Part III

Context

Chapter 10

Environment and site formation

Martin Carver
(with contributions by Charles French and Rob Scaife, and using specialist studies by Steven Rothera)

Introduction

The Deben valley runs through a region of sandy flat seaboard territory known as The Sandlings (Figure 13; Plate 1:b). Between them its two rivers, the Deben and the Alde, give access to an archipelago of promontories and islands with woods, pasture, arable, meadows, marshland and fishing grounds (Scarfe 1986 and 1987; Warner 1996). The Sutton Hoo cemetery is situated on the 33 m (100 ft) contour, on a sand terrace east of the River Deben, about 15.5 km (10 miles) upstream from the North Sea – 10 km (6.25 miles), as the crow flies, from the nearest sea-coast at Hollesley. The river is tidal to Wilford Bridge, which lies about a kilometre upstream from Sutton Hoo. Between the burial site and the river is a flood plain about 300 m across (Colour Plates 1 and 2). It is now dry, being protected by a flood barrier, but it would previously have created brackish meadows, some parts of which could probably have floated a boat at high tide. Strips of conifers have been planted in the nineteenth and twentieth centuries, to provide windbreaks and cover for game. In the flood plain are bands of beech and oak. Otherwise the neighbourhood of Sutton Hoo is flat arable land, divided into large fields interspersed with patches of now protected woods or grassland. The Sutton Hoo barrow cemetery lies on one of these patches of grassland. To its west, screening the site from the river, is Top Hat Wood; to the south and east are cultivated fields; to the north is a re-entrant valley, clad in bracken and overrun by rabbits. The weather is maritime: predominately dry, with occasional blustery rain and strong prevailing north-easterly winds.

The subsoil beneath the cemetery is banded sand with dispersed lenses of pebbles, grit or small shells. The top, *c*.300 mm, of sand is fine and very mobile when dry. Below this, the sand is concreted with silty clay into hard, striated deposits, which can be dug out in lumps ('crag'). The soil above the subsoil is generally 300–400 mm of well-mixed ploughsoil, either still under the plough, or capped by tough springy turf. Buried soil under the mounds has also been ploughed, and lies some 250–400 mm thick.

The studies described in this chapter concern the development of soils and vegetation at the site and its immediate surroundings. The purpose of these studies was, first, to produce an environmental history for the use of the land before the mounds were built and, second, to produce a sequence of the major soil-moving episodes to show how the extant deposits had formed. This information is used to help interpret the Prehistoric sequence (Chapter 11) and the construction, reduction and robbing of the mounds (Chapter 12).

Description of the investigations

Investigations 1945–83

The surface and sub-surface geology in the area of the Sutton Hoo site was studied by C. E. Everard in the context of the British Museum programme of research of 1945–83 (SHSB I: ch. 1). At this point, the River Deben was found to be 170 m wide at high water, and 24 m wide (and 0.6 m deep) at low water. Everard concluded that the overall structure of the area had changed little since the sixth century. It was calculated that the sea had fallen 1.6 m, but the land had also fallen (tectonically) about 0.4 m, implying that the barrow site has had a net rise above sea level of about 1.2 m since the sixth century (SHSB I: 93–6).

The soil history and the vegetational sequence have attracted the attention of environmentalists since the ship-burial was rediscovered in 1939. Zeuner (1975) stated that the buried soil beneath Mound 1 was the complete profile of a podzol, 1 m

thick, and the seventh century environment was a heather heath (FR 9/6.1.2). This interpretation was revised by Geoffrey Dimbleby (SHSB I: 48–77, fig. 11), based on sections cut during the British Museum campaign of 1966–71 into soil and subsoil beneath Mound 1, Mound 5 and Area A (Int. 11 – 'Dr. Longworth's Pit'). Dimbleby, using analysis of soil pollen, found the buried soil was not a podzol, but was instead a brown earth that had been cultivated, and he observed a change from a pastoral to an arable regime during the life of the soil. Cultivation was, stratigraphically, the last event before mound-building, with no intervening turf layer. Dimbleby was puzzled that the Anglo-Saxons had apparently built mounds on a ploughsoil (SHSB I: 63–5; see below). It was noted that the site had probably also been ploughed *after* the mounds were built (SHSB I: 61).

Investigations from 1983

The research targets of the 1983 campaign were to enhance the soil and vegetation history, and to address the problems of what the land looked like before the mounds were built and what happened to them afterwards. It was decided to accept Dimbleby's results on soil pollen from the site, and not to duplicate his investigation (FR 9/2.1). The vegetation sequence would be enhanced by a section cut off-site, and by an examination of the present species population. The soil history would be studied by micromorphology, using the buried soil for the history before mound-building, and the quarry-pit fills for data on soil use after the mounds had been built. The soil history would be considered in conjunction with archaeological studies of the processes of deposit formation, in order to try to understand when and how earth had been moved on the site.

Three specialist investigations were undertaken: an inventory of plant species present on the site in 1984 by Steve Rothera, which produced a floral survey (see below and FR 9/6.1); an analysis of soil pollen by Rob Scaife, from a trench cut off-site, which produced a vegetational sequence (Appendix 1, this chapter); and the micromorphological study by Charles French of samples taken off- and on-site, which produced important evidence for the formation of deposits and soils (Appendix 2, this chapter).

Running alongside these specialist investigations was the archaeological study of strata, recorded on site (see Chapter 3, p. 39). The relevant observations concerned the observation of the context interfaces that might signal changes in the soil regime or cultivation, particularly in the sequences under mounds. An allied investigation was that undertaken by the Leverhulme project, which set out to understand the way that sand bodies had formed and how chemical traces related to them could be detected. The project showed that organic material was transformed to humic sand within a decade (unless the acidity was reduced by a large amount of bone, or by contact with metal), but that insoluble decay-products could still be detected in the substrate (see Chapter 3, p. 57). Acidity had probably also affected the formation of horizons within the buried soil (see below). In 1983 the surface acidity was measured as pH 3.8–4.2.

The results from these investigations are summarized here, and an attempt is made to reconcile their conclusions into a coherent narrative (Tables 89–95).

Floral survey

When the new campaign began in 1983 the Sutton Hoo site was covered by bracken, up to one and half metres high, with the occasional gorse bush. The mounds were barely visible, and rabbits were tunnelling everywhere. The rabbits were expelled and fenced off, and the bracken and gorse were removed by cutting and mowing, as part of the initial management of the site. This at first created a 'moth-eaten' appearance; but in the first spring following the clearance in 1984, a large number of species of grass and other plants appeared: an acid grassland had emerged from its long captivity. A detailed survey of this flora was intended, firstly, to provide a frame of reference for earlier flora, and, secondly, to map the patches of different surface soils revealed by different plant communities.

In his survey, Rothera divided the site into 50 × 30 m areas, each given a letter code and a number of quadrats (with 0.5 m sides) were randomly located within each area. For each quadrat, the species present within it were recorded and a Domin cover-abundance value estimated for each. The survey was conducted in early June. Rothera identified 68 species: 20 grasses, 35 herbs, 1 fern, 3 trees, 6 mosses and 3 lichens. The assemblage, which characterizes the potential plant population of the acid grassland, is summarized in Table 89. The full report is available in FR 9/6.1.5. The pattern of the flora also indicated the character of the soil beneath. An abundance of annual herbs and grasses on a feature meant recent (<15 years) disturbance. Archaeological digging had also helped maintain species diversity. To some extent the variation in plant cover helped to map the history of the site, particularly the holes dug for archaeological and other purposes (see Chapter 2, p. 17, Figure 6).

This work also revealed the character of the acid grassland that must have covered the site for much of its history. This grassland would be maintained by sheep grazing; only when the sheep were no longer cropping the grass would the vegetation outgrow the nutrients, and the soil would podzolize and become easy prey to invasion by heath. The easiest way to break up heath would be to burn it off and plough it. This would create a great amount of podzolic sand, filling in all the hollows and ditches, on top of which a crop and eventually pasture could regenerate. The Sutton Hoo site itself, shorn of bracken, regenerated as a fine turf within five years.

On-site soil sequence

The basic retrieval of palaeoecological data was through bulk-sieving, flotation and grab sampling of all contexts excavated at Level D and higher (see Chapter 3, p. 53). Dry sieving used a smallest mesh of 10 mm, and flotation a smallest mesh of 1 mm. In practice, the yields of faunal and macro-botanical remains were very low. The bone assemblage was confined to unburnt and burnt sheep bones under Mound 2 (see Chapter 11, p. 449), burnt animal bone from Early Medieval cremations (see Chapter 7, p. 275) and modern rabbit bone. The macro-botanical remains were confined to a few grains of burnt cereals, burnt hazelnut shells and burnt acorn kernels (see Chapter 11, p. 414).

Soil columns were taken on-site from all exposed sections that were likely to represent an intact soil sequence (for locations see Figure 155). Columns were taken from standing sections with aluminium monolith tins, Kubiena boxes or sections of sawn square-sectioned drainpipes, (3 in.^{2}, 80 mm^2),

Table 89
Plant species found growing at Sutton Hoo, 5–12 June 1984

Species	English or common name
Agrostis canina subs. montana	brown bent
Agrostis tenuis	common bent
Aira praecox	early hair-grass
Anthoxanthum odoratum	sweet vernal grass
Anthriscus caucalis	bur chervil
Aphanes arvensis	parsley piert
Arabidopsis thaliana	thale cress
Arenaria leptoclados	thyme-leaved sandwort
Arrhenartherum elatius	false oat-grass
Bromus mollis	soft brome
Bromus sterilis	barren brome
Bryonia dioica	white (or red) bryony
Carex arenaria	sand sedge
Cerastium glomeratum	sticky mouse-ear chickweed
Cirsium arvense	creeping thistle
Dactylis glomerata	cocksfoot
Festuca ovina	sheep's fescue
Festuca rubra	red or creeping fescue
Festuca rubra var. pruinosa	
Galium saxatile	heath bedstraw
Galium verum	lady's bedstraw
Geranium molle	dove's-foot cranesbill
Geranium pyrenaicum	mountain cranesbill
Hieracium pilosella	mouse-ear hawkweed
Holcus lanatus	Yorkshire fog
Hypochaeris radicata	cat's ear
Lactuca serriola	prickly lettuce
Lepidium campestre	pepperwort
Lolium perenne	perennial rye-grass
Luzula camapestris	field woodrush
Montia perfoliata	
Myosotis ramosissima	early forget-me-not
Ornithopus perpusillus	least bird's-foot trefoil
Phleum pratense	Timothy grass or cat's tail
Plantago lanceolata	ribwort
Poa annua	annual meadow-grass
Poa pratensis	smooth meadow-grass
Pteridium aquilinum	bracken
Quercus sp. (seedling)	oak
Rubus fruiticosus agg.	bramble
Rumex acetosella agg.	sheep's sorrel
Rumex crispus	curled dock
Sambucus nigra	elder
Senecio jacobaea	ragwort
Silene alba	white campion
Stellaria graminea	lesser stitchwort
Teesdalia nudicaulis	shepherd's cress
Thlaspi arvense	field penny cress
Trifolium dubium	lesser yellow trefoil
Trifolium striatum	soft trefoil
Trisetum flavenscens	yellow oat-grass
Ulex sp. (seedling)	gorse
Urtica dioica	stinging nettle
Veronica arvensis	wall speedwell
Veronica persica	large field speedwell
Vicia sativa ssp. nigra (V. augustifolia)	common vetch
Vicia lathyroides	spring vetch
Vulpia bromoides	squirrel-tail fescue
Vulpia myuros	rat's tail fescue
Mosses	
Dicranium scoparium	
Hypnum cupressiforme	
Polytrichum juniperinum	
Polytrichum piliferum	
Pseudoscleropodium purum	
Rhytidiadelphus squarrosus	
Lichens	
Cladonia impexa (C. portentosa)	
Cladonia sylvatica (C. arbuscula)	
Cladonia pyxidata	

These include species not found in the randomly placed quadrats, but present elsewhere on the site.

recorded *in situ* and wrapped in cling film, bound and boxed. Grab samples consisted of 30 g of soil taken with a spoon, wrapped in cling film, then bagged and boxed.

Selected columns were analysed by Charlie French using micromorphology. This allowed him to advance models for the formation of the soils and other deposits. The results are summarized in Table 90, and are described and assessed by French in Appendix 2, below. The earliest feature examined was the Early Bronze Age pit F129 in Int. 48. This was shown to have been left open for some time after digging, and to have refilled gradually in a series of brief episodes. At the time it was washed into the pit, the surrounding soil had probably not yet podzolized. A ditch dated to the Iron Age (see Chapter 11, p. 453) that had been cut across the surface of the buried soil (later the site of Mound 2) was refilled with a podzolic soil. French found that the buried soils under Mounds 2 and 5 were the lower parts of podzols, which had been heavily truncated. He estimated that some 500–700 mm of the soil profile had been removed, and suggested that this was due to mound-building. (It is argued below that this soil was removed by erosion due to cultivation.) Other investigations of deposits in the quarry ditches showed that the transported material (which at one time formed part of the mound make-up) had originally derived from the same lower part of a podzol (the Bs Horizon) as the surviving buried soil. Lastly, a column taken through the lynchet (S32) showed a relic of the original brown forest soil, capped by a sequence of ploughsoils. The earliest of these belongs to the pre-mound ploughing regime found under the mounds (see below), and the later ones are from cultivation in the Middle Ages and the nineteenth century (see below and Chapter 12, p. 465).

Off-site soil sequence

A trench (Int. 53) was cut by machine into the side of the valley west of Top Hat Wood at *c.*14 m AOD, on the slope between the

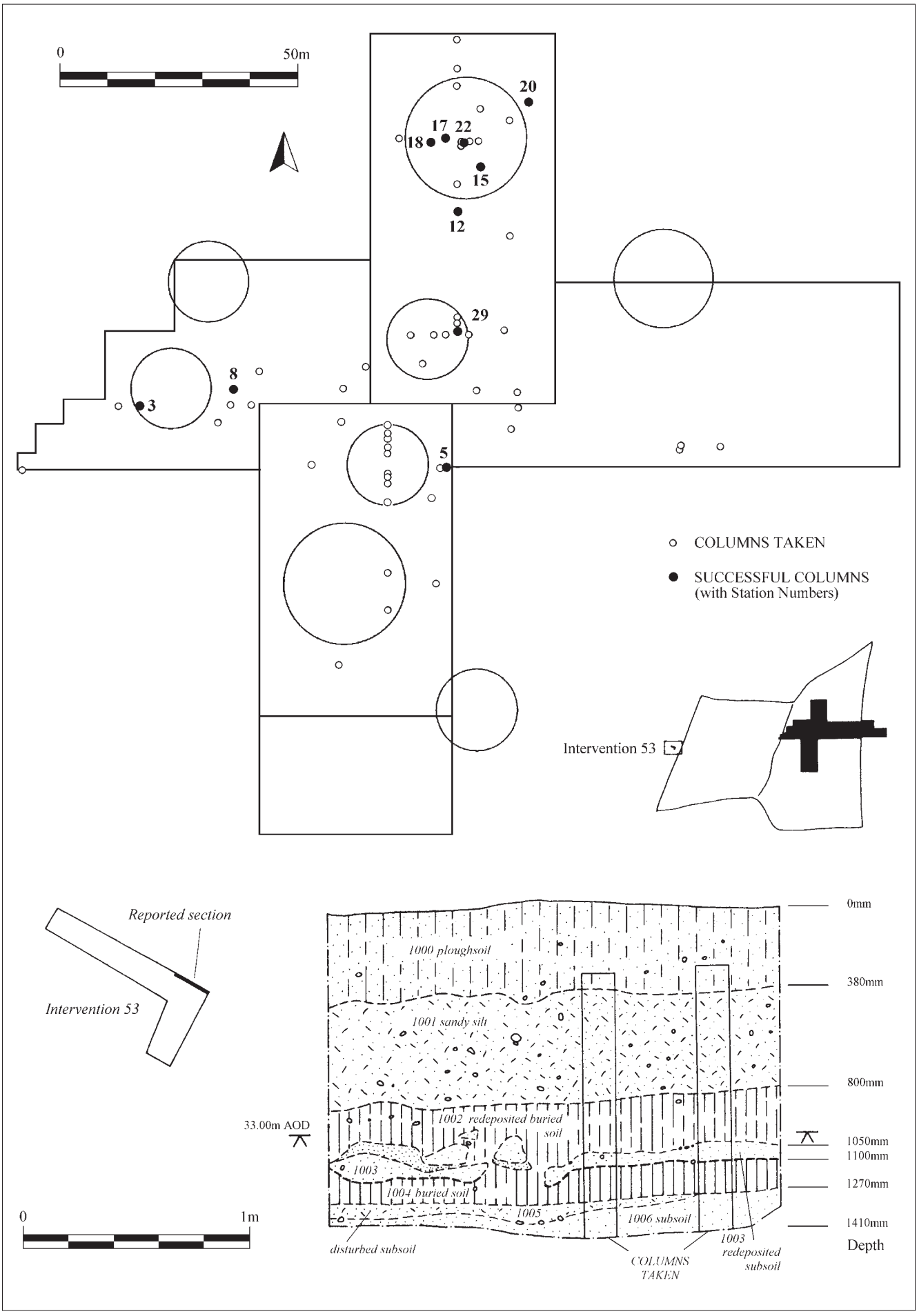


Figure 155 Map of the excavated area showing sampling stations for soil columns (top); extract of section through the hill wash on the valley side, Int. 53 (bottom).

Table 90
Summary of findings from micromorphology

Site investigated	Station	Sample nos	Micromorphology description (Charles French)	Stratigraphic comment (Martin Carver)
Early Bronze Age pit Int. 48/F129	8	2672/3	fill derives from a soil not yet podzolized, but which podzolizes within pit	filled in with water-laid/ wind-blown ploughsoil
Iron Age ditch under Mound 2	18	40462	fill derives from a redeposited podzol similar to the fill of the Mound 2 quarry ditch	quarry ditch fill also a podzol, but one which formed after construction of the mound
buried soil under Mound 2	15 and 17	30323 and 30324	Bs horizon of a truncated podzol, which was well-formed before the mound was constructed	lowest 160 mm of buried soil only; remainder interfered with by Pit 501 and quarry ditch
buried soil under Mound 5	29	39229 (Hor. 4), 39230 (Hor. 4), 39231 (Hor. 4–6), 39232 (Hor. 6–7)	Bh(s) horizon of a podzol (upper) Bs horizon of podzol (lower); original profile truncated by mound building (?); *c.*500–700 mm lost	upper half cultivated (ploughmarks); ploughing probably responsible for loss of missing profile
Mound 2 burial chamber	22	23364	sand	re-deposited subsoil
Mound 2 quarry ditch	12	18962	B(h)s material, like upper half of buried soil beneath Mound 5	buried soil quarried for mound building and re-deposited as surplus
Mound 2 make-up	20	14446	turf from a podzol	part of ploughed mound over quarry ditch and beneath the 1938 spoil heap
Mound 6 quarry ditch	5	3816	lower fill from re-deposited buried soil, including relics of original brown forest soil upper fill sand from a pre-barrow podzol	lower fill re-deposited buried soil surplus to mound building upper fill podzol from post-barrow ploughing
lynchet, Int . 48	3	1814	lower 60 mm was illuvial B or Bt horizon of a podzolized brown soil middle 65 mm was ploughed Bs/h or spodic horizon of a podzol upper 325 mm was re-deposited podzol	buried soil reduced to 125 mm by ploughing before lynchet formed

base of the Sutton Hoo promontory (30 m AOD) and the River Deben (*c.*5 m AOD). The trench ran east–west, with the east end at the foot of the wooded up-slope that rises to the Sutton Hoo terrace, and the west end in the arable fields which slope down to the river. The exposed section, 1400 mm deep, was recorded and sampled with continuous columns (Figure 155 shows the section and the position of the columns). The trench revealed a sequence of deposits dated from the Pleistocene to modern eras, which were analysed for pollen by Scaife and for soil micromorphology by French. Scaife's results are described and assessed in Appendix 1, below, and the pollen sequence is shown in Figure 156. French's results are included in Appendix 2, below. Table 91 is an attempt to present both sets of results, calibrated to the stratification, which is presented in the section shown in Figure 155.

The lowest strata (1410–1270 mm below extant ground level) were sand subsoil, of which the upper part (Context 1005) belonged to a podzolized brown soil that contained pollen from an early woodland, which included oak, alder and hazel. Above this (1100–1270 mm) lay the buried soil proper, a depleted podzol, the upper part of which had been disturbed by cultivation (Context 1004). The pollen assemblage indicated both grassland and arable land (growing cereals). On top of the buried soil was a layer of re-deposited sand subsoil, 50 mm thick (Context 1003, 1050–100 mm). This must have derived from some massive exposure of the subsoil on the terrace above, namely on the Sutton Hoo site. The prime mover for this event may have been the construction of burial mounds in the seventh century; but it is argued below that this is actually a Prehistoric horizon and an explanation should be sought in the Prehistoric sequence. Context 1002 (from 800–1050 mm) is a band of re-deposited podzolic buried soil that has probably come down the slope from the terrace above. Context 1001 (380–800 mm) was a similarly displaced deposit that had probably come down the hill; it was formed from the 'eroded remnants of another soil' (French: Appendix 2, below). Another 380 mm of soil formed the top layer, which was under the plough at the time of recording.

The observed sequences of strata, soil types and pollens were consistent with each other, but there was less agreement on the date of the episodes that are represented. This is discussed below.

Stratigraphic studies

In parallel with these specialist studies, efforts were made, using stratigraphic observations made on-site, to reconstruct the way in which deposits were formed and the old ground surfaces had risen and fallen. The main targets were calculation of the heights of the ground surfaces in the Prehistoric (pre-mound) periods, assessment of the degree of feature loss (see Chapter 11,

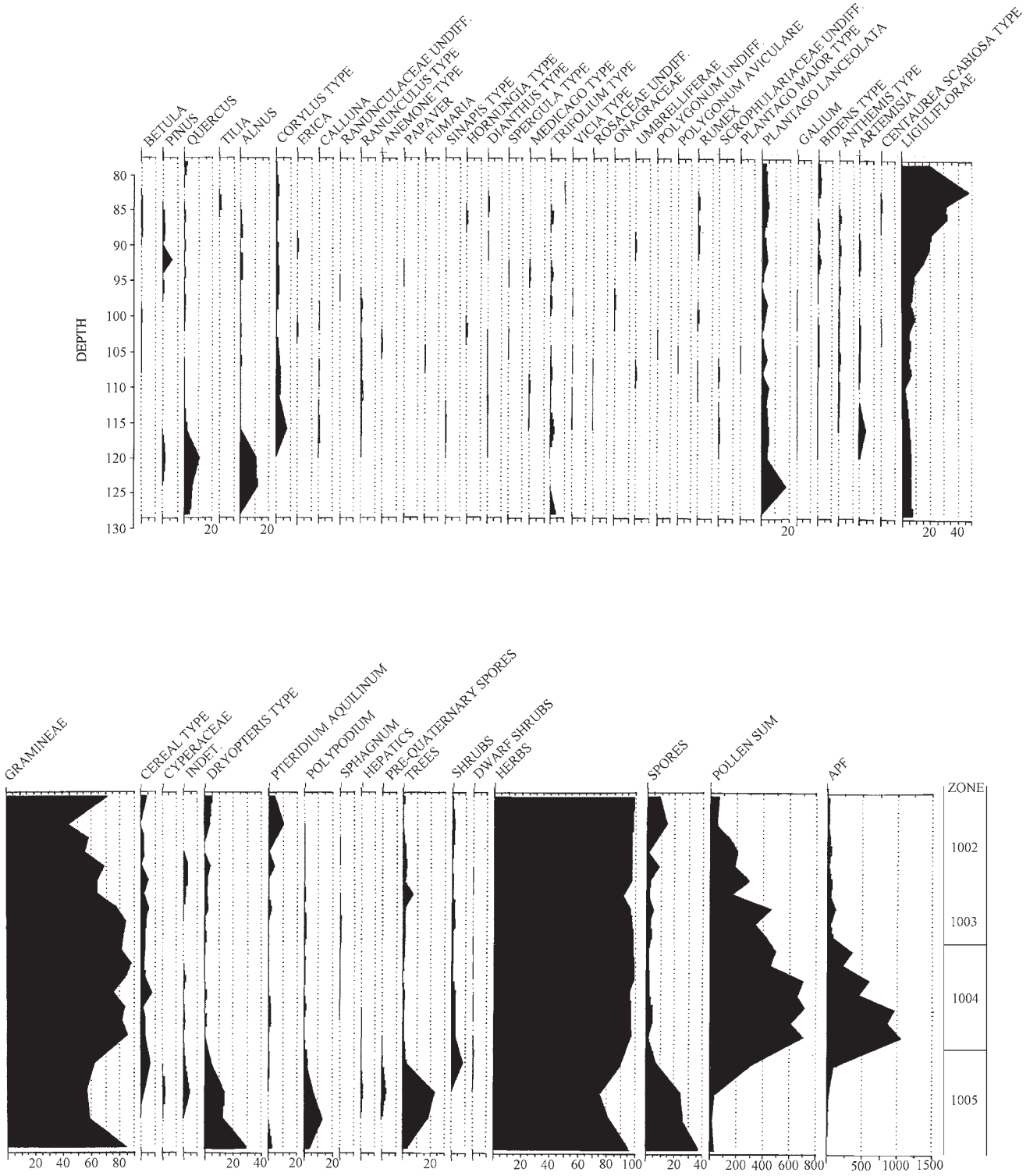


Figure 156 Pollen diagram for Int. 53 (R. Scaife).

Table 91
The record and interpretation of the valley profile

Depth (mm)	Context(s)	Horizon	Micromorphology (C. French)	Pollen analysis (R. Scaife)	Interpretation (M.O.H. Carver)
0–320	1000	Ap	loamy sand ploughsoil		arrived in nineteenth century; under the plough in twentieth to twenty-first centuries
320–500					
500–95	1001 (upper)	Ea(h)	podzolic fabric with pellety organic matter and colluvial clay formed in colluvium – 'the profile received eroded remnants of another soil'		medieval ploughing of terrace and/or up-slope
595–785					
785–875	1001 and 1002 (upper)	Ea(h) lower	essentially as above, with slightly finer fabric	uncountable	mounds built?
875–958				colluvial sandy loam dominated by *Gramineae*	Context 1002 re-deposited from IA–RB ploughing on terrace
958–1030	1002 (middle)	Ea(h)	as above		
1030–50	1002 (lower)	Bs(/w)	poorly developed spodic horizon of podzol formed in colluvium with minor illuvial clay; Contexts 1002 and 1001 have undergone some podzolization *in situ*		
1050–100	1003	(C)	eroded, re-deposited subsoil	pollen count low but similar to Context 1004	prehistoric event
1100–22			as below, with cultivation and faunal mixing		latest ploughed surface of buried soil
1122–85	1004 (upper)	Ah	lower Ah horizon of buried soil, high colluvial content, podzolized	buried land surface dominated by *Gramineae*, but cereal pollen-type present; pasture and arable land implied on or close to the sampled site; absence of *Tilia* implies IA or later	pasture and arable land of BA and later
1185–270	1004 (lower)	Ea(h)	depleted horizon of podzol with relatively high organic matter content		BA and later
1270–80	1005	Ea	depleted horizon of podzol	pollen count low; *Gramineae* with *Quercus*, *Alnus*, and *Corylus*; cleared woodland	Neolithic and later
1280–300	1005	Bs(/t)	spodic horizon (Bs) of podzol developed in argillic horizon (Bt) of original brown earth		subsoil
1300+	1006	C	*in situ* subsoil		

Table 92
History of the buried soil and mounds

Data	Mound 2	Mound 5	Mound 6	Mound 7
Height of subsoil Horizon 7	33.10 m AOD	32.95 m AOD		
Height of Horizon 6	33.21 m AOD	33.06 m AOD		
Height of ploughmarks	33.29 m AOD	33.17 m AOD		
Height of Horizon 5	33.32 m AOD	33.16 m AOD		
Height of Horizon 4	33.54 m AOD	33.36 m AOD	33.16 m AOD	32.85 m AOD
Total thickness of buried soil	440 mm	410 mm		
Diameter	22.50 m	14 m	15 m	20 m
Quarry base	32.53 m AOD	(see Chapter 4)	31.98 m AOD	31.70 m AOD
Depth d1	0.92 m		1.18 m	1.15 m
Depth d2	0.72 m		0.98 m	0.8 m
Quarry ditch length	102.10 m		43 m	73 m
Quarry ditch width	10.25 m		7.50 m	8.40 m
Max. volume (v1)	790.25 m^3	167.15 m^3	221.16 m^3	409.28 m^3
Min. volume (v2)	543.17 m^3	89.12 m^3	164.49 m^3	296.34 m^3
Max. height (h1)	3.82 m (37.27 m AOD)	2.11 m (35.48 m AOD)	2.42 m (35.58 m AOD)	2.55 m (35.40 m AOD)
Min. height (h2)	2.68 m (36.13 m AOD)	1.25 m (34.87 m AOD)	1.73 m (34.89 m AOD)	1.87 m (34.72 m AOD)
Height in 1983	35.15 m AOD (37.55 m AOD, reconstructed)	33.45 m AOD	34.00 m AOD	34.07 m AOD
Min. amount removed by ploughing or quarrying	0.98 m	1.42 m	0.89 m	0.65 m

p. 394) and calculation of the original size of the mounds, and how they were built and reduced. Stratigraphic contexts were defined by horizon mapping, and were described in terms of sand/silt/clay fractions estimated by eye and by colour (using a Munsell Colour Chart). In mounds and buried soils, context boundaries were often only visible in section (see Chapter 3, p. 47). It was recognized that interfaces observed in the buried soil might represent a chemical rather than a stratigraphic horizon, but in some cases, at least, the horizons were mechanical – the limit of disturbance caused by ploughing. Survey measurements were taken of the depths of all features, and of the heights (AOD) of all buried soil horizons, in order to assist the interpretation of how they had formed and been denuded.

Observations of buried soils

The buried soil was exposed in plan, and was inspected in section beneath Mounds 2, 5, 6, 13 and 14. There was very little buried soil left at the sites of Mounds 17 and 18, and the buried-soil platform under Mound 7 was only seen at the edges of the mound, which was not itself excavated. The surface of the buried soil under Mound 2 was described during excavation, by supervisor A. J. Copp, as uneven and difficult to find. Nevertheless, excavators were able to agree the diagnostic indications, both in plan and section. Under Mound 2, the surface of the buried soil was located beneath sand upcast, presumably from the burial chamber, and was confirmed by the cut lines of the slots F214–15, which were related to the burial chamber (they may have originally held a beam across it; see Chapter 6, p. 168) and should thus have been cut from the old ground surface. On the old ground surface, thus designated, there were patches of dense localized staining, which were crusty and appeared to represent a layer of mineral accumulation through the process of leaching within the mound environment. The stains were various shades of brown and ran in irregular lines. Surrounding these reddish-brown stains were spots of firm, very dense darker brown minerals; similar spots or flecks were seen and drawn in the section of the mound make-up (FR 4/3822). The level of the buried soil was often evident from the sections, particularly where it was marked by the 'stone-roll' effect (see Chapter 3, p. 46). The recognition of the buried-soil surface under Mound 5 drew on the Mound 2 experience, but there were independent indications, too, in the texture of the soil and the ring of rolled stones (see Chapter 4, p. 73).

Within the buried soil under Mounds 2 and 5, three separate horizons were identified – Horizon 4 (dark brown, smooth and firm-textured, and relatively stone-free), Horizon 5 (darker brown, firm and slightly gravelly) and Horizon 6 (orange-brown, loose and very gravelly). Plough-marks cut into Horizon 5 were observed, which implied that the top layer of buried soil was a plough-zone about 150 mm thick (see below). Each horizon marked the surface of a context. These varied in thickness: the thinnest generally being that beneath Horizon 5 (FR 4/381). Using the information derived from the horizon definitions and from the sections, Copp was able to deduce the relative heights of the buried-soil horizons under Mounds 2 and 5 (see Table 92). The calculations depend on the maximum heights to which the buried soils had survived under mounds, which was based on a large number of observations recorded as surveyed points, context records or on sections. Local variations in the height and thickness of the buried soil could usually be traced to intrusive features at the point measured.

The measurements in Table 92 show that the thickness of buried soils under the mounds was 400–450 mm, which compares closely to the thickness of soil currently remaining outside the mounds (Table 93). It can be deduced that there has been little net loss of soil from the Sutton Hoo terrace since the mounds were built.

Table 93
Measurements of soil thickness along east–west axis

Int. no.	Grid ref.	Top of present ground surface	Top of clean subsoil	Max. surviving depth
39	300/147	32.35 m AOD	32.00 m AOD	350 mm
39	260/147	32.55 m AOD	32.20 m AOD	350 mm
32	240/147	32.85 m AOD	32.45 m AOD	400 mm
32	220/147	33.00 m AOD	32.60 m AOD	400 mm
50	191/143	33.15 m AOD	32.80 m AOD	350 mm
50	143/143	33.10 m AOD	32.75 m AOD	350 mm
48	089/143	32.60 m AOD	32.15 m AOD	450 mm
48	070/143	31.90 m AOD	31.70 m AOD	200 mm
48	055/143	30.95 m AOD	30.70 m AOD	250 mm
48	051/143	30.60 m AOD	30.15 m AOD	450 mm

Physical evidence for ploughing

Stratigraphic evidence for cultivation was discerned from thirteen sets of observations:

1 In the buried soil beneath Mound 2, plough-marks were seen and recorded at Horizon 5 (see Chapter 11, p. 457) (Figure 157). Some were narrow cuts attributed to ards.
2 Other signs of cultivation under Mound 2 took the form of small trenches that may have been used for planting out (Plate 52:a).
3 There were two kinds of cultivation feature in the buried soil beneath Mound 5, furrows and plant pits, both of which were recorded at Horizon 5. The furrows were of a kind indicative of criss-cross cultivation with an ard for the growing of a cereal crop (Figure 157; Plate 52:b). Cultivation traces of a similar kind have been seen beneath many Prehistoric barrows, as well as beneath the sixth-century barrow at Högom (Ramqvist 1992: 200).
4 The pits were small, circular and shallow, such as might have been dug to plant small fruit bushes (Plate 52:c).
5 Plough-marks were not seen in the buried soil beneath Mound 1, but the pollen analysis implied that the top 120 mm of the buried soil had been ploughed (Dimbleby in SHSB I: 53).
6 Traces of two sets of plough-marks were recorded in the relict buried-soil platform that comprised Mound 17. The earlier set followed a WNW orientation, and were aligned with the Iron Age enclosure ditch (S22) at that point.
7 A second set of plough-marks ran east–west, and partly overlay the filled-in Iron Age enclosure ditch. These were seen on the surface of the Mound 17 platform, and probably relate to the ploughing away of the mound itself.
8 Plough-marks were recorded running east–west in the disturbed buried-soil platform in the area of Mound 18.
9 Plough-marks running north–south were recorded in the same buried-soil platform.
10 The waveform of a ploughing regime running east–west was seen in the section which cut through Horizons 0–2 on Mound 7 (Plate 52:d). The furrows were 1.20 mm apart, trough-to-trough.
11 There were traces of plough-marks running east–west on Mound 14. These crossed the back-filled robber trench.
12 All the quarry ditches and pits belonging to mounds had been filled in with a final layer of podzolic soil (see above and Appendix 2, below). It is argued that this material is most likely to have arrived through the physical agency of ploughing, and that this is the episode mainly responsible for reducing the mounds in height (see Chapter 4, p. 77 and Chapter 12, p. 459).
13 The sections cut through the north–south bank (S32), which runs along the track to the west of the burial mounds, show that it is a lynchet, originally formed by ploughing in the Middle Ages and re-formed in the nineteenth century (see Chapter 12, p. 462). A ditch or hedge line runs along the east side of the lynchet, suggesting that it was formed by ploughing from the west, i.e. up the slopes now covered by Top Hat Wood. Beneath the lynchet, French found evidence for an early brown soil that had podzolized; this had already been reduced to a thickness of 125 mm, probably by ploughing.

There seem to be at least four ploughing regimes implied by this evidence. The earliest, found beneath the mounds and the lynchet, ran in a WNW–ESE direction, and dates to before the seventh century; it is likely to be Iron Age or Romano-British in its final phase (see Chapter 11, p. 457). It featured three different kinds of cultivation marks: the criss-cross ard marks, the narrow trenches and the bush pits (Observations 1–6 and 13). The second ploughing regime ran east–west. It was later than the construction of the mounds, and was responsible for filling up the quarry pits and ditches. It was also later than the twelfth century, as hearths of that date were sealed beneath this transported soil in the quarry ditches (see Chapter 12, p. 459). It is argued in Chapter 12 that this ploughing is earlier than the first robbing expedition of the sixteenth century, and is late Medieval in date (Observations 7, 8, 12 and 13). The third regime concerned the slope to the west. This ploughing appears to have eroded the west sides of Mounds 1, 18, 17 and 12, and was responsible for forming the lynchet S32 (Observation 13). The ploughing was east–west, but was also north–south in the area of the lynchet (Observation 9). It is dated to before 1902 (by which time Top Hat Wood had been planted), and is probably from before 1836, as a map of that date shows the land in question as arable. It is argued that the lynchet was first formed by a Medieval ploughing of this slope, post-dating that described above (see Chapter 12, p. 461). A fourth ploughing episode is proposed, to account for the plough-marks seen over the back-filled robber trench of Mound 7 (Observation 10), a trench

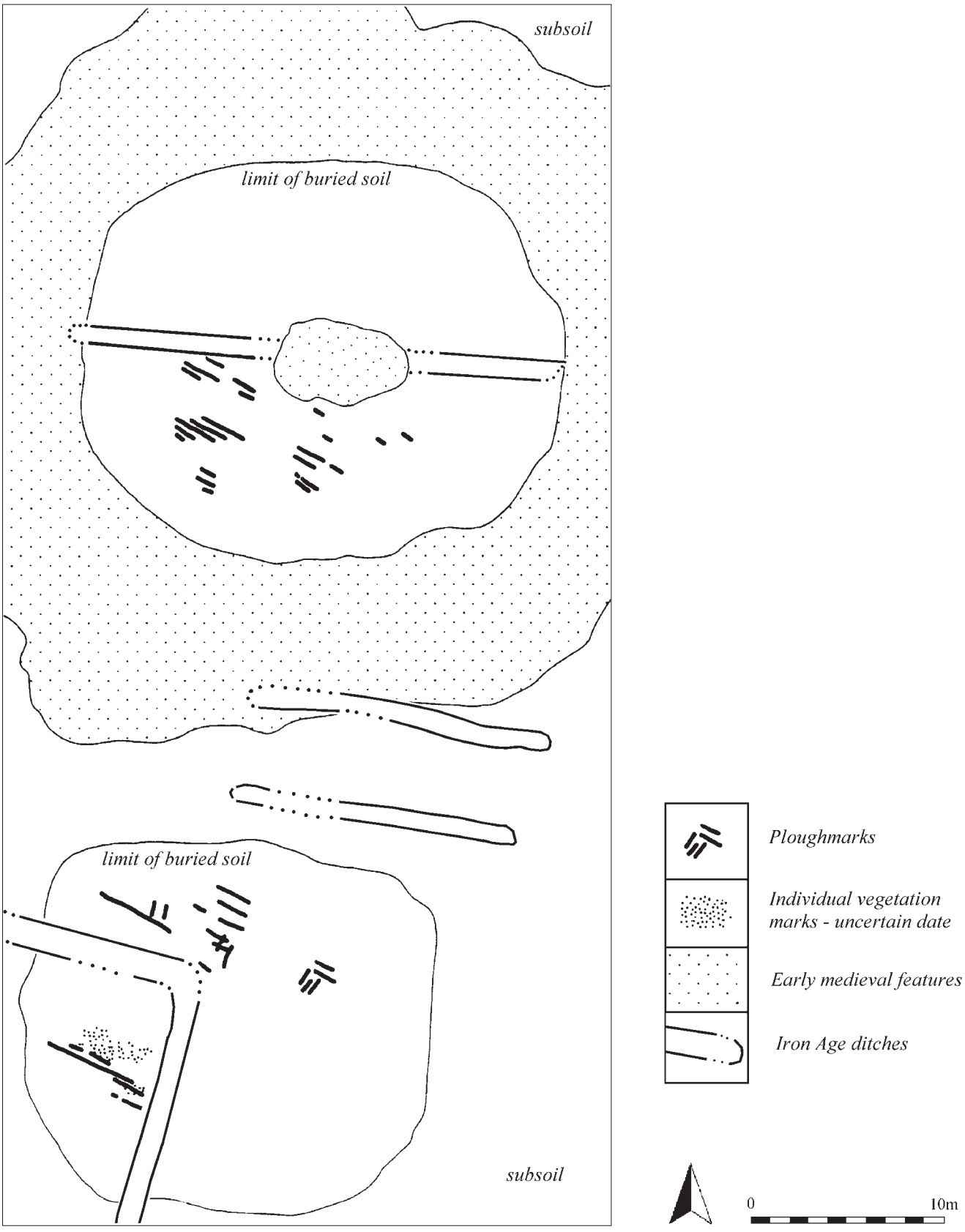


Figure 157 Plough-marks found on the buried-soil platforms beneath Mounds 2 and 5.

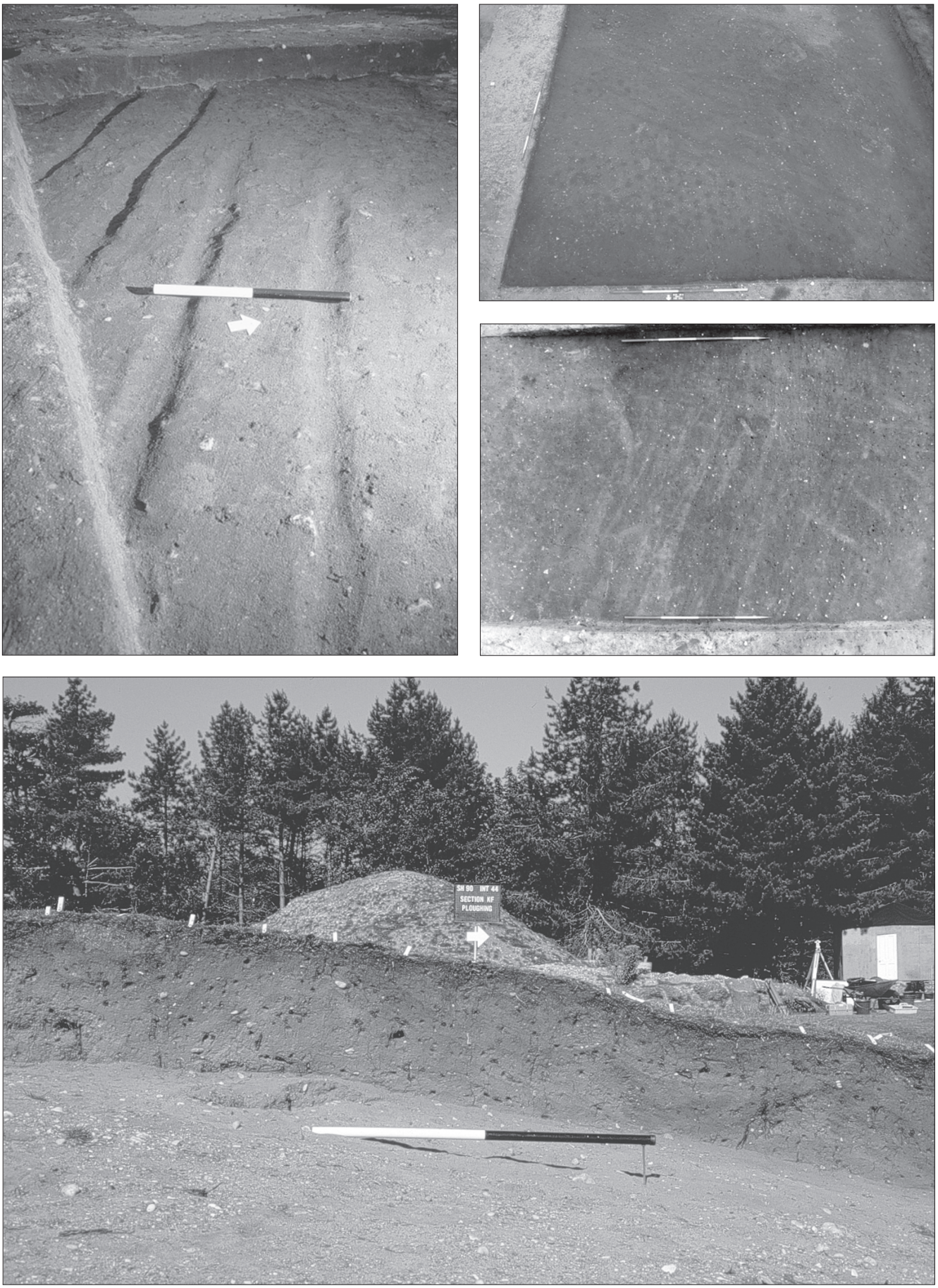


Plate 52 Cultivation features: (a, top left) cultivation trenches under Mound 2; (b, centre right) ard marks under Mound 5; (c, top right) plant holes under Mound 5; (d, bottom) ploughing over the robbed Mound 7.

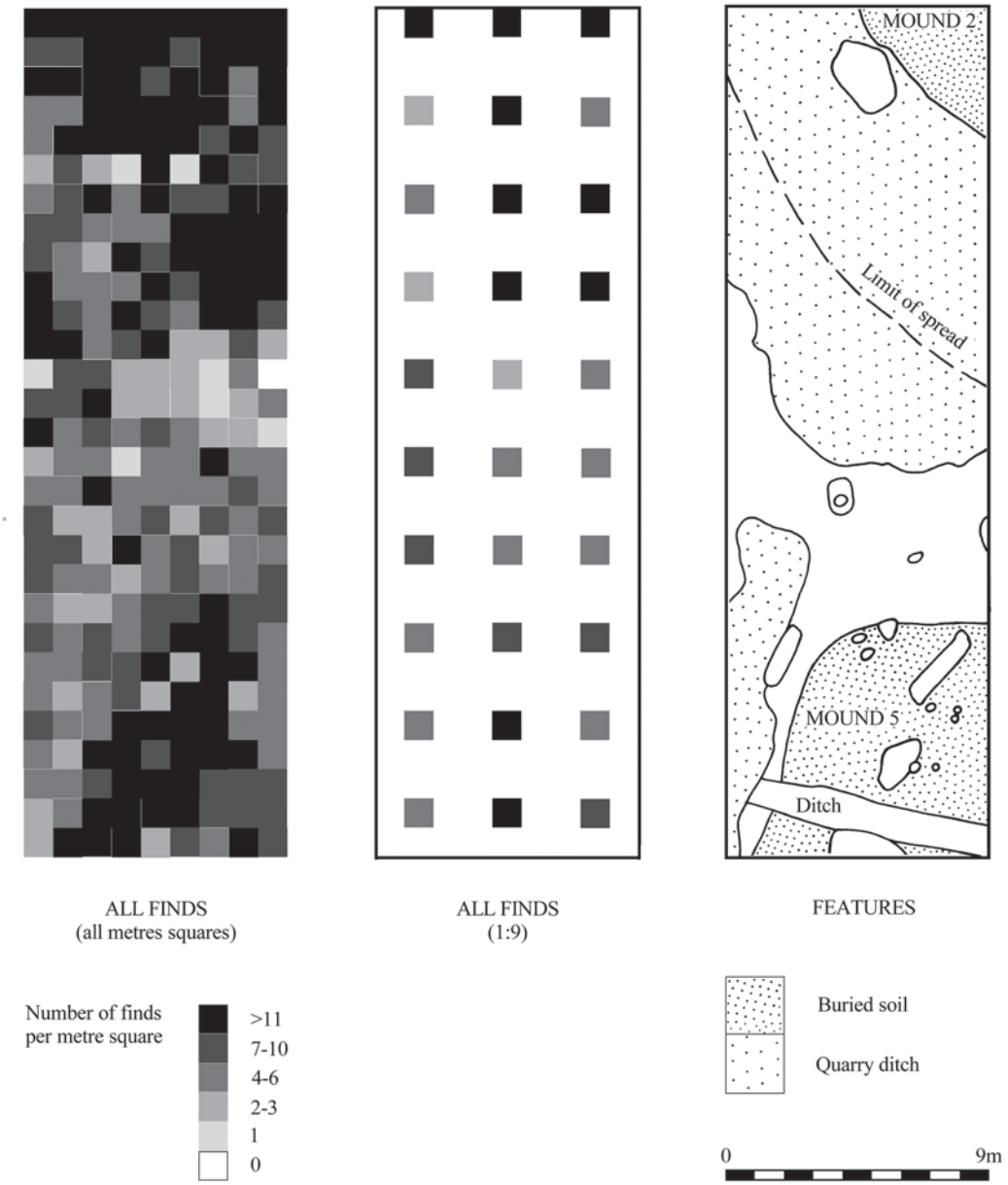


Figure 158 Finds distribution over Quadrant Q, Int. 41.

thought to have been dug in the mid nineteenth century (see Chapter 12, p. 465). The post-mound ploughings are discussed further in Chapter 12.

Evidence from the relative heights of soils

From the relative depths of the recorded horizons (Tables 92 and 93), it can be concluded that buried soil survived to an average thickness of about 400 mm beneath the mounds. The upper 150–250 mm of this had been ploughed, and plough-marks survived at Horizon 5 to a further 50 mm in depth, a total of 300 mm below the Anglo-Saxon ground surface. The mounds had therefore been constructed on an old ploughsoil. However, in some places (Mound 6; see Chapter 4, p. 91) a turf-line survived at Horizon 4 (i.e. the Anglo-Saxon ground surface). Since turfs were also seen in mound make-up (see Chapter 6, p. 161), it is concluded that in the Anglo-Saxon period the ground was under turf which was generally stripped before mounds were constructed (see Chapter 8, p. 309). The average depth of soil away from the mounds is 250–400 mm, so there appears to have been little overall loss of soil since the mounds were built (above). Evidence for the erosion of soil through ploughing since 1940 was provided by a section cut through an anti-glider ditch in Zone D (Int. 21). This showed that there had been no net loss of soil here since 1939.

Evidence from the relative depth of the old ground surface in the Prehistoric periods

This study made use of the fossilized landscape beneath Mound 2 to calculate the levels of the old ground surface in the Prehistoric periods, as inferred from the relative depths of hearths, post-holes and other features. It was assumed that an earthfast post of 200 mm in diameter would need to be sunk 800 mm or more into the sand, and ditches which had any enduring function as markers would need to be cut at least 500 mm deep. Features under Mound 2 assigned to the Early Bronze Age and Iron Age would, therefore, have been cut from higher than the extant buried-soil surface. Features that were defined at Horizons 5 and 6 served to emphasize the truncation of

Table 94
Mound 5: volume of soil extracted from quarry pits, showing the basis of calculations for original height of mounds

Feature no.	Diameter (m)	Length (m)	Width (m)	Depth d1 (m)	Depth d2 (m)	Volume v1 (m^3)	Volume v2 (m^3)
559		12.20	5.80	1.53	0.88	57.74	31.18
557		8.3	4.8	1.53	0.88	33.92	17.42
556		4.7	4.1	1.17	0.72	10.53	5.99
558		4.00	3.1	0.89		5.03	
57	2.2			0.79	0.69	3.89	1.48
subtotal						111.11	61.10
407	3.7			1.4	0.75	8.96	4.25
395		4.7	4.2	1.2	0.8	10.73	6.87
394	2.3			0.68		1.57	1.57
401		2.8	2.4	0.8		2.08	2.08
subtotal						23.34	14.77
508		4.4	2.7	0.83	0.23	5.04	1.37
130		5.0	3.4	0.95	0.27	7.80	2.29
131		4.1	2.6	0.94	0.74	5.28	3.81
133		2.2	1.6	0.92	0.72	1.98	0.82
129	3.5			0.99	0.64	5.27	3.22
141/2		5.0	2.8	1.09	0.79	7.33	5.4
subtotal						32.7	13.25
Total						167.15	89.12

Prehistoric features outside the mounds. Only three posts of the Early Bronze Age roundhouse (S26, see Chapter 11, p. 416) would have survived away from a buried-soil platform (*Bull.* 6: 25). There had thus been some soil loss since the Early Bronze Age, both under and away from mounds, which had resulted in the truncation of Prehistoric features.

Evidence for deposit history from the distribution of finds (Bull. 7: 22–3)

Figure 158 shows the surface distribution of finds gathered at Recovery Levels B and C from the turf and topsoil in Quadrant Q in Int. 41. The material is predominately Prehistoric pottery and flint, but its distribution relates to the mounds (in this case Mound 2 and Mound 5). This is obviously because the soil containing the Prehistoric material had been gathered to make the mounds. This distribution also shows that the material had been spread over the quarry ditch that the Anglo-Saxons had excavated from the subsoil. From this it can be seen that Prehistoric ground was quarried to make mounds in the early Middle Ages, but since the early Middle Ages, the mound had been spread over and into its own quarry ditch. This analysis was used to justify the opening of later interventions (Ints 48 and 50) by machine (see Chapter 3, p. 43).

Evidence of the original volume and height of mounds

The movement of soil by cultivation and mound-building clearly affected our ability to read the environmental and Prehistoric sequence, and it emerged that the profile of the mounds as they survived bore little relation to their profile when newly constructed. As a contribution to this study, and also to produce a better picture of the original appearance of the mounds, an attempt was made to calculate the mounds' original volume and height. The method used was to calculate the volume of earth that would have been provided by the quarry ditches or pits (of mounds that had them), assuming that these had been cut from the same level as the buried soil. This volume, and the diameter of the mound as revealed by excavation, was then used to calculate the original height. The calculation of the volume of earth used to build Mound 5 is shown (as an example) in Table 94. The formula used to derive the height from this volume of earth is given in Appendix 3 to this chapter. The resulting figures for the original heights of mounds are shown in Table 92.

It was found that there was more than enough soil from the Mound 2 quarry to build a mound nearly four metres high (using the maximum volume in Table 92). Due to its stratigraphic character, it was supposed that the first layer found in the quarry ditches, which resembled mound make-up, consisted of soil surplus to mound-building (see Chapter 4, p. 77). Subtracting the volume of this first layer to give a minimum volume still indicated a mound 2.68 m above the buried soil platform.

From these studies, it was deduced that mounds with quarries did not generally need to use additional scraped-up soil. It could also be seen that the mounds had been greatly reduced in height by 1983.

Evidence that the mounds were ploughed

The backfill of most quarry pits and ditches featured a final fill of pink-grey podzolic sand, which was not fine enough to have been wind-blown. In the experiment carried out during the reconstruction of Mound 2 (Plate 15), the heaped-up spoil proved to be very stable. The heap was consolidated by vegetation in two years; after three years there was still no measurable deposit on the base of the quarry ditch. Therefore, the back-filling of a quarry ditch by erosion alone is unlikely, and the reduction of all the mounds and the back-filling of the quarry ditches is most readily attributed to ploughing. The Högom mounds were also reduced by ploughing (Ramqvist 1992: 221), and such reduction is likely wherever the soil is lean and the mounds provide a reservoir of good humus.

The ploughing episode that reduced the mounds in height, and refilled their quarries, is dated to the later Middle Ages (see Chapter 12, p. 461).

Conclusion

The archaeological observations suggest the following:

1 There was a major reduction of the ground level during Prehistoric times that affected the whole area, leaving an average thickness of 400 mm of soil under and beside the mounds. Since the original profile of the podzol was a metre thick or more, there must have been a net loss of at least 500 mm of soil to the site (using French's figure of 500–700 mm). This soil was not incorporated into the mounds, and must have been lost down the slope (see discussion below).
2 The buried soil under the mounds had been under the plough in Iron Age and Roman times. The ground had probably turfed over, and the turf then stripped for mound-building by the Anglo-Saxons.
3 For the mounds that had them, quarry pits and ditches provided more than enough material to build a stable mound.
4 The mounds had been greatly reduced in height by ploughing in the later Middle Ages, spreading the mound make-up over the site, but there was no net soil loss after the mounds were built.

Discussion

None of our sources of evidence are decisive on their own, and the argument presented is cumulative rather than unequivocal.

All recorders and analysts were agreed that there had been considerable truncation of the soils under the mounds, but there were differences of opinion on its cause. The micromorphologist, French, attributed the truncation to soil removal for barrow-building; the stratigraphic observations, on the other hand, indicated that truncation and ploughing had occurred in the Roman period and earlier, and that only a layer of turf had been stripped before mound-building. These differences are reconciled in the model that is offered here.

Soil history and the formation of deposits relating to the Prehistoric period are placed in context in Chapter 11, and evidence for agriculture and earth moving (including mound robbing) relating to the later history of the mounds is put into context in Chapter 12.

In the valley

Scaife confirms that the soil on the valley side, as on the terrace above, seems to have originally been a brown earth that supported oak, alder and, later, hazel. It was cleared of woodland, and subsequently podzolized. It was then slightly truncated during a period associated with cereals and ploughing, incurring the loss of the upper half of the original Horizon A, and being reduced to a thickness of 170 mm. The agricultural phase shows mixed agriculture, rather than pasture, and then ploughing. Scaife suggests that an absence of *Tilia* puts the clearance later rather than earlier in date, that is to the Iron Age rather than the Bronze Age.

Since the surviving thickness of buried soil included the whole soil profile of a podzol, except for the upper Horizon A, it might never have been as thick as it was on the terrace. Even if it had been truncated by two-thirds, that would still only imply an original thickness of about 500 mm. Presumably this means that in the valley the brown earth was not extensively forested, and that it never attained the thickness of a metre or so surmised on the terrace. That there was some truncation, and some evidence for ploughing, suggests that ploughing of the podzol caused what truncation there was. Futile as this cultivation might seem, it would certainly have resulted in erosion down the slope towards the river.

The relic ploughsoil was then sealed by a major transportation of natural sand, and deposited on top of this was over a metre of colluvial material, which included remnants of 'another soil that had undergone considerable soil development prior to its erosion and incorporation in this…horizon' (French in Appendix 2 to this chapter). The deep deposit itself had time to begin the process of podzolization, forming a thick Ea(h) horizon, which, given 'soil erosion or colluviation, associated with podzolization of the aggrading profile, the unstable nature of podzolic profile, poor vegetative cover and human activities…continues up to the present day'.

In trying to match these events to those occurring on the terrace above, it is important to take into the account the basic arithmetic of the soil depths. The total depth of soil in the valley profile was 1270 mm, and the depth under the mounds was 400 mm, argued by French as originally being 900–1100 mm. Taking the lower figure, at least 500 mm has been lost from the profile of the buried soil under the mounds. In the valley section, only 170 mm (Context 1004), or at most 470 mm (Contexts 1002, 1003 and 1004), remains of the buried soil now. There was evidence that the surface of the extant buried soil had been ploughed, so it can be assumed that the original profile had been reduced by ploughing and that soil has been lost down-slope towards the river. Here, at least, no other agency, such as mound-building, is suspected.

Subsequent to this old ground surface, 1100 mm of soil (Contexts 1000–1003) arrived from somewhere else, the most likely source being the slopes above (now Top Hat Wood) and the Sutton Hoo terrace above that, where a loss of 500 mm has already been noted before the mounds were built. After the mounds were built, there was no net soil loss on the Sutton Hoo terrace, but the slopes of Top Hat Wood were themselves ploughed. Soil that was ploughed off the terrace may have arrived on the slopes of Top Hat Wood, and soil ploughed off these slopes would have arrived in the field where the Int. 53 section was cut; this field itself continues to slope downwards, so moving soil eventually into the river. The equation will, therefore, not be direct, but we have to explain a net loss of at least 500 mm of soil from the Sutton Hoo terrace and a net gain of at least 1100 mm at the foot of the slope carrying Top Hat Wood. It seems unlikely that any of this can be attributed to the building of burial mounds, because the loss had occurred before the mounds were built and affected the whole area equally. It is also doubtful that the building of mounds would result in the deposition of clean subsoil or colluvial deposits further down the slope.

A profit and loss account can be modelled for the three areas – the terrace, the slope and the valley, involving seven events of transportation, as follows:

1 (Early Bronze Age) The valley was cleared and ploughed. The soil thickness was reduced to 170 mm (Context 1004).

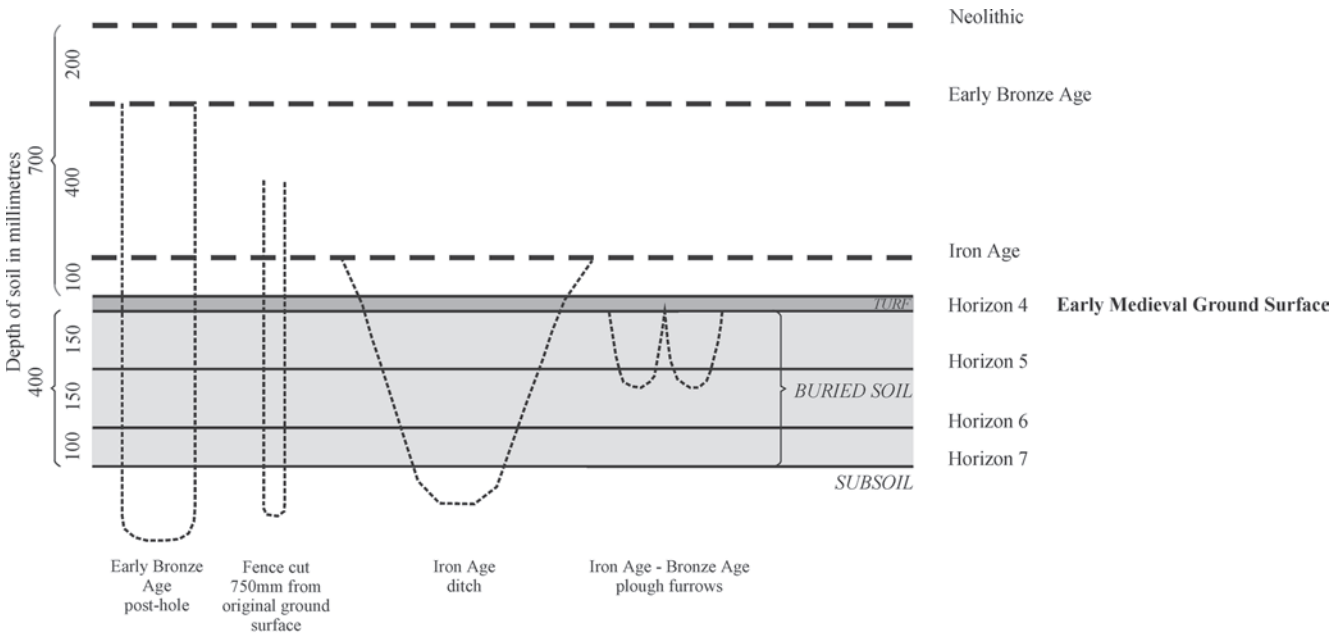


Figure 159 Model of the ground levels from the Neolithic to the Anglo-Saxon period, based on measurements taken at Mound 2.

2 (Early Bronze Age to Iron Age) An event moving sand on the up-slope. The largest earth-moving event known on the terrace was the digging of the boundary ditches (S23), which were cut right through to the clay and apparently involved the dispersal of the sand. This may have been the source of the 50 mm of sand that was deposited in the valley (Context 1003).
3 (Early Bronze Age to Romano-British) Ploughing on the terrace reduced the thickness of soil from at least 900 to 400 mm thick.
4 (Early Bronze Age to Romano-British) Soil eroded from this ploughing was first deposited on the down-slope (say 250 mm), with the remainder (another 250 mm) arriving in the valley (Context 1002). The thickness of the valley soil is now 470 mm.
5 (Anglo-Saxon) The mounds were built.
6 (Later Middle Ages) Up-slope ploughing deposited 420 mm of soil in the valley (Context 1001). The thickness is now 890 mm.
7 (Nineteenth century) The up-slope is ploughed again, depositing a further 380 mm in the valley (Context 1000). In the twentieth/twenty-first century, this layer is ploughed repeatedly. The total thickness of soil on the valley shoulder is now 1270 mm.

Under the mounds

French shows in his report (Appendix 2 to this chapter) that the buried soil under Mounds 2 and 5 is the lower half of a podzol, and estimates that the top 500–700 mm is missing, attributing this loss to the soil being scraped up to construct the mounds. It has been suggested that podzolization encountered under barrows could be caused by their very presence (Grinsell 1953: 53). However, that was not the verdict of these investigations, where micromorphology showed that the podzolization occurred, and its profile was truncated, before the mounds were built.

Under Mounds 2 and 5 there was good evidence for arable cultivation, carried out in the Roman period and earlier (Horizon 5), from the level of the surviving buried-soil surface (300 mm down, at most). This cultivation must have been cut from around the level of the extant buried soil: if the ploughing had occurred before truncation (by mound-building) it would have had to have been cut from 500–700 mm higher up, giving plough furrows 650–850 mm deep. This seems unlikely.

A better explanation is perhaps that the loss of soil is due to the ploughing itself, which broke the surface over many years, causing the soil to drift or blow down the slope and into the river. The soil loss would presumably accelerate during periods of ploughing, and stabilize under turf during periods of pastoral farming. The Prehistoric sequence suggests there was ploughing in the Early to Middle Bronze Age (with perhaps one pastoral interlude), and then a second major period of ploughing in the Iron Age and Roman periods. It is not necessary to argue that the Anglo-Saxons themselves ploughed the land before building on it; the presence of turf under Mound 6 and in the make-up of Mound 2 suggests that the ground was turfed at the time mound-building began.

A notional ground level for the Early Bronze Age would therefore be about 500 mm higher than the extant level of the surface of the buried soil. By the Iron Age, the ground surface had been reduced to *c*.150 mm above the present buried-soil surface. This is thought to have overgrown with turf, say 100 mm in thickness, and it is likely that the mound-builders did begin by stripping this off. The mounds were built on the resulting bared surface. These relative levels are summarized diagrammatically in Figure 159.

Building the mounds

It has been argued that the Anglo-Saxons were not responsible for lowering the ground surface for mound-building, apart from de-turfing. There was no clear evidence for widespread soil quarrying, which would have resulted in different surviving levels of buried soil as mounds were placed over ground that had previously been quarried (lower) or left unquarried (higher). It is argued that the builders of Mounds 5, 6, 17, 18, 2

and 1, at least, could see the Iron Age earthworks (see Chapter 8, p. 309). It was also calculated that there was sufficient soil in its quarry ditch to build Mound 2.

Certain mounds were without quarry ditches, notably those along the edges of the scarp, but none showed evidence for prior quarrying. The Mound 1 buried soil seems to have been of the usual thickness (SHSB I: 52), that is 400 mm. The Mound 18 burial pit scarcely reached the subsoil, and surviving buried soil was particularly thin (see Chapter 4, p. 104). This might imply that the burial pit had been cut from higher up, and had then been quarried to build Mound 1, which would be an odd way of proceeding. If it had been cut from lower down, on ground already quarried, it would surely have dug deeper into subsoil.

In general, therefore, it does not seem that the lost soil was taken for mound-building, and there is some corroboration for this from other micromorphology results: French does not note any examples of re-deposited *upper* podzol horizons in samples from the Mound 2 make-up or from the quarry ditches of Mounds 2 and 6. The samples from the quarry ditches contain primary fill that is like the buried soil under the mounds, and which presumably represents a re-deposited version of it. In the Mound 2 quarry ditch, the primary deposit was re-deposited truncated buried soil, a lower podzol, but not the 'missing' buried soil, an upper podzol. Similarly, the primary deposits from the Mound 6 quarry ditch do not apparently include relics of Horizon B(h), which suggests that the podzol was already truncated by the time the quarry pit was cut through it. These primary deposits within the quarry ditches should represent either erosion products from the ground at the time the mounds were made, or re-deposited parts of soil quarried to make the mounds. In either case, the soil adjacent to Mounds 2 and 6 seems to have already been both podzolized and truncated before mound-building began.

Reduction of the mounds

The idea that the mounds were reduced by ploughing relies largely on stratigraphic arguments. The upper fill of the quarries, so distinctive on the ground, was less well characterized by micromorphology. The example (Mound 6, Sample 3816 in Table 90) seems broadly similar to the description of the upper levels of the valley section (Contexts 1001 and 1002), that is elements of a re-deposited podzol. The particle size (sand) generally seems too large for the quarries to have been refilled by wind, though wind action is possible. Strong winds do move soil at Sutton Hoo, which is why farmers and archaeologists have both had recourse to PVA solution (Vinamul) to prevent their surfaces being blown away (see Chapter 3, p. 51). However, wind only moves soil when the turf has been removed, for example by ploughing. Our experiments showed that a heap of sand and soil 4 m high, reconstructed to represent Mound 2 (above), underwent virtually no erosion for four years, by which time it had stabilized through the growth of

Table 95
Model: the sequence of land use at Sutton Hoo

Date	On the Sutton Hoo terrace	Off-site, in the valley
Pre-Neolithic	brown earth carrying oak	brown earth carrying oak and alder
By the Neolithic	brown earth is up to 900 mm deep	brown earth of unknown depth
Early Bronze Age		clearance of woodland to create arable and pasture; cultivation reduces thickness of soil which podzolizes (Context 1004)
Early Bronze Age	clearance of woodland; construction of ditch system; cereal cultivation soil begins to podzolize and erode	digging of boundary ditches perhaps responsible for deposition of sand (Context 1003)
Middle Bronze Age to Early Iron Age	cultivation discontinued pastoral regime (grass) fenced Animal enclosures	
Iron Age to Roman	ditched enclosures built and interiors ploughed; depth of soil reduced to *c*.500 mm by ploughing, wind-blow and erosion, removing the whole 'A' part of the fossilized podzol	deposition of eroded soil from above (Context 1002)
Before 600 AD	ploughing ceases and turf forms	
***c*.600 AD**	Anglo-Saxons strip turf and build barrows using quarried sand, buried soil and turf	
seventh to thirteenth century	barrows and quarries stabilize under grass; execution victims buried in graves cut through turf (Chapter 9)	
From *c*. thirteenth century	pasture hearths in quarry ditches the mounds exploited as rabbit warrens	
Later Middle Ages	mounds ploughed and reduced in height by up to a metre; quarries refilled with podzolic soil hill slopes ploughed lynchet formed	ploughsoil erodes down the slope and into the valley (Contexts 1001 and 1000)
Early nineteenth century	renewed ploughing of slopes lynchet (S32) re-formed	ploughsoil erodes down into the valley (Contexts 1001 and 1000)
Before 1939	site reverts to grassland and grows wild	still under the plough (Context 1000)

grass. This implies that the quarry ditches would only be effectively filled in by mechanical means. The most likely means was ploughing, and direct evidence for ploughing was seen on the surface of the extant mounds.

The ploughing of the mounds removed up to a metre of their height (Table 92), filling the quarry ditches and raising the ground level around the mound. The erosion from a third ploughing event (above) seems to have affected only the west edge of the site, and can be located on maps in the area that was to become Top Hat Wood. The west side of the mounds had been eroded, and under the lynchet (which may have been formed by this event) the podzolized buried soil had survived to a depth of only 125 mm.

Conclusion

A model for the environmental history of the Sutton Hoo site and the formation of deposits there is given in Table 95. In the model, the first land to be cleared was that below the Sutton Hoo terrace on the shoulder of the valley above the river, where oak, alder and hazel grew. This land was farmed with an arable and pastoral regime, which probably began in the Neolithic. The soil podzolized, and continued ploughing reduced it in thickness until only 170 mm remained of an initial thickness of between 500 and 900 mm.

The Sutton Hoo terrace was then cleared, with large boundary ditches being set across the landscape. This event is dated to the Early Bronze Age, and was followed by cultivation (see Chapter 11). The cultivation resulted in podzolization and the loss of 500 mm or more of soil, which found its way down the hill onto the valley shoulder. The ploughing truncated the Early Bronze Age features by this amount. By the Late Iron Age or Romano-British period, only 400 mm of soil capped by 100 mm of turf remained on the Sutton Hoo terrace.

The mound builders of the seventh century removed the turf before constructing a mound. Where quarry pits were used, these provided the spoil for mound construction. Where quarries were not used, it is thought that mound builders quarried the slope (see Chapter 8, p. 309).

Ploughing in the Middle Ages spread the mounds and refilled their quarries. The slopes themselves were then also ploughed, and this resulted in a lynchet at the edge of the terrace and considerable quantities of spoil arriving down the slope and onto the valley shoulders.

The mounds, the areas between them and the slopes were again ploughed in the nineteenth century, resulting in more soil being deposited on the valley plain. Podzolization was and is a continual feature of the Sutton Hoo site. The land remains an acid grassland, which deteriorates to a wild infertile bracken-covered place if not grazed, as happened in the early twentieth century. The site is currently an island of grassland in an area where cereals, root crops and turf are farmed with all the ingenuity of modern practice.

Appendix 1

Palynological analysis of the valley colluvial profile

Rob Scaife

Introduction

Pedological examination of the 'on-site' soils at Sutton Hoo by Dr C. French (Appendix 2, below) indicated that there had been intensive utilization and disturbance of the area during the later Prehistoric and Saxon periods. In order to understand the development of vegetation and soils on the site, it was thought that the adjacent valley might contain soil material that had been eroded and deposited by rain-wash down-slope from its source, and that possibly one or more palaeosols had been preserved under these colluvial deposits. In order to test this hypothesis, a section (Int. 53) was machine-excavated downslope from the site of the Saxon mounds (FR 9/6.1.6). This proved successful, and a well-developed old land surface was found buried beneath hill-wash deposits. The 130 cm hill-wash profile was sampled for pollen and soil micromorphological analyses. The latter have been carried out by Dr C. French (University of Cambridge), and the palynological study has been undertaken in the Quaternary Environmental Change Research Centre of the Department of Geography, University of Southampton. The pollen data resulting from this study are discussed in relation to the earlier 'on-site' investigation of Prof. G. W. Dimbleby (1975) and the pedological results of Dr C. French (Appendix 2 of this chapter).

Palynological methodology

Pollen samples were taken sequentially from the open valley section at 2 cm intervals, from a depth of 24 cm below the contemporary ground surface to the base at 128 cm. This profile spans Contexts 1001 (24–69 cm), 1002 (77–93 cm) 1003 (93–7 cm), 1004 (97–114 cm) and 1005 (114–28 cm). The pedological characteristics of these contexts have been described in detail by French, and are not dealt with here in detail except where relevant to interpretation of the pollen data.

Subfossil pollen and spores were extracted from the soils using standard palynological techniques (Moore and Webb 1978). Absolute pollen frequencies, which are important in the interpretation of pollen in soils (Dimbleby 1961 and 1985), were calculated using known numbers of an exotic (Stockmarr *Lycopodium* tablets) to a measured volume of sample. Pollen was only found in sufficient numbers to enable a quantitative count in the lower half of the section, between 78 cm and the base at 128 cm. As is frequently encountered in soil pollen spectra, the highest absolute pollen frequencies and best preservation were encountered in the upper 'A' horizon of the old land surface. In these levels (97–114 cm) pollen counts of between 500 at 98 cm, and 700 at 104 cm, were made. In the subsoil of Context 1005 (114–28 cm) absolute pollen numbers were substantially less, and grains frequently exhibited severe exine degradation. As a result there has been differential preservation of the more robust pollen taxa. Here, less than satisfactory counts of less than fifty grains were made. This similarly applies in the colluvial Contexts 1003 and 1002, where absolute pollen frequencies declined up the profile to a point where satisfactory pollen counts could not be made: that is, the top of the pollen profile at 78 cm in the upper part of Context 1002. Pollen data have been calculated as a percentage of total pollen, and spores have been calculated as a percentage of total pollen plus spores. These are presented in diagram form (Figure 156).

Discussion of the pollen data

The principal contexts analysed are characterized as follows.

Context 1005 (128–114 cm)

This is the basal *in situ* subsoil (Ea). Absolute pollen frequencies are low (<2000 grains/ml) and the pollen is poorly preserved. Pollen sums are small and must be treated with caution. They do, however, contain higher values of tree and shrub pollen (*Quercus, Alnus* and *Corylus*). Herb pollens are dominant with *Gramineae* up to eighty-five per cent TP with cereal type, *Plantago lanceolata*. *Compositae* and *Liguliflorae* are also relatively important. Spores are dominated by monolete *Dryopteris* type and *Polypodium*.

Context 1004 (114–99 cm)

This is the buried land surface, which contained charcoal and Bronze Age pottery sherds. APF values are higher in this *in situ* palaeosol (average of 64,500 grains/ml). Palynologically, it is characterized by dominant herby pollen, with *Gramineae* the most important taxon. Also important is the presence of pollen of cereal type and of herbs, such as *Plantago lanceolata*, which represent a range of ruderal, segetal and disturbed ground habitats. In contrast, arboreal and shrub pollen values are low, with only sporadic occurrences of *Betula, Quercus* and *Alnus*. *Corylus* type is more important in the lower levels (to 7 per cent TP), declining to 1–2 per cent TP in the upper part.

Context 1003 (99–93 cm)

This is bleached white to yellow sand, resting directly on the old land surface, which it seals. Absolute pollen frequency values are markedly lower (average 9000 grains/ml), but the pollen taxa are similar in every respect to the underlying Context 1004.

Context 1002 (93–78 cm)

This is colluvial sandy loam. Absolute pollen frequency values decline sharply towards the upper level of 78 cm, above which pollen was not countable. Taxa are similarly dominated by *Gramineae*, but with a marked increase in *Liguliflorae* towards the top of the profile. This reflects the deterioration of the pollen and the effects of differential pollen preservation. Spores of ferns similarly increase, with higher values of *Pteridium aquilinum*.

Discussion

The interpretation of soil pollen spectra differs in peat and lacustrine sediments, as pollen are incorporated in the latter as deposits that accrete upwards, in a normal stratigraphical sense.

In soils, pollen can undoubtedly be well preserved in large numbers, especially in acid conditions such as are found in podzolic profiles. In soils, pollen becomes incorporated in a progressive downward movement of humic material through time (Dimbleby 1985). This appears to be a complicated and, as yet, not fully understood process, but it is clear that only broad changes in vegetation can be deduced from soil pollen analyses. This applies to the well-preserved palaeosol described here. Interpretation of pollen present in the colluvium is further complicated by the likelihood of it being derived from soils eroded and transported from upslope. Few studies of such sequences have been carried out, but in spite of the problems of reworking, and of often poor pollen preservation, useful information on past vegetation and environments can be obtained from such analyses (Scaife 1989). Because of these factors, the pollen diagram has not been zoned in the 'normal' way, but instead changes in the pollen and inferred vegetation are discussed in relation to the pedological zonation of the site. The pollen spectra and inferred vegetational characteristics and changes are discussed from the base of the profile upwards.

The basal context (1005) is a brown, loamy sand forming the *in situ* subsoil of the overlying buried Ah horizon (Context 1004). French has studied the soil micromorphology, and concludes that there are three horizons that can be discerned, ranging from a sandy textured soil with evidence of an earlier brown earth, to a degraded podzolic Ea horizon at the top. The four pollen levels ascribed to this context span these soil horizons, but low absolute pollen frequencies and poor preservation were evident. Absolute pollen frequencies increase upwards and towards the buried Ah profile of Context 1004 above.

Palynologically, in spite of the poor pollen preservation and effects of differential preservation (see below), this context contains the highest percentage values of arboreal and shrub pollen. *Quercus* (to eleven per cent TP), *Alnus* (twelve per cent TP) and *Corylus* type (seven per cent TP) are present. In view of the small numbers of pollen recovered, interpretations must be treated with caution but, however, it is suggested that these arboreal taxa are evidence of the woodland on or near the site prior to its clearance. Although *Alnus* is the dominant pollen taxon, it is produced as a copious pollen, and is anemophilous, which frequently results in over-representation in pollen spectra. Here it seems likely that it was growing in and along the adjacent valley bottom and/or along the River Deben. On the valley side, *Quercus* woodland with *Corylus* (possibly as an understorey) grew on typical brown earth soils, the latter (Bt) as evidenced from the soil micromorphology carried out by Dr C. French. Also present in this context/subsoil Ea are relatively greater numbers of spores of ferns (monolete spores of *Dryopteris* type and *Polypodium vulgare*). These are undoubtedly over represented in these soils through differential preservation in their favour. They are, however, representative of the woodland environment that existed. Poor pollen preservation from this woodland phase is a result of the high biological activity and soil turnover in woodland brown earth soils. It is possible that these woodland pollen elements derive from the limpid colloids adhering to the sand grains, which are considered to be from illuviation of clays down the soil profile under wooded conditions (see Appendix 2).

Although pollen, as noted above, is likely to be highly degraded in biologically active brown earths, the presence of 'residual' pollen dating from an earlier period of woodland is a phenomenon that is frequently noted in soil pollen analyses (Dimbleby 1985). Preservation is substantially better in acid soil forming conditions such as podzolization, which may occur as a result of woodland clearance and soil degradation, through leaching and over-utilization by agriculture. This typically occurs on sandy substrates such as occur at Sutton Hoo. There may be a transitional phase between dominant woodland and open conditions, in which scrub woodland was important. This may be accompanied by some soil acidification, as soils start to become leached. The result is the initiation of better pollen preserving conditions in the soil. In this pollen profile *Corylus* becomes the principal shrub component from 116 cm, that is, in the top of the subsoil (Context 1005). This is associated with evidence of local change in land use and soil acidification. From 120 cm there is a continuous record of cereal pollen type and an increase in herb diversity. Whilst this is in part due to better pollen preserving conditions, it is likely that we are here seeing the start of agricultural use of the site. Evidence of soil degradation is also present, with sporadic records of *Erica*, *Calluna* and *Sphagnum*. However, these are not dominant, and are not considered to have been of great importance on the soils of this local area/sampling site at any point during the time span represented by the pollen spectra.

Context 1004 represents the upper 'A' horizon of the *in situ* buried soil and has, at its top, the old land surface, which was at some time truncated and has been effectively sealed by colluvial deposits (Contexts 1003, 1002 and 1001). This has been described by French (Appendix 2, below) as being the lower part of a podzolic 'A' horizon, and is divided into three differing horizons. Better pollen preservation and substantially greater absolute pollen frequencies allowed satisfactory pollen counts and fewer problems of data being skewed by differential preservation. The importance of pteridophyte (*Dryopteris* type and *Polypodium*) spores in the subsoil is in part an ecological function of the presence of woodland, and is partly from the poor preserving conditions in the subsoil. In the 'A' horizon (Context 1004) spores of these ferns are relatively less important, and this is, conversely, a measure of the absence of woodland communities and of greatly improved preservation in the upper ('A') soil horizon.

Palynologically, there are two phases present in the profile. In the lower part there is more abundant *Corylus*. However, the pollen evidence, being dominated by herbs (especially grasses) shows an open environment. Arboreal pollen is unimportant, with only sporadic occurrences of *Betula*, *Quercus* and *Alnus*, all of which would be expected to be present with higher values if local growth was more important. The lower part of the soil context contains much *Corylus*, but this is less in the overlying levels. This may indicate that there was some extensive scrub in the broader region or, alternatively, that there was local sporadic growth of hazel on the adjacent valley side or bottom. The soil is, however, dominated by *Gramineae* and by a moderately diverse range of herbs indicative of an open agricultural environment. These comprise taxa of cultivated and waste ground (ruderals and segetals). Cereal pollen is present throughout (to six per cent TP), and, along with possible segetal taxa (*Sinapis* type, *Hornungia* type, *Spergula* type, *Polygonum aviculare* type and Compositae-*Anthemis* type, *Artemisia*), are evidence that subsequent to woodland clearance, arable

cultivation was being carried out. Because pollen derived from cereal cultivation is largely under represented in pollen spectra, compared for example with pastoral environments, the representation of cereal pollen and segetals found here indicates that this cultivation was taking place on, or close to, the sampling site. French has noted that this soil (particularly the upper 2.2 cm) shows substantial faunal mixing. It is likely that the cereal cultivation was also responsible for soil mixing and homogenization through ploughing. Sporadic occurrences of *Plantago major* type and *Fumaria* are evidence of broken, disturbed ground, possibly in arable habitats, paths and waste ground. The former may, however, include *Plantago media*, which is characteristic of pasture.

It is also possible that pasture was present as, palynologically, *Gramineae* are dominant, and there are also plants typical of grassland habitats. These include *Plantago lanceolata*, *Ranunculus* type, *Medicago* type, *Trifolium* type and *Rumex*. It is not, however, possible to be certain that these relate directly to pasture, as many of these (and other pollen taxa in the spectra) may also be associated with arable habitats. It is unfortunate that with these pollen taxa morphology does not allow separation to a lower taxonomic level, which might allow better ecological interpretations to be made. Although grasses associated with arable agricultural habitats may also have been in part responsible for the high values and dominance found here, the presence of other herbs noted above suggest that pasture existed alongside arable cultivation. This implies mixed agriculture.

Overlying the old land surface (Context 1004) is a thin layer (5 cm thick) of bleached yellow–white sand (Context 1003). Although taxonomically similar, absolute pollen frequencies rapidly diminish in comparison with the preceding levels. This horizon appears to be re-deposited local subsoil, perhaps derived from upslope. This marks the first evidence of major colluvial processes in this sequence, although minor hill-wash may have been present on the *in situ* soil. It is likely that this phase marks a period of substantial, aggravated erosion caused by human disturbance of vegetation cover and soil upslope, or through natural processes of heavy rainfall causing rapid erosion and hill-wash. French (Appendix 2, below) has also suggested this cause and effect, and also suggests that upslope clearance of woodland anthropogenically, or through gales causing tree-throw disturbance, might have been responsible. Palynologically, it is clear that few if any trees existed, at least locally, during the period of paedogenesis, and it is more plausible to invoke some human disturbance of pasture or arable land upslope. This may have been the abandonment of soils used for arable agriculture at the point sampled, and establishment of cultivation upslope. Alternatively, this soil erosion may represent more widespread activity at some distance, on the top of the adjacent hill, where there is clear evidence of Bronze Age ditch and enclosure construction.

Contexts 1002 and 1001, above, illustrate perhaps less rapid colluvial processes, which further sealed the *in situ* buried soil and old land surface. Absolute pollen frequencies and pollen preservation progressively deteriorate upwards in the sandy loams of these contexts. Pollen was not present in sufficient quantity to enable realistic counts to be made above 78 cm. This reduction in absolute pollen frequencies is mirrored by percentage increase in *Liguliflorae* (*Compositae*). This is frequently, as here, an indication, along with spores of differential preservation, in favour of taxa with robust exines.

With the exception of *Liguliflorae*, *Pteridium aquilinum* and, to a lesser extent, *Pinus*, the pollen spectra of these colluvial layers are identical with the *in situ* buried soil. Thus, *Gramineae* is the dominant herb with evidence of cereal cultivation, there is a range of herbs associated with pastoral and arable habitats, and there is little evidence of local woodland. It is likely that this pollen is contemporaneous with the *in situ* buried soil discussed above and that it has in fact been derived from the same soil profile up-slope; from which it has been eroded, transported and re-deposited by colluvial processes. The increased abundance of *Pteridium aquilinum* may in part be due to differential preservation, but it is suggested that this may also represent colonization of this area, on abandonment or change in land use, by bracken.

Dating and comparison with existing pollen data

The pollen and soil micromorphological data indicate that the area supported woodland that had developed on or with a brown-earth soil, prior to the woodland clearance. It is reasonable to suppose that woodland developed during the early and middle Holocene (Flandrian Chronozones I and II) and resulted in climax woodland during the middle Holocene (Flandrian Chronozone II: Atlantic period). With anthropogenic influences, especially from the Neolithic onwards, given the sandy substrate, podzolization would likely ensue. As noted above, pollen preservation is not favourable in active brown earths because of the concomitant factors of high biological activity, rapid soil turnover, oxidation and neutral or higher pH values. With woodland clearance and ensuing degradation/leaching and acidification, conditions would have become favourable for pollen preservation. This sequence of events apparently occurred at Sutton Hoo. It is, however, not yet clear when this soil degradation occurred. The subsoil horizon (Context 1005) shows some residual tree pollen comprising *Quercus*, *Alnus* and *Corylus*, which may relate to the pre-clearance phase, and perhaps come from the residual palaeoargillic coatings noted by French. This horizon may also be correlated with possible brown earths described by Phillips and Brown (SHSB I: 51), which were associated with possible Bronze Age hearths.

The overlying buried podzolic soil displays strong evidence of pastoral and arable agricultural activity. This correlates closely with the earlier analyses of Dimbleby (in SHSB I: chapter 2). Dimbleby discussed, in depth, this problem of dating, and the sequence of events from his analyses of soils under Mounds 1 and 5, the Longworth pit section and the modern soils outside of the area of Saxon mounds. His analyses of the soils under Mound 1 showed evidence of open woodland (oak and hazel) in a grassland habitat (*Gramineae* pollen was present to forty-five per cent TP). Subsequently, there was a phase of arable agriculture that, through ploughing, caused soil mixing and homogenization of the upper part of the buried soil (it was considered that the soil acidity would have negated the effects of earthworm mixing). A very similar, and better defined, sequence was also described from the Longworth pit profile (SHSB I: 56). It was concluded by Dimbleby that mounds were constructed on this agricultural soil. The problems in this interpretation are considerable and, as discussed by Dimbleby

(SHSB I: 63), rest on the idea that the site had been used as a cemetery for some hundreds of years prior to the Saxon mound construction. The area is, therefore, unlikely to have been ploughed for agriculture during this phase. It is extremely likely that the palaeosol in Int. 53 corresponds with the phase of arable activity discussed by Dimbleby, although some minor differences are apparent. Unlike the analyses of soils under Mounds 1 and 5, in Int. 53 the palaeosol appears to show mixed agriculture with arable cultivation at the point sampled. The twofold sequence of pasture/grassland followed by arable cultivation is not apparent. The dating of this activity remains enigmatic, and must rely on comparison with the known sequences of events in the broader regional context.

The general absence of *Tilia* pollen in even the lowest levels of the soil profile is unusual for southern and eastern England, as it is widely recorded from sites across this region (Greig 1982, Scaife 1980, Baker, Moxey and Oxford 1978). Its clearance for agriculture in the later Prehistoric period (Turner 1962) or early historic period (Baker, Moxey and Oxford 1978) has also been widely noted. Because the robustness of its pollen favours its preservation in even poor conditions, it is likely that if the palaeosol of Int. 53 and those previously described from under Mounds 1 and 5 were of Prehistoric date, *Tilia* would have been present with substantial values. This is not the case, and consequently it is probable that the soil profile post-dates the period of its woodland dominance; that is, even allowing for the longer residual time in the soil. This argument relies on negative evidence, which can be dangerous, but in view of the argument presented above, it does seem very probable that *Tilia* might have been found on these soils at an earlier date. It is concluded, therefore, that the soil developed and was cultivated for a period between the Iron Age, at earliest, and the Saxon period, when it was sealed under the burial mounds.

The dating of the overburden of colluvial deposits is similarly enigmatic, and two possibilities may be presented. Firstly, that the colluvium aggraded gradually over a relatively long time-period, in response to upslope activity (such as, perhaps, a shift in arable cultivation). Secondly, that the colluvium represents a rapid accumulation in response to the soil disturbances that occurred through construction of the Saxon burial mounds. As noted by French (Appendix 2 of this chapter), the top of the old land surface (top of Context 1004) has been truncated, removing the Ah, and the overlying clean white–yellow sand (Context 1003) indicates an erosive event of some magnitude. Palynologically, this event is not discernible other than by a marked reduction in absolute pollen frequencies, but, as discussed above, this is probably due to the effect of reworking of pollen from similar soils upslope. If an 'Ah' horizon with a possibly significantly different pollen (and thus vegetation) content had been eroded from this site and transported, this could be expected to show in the pollen spectra and absolute pollen frequency values in colluvium downslope. This does not appear to be the case, and it is concluded that either all of the upslope 'A' horizon (down to the subsoil) and the top of the *in situ* profile had been eroded and transported farther downslope, or that the shallow sandy colluvium of Context 1003 is not related to the erosion of the top of the *in situ* 'A' horizon. It is possible that, in the latter case, this rapid in-wash resulted from what must have been extensive soil disturbance during mound construction. Subsequently, it appears from the soil analyses of French that there was a continuous accretion of colluvium associated with more recent podzolic processes.

It is apparent that dating of the pastoral and arable agriculture and colluviation is complex and remains a problem. It is probable that only the analysis of a longer and more continuous sedimentary record spanning the later Prehistoric period to the present will clarify the dating of these events and the overall ecological changes that have taken place. Sediments which may be suitable for this occur in the bottom of the River Deben valley. Preliminary examination of the valley area adjacent to the Sutton Hoo burial site by Wilkinson and Murphy (1984) showed that sediment, but little organic material, was present. Subsequently, Helen Atkinson has carried out further surveys of the estuary/floodplain stratigraphy, and although some findings have been published (Atkinson 1990), it is hoped that future pollen analysis will elucidate some of the problems evident in the study of the terrestrial soil profiles.

Conclusion

As suspected, investigation of the valley adjacent to the burial site revealed a palaeosol sealed under colluvium. The combined studies of the soil micromorphology (Dr C. French) and soil pollen are commensurate. It is illustrated that the area had supported woodland growing on brown earths. Contrary to the earlier analyses of Dimbleby, the evidence found here for an earlier woodland phase is minimal. Human activity resulted in soil acidification and the better preservation of pollen. The buried land-surface, although truncated (that is, no 'Ah' horizon present), clearly shows that arable activity was taking place on the site. Pasture was also present at this time, and mixed agriculture is suspected. This contradicts the earlier analyses of Dimbleby, who discerned an earlier phase of pasture that was replaced by arable activity. Cereal pollen is present throughout the 'A' horizon and into the subsoil. Whilst it is possible that an upper cereal phase has been mixed throughout the soil profile, this is not seen as likely, because of the differing values of 'Corylus' in the upper and lower sections of the profile. The soil is buried under an initially rapid phase of colluvium, and subsequently by the slower movement of soils containing pollen of similar character, eroded from the same soil, occurring up-slope. The dating of these events is enigmatic, but for reasons discussed above, they may date to the Iron Age or post-Iron Age.

Appendix 2

Micromorphology studies

C. I. French

Method

A total of thirty-seven thin section slides was taken, prepared and analysed from a variety of contexts at Sutton Hoo. These include buried soils, both on- and off-site, mound make-up and various features, including Prehistoric pits, ditches and burial pits, and a Medieval lynchet.

All of the samples were prepared using the methodology of Murphy (1986), and the thin sections were described using the terms and criteria of Bullock *et al*. (1985). The detailed soil micromorphological descriptions are in the *Field Reports* (FR 9/5.2). The main results of the analyses are summarized in Tables 90 and 91. The main contexts examined were as follows:

1 twelve samples from six contexts associated with Mounds 2 and 5
2 the turf and sub-turf disturbance through the quarry pit to the subsoil, Sample 3816 (Int.44, 12108/14300), associated with Mound 6
3 the fill of an Early Bronze Age pit in Int. 48
4 the Medieval bank/lynchet, Context 1814 (Int. 48, 08420/15676)
5 the section through the slope deposits of the adjacent valley (Int. 53)

Mounds 2 and 5 and associated features

Two buried-soil profiles were examined in detail. The buried soil beneath Mound 2 was sampled in three contiguous blocks (Finds 30323, 30324 and 32759, from top to bottom), as well as the burial chamber (Find 26841). The buried soil beneath Mound 5 was sampled in four contiguous blocks (Finds 39229–32, from top to bottom).

In addition, the material infilling the Mound 2 burial chamber (Find 23364), and a possible turf in the make-up of Mound 2 (Find 14446), were sampled. Finally, the primary fill of the ring ditch around Mound 2 (Find 18982) and the fill of a west–east Prehistoric gully beneath Mound 2 (Find 40461) were also sampled.

The buried soil beneath Mound 2

The intact part of the buried soil beneath Mound 2 was *c*.160 mm in thickness, and exhibited similar micro-pedological characteristics throughout its surviving depth. The soil is an apedal, homogeneous quartz sand, dominated by the medium and fine quartz sand grades. Although there is almost no fine (silt and clay) fraction present (less than eight per cent), it is characterized by very dominant polymorphic organic matter, which together with the silt and clay fractions is cemented by amorphous sesquioxides (iron oxides and hydroxides). Thus the surviving buried soil is indicative of the lowermost illuvial horizon (or spodic horizon) of a podzol and, in particular, is a Bs horizon (or enriched with metal oxides) – after de Coninck 1980, de Coninck and Righi 1983 and Limbrey 1975.

In addition, the lowest sample of the buried soil (Find 32759) contains one nodule of oriented clay and one soil fragment with random striated limpid and non-laminated dusty clay present within it. Both are probably eroded relics of the pre-podzol soil, or of an argillic brown earth, that had developed in the area under former stable woodland conditions (Macphail 1987).

The underlying subsoil is dominated entirely by medium and fine quartz sand, exhibits greater and lesser zones of cementation with amorphous sesquioxides, and contains no organic matter.

Polymorphic organic matter is one of two main types of amorphous organic material found in spodic horizons. It is rough-walled, with an irregular, patchy internal fabric (Bullock *et al*. 1985: 78–9). Although this Bs horizon is dominated by amorphous sesquioxidic impregnation, it is also characterized by polymorphic organic matter. Thus it is essentially a friable spodic horizon that contains silica, aluminium and possibly iron inside the polymorphic units.

Although there are different theories for the formation of a friable spodic horizon, it is probably due to two simultaneous processes. First, the illuviation of organo-metallic compounds (or organo-aluminium, and organo-aluminium and iron, complexes); second, the biological activity living on the remains of the many roots and on the illuviating complexes (de Coninck and Righi 1983). The formation of these organo-metallic compounds is explained as follows. Soluble organic compounds are adsorbed at the surface of clay particles and amorphous metallic hydroxides, and this adsorption modifies the physical-chemical properties of the hydroxides, which acquire the characteristic pellety microstructure (de Coninck and Righi 1983).

Biological activity probably forms the pellety microstructure of friable B horizons in two ways. First, when parts of the plant remains are ingested by the soil fauna forms faecal pellets. Second, when the other parts of the plant remains are comminuted into small pieces and transformed into dark pellets. Thus, the pellety microstructure itself is the result of the action of fauna, but the aggregates contain a large amount of illuvial material associated with the fine mineral fraction and root remains (de Coninck and Righi 1983).

The buried soil beneath Mound 5

The buried soil beneath Mound 5 was *c*.400 mm thick. The lower half of the profile is identical to the surviving profile beneath Mound 2, and is a friable Bs horizon of a podzol. Iron impregnation, first, and amorphous organic matter, second, dominate it. The upper half of the profile (Finds 39229–30) is also similar, but it exhibits a slightly denser fabric, a greater polymorphic organic matter content and a few plant tissue fragments with their cell structure still evident. These characteristics suggest that the soil is grading up to the Bh(s) or more humic illuvial horizon of a podzol.

The classic sequence of soil degradation envisages the following order of soil deterioration: argillic brown earth, brown podzolic soil, podzol (Dimbleby 1962 and Duchaufour 1977). On free-draining parent subsoil clay is moved or destroyed in an acidifying environment prior to the eluviation of sesquioxides and organic matter down the profile. Under the impact of early clearance and agriculture, the climax soil (or argillic brown earth) became depleted of soil nutrients, and progressive acidification occurred as a result of deforestation, burning and accelerated leaching. These factors are regarded as the major causes of podzolization under heathland vegetation in the later Flandrian (Catt 1979 and Dimbleby 1962).

There is little doubt that both the surviving soil profiles beneath Mounds 2 and 5 are severely eroded and/or truncated. As the Bh, Ea and humic horizons are absent, at least 50–70 cm of the original profile has not survived. It is most probable that the upper two-thirds of this podzol has been removed and re-incorporated in construction of the barrow mounds themselves.

Thus, this podzol must have been well formed by the Saxon period. This soil could have formed at any time from the Neolithic period onwards (Macphail 1987 and Dimbleby 1962) after its initial deforestation. Moreover, it would have been quite useless as arable land.

Other examples of similar podzols are found at Bawsey (Norfolk), West Heath (Sussex) and Keston Camp (Kent), to mention just a few. At Bawsey there was a well-preserved podzol exhibiting an Eah with abundant plant remains and polymorphic organic matter, and a Bh and Bs horizon were found beneath a Bronze Age barrow. In addition, this soil had formerly been an argillic brown earth that had developed beneath woodland prior to clearance, the development of heathland and concomitant acidification, and barrow construction (French in Wymer forthcoming). At West Heath pedological and palynological analyses of buried soils from a Bronze Age barrow-cemetery suggests a mosaic of clear areas surrounded by woodland that had developed humo-ferric podzols (Drewett 1976, Macphail 1981 and Scaife 1982). At Keston Camp, Iron Age ramparts buried a fully degraded podzol, in this case a complete (not truncated) profile which had developed under woodland (Cornwall 1958 and Dimbleby 1962).

The burial chamber within Mound 2
The material infilling the burial chamber is an inorganic quartz sand, with up to fifty per cent of the quartz grains cemented with amorphous sesquioxides. This fabric is similar to the underlying natural sand subsoil. It must therefore be suggested that the burial chamber is infilled with re-deposited subsoil material.

Turf within Mound 2
One of the many probable 'turves' observed in section within the mound was sampled to confirm its field identification. This material is a porous loamy sand with frequent to common pellety organic matter, large flecks of charcoal and subangular plant fragments, amorphous sesquioxide impregnation of plant tissues, most of the fine fraction and the polymorphic organic matter. Thus, this material is from the humic, probably turf horizon, of a podzol. Nevertheless, it is poorly preserved and only moderately developed, which may be indicative of a modern organic horizon.

The primary fill of the ring ditch around Mound 2
The soil fabric and cemented pellety organic matter of this material are similar to those within the upper half of the buried soil beneath Mound 5 – B(h)s horizon material – and is less organic than the turf in Mound 2. Although this is not turf, it is probably re-deposited or eroded material from the lower horizon of a podzol. This reinforces the theory that the soil was already a well-developed humo-ferric podzol by the time the barrow and barrow ditch were constructed.

The Prehistoric gully beneath Mound 2
This infilling material is similar to the fill of the ring ditch around Mound 2. Thus the dating of this gully should provide an approximate date by which time the development of heathland/podzol had occurred in this area.

The Mound 6 quarry pit (Sample 3816)
A sequence of eight large, thin section-slides was taken through the *c*.60 cm thickness of the Mound 6 quarry pit. Throughout the quarry-pit profile, the soil material is an homogeneous but poorly sorted sand, dominated by approximately equal proportions of medium and fine quartz, with a very minor fine fraction (*c*. thirty per cent). The fine fraction is dominated throughout by pellety organic matter, a characteristic feature of podzols (de Coninck and Righi 1983), from which this material is consequently derived. Of course, the concentration of pellety organic matter is greatest (*c*. sixty per cent of the fine fraction) in the turf horizon (or the upper *c*.10 cm), and decreases to about thirty per cent (of the fine fraction) at the base of the quarry pit.

The silt and clay fractions are less than ten per cent combined in the upper 30 cm, and increases to about fifteen per cent in the lower 30 cm. There are rare to occasional textural pedofeatures evident throughout the quarry-pit profile, although they are slightly greater in frequency in the lower half of the profile. There are two types of textural pedofeature present. First, very rarely (less than one per cent) in the upper 45 cm, and occasionally in the lowest 15 cm, non-laminated limpid clay occurs either as coatings of grains and/or as small irregular to subrounded fragments within the groundmass. Both are indicative, and surviving relics, of the original brown forest soil profile that undoubtedly existed at Sutton Hoo prior to deforestation in Prehistoric times (see p. 365 and p. 376, above; Dimbleby 1962). Second, there are very rare (less than one per cent in the upper 30 cm) to rare (two per cent in the lower 30 cm) non-laminated dusty clay coatings of the grains. This type of coating is indicative of illuviation of fine material associated with soil disturbance (Macphail 1987).

There is every likelihood that there is a slightly greater amount of illuvial clay within the fine fraction in the base than in the top of the quarry pit. This is because the exposed base of the surviving soil-profile on the upper edge of the quarry pit was subject to initial erosion as a result of being cut through by the quarry pit. Upper horizons of the soil to either side would have also fallen into the quarry pit at the same time, adding the organic component to the fill. The homogeneous but poorly sorted nature of the infill suggests a fairly rapid and immediate infilling process, a process that was undoubtedly aided by wind and water (rain splash impact and run-off) erosion of the exposed soil and subsoil to either side of the quarry pit.

Finally, the eroded and accumulated sandy soil in the quarry pit is derived from a soil profile that is already deforested, leached and podzolized by the time of the construction of Mound 6. This, therefore, confirms the nature of the pre-barrow soil profile that was postulated to exist beneath Mounds 2 and 5 by the Saxon period.

The Early Bronze Age pit, F29 in Int. 48 (see Chapter 11, p. 441)

Two samples were taken from the fill of F29, the Neolithic pit in Int. 48, for analysis in thin section: 2672 and 2673. Both samples were essentially similar, except for one important aspect.

The fill of the pit is composed of a homogeneous loamy sand with about sixty per cent of the fine fraction composed of polymorphic/pellety organic matter. This suggests that the fill is composed of the Ea(h) horizon material of a podzol.

There is also considerable impregnation of the whole groundmass with amorphous sesquioxides, particularly towards the base of the profile. This indicates that there was post-depositional, alternating, wetting and drying of the matrix with groundwater.

There is one different and significant characteristic which occurs in Sample 2673. Over about a 10 mm band in the middle of the sample, there are what appear to be alternating, rather irregular and indistinct, laminations, composed of different size groups of quartz sand grains. A horizontal band composed of a mixture of medium/fine quartz sand (*c*.500–750 mm thick) overlies a thinner (*c*.250–500 mm thick) band composed of a mixture of coarse/medium quartz sand, which in turn overlies a thicker band of finer sand, and so on. These apparent laminations of different size grades of quartz sand suggest that there has been some wind erosion contribution to the infilling of this Early Bronze Age pit.

The Medieval bank/lynchet (Context 1814)

A contiguous sequence of seven large, thin section-slides was taken through the 450 mm thickness of bank/lynchet. This profile exhibited a tripartite sequence in thin section:

1 The upper c.325 mm is characterized by a poorly sorted, porous sand, which is dominated by medium and fine quartz, while c.40–60 per cent pellety organic matter (Bullock et al. 1985: 78–9 and de Coninck and Righi 1983) dominates the fine fraction. The very poor sorting and open porosity suggest that this is re-deposited soil that has already been podzolized before re-deposition in the form of a bank.
2 The underlying horizon at *c*.325–90 mm effectively forms a transition zone to the underlying (third) horizon. Although essentially similar to the overlying bank material, it is less dense and more compacted (in zones) than the overlying sand, and it contains greater amounts of pellety organic matter (*c*. sixty-five per cent of the fine fraction). In addition, there is a more distinct, although still very minor, inorganic silt fraction present. The pellety organic matter is also impregnated with amorphous sesquioxides. Non-laminated dusty (or impure) clay coatings of the quartz grains are very rarely present.

   These characteristics suggest that this is an *in situ* soil, although slightly disturbed. This soil is probably the lower organic and sesquioxide-impregnated horizon of a podzol, or the upper part of a Bs/h or spodic horizon.
3 The underlying horizon at *c*.390–450 mm represents the undisturbed *in situ* soil. It exhibits more well-preserved soil characteristics than the other buried soils that have been examined beneath Mounds 2 and 5.

   Although it is also a, sandy to loamy, sand dominated by medium and fine quartz, there is very little (comparatively) pellety organic matter present (less than twenty per cent of the fine fraction), and there are comparatively high clay (*c*. ten per cent) and silt (*c*. five per cent) contents present.

The clay content is particularly informative, and is indicative of three phases of former soil development in the following sequence. First, there are rare (*c*. two per cent) limpid (or pure) clay coatings of the sand grains. These coatings rarely exhibit micro-laminations. This type of clay coating is indicative of former wooded conditions (Bullock and Murphy 1979 and Macphail 1987). Second, there are rare to occasional (*c*. three per cent) laminated dusty clay coatings of the sand grains that exhibit strong birefringence. These coatings are indicative of forest disturbance (Slager and van de Wetering 1977 and Fisher 1982). Third, there are occasional (*c*. five per cent) non-laminated dusty (or impure) clay coatings of sand grains with strong birefringence, which are indicative of further soil disturbance (Macphail 1987). These coatings may be associated with the truncation of the upper part of the original soil profile and the disturbance thus caused, as well as by the dumping of soil to create the bank/lynchet.

All of these characteristics indicate that this lowest horizon was an illuvial B or Bt horizon of a former brown forest soil (Avery 1980) which has subsequently become podzolized as a result of clearance and associated soil degradation.

The slightly better preservation of these important interpretative features is probably due to three features. This bank is situated slightly downslope; it is away from the disturbance caused by the construction of the barrows; and it has been buried by a later linear feature.

The valley profile (Int. 53)

Due to the intensively utilized and disturbed nature of the landscape immediately associated with the current excavations of the Prehistoric and Saxon periods, it was decided to investigate the adjacent valley. It was judged probable that downslope colluvial soil erosion may have buried the original soil profile, thereby leaving it relatively undisturbed. Accordingly, Int. 53 was excavated by machine just above the base of the slope for the principal purposes of sampling for soil micromorphological and pollen analyses. The results are summarized in Table 91.

Contexts 1001, 1001/2 and 1002

All of these samples exhibit basically similar characteristics. They are characterized by an apedal, homogeneous, porous, loamy sand with about fifty per cent of the fine fraction composed of polymorphic (or pellety) organic matter that is largely impregnated with amorphous sesquioxides. The relative minority component of silt and clay in the fine fraction and the relative abundance of pellety organic matter indicate that the upper two thirds of the whole profile (32–103 cm) is an Eah horizon of a podzol (de Coninck and Righi 1983 and Macphail 1983).

There are very minor amounts of subrounded aggregates of non-laminated yellow clay, particularly in Context 1001. This feature suggests that the profile received eroded remnants of another soil that had undergone considerable soil development prior to its erosion and incorporation in this Eah horizon.

The basal 2 cm of sample 1002 contains two additional characteristics. First, this zone contains a greater amount of sesquioxide impregnation of the whole fabric, including the pellety organic matter and textural clay pedofeatures. Second, there is a slightly greater concentration of clay pedofeatures: rare, non-laminated limpid clay and occasional non-laminated dusty clay coatings of the quartz grains and fine fraction groundmass.

The slight increase in illuvial clay deposition indicates that there has been a sufficient period of time for some soil formation or incipient B(w) horizon formation (Limbrey 1975). In addition, the subsequent and additional cementation with amorphous sesquioxides suggests that this B(w) horizon became a poorly developed spodic or B(s) horizon of a podzol (de Coninck and Righi 1983 and Macphail 1983). Thus, all of this Eah and B(w) soil material has undergone some soil development or podzolization since deposition.

In addition, colluvial aggradation of the profile continued. The homogeneous and relatively poor sorting, plus the depth of accumulation and presence of eroded clay aggregates suggests that there was a gradual accumulation of material as a result of long term colluviation, probably in the form of surface creep/overland flow and gully erosion (Morgan 1979). These types of erosion are often visible today on the surface of the slope into which this trial trench was cut.

Context 1003

Although this 5 cm thick context was not analysed in thin section, the distinct and clean yellow sand is undoubtedly the local subsoil. It can only have been derived from slope erosion and/or deliberate re-deposition by man. As the latter seems unlikely, severe soil and subsoil disturbance must be invoked.

This episode of subsoil erosion could have been caused by a variety of associated agencies. A most probable cause is deforestation of the upper part of the slope. Whether this was a consequence of man's activities and/or storms and associated tree-throw, almost immediate destabilization of the soil and subsoil surface would have occurred, combined with rapid overland flow of the eroded material associated with episodes of heavy rainfall (Morgan 1979).

The irregular nature of this re-deposited subsoil horizon also suggests that it suffered further erosion, probably gully erosion. This would be consistent with the unstable nature of the material immediately after its deposition, and before colonization and stabilization by vegetation.

Context 1004

This context exhibited three horizons. The upper 2.2 cm (112–114.2 cm) was an apedal, relatively homogeneous, but poorly sorted sandy loam which contained no illuvial clay pedofeatures, but which did exhibit rounded aggregates of limpid clay, charcoal fragments and a relatively high organic matter content, both in amorphous and polymorphic (pellety) forms. The colluvially derived limpid clay and organic matter is well mixed with the fabric, which suggests that there has been considerable soil faunal mixing.

It is suggested that this is the top of the former *in situ* soil, probably the lower Ah of a podzol. This soil has been buried by the subsequent erosion and colluvial deposition (i.e. Contexts 1003, 1002, 1001 and 1000). Prior to its burial, it had also been receiving minor amounts of colluvial material in the form of aggregates of limpid clay.

The middle 43 cm (114.2–118.5 cm) is essentially similar to the above horizon, although it contains less pellety organic matter and a slightly greater clay content. It represents the base of the lower Ah horizon. The clay content is in two forms – aggregates of eroded and re-deposited limpid clay, as well as many limpid clay coatings – throughout the groundmass. The former undoubtedly has a colluvial origin, that is, it rolled downslope and was incorporated into the groundmass by soil mixing processes. The latter is illuvial clay resulting from the mass movement of soil associated with colluviation on this part of the slope (i.e. a colluvial 'sludge').

The lower 2.5 cm (118.5–121 cm) exhibits completely different characteristics to the overlying Ah horizon. It is dominated by the sand fraction (eighty per cent), which is predominantly medium and fine quartz, with abundant sesquioxide impregnation, but it contains very little organic matter (five per cent) or fine fraction (less than fifteen per cent) and is more or less devoid of illuvial clay. This sandy, depleted horizon is the Ea horizon of a podzol. It is similar to the underlying Context 1005 (upper 7 cm).

Context 1005

This sample context exhibits three horizons. The upper 7 cm (121–128 cm) is similar to the overlying base of Context 1004, and is the base of the Ea or depleted horizon of a podzol.

The lower 2 cm (128–130 cm) of this context exhibits characteristics of two different soil horizons. Although the texture is similar to Context 1004 (above) and is dominated by the sand fraction (eighty per cent), there are, occasional to many, non-laminated limpid clay coatings within the groundmass and of the sand grains, which exhibit moderate to strong birefringence. Although these coatings are not abundant, they have a relatively strong presence and orientation, which suggests that they represent illuvial clay transported and deposited under former wooded conditions (Macphail 1987). This suggests that this is the base of a former argillic earth (or Bt horizon), which is undoubtedly the base of the original *in situ* soil profile.

As a secondary process, these coatings have become impregnated with amorphous sesquioxides, as has the whole of the fine fraction. This indicates that the original soil profile had become podzolized and that a poorly developed spodic (or Bs) horizon characteristic of a podzol had formed.

This Bs(t) horizon is developed on a sesquioxide impregnated sand (130+ cm), or on the *in situ* subsoil.

Conclusions

Mounds 2 and 5

There were three phases of pedogenesis prior to the construction of the barrow mounds:

1 the probable development of an argillic brown earth under stable woodland conditions in earlier Flandrian times

2 deforestation, and the resultant onset of soil degradation, acidification and development of heathland during the Prehistoric (probably pre-Bronze Age) period
3 concomitant development of well-developed humo-ferric podzol, very leached and iron impregnated, possibly up to 70–90 cm in thickness; associated with the construction of the Saxon burial mounds was a deep truncation of the soil profile, removing up to two-thirds or about 50–70 cm of the profile

The upper horizons of the podzol were re-deposited to form the make-up of the mounds, along with complete turves. These turves were probably stripped from the area that the mounds were to occupy prior to construction. The ring ditch around Mound 2 contains eroded soil material from a podzol, probably derived from the mound itself. The burial chamber beneath Mound 2 is infilled with subsoil material.

The Prehistoric gully beneath Mound 2 also contains eroded podzolic material, which is further proof of the earlier Prehistoric podzolization of the soil in the area occupied by this site.

The Mound 6 quarry pit

The composition of the quarry pit is relatively uniform throughout, and consists of very leached and podzolized sand, with the organic matter content decreasing with depth. This material has been derived from a podzol.

The rare to occasional textural pedofeatures in the base of the quarry pit suggest, first, the erosion of the lower horizons of the exposed *in situ* soil to either side; followed by the erosion of the upper, more organic, adjacent soil horizons as a result of construction, exposure, wind and water erosion.

The soil profile had already degraded to a podzol by the time that the adjacent Mound 6 was constructed. A similar sequence has already been observed from the buried soils sealed beneath Mounds 2 and 5.

Early Bronze Age pit fill

The Early Bronze Age pit was infilled with soil material which resembles that of the Ea(h) horizon of a podzol. The presence of this podzolic material need not necessarily imply that the soil infilling the pit was already podzolized, this process is probably a post-depositional phenomenon.

Some of the soil material infilling the pit exhibits rather indistinct and discontinuous laminations of different size grades of quartz sand. This suggests the influence of wind erosion. This sandy soil and subsoil would have been extremely susceptible to wind erosion once de-vegetated and/or disturbed by man's activities. This is the only occurrence of this phenomenon observed in thin section from the site, but, as the current programme of excavations has shown, wind erosion would have been a very common occurrence where the soil/subsoil was exposed.

The absence of more observable laminations within this Neolithic pit suggests that the pit infill had undergone some post-depositional mixing by soil faunal activity. This, in turn, suggests that this soil material was not yet podzolized when the pit was infilled, otherwise the soil fauna could not have survived the associated acidic soil conditions.

The Medieval bank/lynchet (Context 1814)

The basal *c.*60 mm of this profile is believed to be the surviving but truncated remains of the original post-glacial soil profile. It was the Bt horizon of an argillic brown earth that had developed under wooded conditions by the time of the advent of man on the site during the Neolithic period.

This same *in situ* soil horizon contains evidence, in the form of laminated dusty clay coatings, for the disturbance of the Prehistoric woodland on the site, which was probably associated with clearance activities by man during the Neolithic and Bronze Age periods.

In addition, this illuvial or Bt horizon also contained non-laminated dusty clay coatings, which are indicative of further soil disturbance and the truncation of the upper part of the original soil profile. This may be associated with one or more or any combination of clearance activities, tree-throw and the construction of the lynchet/bank much later in the Medieval period.

The overlying *c.*65 mm appears to be a transition zone between the relatively undisturbed relic soil profile and the overlying re-deposited soil. It also exhibits characteristics of podzolization, in particular, the organic and sesquioxide-impregnated lower B (or Bs/h) horizon of a podzol. Again, this suggests that once deforestation had occurred on site in the earlier Prehistoric period, soil degradation and the process of podzolization began and continued to occur.

The bank/lynchet material is characterized by re-deposited sand with abundant pellety organic matter, which is characteristic of an already podzolized soil.

The valley profile

The trench cut towards the base of the slope immediately to the south of the high ground on which the site is situated has revealed the original soil profile. It has subsequently been buried by about 1100 mm of colluvial material.

Prior to burial, the original soil profile had developed into a brown earth with a relatively poorly developed argillic (or Bt) horizon. This profile must relate to a pre-Bronze Age and pre-clearance phase of the area, as originally set out by Dimbleby (1962). This phase probably occurred during the Atlantic/earlier Neolithic period of woodland cover that characterized the majority of southern England at this time (Keeley 1982).

Subsequent to, and certainly as a partial consequence of, clearance, this brown earth became podzolized. This soil was characterized by a depleted Ea horizon and a spodic (enriched with metal oxides or Bs) horizon. The predominantly sandy matrix of this soil would have been very susceptible to the process of leaching once the protective vegetative cover had been removed.

This soil would have become increasingly unstable and susceptible to the processes of wind and water erosion. Soil erosion had undoubtedly begun during the period of podzolization. This is indicated by the presence of rounded aggregates of limpid clay, which were well mixed with the *in situ* soil in increasing abundance towards the top of the profile. The 'cleanness' of this clay suggests that this soil material originates from the initial disturbance of the original soil profile upslope, a process which is undoubtedly associated with the initial deforestation and accompanying soil disturbance, most probably in the earlier Bronze Age

period. This material was transported downslope as colluvium, probably by a variety of processes such as rain splash and gully erosion.

The upper surface of the podzol has been truncated, leaving only the base of the original A horizon *in situ*. This process, and the presence of the horizon of clean yellow sand above, indicates an erosive event of some magnitude and ferocity. As the sand is most probably an eroded subsoil moved and re-deposited towards the base of the slope by overland flow, it must represent a deep disturbance of the deforested soil on the adjacent high ground. Without adequate dating evidence, it is impossible to be categorical, but this could have occurred during the main period of mound-building in the seventh century AD.

Subsequent to this dramatic erosive event, a further 105 cm of colluvial sand was deposited by colluvial processes. This soil material was probably already podzolized prior to transportation and re-deposition. Nonetheless, it underwent continuing podzolization, forming a thick Ea(h) horizon and a thin, poorly developed, spodic horizon (or Bs) developed on the re-deposited subsoil horizon (Context 1003). The dating of this is unsure, but it has probably been a gradual process since the earlier Medieval period.

This upper podzol has probably suffered further (and unquantifiable) erosion by a combination of factors such as rain splash, soil creep, overland flow and gully erosion.

Thus, there are four major phases of pedogenesis evident in this valley profile:

1 the formation of an argillic brown earth under wooded conditions, probably during the Neolithic period
2 the podzolization of the original soil profile; a gradual process which was probably associated with clearance activities during the Bronze Age
3 soil erosion (slow and long-term, as well as fast and massive, events), which was probably associated with the clearance of woodland, as well as soil disturbance caused by tree-throw and human activities
4 continuing soil erosion or colluviation – associated with podzolization of the aggrading profile, the unstable nature of podzolic profile, poor vegetative cover and human activities – which continues up to the present day

Appendix 3

A method for calculating the original height of a mound

Several approaches were tried, most of which involved calculating the volume of the quarries by treating them as hemispheres and semicylinders, and by treating the notional mound as a hemisphere or cone. Most of these gave heights that were too great, since in reality the quarries were segments of spheres, and the same must have been true of the mounds, or they would have soon collapsed. Two methods were developed that should offer a better approximation of the original height, the first by C. L. Royle, and the second by J. Szymanski.

Royle's method: using a section across the mound

The drawn section across Mound 2 and its quarry ditch was used to calculate the area of mound make-up (by counting millimetre squares). A mound with this area was then drawn on a diameter given by the inner radius of the quarry ditch, as follows:

Diameter = 22.50 m
Area of mound + slippage of mound into the quarry ditch, as observed in Section [S-C] = 4560 m^2; or in Section FL–KP = 3898 m^2
Height of Mound 2 = 3.4 m or 2.8 m

Szymanski's method: treating both quarries and mounds as segments of spheres

The volume of the quarry ditches and pits was calculated by extrapolating the profile up to the level of the old ground surface, as indicated by the height of the buried soil beneath the mound. This gave a new profile, the cross-sectional area of which was calculated by counting squares. The volume was calculated by multiplying by the median length of the quarry ditch.

As proposed in the analysis of the mound construction, it is probable that a certain quantity of soil extracted from the quarries, was immediately returned there. If so, the true volume of soil used to build a mound is the total volume less the volume of returned soil.

Heights were calculated using both the total volume of soil, from a quarry of depth d1; and the net volume of soil from a quarry of depth d2, where d1 – d2 = the depth of returned soil.

Armed with the volume of soil used to construct the mound, the height was calculated using the following formula:

for a mound of height h and diameter 2R,
volume $V = \pi | \ h/6(3R^2 + h^2)$
from which:
$h = \sqrt[3]{}(\sqrt{}(9V^2/\pi^2 + R^6) + 3V/\pi) - \sqrt[3]{}(\sqrt{}(9V^2/\pi^2 + R^6) - 3V/\pi)$

This gave a calculated height between 2.7 and 3.8 m.

Chapter 11

Before Sutton Hoo

The Prehistoric settlement (*c.* 3000 BC to *c.* AD 550)

Madeleine Hummler

Introduction

The Anglo-Saxons inherited an ancient landscape, and they were aware of it. However, at Sutton Hoo they were not faced with dramatic earthworks: they neither took over a monumental or funerary landscape nor did they add to or remodel Bronze Age barrows. The site they selected and adapted was the relic of an embanked field system, a former bocage created in the Iron Age – itself the end result of repeated attempts to settle, cultivate and exploit the Suffolk Sandlings from the Middle Neolithic onwards. That is not to say that occupation was continuous. There are long gaps in the sequence, particularly after a zenith in the Early Bronze Age. From a beginning in oak woodland, there followed land clearance, soil exhaustion and changes in social organization that determined the exploitation regimes adopted over centuries.

At the time of excavation, Sutton Hoo was a small island of uncultivated ground surrounded by flat fields that were intensively farmed for cash crops: wheat, potatoes, carrots and, latterly, turf for golf courses and garden centres. However, this latest exploitation is only the most recent aspect of a landscape that has been managed for at least five millennia, with ever-changing responses to economic and social pressures in East Anglia and Europe. In this sense, the story written from Sutton Hoo's ditches, pits and post-holes links its remote past directly to modern land management and farming strategies, perhaps more so than its unique funerary episode of the seventh century AD.

The Prehistoric sequence detected at Sutton Hoo consists of four periods of activity (Figure 160). First, a Middle–Late Neolithic occupation in the form of pit clusters and artefact scatters, in which a strong Mildenhall element coexists with bowls of the Grimston tradition. This first occupation was widely scattered, with foci every seventy or so metres. It may linger on into the later Neolithic, as a few groups of Peterborough and grooved ware suggest.

The second period of occupation, beginning in the Early Bronze Age, was by far the most intensive, and involved a major organization of the landscape using a system of linear boundaries, with settlement zones spaced fifty metres or so apart. The evidence for settlements included at least one roundhouse, and pit clusters with assemblages dominated by late Southern Beakers (Case 1977). Food Vessel and Collared Urn elements were also present, and the occupation lasted at least until the appearance of Ardleigh and Deverell-Rimbury ceramic traditions.

A third phase, perhaps in the later Bronze Age or earlier Iron Age sees the replacement, probably after a long period of disuse, of the old linear boundaries by a fence enclosing an area of at least 4,800 m^2 in the centre of the Sutton Hoo promontory.

There followed a thorough remodelling of the landscape in the middle Iron Age, which introduced a coaxial field system with square enclosures and drove-ways. This fourth period of land-use, whose inception was dated by finds of Darmsden ware in the excavated enclosure, was further documented by aerial photography that showed a system of 'Celtic fields' covering ten hectares.

Sutton Hoo was ploughed repeatedly, both before and after it became a princely barrow-cemetery in the seventh century (see Chapter 10, p. 465). In the buried soils beneath the barrows, a thin scatter of Roman finds as well as plough and cultivation marks testify to the pre-Saxon ploughing episode. It is suggested (below, p. 457; Chapter 8, p. 309) that the barrow builders encountered a network of boundary banks, and that they used field corners and boundaries to site six of their burial mounds.

Prehistoric Sutton Hoo was both eroded and preserved by the Early Medieval mound builders (Colour Plate 6). The mounds preserved buried soils and the lower parts of features beneath them, while outside the mounds objects were dispersed

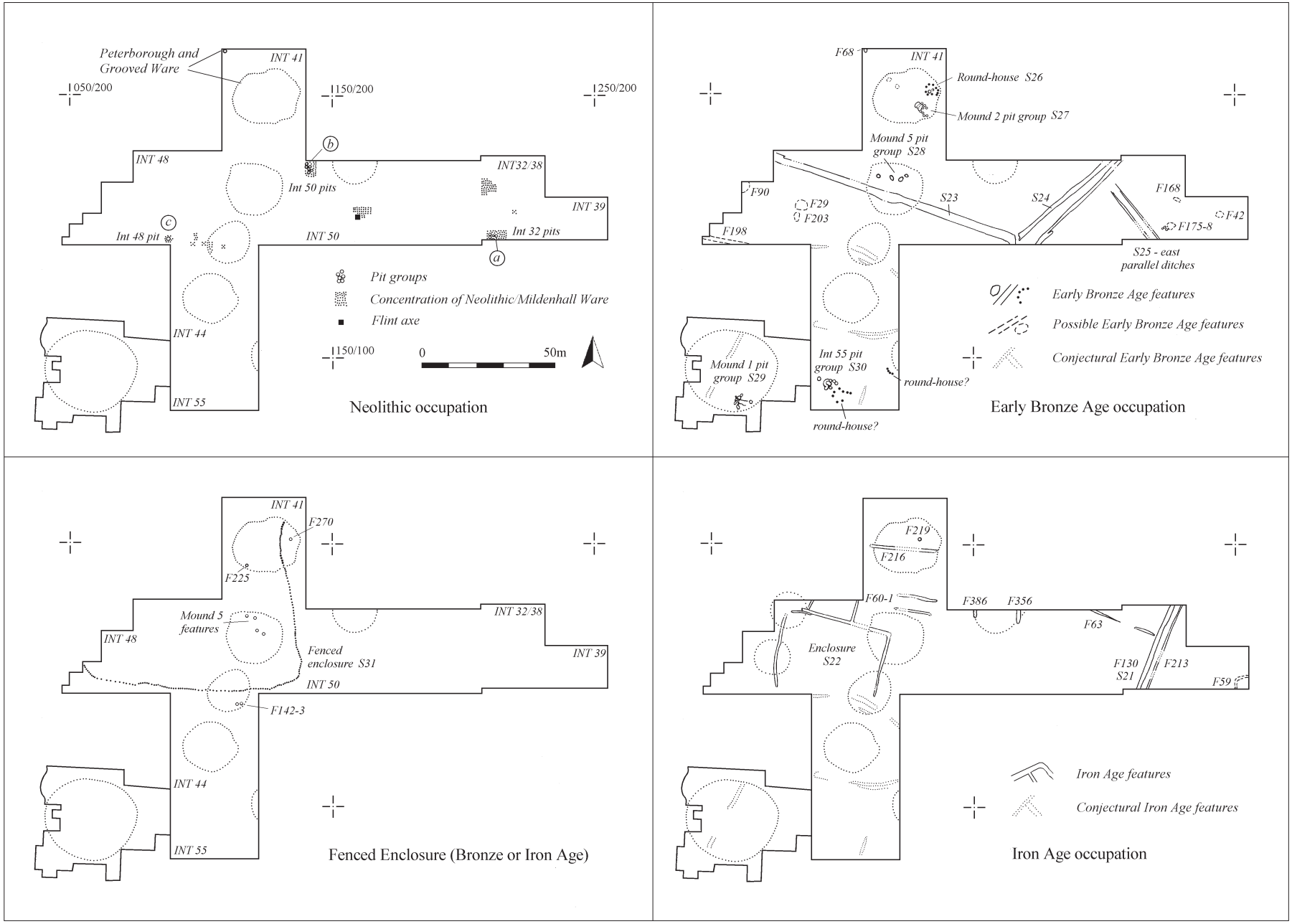


Figure 160 The excavated Prehistoric sequence, with the features selected for study. For the plan of all features recorded, see Figure 17.

and features truncated by quarrying and ploughing. The strategy for the Prehistoric investigation took account of this patchy survival (see below).

Description of the investigations

Basil Brown recorded that he had encountered a Bronze Age hilltop village in his excavations in Mound 2 in 1938, where he found a hearth and a blue faience bead, and in Mound 1 in 1939, where he noted hearths and probable post-settings (BBD: 148 and 158). The investigation of this Prehistoric settlement formed one of the objectives in the British Museum campaign of 1965–71. The features beneath Mound 1 were studied by Paul Ashbee (SHSB I: 25–30; see also FR 2/2.1 and Figure 188), and the sequence as a whole was examined in a series of cuttings by Longworth and Kinnes (1980). Their findings guided the present study, which has endorsed and enhanced theirs.

The Prehistoric sequence was not a major element of the 1983 project design, which was focused on understanding the Early Medieval cemetery *(Bull.* 4). The Prehistoric objectives were to improve knowledge of the sequence of land use, to distinguish the Prehistoric from the Early Medieval features, and to understand the earthworks and possible monumental legacy that previous occupation had left and thus the use that the Anglo-Saxons may have made of it.

A special conference was convened at Oxford in 1984 to discuss the relevance of the Prehistoric site to the Early Medieval research project and, although many of the delegates were somewhat dismissive of its value, the Sutton Hoo Research Trust and its director decided that an extensive study was not only valuable in itself, but necessary in order to understand fully the context of the Early Medieval cemetery.

Plate 53 Prehistoric surfaces: (a) looking north over Int. 41, the ditch system S23 (still unexcavated) is crossed by the post holes of palisade S31; (b) Beaker pit-complex S30 under excavation in 1992, looking south (photo: M. Hummler).

Character of deposits

As had been learnt from previous excavators, the survival of deposits was very poor, being mainly limited to deeper features, with an assemblage limited to pottery and flint. The most intact strata appeared to lie at the north-west corner of Zone A, where a Bronze Age burnt mound was recorded in the edge of a modern silage pit (see Chapter 2, p. 20, Plate 6). Under the mounds most of the features had been truncated by up to 400 mm (the depth of the buried soil), and the older features by as much as 1 m – the additional 600 mm of soil being that calculated to have been lost since the Neolithic (see Chapter 10, p. 388). Within features, the assemblage was usually limited to flint and pottery, with rare organic survivals in burnt deposits, such as nut shells.

Outside the mounds, and within the area of the barrow cemetery, material from the topsoil proved to have been extensively disturbed from their original locations by barrow-building and ploughing (see Chapter 10, p. 374). Whether under or outside the mounds, most features were detectable by excavation only at the level of the subsoil (Horizon 2/7). Structures, composed of groups of features, were suspected, but were rarely mappable as their post-holes had usually been erased or truncated. Outside the barrow-cemetery, pottery and flint was widely distributed in the topsoil, and could be sampled by surface collection. In this area, the distribution of artefacts was broadly found to reflect the location of the features beneath (see Chapter 2, p. 21). The deeper features also proved detectable by aerial and geophysical survey.

In the event, the swings from pasture to arable and back manifested in the types of field boundary were the most useful evidence in the archaeological record. These could be mapped and sampled, economically, by a combination of excavation and survey.

Survey

Aerial photographic surveys by the Cambridge University Committee for Aerial Photography were collated for the evaluation (*Bull.* 6: 16), and showed a large segment of an Iron Age field system (see Chapter 3, Figure 18). Systematic surface collection was undertaken in the ploughed fields that surrounded the mound-cemetery (Zones D and F), where the predominantly Prehistoric assemblage was mapped (*Bull.* 4: fig. 13), correlated with a phosphate survey and validated with test transects (see Chapter 2, p. 21). This showed that Prehistoric settlement activity was concentrated over about 10 ha. at the Sutton Hoo site. But there were also other clusters of Prehistoric material spread along the terrace of the River Deben, as was demonstrated by John Newman's Deben Valley survey (see Chapter 13).

Excavation

The excavation (see Chapter 2) was designed with an eye on the predicted survival of Prehistoric strata, and on the excavations that had already taken place in the 1965–71 campaign (see, especially, Longworth and Kinnes 1980). The whole of the 1 ha. sample was mapped at the level of the subsoil, with the exception of the platform of buried soil under Mound 7, which was left unexcavated (see Chapter 4, p. 96). Out of a total of 2,000 features recorded in the campaign, about 1,500 were Prehistoric. The realization that feature survival was uneven led, in 1989 after the completion of the total excavation of Int. 41 (the only area fully excavated), to a decision to focus on selected features of the Prehistoric landscape. The buried-soil platforms and the features within and beneath them were completely excavated at Level D. Selected lengths of the linear boundaries, and the principal Prehistoric pit and post-hole clusters, were also excavated at Level D (see Chapter 3, p. 24, Figure 17). Other features were deliberately left unexcavated, and these remain for future examination when research questions and sampling techniques have been further refined.

Analysis

The Trust was also selective in its analysis of the artefacts and samples: all have been assessed, but not all have been analysed. About 63,000 Prehistoric finds were recovered in the excavations, and another 20,000 from surface collection during the evaluation. Relatively few artefacts were retrieved from the Prehistoric features themselves, the vast majority stemming from buried soils, later features, topsoil beneath the turf and ploughsoils.

The excavated ceramic material, totalling some 17,000 sherds, has been assessed for the presence of identifiable Prehistoric pottery types. In general, classification could be achieved for one sherd in every three or four, but this ratio could fall to one in every seven sherds. Thus, no detailed typological analysis has been attempted, nor a sherd-by-sherd assignation to fabric type. With this proviso in mind, some patterns do nevertheless emerge when identifiable ceramic types are plotted over the excavated area. The excavated flint assemblage – totalling some 15,600 finds, mostly waste flakes and core fragments – included 460 implements. Types thought to be characteristic of, or emanating from, significant features have been defined and are illustrated and mentioned in the text.

These limited analyses met the objectives of the project design, but the assemblages have some potential for further work, particularly in spatial analysis. All artefacts were recorded as single finds, either to the nearest square metre (Recovery Level C), or to the nearest centimetre, with heights (Recovery Level D). The Finds Index (see Guide to Field Reports and Field Records, p. 505) lists the type and location of every individual find: not only in the excavated sample, but also in the 100 m perimeter surveyed by fieldwalking around Sutton Hoo (Int. 19).

Certain samples of copper-alloy residues (bronze droplets and residues) mentioned in the text (see p. 414) provide evidence for very early metalworking, and these could be subject to future scientific analyses. They are held by the British Museum's Department of Scientific Research.

Every opportunity was taken to collect carboniferous material suitable for radiocarbon dating, but there were few adequate samples. Of these few, only one was accepted for dating by the British Museum's Department of Scientific Research: this sample (from Int. 41/F545) gave a calibrated date range for the Beaker pit-complex in the middle of Mound 2 that centred on 2000 BC (cal. 2140 to 1910 BC; see Chapter 3, p. 55).

The Prehistoric sequence

Recognized types of pottery and flint were used to give contexts their earliest date of deposition, and thus the earliest dates for the hearths, pits or post-holes that contained them. Where features were spatially related, they were associated in time, and could sometimes be expressed as a 'structure': for example the

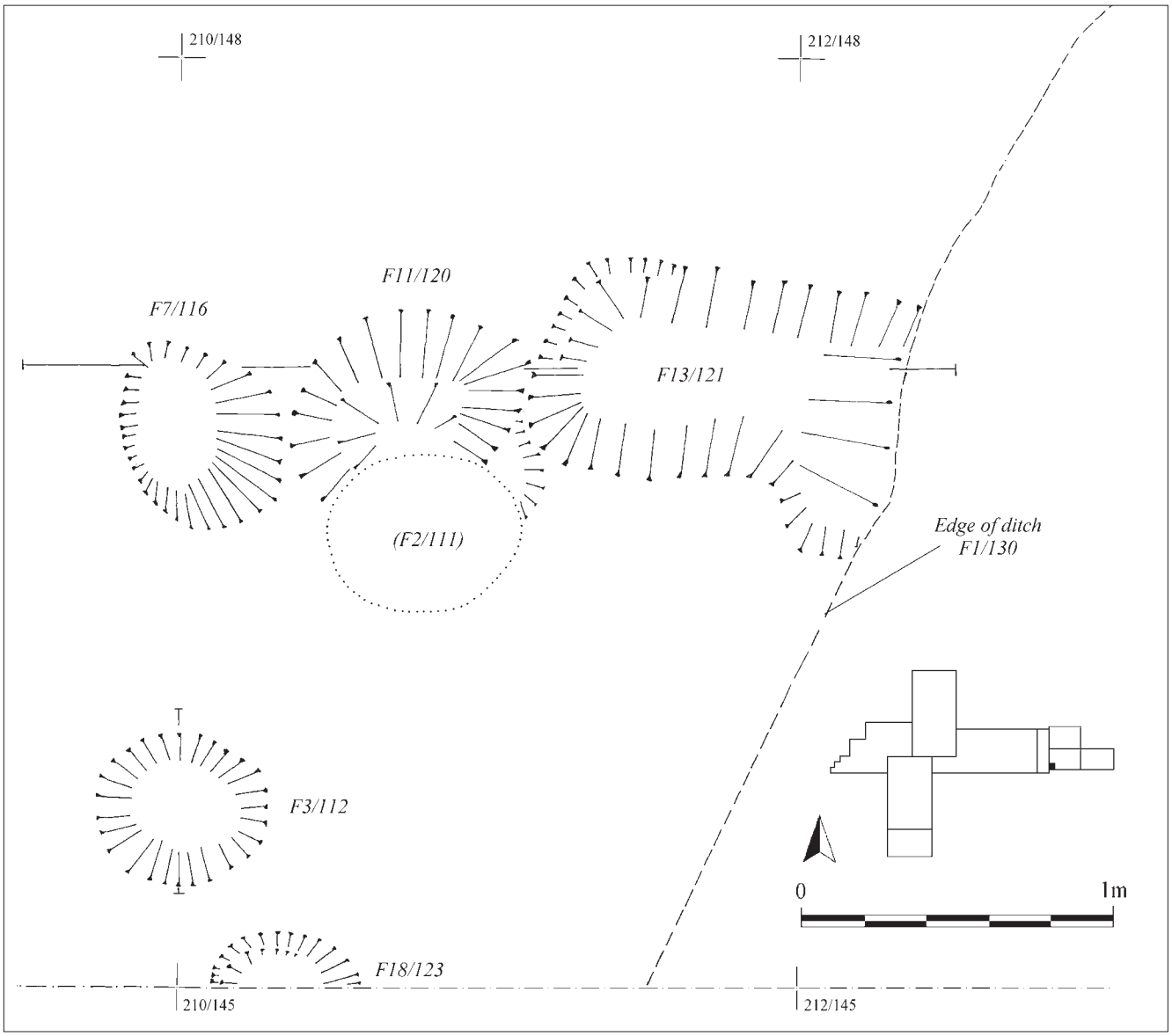


Figure 161 Neolithic pit group (a) in Int. 32: plan.

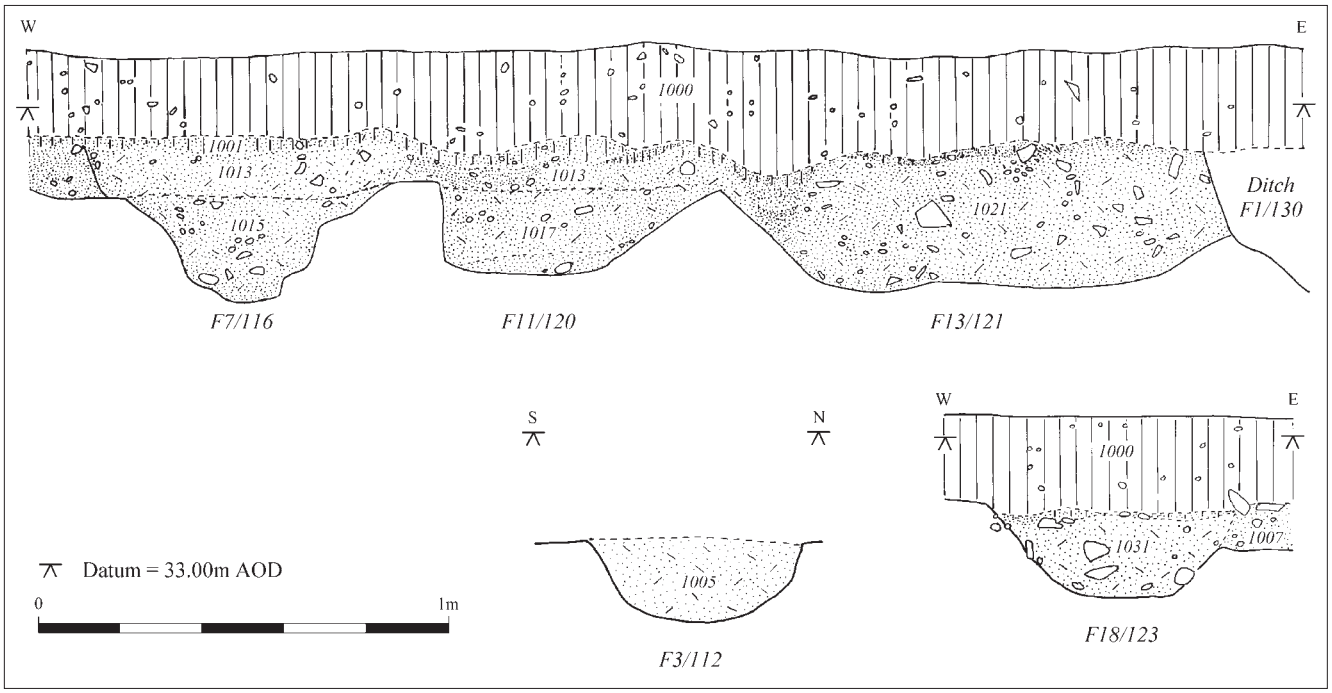


Figure 162 Neolithic pit group (a) in Int. 32: sections.

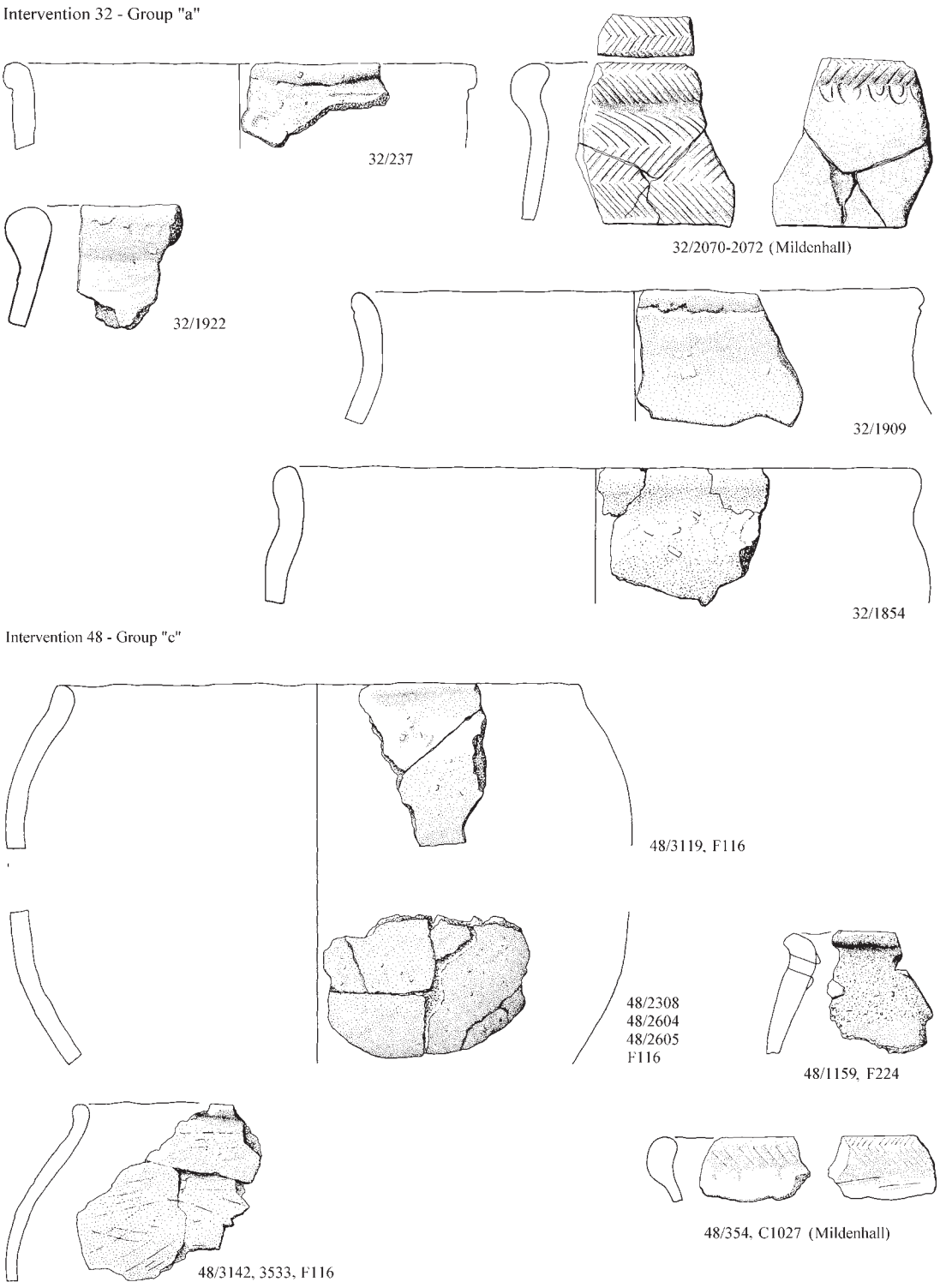


Figure 163 Neolithic pottery from pit groups (a) in Int. 32, and (c) in Int. 48. Scale 1:2.5.

ring of post-holes forming the roundhouse under Mound 2 (S26), the segments of boundary ditches (S23, 24 and 25), or the numerous post-holes making up the fence-line (S31). Occasional instances of legible stratification enabled features or structures to be sequenced: for example, enclosure S22 (Iron Age) had cut the boundary ditch S23 (Bronze Age).

Since stratification was infrequent, and much of the datable material secondary, only a broad sequencing was possible. It was divided into four periods: Neolithic, Bronze Age, Late Bronze Age/Early Iron Age and Iron Age.

Neolithic occupation

Neolithic material was found in three discrete pit-clusters and in several concentrations of pottery in buried soils, topsoil and other later deposits (see Neolithic a, b and c on Figure 160). The pit-clusters were located some 60–70 m apart from each other and, where seen in conjunction with ceramic scatters in their vicinity, represent the remnants of a long-lost pattern of occupation.

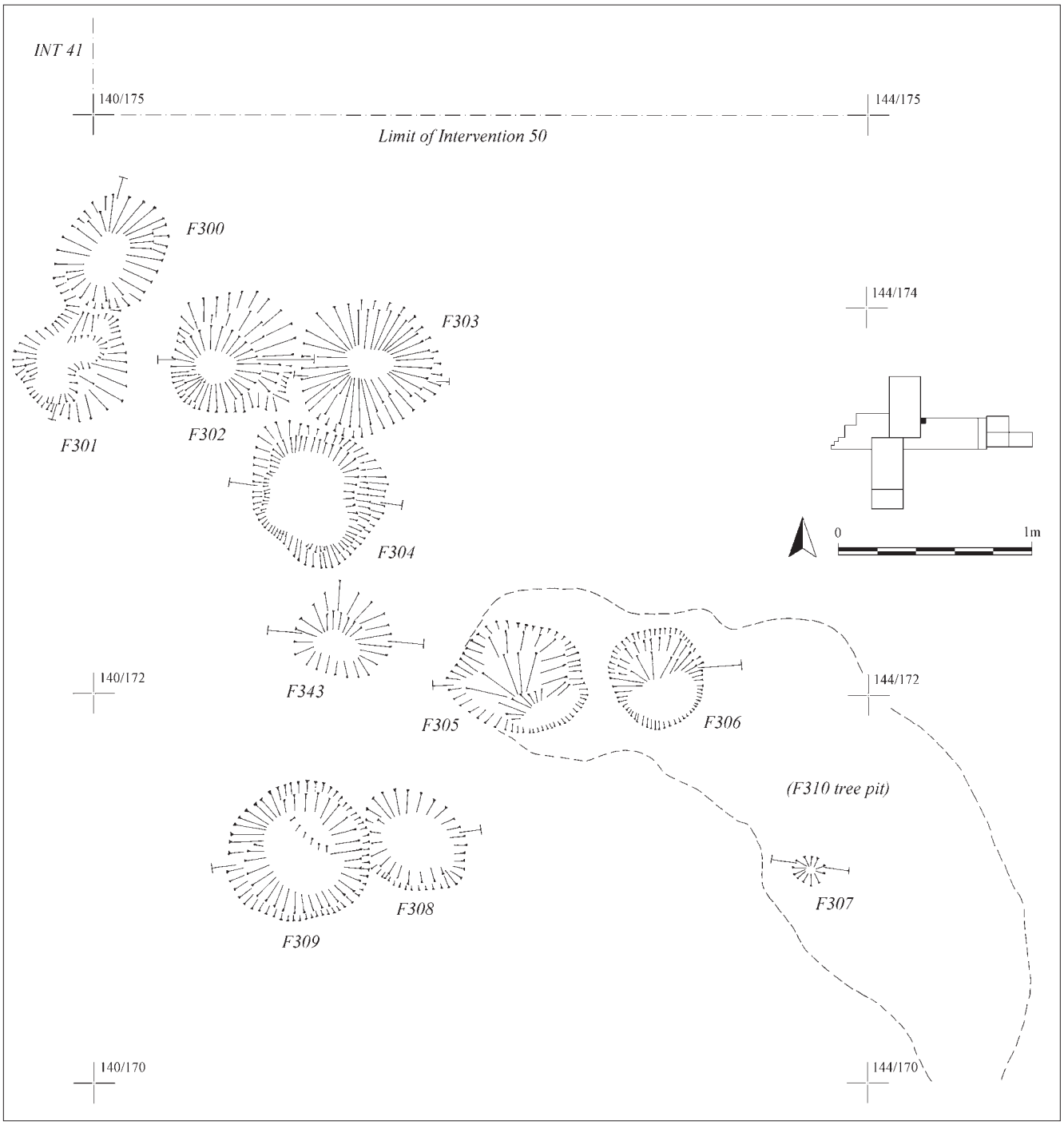


Figure 164 Neolithic pit group (b) in Int. 50: plan.

Pit Group A (Int. 32, FR 8ii/5.1)

An arc of five pits (F3/112, F7/116, F11/120, F13/121 and F18/123) covered an area of *c.*9 m^2 around grid 211/146 (Figure 161 and Figure 162). As recorded at Horizon 2 (against the subsoil), the pits had a diameter of between 0.50–0.65 m and a depth of 0.20–0.30 m. Studies of the soils beneath Mound 2 (see Chapter 10, p. 364) showed that the Neolithic ground surface would have stood about 900 mm above the subsoil. The same original depth of soil is assumed over the whole of the Prehistoric area, giving the pits in Int. 32 an original depth of a metre or more. If the pits were contemporary, their original profiles would have been nearly vertical – otherwise they would have cut and succeeded each other.

The pits contained just over a hundred sherds of pottery, all of which have been identified as parts of large, coarse round-bottomed bowls or pots in the Grimston bowl tradition. The surface scatter near the pits also produced sherds of Mildenhall ware (Figure 163). Thirty flint flakes, an end-scraper and a serrated blade (from F13/121, Int. 20/417 and 418), and a thin scatter of burnt flint (around twenty fragments) complete the assemblage. Two of the features had most of the artefacts. The remains of a pot smashed into sixty-four sherds were concentrated in the south-eastern quarter of F3/112; and F13/121 had a substantial amount of pottery, contained within a small central zone, complemented by ten flint flakes, a core fragment, two blades, an end-scraper and a few pieces of burnt flint. The assemblage from pit F11/120 was more modest, with some twenty finds. All the other features reveal much poorer assemblages, each with a few isolated finds of pottery and a handful of burnt or waste flint. The unequal distribution of

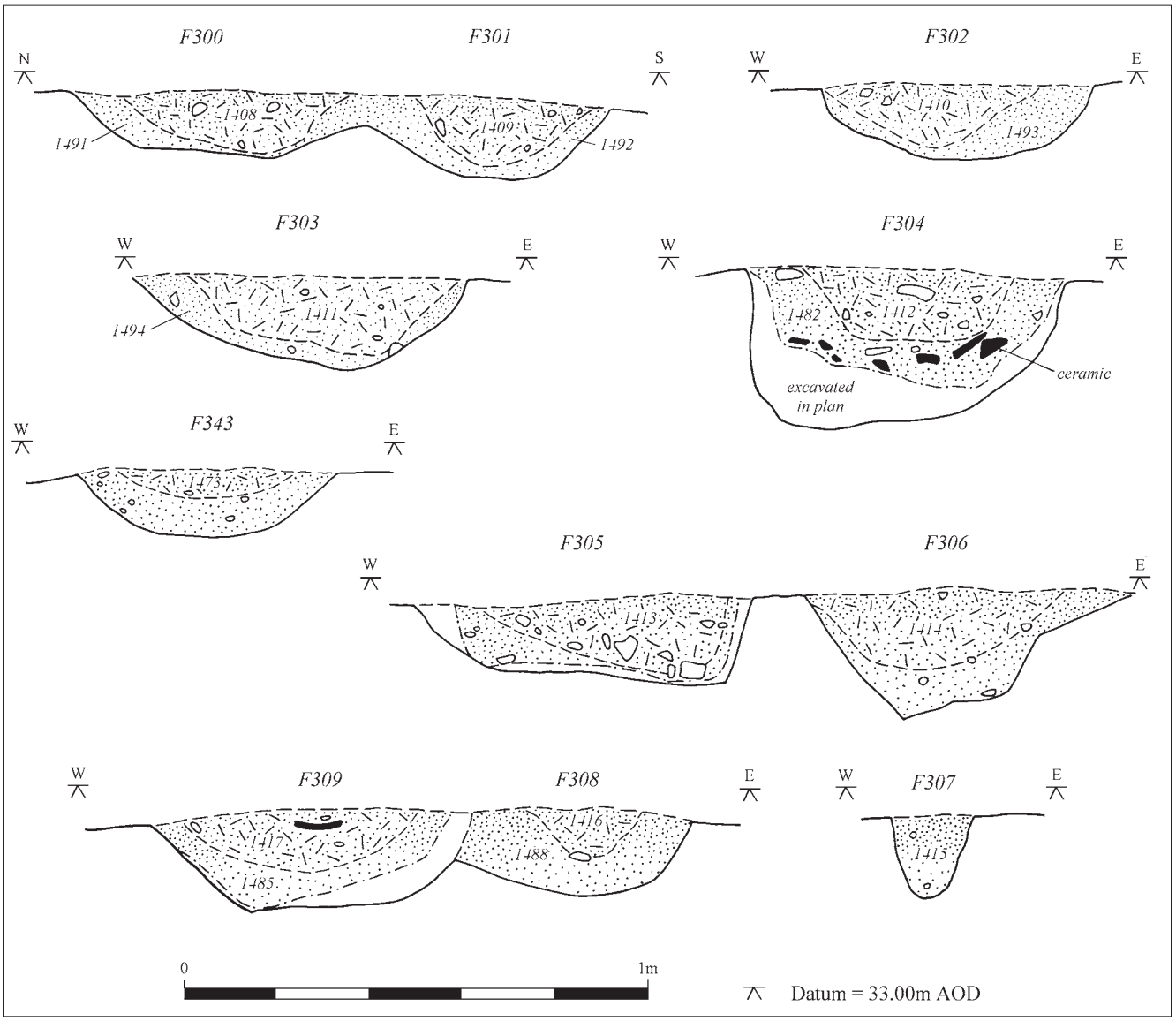


Figure 165 Neolithic pit group (b) in Int. 50: sections.

artefacts amongst the features of a single pit group appears to be a recurrent trait (see below).

The function of the pits was not identified. There were no post silhouettes, and the fills were homogeneous sand and pebbles with a typical Munsell value of 10YR 4/4 (Figure 162).

Pit Group B (Int. 50, FR 7/5.4)

A group of ten pits was clustered in an area about 5 m in diameter at grid 140/172 (Int. 50 F300–9 and F343; Figure 164 and Figure 165). The pits had diameters of 0.50–0.70 m, and were cut into the subsoil to a depth of 0.20 m (except F304 and F309, which were deeper at 0.35 m and 0.25 m, respectively). Two of the pits (F300 and F301) abut, rather than cut, each other. From the description of features, fills and assemblages it seems likely that all the elements of the group are contemporary. As with Group A (above), these pits would have had a depth of a metre or more from the Neolithic ground surface, and would have cut each other unless they had taken the form of vertical shafts.

The central fills of the pits were dark brown in colour (Munsell value 5–10YR 3/2 and 3/3) and contained matrices that were more silty than those in the outer, sandier and stonier fills, which were lighter in colour (typical Munsell value of 7.5–10YR 4/4). With one notable exception, F304, it was the central dark context that produced most artefacts.

Pit F304 is singled out as being by far the richest 'pot-producing' pit (114 sherds, compared to the next richest pit, F303 with 15 sherds; see Plate 54). It contained a dark-brown central fill (Context 1412, Munsell colour 5YR 2/2) that was rich in finds, and an outer, lighter fill (Context 1482, Munsell colour 7.5YR

Plate 54 Neolithic pit F304 in Int. 50.

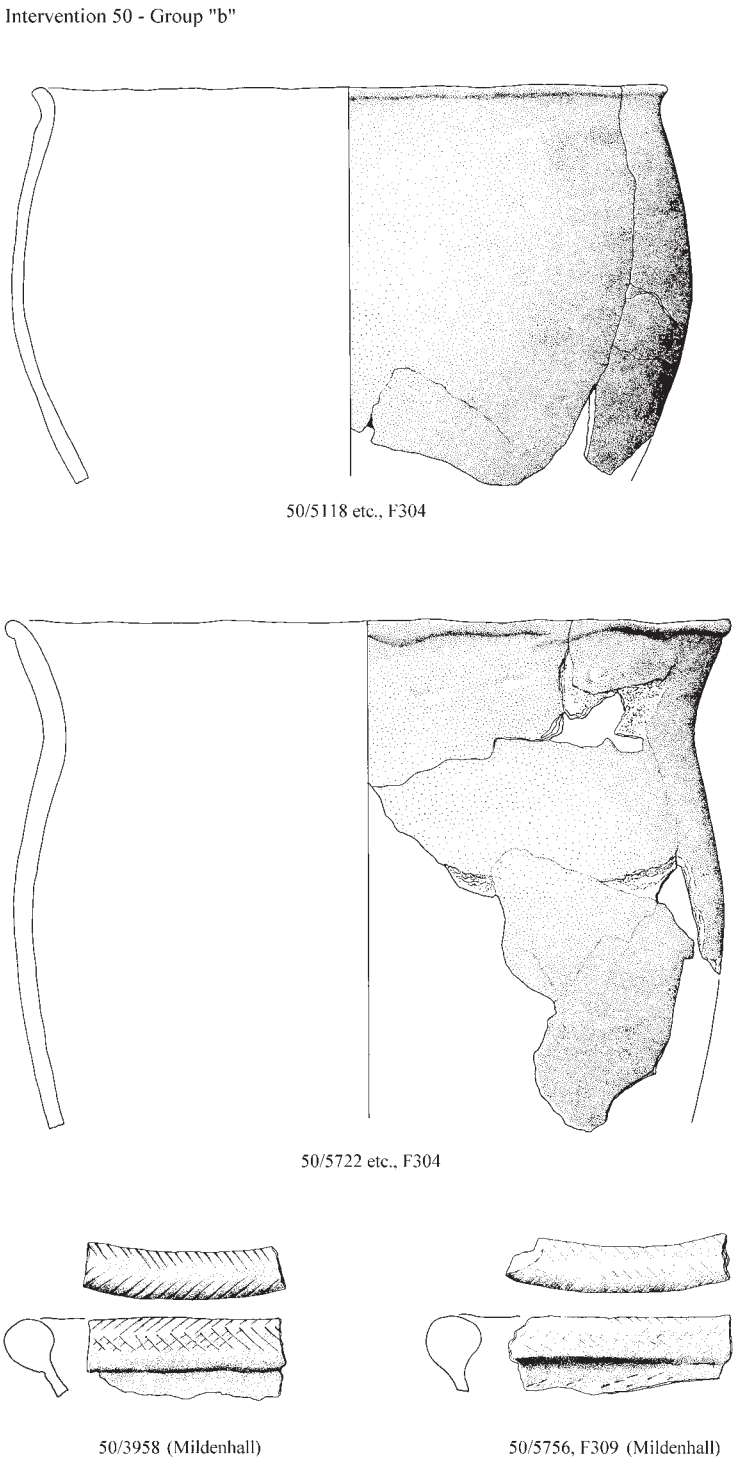


Figure 166 Neolithic pottery from pit group (b) in Int. 50. Scale 1:2.5.

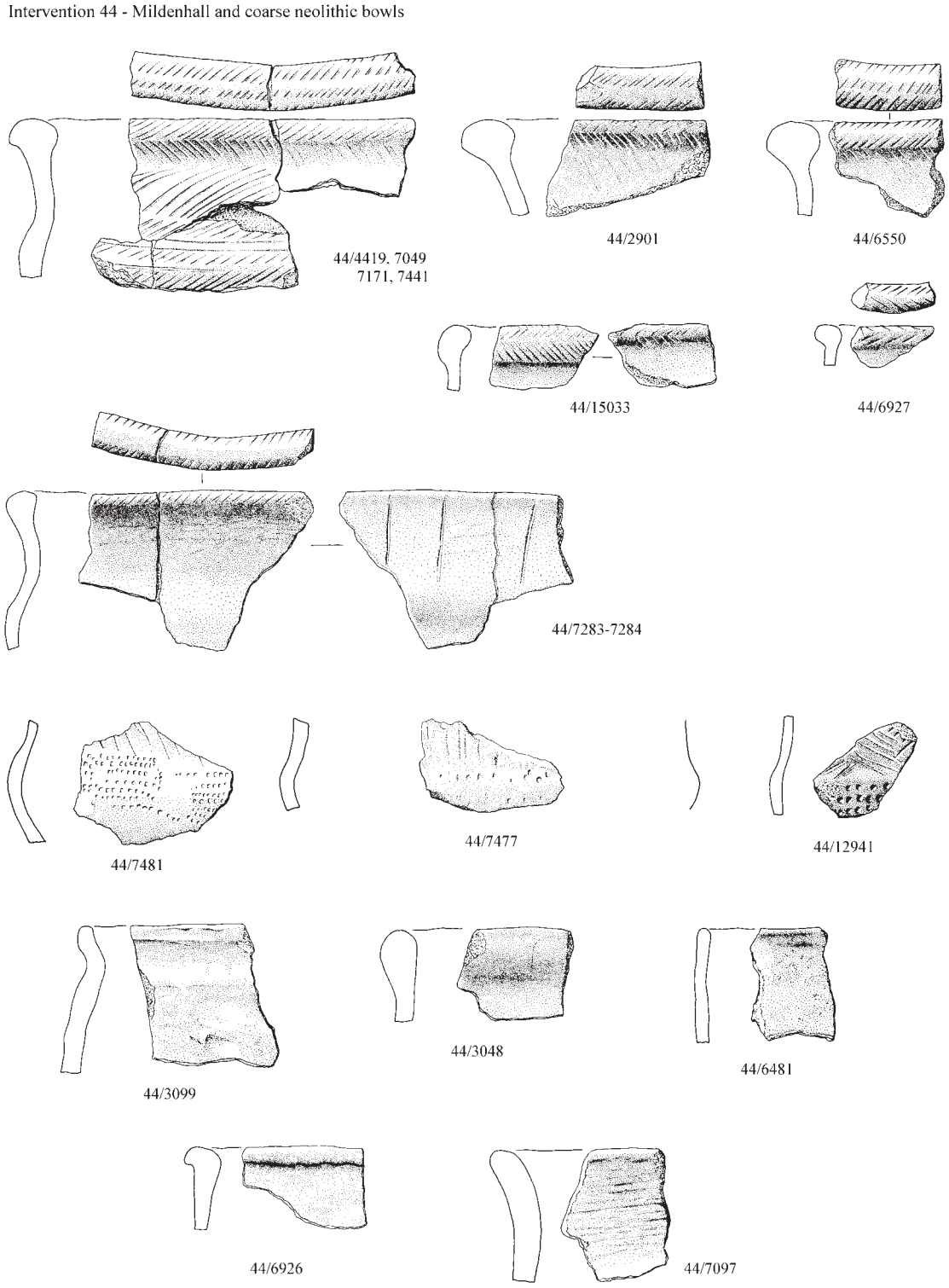


Figure 167 Neolithic pottery from features in the Mound 6 area (Int. 44). Scale 1:2.5.

4/4) that was extremely rich in ceramic finds. This context (1482) contained sherds of pottery seemingly lining the pit. Records of the position and orientation of the sherds and the joins between them showed that examples of freshly broken sherds from four different vessels had been placed 'the right way round' around the perimeter of the pit base (i.e. inside of pot towards inside of pit). But no pot had gone into the pit whole: F304 was a pit whose base and sides were deliberately lined with previously broken parts of pots.

The Group B assemblage as a whole – which also takes into account a cluster of ceramic sherds picked up in the ploughsoil immediately above it – contained some 185 sherds of pottery. The vast majority belong to plain round-based bowls, with a dozen sherds of finer Mildenhall ware (for example sherds 3958 and 5756 in Figure 166). The dominance of plain over decorated bowls has been observed for many assemblages in Middle Neolithic south-east England (Healy 1988: 63; Herne 1988: 15).

As with Group A, the assemblages are unevenly distributed between pits. Some are rich in ceramics (F304 contains 114 pottery sherds), some are intermediate (F303, F309 and F305 produced 15, 12 and 10 sherds, respectively) and some are poor (F300–2, 306–8 and 343). The concentration of flint waste or burnt flint also varies, with some pits being rich in pottery, flint waste and burnt flint (F304 and F309), some pits being mostly rich in flint and burnt flint (F305 with 34 flint flakes and 51 pieces of burnt flint, but only 10 sherds of pottery) or the reverse (F303 only produced 7 flint flakes and 2 fragments of burnt flint, but 15 sherds of pottery). Only one flint implement was identified (a scraper, Find 5583 from pit F311).

The function of the pits was not identified. The inner dark fills and outer lighter 'coronas' initially suggested pits for posts, but this was not endorsed by the fill sequence (Figure 165). Three pits (F305–7) directly cut a feature (F310, un-excavated) that, by analogy with numerous similar excavated arc-shaped features at Sutton Hoo, is interpreted as the outer ring of a tree pit. This particular tree pit could, of course, be the silted-up remains of a tree felled or fallen hundreds or thousands of years before Neolithic pits were dug at Sutton Hoo. Nevertheless, it may just be worth inserting the suggestion that there is an association between the sites of trees and of pits in which pots or parts of pots had been deposited.

Pit C (Int. 48; FR 6/5.1)

An isolated pit with a Neolithic assemblage, F116, was excavated at 088/155 (Figure 160) and was in all respects similar to the pits of Groups A and B (above). It was a truncated oval scoop, *c*.0.80 × 1.20 m across, cut 0.20 m into the subsoil, and presumed to have been cut to a depth of over a metre from the Neolithic ground surface. Its fill (Context 1179, a mid-brown sand-silt, Munsell colour 5YR 3/4), and the ploughsoil immediately above, produced some two dozen sherds of Neolithic coarse round-based bowls, as well as four sherds of fine Mildenhall ware (Figure 163), together with a few fragments of burnt flint and fourteen flint waste flakes. Though more severely truncated than most other Neolithic pits, it seems reasonable to suggest that this pit also received substantial parts of different Neolithic vessels.

Other indications of Neolithic occupation

Discrete concentrations of Neolithic coarse round-based bowls and Mildenhall ware – the two types characterising the pit clusters – were picked out around grid 208/165 (Int. 32/38), 219/155 (Int. 32), 158/156 to 164/156 (Int. 50) and in the centre of Mound 6 around 103/143 (Int. 44; Figure 167). It may well be that these small clusters represent no more than a few vessels broken and then dispersed into many fragments, but their location deserves some further consideration. In each case, the clusters are relatively near to a pit group, but not so close as to represent dispersal through erosion and ploughing from that same pit group: a distance of 15–20 m seems to be the norm. If one accepts that the pits, being the deepest features, are the only actual surviving remnants of a Neolithic occupation, then the clusters could be further elements of that same occupation, representing shallower, and therefore erased, features, perhaps even structures. In Int. 50 Neolithic pottery clusters occurred near undated post-holes and scoops F250–60. In Int. 44 a single post-hole (F115) on the Mound 6 platform was associated with high quality Mildenhall ware (Figure 167). This may represent the remnant of a Neolithic structure.

In Int. 50 flint implement types thought to be characteristic of a Middle–Late Neolithic facies – such as leaf-shaped arrowheads, serrated implements and narrow end-scrapers (Figure 168) – were also found in the topsoil in the vicinity of the pit- and ceramic clusters, but their distribution appears more diffuse. Implements found in the pits themselves include a waste blade, a serrated blade and an end-scraper from pit F13/121 in Int. 32, and a scraper from pit F311 in Int. 50. A partially polished flint axe (Int. 50, no. 6709; Figure 168) was recovered in the base of the ploughsoil (Context 1004) at grid 159/153, that is near the Neolithic ceramic cluster in the centre-west of Int. 50.

Apart from the small, discrete concentrations of Neolithic artefacts reviewed above, a trawl through the flint and ceramic records compiled for the excavated sample at Sutton Hoo reveals a significant number of finds of this date deposited in the buried soils of Mounds 2, 5, 6, 7, 14 and 17 (Figure 169 and Figure 170), in isolated features and re-deposited in later features, ploughsoils and topsoils. Their distribution does not significantly alter the proposed dispersed occupation pattern, but serves to reinforce the suggestion that the Middle–Late Neolithic occupation of the Sutton Hoo promontory was not insubstantial. The slightly greater density of finds in the west of the Mound 2 area may represent yet another eradicated focus of the Neolithic period.

Late Neolithic indicators

Peterborough ware and grooved ware sherds (Figure 169) make some appearances in small clusters (Int. 32) and discrete features (Int. 41/F68), in particular in the Mound 2 buried soil and in the Early Bronze Age ditch excavated by Longworth and Kinnes in 1968 (Longworth and Kinnes 1980: 13–26 and 31, fig. 20). This material is not plentiful and, in particular in the case of grooved ware, identifications are often tentative. The association of these two classes of ceramic, either with each other or with other late Neolithic and Beaker types, is the subject of much debate and thorough study (Cleal 1984 and 1991; Healy 1984, 1988 and 1995). At Sutton Hoo, the contribution of this later Neolithic material to the debate is far from easy to assess, as pottery can be residual or re-deposited in later features and contexts (the case, it seems, for Longworth and Kinnes's ditch 1), or dispersed and ploughed up (the case for most buried-soil sequences). On the one hand, the presence of Peterborough and grooved ware hints at the continuation of the Neolithic round-based bowl tradition, and on

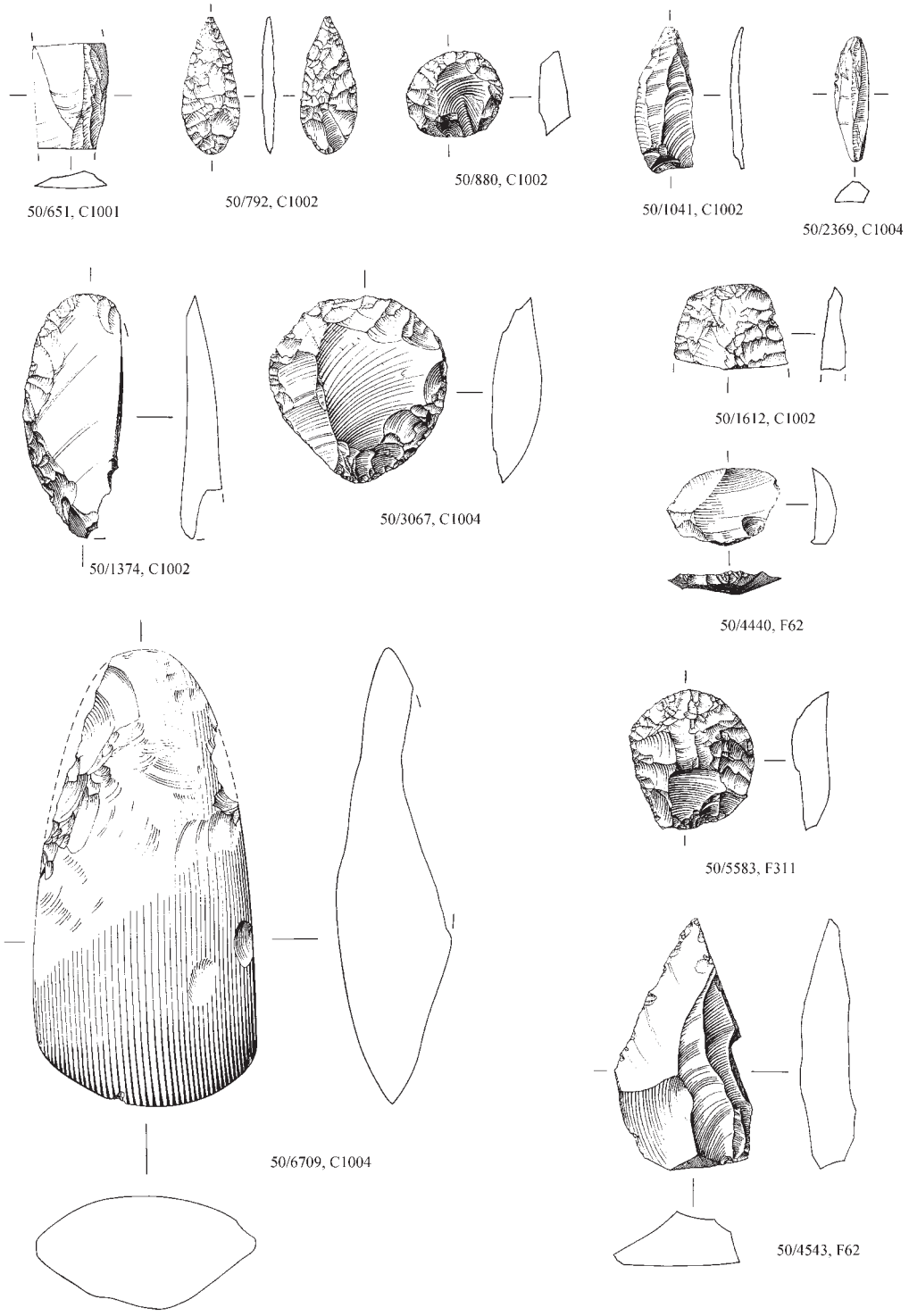


Figure 168 Selected flint implements from Int. 50. Those from F62 and F311 are from the Early Bronze Age ditch system; the remainder are from secondary contexts. Scale 1:2.

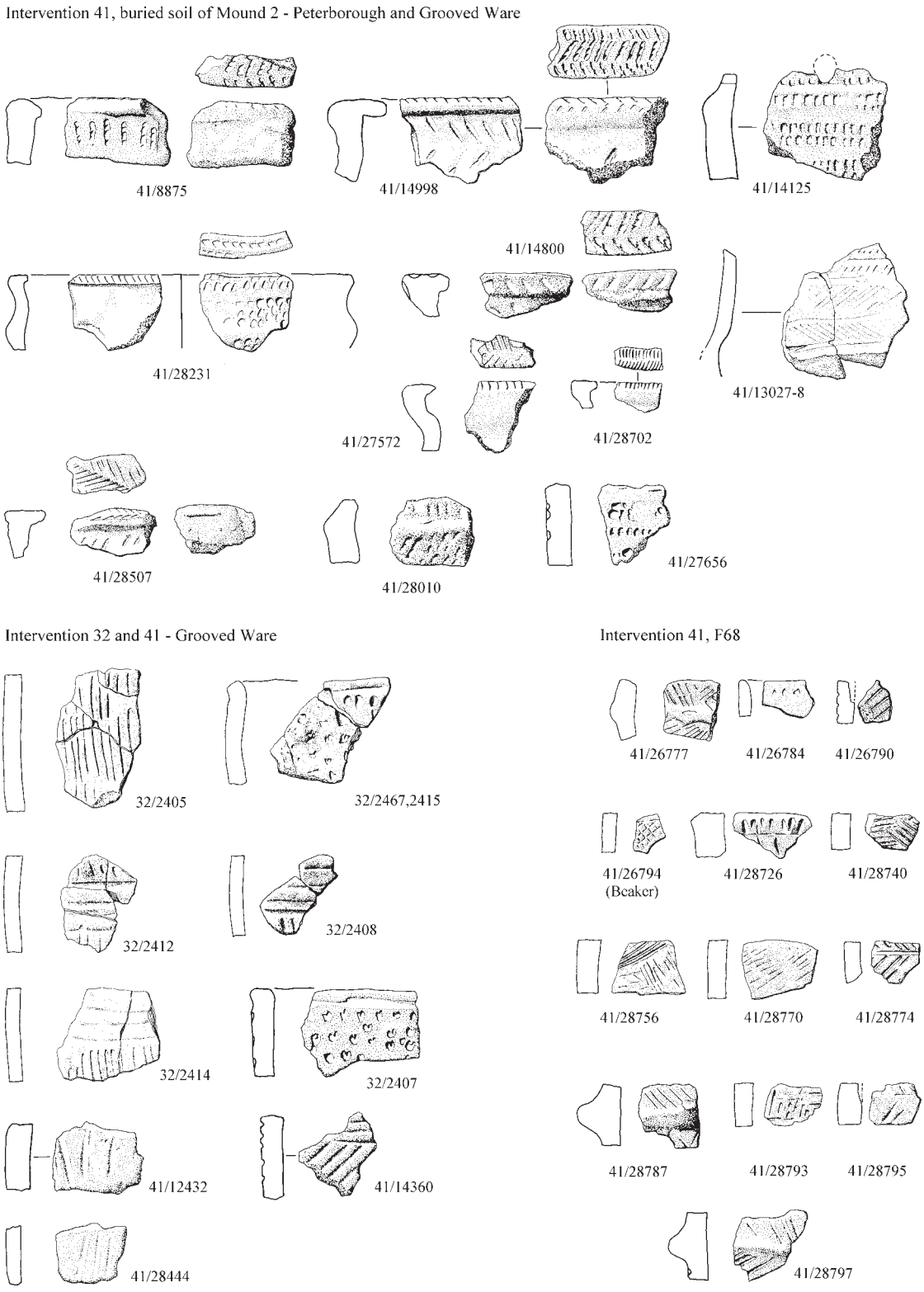


Figure 169 Later Neolithic pottery from the buried soil under Mound 2 and F68 (Int. 41) and from Int. 32. Scale 1:2.5.

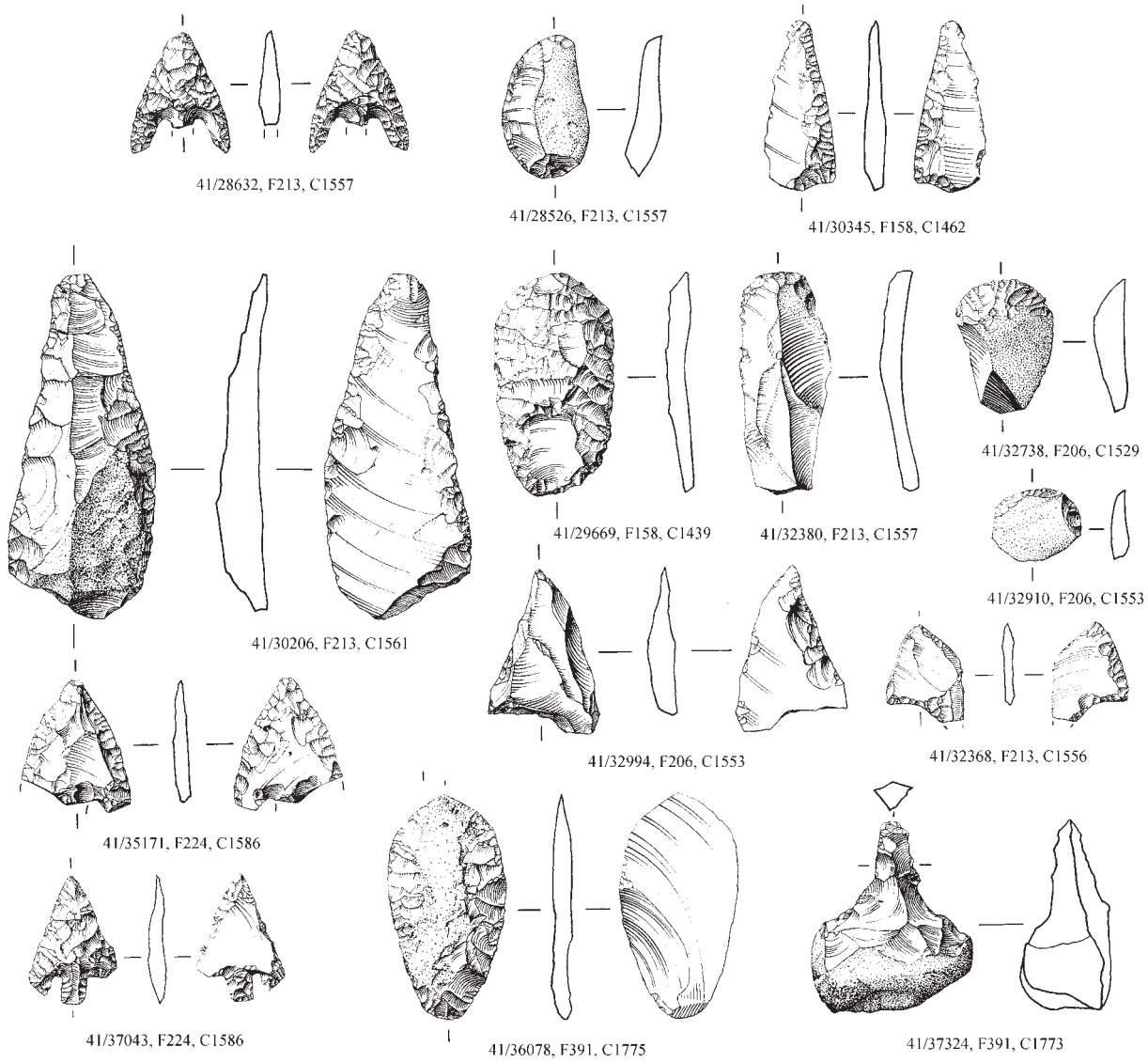


Figure 170 Selected flint implements from buried soils under Mound 2 (F158, F206 and F213) and Mound 5 (F224 and F391). Scale 1:2.

the other hand it suggests that its decorative vocabulary was available to Early Bronze Age people manufacturing Beaker pottery, even in the late Southern Beaker period (see below). At Sutton Hoo, Peterborough and grooved ware ceramics have been recovered in contexts as diverse as an Early Bronze Age pit on the Mound 2 platform (Int. 41/F235) and a ditch butt-end (F68 in the extreme north-west of Int. 41) that also contained a sherd of Beaker fine-ware (Find 26794 in Figure 169).

Interpretation

The evidence for Middle to Late Neolithic occupation on the Sutton Hoo promontory survives in a mangled state. Much has been lost through the continuous lowering of the ground surface from the Bronze Age onwards, particularly with the loss of some 700 mm under mounds, and 850 mm of soil beside them, in later prehistory (see Chapter 10, p. 377). The result of this process of attrition is that only the deepest Neolithic features survive, together with concentrations of flint and pottery that are relicts of shallower activities. However, a pattern did emerge at Sutton Hoo: three pit groups were located some 70 m apart from each other, and pottery scatters some 15 m away from the pit groups signal further eradicated structures of the same period. This might be held to indicate a landscape populated with several dispersed nuclei.

All the pits reviewed were closely packed together in their groups, and were similar in size, shape, depth and type of infill. The groups are distinguished in their one or two 'rich' members; the other pits in the groups having much poorer assemblages. The ceramic assemblage included sherds broken from vessels of substantial proportions, which were selected and positioned in the pit. The vast majority were coarse domestic bowls, but each time they are complemented by a smaller number of finer Mildenhall bowls. These traits in common mirror those expounded by Healy in her review of pit deposits in East Anglia (Healy 1995). Similar, but more extensive, pit clusters are well known in Suffolk at Mildenhall Hurst Fen (Clark 1960) or in Norfolk at Spong Hill (Healy 1988 and 1995: 173).

The pits can be interpreted in two ways that are plausible for the Sutton Hoo context: they are food preparation or storage pits (the broken pottery in them being used as lining), or they are votive deposits. If the latter is the case, then a reason for such activity has to be invoked, as Neolithic Sutton Hoo (like East Anglia generally) had no known monumental focus (Bradley 1993b: 8). The association of one pit cluster with a filled-in tree pit may be fortuitous, but some of the many examples of tree pits at Sutton Hoo were associated with pit deposits of the subsequent Early Bronze Age phase of occupation. Thus a link

Plate 55 The Early Bronze Age ditch system: (a) phases 1–4; (b) spade marks in the base of the ditch; (c) section across the ditch.

between pit deposits and land clearance could be proposed.

It should be noted that nearly a metre of soil loss is likely to have given a very partial account of Neolithic settlement. The net effect of this process of attrition may be that the domestic or settlement element of such occupation is under-represented, while the more visible element – pieces of pots in deep pits, often implicitly interpreted as votive deposits (Healy 1995: 174; Thomas 1991: 61) – is over-emphasized.

Dating for the Middle–Late Neolithic occupation at Sutton Hoo relies on comparison with other assemblages in East Anglia, which are fortunately plentiful. The pottery tradition reflected in the Sutton Hoo assemblage shows cultural affinities with Mildenhall and Grimston sites – such as Mildenhall Hurst Fen (Clark 1960), Spong Hill (Healy 1988), and Broome Heath and Eaton Heath (Wainwright and Longworth 1972, 1973; Herne 1988: 15) – while the sparse presence of Peterborough ware and grooved ware hints at somewhat later associations, also known at Spong Hill, Beeston with Bittering, and Hunstanton (all in Norfolk and summarized in Healy 1995: 175).

The Early Bronze Age

The Early Bronze Age emerges as the period of most intensive detectable activity at Prehistoric Sutton Hoo. To a degree, this is due to the greater visibility of certain artefact types, such as Beaker fine pottery, where even tiny sherds betray their typological allegiance. But an intensification of occupation is also clear: the number of identifiable features increases, the distance between settlement zones decreases to 50 m, and the landscape is divided with large linear boundaries.

Four main groups of features are assigned to the Early Bronze Age: the linear boundary system, and three concentrations of material relating to settlement – a roundhouse and pit cluster under Mound 2, a pit cluster under Mound 5, and two pit clusters and three possible house sites under and beside Mound 1. These are referred to here as the Mound 2, Mound 5 and Mound 1 settlement zones. The locations of these zones are mainly owed to the protection, in the event only slight, given to shallow features by the mounds. The linear boundaries and the settlement zones are here considered and assessed in order, and followed by an overview of the Early Bronze Age occupation as a whole.

Linear boundaries (Figure 160)

The linear boundary attributed to the Early Bronze Age has three components: a deep ditch running WNW–ESE across the centre of the excavated area (S23); a double palisade or ditch which meets it to the east at an angle of 60° (S24); and another double palisade or ditch (S25), still further east (Plate 53 and Plate 55). It is possible that other linear features seen in the excavation (e.g. F198 of Int. 48) or air photographs (*Bull.* 6: fig. 8), summarized in Chapter 3, Figure 18, belong to this Early Bronze Age system. However, most excavated candidates have turned out to belong to the Iron Age boundary system, which is almost on the same alignment.

Full documentation of the 1983 campaign is contained in FR 4/5.2, 6/5.2, 7/5.2, 8i/5.2 and 8ii/5.1. Here studies are presented of

1 the stretch of boundary ditch S23 in Int. 41 (plan: Figure 171; section: Figure 172; interpretation Figure 173)
2 the double-ditch boundary S24 (plan: Figure 175; section Figure 176)
3 the double-ditch boundary S25 (Figure 177)

Figure 176 shows three sections across the S23/24 system, and Figure 175 gives the sequence of the system in plan.

Ditch S23

Ditch S23 was found by Longworth and Kinnes (their ditch 1), and was excavated in their area A in 1966 and 1968–70 (Longworth and Kinnes 1980: figs 2 and 8), when it was traced by them to under Mound 5 (ibid.: area C, figs 14 and 18) and further east (ibid.: area B, fig. 11). During the 1983 campaign it was mapped in Int. 48 (where it underlies the burial chamber of Mound 17 and the quarries for Mound 5), excavated over a length of 40 m in Int. 41, and studied over 7 m at its eastern end, where its junction with S24 was carefully dissected (Figure 175). The excavation of Ditch S23 in Ints 41 and 50 endorsed Longworth and Kinnes' studies in every respect, including their prediction of the course of the ditch, their proposal that this was the earliest element of a complex sequence, their documentation of a multiphase series of recuts and their suggestion that this boundary was long-lived, going out of use later in the Bronze Age, at a time when Ardleigh urns were current.

From stratigraphic excavation, and in plan and section, S23 was shown to consist of a sequence of four main phases of ditch, running WNW–ESE for 100 m across the Sutton Hoo promontory. The plan is shown in Figure 171, sections at three points are given in Figure 172, and the overall sequence is in Figure 173 and Table 96. The soil sequence under Mound 2 suggests that about 500 mm of soil had been lost between the Bronze Age and the construction of the mound, giving a Bronze Age ground surface at about 33.60 m AOD in the neighbourhood of Mound 5 (see Chapter 10, p. 377). This figure has been used in the estimates for the overall profile of the ditch in each phase. It is likely, however, that the Old Ground Surface continued to reduce throughout the life of the ditch until it reached the figure of 33.10 m AOD, which refers both to the Iron Age and Early Medieval ground surfaces under Mound 5.

In Phase 1 (Figure 173) the first ditch (F571) was cut. It was long, straight, deep and narrow (about 1.60 m deep, and 2 m or more across). The base does not slope consistently in either direction, so the ditch was probably not intended for drainage. The primary silt was a light colour, and contained a drip of bronze, an acorn and a scraper. The secondary fill was darker, and was seen as deriving from a cultivated soil. Bands of horizontal iron pan (Section C–C', Figure 172) imply that this filling continued for some time. A single Beaker sherd was recovered from this fill (Find 43470 in Figure 174).

In Phase 2 (Figure 173) a new ditch (F561) was cut, which was also deep and narrow (about 1.60 m deep and 1.30 m wide). D-shaped spade marks (F563) were left visible in the bottom of this ditch at 32.00 m AOD (Plate 55). There was no primary silting, and the ditch refilled with a brown soil that resembled the secondary fill of Phase 1, and was interpreted as the result of cultivation. Contained in this fill were two bronze drips, five sherds of Beaker pottery (Finds 43461 and 43419 are illustrated in Figure 174) and a flint knife.

In Phase 3 (Figure 173) a broader and shallower ditch (F117) was established, 1.30 m deep and taking in within its width (2.40 m) the combined widths of the two previous ditches. Bands of washed sand (Context 1216) slipped into the ditch along its southern edge, containing Bronze Age pottery (Finds 42481 and

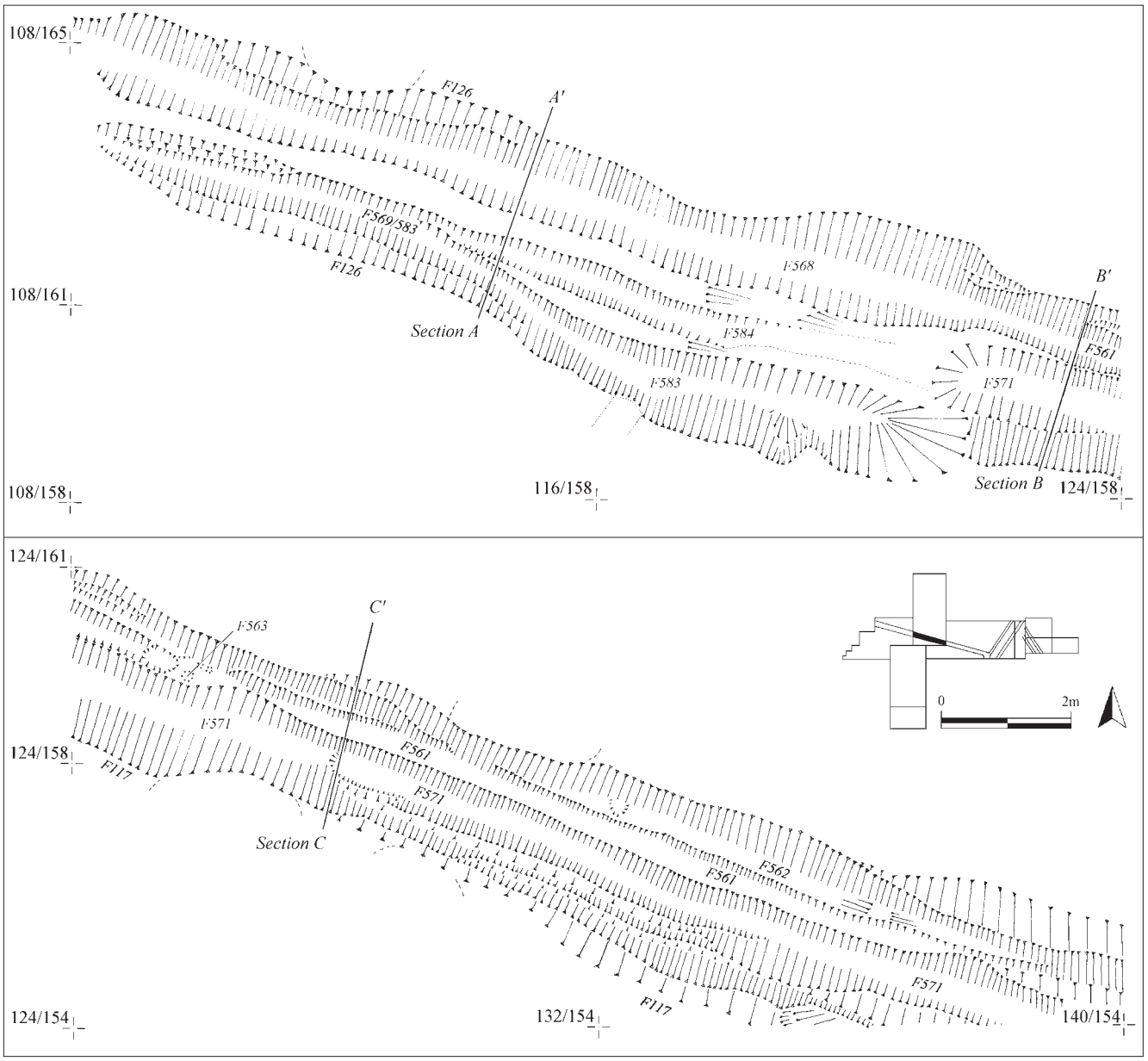


Figure 171 Early Bronze Age ditch sequence, S23, in Int. 41: plan.

42521 in Figure 174). A secondary fill (1217) showed substantial lines of iron pan, and contained a bronze drip, a scraper and twenty-one ceramic fragments.

In Phase 4 (Figure 173) a last attempt was made at reinstating the long-lived boundary by cutting a narrow (and shallow) ditch (*c.*1 m deep, 1 m wide) along the north edge of the filled-in broad ditch, along its eastern stretch (F562). A second similar ditch was cut along the southern edge (F583). The two ditches butt-end in the centre, leaving a gap in between. The backfill of these ditches (Contexts 1222 and 2070) is qualified as 'loose' or 'soft', and lacks traces of iron pan, and may represent the ploughing of a soil well on the way to podzolization (see Chapter 10, p. 379).

Form of the boundary

Measurements of the height of the base of Ditch S23 did not show any consistent slope, and it is therefore unlikely that the ditch carried water (although it may have served to drain it through the porous sand, gravel and subsoil). Marks on the base of the primary ditch were initially seen as possible seating for posts, but later examples more closely resembled spade cuts (FR 4/3.9.3.8.6; Plate 55). The boundary may have taken the form of a simple bank and ditch. All phases of recuts occur within the same 3 m lateral span, suggesting that the position of a bank was fairly stable and long-lived, and that it may have been stabilized with a hedge. A later fence, S31, erected once Ditch S23 was completely back-filled, crossed over the ditch at grid 137/156 (Plate 53:a). Its post-holes were seen cutting the northern part of Ditch S23, but on the south side of the ditch there was a gap. This might imply that the missing post-holes had been lifted clear of the subsoil by a residual bank, which therefore lay on the south side of the boundary ditch.

However, neither remnant banks, nor a rise in the subsoil level that is sometimes associated with the run of former banks (e.g. Barnham, Martin 1993a), nor clear tip-lines from eroded banks were documented. The excavated upcast from the ditch would have included substantial amounts of sandy subsoil and crag. This material may have been spread on the brown soil, to increase its porosity. In this case it would not have been available to form a bank.

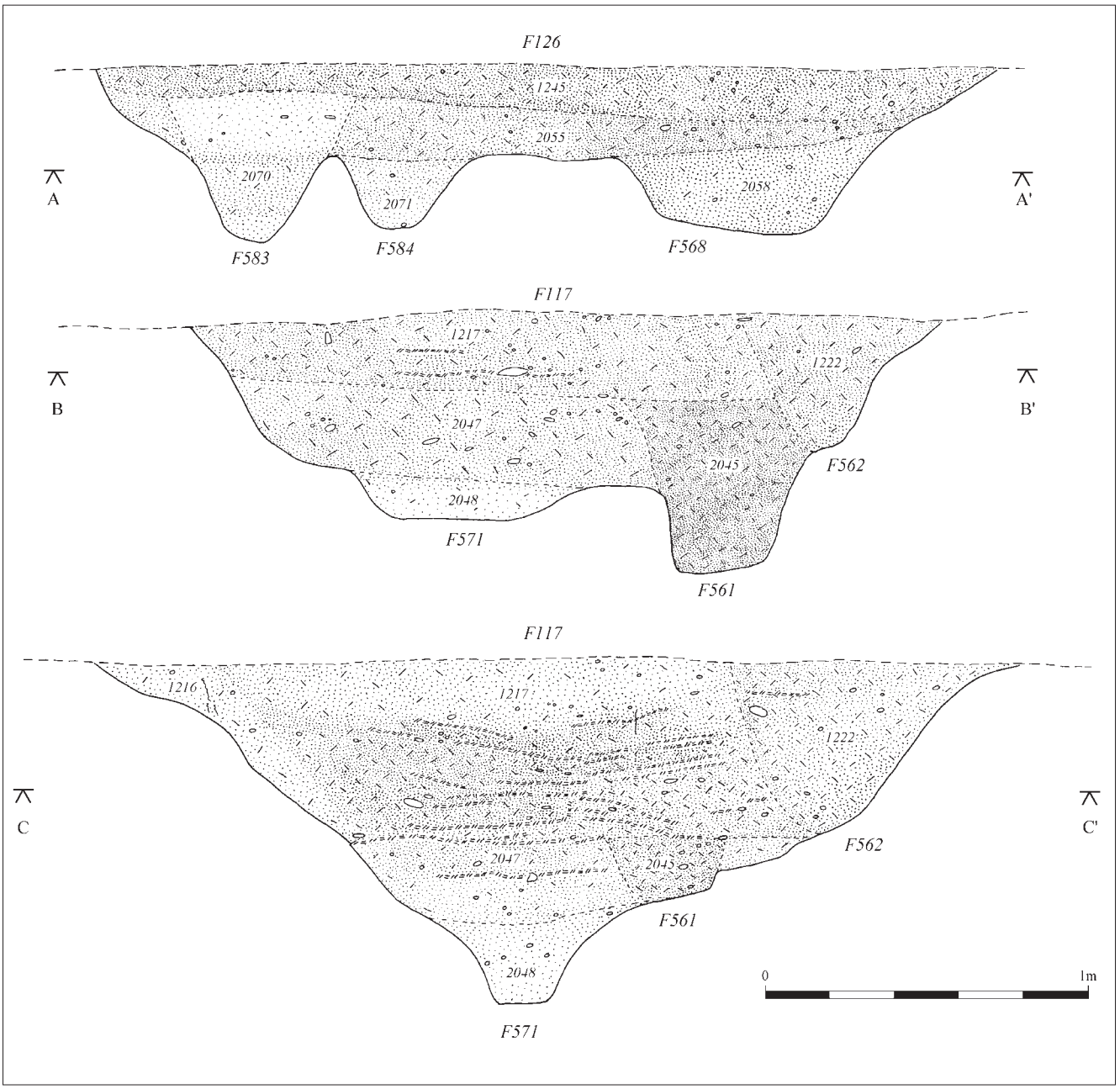


Figure 172 Early Bronze Age ditch sequence, S23, in Int. 41: sections.

The double-ditch boundary S24

Structure S24 consisted of two parallel ditches, F155 and F182, some 4.5 m apart, running north-eastwards across Int. 50 (Figure 160). The central reservation between the trenches was noticeably rich in post-holes (Figure 17). Both were narrow ditches or gullies, the more westerly (F155) being 1.3 m wide and 0.4 m deep at the subsoil level, and featuring stake impressions (F299) along the base at intervals of 0.5–1.2 m. The interpretation of F155/F299 is that it formed a palisade or fence.

The southern arm of S23, F311/345

Ditch F345 was a ditch running up from the south, with a profile similar to S23, of which it may originally have been part. It was later recut as a broad and shallow ditch (F311).

Junction between S23 and 24

At grid 165/145 in Int. 50 the main boundary ditch, S23 (coming from the west), met two other ditches, F155 (the western part of S24) coming from the east, and F311/345 coming from the south. The junction was the subject of a detailed excavation (Level D) in an area 7 × 5 m (FR 7/5.2; Figures 175 and 176). At the level of the subsoil all the ditches abutted each other. A later gully or rut (F143) crossed over the terminals of all three ditches and removed their upper strata. Stratified contexts linked parts of the backfill sequence, and this, combined with similarities in the description of contexts, in the assemblages and in the shape of the cuts, allowed a partial correlation between the four phases of the main boundary ditch (S23) and the other ditches. The evidence is summarized in Figure 176 and in Table 96.

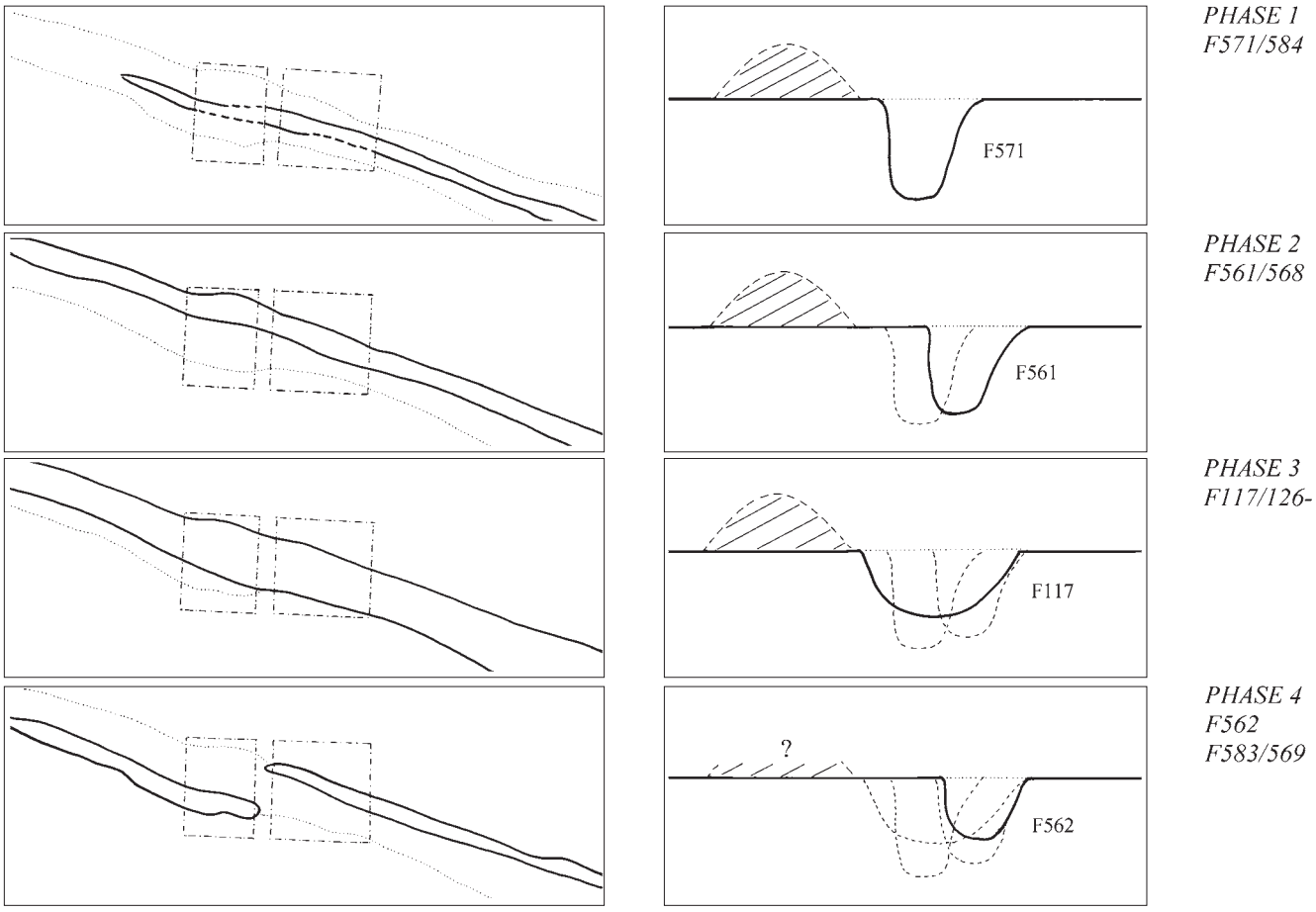


Figure 173 Diagram showing the sequence in the Early Bronze Age ditch, S23, in Int. 41.

At its eastern end, the main boundary ditch (S23) followed a sequence similar to that studied further west in Int. 41 (see above). The ditch begins in the Early Bronze Age (Phase 1) as a deep narrow cut (F62), which was back-filled with a probably cultivated soil (Context 1465). The earliest ditch in the southern arm (F345) had a similar depth, profile and backfill, and was attributed to the same early phase on this basis. Phase 2 was defined by the advent of F155/299, a palisade trench, and the arrival in S23 of a similar palisade trench (F340) with post impressions 0.20–0.25 m apart. In Phase 3 both the western and southern parts of the junction were modified into broad and shallow ditches (Contexts 1094 and 1160 in F62; and F311 replacing F345). A narrow gully, F294, which may also represent a fence-line, replaced F155. In Phase 4, the western and southern arms returned to modest versions of the Phase 1 layout (Context 1084 in S23, and F344 in the southern arm).

For obvious reasons this sequence is not precise: all three arms of the ditch system may have been in operation from the beginning, and the palisade (F155) might actually belong with the broad ditches of Phase 3. The phasing, which the assemblage does little to inform (see below), is based mainly on the change of shape of the ditches and the change in function that that implies. In Phase 1, deep ditches created the boundaries. The boundaries were extended in Phase 2, and armed with fences. In Phase 3 the ditches become broad and shallow, and in Phase 4 the system of deep narrow ditches returned. The significance of this changing system is discussed below.

The double-ditch boundary, S25

The parallel ditches or gullies F5/F133 and F15/F135 (collectively S25) ran north-west to south-east across Int. 32 and into Int. 52, where they had been rubbed out by the modern track (Figure 177). The two ditches were typically 0.6 m wide and 0.3 m deep (from the subsoil). As with S24, the space between the ditches was noticeably rich in post-holes, but was narrower at 2.5 m. Only the most easterly ditch (F15) had evidence for upright timbers. These were identified by the circular discolorations and cavities remaining after the main fill of the trenches had been removed. No post silhouettes were recorded.

It is not clear whether a gap was intended in the corner formed between S24 and S25: it is possible that the two sets had once met but that the evidence had been lost at this point. Ditches F5/133 and F15/135 (known in Int. 52 as F28 and F38) appeared to peter out, only just scoring the surface of the subsoil underneath the modern track surface.

Stratigraphically, the parallel trenches appear early in the Int. 32 sequence: they were cut by an Iron Age ditch, and the ceramic and flint evidence supports an Early Bronze Age date for their inception and use (see below).

Form of the double-ditch boundaries, S24 and S25

The double-ditched boundaries S24 and S25 both contained evidence for timber uprights in one of their ditches (the more easterly). There was some evidence that a bank had occupied the space between the two ditches of S25 in Int. 32. Excavators

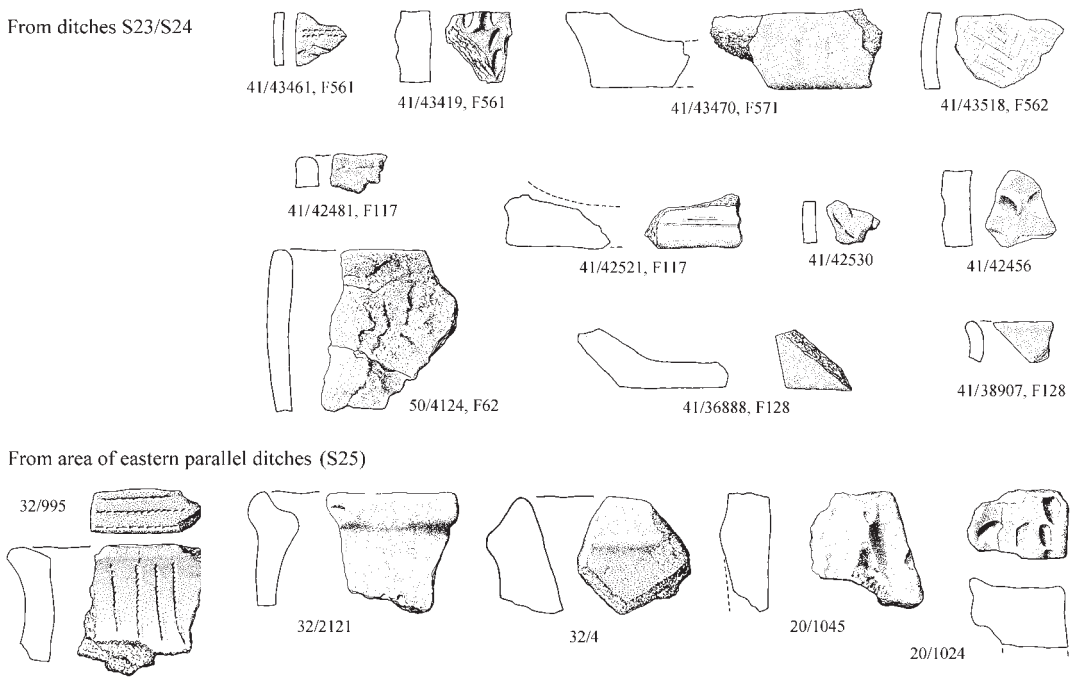


Figure 174 Ceramic from the Early Bronze Age ditches, S23–S25. Sherds 42530, 42456, 36888 (F128) and 38907 (F128) are from later features over the ditch. Scale 1:2.5.

Table 96
Evidence for the junction between structures S23 and S24

Phase	S23 (west)	S23 (east)	Ditch F345, southern run of S23	F155, west part of boundary S24
1 Deep narrow ditches	F571 width *c.*2 m depth 1.6 m base at 32.00 m AOD primary fill Context 2048 (10YR 5/6) refilled with Context 2047 (7.5 YR 5/4; ploughsoil)	F62 width *c.*1.20 m depth 0.76 m base at 32.00 m AOD back-filled with Context 1465 (7.5 YR 5/6)	F345 width 1.20–1.70 m depth 0.55 m base at 32.30 m AOD back-filled with Context 1490 (7.5 YR 4/4, 5/4) and Context1489 (10 YR 5/6)	
2 Palisades or fences	F561 width 1.3 m depth 1.6 m spade-cuts in the base (F563) refilled with Context 2045 (7.5 YR 5/4; ploughsoil)	F62 width 0.9 m depth 0.55 m base at 32.20 m back-filled with Context 1469 (7.5 YR 5/8) and Context 1463 (7.5 YR 5/6) F340: postholes in base of F62		F155 width *c.*1.30 m depth 0.45 m base at 32.30 m back-filled with Context 1406 (7.5 YR 5/8) and Context 1375 (7.5 YR 5/6) F299: postholes in base of F155
3 Broad shallow ditches	F117 width 2.4 m depth 1.3 m refilled with sand Context 1216 and panning Context 1217	F62 width *c.*2.70 m depth 0.4 m base at 32.30 m AOD back-filled with Contexts 1094 and 1160 (7.5 YR 4/4)	F311 width *c.*1.70 m depth 0.35 m base at 32.40 m AOD back-filled with Context 1484 (10YR 5/8) and Context 1420 (7.5 YR 5/6)	F294 gully on east side of F155 back-filled with Context 1374 (5YR 4/6)
4 Deep narrow ditches	F562 width 1 m depth 1 m refilled with Contexts 1222 and 2070	back-filled with Context 1084	F344 width 0.5 m depth 0.3 m base at 32.45 m AOD back-filled with Context 1421	

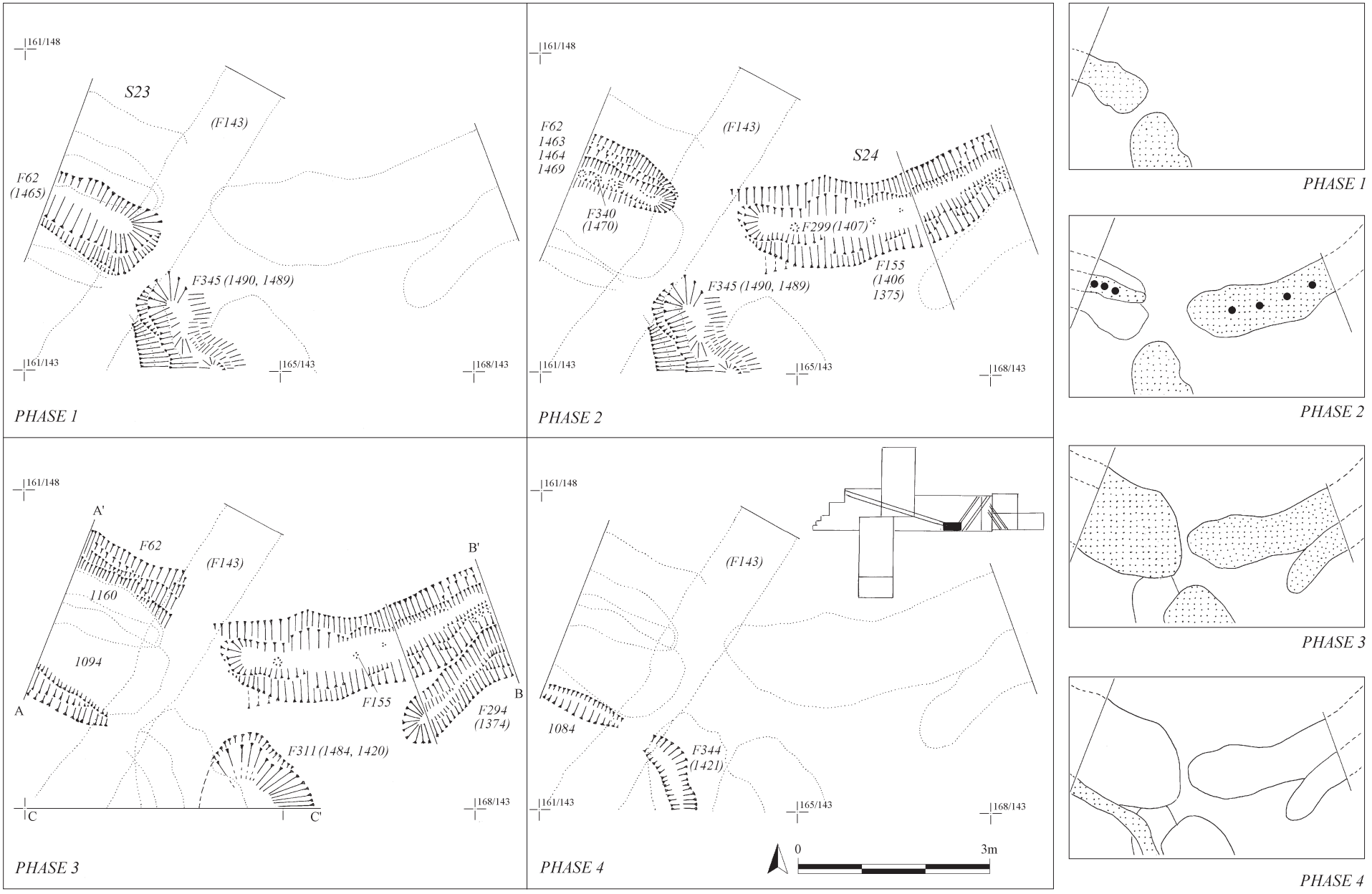


Figure 175 Early Bronze Age ditch intersection in Int. 50: plan and sequence diagram. Three ditches met at this point, each with its own sequence. The western arm of the junction was formed by S23 (F62, 340); the eastern arm by S24 (F299/155) and the southern arm by F311/345. Figure 176 shows the recorded relationships between these ditches in section.

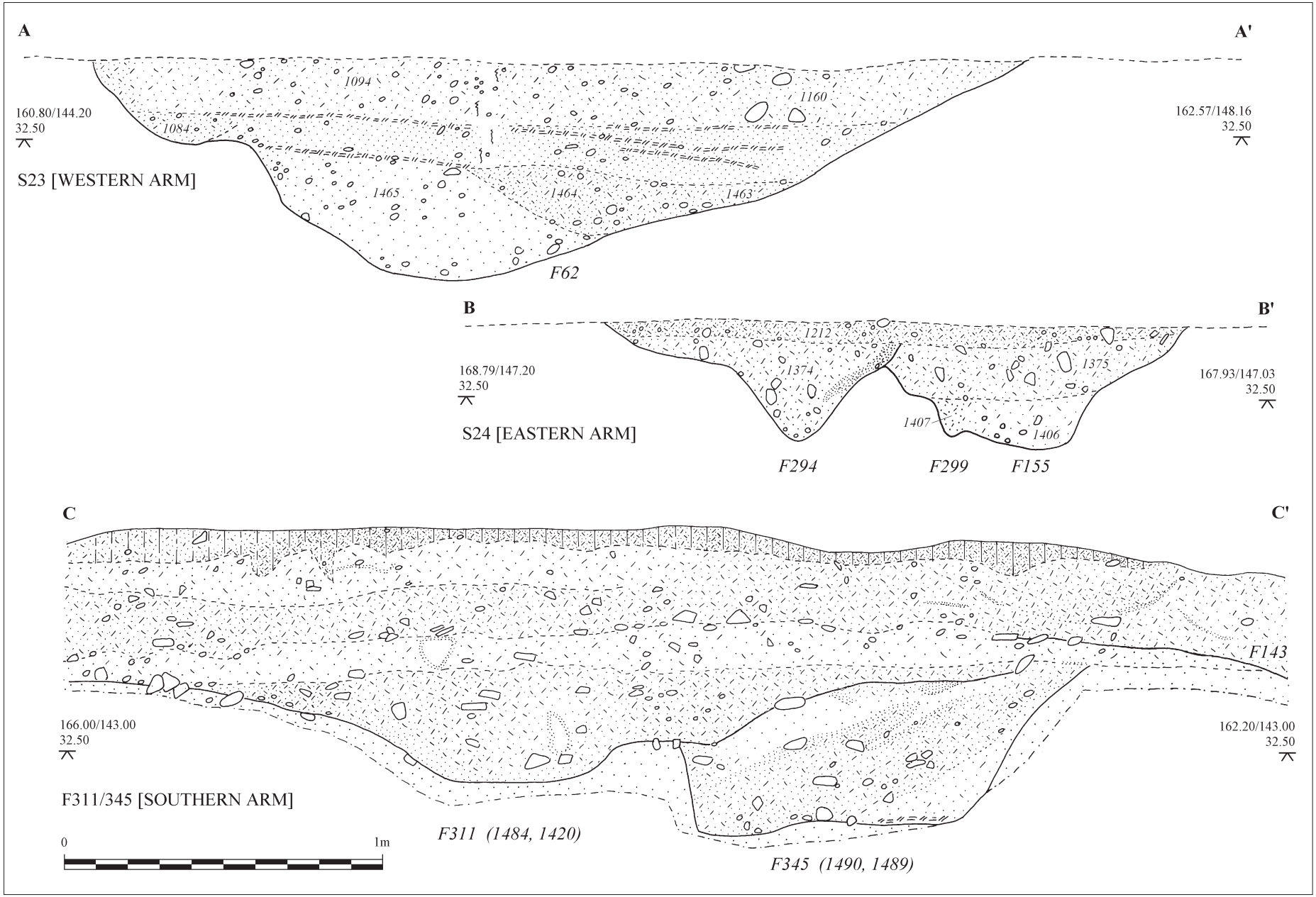


Figure 176 Early Bronze Age ditch intersection in Int. 50: sections across S23 (A), S24 (B) and F311/345 (C).

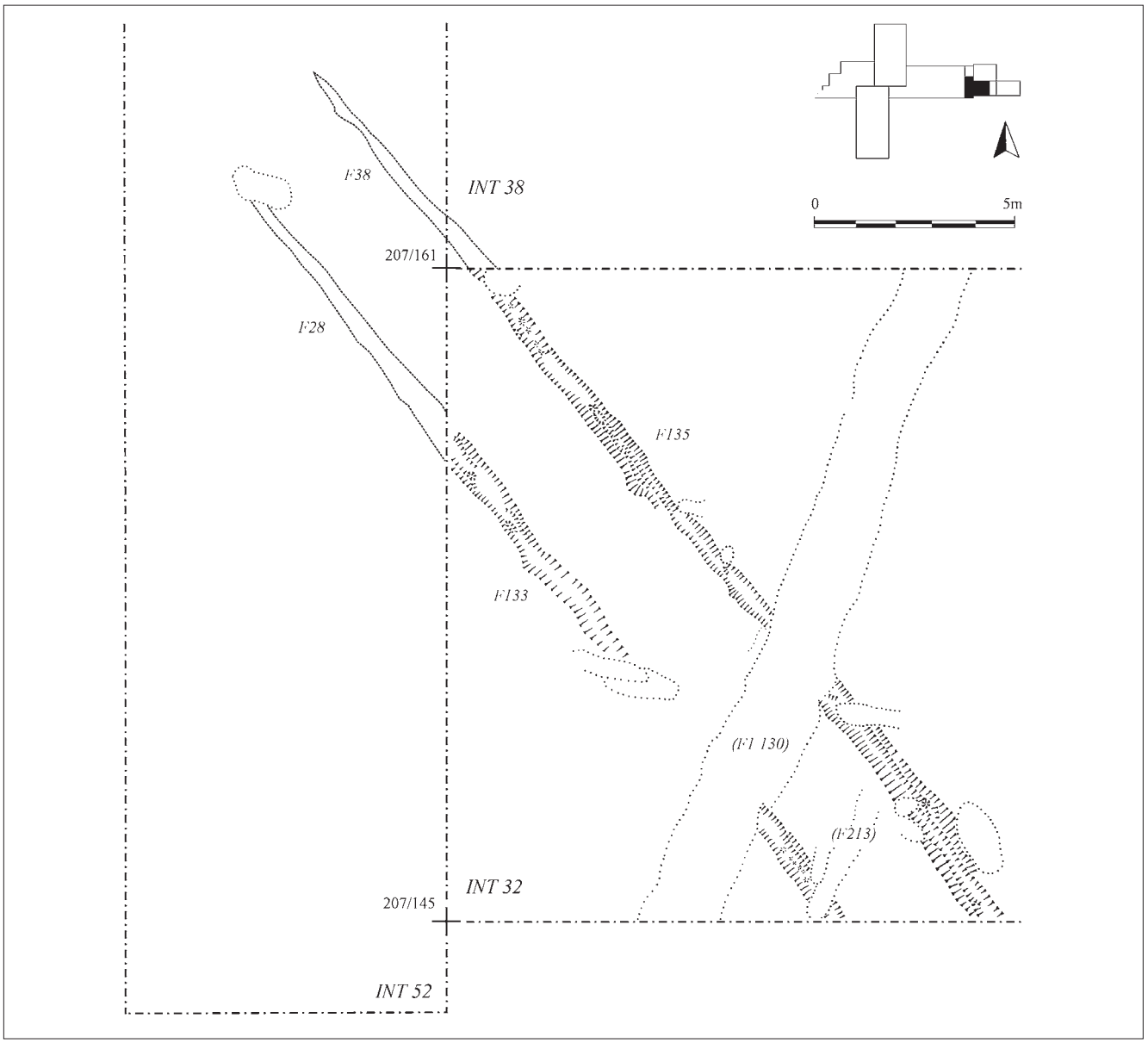


Figure 177 Bronze Age double ditch in Int. 32: S25, plan.

had noted the presence of a 'stone-enriched' strip between the trenches, on a subsoil that was generally poor in gravel and pebbles. Levels taken along the inside edges of the trenches showed that the subsoil in the central reservation had survived at a slightly higher level, on average by 50–100 mm. Such subsoil survival could be compatible with a ploughed-out bank. A far greater density of post-holes was documented in the central strip between trenches than elsewhere on the subsoil surface; their greater survival rate might indicate that a bank protected them. If the intermittent post settings can be taken as sightings of a more general system, a bank with a double revetment would be a possible form for the double-ditched boundaries.

Such a structure could have rotted *in situ*; but the evidence of the fills is not supportive. Post silhouettes were absent and there were consistently two fills, the lower context consisting of re-deposited sandy subsoil (typical Munsell value of 7.5YR 5/8) that barely covered the depressions in the base of the trenches. The upper backfill was darker (typical Munsell value of 10YR 3/4–4/4), and contained nearly all the occupation debris recovered from the trenches. It seems, therefore, that the original posts or stakes, where they existed, were removed before the parallel trenches were back-filled.

This might imply that the ditches marked the course of a track or drove-way, accompanied by a fence on one or both sides, as suggested by Pryor (1996) for Early Bronze Age boundaries at Fengate. The Sutton Hoo drove-ways are narrow (2.5–4.5 m wide) compared to the Fengate examples, but the convergence seen at the north-east end of S24 is consistent with the management of stock. If this model is accepted, the enrichment of the reservation between the ditches can be accredited to the embanked track formed by the upcast of the ditches.

Assemblage

The ceramics recovered from S23 and S24 consist of seventy-seven fragments (thirteen fragments of fired clay and sixty-four sherds of pottery). Most are unidentified but three sherds from Phases 1 and 2 exhibit both fine and rusticated Beaker characteristics (Table 97). In Phases 3 and 4 the assemblages are richer, with fifty-three sherds of pottery and thirteen fragments

Table 97
Assemblage from the Early Bronze Age ditch system

Phase	Identified pottery (Fig. 173)	Flint (Figs 182 and 194)	Bronze droplets	Flotation
1	43470/F571/2048 Beaker	43529/F571 scraper	43173/F571/2048 5610/F62/1465 pin	43488/F571 acorn 43524/ F571/2048
2	43461/F561/2045 43419/F561/2045 Beaker	43467/F561 plano-convex knife	43453/F561/2045 43459/F561/2045	43469/F561/2045
3	42481/F117 42521/F117 4124/F62 4544/F62 (not illus.) Bronze Age 1 lump of fired clay (F62)	41923/F117 side-scraper 42518/F117 plano-convex knife 5583/F311thumb-nail scraper 4440/F62 retouched flake 4543/F62 large point 4476/F62 scraper (not illus.)	42468/F117/1217	43523 /F117/1217
4	43518/F562	41948/F562 retouched flake 16979/F562 barbed and tanged arrowhead	41947/F562/1222	43438/F562/1222 43525/F583/2070

of fired clay, but only fifteen sherds came from the primary fill of S23 Phase 3 (F117/1216). Some of these show Bronze Age characteristics (Table 97; Figure 174). All the remainder stem from the secondary backfills of F117 or from the Phase 4 ditch (F562/F569). The tops of these ditches were ploughed, and this ploughing is held to be responsible for the hotchpotch of small, abraded sherds, which included Iron Age examples, recovered in the top of S23.

Twelve flint implements were recovered in the whole excavated ditch complex. Three are illustrated in Figure 168. This assemblage, compatible with an Early Bronze Age date, consisted of five scrapers (including side-scrapers and thumbnail-scrapers), three knives (including planoconvex knives), two retouched flakes, a large point and a barbed-and-tanged arrowhead.

Five copper-alloy droplets or drips (perhaps residue from casting?), as well as a fragment of a copper-alloy pin, were recovered in the backfills of the various ditch cuts and recuts to the east of Mound 5. These were present from the first cutting of the system: one droplet was found in the primary fill of F571, and the bronze pin-fragment also stems from Phase 1 of Ditch F62. The remaining four drips are distributed in contexts assigned to Phases 2–4 (Table 97). Though found in different contexts, all the drips stem from the same stretch of the ditch complex at the east end of Int. 41. The most plausible explanation for the presence of bronze waste in these disparate contexts is that the earliest ditches received this residue, and that the later recuts are responsible for the re-deposition of artefacts when cleaning, cutting and back-filling later elements of the ditch complex.

Flotation samples were routinely taken and processed, but they proved disappointingly poor in yield. Five samples only contained modest amounts of granular charcoal, as noted by Alan Hall (Environmental Archaeology Unit, York) in his assessment (see FR 4/5.5). A single acorn was found in the primary fill of the earliest ditch (F571). It may be worth noting that all other acorn finds made at Sutton Hoo stem from Early Bronze Age contexts (late Beaker and Food Vessel pits, see below).

The assemblage from S25 is comparable with that from S23 and S24. The distribution of Early Bronze Age ceramic and flint in Int. 32 was concentrated in an area west of the 220 easting, in close proximity to, or in, S25. Amongst identifiable Early Bronze Age wares, there were fragments of Collared Urn and Food Vessel in grid squares 210/155, 211/157, 208/160, 212/151 and 208/172, and somewhat later sherds thought to belong to Ardleigh urns were found in grid squares 211/156 and 208/172. These sherds are illustrated in Figure 174. The distribution of flint implements thought to be compatible with an Early Bronze Age date – such as barbed-and-tanged, chisel and oblique arrowheads, discoidal scrapers and planoconvex knives – spread beyond S25 over the eastern areas of excavation (in Int. 20/32, Figure 178). These elements would suggest that the main areas of activity were focused upon the parallel trenches, but also that occupation was quite widespread.

Date

In earlier interim reports (*Bull.* 7: 16 and *Bull.* 8: 21), in a period of research when the hunt for early boundaries was intense (e.g. Fengate, Pryor 1980: 177ff.), a date in the late Neolithic/Early Bronze Age had been proposed for these linear ditches. Possible Late Neolithic beginnings, however, can now be discounted, both at Fengate (Pryor 1996 dates the boundaries at the Newark Road and Storeys Bar sub-sites to the Early Bronze Age and later) and at Sutton Hoo. All in all, stratigraphy, the presence of Early Bronze Age pottery (including late Beaker fine and rusticated sherds), flint implements consistent with an Early Bronze Age date and residue from bronze-working – coupled with the absence of any demonstrably earlier or later artefacts in the initial phases of the ditch complex – all combine to point towards the Early Bronze Age as the period of inception and use of Ditch S23, thus confirming the verdict of Longworth and Kinnes (1980: 28).

Interpretation of the boundary system

The sequence, as determined, begins with a very large, deep narrow ditch, apparently enclosing land to the south and back-filled with ploughsoil (Phase 1, S23). The system is then extended eastwards using palisades and, perhaps, drove-ways (Phase 2, S23, S24 and S25). The same system is then adapted using broad shallow ditches (Phase 3). A final phase returns to the scheme seen in Phase 1 on a more modest scale (Phase 4).

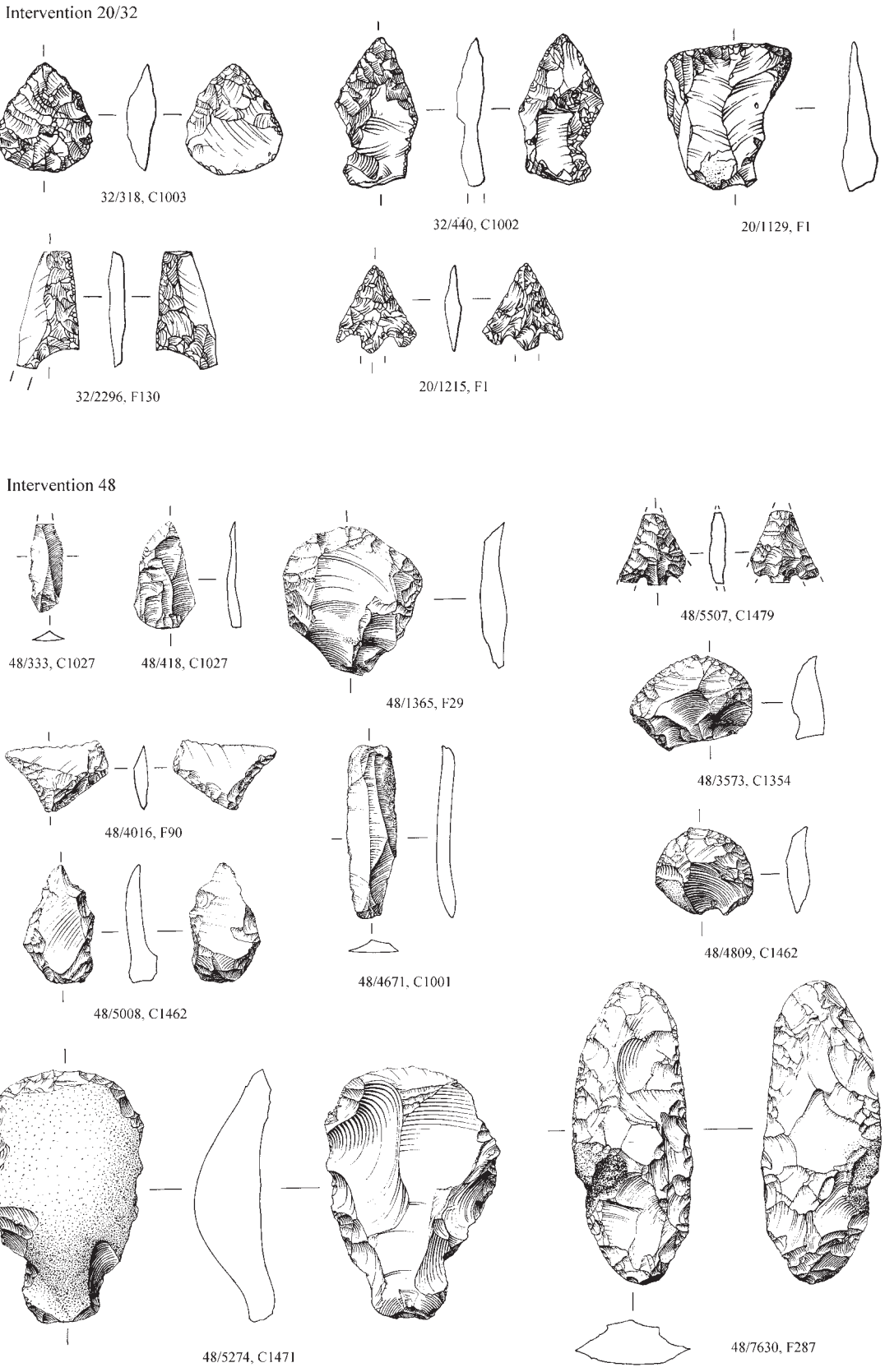


Figure 178 Flint implements from Int. 48 and Int. 20/32. Scale 1:2.

Plate 56 The roundhouse.

It seems likely that different types of boundary indicate different kinds of land management and, in the absence of direct scientific evidence, there is a local analogy that might help to identify which they were. Documentary material collected by Peter Warner (Archive Z6) includes a tenancy agreement, dated 1815, between the tenant farmer of Ferry Farm, Sutton, and his landlord, in which the tenant is required to maintain ditches, hedges and fences for two sorts of fields, arable and pastoral. The arable ditches should be 4 ft wide at the top, 20 in. wide at the base and 3 ft deep, and a length of 60 rods (300 m) should be cleared annually. The pastureland ditches should be 6 ft wide at the top, 4 ft wide at the base, 3 ft deep, and a length of 25 rods (125 m) should be cleared 'as often as is necessary'. The 1815 tenancy agreement also shows the importance of protecting and maintaining banks, as the tenant farmer is required 'not to turn up spoil upon banks nearer 4 feet from the table where the spring is laid to the prejudice of the same or the trees growing thereupon'. The tenant farmer is also encouraged to grow rows of 'whins and furzes' (gorse) to maintain the hedges. The dimensions of the excavated ditches at Sutton Hoo match those of the 1815 agreement, and invite the speculation that the ditches of Phase 1 (and perhaps Phase 4) could have bounded arable land, whereas the ditch of Phase 3 could have formed a pastoral boundary.

The arrival of the double-ditched boundaries S24 and S25 in Phase 2 is less clearly assigned to function. Their form seems to fit best with drove-ways protected by ditches and/or fences, and to relate to the management of stock. Francis Pryor (1996), re-examining the Fengate Early Bronze Age linear boundaries in the light of his experience as a sheep farmer, concludes that the Fengate evidence can be interpreted as a system of drove-ways uniting, rather than dividing, enclosures and stockyards, erected to manage and sort hundreds, if not thousands, of heads of sheep. Interruptions or butt-ends generally occur in field corners, to take advantage of the funnelling effect afforded by a field corner when driving sheep to be sorted. Such a situation may be observed at Sutton Hoo, where the boundary ditch has a gap in its corner at a point where the double-ditch boundary and possible drove-way (S24) meets it.

If S24 and S25 are drove-ways, then they might fit best with S23 in its broad-ditched pastoral phase. Phase 2 would thus become a precursor to the 'pastoral' ditches of Phase 3. There is then a consistent sequence to be read from the boundaries as a whole. The land was divided with a bold linear boundary in the Early Bronze Age, and ploughed. After one or more recuts, arable was abandoned in favour of pasture and the management of stock using fences, drove-ways and, later, broad ditches. After an interval the regime returned once more to arable. This sequence prefigures the alternating agricultural strategies that were to follow for many centuries.

The Mound 2 settlement zone: the roundhouse, S26 (FR 4/5.3)
Located in the north-eastern side of Int. 41, where Mound 2 was later to stand, was a roundhouse (S26), uncovered in plan (Plates 56 and 57; Figures 179 and 180). Nine post-holes (F221–2, F260, F263–5 F267, F358 and F360) surrounded a hearth (F220). A pit (F268) and three other post-holes – F259, F266 and F374 (cutting F263) – and a possible cremation (F270,

Plate 57 The Mound 2 platform: the excavator is working on the Beaker period pit-complex, S27, foreground, crossed by the Bronze Age fence S31; house S26, right; the Mound 2 burial pit covered by canvas cuts the (unexcavated) Iron Age ditch F216.

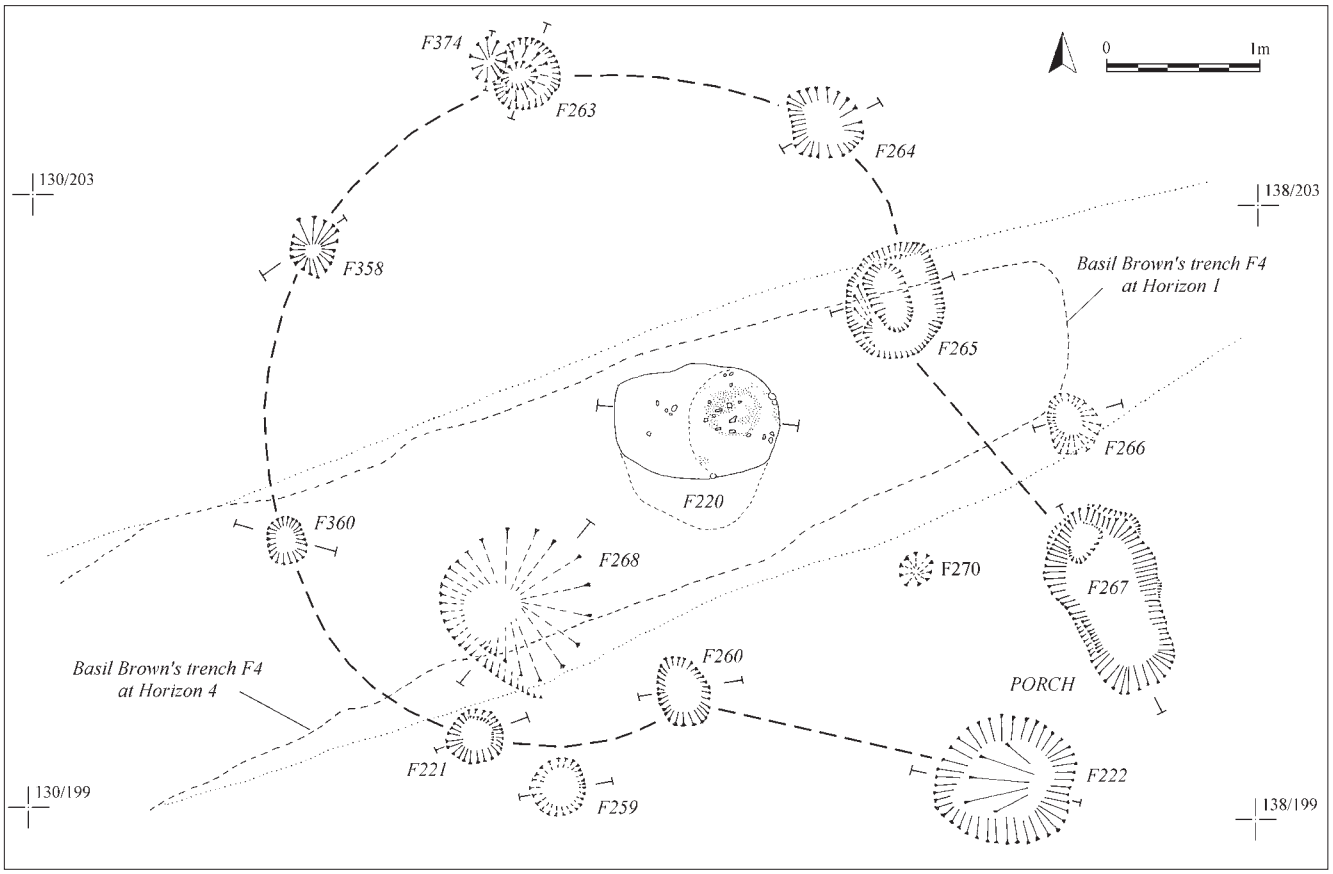


Figure 179 Roundhouse S26 under Mound 2: plan.

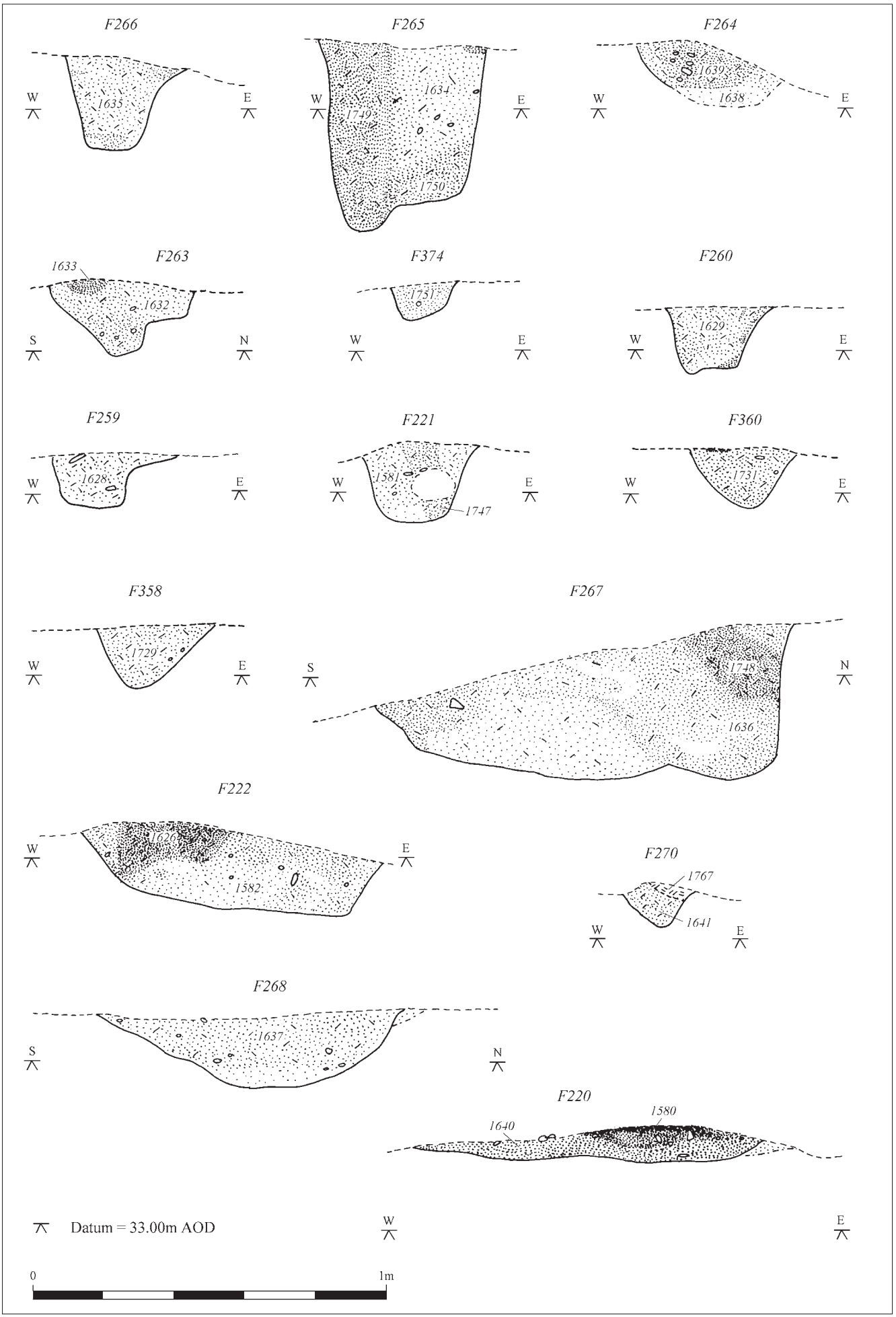


Figure 180 Roundhouse S26 under Mound 2: post-hole, hearth and pit sections.

later discounted) were also located within the area of S26, and may be seen on the plan, Figure 179.

Description of the Investigation

The features were defined beneath Mound 2 in an area that had been subject to much disturbance, particularly by rabbit burrows. The quarry ditch surrounding Mound 2 had clipped some of the easternmost post-holes (F222, F267 and F264). Basil Brown's 1938 trench (here F4), running north-east to south-west towards the centre of Mound 2, had already touched some of the components of the roundhouse (pit F268, hearth F220 and pits F155 and F270 – see Figure 179). Among Brown's finds was a blue faience bead (see below). The majority of features had been truncated by late (Prehistoric) ploughing and were defined at Horizon 7 (on the subsoil), that is after the removal of buried soil, at a height of 33.10–33.15 m AOD. Post-holes F263, F264 and F265 had, however, survived a little higher to 33.30 m AOD. The central, truncated sunken hearth scoop F220 was encountered at 33.30 m AOD, and must originally have been cut from higher, as it had already been lowered by Basil Brown (BBD, 7 and 11 July, 1938). Features in the 1983 campaign were excavated at Level D with sieving and plotting of all material (see Chapter 3, p. 53).

Structural Posts

On the basis of the plan, an arc of five post-holes was assigned to a roundhouse and a group of four on the south-east side to its porch. The post pits fall into two broad categories: the smaller ones around the perimeter are around 0.40 m in diameter and are cut to a depth of 0.20 m from the subsoil, while three of the larger ones assigned to the porch (F222, F267 and F265) are 0.70 m or more in diameter and reach a depth of 0.5 m. The post pits would all have been cut from higher up, at least from the top of the buried soil (400 mm higher, at Horizon 4) and probably higher than that. The soil loss between the Neolithic and the construction of Mound 2 was calculated as about 750 mm: with podzolization setting in after the Early Bronze Age, and the soil being lost through erosion during the Bronze Age. The scheme proposed in Chapter 10 suggests a notional Early Bronze Age OGS (old ground surface) at 500 mm above Horizon 4, a Bronze Age OGS at 200 mm above, and an Iron Age OGS at 100 mm above (Figure 159). On this model, the structural posts of a building belonging to the Bronze Age might originally have been dug 0.8–1.1 m deep, with those of the porch cutting to a depth of 1.1–1.4 m. The subsequent truncation means that only the very bottom of the features survive, and accounts in part for the variation between the posts.

Post silhouettes were seen in the disturbed F221 and in porch-post F265 (Figure 180), these suggested a minimum post diameter of 100 mm for the post ring, and 200 mm for the porch. Porch post-holes F222 and F267 and ring post-holes F263 and F264 are characterized by dark central fills containing occupation debris. The sections through these post-holes show eastward- and southward-leaning profiles, suggesting that while being pulled out (towards the east and south) the posts had captured samples of domestic refuse. The context descriptions of the fill of these post-holes closely match those of hearth F220.

Hearth F220

The hearth F220 was defined in 1988 as 'sitting' on the surface of the subsoil platform beneath Mound 2. Indeed, it exhibits a rather domed profile (see Figure 180), its centre being first encountered at a height of 33.28 m AOD, i.e. 0.13 m higher than the level of the surrounding subsoil (around 33.15 m AOD). Assuming it was contemporary with the post pits, the hearth as encountered must have begun at an old ground surface at least half a metre higher up (see above). The truncated base was a charcoal-rich black silt-sand (Context 1580) containing hundreds of fragments of heat-shattered, calcined flint. Context 1640, encountered beneath 1580, is a red, burnt sand more likely to be the subsoil reddened by contact with hearth F220 than a fill.

This presupposes that hearth F220 is a shallow pit where burning took place *in situ*. Could this be possible at a depth of up to 1 m below the contemporary ground surface? A scoop can certainly be created by repeated burning and clearing of a hearth on soft sandy subsoil, quite apart from the possible advantages of having a slightly sunken hearth. The excavation team's own bonfire, repeatedly lit and cleaned between 1988 and 1992, itself resulted in a substantial scoop with soft sandy edges. If this were to be excavated to 'natural' subsoil, then it would probably result in a similar profile.

When encountered in 1988, hearth F220 was roughly circular, Context 1580 being between 0.55 m and 0.70 m in diameter, and the sub-oval 'aura' of Context 1640 being roughly 1.05 × 0.75 m in extent. Given that an original depth of 1 m is suggested for the hearth scoop, it is possible that the hearth F220 possessed an original diameter of up to 2 m.

Other features which may belong to the roundhouse

In 1987 a small heap of bones (F155) was encountered at 33.41 m AOD (which would confirm that Basil Brown had clipped *c*.100 mm off the top the buried soil). The heap was reported as 'lying on the buried soil… It is likely to be a disturbed Prehistoric cremation that became incorporated into Mound make-up at an early stage of barrow building' (A. Copp, Feature Card F155). These bones were lifted as a block, sieved and stored as a single find (18661). The bones were identified by Julie Bond, who reported that *none* of the bone was cremated, and that all the identifiable fragments (nine in total) were small fragments of cattle molars, both mandibular and maxillar. She comments (FR 9/8.2.6): 'The presence of …unburnt cattle teeth, without much other cattle bone being present, is not necessarily significant. Where bone preservation is very bad (as this is), teeth, and especially cattle teeth, are amongst the most robust elements and will quite possibly be preserved where nothing else is.'

Also signalled in the records as a possible cremation was F270, which was located 0.20 m to the south of F155. However, neither burnt bones nor charcoal were confirmed in analysis.

Some 1.5 m to the south-west of hearth F220 was F268, a subcircular cut into the subsoil *c*.1–1.1 m in diameter, and some 0.22 m deep from the subsoil surface at 33.13 m AOD. Its sides are gently sloping towards a scooped base. This represents the severely truncated base of a once more substantial pit. It contained eight burnt flints, seven flint flakes and six small pottery body sherds (Finds 33741, 33742, 33748 and 34319–21), all belonging to the same vessel but reduced to small crumbs. Only Sherds 33742 and 33748 (conjoining) are a little bigger (*c*.20 mm across): they are plain, medium-coarse (8–9 mm thick), uniformly fired, brown-black sherds, with fine to medium flint,

sand/quartz and grog temper. They are not distinctive enough to ascribe to a type, but a late Beaker domestic, or Early Bronze Age, fabric is not impossible. Cut F268 may have been a pit contemporary with the roundhouse, and inside it.

F259 (containing one burnt flint) and F266 (containing four flint flakes) had profiles acceptable as truncated post-holes. They were situated either side of the porch, and may have belonged to structural elements that have not been identified.

Assemblage

The post pits showed three types of assemblage:

1 No finds: F221, F358 and F360
2 Finds from post packing: F260 (a flint flake), F265 (two burnt flints, six flint flakes and one sherd), F267 (a burnt flint and two sherds), F263 (a sherd) and F264 (a flint flake). These finds are potentially residual from earlier activities in the buried soil.
3 Re-deposited occupation debris: F222 (three burnt flints, one sherd), F267 (three burnt flints, a flint core, a sherd and a lump of burnt clay), F263 (burnt wood), F264 (burnt wood and a grain of *Hordeum sp.* [barley] – Find 33593, Context 1639). These represent displaced primary material relevant to the occupation of the roundhouse, but unfortunately are unspecific in date or function.

The finds from hearth F220 consisted entirely of fragments of heat-shattered, burnt flint: 124 of these were recorded *in situ* (all those larger than 10 mm across). A further four finds are soil samples: two flotation samples (Finds 33590 and 33498) were submitted for assessment of macro-botanic remains by Alan Hall (FR 9/6.2), These and two other soil samples (Finds 33706 and 33713) proved unsuitable for radiocarbon dating.

Faience bead

On 11 July 1938 Basil Brown found a blue faience bead in 'the fire on the old ground surface', which he encountered while excavating his approach trench into Mound 2 (an outline of his trench is shown on Figure 179). Some study was undertaken to discover whether Brown's feature could have been the hearth F220, and so relate the bead to the roundhouse. Segmented blue faience beads belong to the earlier part of the Early Bronze Age in Central and Eastern Europe, and are also known in Malta, Spain and the Wessex culture (where such beads could have been manufactured locally; see Coles and Harding 1979: 11, 49 and 66).

There are two relevant entries in Brown's diary (Bruce-Mitford 1974: 148 and SHSB I: 111). On 7 July: '…an interesting find was made in a patch of black earth almost certainly due to burning. There were associated with this many small sherds of Bronze Age pottery and I decided to sieve all this layer. In this process, Fuller saw a small blue object among the stones and bits of pottery in the sieve. I examined this and found it to be a Bronze Age faience bead of a turquoise blue colour.' On 11 July, he reports: 'On the old ground surface we found evidence of a fire, but whether it belongs to the Bronze Age or Anglo-Saxon is uncertain.'

The bead must either come from the hearth F220 or from another feature, which was then detectable within the buried soil. Brown does not give any indication that the 'patch of black earth' of 7 July and 'the fire on the old ground surface' of 11 July are the same, but in four days his rate of advance should have taken him beyond the ambit of the roundhouse. The first black patch encountered would certainly have been near the hearth F220, and in default of other features it is reasonable to assume that it originated there. The implication is that the buried soil in the hearth area had been rich in Bronze Age pottery.

Dating

The Early Bronze Age date proposed for the roundhouse depends on a number of factors that, though weak when taken in isolation, support each other. Firstly, no definitely later ceramic or flint artefacts were recovered in the back-filled post-holes of the structure. Secondly, a segmented blue faience bead was found in the area of the roundhouse and probably from its hearth. Thirdly, the roundhouse is located in close proximity to a more securely dated Beaker pit cluster, 5 m to the south-west (see below). Fourthly, the post-holes of a fenced enclosure (S31), which superseded the Early Bronze Age boundary system, are located too close to the roundhouse to be contemporary. The fence also cuts the nearby Beaker pit cluster.

A fifth reason for an early date is that for an effective structure on the sand, the posts would need to be dug from a higher level than that of the buried soil as found. Micromorphology (see Chapter 10, p. 384) implies a soil loss in the order of 500 mm between the Early Bronze Age and the Anglo-Saxon period, which would add 900 mm to the depths of post pits as measured. To support the structure the posts would require founding to a depth of this order.

Discussion

The form of the building proposed is a roundhouse, about 4.5 m in diameter internally, with a porch to the south-east, possibly with ancillary posts either side of the porch. It has a central hearth, and possibly a pit inside the building. A similar building has been excavated by Martin at West Row Fen, Mildenhall, and dated to the Early Bronze Age (Martin and Murphy 1988: 355). It was 5 m in diameter and had a south-east-opening porch. A slightly larger post-built roundhouse, 6 m in diameter with a SSE-opening porch (structure 1), and associated with a Beaker and mainly Collared Urn assemblage, was excavated at Redgate Hill, Hunstanton (Norfolk) on the north-eastern fen edge (Bradley *et al.* 1993: 23 and 71, fig. 25). A possible Beaker roundhouse, some 12 m in diameter, with an eaves-drip gully and a wall slot has been proposed by Pryor at site 11, Fengate, Peterborough (Pryor 1993: 137, fig. 95). A later date – in the Middle Bronze Age – is suggested for a further roundhouse, also 5 m in diameter, excavated in 1991 at Barnham in the Suffolk Breckland (County SMR BNH041; Martin *et al*. 1992: 383, fig.62).

An analysis of the location of the finds, and of the presence or absence of structural details of the fills and profiles of the post pits, suggests that the roundhouse was dismantled: it may have rotted *in situ*, but is more likely to have been pulled down, mostly in an eastward or southward direction. Debris accumulated in four of these pulled post-holes, all on the same side of the structure. These finds-rich post-holes are the result of clearing the ground after dismantling. A ritual explanation, as proposed for a very similar but late Neolithic structure at Knowth (Eogan 1993: 16–18), is not favoured here (FR 4/5.6, but see FR 4/3.11.5.2 for support for this interpretation from the excavator).

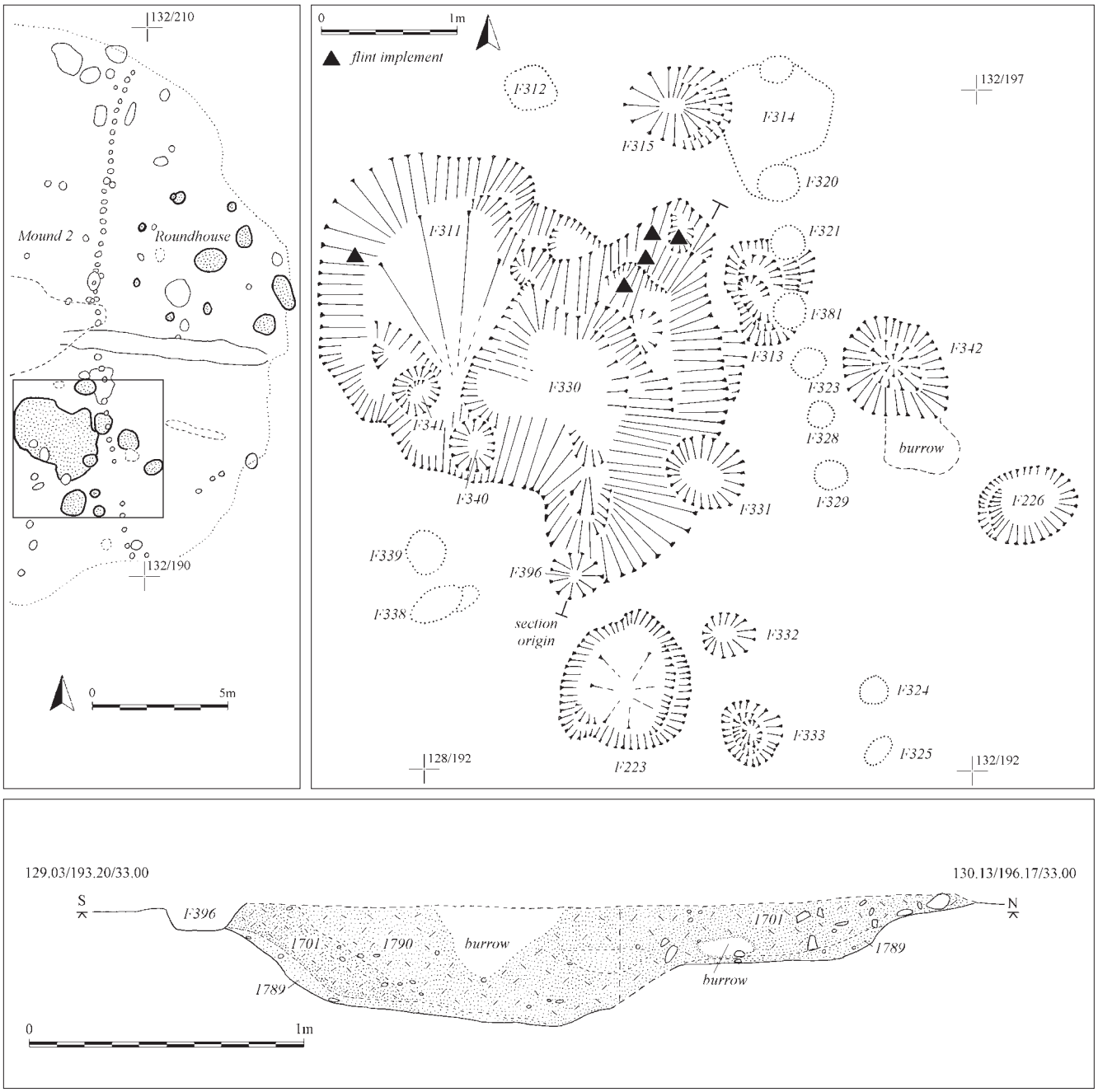


Figure 181 Pit group under Mound 2, S27: plan and sections.

The Mound 2 settlement zone: pit group S27

Located 5 m to the south-west of the roundhouse, and similarly protected by the mantle provided by Mound 2, lies a complex of features rich in charred remains, including hazelnuts and artefacts of the late Beaker period (particularly coarse, rusticated wares, but also fine-wares). There are many features – pits, scoops and post-holes – in the cluster, not all of which are necessarily contemporary. Among these is a concentration of features focused on a tree pit, which consists of:

- F311/330: a large, irregular pit shaped like two kidneys (F311 being the western 'kidney', F330 the eastern one)
- F223: a further pit immediately south of F330
- F315, F313, F342 and F226: four features, in a slight arc, immediately to the north-east of F330
- F331–3: three post-holes in a line roughly north–south. One of these, F331, cuts the central pit F330.

The locations of these features are illustrated in Figure 181, with sections of associated post-holes in Figure 182.

All these features pre-date a later north–south fence-line, S31 (see below). It is worth noting that in this stretch of fence-line, and in this stretch only, three post-holes contain one sherd each of Beaker pottery (in F320, F321 and F328), which were presumably re-deposited when the fence cut through this Beaker-rich cluster.

Pit F311/330

The central pit of the cluster, an irregular hollow oriented WNW–ESE, was *c*.3 m across an NNW–ESE axis, and between 2.8 m and 2.0 m wide. It reached a depth of *c*.0.60 m from the subsoil at *c*.33.03 m and, assuming an Early Bronze Age old ground surface 900 mm above the subsoil (see above), the original pit would have been 1.5 m deep and perhaps 3.5–4.0 m across. There were three groups of fills: a primary silt (Context

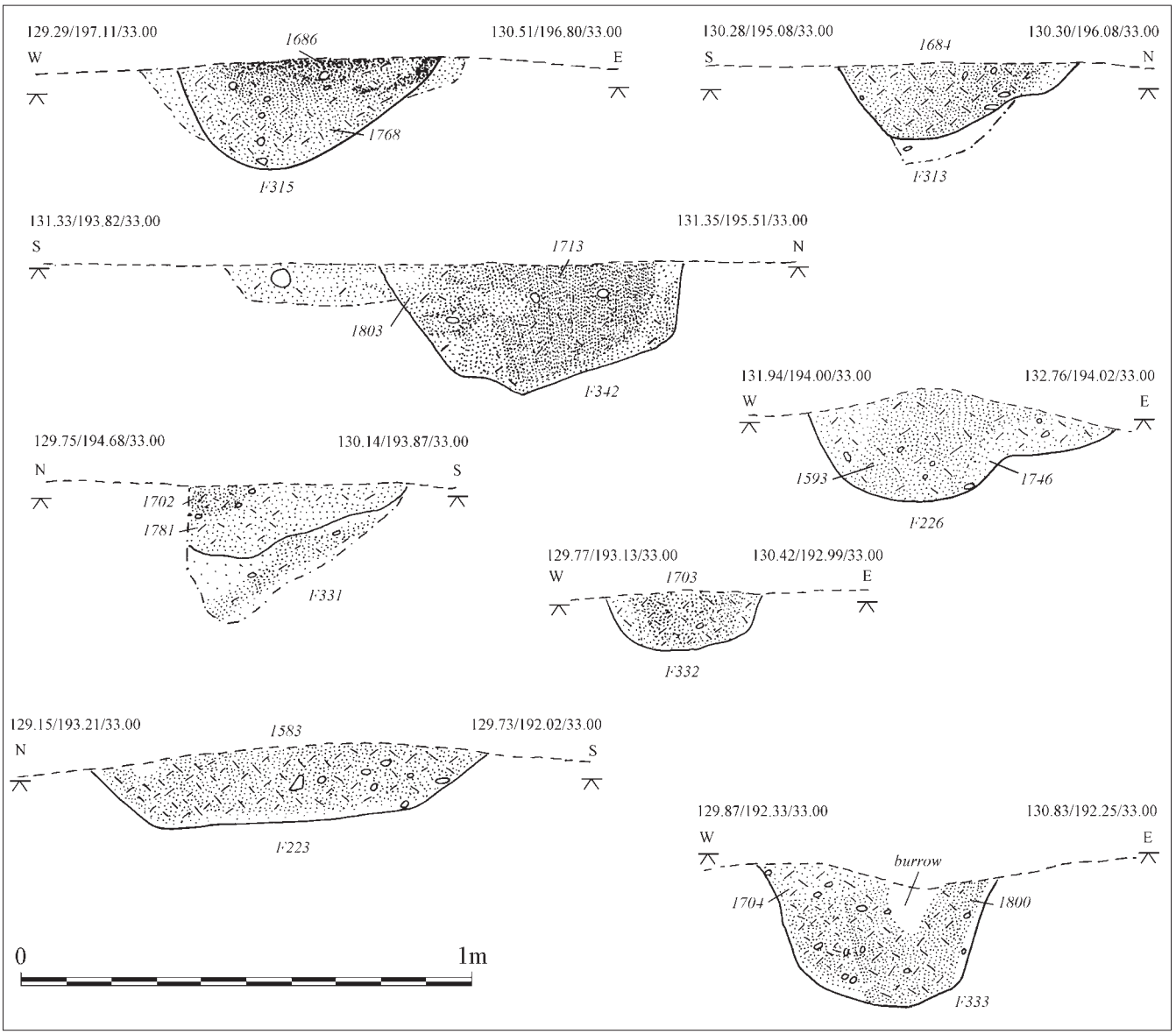


Figure 182 Pit group under Mound 2, S27: sections of associated post-holes.

1789), a brown soil rich in finds (Munsell 5YR 3/4–7.5YR 4/2; e.g. Contexts 1682, 1701, 1783 and 1795), and a clean yellow sand that was probably re-deposited subsoil (Context 1841).

Fifty-three sherds of pottery, seventy-two flints (sixty-eight waste flakes and core fragments, two scrapers and two arrowheads), one hundred and three fragments of burnt flint, charred hazelnuts, charcoal and grain of cereal, a few snails, shells and one tiny unidentifiable crumb of burnt bone were recovered in the pit, mostly from the brown soil contexts.

Interpretation

How did the pit F311/330 originate, and what was its function? The four flint implements recovered in pit F311/330 include two scrapers and two high quality arrowheads (Figure 183:A) that were deposited in a restricted area to the north-east of the pit (plotted on Figure 181). Most of the fifty-three sherds were extremely small and abraded, and they came from a great diversity of different vessels. In a volume of over 4 m^3 of fill, this can hardly be deemed a 'rich' or a structured assemblage.

The assemblage seems to derive from domestic debris, including hearth sweepings with charred hazelnut shells, which would perhaps normally have accumulated in a midden, but there would be no obvious reason for burying it below ground. A possible explanation for deposition in a hollow below ground level may be inferred from the form of the pit and its fill, which resembled that of other features interpreted as tree pits. These features are formed when a tree blows down and the root mantle upends, burying a chunk of the contemporary ground and throwing a crescent of subsoil onto it (for example F178 in Int. 32; see FR 8ii/5.3). Such a formation process was endorsed by observations made after the gales of 1987, when large numbers of trees were uprooted in the vicinity. If it were a tree pit of this kind, the F311 assemblage would represent a piece of unploughed Early Bronze Age occupation strata fortuitously captured by a tree blown down in a high wind.

This explanation does not serve all the pit clusters encountered, and the Mound 2 pits may have originally been

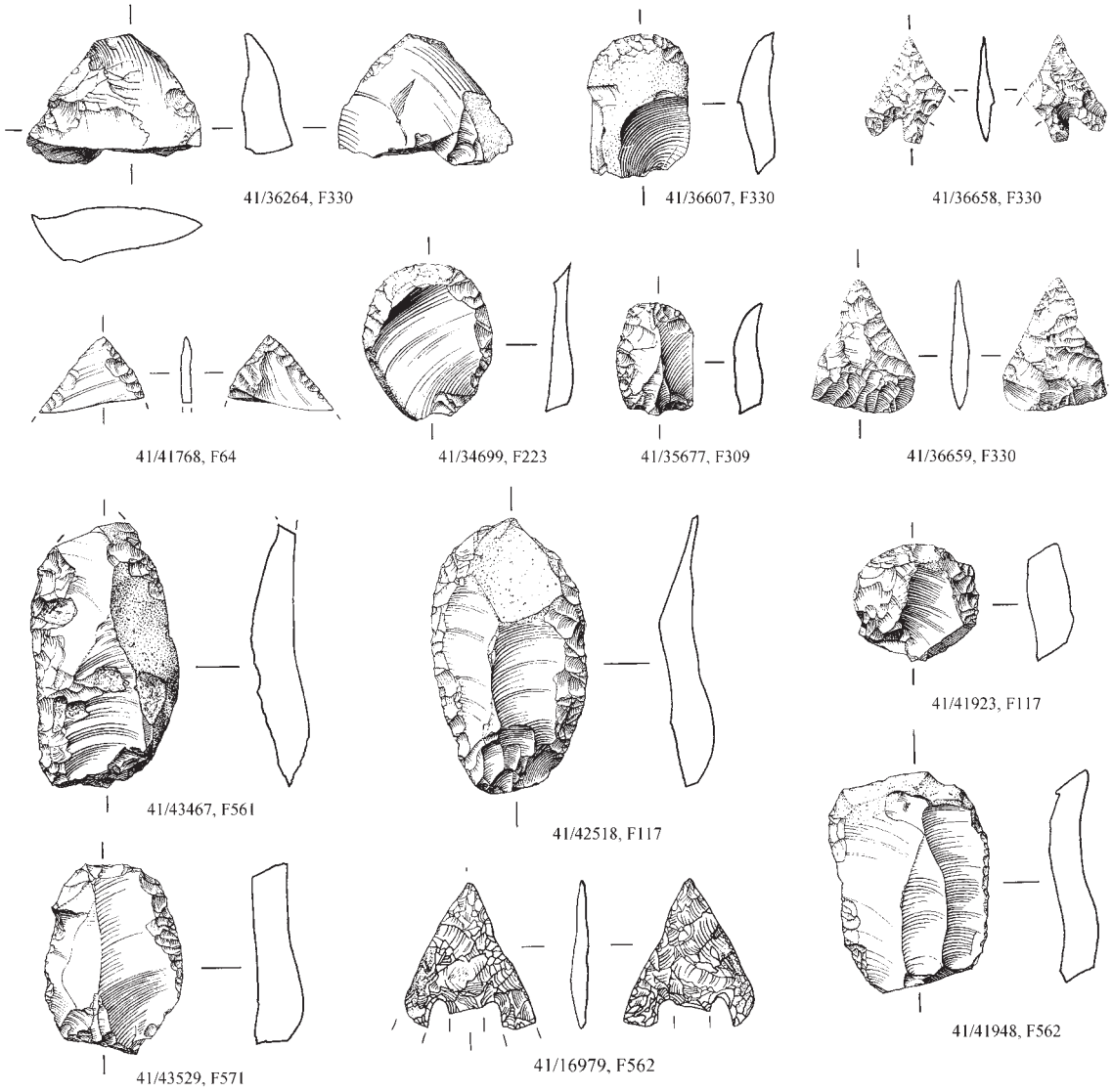


Figure 183 Selected flint implements: (a) from the Early Bronze Age pit group S27; (b) from the Early Bronze Age ditch system S23. Scale 1:2.

intended for storage, as is proposed for those found near Mound 1 (below). Had organic evidence survived better (as at Mildenhall, West Row Fen: Martin and Murphy 1988), then other possible functions, such as flax retting, antler-soaking, water or food storage, or food- or hide-smoking could no doubt have been explored.

Features adjacent to pit F311/330 with Early bronze age assemblages

A number of features were found immediately adjacent to pit F311/330, and show a relationship in their assemblages, spatial organization or stratigraphy (Figure 181 and 182).

Pit F223 measured around 1 m in diameter, and had a flat base which only cut into the top of the subsoil by *c*.0.20 m at 33.08 m AOD. It contained a single, homogeneous black fill, Context 1583 (Munsell colour 5YR 2.5/2), which was characterized by the presence of very large amounts of charred hazelnuts (Sample 37754 and Finds 34421–3 and 35063–4). Ceramic finds were a lump of fired clay, a sherd of Beaker fine-ware, two sherds of Beaker rusticated-ware and one fingernail-impressed sherd (illustrated in Figure 184). The pit also produced thirty-one fragments of burnt flint, and thirty unburnt flints, comprising a scraper (Find 34699 illustrated in Figure 183:A), a core fragment and twenty-eight waste flakes. Although the feature was recorded as a post-hole (Feature Card F223 reported that 'the post was removed, allowing dark brown fill to wash into the hole'), there is nothing specific to endorse this identification.

Feature 226 represents more of a puzzle. It was by far the richest feature in terms of the ceramic finds for its relatively small size: twenty-one sherds of ceramic were recorded, some of them very large (seven are illustrated in Figure 184). They represent the rim, base and body sherds of large Beaker rusticated vessels and fine comb-impressed wares, as well as other fingernail-impressed wares. A single charred hazelnut shell (Find 34379) was retrieved, but nothing more than granular charcoal was found in the two flotation samples. Two burnt flint fragments and two flint flakes were also recovered.

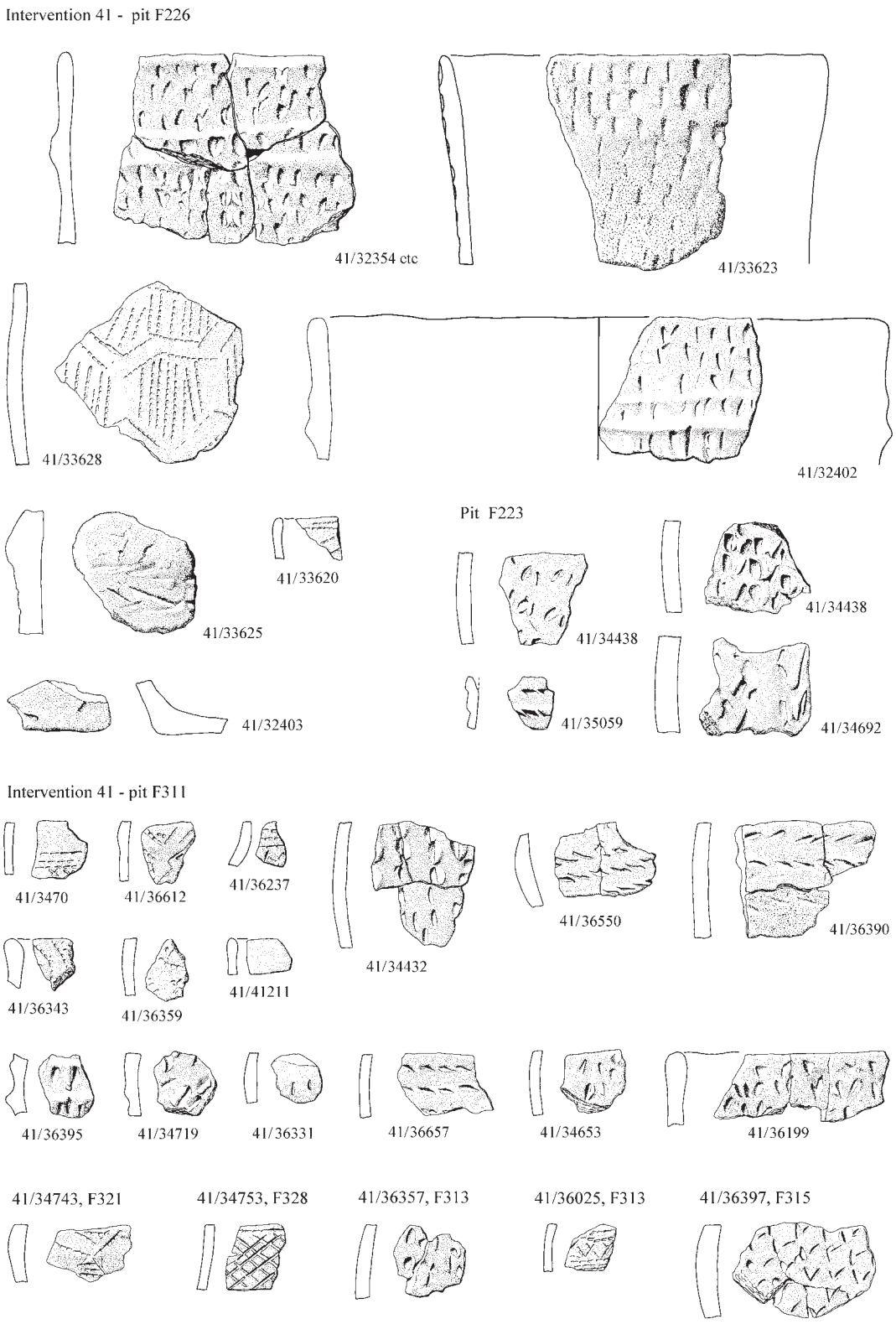


Figure 184 Beaker pottery from pits in the Mound 2 pit group S27. Scale 1:2.5.

The feature was 0.65–0.70 m in diameter, had cut into the natural subsoil to a depth of *c*.0.25 m from 33.08 m AOD, and had a black, homogeneous silty fill in its centre (Context 1593, Munsell colour 5YR 2.5/2). All but one of the pottery sherds came from this central fill. Around (and stratigraphically earlier than) the central fill was a lighter silt-sand (Munsell colour 7.5YR 4/4), which was interpreted as sand washed into the sides of the hole. The dimensions, profile and description of the fills of this feature would allow an interpretation as a post-hole. It seems possible that a post, perhaps some 0.25–0.30 m in diameter, once stood in the post pit, and that after the removal of a post debris accumulated in the hollow. This explanation is similar to that offered for the post-holes of the roundhouse, whose apparent removal was followed by a clearing operation. But, if an element of ritual were suspected for some features, then F226 would be a prime contender because of the quality and quantity of its ceramic assemblage.

With F226, three other pits (F342, F313 and F315) seem to form a shallow arc on the north-east side of F330 (see above). These too may have been post-holes. They are similar in size, profile, type of infilling and composition of assemblage to F226. Each measured around 0.75 m in diameter, and they were between 0.2 m and 0.3 m deep from the surface of the subsoil (at *c*.33.05 m AOD). They were filled with a dark brown silt-sand (Munsell colour 7.5YR 3/2 or 4/2) containing sherds of pottery (eight sherds in total, including Beaker rusticated- and fine-ware in the case of F313), charred hazelnut fragments (in F342 and F313) and fragments of burnt flint, flint flakes and core fragments, as well as one scraper (in F315). Their composition was similar to that of F226, and a similar interpretation, namely that hollows filled up with debris once posts had been removed from post-holes, is not incompatible with the records.

Feature 333, similar to the above features, lies to the south of pit F311/330, and next to pit F223. Although disturbed by rabbit burrows, it was probably around 0.30 m deep from the surface of the subsoil (at 32.98 m AOD), and had a diameter of around 0.50 m, with a central black fill (Context 1800, Munsell colour 5YR 2.5/1). This context contained an abundance of charred hazelnut fragments, flint flakes, core fragments and burnt flint, and a lump of fired clay. An outer brown fill (Context 1704, Munsell colour 5YR 3/4) contained a few fragments of burnt flint. It is again possible to interpret this feature as a post-hole with detritus accumulating in the hollow left by a pulled post.

Features 331 and 332 are the final two features. Although in line with F333, it is possible that they do not belong to the same complex, as F331 cuts pit F311/330. The features appear to be shallower (*c*.0.15 m from the surface of the topsoil at 33.07 m AOD), and their fills were generally lighter in colour, and lacked some elements such as charred hazelnuts. A minute sherd of pottery was found in each feature. A few flint flakes and a few fragments of burnt flint were also produced from F331. It is, therefore, quite likely that F331 and F332 belong to another group of later, shallower, more superficial features, of which F340, F341 and F396 (which all cut the pit F311/330) are further members.

Interpretation of Pit Cluster F330

Located 5 m to the south-west of a roundhouse with which it was probably contemporary, this cluster consists of a very large pit (F311/330), an arc of post-holes to the north-east (F315, F313, F342 and F226) and a smaller pit with post-hole to the south (F223 and F333). It is suggested that all these features received their dark brown to black fills, rich in ceramic and remains of charred hazelnuts, as secondary fills. The components of these secondary fills may be derived from middens located close by, whose contents accumulated in, or were pushed into, once open hollows.

The original function of the small hollows may have been that of post-holes of a structure that had been dismantled – just as the roundhouse had been dismantled. This structure would have stood very close to a large hollow, interpreted as a back-filled tree pit. Or the large hollow may have fulfilled another, now lost, role, which the arc of post-holes to the north-east may have been connected to. For instance, the arc is situated on the leeward side of the hollow and the windward side of the roundhouse, and so could have protected the roundhouse from the prevailing south-westerly wind and from smells emanating from an artisan or domestic activity, such as food-processing, roasting or smoking. The posts are, however, rather substantial to have acted as simple supports for a windbreak.

A more ideological model could be preferred to the above functionalist model, in which case some form of ritual deposition of artefacts and charred materials, including burnt hazelnuts, could be interpreted as having taken place. The focus of such an offertory ritual could have been the tree pit, or even a tree. Post-holes of a nearby structure, or simply further small hollows, would have received further deposits.

The Mound 2 settlement zone thus consisted of one or, perhaps two, structures of the Early Bronze Age, representing a small survival of what may have been a considerable concentration of activity.

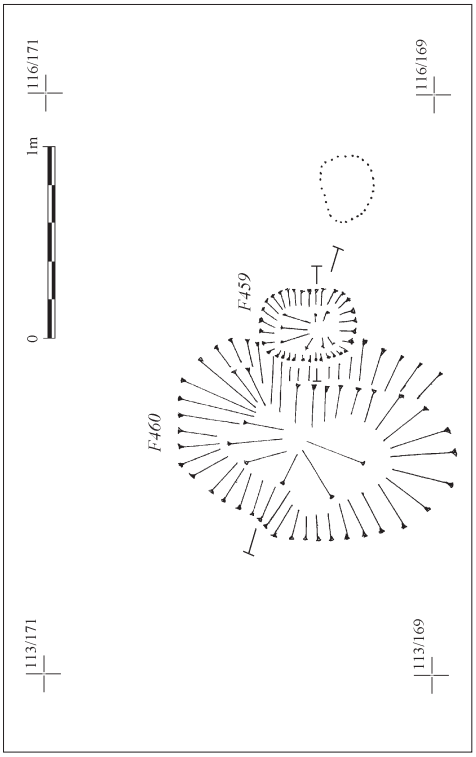
Mound 5 Settlement zone, S30

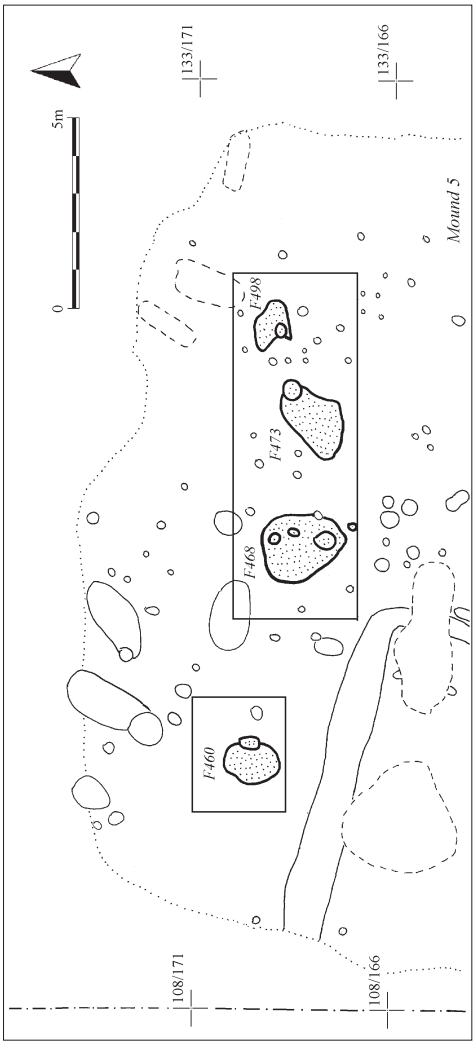
In the south of Int. 41 the protective mantle provided by Mound 5 resulted in the survival of a high concentration of Prehistoric features cut into the subsoil plateau (Figure 185 and Figure 186). Amongst these, a number of large pits cluster in the centre-north of the subsoil platform of Mound 5. They are, from west to east:

- F460 (cut by F459): the assemblage contains Food Vessel
- F468 (with F543–5 cut into it): the assemblage contains Beaker ware
- F473 (with F552 cut into it): the assemblage contains Beaker ware
- F498 (with F550 cut into it): assemblage contains Food Vessel

Pit F460 was a large, more or less oval, depression that was 1.50 m long, from north to south, and 1.10 m wide, and cut into the subsoil by 0.16 m from a height of 32.88 m AOD. Assuming that the Early Bronze Age ground surface was located 900 mm higher, the hollow could have once been up to 1.10 m deep.

The scoop contained a single, reddish-brown (Munsell colour 5YR 4/4) silty fill (Context 1876), and within this fill, in the centre-north, were the scattered remains of a single, but far from complete, Food Vessel urn. Ninety sherds were recovered, the greater part from the base and plain lower part of the body, but parts of the upper, decorated, portion of the vessel (including some of the shoulder and rim) were also present (Figure 187:a). Except for one intrusive, small, perhaps Iron Age,





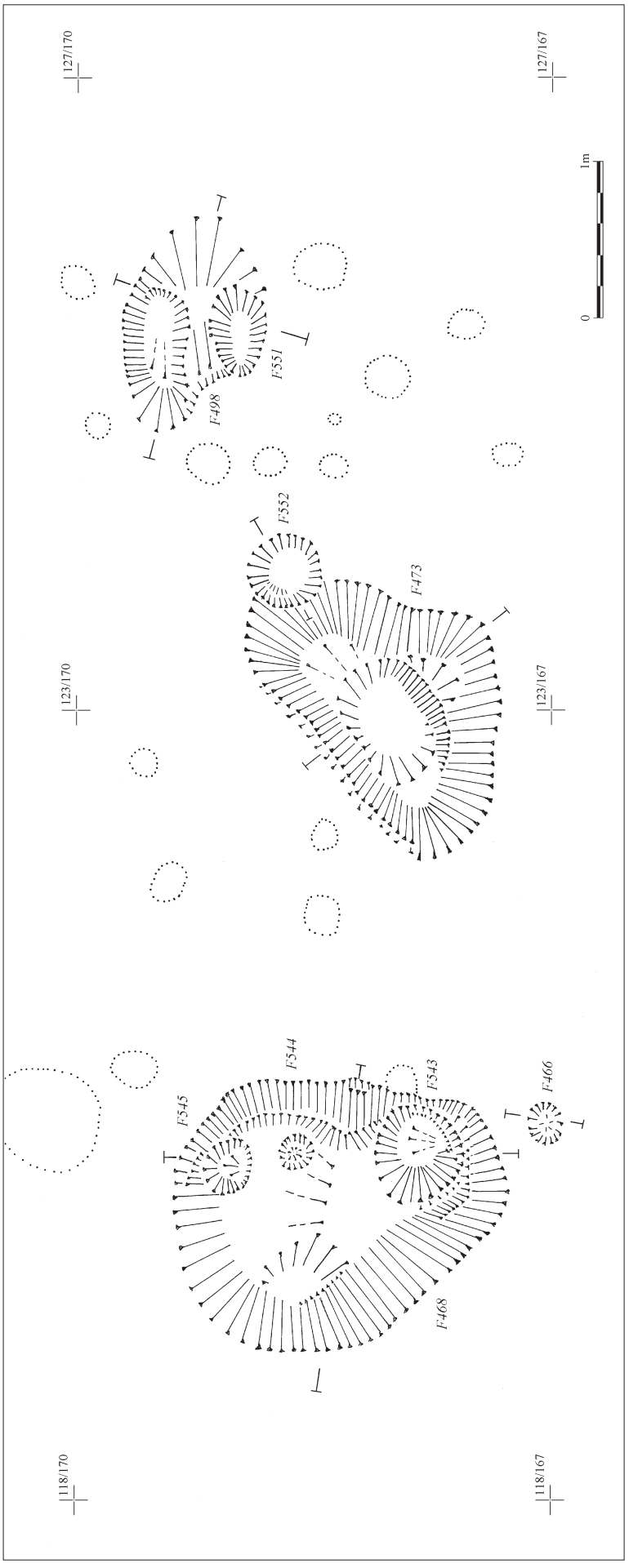


Figure 185 Pit group S30 under Mound 5: plan.

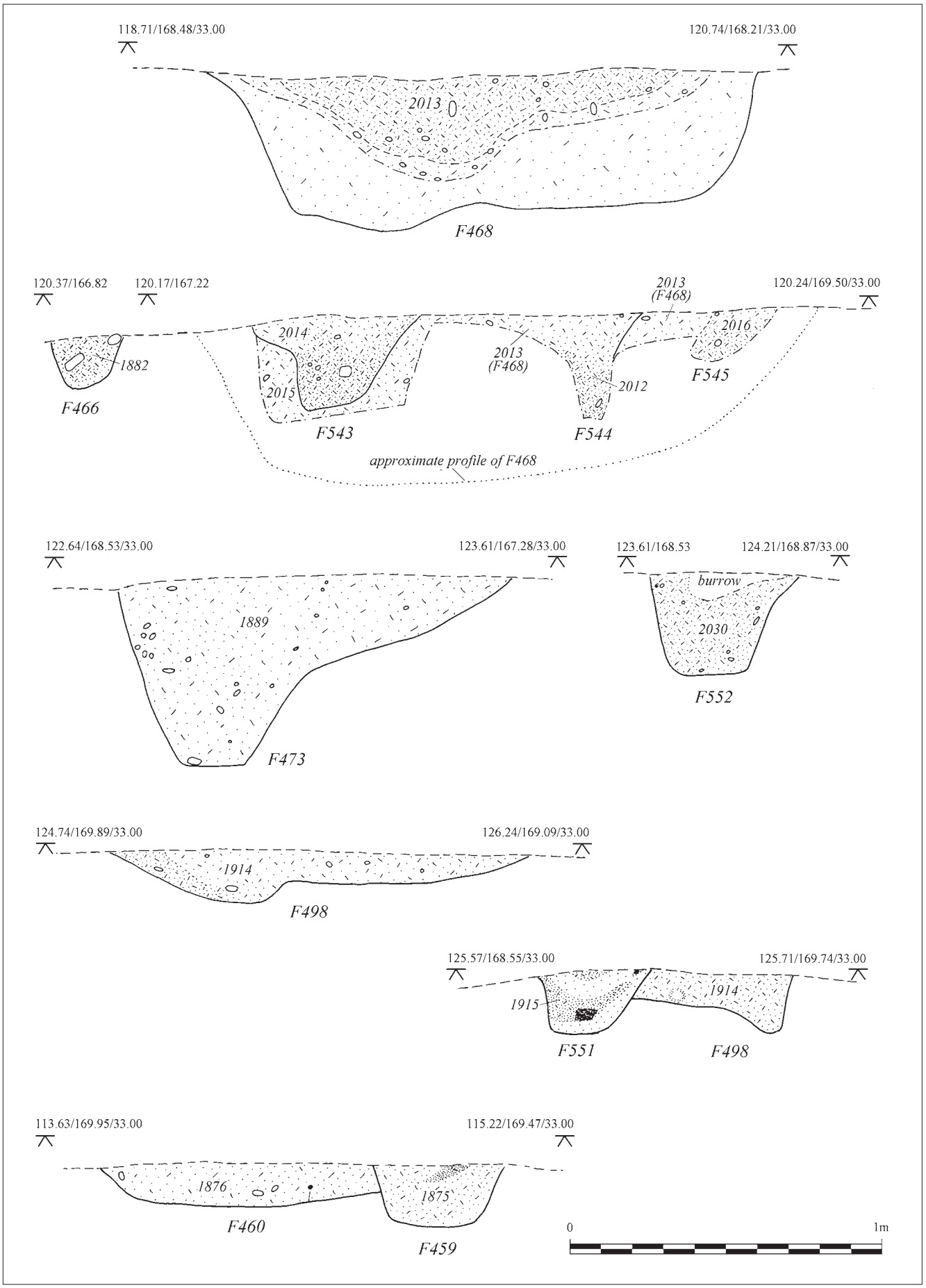


Figure 186 Pit group S30 under Mound 5: sections.

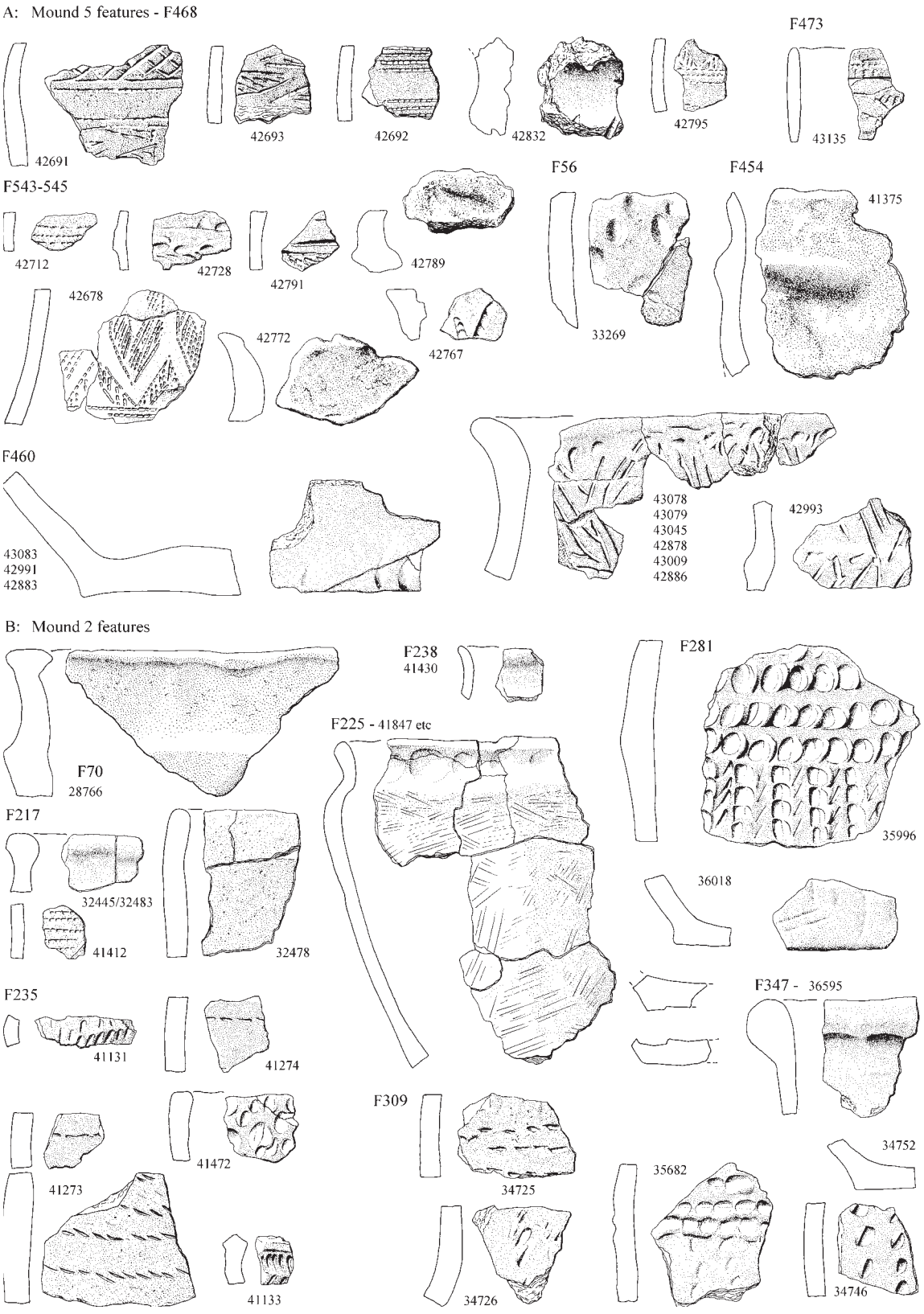


Figure 187 (a) Later Early Bronze Age pottery from the Mound 5 settlement area, S28; (b) Bronze Age pottery from features on the Mound 2 platform. Scale 1:2.5.

sherd, no other pottery was found in the pit. Six fragments of burnt flint and seven flint flakes were also found. Unfortunately, no flotation sample was taken, but the records mention the presence of carbonized 'nuts'. One spot find (42889) examined by Alan Hall (EAU, York) confirmed that these are the remains of charred acorns. A soil sample and a charcoal sample were taken, but these samples were unsuitable and insufficient for radiocarbon dating.

Post-hole F459 was a rectangular feature cutting pit F460, 0.50 × 0.35 m across, and 0.20 m deep from the top of the subsoil at 32.91 m AOD. Only a burnt flint and a flint flake were found in its fill (Context 1875), which was identical to that of the pit it cut. The two features may be related, or the location of post-hole F459 on the eastern edge of the hollow F460 may be fortuitous.

Pits F468 and F473 were two pits located in the centre of the Mound 5 platform that produced Late Beaker assemblages, and which were cut by related post-holes.

Pit F468 was a large, steep-sided and flat-bottomed hollow, that was 2.10 × 1.70 m on the surface and was cut into the subsoil to a depth of 32.42 m AOD, 0.50 m from the observed top of the subsoil at 32.91 m AOD. A yellow-red, stony, silty sand (Context 2022, Munsell colour 5 YR 5/6) washed or rolled into the base of the pit. This fill included two Beaker fine-ware sherds (Finds 42691 and 42693, Figure 187), a flint core fragment and two flint flakes, and some charred acorns and charcoal flecks. The main fill that followed emanated from domestic activity that took place in, or more probably near, the pit (Context 2013, a dark reddish-brown silt-sand, Munsell colour 5 YR 3/3). It included charred acorns (Finds 42634 and 42865), fourteen pieces of fired clay, perhaps the remains of an oven, two sherds of Beaker fine-ware (Finds 42692 and 42795, Figure 187), seven fragments of burnt flint and nine flint flakes. A soil and a charcoal sample (Find 42635) were also taken. Acorn roasting springs to mind as a possible source of this material.

Posts F543, F544 and F545 were then inserted against the eastern edge of pit F468, cutting through Context 2013 and biting into the lower Context 2022 of pit F468, but not below it into the subsoil. These post-holes were recognized as containing a more or less vertical dark fill that was rich in charcoal and acorns. Outside the pit, F466 and F521 form a row with these post-holes.

Post-hole F543, 0.60 m in diameter and recorded as 0.32 m deep, was recognized as having an outer brown fill (Context 2015, Munsell colour 5YR 3/4) containing a small amount of charcoal and acorns. The Finds Index lists a soil sample containing six pieces of burnt flint and a sherd of fingernail-impressed pottery (Find 42728). An inner dark fill constitutes Context 2014 (Munsell colour 5YR 2.5/2), described in the record card as a 'backfilled post-pipe' it proved prolific in finds, which included six sherds of pottery (Beaker fine-ware sherds 42712 and 42791, Beaker rusticated sherd 42792, fingernail-impressed sherd 42736 and, other sherds, 42713 and 42735; Figure 187), five pieces of burnt flint, four flint flakes and a fragment of a flint core, and large amounts of charcoal and acorns from its flotation sample (Find 42630).

Features 544 and F545, and also F466 and F521, were recorded as each having a single fill, and were very similar to post-hole F543. As they cut into pit F468, F544 and F545 were equally rich in finds. Feature 544 produced three conjoining sherds of fine Beaker comb-impressed ware (Figure 187), three fragments of fired clay, four flint flakes, five pieces of burnt flint, a soil sample and large quantities of acorns from its flotation sample (Find 42626). In turn, F545 provided seventeen fragments of fired clay, three flint flakes, two pieces of burnt flint, a soil sample and large amounts of acorns from its flotation sample 42629. Finally, post-holes F466 and F521, though without artefacts, produced charred acorns (Finds 42625 and 42623) and soil samples. The charred acorns from post-hole F545 gave a radiocarbon date of cal. 2140–1910 BC (Chapter 3, Table 9).

Pit F473 and post-hole F552, which cut its north-eastern edge, tell a similar story. The pit is located 2 m east of pit F468, and produced a similar, though smaller, Late Beaker assemblage (Figure 187). It was an irregular, subrectangular scoop, *c*.1.40 × 2.40 m wide, with stepped profile cutting into the subsoil by 0.63 m from the surface of the subsoil recorded at 32.94 m AOD. It contained a single reddish-brown homogenous silt-sand backfill (Context 1889, Munsell colour 5YR 4/4) with flecks of charcoal and fragments of acorns. Its assemblage consisted of seven sherds of pottery (one Beaker, and six plain, thick and possibly Early Bronze Age), eight flint flakes, a flint core fragment and a burnt flint piece. A soil sample exists, and a spot find (43106) of an acorn (confirmed by Alan Hall) was also made.

Post-hole F552, which cut the north-eastern corner of the pit, was circular in plan, with a diameter of 0.50 m, U-shaped in profile, and cutting into the fill (Context 1889) of F473 to a depth of 0.32 m from the subsoil surface recorded at 32.95 m AOD. The silhouette of the post (Context 2030, Munsell colour 5YR 2.5/2) was a darker silt-sand that was clearly visible against the backfill, but it was otherwise identical in composition and assemblage. The latter consisted of charcoal flecks and carbonized acorns, a minute fragment of fine pottery (possibly Beaker?), four lumps of fired clay, twelve flint flakes, five pieces of burnt flint, a soil sample, a flotation sample (43094, which produced acorns) and a corroded lump, possibly of metallic mineral, with stones adhering.

Judging by the similarity of the backfills and assemblages of both pit and post-hole, it seems again reasonable to propose that the post which was inserted into a back-filled or partially back-filled pit was later extracted, and that the resulting void was filled with material derived from the same source as that which filled pit F473.

Pit F498 was located one metre to the north-east of pit F473. It was an irregular shallow scoop, much mangled by rabbit burrows, *c*.1.40 × 0.90 m wide, cutting some 0.30 m into the subsoil, whose top was recorded at 33.08 m AOD. Its profile is irregular, and the pit was back-filled with a single, homogeneous dark reddish-brown silt-sand (Context 1914, Munsell colour 5YR 3/3) containing two sherds of pottery (one very small and unidentifiable, and one of Food Vessel) and six flint flakes. Though lacking in significant dating material, the sherd of Food Vessel (not illustrated) was similar to those found in pit F460 (Figure 187).

Post-hole F551 – a subrectangular, steep-sided, flat-based feature, 0.60 × 0.40 m across and cutting through the backfill (Context 1914) of pit F498 by *c*.0.20 m – repeats an increasingly familiar story: the post is set on the edge of the pit, and does not cut through the base of the pit, but only through its backfill; its fill (Context 1915, Munsell colour 2.5YR 3/6) is darker but similar in composition to that of the backfill it punctured. The record card notes: '…initially seen as a fill within F498 but … [later] defined as a separate feature with a distinctive cut … it contains

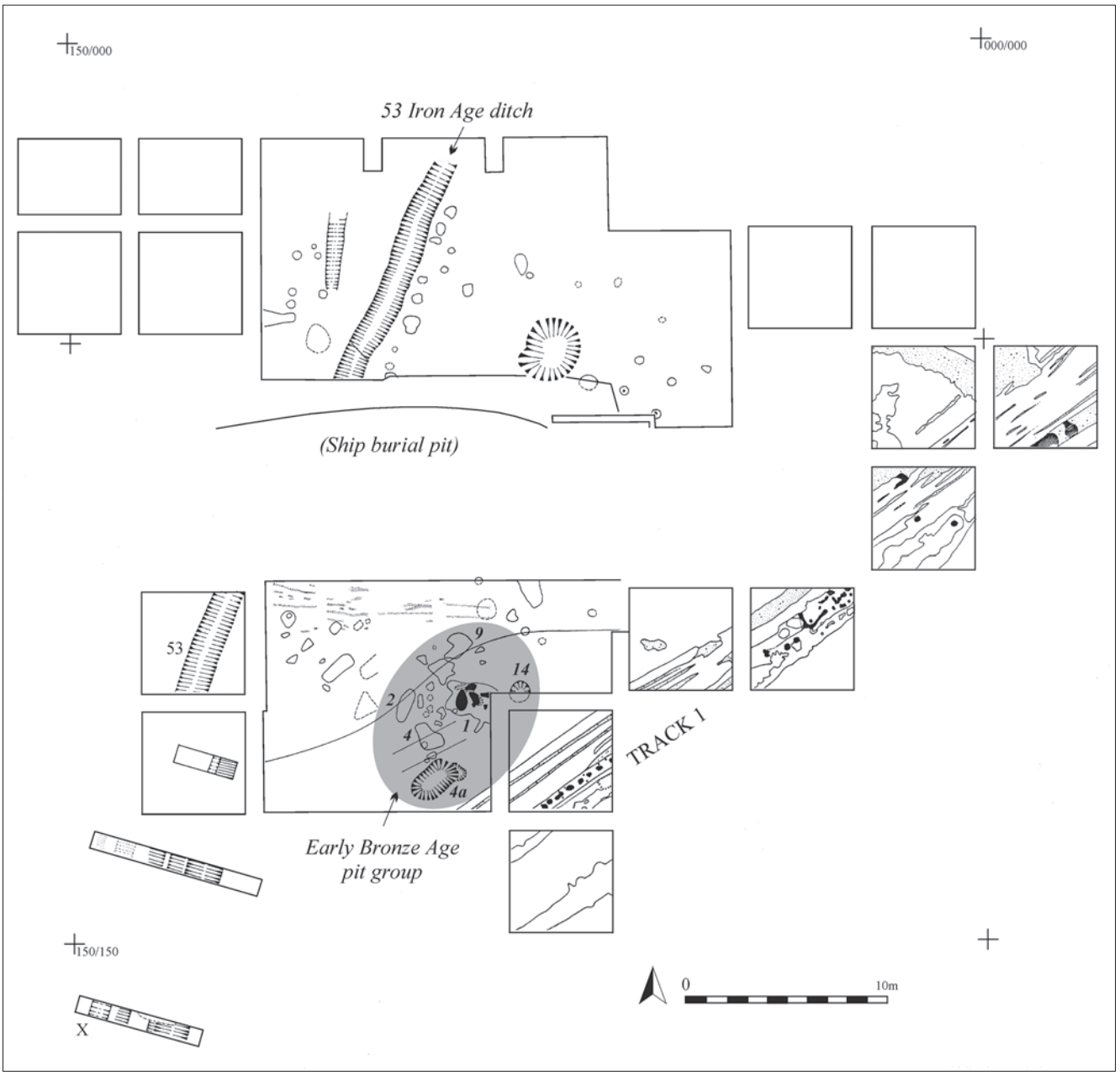


Figure 188 Early Bronze Age pit group S29, and other features under Mound 1 (after Ashbee/Birkeland).

large amounts of charcoal and burnt sand apparently deliberately back-filled into the hole … from a ?hearth.' The Finds Index lists three pieces of burnt flint, two flint flakes, a soil sample, a flotation sample (Find 43092), and the charred remains (Find 42842) of a wooden stake (?)

The central-northern part of the Mound 5 subsoil platform harbours some further large shallow scoops, hollows or pits, but in the absence of diagnostic finds to date them to the Early Bronze Age phase, they have been left out of this discussion.

Discussion

The four pits in the central-northern part of the Mound 5 subsoil platform, located a few metres from each other, have a number of traits in common. According to their ceramic assemblage – two contain Beaker pottery and two contain Food Vessel sherds – they all belong to the earliest Bronze Age phase of occupation at Sutton Hoo. It is tempting to see the two opposing pits (F468 and F473), at least, as contemporary, and as perhaps accompanied by a post-built structure. Such a structure may have been employed as a windbreak for some activity in which the roasting of acorns may have played a part.

Large numbers of post-holes were clustered in the centre of the Mound 5 platform, although they formed no obvious plan (Figure 185). Since the subsoil of Mound 5 is a palimpsest of negative features cut from a number of different phases, no attempt has been made to 'join the dots'. Nevertheless, the hypothesis remains that the centre of the Mound 5 subsoil platform, protected by subsequent mound make-up, is a focus of domestic activity of the Later Beaker period, similar to that encountered on the eastern edge of the Mound 2 platform.

The Mound 1 settlement zone, S29

Groups of features of Early Bronze Age date were located under Mound 1 during the campaign of 1965–71 (Int. 7) and to the east of Mound 1 (Int. 55; Figure 188).

Under Mound 1

The following summary is based upon the indications given in interim reports (Owles 1970: 327, 1971: 105, 1972: 212–13; SHSB I: 29, 164–6 and 322–6), in an unpublished MA dissertation by Mark Newman (1984) and from the contents of Paul Ashbee's excavation archive, which he made available to the later Sutton Hoo team (FR 2/2.1). The cooperation and advice generously given by Paul Ashbee throughout the 1983–92 project is acknowledged with gratitude, and the map here of Prehistoric features under Mound 1, redrawn by Marianna Birkeland in 1984 (Figure 188), is based on his archive.

Two of the major systems of features seen on the plan can be omitted from a discussion about the Early Bronze Age. The parallel ruts running north-east to south-west on the right hand side of the plan belong to the Medieval track way ('Track 1') discussed in Chapter 12. The narrow ditch (F53), which runs NNE–SSW with accompanying post-holes to the east, had a fill that included the charred remains of a possible hedge (Ashbee 1975: 325). Ashbee leaves the question of its date open, but the description and location of the ditch aligns it with other ditches attributed to the Iron Age phase of enclosure at Sutton Hoo (see below).

Candidates for the Early Bronze Age phase consisted of a number of pits, post-holes and hearths. Basil Brown had already reported finding the remains of a Bronze Age village in 1939: 'The trench … for the ship had been cut through a Bronze Age site (Hill Top Village) and the hearths or fire pits of hutments can be clearly seen' (BBD: 158). Accounts of the 1965–71 excavation refer to:

> superimposed hearths and a palimpsest of pits and post-holes [F1, F2, F4, F4a, F9 and F14, see below]. It is possible that the succession of hearths was in the remains of a circular structure destroyed in great part by the traffic rutting at the fringe of the barrow [i.e. Track 1]… Sherds of pottery from the hearths and certain pits link this pattern of occupation to the great quantity of Beaker pottery recovered from the make-up of the ship barrow. It is apparent that the area of settlement extends beyond the ship barrow [as was confirmed in Int. 55, see below] and in the circumstances it seems not unlikely that part of this area was stripped of soil to facilitate the barrow's construction. (Owles 1971: 105)

More details appear in the 1972 summary:

> Excavation [of F1] revealed a clutch of superimposed hearths within a subrectangular depression below the lowermost horizon of the pre-barrow soil… Each hearth was elongated with a sloping bottom and contained a mass of charcoal in which twigs could be clearly discerned. A post-hole was adjacent to the series and an arc of irregular pits might indicate an erstwhile windbreak. A further series of pits below [?] those examined in 1970 was found: they were no more than about 45 cm in diameter, contained dark soil and Beaker sherds and conformed to no regular pattern. All were cut into the base of the sandy bedrock below the base of the pre-barrow soil and below some 36 cm of presumably wind-accumulated sand which was on the bedrock. (Owles 1972: 212–13)

Mark Newman's dissertation (1984) re-examined this complex, along with the flint and ceramic passed onto the Sutton Hoo Research Project by Paul Ashbee. He identified at least seventy-four sherds of Beaker fine- and rusticated-wares, noting that most sherds came from the buried soil and the make-up of Mound 1, rather than from features (Newman 1984: 32; fig. 11c). A selection of Beaker sherds from the Mound 1 area are found in Newman's fig. 10a and SHSB I: 165, figs 104–5.

The presence of quantities of Beaker pottery, as well as other Bronze Age, Iron Age and Romano-British ceramic material in the buried soil and make-up of Mound 1, is partly explained by the fact that the area to be occupied by Mound 1 was ploughed prior to its erection (Dimbleby 1975: 62–3), and partly by the fact that Mound 1 was built by scraping up ancient soil to build the barrow (SHSB I: 322–4). Under Mound 1, as under Mounds 2, 5 and 6, features were mainly defined against the subsoil. The principal Early Bronze Age feature, F1, was an irregular hollow, around which pits and post-holes were clustered in an arc (F2, F4, F4a, F9 and F14). The hearth sequence described above appears to have been contained in F1. It probably did not consist of superimposed hearths *in situ*, but of hearth deposits which had accumulated in a large hollow, in a situation similar to that recorded under Mound 2 (the F311/330 complex). Pits and post-holes gathered in an arc around F1 also recall the elements encountered in the settlement zones excavated under Mounds 2 and 5, and in Int. 55 (below). On the east side of F1 was a post-hole (F14), while the shape of the scoops to the west of the hollow F1 (F2, F4, F4a and F9) identifies them as pits. However, the cluster of features under Mound 1 included a number of possible post-holes, and it is likely that some of them were Early Bronze Age and had once formed buildings or windbreaks. Paul Ashbee (1975: 325–6) is cautious in his description of the group of pits and hearths, which is labelled an episode of 'Beaker squatting'. In the light of the later experience of excavating under other mounds, these features can be seen as probably deriving from a more extensive and permanent form of Early Bronze Age settlement.

East of Mound 1 (Plate 53) – Pit-complex S28 in Int. 55 (FR 5ii/5.1)

In the final season of excavation at Sutton Hoo in March 1992, a group of Late Beaker features was excavated to the east of Mound 1. The group (S28) consisted of sixteen intercutting pits and three post-holes, covering an area of 30 m^2 around grid 095/089 (Figure 189 and Figure 190). Five of the pits had been affected by a shallow Medieval ditch (F4), part of the track ('Track 1') that crossed to the east of Mound 1 (see Chapter 12, p. 461).

Definition

The complex was first identified, during definition at Horizon 1, as an annular series of black patches surrounding a central area of subsoil. This was at first thought to be a post-ring with outlying post-holes to the south-east, and was erroneously interpreted as a roundhouse. A Beaker date was likely, as thirty-one sherds of pottery, many from fine, comb-impressed Beakers (Plate 58), were recovered during the trowelling of this definition spit (Context 1008). Accordingly, the remaining definitions of Horizon 1 (and 2) proceeded at Level D, so as to maximize the information gained from the plough-damaged upper parts of the features and their dispersed assemblages. An intermediate definition horizon, Horizon 1C, was created through the removal of Context 1009 in 10–20 mm deep spits, and the clearing of the rabbit-disturbed remnants of a bank between ditches F4 and F10 (Context 1052). This exercise provided a rich harvest of finds: one hundred and eighteen artefacts, including seventy-one pottery sherds (many were Beaker

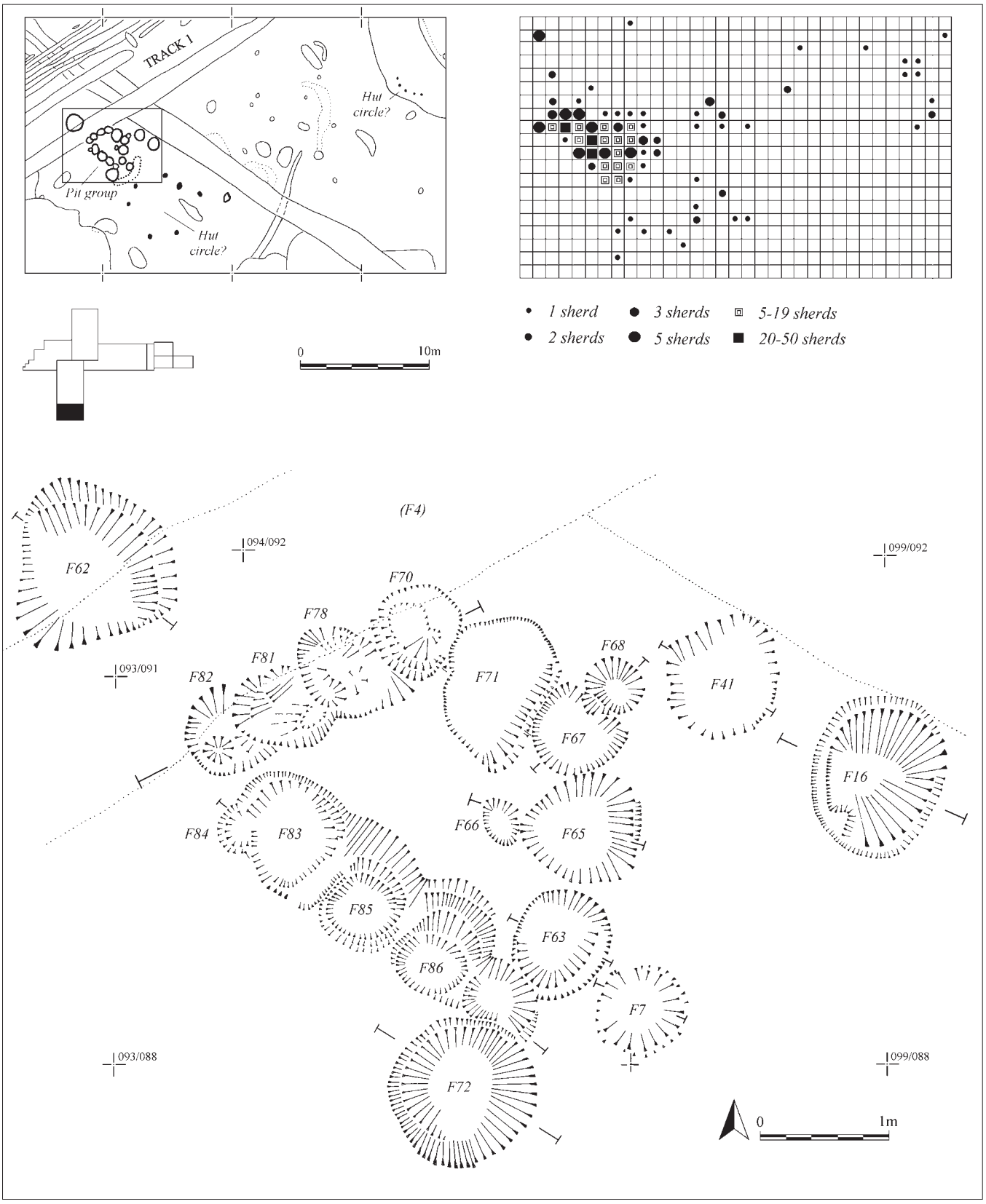


Figure 189 Pit group S28 in Int. 55: plan.

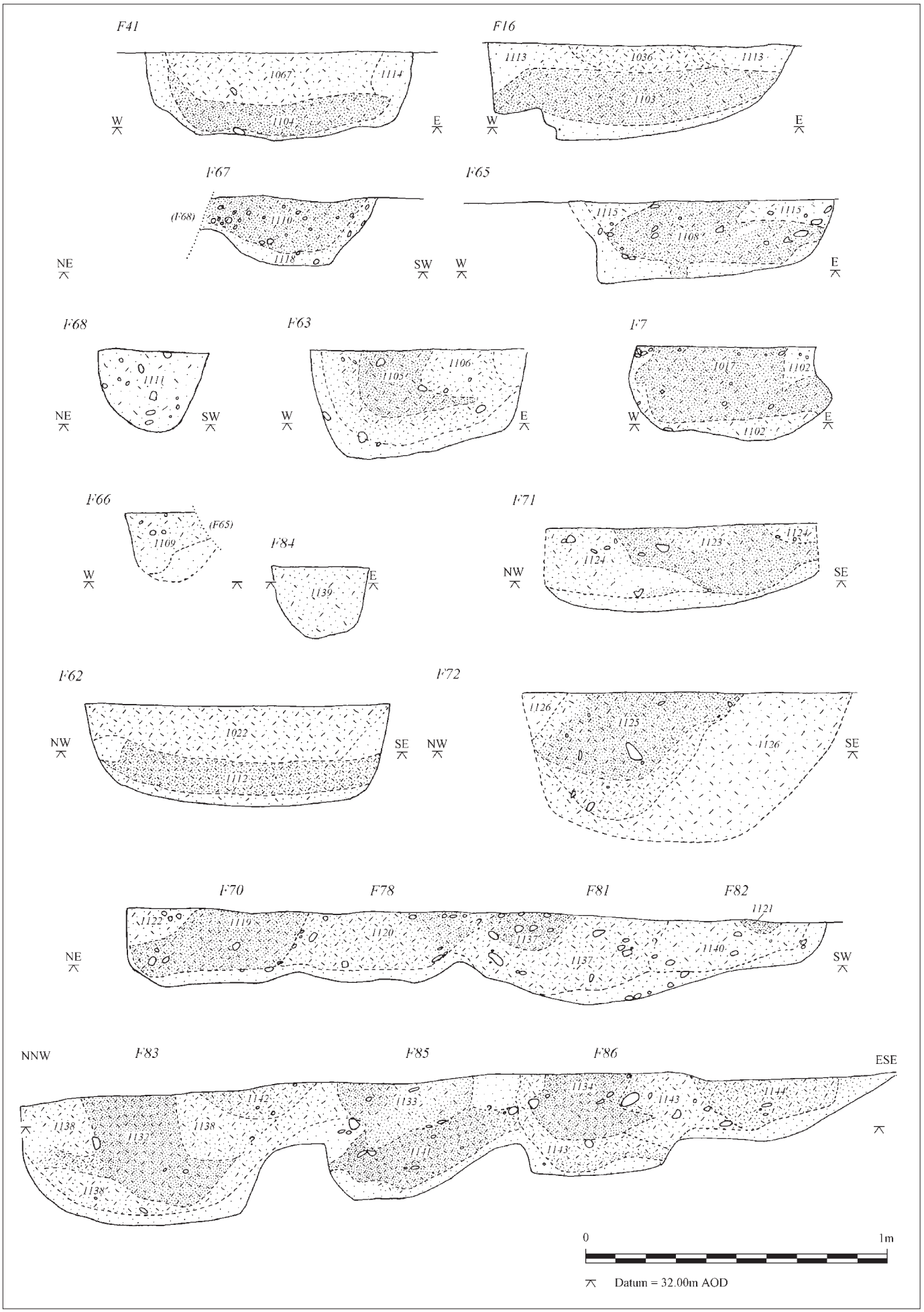


Figure 190 Pit group S28 in Int. 55: sections.

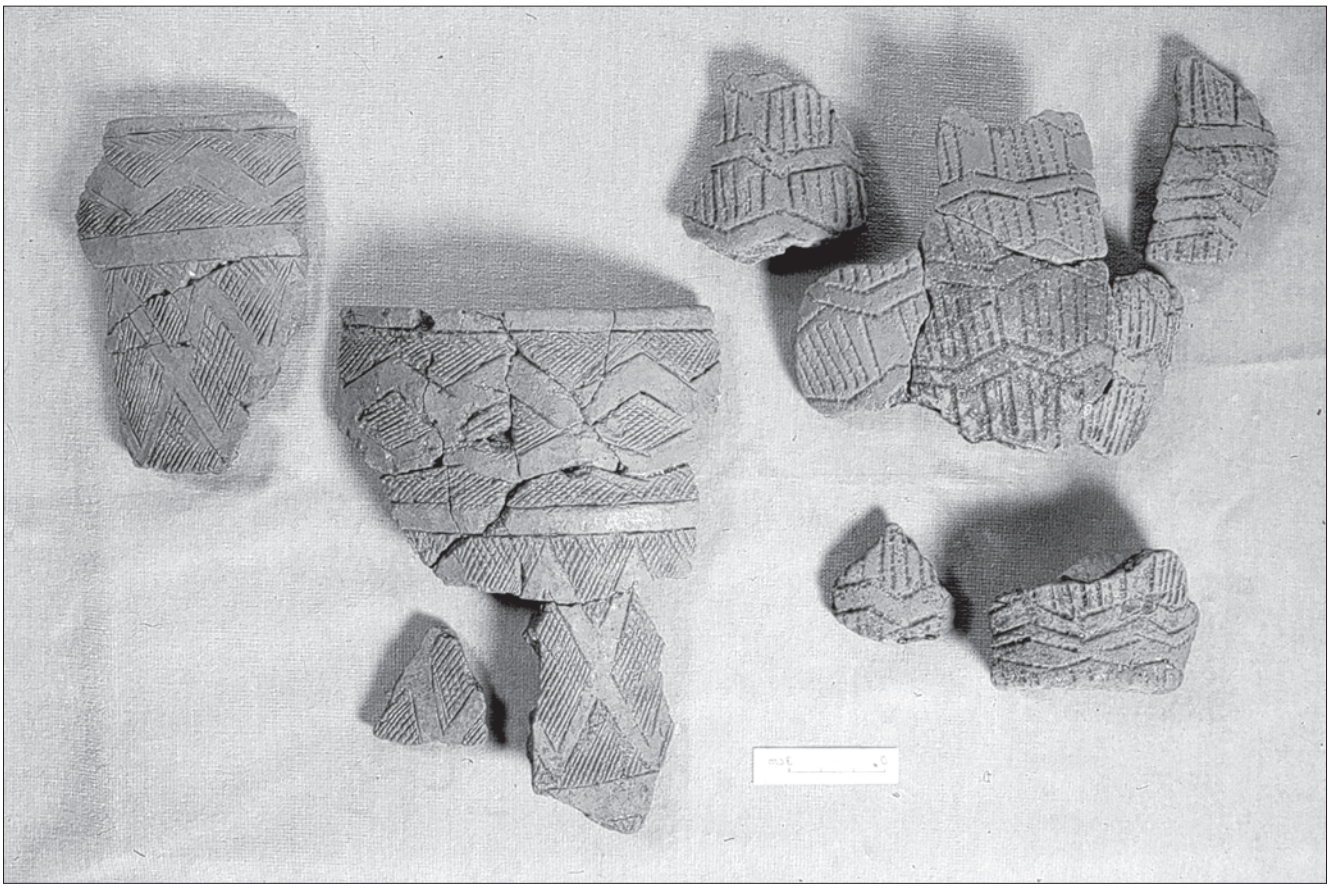


Plate 58 Selected Beaker pottery from the Int. 55 pit-complex S28, east of Mound 1.

fine-wares), a flint scraper and an arrowhead. The Late Medieval ditches were then excavated to 'decontaminate' the area and thereby provide a preview of the complex in the sides of the ditches: again this exercise uncovered many artefacts (fifty-nine finds) originally derived from the pit-complex.

At this stage it was becoming clear that all the features in the complex represented a single Late Beaker event. A final 10–20 mm spit (Contexts 1015 and 1100–1) was removed to reach the Horizon 2 subsoil surface. This last definition proved to be the richest. Context 1015 produced no fewer than 415 finds: 172 fragments of burnt flint, 104 fragments of unburnt flint (including three scrapers and a rough-out), 128 pottery sherds, 8 charcoal samples and 2 finds of acorns. Contexts 1100–1 contributed a further 134 finds (35 pieces of burnt flint, 22 flint flakes, 76 sherds of pottery and a charcoal sample). Since these finds stem directly from the subjacent pits, they will be treated as part of the pit assemblages.

Pit geometry

The Early Bronze Age pits were concentrated in an area of 6.50 × 5.20 m. They are made up of an arc of scoops in the north-east (F7, F16, F41 and F63–8) that contained few finds, a line of pits in the west (F70, F78, F81 and F82) and a further line in the south (F83–6), itself part of a further group with deep, rich pits (F62, F83 and F72). Most pits were around 0.45 m deep, and between 0.70 m and 0.90 m in diameter. Three pits (F62, F72 and F83) were deeper (0.60–0.70 m), and diameters of over 1 m. Three slighter features (F66, F68 and F84) are interpreted as post-holes. The pits are so closely spaced that, from a higher old ground surface, they must all have intercut, with the possible exception of F62, F41 and F16.

During excavation it was extremely difficult to separate the fill of one feature from another, the fills appearing homogeneous and merging into each other. It is possible that the pits cut each other serially, in a linear fashion: this is how the stratification of the western group was read (F70 cuts F78, which cuts F81, which in turn cuts F82), as was the southern group (F83 cuts F85, which cuts F86; Figure 190). But only two secure stratigraphic relationships could be observed: first, the large southern pit F72 cuts the linear group of which F86 is a member; second, the post-holes F84 and F66 were earlier than the scoops. It is likely that these post-holes have nothing to do with the Beaker complex.

Relationship between the pits and their assemblages

Between the first sighting of the complex at Horizon 1, and its definition at Horizon 2, an average of 150 mm was trowelled off in spits and cleaning operations. (It is likely that in the area of Int. 55 the buried soil had survived to around the equivalent of Horizon 6 under a mound.) Half of the finds from the pit-complex stem from the trowelling of these 150 mm: out of a total of 1,593 finds, only 778 could be assigned to the features. Three main groups of artefacts are represented: flint (waste products and implements) account for thirty-eight per cent, pottery for thirty-six per cent and burnt flint fragments for twenty-six per cent.

However, these proportions are far from uniform within the complex, with horizontal and vertical variations. This is partly due to differences in recovery, and partly due to the functions of

the pits. Twice as much pottery was recovered from the horizon definition as from the pits themselves, whereas flint waste and implements are more common in the features than in the definition. Burnt flint, on the other hand, is distributed more like pottery. Several factors may influence such a pattern. It seems clear that pottery is more abundant in the truncated tops of features than in their bases. On the other hand, excavation was more controlled inside features, which gave a higher recovery rate for flint, mostly in the form of small waste flakes that were easily missed in trowelling definition spits.

The individual features do not have a uniform character either. Three large and deep pits (F62, F72 and F83) are the richest in finds (around one hundred each). At the other end of the spectrum, the three features interpreted as post-holes (F66, F68 and F84) exhibit the lowest numbers of finds. Assemblages inside the feature also vary in their composition. The three large pits (F62, F72 and F83) that contain most pottery also contain most implements and flakes of flint waste. There are a few pits (F70, F71 and F78) that are rich in flint but which produce hardly any pottery. All pits, but not the three post-holes, are rich in charcoal and had black ashy fills; however, comparatively little burnt flint found its way into the pits themselves (F86 excepted), though it is found abundantly in the definition spits above the features.

An analysis of all the sherd locations showed that the density of pottery in the contexts above the Beaker features compared well with the density of ceramic in the features themselves (Figure 189). This would suggest that although rabbit burrows, ploughing and truncation had damaged the complex, its assemblage had not dispersed unduly. This was also borne out by the distribution of conjoining sherds, which were contained in the immediate vicinity of the features. However, sherds thought to belong to the same vessel but not directly conjoining show a more widespread dispersal pattern. This would support the view that vessels were already fragmented before they entered the pits, an impression also borne out by the heights inside pits at which conjoining sherds were encountered (i.e. 170 mm or more).

A few general trends can be elicited from these observations and analyses. First: the bigger and deeper the pit, the more likely it is to be rich in artefacts. Second: most assemblages are most abundant at the tops of features. Third: there is little lateral movement in the definition levels of features – dense scatters of artefacts reflect the density of finds in the features below.

Function of the Pits

No evidence for structural timbers was encountered, and the spatial geometry and sections did not encourage the interpretation of the pit group as belonging to a building. Typically, the pits had flat or very shallow-angled bases. The basal fills are invariably greater in extent than the uppermost fills. This gave a lot of trouble to the excavators, as the shape as 'first seen' was almost always smaller than the final shape of the excavated feature. If the dark central fills were followed from top to bottom, then the excavators almost inevitably undercut their features in an attempt to 'follow the black'. The simplified profiles need to be compared with the original colour sections and section photographs to realize how difficult it proved to distinguish one context from another. Nevertheless, the following sequence of infilling of one of these pits can be proposed:

1 A pit around a metre deep is cut into the natural subsoil, from an Early Bronze Age ground surface.
2 The scoop of the base is half filled with a black deposit, rich in ash, whose top surface is generally horizontal. This represents the 'bottom black' context.
3 The unstable sides are mangled and collapse, perhaps during infilling, causing re-deposited natural and original ground-surface material to sit on the edges of the feature in the form of 'shoulders'. This material is referred to as the 'outer brown ring'.
4 The scoop is then further back-filled with a black deposit that was generally indistinguishable from the 'bottom black', though it was narrower at its mouth and usually richer in finds.

The shape, and the back-filling, suggest pits that were dug in sequence for storage, and which acquired domestic debris once disused.

The assemblage from the pit-complex

Ceramic

Five hundred and twenty-five sherds of pottery were recovered during the excavation of the Int. 55 pit group. Their distribution was particularly dense in the tops of features. Amongst the features, the large, deep pits F62, F72 and F83 proved to be the most productive. This pottery can be separated into two groups, fine- and coarse-wares (Figures 191–4). Fine-wares account for twenty-seven per cent of the assemblage (140 sherds); coarse-wares for the remaining seventy-three per cent (385 sherds). Each of these two groups can be subdivided according to the type of decoration found on the pottery. Amongst fine-wares, two subgroups can be distinguished: forty-three sherds of Beaker incised fine-wares (BEAFII); and ninety-seven sherds of Beaker comb-impressed fine-wares (BEAFIC). Amongst the coarse-wares, the vast majority (*c*.200 sherds) belongs to Beaker rusticated-wares (BEARUS), forty-five sherds to an individual type of rilled-ware seemingly peculiar to Sutton Hoo and executed in Beaker fabric, and a number to less easily definable coarse-wares.

The composition of the assemblage is shown in Table 98 as a percentage of the sherd population in the complex (one hundred per cent = 525 sherds). Each group will be briefly presented, starting with the fine-wares.

The Beaker incised fine-wares (BEAFII)

Forty-three sherds could be assigned to this group, defined as Beaker pottery executed in a fine reddish-brown fabric decorated with incised lines (as opposed to comb-impressed lines). This form of decoration is rather less common than comb-

Table 98
Composition of the pottery assemblage from Int. 55 pit-complex

Pottery type	Per cent	Subtotals
Beaker rusticated	38%	
Other coarse wares	27%	
Beaker rilled wares	8%	73% coarse-wares
Beaker fine comb-impressed	19%	
Beaker fine incised	8%	27% fine-wares

(100% = 525 sherds)

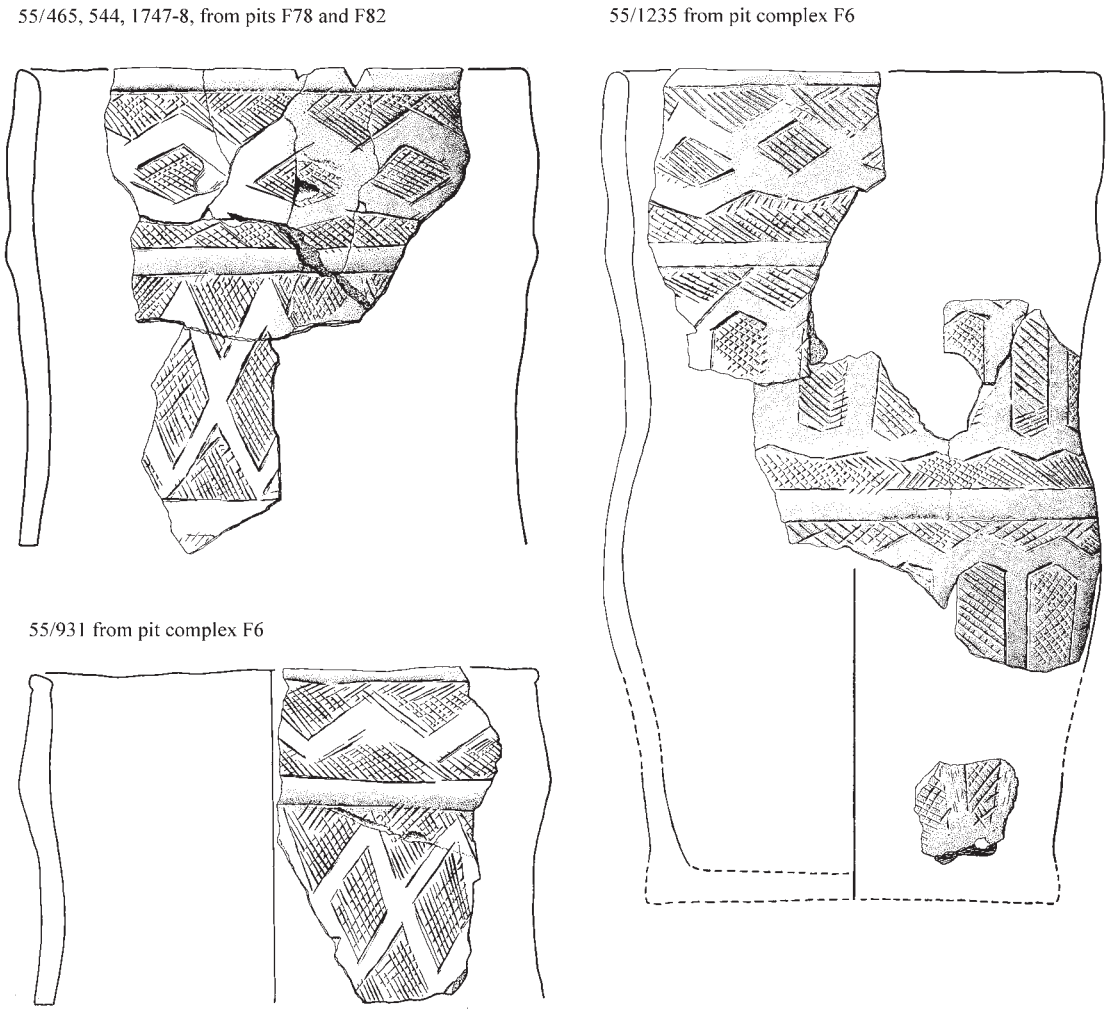


Figure 191 Early Bronze Age pit group S28 in Int. 55. Beaker pottery with incised decoration (BEAFII). Scale 1:2.5.

impression, and accounts for a third of the fine-wares. An exercise in matching conjoining sherds of this group, as well as non-conjoining sherds thought to belong to the same vessel, suggests that the vessels were already fragmented before deposition. Ancient breakages may be compatible with a backfill of material derived from nearby middens. Nevertheless, substantial parts of vessels could be reconstructed: these are illustrated in Figure 191.

At least six vessels are represented in the assemblage, with three vessels illustrated in Figure 191. Their large size, slight 'collar', zonation of decoration carried out all over the body and use of infilled triangles and lozenges, would place them in the later Beaker phase (Case 1977: 72 and 82). Parallels for these vessels can be found at Risby Warren, Hockwold cum Witton, Edgethorpe, Fifty Farm and Bury St Edmunds (Bamford 1982; Gibson 1982; Clarke 1970). Amongst the remainder that are illustrated, there are sherds featuring horizontally-zoned lattices as well as sherds belonging to somewhat coarser vessels, whose decoration was executed with less care.

The Beaker comb-impressed fine-wares (BEAFIC)

Ninety-seven sherds were found to display the form of decoration usually referred to as comb-impression, though a number of different tools could have been used to achieve this effect. Twice as common as the incised form (above), the sherds are thought to represent the remains of a larger number of fragmented vessels, perhaps a dozen. Only one vessel (from F83) was present in substantial parts, the remaining sherds represent a great variety of vessels exhibiting different decorative schemes. Again, as most vessels are individualized only by a handful of sherds, the pots must have been broken and the sherds dispersed before they entered the pit-complex.

There is a wider decorative vocabulary in the comb-impression fragments than in those that have been incised, but the style, pattern of decoration and shape of the vessels are in keeping with Late Beaker styles. Figure 192 represents a selection thought to be representative of the decorative vocabulary found in the group. The main decorative elements feature on the large vessel from F83 with repetitive zoning: opposed triangles filled with vertical lines, horizontal lines and chevron patterns. Dogs' teeth and zoned lattice patterns also appear, the latter on some fine vessels (e.g. Finds 55/325 or 55/876). The impressions are generally sharply defined, but the execution of the decoration appears less careful than on the incised wares.

To see such a variety of decoration occurring together is a salutary warning not to derive too much chronological meaning

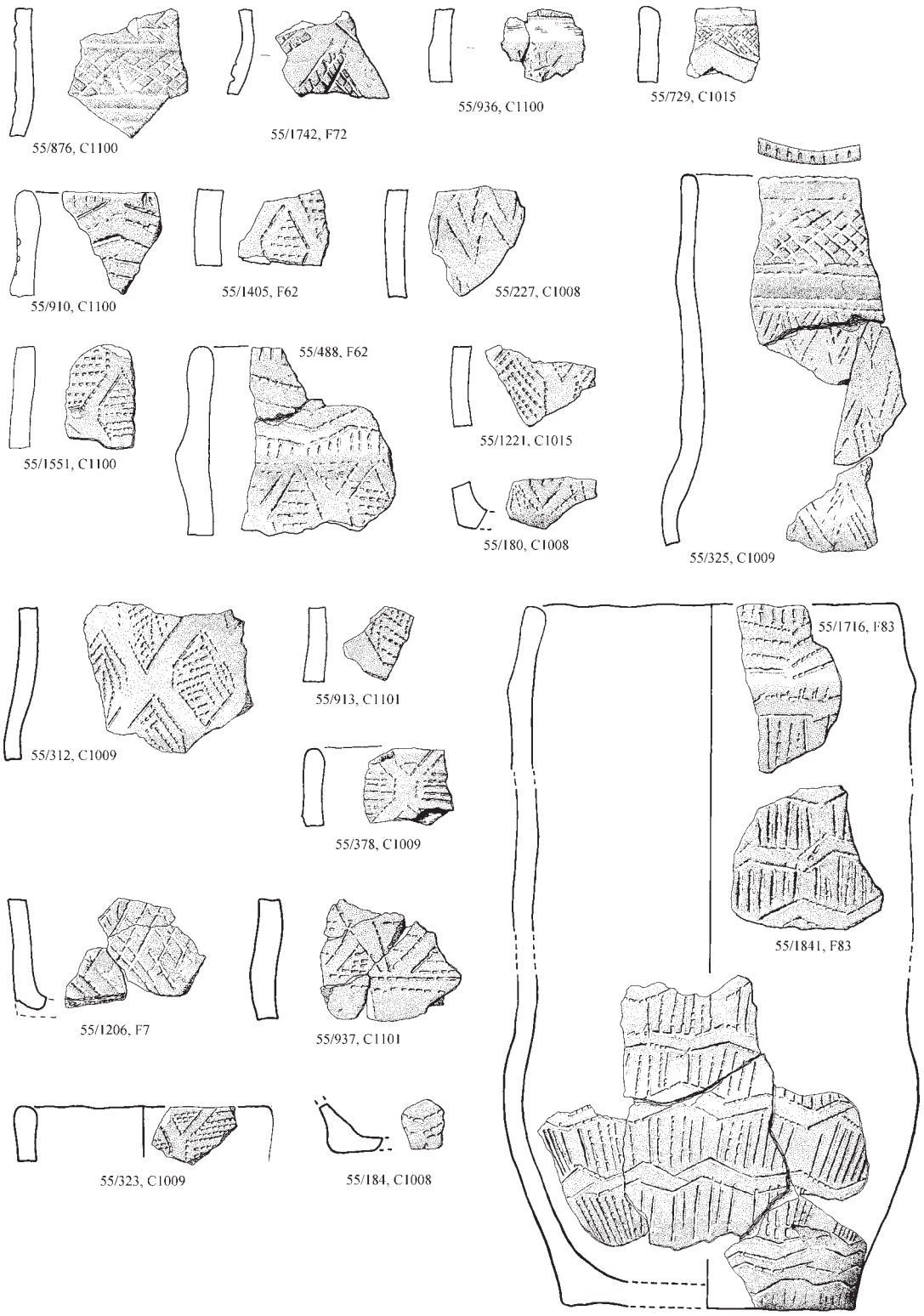


Figure 192 Early Bronze Age pit group S28 in Int. 55. Beaker pottery with comb-impressed decoration (BEAFIC). Scale 1:2.5.

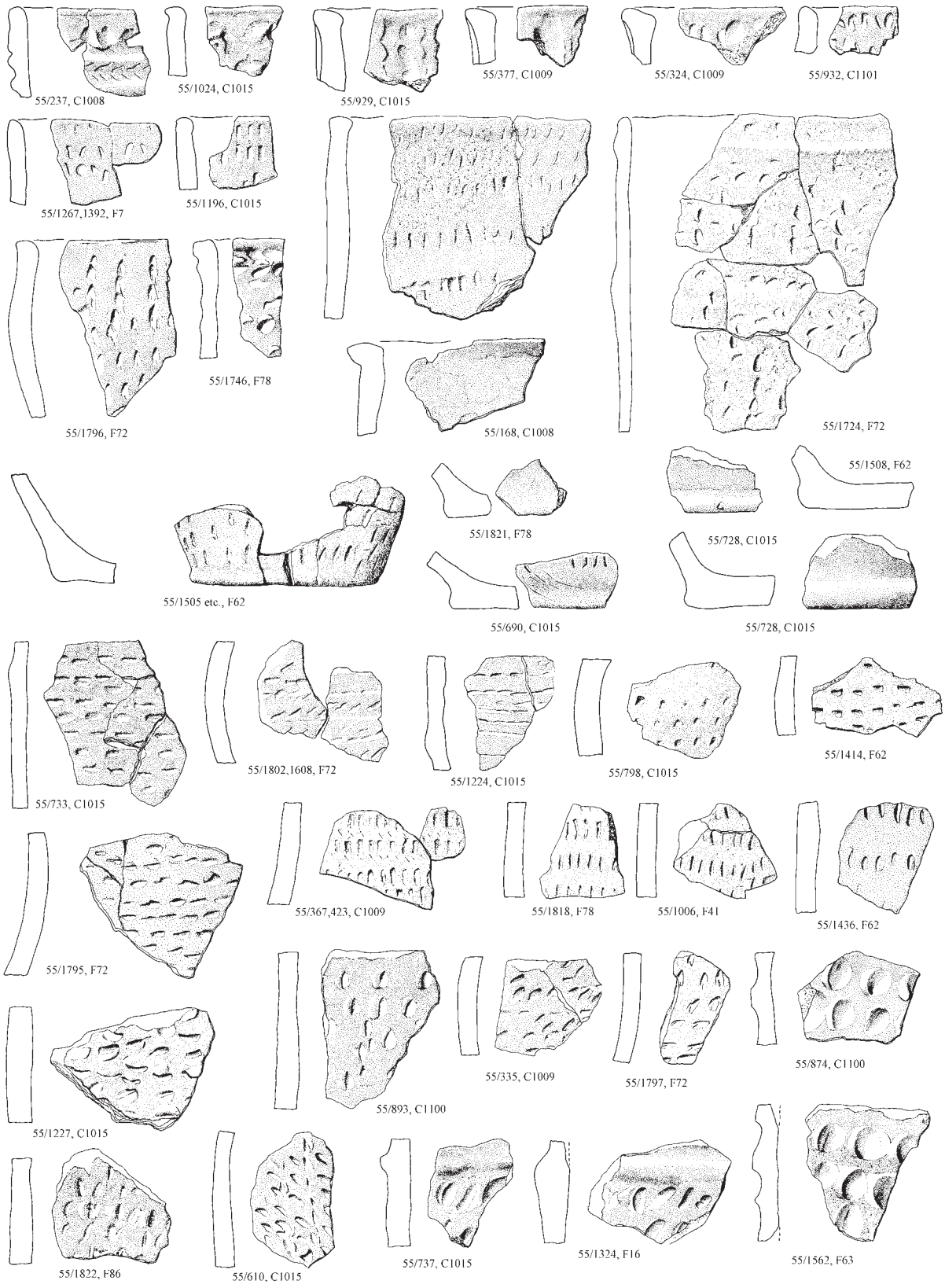


Figure 193 Early Bronze Age pit group S28 in Int. 55. Beaker coarse wares (BEARUS). Scale 1:2.5.

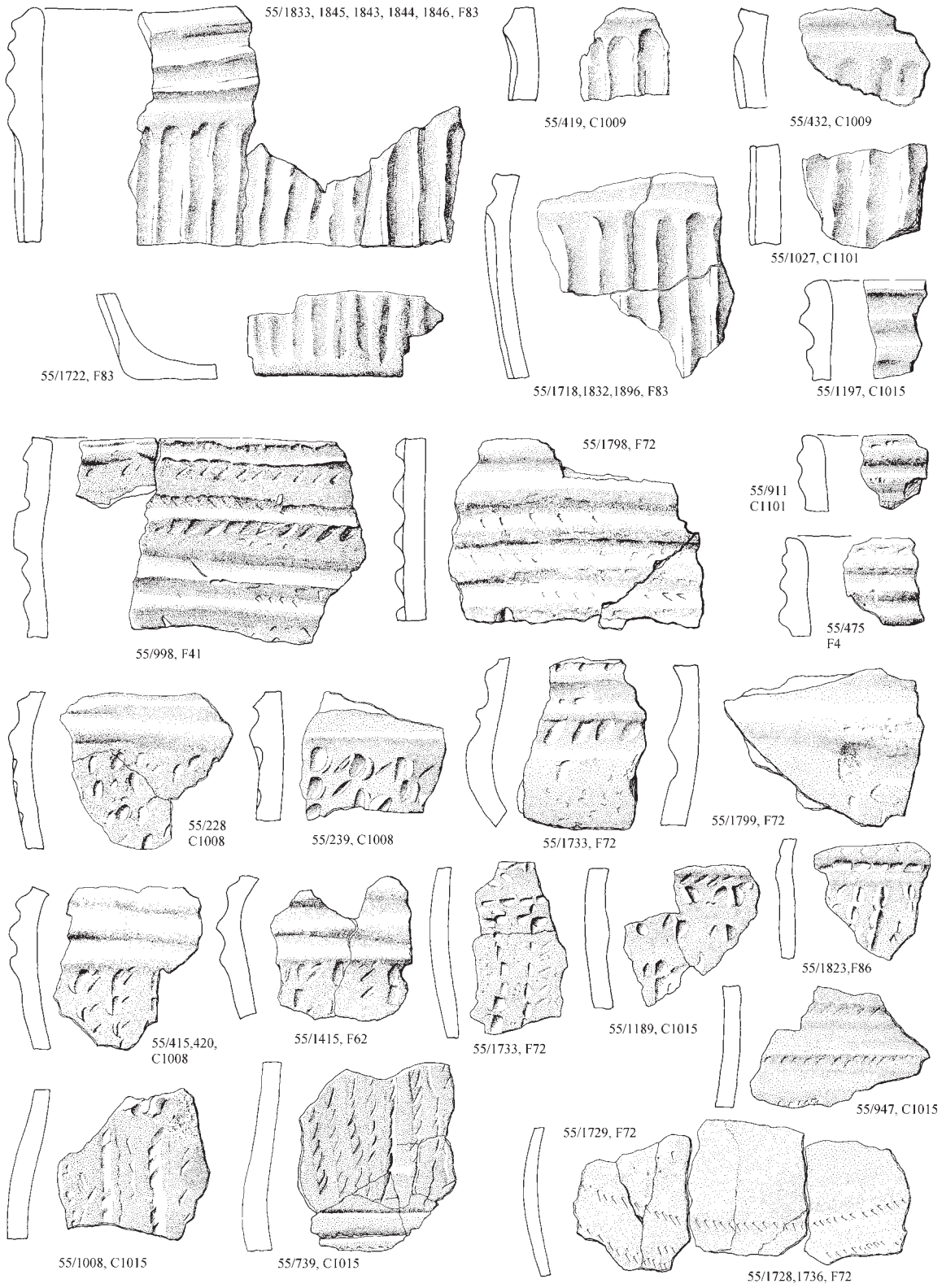


Figure 194 Early Bronze Age pit group S28 in Int. 55. Beaker pottery with rilled and rusticated decoration (BEARUS). Scale 1:2.5.

from single vessels. In this sense, the findings from Sutton Hoo are in keeping with the scepticism voiced by the researchers engaged in the British Museum's radiocarbon dating programme of Beaker vessels (Kinnes *et al.* 1991). Nevertheless, the range can be accommodated within Case's Late Beaker phase (Case 1977: 78 and 82).

The Sutton Hoo fine Beaker assemblage is in stark contrast to a nearby large Beaker assemblage, that from barrows 1 and 2 at Martlesham Heath (Martin 1976), which is dominated by barbed-wire Beakers. No Beaker sherd from Sutton Hoo exhibits this type of decoration.

The Beaker coarse-wares

Nearly three-quarters of the pottery is made up of sherds of coarse-wares. There is, however, no need to doubt the contemporaneity of these 385 sherds with the Beaker fine-wares, and it must be accepted that the great variety of coarse vessels represented could have all been in existence at the same time in the Late Beaker phase. In the absence of fine- or rusticated-wares, it would have been easy to misplace many sherds 'somewhere in the Bronze Age', without any inkling of their contemporaneity with Beaker material.

By far the largest group of coarse-wares consists of sherds of rusticated Beakers (BEARUS; Figure 193), which carry characteristic fingernail impressed decor over the whole body of the large, tub-like vessels. Some 200 sherds exhibit this decor, which is by no means uniform. Many variations can be seen in the execution of the rustication: the manner of impression, the closeness of spacing, the horizontal or vertical arrangements of rustication and the combination with other methods of decorating or strengthening, or roughening the surface of the pots, such as rilling or cordons.

A second, substantial part of the coarse assemblage (140 sherds) consists of a hotchpotch of coarse-sherds featuring fingertip and fingernail cordons and grooves, etc. It is this material that would, had it not been found together with Beaker material, have been lost in our crude classification of simply 'unknown Bronze Age' date. The lesson to be learnt is that in the absence of contemporary fine wares, Beaker domestic assemblages can pass unrecognized.

Finally, a small but peculiar group of coarse-wares, rilled-wares, were identified in the complex. So far no convincing parallel has been found for them. They consist of forty-five sherds derived from vessels manufactured in Beaker fabrics (some are quite fine, smooth and red, more akin to Beaker fine-wares) and exhibit evenly spaced, vertical deep rilling, accompanied by a similar horizontal rilling. A particularly good and substantial example of a vessel of this type was recovered in F83 (Figure 194).

At first glance, grooved ware of the Durrington or Woodlands style comes to mind as a possible influence on this form of decoration. It is, however, not grooved ware, but a Beaker type. Hybrids may exist between the two families (Find 998 from F41). The grooved ware association, even if indirect, is not without interest, as in Wessex it is found on sites with a ritual or ceremonial function (Bradley 1984, 1993a; Thorpe and Richards 1984). However in East Anglia Cleal has found grooved ware associations with Beakers to be as common on domestic sites (Cleal 1984, 1985).

Many different coarse vessels, often only represented by a handful of sherds, are present in the complex, following a trend already exhibited by the fine-wares. Together, the coarse- and the fine-wares derive from an estimated two dozen (or more) pots that were smashed and deposited – with a few exceptions, as a very small percentage of the whole vessels – as refuse into the scoops of the pits. There seems no reason to doubt the domestic nature of this rubbish. Although the assemblage is 'rich', three-quarters of the pottery is coarse, and vessels did not end up in the scoops as whole or nearly whole pots, nor could the pots have been broken *in situ* and then distributed amongst the fills of the various scoops.

Flint

Burnt flint (382 fragments) was abundant in the tops of features, rather than in the fills, and its distribution was akin to that of pottery. Unburnt flint (599 finds) was mainly recovered from feature fills, and consisted mostly of waste products, that is, the large majority were waste flakes with some core fragments. Only twenty-two flint objects were implements: fourteen scrapers (one each in F41, F63, F70 and F72, one each in Contexts 1009 and 1100, two from F83, three from F78 and three from Context 1015), three knives (one each from F41, F72 and ditch F10), one arrowhead (Context 1009) and four miscellaneous retouched implements. They are illustrated in Figure 195.

The preponderance of scrapers, and the low incidence of more prestigious objects like arrowheads, would suggest that the discarded flint implements derived from domestic pursuits.

Discussion

The purpose or necessity for these pits was not self-evident. Their original function is unknown, but some details may point towards food storage or preparation, and ultimately they received rubbish in their backfill, including charred material and hazelnuts. The pit group was probably not itself a structure, nor was it contained in one, but it may have been adjacent to a roundhouse (see below). The first pits formed an eastern arc, some 3 m in diameter, to which a further western arc, or horseshoe, *c*.2.50 m in diameter was added. They were finally complemented by some outlying pits along the edges of the complex (F62, F72 and, perhaps, F16).

The fact that mostly small parts of many different vessels are represented strongly suggests that the pit fills were secondary fills or backfills. The original function of the pits may have been storage, with pit bases wider than their mouths. The pits are closely packed together, and were perhaps cut serially. They occupy an area of 30 m^2. In their disuse phase they received rubbish in the form of charcoal, ash, charred hazelnut shells and acorns, bark fragments, burnt flint, flint waste flakes, core fragments and occasional implements (mainly scrapers), fine Beaker pottery and much coarse pottery. The composition of this assemblage is compatible with a deliberate backfill that derived material from midden deposits or hearth sweepings, or simply from an ancient ground surface now eradicated through erosion and ploughing. The wealth of artefacts in the pits contrasts with the general poverty of artefacts outside the pit clusters. It is suggested that this contrast is not due to ritual deposition, but to a bias in the assemblages recovered due to formation processes.

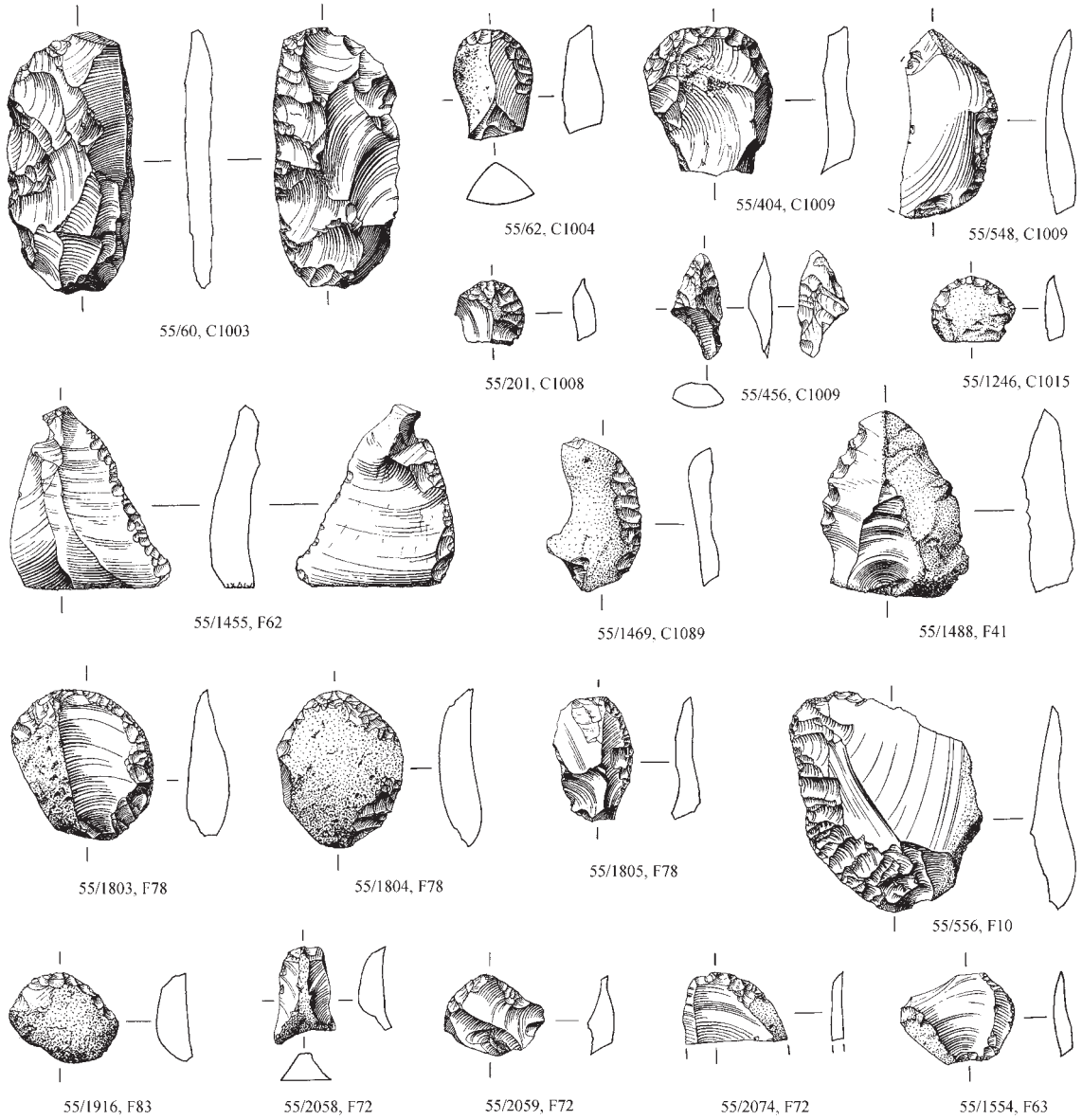


Figure 195 Selected flint implements from the Early Bronze Age settlement area in Int. 55. Scale 1:2.

Possible buildings in the Mound 1 settlement zone

Structures, particularly roundhouses of *c*.5 m in diameter, are suspected to be more frequent on the Sutton Hoo promontory than the documentation, based on the very eroded subsoil surface, suggests. The sites of three possible structures were located in this area: one under Mound 1 (see above) and two others in Int. 55. In each case they are located about five metres from pit-clusters.

A circle of posts (F19–25), 5 m in diameter with a possible porch to the south-east (F26–28), lay just to the south-east of the Int. 55 pit group. This hypothetical roundhouse has not been excavated (see Figure 189; FR 5ii/5.2). It lies in a zone (in Contexts 1008 and 1009, just above the subsoil surface) with a slightly greater concentration of finds of the Beaker period than elsewhere on the subsoil surface (excepting the pit-complex itself). Indeed, seven flint scrapers and two flint knives, as well as sixteen sherds of Beaker pottery, were recovered from this zone.

A third group of five post-holes (F73–77) further east (also on Figure 189) may have formed part of a circular building. This would have been largely destroyed by the quarry ditch (F57) for Mound 13. These post-holes once must have been substantial, as their truncated bases still survive at 33.24 m AOD, 0.30 m below the top of the subsoil on Mound 13. A Beaker date for this structure would not be out of the question, though only a few Beaker sherds were found in the area of Mound 13.

Other possible Early Bronze Age settlement zones

The four clusters already described are the most visible, but they were not the only pits with Early Bronze Age assemblages excavated at Sutton Hoo. Others (F68 in Int. 41, F29, F90 and F203 in Int. 48; FR 6/5.2) indicated on the plan (Figure 160) may be relicts from settlement sites. The largest of these minor groups was encountered in the south of Int. 32 at grid 223/148, and consisted of three shallow pits (F175, F176 and F179) next to a large, irregular, hollow tree pit F178 (FR 8ii/5.3). The features are

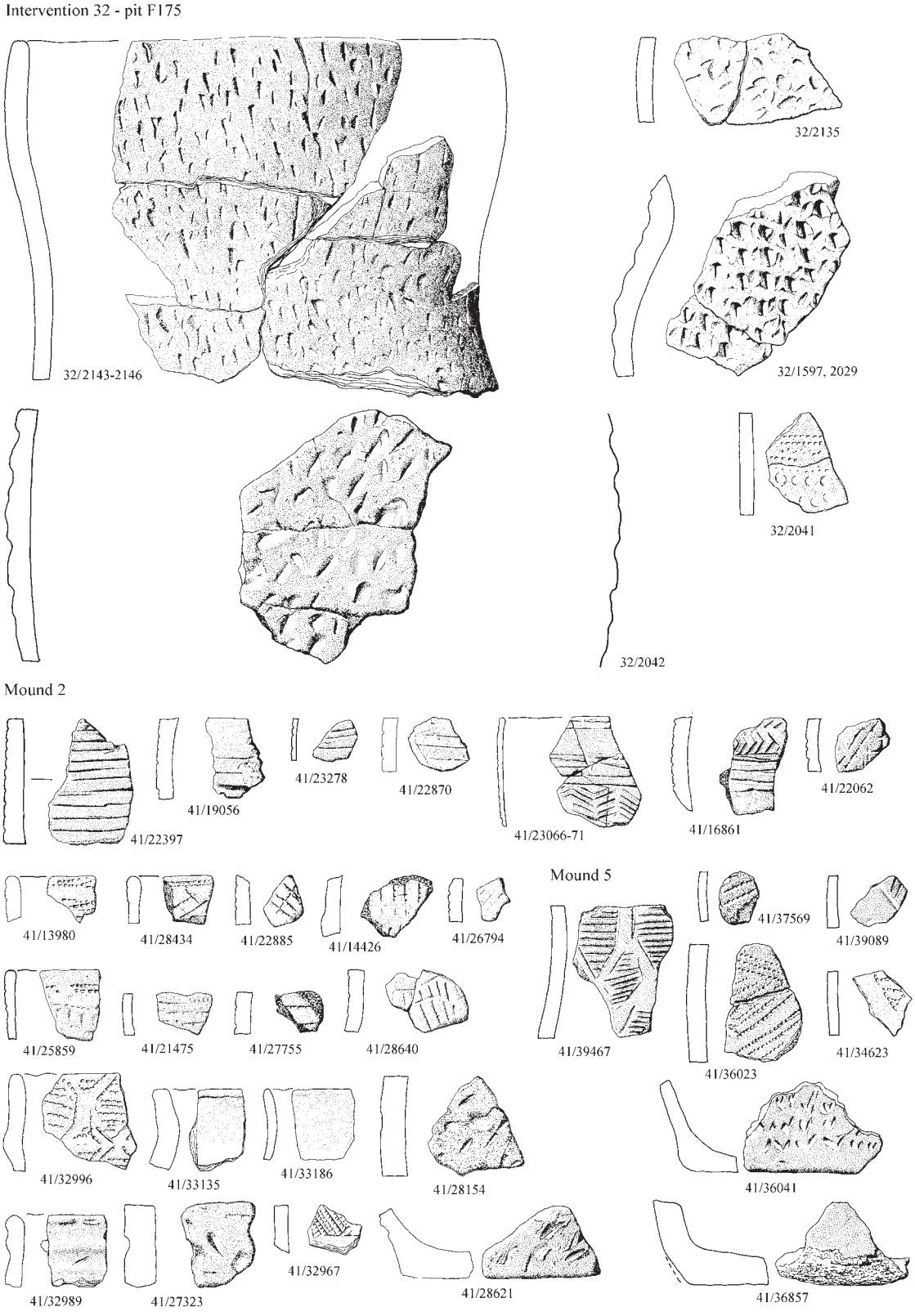


Figure 196 Beaker and Early Bronze Age pottery from Int. 32 and the buried soils under Mounds 2 and 5. Scale 1:2.5.

shallow, round-based, oval, truncated scoops, about 1 m across. An assemblage of Beaker pottery came from one of these pits (F175): only twelve sherds were recovered, but they represent parts of at least five different vessels. One small body sherd (Find 2041, Figure 196) belongs to a fine, incised Beaker, the other eleven sherds belong to rusticated Beakers, and show variations in rustication (Figure 196): a large 'pot-Beaker' is represented by sherds 2143–6, another vessel by sherd 1597/2029, and one or more additional vessels are implied by sherds 2031, 2042, 2135, 2254 and 2266. A dozen flint flakes and burnt flint fragments complete the assemblage. The other two adjoining pits contain poorer assemblages of flint flakes and burnt flint only.

The assemblage of F175 echoes traits encountered in the main pit-clusters: parts of a variety of vessels ended up in pit backfills, and individual members of a given group show variations in assemblage composition. A further element is worthy of notice: pit F175 is located next to a large pit (F178) that is interpreted as the hollow left by a felled or blown-over tree (see above). This hollow acted as a 'trap' for Bronze Age occupation debris and re-deposited natural sand. There appears to be a recurring association between pits with Beaker assemblages and tree pits at Sutton Hoo: other examples exist on the Mound 2 platform (tree pit F311/330) and in Int. 55 (the pit-complex in Int. 55 cuts a crescent-shaped feature interpreted as a filled in tree pit). It may be that this positioning was deliberate, or that the hollow acted as a trap for occupation debris and as a focus for further pit digging.

Overview

Assemblages

The range of ceramic types recovered in Early Bronze Age features had a strong Late Beaker presence: particularly domestic or rusticated-wares, rather fewer finer wares, a lesser Food Vessel and Collared Urn element, and a mass of less distinctive Bronze Age urn types (recorded in our Finds Index as BAUN or 'Bronze Age, Unspecified'). This general character was also reflected in the distribution outside features, especially in the buried soils of Mounds 2 and 5 (less in the buried soils of Mounds 6, 13, 14 and 17/18). A selection from these contexts is illustrated in Figure 196 and Figure 197. Amongst them were quantities of fine and rusticated Beakers (Figure 196), some Food Vessel sherds (Finds 41/13128, 41/28644, 50/2451 and 50/2456 in Figure 197, and 20/1024 and 32/2121 [?] in Figure 174), some Collared Urn elements (41/22829, 41/28467 in Figure 197, 32/995, and 32/4 [?] in Figure 174), a small Accessory Vessel (41/27831 in Figure 197), and further sherds with fingernail impressions, stab impressions, incisions or cord impressions.

Towards the end of the Early Bronze Age series, a number of sherds, tentatively identified as belonging to Ardleigh urns, make their appearance: Longworth and Kinnes (1980: 16 and 32) report such sherds from the top of their ditch 1 and elsewhere (1980: 36–50, figs 21–2); further examples are offered from Int. 41 in F281 (Finds 35996 and 36018) and F309 (nos 34725, 34726, 34746, 34752 and 35682), illustrated in Figure 187, and from Int. 32 (nos 1045 and 1158). In the light of some early dates obtained for Ardleigh urn assemblages at Brightlingsea, Essex (Brown 1995), it is possible to accept that there may have been a period, in the middle of the Bronze Age, when Early Bronze Age ceramic styles were still current and concurrent with the Ardleigh style and biconical urns. In this case, a sherd (Find 4544) from the Int. 50 ditch intersect, which E. Martin (pers. comm.) suggests as belonging to a biconical urn, may not be out of place.

Over the investigated area, the general distribution of Early Bronze Age ceramic types reveals some broad trends. Firstly, there is a fall-off in features, flint and pottery (mainly Bronze Age) in Int. 39, east of the 245 easting, and a corresponding increase in Bronze Age pottery west of the 220 easting in Int. 32, coincidental with the eastern double 'palisade' trenches. An eastern limit to the occupation of the Sutton Hoo promontory here in the Early Bronze Age is, therefore, not improbable. Secondly, the areas identified as the main occupation foci of Early Bronze Age Sutton Hoo, the pit clusters and structures, are most richly represented by features and finds in the buried soils (particularly in the east part of the Mound 2 platform), and more sparsely in the nearby zones occupied by real or hypothetical roundhouses (in the north-east of Mound 2 and in Int. 55, east of the pit group). Finally, the more widespread presence of Early Bronze Age or Bronze Age ceramics, compared to the previous localized Neolithic foci, testifies to an intensification of occupation on the Sutton Hoo promontory.

Two further classes of remains from Early Bronze Age contexts at Sutton Hoo have fortunately been preserved, albeit in small quantities: they are residues from metalworking and charred plant remains, and are briefly reviewed here.

Evidence for Prehistoric Bronze-Working

During the excavation of the ditch complex S23, the excavators noticed a number of bronze droplets in the fill of F571 and F561 and in later recuts (F117 and F562; Table 97). In all, there are four bronze 'drips', irregular lumps that are probably residue from casting, as well as a scrap of a bronze object (Find 43459). To these five finds should be added a sixth, from the same ditch complex but recovered further east in F62 in Int. 50 (Find 5610, a possible bronze pin), and a seventh, a bronze drip from the ploughsoil Context 1022 of Int. 41. With the exception of the latter find, all these bronze scraps and waste products were found in the same ditch, and most between the 130 and 138 eastings. The most plausible explanation for the presence of bronze waste in the ditch complex is that ditches F571 and F561 (the earliest and second earliest of the series of recut ditches, which also produced a sherd of Beaker fine-ware) received residue from bronze-working in their fills before ditch F117 was cut. The finds of bronze residue in F117 and F562 (third and fourth recuts, respectively) would originally have come from the backfill of F561, but ended up re-deposited in the later ditches when the recuts into F561 were carried out. There seems to be no reason to doubt that bronze-working was carried out at Sutton Hoo, perhaps on a small scale, in the Earliest Bronze Age, and that its residue ended up in the ditch complex (and perhaps other Prehistoric features) together with material as early as the Late Beaker period.

Several finds of slag, probably from different periods, are reported from Prehistoric features (one each from F216, F218 and F552), from the successive buried-soil horizons of Mounds 2 and 5 and, finally, in later features associated with Mound 2 (including one piece of bronze slag, Find 22820 from the quarry ditch F153).

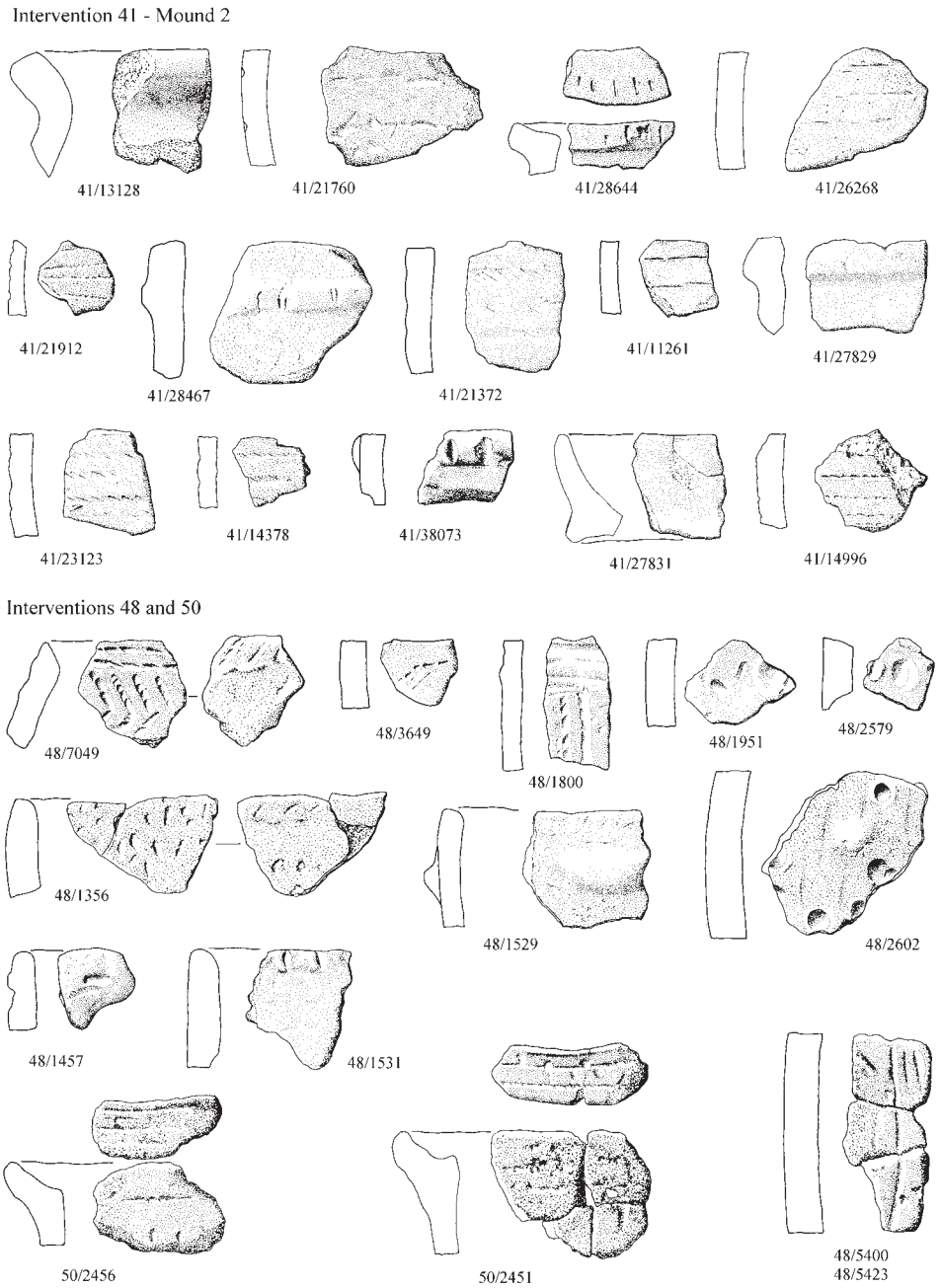


Figure 197 Miscellaneous Bronze Age pottery from secondary contexts in Ints 41, 48 and 50. Scale 1:2.5.

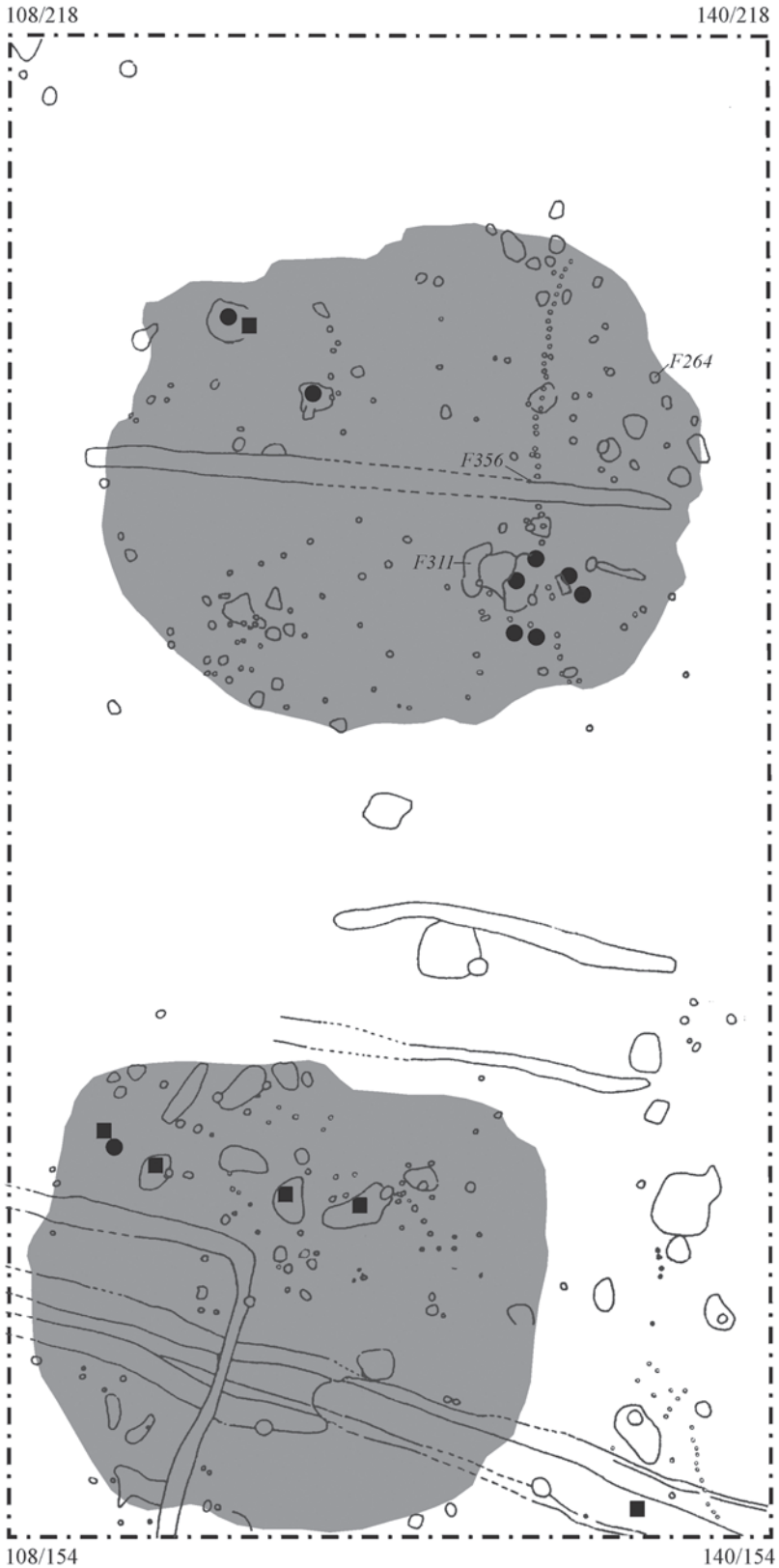


Figure 198 Map showing incidence of charred plant remains in Int. 41.

Charred plant remains

Charred plant remains were recovered in two ways at Sutton Hoo, either as spot finds noticed by an excavator engaged in the dissection of a feature, or from targeted flotation samples. Amongst the many hundreds of flotation samples processed, fifty samples from significant Prehistoric features and twenty-four samples from the buried soils of Mounds 2 and 5 were submitted for assessment by Alan Hall in 1994. Additional information was given by the thirty spot finds. The following remarks are a précis of Hall's report (FR 9/6.2), which is gratefully acknowledged.

Most, if not quite all, samples produced charcoal in moderate quantities, with an abundance of charcoal in hearth F218 and scoops F502, F506 and F532 (containing hearth remains), all in the north-east of Mound 2. Charcoal was also abundant in three post-holes in the centre of Mound 5: F544, F545 and F551 (these post-holes are associated with pits of the Late Beaker period). A radiocarbon date of cal. 2140–1910 BC was produced for F545 (see Chapter 3, p. 35).

Recovery of plant remains in dry sieving was very rare; however, although they do not usually float, six cereal grains were retrieved from flotation. From this it can at least be said that *Hordeum*, *Avena, Triticum* and, perhaps, other cereal species were available. All the specimens were obtained from the eastern part of the Mound 2 area, near or in the Beaker tree pit F311/F330. Features producing cereal remains were the buried soil of Mound 2 (F158, a grain of *Hordeum*), post-hole F264 of the roundhouse (a grain of *Hordeum*), pit F311 (an unidentified charred cereal grain) and post-hole F356 immediately to the west of the roundhouse (a grain of *Avena*, a grain of *Triticum* and a further unidentified charred grain).

The most interesting aspect of the work carried out on the charred plant remains of Int. 41 concerns the remains of hazelnut shells (not kernels or 'nuts') and acorn seeds (not cups or 'shells'). All the features producing acorns or hazelnuts have good or acceptable grounds for being dated to the Early Bronze Age period on ceramic evidence. None of the features attributed to the subsequent periods have had a single hazelnut or acorn in their fill. Thus, if Figure 160 (sequence) and Figure 198 (presence of hazelnuts/acorns) are compared, the fit between Early Bronze Age features and the features with nuts/acorns is extremely good, to the extent that the presence of hazelnuts/acorns could here be taken as diagnostic of date.

On Figure 198 there also appears to be a spatial differentiation between those features producing charred hazelnut shells and those bearing charred acorn seeds: the Early Bronze Age features of Mound 2 are the hazelnut-bearers, those of Mound 5 the acorn-producers. Only in one pit on Mound 2 (F235) do both appear together. The buried soil of Mound 5 at Horizon 6 (F412) also produced one flotation sample (Find 38494) with a moderate amount of hazelnuts, but the remaining ten spot finds and two flotation samples from beneath Mound 5 (Horizons 5 and 6) contained acorns.

This spatial differentiation ought to be due to different activities being carried out in different parts of the site. Perhaps the hazelnut-eating occupants of the Mound 2 settlement area discarded the shells in domestic fires, or added the shells to fuel, and the remnants of such consumption ended up in pits (F235 and F330), a hearth (F218), scoops and post-holes (F223, F226, F313, F333, F342 and F356). In the Mound 5 area acorns may have been processed to make them less unpalatable (roasting, leaching or boiling?), with the charred remains of such processing finishing up in the Food Vessel pit (F460), the Beaker pits (F468 and F473), and the post-holes cutting these pits (an abundance in F543–5), or situated close by (F466 and F521–2); and also, in one instance (Find 43488), in one of the early ditches (F571) making up the Early Bronze Age ditch system.

The Int. 55 Beaker pit-complex emerges as a hazelnut-bearing complex (with shells in pits F41, F63, F67, F70, F71, F83, F85 and F86), but two spot finds of acorns were also made on the surface of the complex (Context 1015).

The function of the settlement zones

The pit and post-hole groups at Sutton Hoo belong to an Early Bronze Age culture well-defined in East Anglia (Healy 1995) and Wessex (Thomas 1991: ch. 4). Often a ritual or votive element is postulated, as, for example, for the post-holes of a roundhouse rich in grooved ware at Knowth (Eogan 1993: 16–18) or for the pit with Beaker, charcoal, flint and bones found at Lakenheath in Suffolk (Briscoe 1960). Arguments in favour of a ritual model cite a rapid, deliberate filling of pits with an assemblage of high quality (Thomas 1991: 62; Healy 1995: 5; Bradley 1993a). Might this model apply to the Sutton 'settlement zones'?

The deliberate and rapid deposition of assemblages is certainly an aspect of the Sutton Hoo pit fills. Even if the material was domestic, domestic offerings could be seen in a ritual context (Bradley 1993a: 104, 107), where the deliberate addition to a sacred place of items otherwise encountered on a settlement site would have the effect, in structuralist terms, of 'domesticating the Other'. Such deposits may be interpreted in a number of ways, such as initial offerings (settlement refuse used as 'symbolic manure', Bradley 1984: 14) or as votive deposits in a monumental context (e.g. the pit deposits at Durrington Walls, Wainwright and Longworth 1971). Of course, if a visible ceremonial centre existed, there would be increased incentive to invoke a ritual element in pit deposits. But what if there are no monuments, or the monument is a natural place?

With some notable exceptions, East Anglia has few monuments or dramatic natural settings, and this relative absence has led scholars to propose different avenues of inquiry. One approach is to look for alternatives to monuments (Martin 1993b). For example, the Mildenhall-period pit deposits at Spong Hill prompted Frances Healy to suggest that 'a landmark like Spong Hill may have been a place of significant and repeated resort' (1995: 5). Another model emphasizes the lack of monuments compared to the (later) wealth of intentional offerings in natural locations such as fens, rivers and bogs (Bradley 1993b: 8).

Do the Sutton Hoo pits betray the presence of a place of significant and repeated resort? Or could it be a natural place of special importance, at which deposits were deliberately made? What springs to mind is the relationship between the tree pits and ceramic deposits. It would be a neat equation if one could associate 'rich' deposits with a ritual that had trees or felled trees as its focus. This would provide a good context for initial offerings after clearance, or for linking 'the natural world with that of human culture' (Bradley 1993a: 29).

The 1983 campaign offered the advantage of a large-scale excavation, including that of three platforms of buried soil beneath Early Medieval mounds, which on the whole served to

emphasize how far the raw material of interpretation is skewed by accidents of attrition and survival. This has certainly affected our reading of the Early Bronze Age. The character of the settlement zones described above is that they consist of pit-clusters accompanied by post-holes. Even under the mounds, the post-holes are severely truncated and many must have been lost with the soil itself, through erosion (see Chapter 10, p. 377). Only rarely does a comprehensible plan survive, and it then appears as a circular building with a south-east facing porch. Other incomplete arrays of posts may be incomplete houses, or structures which needed less symmetrical plans, such as windbreaks, or other artisan or domestic activities requiring upright post-built structures, such as smoking, drying, roasting or cooking.

The assemblages recovered from the pits and post-holes are impressive, but are they unusually rich, or of high status? Such values are difficult to judge in isolation; but it can be said here that the pottery found in the pits only represents a better preserved version of a more widespread and fragmented assemblage, which was found distributed over more than one hectare of ground much reduced by ploughing. Each of the assemblages is thus a sample of a broad domestic repertoire in which selection is due not to the active use of material culture, but its passive survival. The assemblages appear to have been captured by events associated with abandonment. At a given moment, some of the posts of the structures were removed, and the cavities were back-filled with artefacts and other debris. At the same time, the pits that were open were filled with debris of the same general character. The bulk of the assemblage could have been deposited quickly, not because it was ritually placed, but because the dwelling place was being dismantled and moved.

In more than one case, the settlement zones included a tree pit, which have also been agents for the capture of the assemblage. However, the deposits in the tree pits presuppose that the tree has already fallen. The deposit is therefore not made in favour of a living tree. The tree pit deposits, like the pit and post-hole deposits, have been formed in the same way, and might even be due to the same circumstance. Living at Sutton Hoo in the autumn of 1987 provided us with an apposite analogy: most of the trees were blown down in a single night.

The interpretation offered here, therefore, is that, as with the Neolithic phase (above), the archaeological evidence very partially captures the working activities of a farming community. The observed variations are not principally due to structured or ritual behaviour, but instead derive from the processes that formed the site.

Conclusion: the Early Bronze Age at Sutton Hoo

The Sutton Hoo promontory witnessed a dramatic increase in activity at the very beginning of the Early Bronze Age, the Late Beaker period. At this time, the landscape was carved up by linear land boundaries that seem to have disregarded variations in local topography – a characteristic, it seems, of early boundaries (cf. Fengate, Pryor 1980). The main element of this land division was a ditch and accompanying bank running west–east inland, and then turning southwards to enclose an area of a hectare or more, and in which arable farming is suspected to have occurred. Somewhat later a series of drove-ways were added, and the ditches were broadened; measures that are thought to indicate that the agricultural economy was turning to pasture. Frequent cleaning operations and recuts along the same alignment (and implied maintenance of a bank and hedge) show that these early boundaries were maintained with care. The system appears long-lived, and may have gone out of use at a time when regional pottery, such as biconical or Ardleigh urns, were current.

A number of occupation nuclei have been identified on either side of the boundaries. These take the form of dense pit-clusters associated with post-holes from windbreaks, of nearby structures (certainly one roundhouse, perhaps more), and of artefact densities preserved and protected in the buried soils of later Anglo-Saxon burial mounds. These nuclei are interpreted as domestic: the remains of a settlement with foci at least every 50 m or so (compared to intervals of around 70 m in the previous Neolithic phase), standing out against a widespread background of Early Bronze Age occupation. A little residue from bronze-working, found in the ditches, testifies to potentially some very early metalworking in the British Isles.

The question as to whether the Early Bronze Age foci, particularly those identified by rich assemblages in pit-clusters, represent a ritual or a domestic function was considered. Our conclusion is that there seems no need to invoke votive intentions in Early Bronze Age Sutton Hoo, though that possibility cannot be ruled out. Our more pragmatic model envisages rich deposits as secondary, as implying the clearance and deliberate back-filling of material from well-provided domestic contexts. The discussion of ritual versus domestic deposits has led us to a somewhat critical view of rich assemblages, one which stresses their post-depositional trajectory and the paradoxical bias introduced by fortuitous protection by later burial mounds on the one hand, and denudation on a severely eroded and ploughed site on the other. The result of these deliberations is that only a small proportion of a once busy landscape is still archaeologically visible. These survivals comprise a tantalising glimpse of a busy agricultural landscape in Early Bronze Age East Anglia.

The Late Bronze Age or Early Iron Age fenced enclosure, and other features

After the Early Bronze Age linear boundaries and roundhouse had gone out of use and the ditches were completely back-filled, a fenced enclosure, known as Structure S31 was established in the northern part of the Sutton Hoo promontory (Figure 199; Plate 53). It consists of a series of close-set post-holes running north–south in Int. 41, turning west in Int. 50, running east–west in Int. 44 and Int. 48, before turning northwards again in Int. 48 along the edge of what is now Top Hat Wood. In all, one hundred and sixty-five post-holes have been identified and planned: seventy-six of which were excavated. The various segments of this enclosure, oft interrupted because of truncation by later events and erosion of the subsoil surface, form elements of the same structure. The post-holes are discussed in the field reports (FR 4/4).

Date

The stratigraphic relationship of the fenced enclosure with other elements of the Sutton Hoo Prehistoric sequence is reasonably secure: the latest backfill of the Early Bronze Age ditch system S23 is crossed by the fence that runs over it (post-holes F109–11

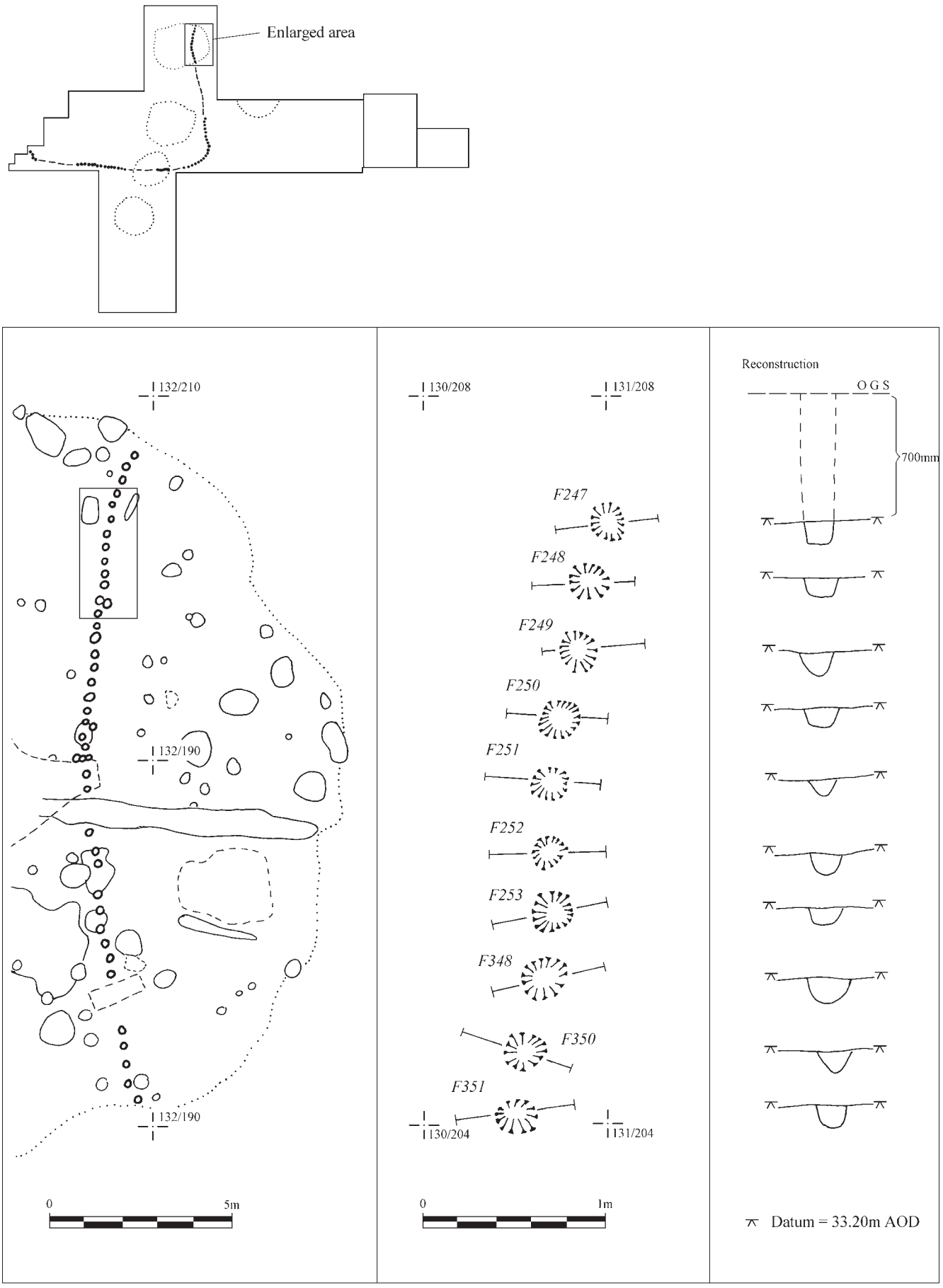


Figure 199 The fenced enclosure S31, with post settings.

and F120). It was also argued (above) that the Early Bronze Age roundhouse (S26) in the north-east of the Mound 2 subsoil platform no longer existed by the time the fence was built, as its run is set too close to the western arc of the roundhouse, and as the enclosure cuts elements of a nearby pit group of the Late Beaker period (S27) thought to be contemporary with the roundhouse. At the other end of its life, the fenced enclosure is consistently cut by linear features attributed to an Iron Age system of boundaries: thus, in the Mound 2 area, the fence is cut by the west–east gully F216 and sealed by a hearth, F219. In the Mound 6 area, the eastern north–south stretch of an Iron Age enclosure (S22) similarly cuts the east–west return of the fenced enclosure (gully F133 cutting post-hole F213).

Nearly all post-holes were devoid of datable artefacts: five produced one ceramic sherd each. Three of these (F320, F321 and F328) contained a small sherd of Beaker ceramic each, which is likely to be residual material derived from the pit-complex in the east of Mound 2 (S27) that the fence crosses at that point. A further sherd (Find 3076, Figure 203) – a rim of a small, round-shouldered, necked vessel that Ed Martin (pers. comm.) suggests belongs to a Late Iron Age vessel – was found in the top of post-hole F65 in Int. 50. Artefactual evidence for dating the fenced enclosure seems, therefore, of little help except for confirming the stratigraphic order, i.e. *termini post* and *ante quem* between the Late Beaker and the Iron Age periods. Charcoal flecks are occasionally mentioned in post-hole fills (in F65 and F77 of Int. 50, and in seven post-holes of the northern stretch on the Mound 2 platform), but no charcoal was recovered in sufficient quantities to allow radiocarbon dating.

No firm date is proposed for the fenced enclosure S31; on present knowledge it can only be assigned to the long period between the filling in of the Early Bronze Age boundary ditch (see above) and the establishment of new land boundaries in the Iron Age (see below).

Function

The construction of the fence-line implies a degree of planning and woodland management: the posts are uniform in size (diameter of 0.20–0.25 m) and were driven into the ground at regular intervals of 0.30–0.50 m (see Figure 199). Assuming an original ground surface for the period of 500–700 mm above the subsoil, the posts would have been driven in by 0.60–0.80 m and would have been set very close to each other. The final impression is of a very strong fence or stockade, enclosing an area of at least 4800 m^2, 60 m wide and at least 80 m long. It enclosed a gently sloping area. Between the north-eastern and the south-western corners of the enclosure there was a reduction of ground level of 2 m. There are gaps in the palisade, but because they may be the result of truncation by later features or ploughing, entrances cannot be assumed.

Why build such a strong fence? Why use so many trees? Greater pressure on land, and perhaps deterioration in the quality of soils during the Bronze Age, could result in a more defensive (even if symbolic) attitude being displayed in enclosures. This can be coupled with a greater reliance upon pastoral regimes of exploitation (including the keeping of semi-free pigs browsing in woodland), as soil exhaustion resulted in podzolization and, therefore, less productive arable land. A strong fenced enclosure may have been necessary to keep animals (especially pigs) in, or maybe out of, bounds. Inside the fenced enclosure, no obvious features leap out as being contemporary with the fence, but it cannot be said, categorically, that no settlement existed there. Alternatively, the enclosure may have been empty most of the time or some of the time (if, for example, it served as a meeting place and/or for gathering stock).

Evidence for Prehistoric burial?

During the 1983 campaign a number of features were thought to be cremations of the Prehistoric period, and were recorded as such in the field. Early predictions as to the nature of the Prehistoric occupation at Sutton Hoo (Ellison 1986: 39) also envisaged the presence of Bronze Age burials, as a funerary context would best explain the 1938 find of a faience bead, and the possibility of such burials, perhaps under barrows, would provide an ideal context for the establishment of later Anglo-Saxon burial mounds on a relict funerary landscape.

Indeed, south-east Suffolk is rich in round barrows and ring ditches, predominantly of Early Bronze Age date (Lawson, Martin and Priddy 1981: 64–88, figs 25–6). To the west of Sutton Hoo, barrows and ring ditches cluster particularly densely in the Shotley and Felixstowe peninsula (ibid.: 77–8, fig. 28) and include such barrow-cemeteries as Martlesham Heath (E. A. Martin 1975 and 1976) and the Seven Hills at Nacton (Lawson, Martin and Priddy 1981: 85, fig. 32). To the east of the Deben barrow sites are much fewer, but some barrows and ring ditches feature in the *Historical Atlas of Suffolk* (Dymond and Martin 1988: 31) in the Bawdsey peninsula, including some at Shottisham (CUCAP photograph reproduced as pl. 2 in Bryant 1984).

However, none of the features claimed as Prehistoric cremations at Sutton Hoo turn out to be convincing: either they were not Prehistoric or they were not cremations. The group under discussion consisted of a dozen features: four in the Mound 2 area, four in the Mound 5 area, two in the Mound 6 area and, finally, two cremations excavated by Longworth and Kinnes in 1968 to the east of Mounds 17 and 18, which they dated to the Anglo-Saxon period (1980: 11, fig. 6; SHSB I: 26–8). If we accept the latter two, one urned and one un-urned, as Anglo-Saxon (see Chapter 4, p. 105; SHSB I: 27–8), then this leaves ten potential Prehistoric 'cremations' to consider.

Three of these were features excavated beneath Mound 2, and so are indeed Prehistoric in date. They contained bone, but on analysis it proved to be mainly unburnt animal bone – cattle molars in F155, sheep in F225 and unidentified in F549 (Julie Bond, report of 6 February 1996, FR 9/8.2.4).

A yellow-green sticky clay noted in F225 was initially interpreted as the remains of a cremation, and this encouraged the same interpretation for five other features with similar deposits (F155, F270, F479, F548 and F566). Bones were absent in all but one case (F155's cattle molars). It is proposed instead that minuscule clayey deposits are likely to be connected with decay or replacement of organic products, in our case perhaps meat. Similar instances of replacement of former organic materials with clay have been analysed elsewhere, for example on the spokes of the Rudston wheel (Limbrey 1991; see also Chapter 3, p. 58).

Two features remain to be considered: the bases of two urns recovered in two small scoops adjacent to each other in the south-east of the subsoil platform under Mound 6 in Int. 44.

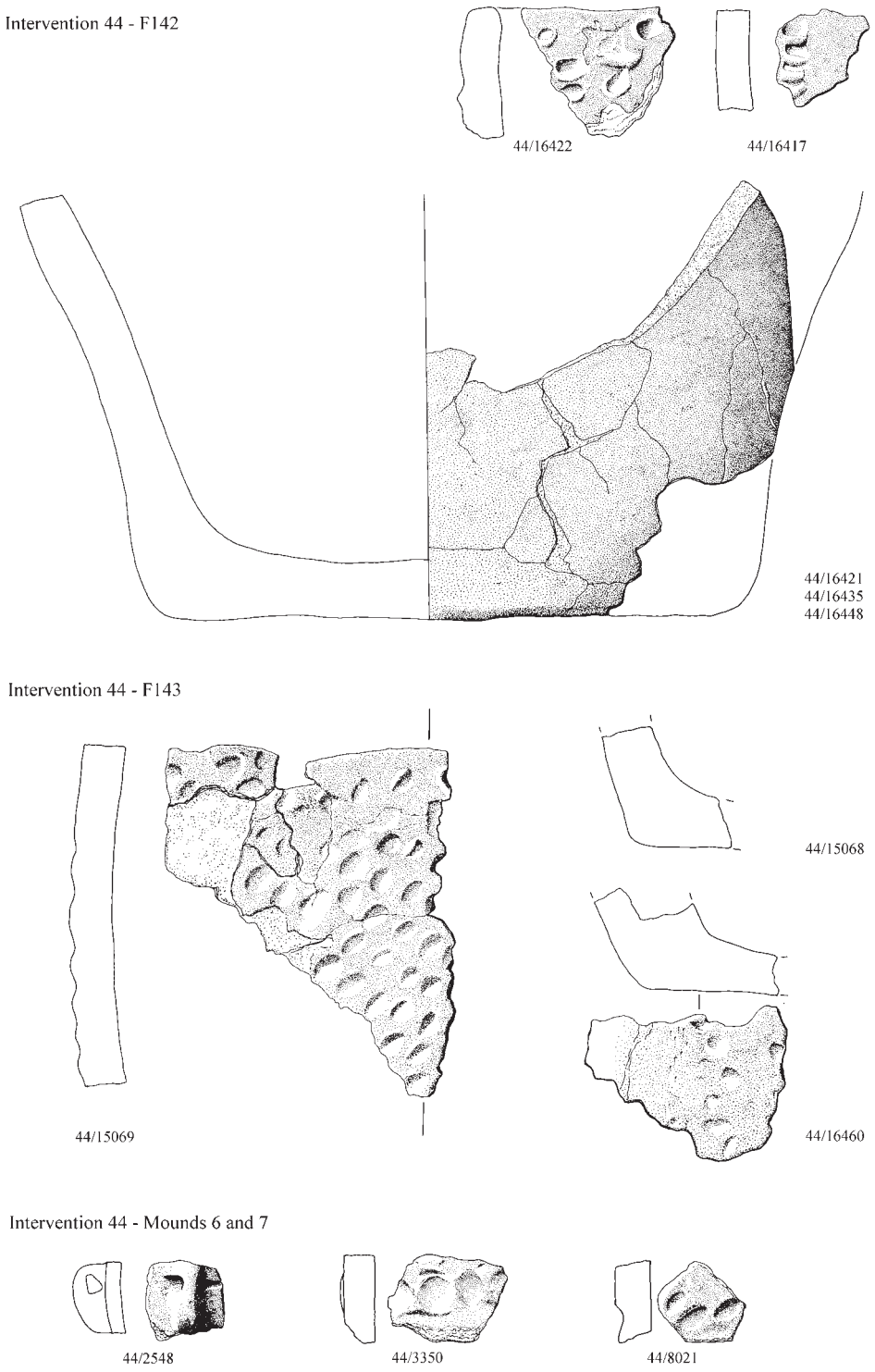


Figure 200 Deverell-Rimbury pottery from the Mound 6 area, Int. 44. Scale 1:2.5.

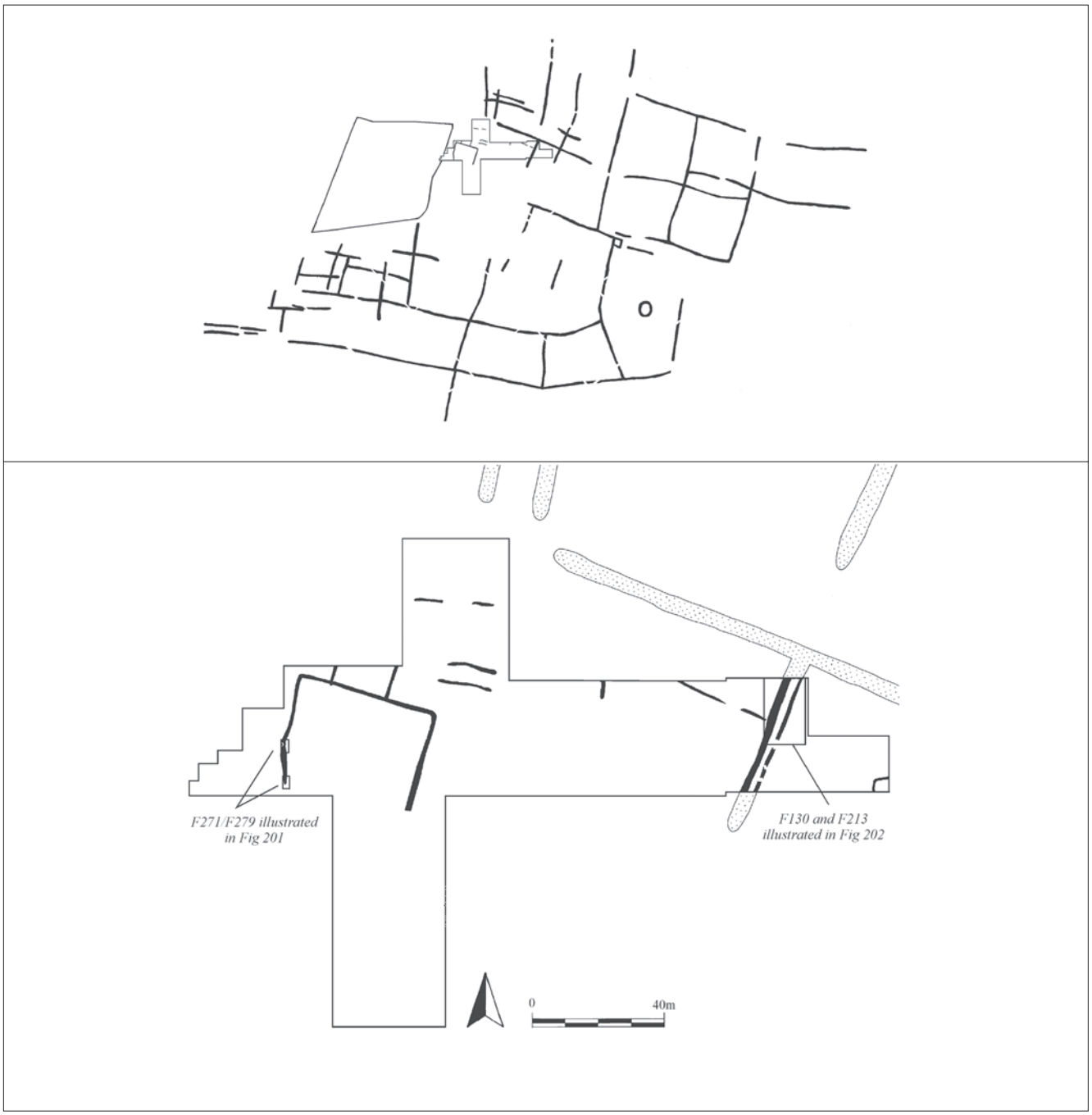


Figure 201 Iron Age enclosures: plan of principal components excavated and seen on aerial photograph. Excavated as S22 (left) and S21 (right).

They are located 2 m apart, and are known as F142 (with Deverell-Rimbury urn) and F143 (with Ardleigh urn). They are illustrated in Figure 200.

The F142 urn was set straight into the subsoil, without any surrounding scoop fill. The matrix contained inside (Context 1293) was a reddish-brown silt-sand (Munsell colour 5YR 4/3). Neither charcoal nor bone were observed or recovered. The assemblage consists entirely of twenty-five pottery sherds and a soil sample (Finds 16352, 16408–22, 16427–35 and 16486).

The F143 urn was contained in a mixed dark matrix (Context 1294) that filled the entire scoop (Munsell colour 5YR 2.5/1). The ceramic sherds were more dispersed, and were associated with charcoal, two lumps of fired clay and two lumps of burnt flint: in all thirteen find records were made (pottery sherds Finds 15068–9, 15945, 15996, 16103–4 and 16460; fired clay, burnt flint and two soil samples).

The urns were coarse and extremely crumbly. Though lifted as carefully as possible, as blocks, it proved extremely difficult to reconstitute more than part of their profile. These crude vessels are hardly what could be expected of funerary containers, and they contained no bone whatsoever. Moreover, they are set the right way up into the ground and, assuming they had an original height of 500 mm, their tops were originally close to their original ground surface. It seems, therefore, likely that they are domestic vessels and that their original function was that of food storage.

The overall verdict was that no cremations or other human burials from the Bronze Age have yet been found at Sutton Hoo.

The Iron Age

The Iron Age occupation of the Sutton Hoo promontory was extensive, but not intensive, judging by the dispersed nature of

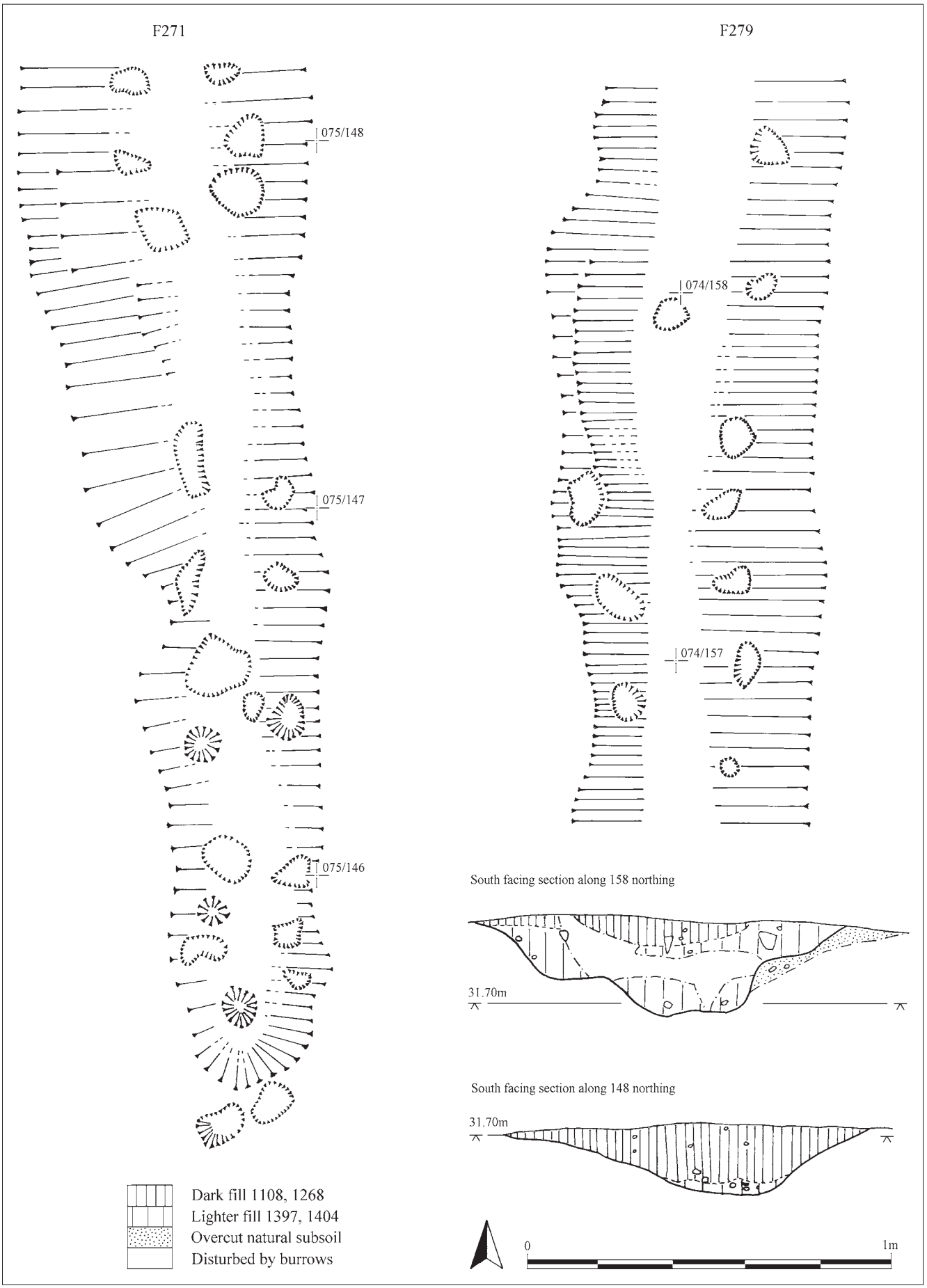


Figure 202 Iron Age enclosure S22 in Int. 48: post settings and sections.

artefact distributions and the wide span covered by linear features. These latter were made up of a number of elements: a 'palisaded' enclosure (S22) and segments of an attached field system, with a number of other detached ditches of similar structure and assemblage (S21 in Int. 32, F216 and F60/1 in Int. 41, and F356 and F386 in Int. 50; Figure 160). Together these features seem to make up a patchwork of 'Celtic fields', about 40 m^2, connected by trackways.

The Iron Age enclosure S22

Enclosure S22 contained a rectangular area that was 41 m wide, from west to east, and at least as long from north to south (Figure 201 and Figure 202). The southern part of the enclosure is lost, as truncation is more severe the further south one goes and the base of the enclosure ditch was not cut deep enough into the subsoil to survive as a negative feature. Also, Mound 7 in the south was not excavated beyond the top of its buried soil in Int. 44. Thus, whether there was a southern return or whether S22 was open remains unresolved. It is placed on a promontory directly opposite the two valley re-entrants leading down to the River Deben. This location foreshadows the positioning of later Anglo-Saxon burial mounds.

Date

Stratigraphically, the enclosure is the latest of the Prehistoric boundaries encountered on the Sutton Hoo promontory, and cut the Early Bronze Age boundary ditch (S23) and the later Bronze Age/Iron Age fenced enclosure (S31). The enclosure was also systematically cut by all Anglo-Saxon features that make up Mounds 18, 17, 5 and 6, including their central burials and quarry pits. It was dated to the Middle Iron Age period or later by the presence of Darmsden ware pottery sherds in its backfill. Longworth and Kinnes had already identified these in a short excavated stretch in 1968 (Longworth and Kinnes 1980: 16 and 32, fig. 22 and 51–8). The attribution to the Middle Iron Age from Darmsden ware may not, however, be particularly helpful in dating enclosure S22, as it seems to be a long-lived style. Martin (1993a: 38), discussing the ceramic from the settlement at Barham in central Suffolk, points out that Darmsden ware may be the fine-ware component of a long-lived pottery continuum between the ninth and fourth century BC.

Compared to earlier Prehistoric pottery assemblages, the sherds found in the enclosure and outlying ditches are much smaller and much more abraded: this often makes identification difficult (see Figure 203), but it is consistent with a hypothesis that proposes that the ditches were back-filled, perhaps as late as the time of the erection of Anglo-Saxon burial mounds, with ancient soil that had been much ploughed in the intervening centuries.

Function

The enclosure S22 was defined by a narrow ditch or 'gully' that was traced in plan in Ints 48, 41 and 44: of its western run, 20 m were excavated (Int. 48, F56/172); Longworth and Kinnes (1980, area A, ditches 2 and 4) excavated two north-western stretches; of its north-eastern corner under Mound 5, 22 m were studied (Int. 41, F122/393); and a short stretch under Mound 6 was sampled (Int. 44, F133). This ditch is between 0.80 m and 1.00 m wide and, where best preserved in buried-soil profiles, reaches a depth of 0.40 m. It was defined at Horizon 5 (the middle buried soil) in the Mound 5 area (Colour Plate 4). The records for the various excavated stretches are remarkably consistent and all report two fills: a light brown sandy base fill (Munsell color 7.5 or 5YR 4/4), and a very dark brown silty upper fill rich in detritus and very similar to buried soils (5YR 3/3). Observed in the base of the enclosure ditch, but only along certain discrete stretches, were groups of post-holes or stake-holes, 0.10 m in diameter, set in line or offset from each other. Four such groups are documented: under Mound 6 (Int. 44, F210/214 in F133), under Mound 5 (F523 in F122) and in Int. 48 (F271 and F279 in F56/172; see Figure 202).

None of these post-holes survived as 'silhouettes', and they were invariably only discovered once the light basal fill of the ditches, which also filled them, was removed. Since long stretches of the enclosure ditch were excavated in a consistent manner without uncovering runs of post-holes, it must be accepted that the enclosure ditch never held a full-length palisade, but that only certain segments were strengthened by runs of one or two dozen post-holes. The impression gained from these post-holes is that they held a rather flimsy structure, perhaps a wattle fence or even sections of prefabricated hurdles. If a full palisade was never intended, and stretches were strengthened at irregular and infrequent intervals, then one may envisage that the upcast from a narrow ditch or 'gully' formed a low bank which may have been retained at weak points by stretches of fence. Alternatively, as stretches of fence are only intermittent, they may be interpreted as temporary barriers erected for stock management (Pryor 1996). If fences were erected to retain a low bank, then a hedge might have grown alongside or on this bank or, alternatively, the presence of a barrier might have favoured the build-up of a lynchet, if repeated ploughing took place. Indeed, it is the case that the plough-marks seen at Horizon 5 on Mound 5 (F416) leave approximately two metres of headland on either side of the enclosure ditch (see Chapter 10, Figure 157).

The numerous sections – both longitudinal and transversal – and profiles across S22 (Figure 202) show variations in detail, but generally it had a rounded base and sloping edges with, above a thin basal sandy fill, a thick dark, finds-rich deposit identical to that of the buried soils of Mounds 6, 5, 17 and 18. Levelling springs to mind as the possible cause for the formation of such a deposit. A similar scenario was envisaged by Paul Ashbee (1975: 324) for the undated NNE–SSW ditch he encountered under Mound 1 (Figure 188, F53).

Associated ditches

Enclosure S22 does not stand isolated, but can be associated with a number of other ditches with similar structure and alignment:

1 Immediately to the north of S22, two ditches, 17 m apart, meet the northern edge of S22 at right angles. The western element is Longworth and Kinnes's ditch 3 (1980: 16, fig. 2), the eastern element is F286, cut at its junction with the enclosure by a quarry pit of Mound 5.
2 In Int. 41, exactly in the centre of what would later be Mound 2, an east–west ditch (F216/500) was traced over 25 m. It is stratigraphically later than the fence of Phase 3, which it bisects, and it was cut by the quarry ditches of Mound 2 and its central burial chamber (Plate 53). The descriptions of the

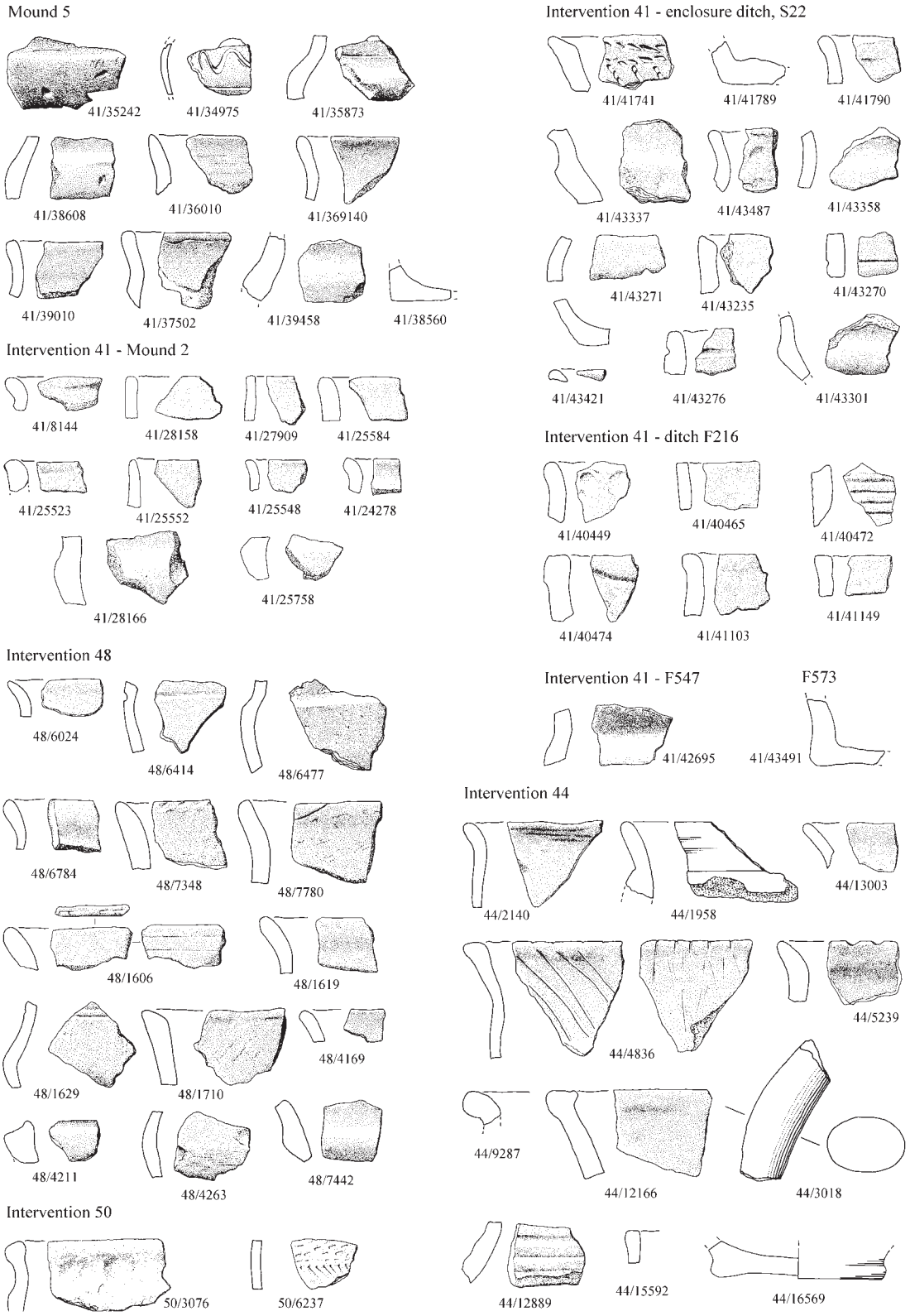


Figure 203 Iron Age pottery from ditch S22 and F216; and from secondary contexts in Ints 41, 44 and 48. Scale 1:2.5.

fills of this 1 m wide, 0.45 m deep ditch are identical to those of the enclosure ditch S22 (two-tone fill; upper deposit as the buried soil of Mound 2). No post-holes were observed in its base. A slot (F500) running alongside the northern edge of the ditch was interpreted by its excavator as 'the footings of a revetment to stop the bank from ending up in the ditch. If so, the bank would have been to the north of the gully' (A. J. Copp, Feature Record Cards). The possibility that this ditch was cut at the time of the ship-burial under Mound 2 is discussed (and discounted) in Chapter 6 (p. 169)

3 Seventeen metres to the south of the Mound 2 ditch, and 8 m to the north of S22, parallel west–east ditches (F60 and F61) set 5 m apart from each other, perhaps part of a drove-way, were traced over a distance of 15–16 m. These ditches, badly disturbed by bracken roots and rabbit burrows, are stratigraphically earlier than the Anglo-Saxon period, as F61 is cut by a quarry pit of Mound 5. Cut into eroded subsoil, these 0.70–0.90 m wide ditches only had 0.12–0.14 m of their basal fills surviving (the descriptions of which are identical to those of the basal fills of enclosure S22).

4 In Int. 50 the butt-ends of two parallel ditches (F356 and F386 of Int. 50), 17 m apart and running north–south, were excavated under Mound 14. These 1.00–1.20 m wide, and 0.35 m deep, ditches are sited exactly under the quarry ditches of Mound 14, F269 and F266, by which they are cut.

5 Further east we encounter a large ditch (F130) with a bank and accompanying palisade trench (F213), all running NNE–SSW in Int. 32/38. This is considered further below.

6 Finally, in the extreme east, there are indications in Int. 39 (palisade corner F59) and in Int. 20 (slot F37 at the 295 easting) of another enclosure, 45 m wide. Perhaps more examples, less well defined or undated, exist in the south, in Int. 44, Int. 55 and under Mound 1.

All the features reviewed have shape, size and orientation in common. Furthermore, certain distances keep recurring: 17 m for parallel sets and just over 40 m for enclosures. We seem to be looking at elements of a field system that can be tied in with the coaxial system revealed over the years by air photography, and consolidated into a single plot by the CUCAP (1976; *Bull.* 6: fig. 8; here Figure 201).

The eastern ditch, bank and palisade (S21)

An opportunity to study another part of the Iron Age boundary system on a large scale occurred in Int. 32 (FR 8ii/5.4). Here a ditch (F1/130), 2.20 m wide and 0.60–0.70 m deep from a subsoil surface at 32.90 m AOD, ran NNE–SSW (Figure 204 and Figure 205). It was excavated over 18 m in Int. 32, and traced over a further 16 m in Int. 38. Parallel to it, at an interval of 2 m to the east, ran a palisade trench (F4/213), 0.60 m wide and cut into the subsoil by 0.20 m.

Palisade trench F213 appeared to have a single grey-brown, stony, silt-sand backfill that also fills the hollows of former post-holes in its base. The assemblage mostly consists of burnt flint and flint waste, as well as eight unidentified small sherds of pottery. Only two sections through the palisade were drawn (Figure 204): one exhibits an even, rounded profile; another has a steep western edge and a shallower eastern edge.

Ditch F130 showed a single cut followed by a long phase of disuse. The fills contain two major deposits listed as Contexts 1002 and 1003, but the sequence can be somewhat refined. One section amongst many (along the 157 northing, Figure 205) illustrates this sequence. A very stony deposit (Contexts 2072–3), which fills the base of the ditch, may be stone-roll from a bank. Few finds were made in this deposit (9 per cent of the F130 assemblage): they include a group of flint waste and implements, and half a dozen sherds of pottery, some of which have been identified as of an Iron Age type.

Then the lower of two backfill deposits or tips (Context 2028 equals Context 1003) filled the ditch. It was a relatively clean, light brown sand, with a few stones more prominent on the east side of the ditch. The descriptions of Contexts 2028 and 1003 fit an interpretation as bank material (subsoil upcast onto the eastern bank) back-filled or pushed back into the ditch, mixed with occupation debris. The assemblage from Contexts 2028/1003 is quite substantial (some 34 per cent of all finds made in ditch F130), and consists of many fragments of burnt flint, flint waste and implements, a piece of slag (?) and sixteen sherds of pottery, some of which were assigned to an Iron Age fabric.

The upper backfill in ditch F130 (Contexts 1002 and 1028) is, in terms of assemblage recovered, the richest (54 per cent of all finds made in the ditch), with similar composition to the lower backfill: masses of burnt flint, some flint waste and an arrowhead, as well as a very mixed group of thirty-six pottery sherds ranging from Neolithic to Iron Age. It is darker, siltier, more 'humic' (through admixture of anthropogenic material) and stonier than the lower backfill. It is most likely to represent deliberate backfill of occupation debris, with a little charcoal, perhaps levelled-off before ploughing. It is this backfill that was cut by Burial 31 (grave F231).

The two features were thought to be contemporary, in default of other indications. The eastern palisade trench may have served to revet upcast from the ditch piled in the 2 m interval, or may have been a fence erected to prevent slippage. The search for a bank to the east or west of ditch F130 was pursued in three analyses: an examination of the surviving heights of the subsoil (theoretically higher under a remnant bank), a tabulation of the depths of the eighteen graves of the Group 1 cemetery (theoretically shallower where cut through a remnant bank) and an examination of tip lines in the backfill of ditch F130. The results from these researches are not unequivocal, but the direction of tip lines in the ditch and the profiles of ditch and palisade (Figure 205) suggest there was once a bank between the ditch and the palisade (see also Chapter 9, p. 326). This bank, like that proposed to lie within the Early Bronze Age double-ditched boundary (S25, above), may have functioned as a bounding track or drove-way.

The boundary and its hypothetical track may have survived for some time. Although for most parts of the ditch F130, Context 1028/1002 is the ultimate backfill, at the northern end of the excavated sector a much later, black and burnt deposit (Contexts 2014 and 2024) overlay a central strip of a still-visible ditch depression. This charcoal spread was patchy, very irregular, variable in depth and unrelated to the main infill sequence. It also sealed an Anglo-Saxon grave, Burial 31, which had been cut into the ditch along its length (Figure 204; Chapter 9, p. 316). The charcoal layer is thus Medieval in date, and represents the remains of a campfire in the shelter of the ditch. These Medieval 'picnics' were found in other parts of what were

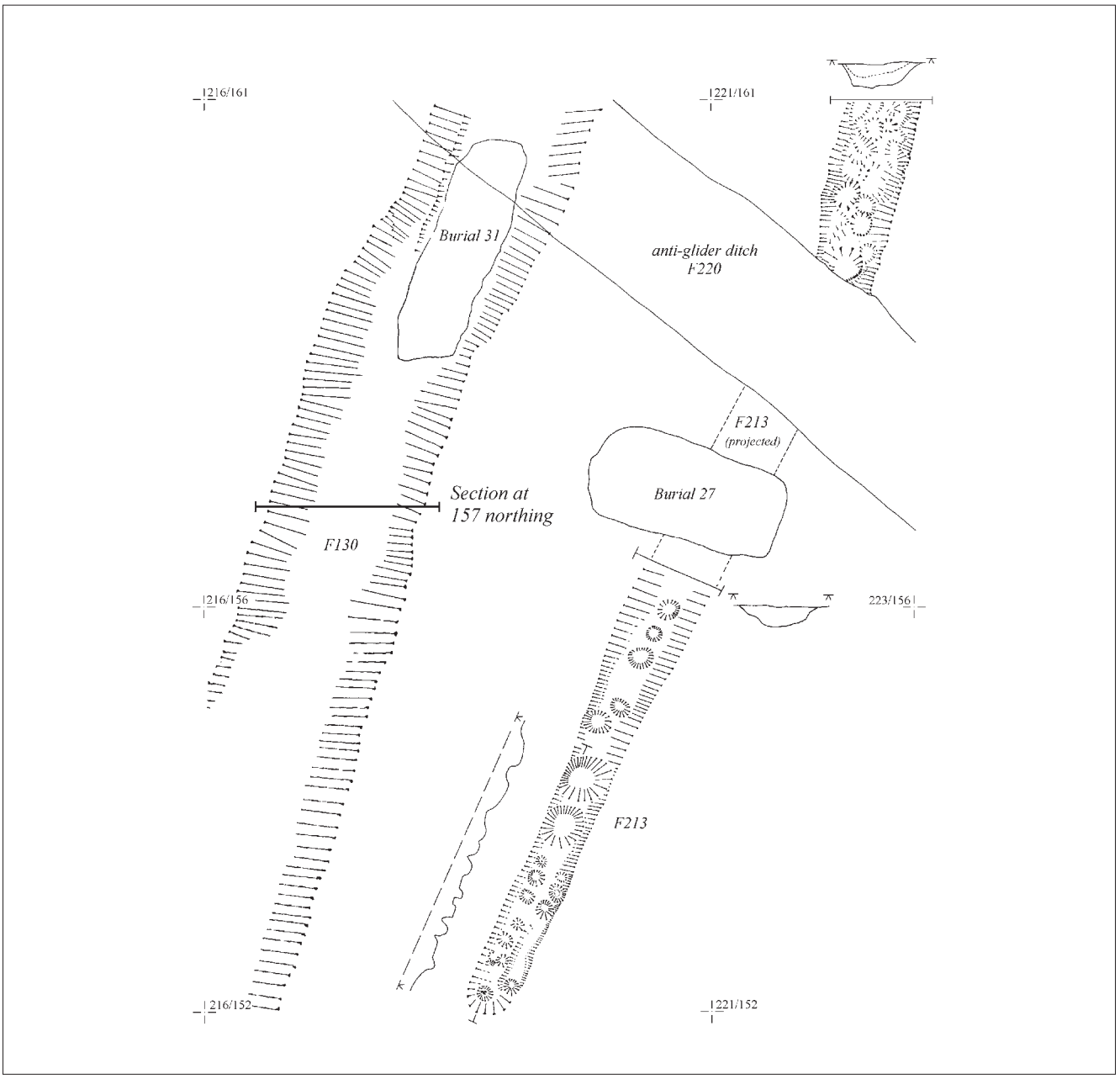


Figure 204 Iron Age ditch and palisade S21 in Int. 32: plan.

then the grassed-over Sutton Hoo earthworks (Mounds 2 and 14 quarry ditches and a Mound 5/6 quarry pit; see Chapter 12). The interest of Context 2014 is that it reveals that a grassed-over hollow was still visible in the Middle Ages and, by extension, in the Anglo-Saxon period. Ditch F130 and palisade trench F213 form part of a long Iron Age boundary running SSW–NNE (Figure 201). If, as suggested above, they bound a track, it was one that may have endured from the Iron Age into the later Anglo-Saxon period, when the execution victims of Group 1 were buried. Such a thoroughfare may even have provided the rationale for the original gallows site (see Chapter 9, p. 324).

Conclusion

Taken together, the S21 and S22 ditches, and similar features (F60, F61 and F216 in Int. 41, F286 in Int. 48, and F386 and F356 in Int. 50), constitute parts of an extensive system of square fields on a NNE–SSW alignment (Figure 201). A common Iron Age type of field system, these so-called 'Celtic fields' provided a set of interlinked agricultural enclosures. The combination of ditch and palisade seen in the western arm of S22, and in S21, may suggest that they also featured long-term thoroughfares. The purpose of these enclosures was not evident from this investigation. They are suitable for the grazing of small groups of stock, but were employed at one time for the cultivation of crops, including vegetables or fruit. The evidence for this practice survives only in its latest form, which here seems to belong to the Roman period.

Roman usage

The latest activity detected in the buried soils before the construction of mounds was cultivation (Plate 52; Figure 157). The cultivation marks are of two kinds: families of linear furrows, and rows of circular patches that might be attributed to vegetables or fruit bushes. The cultivation marks were aligned with, and generally respect, the Iron Age enclosure and its

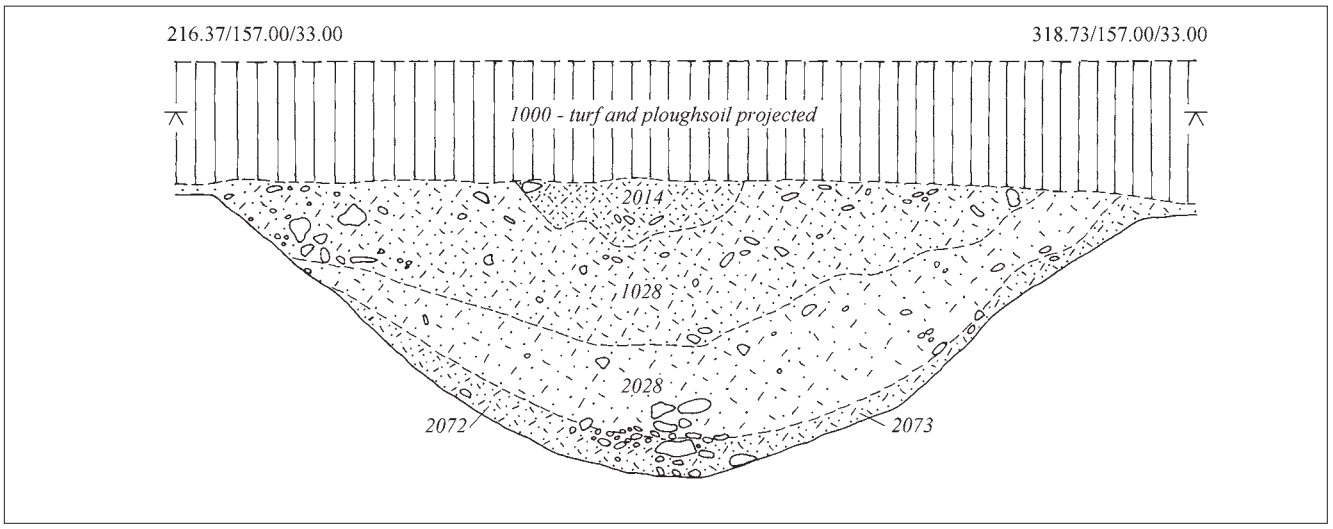


Figure 205 Iron Age ditch and palisade S21 in Int. 32: section through F130 at northing 157.

system, and were seen only beneath Mounds 2 and 5. The base of the plough-marks occurred at about 250–300 mm below the extant buried-soil platform, and marked the surface of Horizon 5 or 6. The linear marks criss-cross in places and are presumably the work of an ard. The implication of the depths of both kinds of cultivation mark is that the latest ploughing had taken place from an old ground surface equivalent to Horizon 4, the extant surface of the buried soil beneath the mounds. They should, therefore, be relatively close in date to the construction of the mounds.

Roman pottery was found in the buried soils under Mound 2 (all at Horizon 4, except for one sherd at Horizon 5) and in those of Mound 5 (all at Horizon 4, and in the same area as that occupied by the plough-marks). A few sherds of Roman pottery were also recorded from the tops of Prehistoric features in the Mound 5 area (Find 38907, from the top of the filled-in ditch S23, F128; Find 42705, from a Bronze Age [?] feature F547) and in the Mound 2 area (Find 40460, from the Iron Age gully F216). Roman pottery also appears, re-deposited, in later contexts, such as the quarry pits of Mound 5 (one sherd each in F125, F556 and F559) and the warrener's pit F269 of Mound 2 (five sherds; see Chapter 6, p. 174). A Roman follis was found in Mound 2 at Horizon 1 (Int. 41/1022/12488), a Colchester type 90 (Crummy 1983; identified by R. Hobbs) Roman fibula (*c.*AD 40–60) in the buried soil at Horizon 5 under Mound 5 (Int. 41/F391/1773/36800) and a second fibula in Mound 6 at Horizon 3 (Int. 44/F108/1177/3219).

The widespread, but fairly thin, scatter of mainly grey-ware Roman pottery and other finds would be consistent with ploughing and manuring fields. Cultivation appears to have been the main local activity in the Roman period, both on the Sutton Hoo promontory and in the flood plain of the River Deben below (*Bull.* 4: fig. 21, *Bull.* 5: 10–11, *Bull.* 6: fig. 10 and *Bull.* 8: 30). It could also be suggested that Roman-period cultivation respected, or perhaps even expanded on, the layout of the 'Celtic' field system formed by S21, S22 and associated features (see above).

Iron Age boundaries and Anglo-Saxon mounds

The Iron Age field system survived to be used in the Roman period and, as mentioned above, into the Middle Ages. Parts of it, at least, were therefore visible to the Anglo-Saxons. It will not have escaped notice that barrows and central burials seal and cut enclosure S22 (Figure 18): Mound 18 is sited on its western run, Mound 17 on its north-western corner, Mound 5 on its north-eastern corner and Mound 6 on its eastern run. Not only are these four mounds following an Iron Age arrangement, but two further mounds are sited centrally over further elements of the Iron Age system: Mound 2 over F216, and Mound 14 over F356 and F386. Finally, it could be argued that the siting of the eastern execution Group 1 was influenced by the course of ditch F130 or its attendant trackway (see above).

It is envisaged that the Iron Age system, a bocage landscape, consisted of boundaries in the form of low banks, lynchets, hedges and fences, at which the plough stopped (no plough-marks overrun the Iron Age features, and on Mound 5 there seems to be a 2 m headland either side of enclosure S22). Ploughing continued at least into the Roman period (above). On sandy and windy ground, with poor topsoil cover, the maintenance and conservation of topsoil in a bocage would certainly have been an investment worth perpetuating.

But no earthworks or turf lines were defined beneath the mounds, and the ditches of the enclosures appeared to have already been filled in when the mounds were built: so the Anglo-Saxon mound builders were apparently influenced by ditches that were already buried. This paradox can best be explained if the Anglo–Saxon mound-builders chose the site of the mound from the earthwork, but began by stripping off the turf, levelling the banks and filling in the upper parts of the ditches. If some land was still under the plough, then the siting of barrows was on field edges and corners: a peripheral position, rather than one in the middle of a field, would maximize the amount of turf and topsoil available.

The choice of these Iron Age field boundaries for one of Early Medieval Britain's richest burial grounds indicates a fairly generalized awareness of their significance. The fields may have been taken into Anglo-Saxon agricultural use during an early phase of *Landnahme*, before being adopted as a prestigious burial ground in the seventh century. The Prehistoric landscape, though very old, was not funerary, monumental or even of a dramatic aspect. Perhaps practical and spiritual considerations were not that far apart in the barrow-builders' minds.

Conclusion

Whether in the form of a bank and ditch, hedge and ditch, bank and fence, or a more substantial revetted bank, the Iron Age boundaries formed a network of small fields 40 m or so across and connected by drove-ways. Other parallel ditches within the system showed a separation of 17 m, which may also be a significant measure in the parcelling of land. It is likely that these 'Celtic fields' covered at least 10 ha. of the Sutton Hoo promontory. The fields and tracks were respected and used by farmers of the Roman and, probably, Early Anglo-Saxon periods. They remained as earthworks to influence the siting of the barrows of the princely cemetery, and the gallows that succeeded them after the Christian conversion. Parts of the system were still visible in the Middle Ages when, together with the new landscape provided by the burial mounds, they formed a grassy undulating stretch of pasture affording shelter for casual fires.

Chapter 12

After Sutton Hoo

Farming and excavation campaigns from the twelfth to the twentieth century

Martin Carver

Previous investigations

The recent history of the Sutton Hoo area was extensively researched by Rupert Bruce-Mitford, who collected the maps, the earliest dating to 1601, on which Sutton Hoo featured, and equated them with the observed mounds and trackways. He assumed that the Norden and subsequent maps featured the hollow way that can still be seen, and he also assumed that the Norden Map used a 'cocked hat' symbol for 'broken ground'. Thus he asserted that while the small bumps shown at the expected point for the Sutton Hoo cemetery do refer to burial mounds, those to the north, which are larger and more numerous, do not (SHSB I: 32–42; here Table 99 (Track 1), Figure 206, Colour Plates 3 and 13, Plates 1 and 4).

Between 1983 and 1986 Peter Warner reviewed the map and documentary evidence for the Sutton Hoo area on behalf of the new project, including the tythe maps. In these, he rediscovered the location of the Domesday vill of Stokerland to the south of the site, and located Harrough Pightle, an Anglo-Saxon pagan 'temple' name, on the hill above Wilford Bridge (Warner 1996: 118). This place was later occupied by the gallows depicted on Norden's map. A gallows in the area was still remembered in 1843 (Table 100). Warner's researches also led to the hypothesis of a 'pagan enclave' in the area of Sutton Hoo, a zone with pagan place-names and an absence of early church dedications. He also collected evidence for early barrow digging in Suffolk, and studied early agricultural practice in the Sandlings, providing useful analogies for the interpretation of the Prehistoric and environmental sequences (*Bull.* 2: 7 and 3: 17; Warner 1996; see Chapter 11, p. 416).

Additional research for the present volume has had the following objectives:

1 to investigate the later history of the mounds and, in particular, the use of the site by farmers
2 to discover evidence for the excavation campaigns suspected of having taken place before 1938

To this end, the archaeological evidence from the excavation was combined with documentary searches in Suffolk County Record office and elsewhere.

Archaeological evidence for the history of the site since the mounds were built

Later history of the mounds

Quarry pits excavated around Mound 5, and quarry ditches excavated around Mounds 2, 6 and 7, had initial fillings of mixed soil up to 200 mm deep, patchily covered by a layer of dark grey sand that thickened towards the mound. Above this was a layer of homogenous pale pink-grey sand (see Chapter 4, p. 77, Chapter 5, p. 113 and Chapter 6, p. 170). Analysis (Chapter 10. p. 371) showed that the primary filling was similar to the buried soil (mixed with subsoil), and the final fill had a podzolic derivation too, though it was visually different. The interpretation given is that the primary fill was surplus from mound-building, the dark layer was a turf line that had developed on it, and the pale sand was the result of the ploughing of the mounds. The calculations of the original heights of mounds showed that they had been much higher, and had been reduced by a metre or more. The action of ploughing also spread the mounds, so that they oversailed their own quarries. There was support for this model from an experiment to reconstruct Mound 2 using the measurements obtained from the excavation of the mound and its quarry ditches (see Chapter 3, p. 47). The deposition of the pale sand thus represents a key moment in the aftermath of the mounds.

The graves of six victims of execution were cut into quarry pits around Mounds 5 – all but one certainly sealed beneath the pale sand. Other bodies in the group were dated by radiocarbon

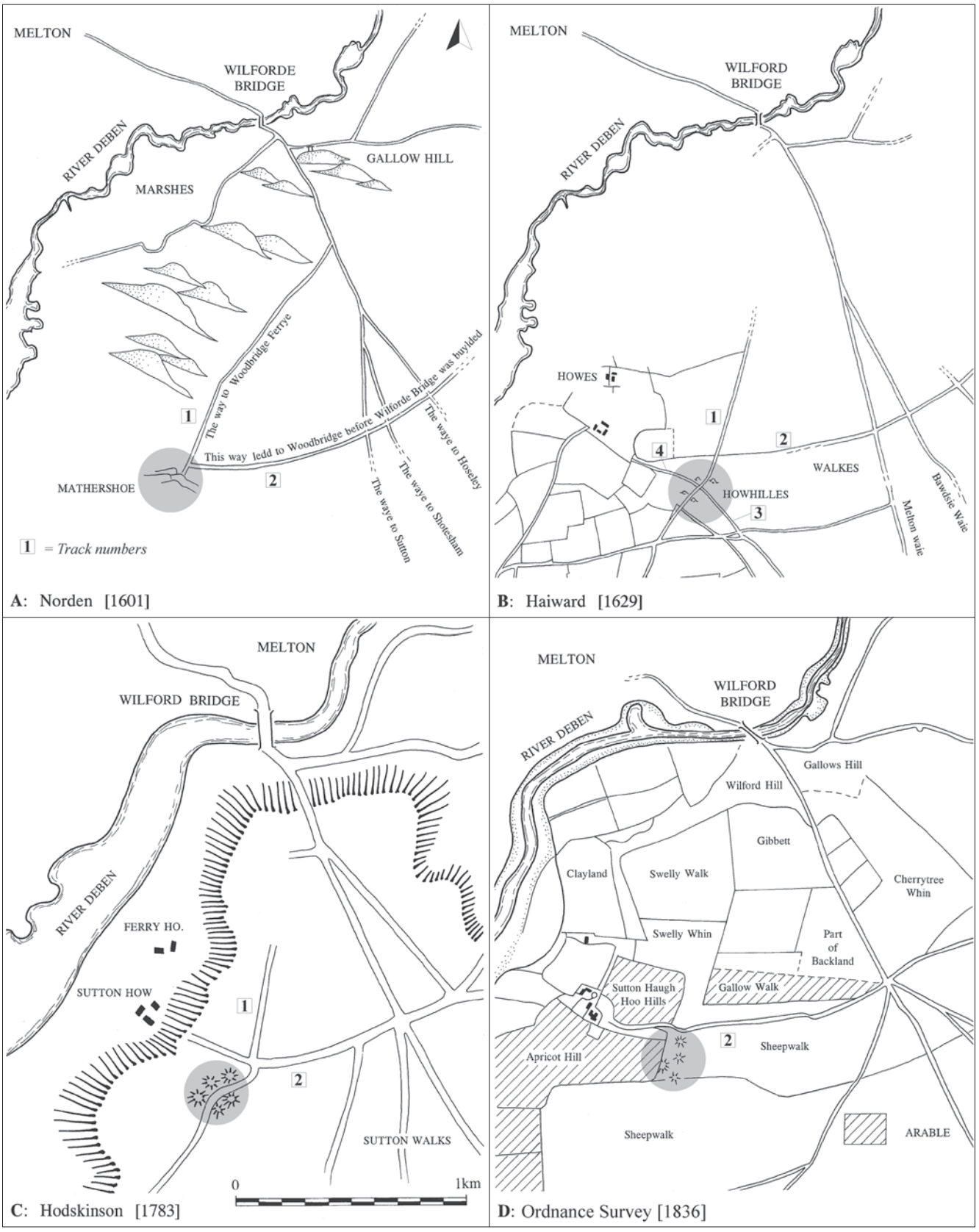


Figure 206 The evidence of maps: the maps made by Norden (1601), Haiward (1629), Hodskinson (1783) and the Ordnance Survey (1836) redrawn to the same scale.

Table 99
Maps relating to the Sutton Hoo area

Date	Description
1601	Norden's map of the Stanhope Estates (Suffolk Record Office V6/22/1). The map is made with watercolour on vellum or parchment; it is 18" by 12" and bound in boards. There are ten bi-folio maps preceded by a table showing the size and value of the land mapped by the occupier. A paragraph preceding the table tells how to use the map and the table. The preface explains that the map was made by J. Norden for Sir Michael Stanhope in 1600–1.
1629 [1631]	Lands of Sutton Parish (Suffolk Record Office, T.379 – this seems to have been a temporary accession number for Haiward's map of Sutton, HA24 50/19/1-11a–d. It does not go as far north as Sutton Hoo, unlike the better JA 1/48/2, see below)
1783	Hodskinson's 1" map of Suffolk (British Library) shows five mounds astride a north-east to south-west track. The cemetery site lies in Sutton Walks. The slope to the west may already be under the plough.
1836	Ordnance Survey sketch (British Library) shows five mounds to the south of an east–west track. The cemetery site is now heath and called Sutton Walks.
1843	Tythe Map (Suffolk Record Office FDA 43/A1/1b [Bromeswell]/FDA 247/A1/1b [Sutton]) shows no tracks. The cemetery site lies in 'Sheepwalk' and is heath. The slope to the west is under the plough.
1881	Ordnance Survey 25 in. to the mile shows 9 mounds, all except Mound 1 to the east of a north–south track. The cemetery site is heath.
1889–91	Ordnance Survey 6 ins to the mile first edition shows 9 mounds, all (except mound 1) to the east of a north–south track. The cemetery site is heath
1902	Ordnance Survey second edition shows 9 mounds , all to the east of a north–south track. The cemetery site is heath.

to the period between the seventh and thirteenth century, with the probability being between the eighth and eleventh century (see Chapter 9, p. 348). Patches of burnt material, interpreted as hearths were found on the turf, or at an equivalent level in the quarry ditches of Mounds 2, 6 and 14 (see Chapter 4, p. 83, Chapter 5, p. 113 and Chapter 6, p. 161). Two examples (Mounds 6 and 14) were accompanied by sherds of coarse-ware cooking pot. Four pits around Mound 2 attributed to warreners (see Chapter 6, p. 174), one of which had similar coarse-ware sherds, were dug from a level equivalent to the turf line in the quarry ditch. This pottery has been dated by Keith Wade (of Suffolk Archaeological Unit) who writes:

> The sherds have sandy fabrics with buff or grey cores and grey-brown to red-brown surfaces. Pottery from the Mound 6 quarry ditch seems to belong to a single cooking pot with simple everted rim [Find 5720]. Pottery from the Mound 14 quarry ditch has a number of conjoining sherds, and also seems to come from a single cooking pot with an everted rim [Find 6150]. The simple rim-forms and the lack of Thetford ware, which goes out of use in the mid twelfth century, suggest a date in the late twelfth century – a date endorsed by the lack of glazed Medieval sherds from Sutton Hoo.

The whole carcass of a young bull (*bos longifrons*) had been buried in a pit in a quarry ditch of Mound 6 (for identification, see FR 9/8.2.2). This burial had probably cut through the turf and pale sand (Context 1007), but its stratigraphic position was not precisely seen (see Chapter 9, p. 343). The animal bones gave a radiocarbon date centred in the mid seventeenth century (see Chapter 3, p. 54). The infilled quarry ditches of Mounds 7 and 17 were overrun by a track (Track 1, see below) which is marked on a map in 1601 (Table 99; Figure 206). The ploughing should, therefore, have certainly taken place before 1601.

After their use as an execution cemetery (see Chapter 9), the grassed-over mounds, and their quarries, were visited by people making hearths in the shelter of the quarries and by warreners digging pits to farm rabbits in Mound 2. These events should have taken place by the twelfth century. The mounds were thus ploughed between the twelfth century and 1601.

Track 1, S33

The infilled quarry pits had been overrun by a track that was excavated in a number of places. It crossed beneath the spread mantle of Mound 1, on its eastern side, crossed Int. 55, and then crossed the filled-in quarry pits of Mounds 13, 7 and 14 (Plate 12, Figure 17). Ruts, 50–100 mm wide, ran alongside each other. There was no metalling, and the ruts would seem to have been formed by carts with an axle span in the order of 800 mm

Table 100
Field names in Bromeswell and Sutton, 1843/4

Field numbers, and their names in Bromeswell Parish, 1843. All owned by Sir Charles Kent (Bart.) and occupied by Robert Barrett.

335	Wilford Hill
344	Swelly Walk
345	Gibbett
346	Stackyard Walk
347	Part of Blackland
349	Swelly Whin
351	Clayland

Field numbers, and their names in Sutton Parish, 1844. All owned by Sir Charles Kent (Bart.) and occupied by Robert Barritt [*sic*].
The crops are listed.

419	Apricot Hill – *arable*
421	First home meadow – *pasture*
421a	Saltings
422	Stable Piece – *arable*
423	Cottage – *pasture*
424	Drift – *pasture*
425	Meadow – *pasture*
426	Farm house and garden – *pasture*
427	Drift – *pasture*
428	Hoo Hills – *arable*
429	Sheepwalk – *heath*
430	Gallow Walk – *arable*
431	Sheepwalk (includes the Sutton Hoo cemetery) – *heath*

Table 101
Medieval pottery from Sutton Hoo

Context	Description	Date
from a hearth (F192) in the Mound 2 quarry ditch	1 base sherd (Find 26523)	late twelfth century
from a pit (F269) dug into the Mound 2 quarry ditch	4 body sherds and 1 base sherd (Finds 42070, 42131, 42132, 42133, 42172)	late twelfth century
from the turf horizon within quarry pit F2 for Mound 6	22 sherds from a cooking pot (Finds 5720–1, 5728–9 and 5731–3)	late twelfth century
from a hearth, Context 1487, in the Mound 14 quarry ditch F266	140 sherds of a cooking pot (Finds 5891–8, 5907, 6093–9, 6101–10, 6115–20, 6150–68, 6180–6229 and 6238–44)	late twelfth century

(Figure 44). A track in this position is shown on a map of 1601 (Table 99, Figure 206, Track 1) and, although it no longer appears on maps after 1836, its general course remains visible in the surface of the site to the present day (Colour Plate 3).

The lynchet, S32

A low bank runs north–south along the west side of the burial ground, overrunning the edges of Mounds 10, 1 and 12 (S32, FR 6/8.1; Figure 207). It was explored in three trenches by Ashbee (Ints 8–10) and in Int. 48. The bank (F224 and F338) was accompanied on its eastern side by a ditch (F59/F188), 1.20–1.70 m wide and 0.55 m deep (where excavated). This ditch, cut through sterile, natural, sandy subsoil, provided enough nutrients in its deep, grey, podzolized fill (Context 1284) to attract the roots of the ash tree that stands at the north-west corner of the Sutton Hoo site: its roots could be traced for a distance of some 50 m southwards from the tree along the course of the ditch. An assemblage of post-holes (F60–68, F70–78 and F196) can be seen running north–south under the bank F224. They seem to align with the ditch in its original form, but are buried by the latest form of the bank.

The excavator felt that the ditch was a boundary that was marked by a fence (F188) and a hedge (F273). The ditch contained Iron Age pottery, and the upper bank had recent nails and glass. The stratigraphic sequence is shown in the section (Figure 207). The first context (1305) was analysed by micromorphology (see Chapter 10, p. 371), and was found to be a relict brown earth (60 mm deep) capped by the lower part of a podzol (65 mm deep). It therefore mirrors the lower parts of the podzol beneath the mounds, and at 125 mm thick is probably equivalent to the soil between Horizons 6 and 7. Part of a soil of similar composition was found on the east shoulder of the ditch. Context 1304 was reported as a pale sand similar to that filling the quarry pits, and may be from ploughing belonging to the same period (i.e. before 1601). Above it is a considerable depth (500 mm) of a later ploughsoil.

Three phases of function could be ascribed to this boundary: first, a fence or hedge on the edge of an otherwise open, grassed-over ditch; second, an episode of ploughing which filled the ditch; third, the formation of a lynchet from further ploughing. Reasons are given below for assigning the first of these phases to a Medieval period of pasture, the second to a later Medieval ploughing and the third to ploughing in the nineteenth century.

Evidence for earlier excavation campaigns

Evidence for major earlier excavations that were otherwise unrecorded (colloquially known as 'robbing') were noted in Mounds 2, 3, 4, 5, 6, 7, 13, 14 and, possibly, 18, with unsuccessful attempts in Mounds 1 and 17. The robber excavations took two forms (Figure 208). That of the *oval pit* was best defined in Mounds 2 (Plate 35) and 14 (Plates 25 and 37), where it had been back-filled with dark grey turfs. The pits were deep shafts aimed, for the most part accurately, at the centre of the mound and the burial. In the case of Mounds 2, 3, 4, 5 and 14, they seem to have scored a direct hit. In Mound 1 the shaft was off-centre (see below), and in Mound 17 the shaft came down between the two graves of a man and his horse. It is argued below that these shafts belong to a sixteenth-century campaign. The second kind of robber excavation, argued to be nineteenth century in date, used an *east–west trench*, and was noted most clearly in Mounds 6, 7 and 13.

In Mounds 5 and 6 the excavators of this second campaign dug trial pits on the west side, and then drove a trench along the top of the buried soil: the same technique later used by Basil Brown. In Mound 7 steps had been cut down into the burial chamber from the west end of the robber trench; while at ground surface at the east end there were ruts and tread and the trench splayed out (Plate 60). This scheme suggests that the gentleman antiquary had stood at one end to inspect the burial and receive the grave goods; while at the other end a labour force removed the soil. Victor Ambrus reconstructs the scene in Figure 209. Ship-rivets, for which the only known origin then would be Mound 2 (see below), were found near Mounds 5, 6 and 7. It may be, therefore, that the excavation campaign began with Mound 2 and proceeded southwards.

Plate 59 The bull in the ground in a Mound 6 quarry ditch.

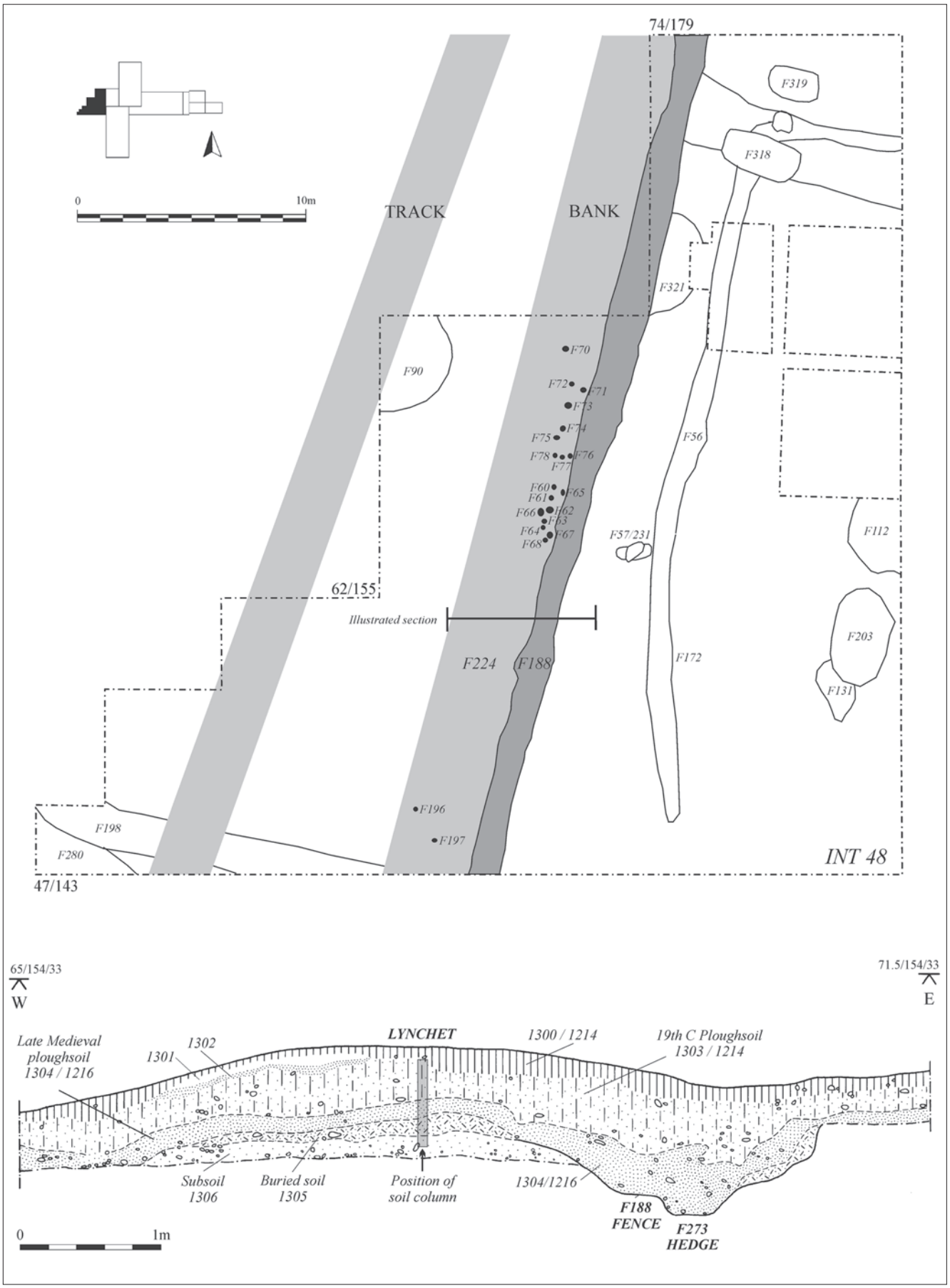


Figure 207 Section through lynchet and ditch in Int. 48, with (inset) plan showing location.

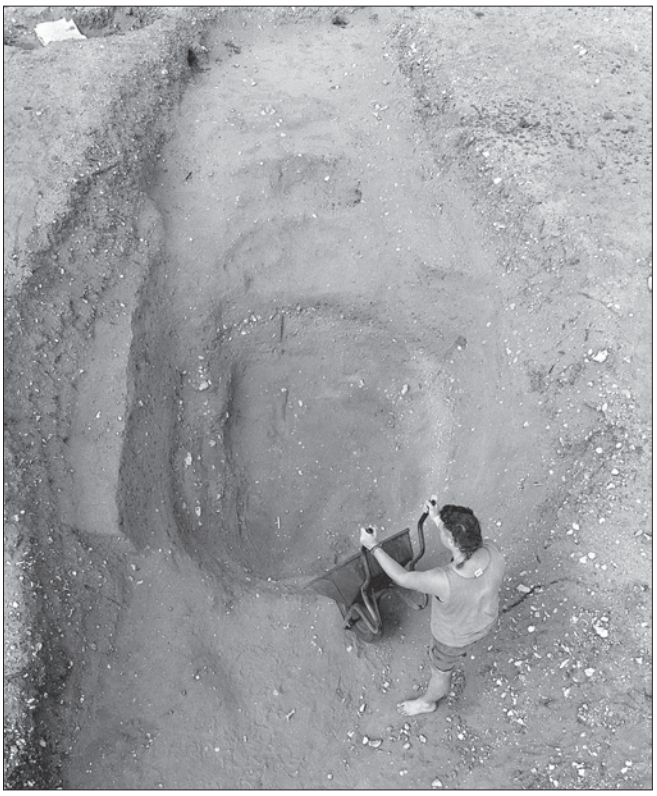


Plate 60 The robbing of Mound 7 in the 1860 campaign. Toby Simpson stands on the excavators' barrow run in the foreground. The 'antiquaries' steps' are on the far side of the pit. The pit itself may have been enlarged by a shaft dug in the 1600 campaign.

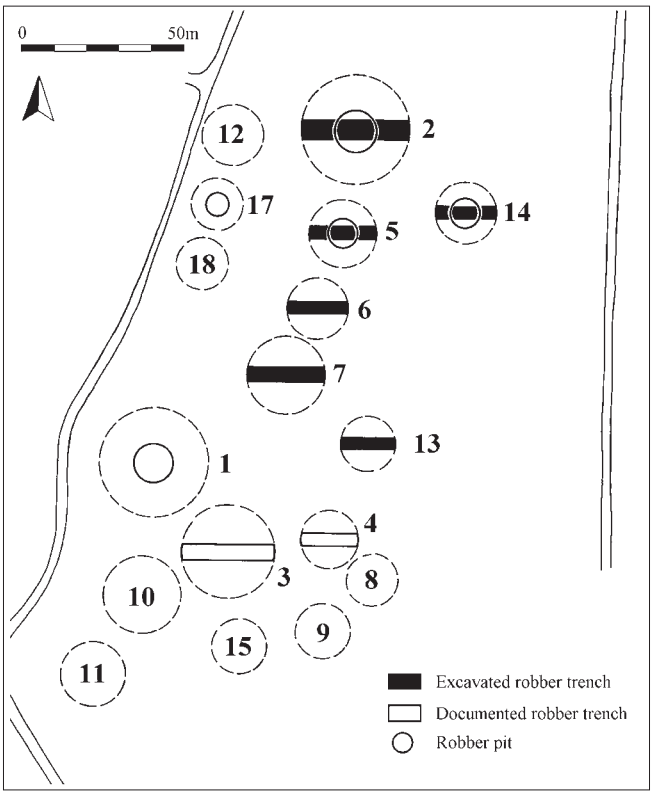


Figure 208 The early excavation campaigns: robber pits (sixteenth century) and trenches (nineteenth century).

Figure 209 Reconstruction of Mound 7 under excavation in the nineteenth century (Victor Ambrus; see Figure 39).

The archaeological excavations in the 1983 campaign also redefined the lines of Basil Brown's trench in Mound 2, and re-investigated some of the anomalies he encountered (see Chapter 6, p. 173). His bamboo canes, used to mark rivets, were still in position, and a pair of steel roller-skates was retrieved from his sieved backfill .

The date and purpose of mound robbing is itself an interesting research question. Robbing for loot is endemic, but it has not always happened, implying that the force of law or ownership, or a communal ideology, or respect, prevents it (Carver 2000). The spoliation of graves may itself have a ritual or social function, as is suspected in the case of Oseberg, where the bodies were removed and scattered, but not the grave goods (Brøgger, Falk and Schetelig 1917). In Scandinavia the plundering of graves was common in the migration period, but less so in the Vendel period (Arwidsson 1983: 82). The robbing of graves is encountered by archaeology all over Europe, but it is notoriously difficult to date.

The central pit was a recognized method of excavation, used, for example, on Mound 1 at Snape (Hele 1870: 25), and the trench was still used by Brown in the 1938 campaign. Bruce-Mitford noted depressions in the top of several mounds (see Chapter 6, p. 198), which he attributed to buried ships and called 'ship-dents'. An undecked ship has no cavity to cause such a collapse, but such depressions can be caused by the collapse of a burial chamber (Schönbäck 1983: 124). In the case of Sutton Hoo, the depressions could be equated with the partially filled robber trenches, in which case the majority of the mounds would seem to have been affected. It seems proper to speak of two 'excavation campaigns' at Sutton Hoo, both of which were interested primarily in artefacts, with the first more successful than the second. The context of these campaigns can be deduced from their dates, which in turn can be proposed from stratigraphy and documents.

Ploughing and robbing: a possible order and date

Basil Brown found a large robber pit at Mound 1, and from it recorded sherds of Bellarmine ware datable to the late sixteenth/early seventeenth century (SHSB I: 160–1). Bruce-Mitford felt that the west end of Mound 1 had already been ploughed away by the time the attempted robbing took place, so confusing the robbers as to where its centre really was (SHSB I: 146–8). For the same reason, he felt that the bank on the west flank of Mound 1 would have been Medieval in date (i.e. earlier than the sixteenth/seventeenth century, the date of the Mound 1 robber pit). There would therefore have been a Medieval ploughing on the west side of the barrow-cemetery that would also have affected the west parts of Mounds 10, 1, 18, 17 and 12. The bank, which runs north–south along the western edge of the mound-cemetery, was also thought to be Medieval by Bruce-Mitford, on the grounds of its apparent association with a Little Sutton Estate (How Farm, see below) noted on maps from 1629 and, possibly, 1601 (SHSB I: 147). Peter Warner also found an association of the land to the west with a Medieval estate (see below).

If there were two ploughing episodes, that from the west must have followed that from the east, which was the main agent for the lowering of all the mounds and the filling of the quarry pits. As it stands, however, the bank that crosses Mound 1 must represent a lynchet owed to the latest ploughing, which we know from both excavation (above) and map evidence (below) to have been early nineteenth century. These anomalies can be resolved by supposing there to have been ploughing from both the east and the west in the later Middle Ages: the east ploughing lowered Mound 1, along with the other mounds; and the west ploughing, still in the Middle Ages, respected a new boundary and ate into the west ends of Mounds 10, 1 and 12. A later (nineteenth-century) western ploughing maintained the Medieval property boundary, and left a lynchet along the boundary line.

At Mound 2 a ploughing episode had filled the quarry ditch after the late twelfth century, when warreners had worked the mound. There was a major robbing by a central pit that penetrated 2 m deep from the level of the buried soil. The shaft would have been more manageable from a mound that had already been reduced in height by ploughing. Seventy-one rivets were recorded within the quarry ditch upper fill, which would imply that here the robbing had preceded the first ploughing. But the matter is complicated by the fact that there was a later robbing, in the form of a long trench, east–west, through the mound. The form of this trench was itself largely deduced from the rivet patterns (Figure 80). Straight edges within the mound platform might imply that here, as in the better documented Mound 7, the trench was a neat rectangular cut, but it would still have fanned out at access points to east and west. A few outlying rivets on the south side of the mound might leave the argument open. In short, given the degree of disturbance by two robbings, and the nature of the quarry pit fills, we did not succeed in locating rivets which were unequivocally deposited before the quarry ditch was filled with ploughsoil. Ploughing could here have followed the first robbing, but more plausibly preceded it.

At Mound 14 an oval robber pit was filled in with turves, and then ploughed over. Ploughsoil filled the quarry ditch, the east side of which was overrun by Track 1 (which was in existence before 1601). The oval robber pit suggests that it belonged to the first campaign. The possibilities here are that the mound was robbed while under heathland, which had not yet been ploughed, so that the first robbing preceded the first ploughing. Or that the mound was ploughed, reverted to heath, was robbed, and was then ploughed again, almost flat.

The situation at Mound 1 suggests that comprehensive ploughing had taken place before any robbing, so explaining the digging of the robber shaft off-centre and missing the Mound 1 burial chamber (see Chapter 6, p. 198). The Mound 14 backfill suggests that the land became heath after this first ploughing, so that the first campaign of robbing took place on heathland over mounds already reduced by ploughing. The first ploughing took place in or before the sixteenth century, as it filled quarry ditches that were overrun by a track in existence by 1601. The Bellarmine pottery in Mound 1 suggests a date for the robbing in the late sixteenth or early seventeenth century, say about 1600. The second robbing also included turves in its backfill (see Chapter 5, p. 114), and so probably took place while the site was under pasture. It was followed by a further east–west ploughing.

These observations suggest the following as the likely order of events in the post-mound history of the site.

Seventh to eleventh centuries

The site was used for executions (see Chapter 9).

After the late twelfth century

The mounds grassed over. Warreners were active in Mound 2. Hearths in quarry ditches served warreners and shepherds. A boundary fence or a hedge marked the west side of the burial ground.

During the later Middle Ages, or at least before 1601

1 The whole site was ploughed. The mounds were reduced in height. The quarries were filled in with pale sand.
2 The slopes to the west of the site were ploughed, removing part of Mound 1 and creating a modest lynchet.
3 The site became heathland.
4 Track 1 was established or re-instated.

About 1600

Most mounds were robbed with large central oval pits in the first campaign.

About 1650

A young bull was buried in an infilled Mound 6 quarry pit.

The nineteenth century

1 The slopes to the west of the site were ploughed, creating the bank that now survives.
2 Mounds 2, 5, 6 and 7 were excavated with trenches in the second campaign.
3 The site was ploughed again (east–west).

Cartographic evidence

Studies of maps and documents were intended to help place these events in a historical context.

Mounds and tracks

The sources are listed in Table 99, and the basic information on tracks, mounds and land use is summarized in Table 99 and Figure 206, and in Figure 210, in which all the maps are reduced to the same scale. The tracks have been numbered to ease discussion.

In Norden's map of 1601, there are four mounds and a track winds between them from north-east to south-west (Track 1). The track is labelled 'The way to Woodbridge ferry', and is joined at the mounds by a track heading east (Track 2), for which the rubric explains 'This way led to Woodbridge before the Wilford Bridge was builded.'

In 1629 there are still four mounds, and the north–south track (Track 1) has been joined by an east–west track (Track 3) to make a crossroads, with the four mounds in each arm.

The same tracks are apparently seen in 1783, but there are now five mounds and they lie south of the crossing point, where Track 1 (north–south) forms a junction with Track 2 (east–west), which now extends down the slope (Track 4).

Track 1 has disappeared by 1836, when the sketches were prepared for the Ordnance Survey. There are five mounds, and the only track (Track 2/4) runs east–west to the north of them. The *Ipswich Journal* also mentions five mounds in 1860 (see below).

No tracks are marked on the 1843/4 tythe maps, and the Hoo Hills and Apricot Hill fields are under the plough (this is the land to the west of the barrow-cemetery, which slopes down towards the river). It would be at this time that the westerly mounds – Mounds 1, 17, 18 and 12 – are being touched (for a second time) by a turning plough, and that a lynchet is created against them.

The 1889 edition of the Ordnance Survey has nine mounds (Figure 210). A new north–south track (Track 5) runs to the east of Mound 1 and to the west of all the other mounds to join the east–west track (Track 4) to the north.

This track has been re-routed by 1902 (Figure 210, Track 6), so that all the nine mounds lie to the east of it. The conifer plantation called Apricot Hill, now Top Hat Wood, was now to its west. This is the situation that remains to the present day.

Some of the discrepancies can be explained by increasing visibility. The fact that more mounds were recorded between 1601 and 1889 was presumably a result of more detailed surveys. The number rose from five to nine between 1836 and 1889, as a result of fieldwork by the Ordnance Survey; just as, for the same reason, it rose to sixteen in 1966 and to eighteen in 1983. The development of trackways is otherwise consistent. A north–south route passed through the mounds and connected the ferry at Ferry Point to the settlements on Wilford Hill and Eyke. This was the main route from Woodbridge via the ferry before the bridge was built at Wilford. According to Arnott (1946) Wilford Bridge was built before 1547 and probably in or by 1530, although Redstone (1897, 1900: 58) believed that there was already a bridge or causeway that gave Woodbridge its name in Anglo-Saxon or even Roman times. Track 1 was becoming redundant in the sixteenth century, but it did not disappear from the map until 1836. After 1836 the burial mounds still received traffic from the south, but it was directed west to Little Sutton Hoo or east to join the Bawdsey road from Wilford Bridge.

The north–south track (Track 1) is still visible today in the surface of the barrow site (where it crosses between Mounds 1 and 3, and then veers north-east; see above). It has Mounds 1, 7, 6, 5 and 2 to the west of it, and Mounds 8, 9, 10 and 4 to the east of it. Track 1 can also still be traced northwards through the gardens of Sutton Hoo House, arriving on Wilford Hill. Track 2 still exists as a public bridleway. Track 3 has not been found among the mounds, and is not known on the ground. If it lay to the north or south, as do the known tracks, then the 1629 map would appear to be reporting mounds that are not otherwise known. This is unlikely, as it shows only four in all. Tracks 4 and 6 still remain in use.

This would seem to imply that the robbing and ploughing episode that pillaged and levelled the mounds took place before 1783. It could also belong to the period before 1601, if the indications on Norden's map are to be taken literally. There is some reason for believing that they should.

A reconsideration of the Norden Map

The beautiful Norden Map of 1601 (Colour Plate 13) was made specifically to describe the assets of an estate, so its designation of land use, if it can be understood correctly, will be important. The study of the Norden Map turned out to have significance not only for the position of tracks, the destination of routes and the use of the land, but for the number of the mounds once standing on the high ground to the east of the Deben. Norden's folio 1 shows the south-west part of the Parish of Bromeswell, part of the manor of Staverton cum Bromeswell, 'whereon is sett downe the land of Robert Mather, gent.', and states how 'this manor contenyth Sutton south, Wilford Bridge and the manor of Melton west.'

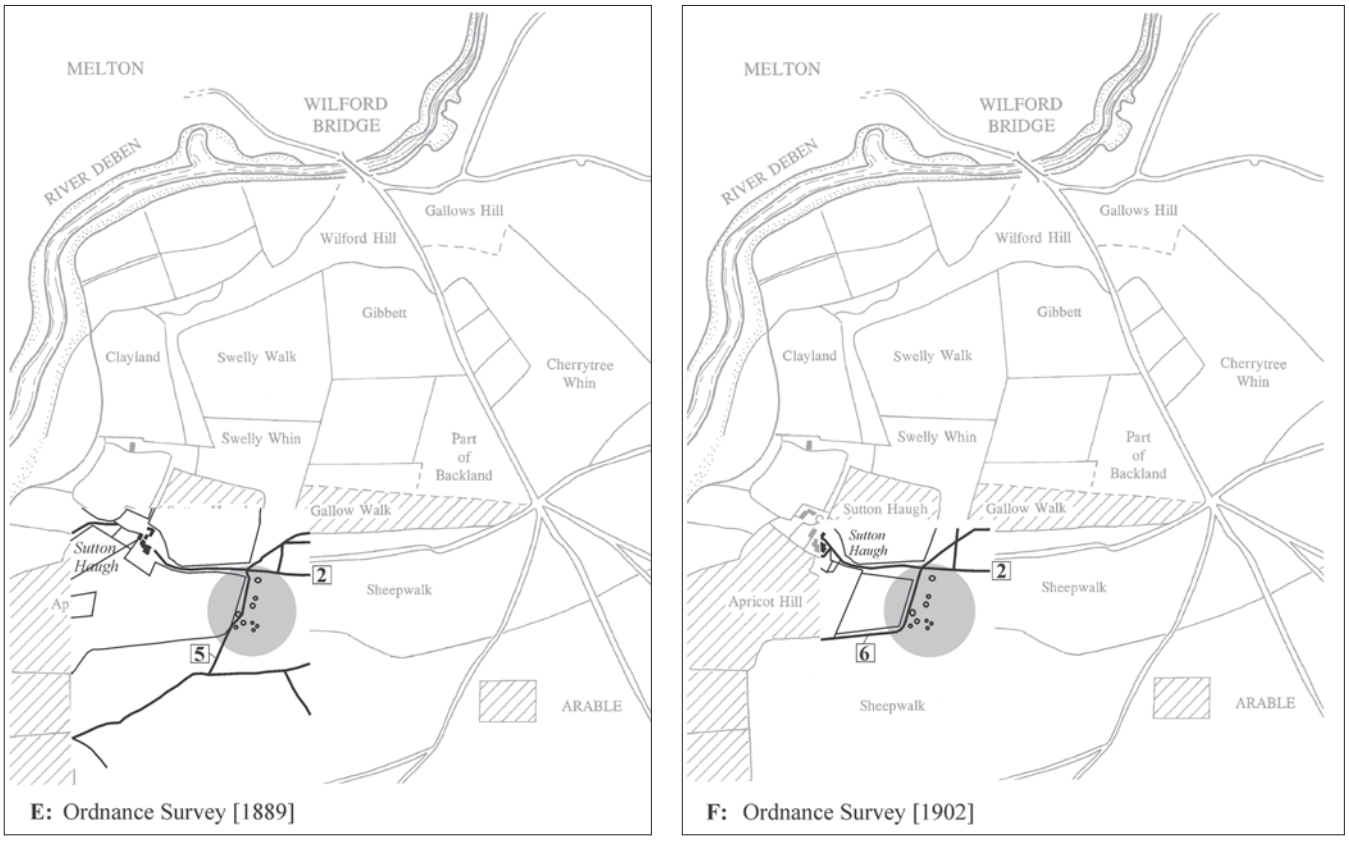


Figure 210 The 1889 and 1902 maps drawn to the same scale, with tracks marked.

Norton shows the Sutton Hoo tumuli labelled as 'Mathershoe', and depicts them as green conical heaps. There are four of them in all. A track crosses between the two pairs, and then meets a junction to the north of all four. One pair is presumably Mounds 1 and 3, but there is no clear identification with the existing mounds.

The same 'mound signs' continue all the way up the east side of the River Deben and over onto Gallows Hill above Wilford Bridge (now the seventeenth green of the golf course). Here are depicted the double posts and single crossbar of an early gallows.

Pace Bruce-Mitford (SHSB I: 35), one cannot conclude that Norden uses this 'mound sign' as a convention for promontories or 'broken ground', for the good reason that he does not use it for the known promontory north of Ferry Farm or at Haddon Hill. His 'mound signs' east of the Deben are not placed on the field called 'Hoo Hills', but are on 'Swelly Whin', 'Swelly Walk', 'Wilford Hill' and 'Gallows Hill'. Of these, Swelly Walk and Swelly Whin are not obvious promontories. The real meaning of these signs becomes clearer from Norden's folios VI and X. Folio VI shows the larger part of Wantisden 'which containeth much low groundes or fennes more arable and pasture and most of all heathye and barren groundes whereof much may, and is, converted to Rye grounds.' This is presumably the process whereby heath is converted to arable. The land is leased by John Talbot. The large tract of heath land is divided into 'The Little Walk' and 'The Great Walk'. This is not hilly country, but both walks are covered in 'mound signs' identical to those on Norden's folio 1. The two 'walks' are situated either side of the road from Woodbridge to Orford. We seem to be around grid reference 3651. There is a tumulus surviving on the present OS map at 375 528, but there are no hills or promontories.

A more specific meaning of the 'mound sign' is suggested by Map X, where

> most espetiale is contayned Dunningworth Heathe. In the tenure of Antoine Felsop [or FELSOPE]. Among other things the lease hathe been heretofore used as a sheepewalke of late converted to a warren of cunnyes for which it is very apt being a verie good layre and bredeth verie fatt game.

The 'mound signs' on Dunningworth Heath are very prominent and are clearly labelled 'Warren'. This seems to be at grid 3856–3956. There is a tumulus surviving at 379 569. There are no obvious hills or promontories. From this it can be deduced that when Norden uses 'mound signs' he was not identifying promontories or hilly ground. All his mound signs are on heath and, in one case, on ground that is low-lying and flat. In one case the mound signs are labelled, unequivocally, as warrens. Since the purpose of the map was to indicate the agricultural values, it is a fair assumption that the purpose of the mound signs was to indicate warrens. If so, there were warrens in the parcels of land east of the Deben and north of Sutton Hoo, and on Gallows Hill.

The representation on the map suggests that warrens, in general, were mounds of earth, and there is a strong likelihood that some of these mounds, at least, were based on or built up from existing burial mounds. On one reading, the mounds north of Sutton Hoo could have been part of a larger Sutton Hoo cemetery that stretched all the way to Wilford and, following Warner (above), included a pagan temple site at Harrow Pightle. There is some corroboration of this from the find of a Byzantine bowl and gold pendant in Bromeswell parish, to the north of Sutton Hoo house, which may imply the former presence of one or more burial mounds (see Chapter 2, p. 25). This is the 'static' hypothesis. Alternatively, the mounds north of Sutton Hoo were warrens, but not burial mounds. In either case, the northern

group of mounds has vanished by 1629 and does not reappear on any subsequent map. Whether they were burial mounds or warrens or both, they appear to have been removed sometime in the early seventeenth century.

In 1836 the barrow-cemetery lies in Sutton Walks, an area marked as heath, or at least not as arable. This is confirmed by the map that summarizes the commutation of tythes in 1843–4 (Table 99). However Apricot Hill, which included the promontory now carrying Top Hat Wood, was under the plough, as was Hoo Hills, the re-entrant between the site and Sutton Hoo House.

The land on which the barrow-cemetery lies was indicated as heath in maps of 1881, 1889, 1902 and 1928, from which we can deduce that the Sutton Hoo barrow-cemetery was last ploughed before 1836. Gallow Walk, Gibbett and Gallows Hill, on the same maps, all refer to the execution place. Gallow Walk might have remembered the route from the ferry that was originally taken by the condemned (see Chapter 9, p. 347).

Documentary evidence for excavations

The cartographic disappearance of mounds north of Tranmer house between 1601 and 1629 seems to provide a hint that the excavation campaign documented at the Sutton Hoo site in the late sixteenth or early seventeenth century might have been part of an even wider pillaging operation that left some materials (such as the Byzantine bucket, p. 483) sufficiently near the surface to be caught by later ploughing.

However, the first specific documentary evidence for an early excavation campaign at Sutton Hoo was provided by a discovery by Hugh Moffat (Hoppit 1983), who searched the local papers for references to Sutton Hoo in the early years of the 1983–93 campaign. The discovered entry read as follows:

> ROMAN MOUNDS or BARROWS. – It is not known by many that not less than five Roman barrows, lying close to each other, may be seen on a farm occupied by Mr Barritt, at Sutton, about 500 yards from the banks of the Deben, immediately opposite Woodbridge. One of these mounds was recently opened, when a considerable number (nearly two bushels) of iron screw-bolts were found, all of which were sent the blacksmith to be converted into horse shoes! It is hoped, when leave is granted to open the others, some more important antiquities may be discovered. These barrows were laid down in the Admiralty surveys by Captain Stanley during the stay of the Blazer, when taking the soundings of the above-named river some years since. (*Ipswich Journal*, 24 November 1860)

From this description, it is reasonably certain that in 1860 excavators had encountered a ship-burial, and the likelihood is that Mound 2 was the site of its discovery. As argued in Chapter 6, Mound 2 had contained a full-sized ship, the central part of which would have collapsed into the chamber that lay beneath it; the rivets appropriate to this section of the ship were found to be largely absent in the excavations of 1983–93. Mound 2 fits an operation of the kind described in the *Ipswich Journal* well. The similarity between the trench used to excavate Mound 2 and that found in other mounds (Mounds 5, 6, 7 and 13) does suggest that they all belong to the same episode.

In view of this connection between the observed robber trenches and the newspaper article, the excavation of the mounds and their reduction by ploughing were all initially thought to belong to the years in and after 1860 (Carver 1992b: 344). However, the evidence drawn from the archaeological and cartographic analysis clearly points to another campaign of excavation before 1601. This apparent conflict can be reconciled by supposing that both campaigns took place, but that only the earlier of the two was successful. The earlier would be that signalled by central pits, such as those found in Mounds 1 and 17. Sixteenth-century robbers must be the authors of the central oval pit in Mound 2, which could be attributed to many incursions in this much visited mound, but which is best read as the imprint of the first and successful pillaging operation (see Chapter 6, p. 174). From the scraps that remained in 1938 and 1986, it is to be understood that this mound originally contained a treasure almost as rich as that which survived in Mound 1: sword, shield, buckle, drinking-horns and cauldron are all implied among what must have been a larger assemblage. So when the large trench was cut across Mound 2 in 1860 the majority of the treasure had already gone, and the nineteenth-century explorers found precious little.

Circumstantial corroboration that the 1860 excavation was not the first comes from the way that the expedition was, and was not, reported. The newspaper article speaks of the hope of discovering more important antiquities in other mounds, assuming leave is granted to open them. But nothing more is heard of Sutton Hoo. If any interest had been awakened by the 'iron screw-bolts' it was not sustained. Can we infer anything about further excavations from what is or is not mentioned in the press? In this period, which saw the emergence of archaeology as a proper pastime in middle class Britain, we probably can, as it was not only the press, but also the whole new antiquarian community of a particularly active county that was silent. Barrow excavations in Suffolk were being reported from at least 1758. In 1820 Sir Henry Bunbury opened barrows at Warren Hill, Mildenhall. The Melton buckle plate (see West 1998: 81), the sort of object that should have originated in a wealthy barrow-burial, was found in 1833. The Sutton gold brooch (West 1988: 98), another item of polychrome jewellery, was found in 1835. There was activity at Rendlesham in 1837 and, before 1840, the 'gentlemen from London' were investigating Snape. This is not to say that everything found would receive notice, only that the people of the Sandlings were well aware of such material and what it might mean (see West 1998: ch. 1). In 1860 the Suffolk Institute of Archaeology and Natural History actually held its October meeting in Woodbridge, and 'Saxon and Roman jewellery were exhibited in "the Lecture Hall" by Messrs Colchester, Whincopp, Spalding, Loder, Baker and many others' (*Gentleman's Magazine* 130.2 (1860): 634; *Proceedings of the Suffolk Institute of Archaeology and Natural History* 3 (1863): 410). Since the notice of the dig did not appear in the *Ipswich Journal* until a month later, it is possible that the meeting had, itself, a winter expedition. But in 1861 the *Gentleman's Magazine* makes no mention of Woodbridge or Sutton, although it reports in 1863 the 'discoveries lately made at Snape' (133.1: 459).

Mr Whincopp is a pivotal figure in the archaeology of the area. He exhibits British, Roman and Saxon material at Ipswich in 1864 (*Journal of the British Archaeological Institution* 21(1865): 343–4) and again at Woodbridge in 1872 (*Proceedings of the Suffolk Institute of Archaeology and Natural History* 5 (1886): 124). Lewis (1871) gives a learned disquisition on the Sutton hoard of Roman coins, found by labourers digging for coprolites near Woodbridge, without mentioning any other discoveries at Sutton. Neither Hele (1870) nor Redstone (1897, 1900) appear to know about a dig at Sutton Hoo, although they are perfectly aware of the mounds (see Chapter 14, p. 494).

Documents therefore corroborate that there were at least two major campaigns of excavation at Sutton Hoo before the twentieth century. The first took place around 1600, and took the form of large pits cut down from the supposed centre of the mound. As we have to assume that very little was found in the subsequent campaign, it must be that virtually all the mounds were visited in this way. However, in two cases, at least, the sixteenth-century excavators were unsuccessful: in Mound 1, where the burial pit was unusually deep, and the robber pit off-centre; and Mound 17, where there were two burials and the robber pit arrived between them. The excavators must have nevertheless been greatly enriched by their endeavours.

In about 1860 another major campaign of excavation was launched, this time with trenches cut west–east across the reduced burial mounds. It has to be assumed, as argued above, that very little was found, even though the excavators trenched Mound 2, where they unearthed the two bushels of iron screw-bolts, and went on to trench Mounds 5, 6, 7, 13, 3, 4 and, probably, 10. So why did they fail to trench Mound 1 and take the biggest prize of all? The answer must lie in their experience: from the discarded rivets, we can believe that the mounds were trenched systematically from Mound 2 at the north to Mounds 4 or 10 in the south. Their efficiency and technique were improving with every mound, as we can tell by how little they left. But, by the time they arrived at Mound 4, the team would have encountered five ransacked mounds in a row, and the last four, moreover, had been cremations. The tell-tale signs of the earlier excavators, a large depression in the summit, would have been reasonably obvious and recognizable, even after ploughing (Grinsell 1953: 98; Hele 1870: 24). It would have taken a great optimist to persevere with such an unrewarding enterprise, and to cut a trench through the waiting Mound 1. One further possibility is, however, considered in Chapter 6 (p. 198): namely that Mound 1 was indeed trenched by the 1860 excavators, but that, due to the character of the burial, the typical shape of a burial chamber indicated by its dark backfill against the yellow subsoil could not be found. Ship-burial had yet to be recognized in Britain. The excavation would therefore have been abandoned because the mound was deemed very disturbed, or seemed to have no central burial pit (as indeed it did not).

Who then may have been responsible for these early investigations, and can anything be still retrieved from them?

Evidence for land use and excavation from landowners

If burial mounds were removed from Bromeswell parish in the seventeenth century, the landowners at that time would have been Sir Michael Stanhope or Sir Henry Wood (Table 102). At the time the Sutton estate was owned by the Fearnley family. The family of Robert Mather, for whom 'Mathershoe' is presumably named, claimed to have title to deeds of lands in Sutton. The sixteenth century, like the early nineteenth, appears to have been the occasion for a major extension of arable (Peter Warner: pers. comm.). This was also, of course, a period of drastic redistribution of the nation's assets. Not only did the monarchy feel justified in privatising the possessions of the church, but it is possible that the contents of burial mounds, which were seen as being in the king's gift, were being pre-emptively sold, licensed or granted to those in favour (Carver 2000: 25–7).

In 1538 Thomas Toyser applied for a licence to finish off a programme of excavation at Brightwell, Suffolk, begun by some 'ill-doers', that is, unlicensed diggers (*Letters and Papers Foreign and Domestic* 1538: 555), and it is possible that barrow-digging is the mysterious activity referred to as 'mining for gold' in three contemporary references to Suffolk (ibid.: 533–4). Reyce says that 'nature supplying us otherwise with a more ample countervaile, justly denied us the benefitt of any minerals or metalls within this country' (Reyce 1618: 27; probably written *c.*1603, see Scarfe 1987: 193). He mentions the rumour, which he did not believe, about a gold mine at Bacton (Banketon in Hertismere Hundred).

The notorious John Dee (1527–1608) is exactly the kind of agent who might be employed to extract gold from burial mounds, although as Bruce-Mitford says (SHSB I: 161n.), there is no clear documentary evidence that he, or anyone else, dug at Sutton. On 3 October 1574 he wrote to Lord Burghley saying, among many recommendations of his own talents, that 'he will discover a mine of gold or silver in the queen's dominions, which is to belong to her on condition of his having a right to all treasure trove in her dominions', and offers Burghley half of the proceeds. It is at least likely that burial mounds featured in such a proposition, and that Dee, being a great traveller, would have had no difficulty disposing of objects abroad in that irreverent age (*DNB* XIV: John Dee). Whoever was responsible for the systematic robbing and subsequent ploughing of Sutton Hoo in the sixteenth century, both activities were likely to have proved a lucrative ventures, not only in terms of the treasure recovered, but also in the increased yield of arable from the former sheepwalks.

The landowners in the sixteenth to seventeenth centuries are listed in Table 102. Breen (1996) points to How Farm (west of Sutton Hoo) as a key property, and expects it to have developed into a single large holding sometime in the late sixteenth century. In the nineteenth and twentieth centuries (see below) the Sutton Hoo site lay within the estate controlled by the owners of Little Sutton Hoo, the successors to How Farm, and this may already have been the case in the sixteenth century. The Mather family may then have been the occupiers, and, following a study of the Mather wills, Breen remarks 'whilst John Mather 1567 and Thomas Mather 1592 style themselves yeomen, both Robert Mather 1639 and Henry his son are styled as gentlemen'. They might therefore be suspected of a fortunate enrichment.

In the nineteenth century, the motivation may have been less venal, but a successful outcome could have been equally beneficial. The relevant authorities would have been either the Bardistons in Bromeswell, or the Waller family in Sutton (see Table 102 for what follows). The *Ipswich Journal* refers to Mr Barritt's excavation in 1860, when the rivets were taken to the local blacksmith. At this date Mr Barritt (listed as Robert Barrett) would appear to have been the tenant, and George Friston the blacksmith, but there is no evidence that they, or the four other farmers mentioned, or the landowners, got rich. This small community should have known something of the discoveries of 1860, had they been worth reporting, and not everyone would have been moved to remain silent.

From 1873, the land that is now called 'Little Sutton Hoo', probably equivalent to How Farm, was in the hands of the Lomax family of Yoxford. In 1910 John Chadwick Lomax built the house on the promontory, which came to be known as 'Sutton Hoo'. John Lomax is thought to have built a golf course on the terrace between the house and the mounds, taking sand from Mound 1 for the purpose (Angus Wainwright: pers. comm.). Sutton Hoo House and its estate were subsequently owned by Mrs Pretty,

Table 102

Landowners of Bromeswell and Sutton (source: Coppinger 1911)

Bromeswell Manor	
1601	At the time of the Norden Map, Sir Michael Stanhope was owner. The Sutton Hoo mounds are named 'Mathershoe' after Robert Mather, possibly occupier of How Farm (Little Sutton Hoo). The Sutton Hoo mounds were robbed and ploughed around this time. Sir Henry Wood (treasurer of the household of Queen Dowager Henrietta) succeeded Stanhope and died in 1671.
1671–1747	The owners are as for Blythford in Blything Hundred, viz. Robert Onely, Sir John Chapman, William Morris and Edward Leeds. Sir Charles Kent inherited the Manor of Wilford though his wife.
1805	Nathanial Bardiston was owner of the manor of Bromeswell, which remained in the Bardiston family until 1911.
1834	Sir William Charles Egleton Kent Bart. inherited the manor of Wilford.
1855	His sisters Sarah Ann Childers and Louisa Elizabeth Litchford were in possession.
1858	Occupiers include: Robert Barrett, farmer; James Carver, farmer; Henry Edwards, farmer and landowner of Wood Hall, George Friston, blacksmith; Charles Roper, farmer; and Isaac Walker, farmer. The Sutton Hoo mounds were trenched at this time.
1868	James Carver now a cattle dealer; Robert Barrett no longer listed.
1869	George Friston still the blacksmith; Alfred Smith was farmer at Hoo Farm.
1873	Thomas Lomax of Grove Park, Yoxford, was landowner resident at Little Sutton Hoo. The Lomax family remained resident at Little Sutton Hoo, but let it to a tenant in 1906. In 1910 John Chadwick Lomax built a new house at Sutton Hoo (now Tranmer House). In 1926 Frank and Edith Pretty bought this house and the estate, which then included the Sutton Hoo burial ground.

Sutton	
	In the fifteenth century Sutton was in possession of Sir Robert Wingfield, and remained in that family until 1541
1541	Manor sold to William Ferneley, citizen and mercer of London
1591	Owner was John Ferneley
1621	Miles Ferneley
1661	William Ferneley The Sutton Hoo mounds were robbed and ploughed in this period
1673	Manor sold for £4000 to Sir Nicholas Bacon
1767	Owner is the Rev John Bacon of Shrubland Hill
1788	Rev. Nicholas Bacon was owner
1789	William Waller was owner
1836	Thomas Waller died The Sutton Hoo mounds were trenched at this time
1899	Rev. William Naunton Waller died
1911	The owner was Mrs W. W. Darby

who authorised excavations at Sutton Hoo in 1938, and later by Mrs Tranmer, who authorized the 1983 campaign. The estate and the house, now Tranmer House (Plate 63), was bequeathed by the Tranmer family to the National Trust in 1997.

Documentary evidence for agriculture

It was accepted as a likely generality that, from the Medieval period, the Sutton Hoo area was a lowland heath and would have been managed as grazing, predominately for sheep (Rothera, Chapter 10, p. 364). The agricultural strategy employed on the Sandlings (sheep grazing, with occasional cultivation for cereals) is paralleled in the Brecklands. Rabbit warrens were established in the Sandlings from 1400 onwards (Sheail 1978 and 1984). In a report for Suffolk County Council (1996), Breen describes a post-medieval expansion of agricultural activity: 'certainly by the early sixteenth century, How Farm was a major agricultural unit. The reference to rye being sown on the sheep walk may suggest that areas of the heath were temporarily enclosed perhaps as penfold, and then used as arable land before reverting to sheep walk.'

The great Suffolk agriculturalist Sir Arthur Young had no doubt that the proper use for the Sandlings was sheep pasture, although 'very little land in this county is thus applied' (1804: 301). There was a great deal of waste in Young's day, which ought in his opinion to be converted to 'grass not corn' (1804: 170). Nevertheless the temptation to go for cereals was often irresistible, given the high price of grain during the Napoleonic wars, which saw 'bold expenditure in bringing marginal land under the plough' (Thirsk and Imray 1958: 18, 21). The hunger for land to be converted to arable often led (as in contemporary Denmark, see Glob 1983: 23) to the levelling of earth mounds, some of which were warrens (Young 1813: 220), while others must have been barrows. But the development could not easily be reversed, and in the mid 1830s light-land farmers were bordering on ruin.

Sutton Hoo at war

In spite of Sir Arthur Young's caveat, ploughing has continued intermittently in the nineteenth century, and since. The land had reverted to grass heath, and the Sutton Hoo mounds neglected for a few generations, until in 1938 Basil Brown and Mrs Pretty began what we can now see as the third campaign of exploration. After that, Sutton Hoo briefly contributed to the war

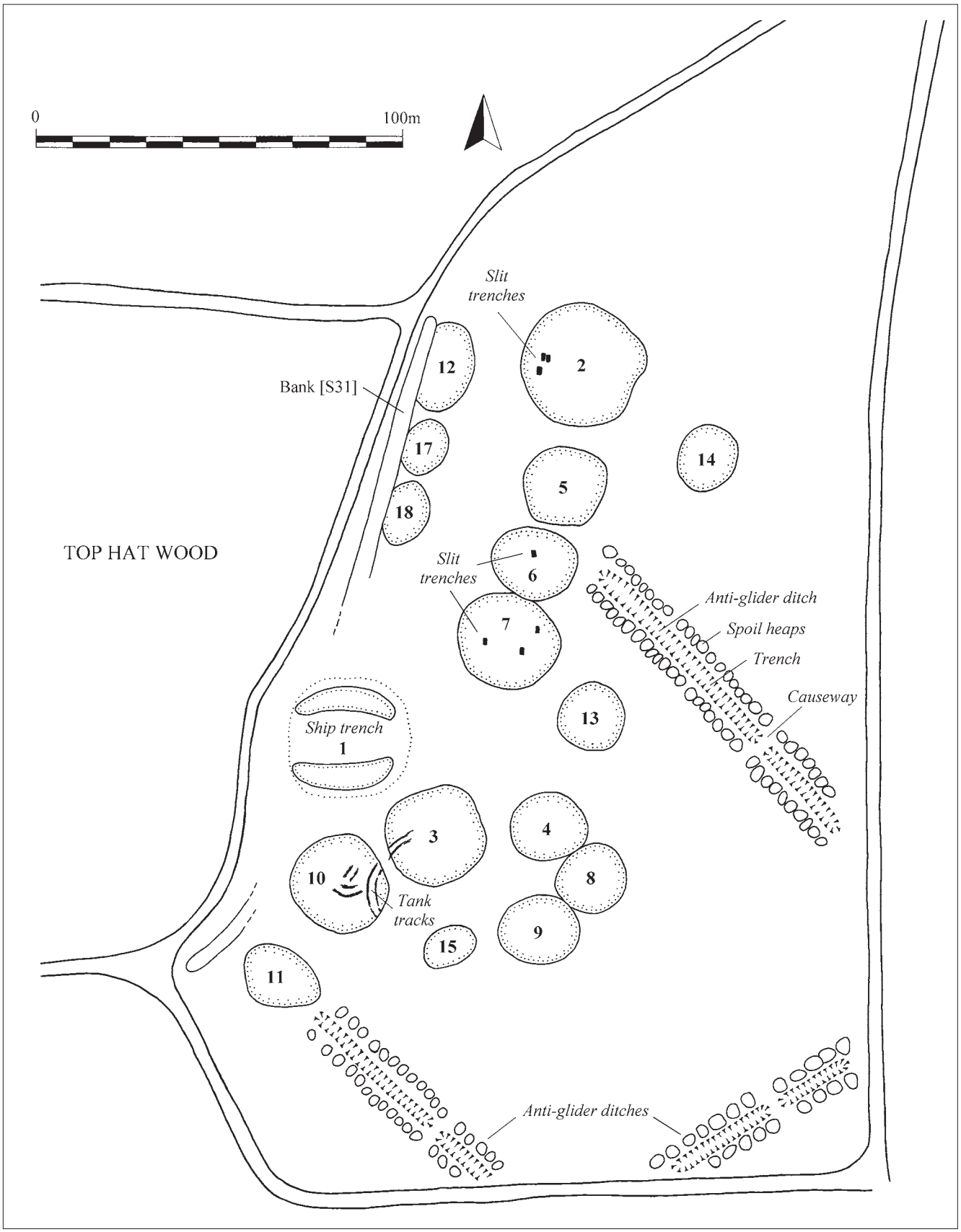


Figure 211 Sutton Hoo at war: plan of anti-glider ditches, slit trenches and tank tracks.

Figure 212 Sutton Hoo at war: the mechanical excavator digging an anti-glider ditch (Victor Ambrus).

effort. 'Anti-glider ditches' were cut all over the Sutton Heath by drag-lines (Figure 211 and Figure 212). These are described in *The Illustrated London News* for 1940, which carried details of precautionary measures to counter the threat of German invasion. All fields or open spaces having an area 300 × 200 yards or more were to be obstructed by means of trenches and banks ('composed of the surplus earth removed') set alternately beside them. The trenches were to be 4 ft wide and 3 ft 6 in. wide, and the banks at least 3 ft high (equivalent to 1.2 × 1.1 × 0.9 m). The trenches were arranged in a criss-cross pattern, giving a grid of 150 yd (137 m) squares (Dobinson 1996: ch. 9, pl. 4).

On the site itself, slit trenches were dug on Mounds 2, 6 and 7, presumably with a view to practising 'platoon in the defence' against attackers coming out of Top Hat Wood, having approached from the Deben. Rounds were fired and ammunition clips were dropped. A cap badge on Mound 6 suggests that the South Wales Borderers were among the units deployed. On the flanks of Mound 10, and over the open trench of Mound 1, Bren-gun-carrier crews practised their skill, until stopped out of respect for the monuments of the nation by Lt. Ted Wright, later to become an important figure in maritime archaeology.

And at peace

Since 1983 the Sutton Hoo site has been under active conservation, and since 1997 it has been in the ownership of the National Trust. The topography of the mound-cemetery on the completion of excavation was recorded (Figure 213), and the immediate vicinity surveyed in detail (Figure 214). The area has now been prepared for presentation to the public, in a way designed to have the minimum impact on the monuments but the maximum impact on the visiting public through a new visitor centre, where the whole story will be told and retold (Plate 61). The history of the site after it had been a princely burial ground is an important part of that story, showing how the monuments changed their role and use as society itself changed. The sequence, drawn from archaeological, cartographic and documentary evidence, is summarized in Table 103. By the Middle Ages, the Sutton Hoo mounds were topographical features which gave names to the land, but for nearly 1,000 years they also had to take part in the agricultural cycle of the Sandlings: a natural grassland intermittently put under the plough. The special agricultural roles of the mounds were as rabbit warrens when under pasture, and as reservoirs of fertile soil when under arable. The value of the mounds as a source of bullion seems not to have been appreciated, or at least accessed, until the end of the Middle Ages. In the nineteenth century they attracted explorers, and in the twentieth century, researchers. In the twenty-first century the site has been given a new commission as a public archive of historical and environmental assets.

Plate 61 The National Trust Visitor Centre at its opening in 2002.

Table 103
Summary of post-mound history at Sutton Hoo

Mound	Late twelfth century	Twelfth to sixteenth century (before 1601)	Sixteenth to seventeenth century	Before 1629	Before 1783	Before 1836	1860	1881
1		ploughing from east ploughing from west	attempted robbing	turf (sheep walk)	turf (sheep walk)	turf (sheep walk)	robber trench?	turf
2	turf warreners in the quarry ditch	ploughing from east	robber pit	turf (sheep walk)	turf (sheep walk)	turf (sheep walk)	robber trench	turf
5	turf	ploughing from east	robber pit	turf (sheep walk)	turf (sheep walk)	turf (sheep walk)	robber trench ploughed out	*gone*
6	turf hearth in quarry ditch	ploughing from east	robbing?	turf (sheep walk)	cow burial *c.*1650 turf (sheep walk)	turf (sheep walk)	robber trench ploughing	turf
7		ploughing	robbing?	turf (sheep walk)	turf (sheep walk)	turf (sheep walk)	robber trench ploughing	turf
14		ploughing	robber pit	turf (sheep walk)	turf (sheep walk)	turf (sheep walk)	ploughing	*gone*
17			attempted robber pit	turf (sheep walk)	turf (sheep walk)	turf (sheep walk)	ploughed out	*gone*
18			robbing?	turf (sheep walk)	turf (sheep walk)	turf (sheep walk)	ploughed out	*gone*
Track 1		begins			disused			turf
Track 2	begins?							
Track 3			begins		disused			turf
Track 4				begins				
Lynchet		formed by ploughing from west?				raised by ploughing from west		turf

Figure 213 The Sutton Hoo site on completion of excavation: contour survey (A. Copp).

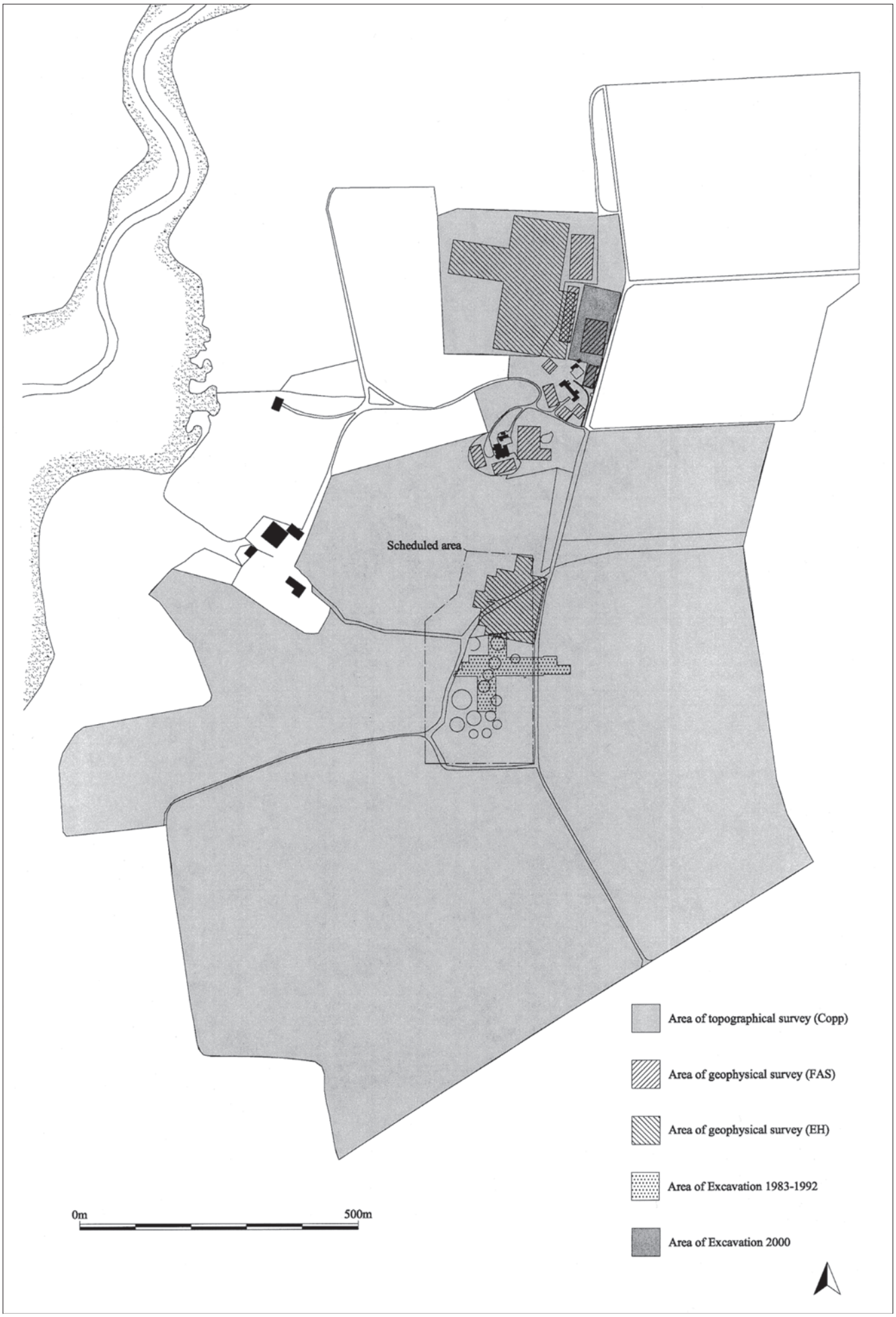


Figure 214 Areas of topographical and geophysical survey.

Chapter 13

Survey in the Deben Valley

John Newman

Introduction

When the feasibility of a renewed Sutton Hoo research programme was discussed at the Oxford Anglo-Saxon symposium in 1979, an area survey was considered essential for a fuller understanding of the Anglo-Saxon cemetery site, and its social and economic context (Rahtz *et al*. 1980). The need for survey work reflected a move away from a site-specific approach to archaeological fieldwork that was apparent in various projects initiated in the 1970s and early 1980s. This trend was led by a variety of fieldwalking surveys in southern and eastern England (Ford 1987; Hayfield 1987; Shennan 1985).

These survey projects took advantage of the extensive areas of arable land in lowland areas of the country, where continual cultivation brings a proportion of the archaeological material present in the plough-zone to the surface every year. Once on the surface, after appropriate weathering through rain and frost action, it can be recovered, identified and analysed, and subsequent patterns of distribution can be interpreted in terms of past settlement and related land use. Such a brief and simplistic summary of the rationale behind fieldwalking surveys on arable land, of course, omits the complex depositional and post-depositional activities and processes that have sorted and re-patterned the ceramic and lithic assemblage in any portion of the plough-zone, and the bias caused by the strategy and method of collection and analysis. During the 1980s, these problems in the interpretation of field survey results were extensively reviewed by various authors, where the need to be critical of the data collected and what it represents was particularly stressed (Haselgrove 1985; Millett 1985). The implicit relationship between plough-disturbed archaeological features in field survey and the plough-zone assemblage has also been questioned (Haselgrove 1985: 9), with a further note that as little as two per cent of that assemblage might be on the surface at any one time (ibid.: 8). Furthermore, one must be aware of the underlying assumptions when deriving sites from artefact clusters, in contrast to what is often a continuous background scatter (ibid.: 9). Finally, the need to experiment with new methods of controlling and analysing field survey data has also been stressed (ibid.: 28).

The problem of identifying Prehistoric settlement sites from surface scatters of pottery that is heavily abraded by continual ploughing and weathering is illustrated by the discovery of an Iron Age site with some Neolithic material in Great Bealings parish, near Woodbridge (Martin 1993a: 42). The area was designated as a quarry for the Martlesham bypass, and is also inside the survey area. When fieldwalked prior to the stripping of the soil, a few small, abraded Iron Age sherds were discovered, as well as some waste flakes. This surface collection gave little indication of the state of preservation of the site below the plough level. When the ploughsoil was stripped, prior to the start of quarrying, two Iron Age hut circles and various Iron Age and Neolithic pits were located, and had to be investigated during a rapid salvage excavation.

However, for all these caveats, field survey is still seen as an essential method of studying the past, moving away from purely site-based approaches to a broader understanding of the landscape and how it has developed. Regionally based, multi-stage, data collection programmes, with sample sizes appropriate to the questions being posed and the resources available, have been strongly recommended (Mills 1985: 39). Four main areas of bias have also been identified in British archaeology (ibid.: 43): towards particular classes of evidence, towards particular types of site, towards sites rather than landscapes and, lastly, towards particular landscape zones. Additionally, the material available on the surface is determined by the productivity of the culture being studied. Here Anglo-Saxon East Anglia is relatively fortunate, as pottery was made and distributed widely throughout the period (from the early handmade wares, produced from the early fifth to the late seventh century, to the wheel-finished and mass-produced Ipswich ware made AD 650–700 to *c.*850, to the Thetford-type wares produced AD *c.*850 to *c.*1150). In contrast, the relative paucity of Anglo-Saxon pottery scatters in southern England was reflected by the East Berkshire Survey (Ford 1987) and the

East Hampshire Survey (Shennan 1985), while other parts of eastern England have extensive post-Roman scatters but a lack of datable wares, as evidenced around Wharram Percy in Yorkshire (Hayfield 1987).

With these considerations in mind, the Deben Valley survey was designed. It ran from 1983–9, and was originally intended as a pilot scheme for a much more ambitious East Anglian Kingdom Survey. Prior to 1983 the Suffolk Archaeological Unit had carried out a small amount of fieldwork in the hinterland of Ipswich, in order to locate and examine Anglo-Saxon sites on a fairly informal basis. In particular, an area of some 10 ha. round St Gregory's Church at Rendlesham was intensively fieldwalked over a grid in 1982, in an attempt to locate and define the royal vill mentioned by Bede (*HE* III: 22).

However, it was with the start of the Sutton Hoo research project that this area survey was put on a more formal footing, and a research design was formulated that saw an understanding of the Anglo-Saxon kingdom of East Anglia as its ultimate goal (Wade and West 1983: 18). Subsequent editions of the *Bulletin of the Sutton Hoo Research Committee* have carried refinements to this research design (Wade 1986: 19) and summaries of the field surveys carried out have appeared there and elsewhere (Newman 1989: 17, 1992: 25). The survey project had an unashamed ultimate aim of examining the development of one of the major kingdoms of Anglo-Saxon England, with Norfolk and Suffolk together forming what was once the kingdom of East Anglia (an area that still retains its own regional identity, bordered as it is by the North Sea on two sides, the Fens to the west and the River Stour to the south). Within this survey, it has only been possible to examine one area so far, and this is in south-east Suffolk (Figure 217). In six winters of fieldwork, between 1983 and 1989, the area walked has totalled nearly 5,500 ha., and this represents most of the arable land in a rectangular block, of 134 km^2, centred on Sutton Hoo and bisected by the River Deben (see Figure 215:a). The surveyed area was forty-two per cent of the landscape block examined, and over sixty-five per cent of the area away from the major constraints of the town of Woodbridge, the large villages at Kesgrave/Martlesham and Melton/Ufford, RAF Woodbridge and Rendlesham forest.

The research design

In an age when most archaeological work is constrained by the narrow limits imposed by project funding of individual sites, the original research design (Wade and West 1983) for the study of the East Anglian Kingdom may now seem over-ambitious. The research design proposed, to begin with, an assessment of prior knowledge, including both archaeological and documentary evidence, and then to embark on a fieldwork project aimed at locating and characterizing early, middle and Late Saxon settlements and other sites within a definable landscape. Areas for fieldwork would be chosen throughout East Anglia, so that each of the major subregions was represented and could subsequently be compared (Chapter 2, Figures 13–15). These different areas for fieldwork included both the lighter soils on the eastern, northern and western edges of the region and the heavier soils of the boulder clay plateau running from south Norfolk into central Suffolk.

To ease comparison between areas, the methods of fieldwalking survey were standardized. From the initial survey results, coupled with a critical assessment of prior knowledge, stage two of the project was to apply more intensive survey and sample excavation to sites from all levels of the hierarchy in the areas examined. This stage was aimed at retrieving additional data on the agricultural and industrial economy, wealth, social status and demographic character of sites across the settlement hierarchy, as well as carrying out an assessment of plough damage. Environmental data would also be sought, to build on valuable work already done across East Anglia (Murphy 1997: 54). Finally, selected sites would be put forward for larger scale investigation, while others might be proposed for scheduling as Ancient Monuments to preserve some of the archaeological resources for future generations. After four or five sample areas of East Anglia had been surveyed, an initial model of settlement location and hierarchy could be created.

It is today unusual for any excavation to be carried out as part of a national or regional research programme. In this case the Sutton Hoo project also provided the initiative for a regional survey, which began, not unnaturally, in the area of the site. The Deben Valley survey was thus the first of the planned sample areas to be systematically addressed, and the work was funded by the Sutton Hoo Research Trust. Detailed knowledge of Anglo-Saxon Suffolk had been collected over many years within the Suffolk Archaeological Unit under the direction of Stanley West, who has now published an invaluable inventory, based on a deep understanding of the region and the period (West 1998). This provided the basis for the Deben Valley programme. The fieldwork area centred on the Sutton Hoo barrow-cemetery and straddled the Deben Valley. The area also forms part of the immediate hinterland of Ipswich, a major port from the seventh century, and the first urban centre in post-Roman East Anglia (Wade 1993: 144). Rendlesham, the site of an Anglo-Saxon palace and church, where some systematic survey had already been carried out, was also deliberately included. Otherwise the limits of the survey area were drawn along convenient national grid lines, so as to include a large area of Sandling, with its light sand- and gravel-derived soils, and a smaller area of boulder clay in the north-west corner (see Figure 215:b). By examining Sandling and the boulder clay areas, it was hoped that their respective settlement patterns could be compared and contrasted. As has already been noted (Mills 1985: 44), some soil types have been neglected in field survey: heavy boulder clay is one of these. The need for survey on the clay lands of East Anglia has also been a recently stressed research topic in the region (Brown *et al.* 2000: 46). Heavy clay-derived soils produce little evidence in aerial survey, and are not attractive to the fieldwalker in the middle of a long, wet winter.

The sample area was a rectangle of 216 km^2. This may be seem large, but, as Mills has pointed out (1985: 45), rapid coverage of large areas might well be the way to obtain the basic data needed for a comprehensive study of past settlement patterns. A large area certainly needs to be covered in order to locate sites that are rare in the landscape, such as Early Anglo-Saxon settlements, or to recover enough evidence to build up a settlement hierarchy. The area included nearly 90 km^2 of Sandling, and just over 40 km^2 of soils derived from boulder clay. Areas inaccessible for fieldwork are also clearly shown in the results, and consist of built-up areas and large forestry plantations and air bases on the broad, dry interfluves in the

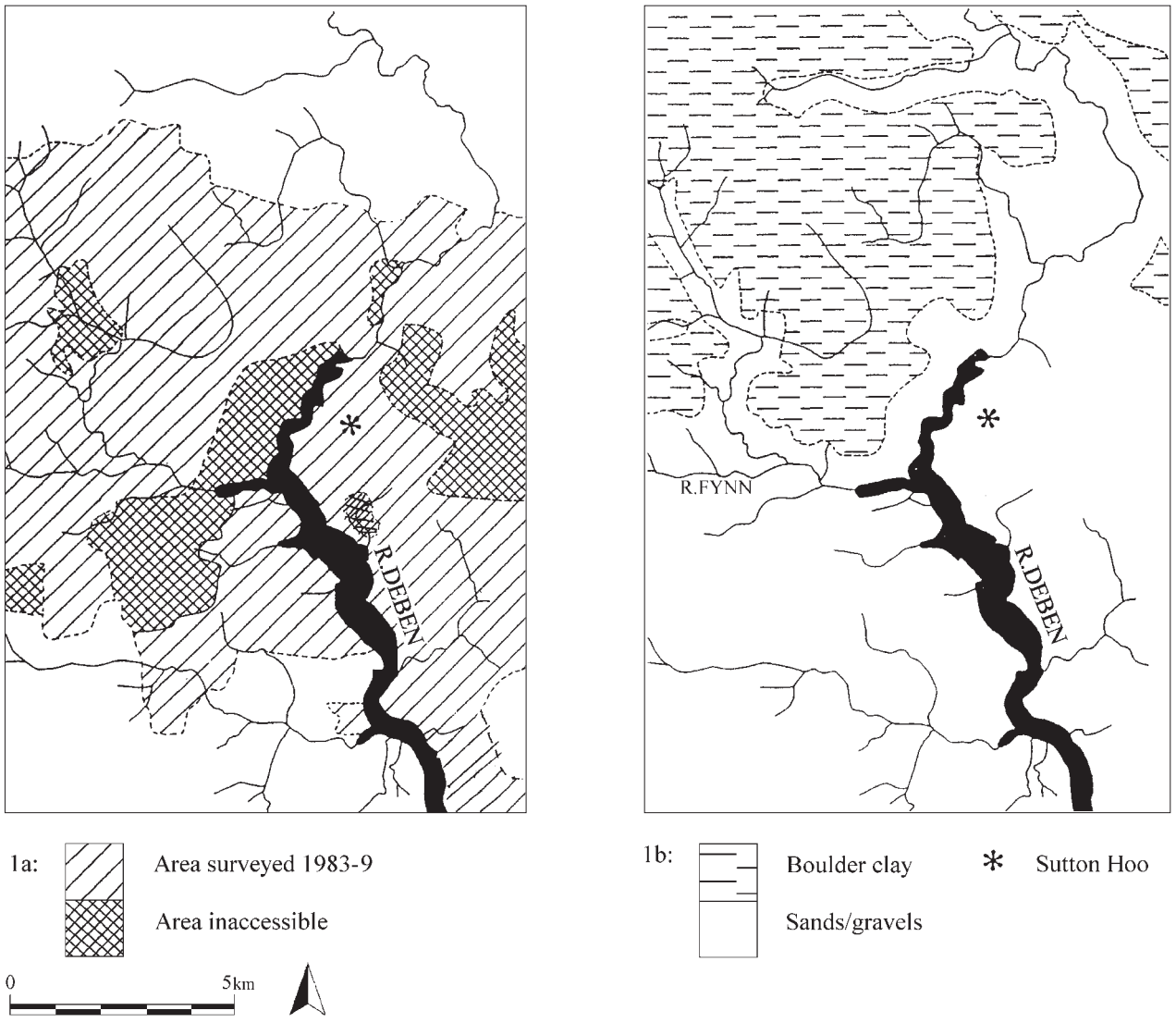


Figure 215 The Deben Valley survey: (a) the area surveyed; (b) drift geology.

Sandlings. Furthermore, not all the agricultural land was accessible or suitable for surface collection, so that within the sample only a proportion of fields were visited (Figure 14).

Field survey methodology

The field survey carried out between 1983 and 1989 was, essentially, a one-person operation carried out by the author. Such an approach was employed for a variety of reasons, the main one being a desire to maintain consistency which, as Hayfield points out, is of prime importance (1980: 27). Other factors included the limited resources available, and the increased cooperation from landowners when small numbers are involved in the field.

In the first stage of the survey, standard line-walking with transects 20 m apart was employed on each field, with finds bagged by each transect. This represents Foard's method B2 (1978: 358) and, while not having the greater distributional accuracy of dividing transects into subunits, it does aid more rapid survey. As a survey using one experienced fieldworker, it was also felt that significant finds or clusters of material would be recognized immediately, and this has proved to be true in the majority of cases. All the archaeological material observed along each transect was picked up, which, with an eye-scan of 1.5–2 m must represent seven to ten per cent of each field's surface. The only exception to this rule was post-Medieval material, which when found in large quantities was recorded, but only a few sample pieces removed, and burnt flint scatters, which were treated in a similar way. To spend too much time or effort in recording such late or undatable features in the landscape would have endangered the true objectives of the survey. Generally each field was walked using the 'tram lines' formed by tractor wheels as guidelines, and the fields were not examined unless conditions appeared fair to good for artefact recovery. Most had young crops emerging when examined. In the field, 1:10,000 Ordnance Survey maps were used for marking field numbers, transects and concentrations of ceramic or lithic material. At the end of each day, field notes and conditions were recorded on standard forms already tried and tested elsewhere (Fasham *et al.* 1980).

During the rapid survey stage, over 800 fields were covered in a near continuous block of land that measures 13 km east to west, by 12 km north to south (Figure 215:a), at a rate of approximately 12–15 ha. per day. At the same time, nearly all the sites showing evidence of concentrated Anglo-Saxon activity were walked intensively, over a grid. The sites that fell into this category were those that produced probable Early and Middle Saxon pottery scatters. In addition, the extensive Prehistoric

scatter round Sutton Hoo was surveyed intensively, as were any sites located by metal-detector users that had produced Early or Middle Saxon metalwork. The intensive surface collection was done in 25 m squares based on the national grid, with each square walked at 5 m intervals, using 1:2,500 Ordnance Survey maps to plot the grid in the field. Such a method of collection is very time-consuming, but is essential if sites are to be compared so as to build up a settlement hierarchy based on size and density of ceramic scatters. Even though the survey was primarily aimed at locating Anglo-Saxon material and sites, good evidence was located and recorded for all periods of human activity in the landscape.

Surface collection was enhanced by other methods of survey, such as aerial photography and metal detection. Aerial survey tends to favour the discovery of enclosed sites featuring large ditches that make crop-marks. Unenclosed sites, which are beginning to appear as the majority, have few features that create strong crop-marks, so surface collection must be relied on in order to reconstruct late Prehistoric settlement patterns. In areas of heavier, clay-derived soils, identifying sites of all types is dependent on field survey, as even enclosures will rarely appear on aerial photographs.

East Anglian fieldworkers have also found the use of metal detectors to be very productive, particularly for periods in which pottery production was low or the fabrics unspecific. In Suffolk, the Archaeological Service pursues a policy of positive cooperation with responsible, local metal-detector users, and over the last twenty years a wealth of valuable information has been recorded. These responsible detector users have recovered artefacts and coins from sites that are inevitably plough-damaged in a region that sees some of the most intensive arable use in the country. On a smaller scale, the use of metal detectors on individual sites and small areas has already been shown to be of value (Gregory and Rogerson 1984: 179); on a larger scale this wealth of material is opening up new and exciting avenues of research (Plouviez 1995: 69). Metal-detector surveys have proved valuable in finding Roman sites and assigning status to them. In the Early Anglo-Saxon period, metal-detector finds can often be diagnostic of period, as the coarse-ware pottery is hard to distinguish from Iron Age fabrics. Where doubt exists over the separation of Iron Age and Early Anglo-Saxon organic tempered pottery sherds, the metalwork can not only confirm activity for the latter period, but can also indicate the level of fifth- and sixth- to early seventh-century settlement in the area.

Survey results

Prehistoric period, c.3000–0 BC

For the earlier Prehistoric periods, numerous lithic scatters were found in the Sandlings area, within which diagnostic artefacts and pottery sherds were generally scarce. Some Neolithic and Bronze Age pottery scatters were found, though both types are extremely fragile and very unlikely to survive repeated cycles of ploughing and exposure to rain and frost. However, a general pattern of settlement and land use is emerging on the light soils of the Sandlings from a study of the lithic scatters. The densest of these scatters are to be found near water sources, where settlement might be expected. On the drier areas of ex-heathland there is a low density scatter of lithic finds that must represent off-site activities associated with agriculture or hunting. By contrast, on the heavier soils of the boulder clay part of the survey area very few lithic finds were made. The few, small lithic scatters located in this area of heavier soils were usually on small stretches of lighter sand- and gravel-derived soils exposed in some valley bottoms. While the edge of the boulder clay plateau of central Suffolk in the north-western corner of the survey area was certainly exploited in the Neolithic and Bronze Age periods, perhaps for timber or hunting, no real evidence for settlement was located.

In addition to being a site of international importance for Early Medieval studies, Sutton Hoo is also of undoubted regional importance for Prehistoric studies (see Chapter 11). The use of the site for barrow construction in the seventh century AD has helped to preserve good structural and artefactual evidence for the Neolithic, Bronze Age and Iron Age periods; and the fieldwalking survey indicates that this Prehistoric complex extends into the adjacent arable land (see also Chapter 2, p. 23). To the east of the barrow-cemetery the artefact scatter falls off rapidly some 100 m away from the mounds; however to the south-west a relatively dense scatter of ceramic and lithic finds extends for 650 m, to the point where Ferry Cliff overlooks the River Deben. Of particular note within this scatter, for the earlier Prehistoric periods, is the relatively high number of Neolithic and Bronze Age pottery sherds, which are good indicators of settlement activity. While it is very unlikely that the area in and around the barrow cemetery was in continuous settlement use during the Neolithic and Bronze Age periods, a zone of intermittent, domestic activity covering some 15 ha. between the mounds and Ferry Cliff can be identified (see Chapter 3, p. 36).

The picture of the earlier Prehistoric land use for the survey area, outlined above, can be seen to change in the Iron Age, when some areas on the edge of the boulder clay plateau were settled and, presumably, cleared for cultivation or the grazing of stock. Many small scatters of handmade, flint-gritted pottery sherds were found all over the survey area, and most probably date from the first millennium BC (see Figure 216:a). Interpretation of the very smallest Iron Age pottery scatters is difficult, as some may represent manuring activities rather than settlement sites, but they do, at least, show activity of this period nearby. In some of the small valleys feeding into the River Deben, the overall density is one site every kilometre. The large, Late Iron Age defended site at Burgh-by-Woodbridge (Martin 1988) is of demonstrably high status for the period.

The immediate vicinity of Sutton Hoo is one area where aerial survey has proved its worth: identifying a later Prehistoric field system that can be directly linked to ditches excavated on the barrow-cemetery (see Chapter 11, p. 45). It is worth noting that an oval enclosure 250 m to the south-east of the barrow-cemetery (Figure 8) has yielded a considerable quantity of Iron Age pottery sherds and burnt flints during fieldwalking surveys. The site, which has a diameter of *c*.40 m, lies on the crest of the slope, just above the point where the ground drops away gently to the south and east. This is likely to be an enclosed, domestic settlement site integrated into the later Prehistoric field system around Sutton Hoo. In it, once again, the complex pattern of pre-Roman settlement and land use on Sutton Heath, overlooking the River Deben, can be clearly seen.

Roman period, AD 0–400

During the Roman period the area around Sutton Hoo appears to have become part of a peripheral agricultural zone, with the nearest settlement sites being situated below the barrow-

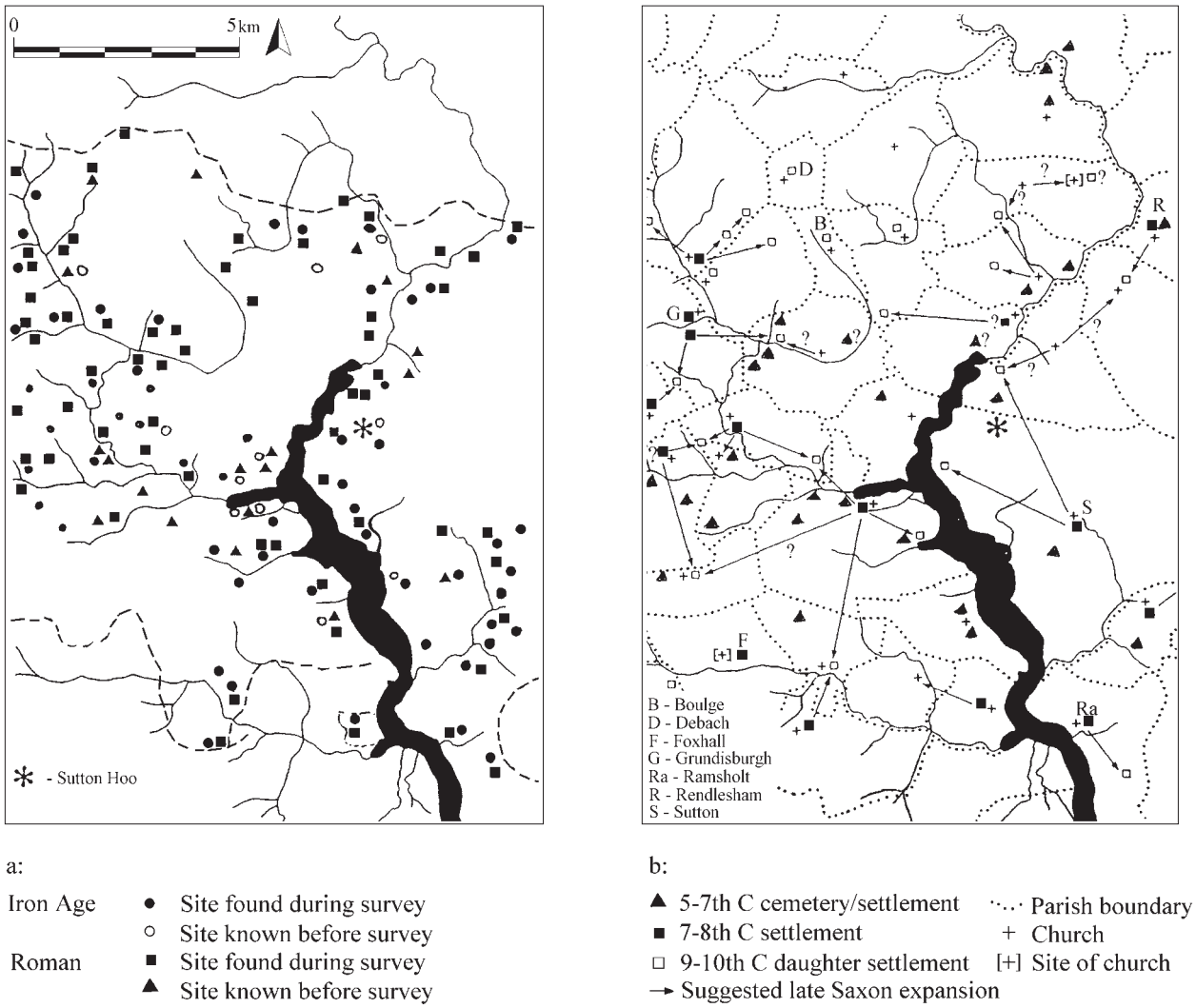


Figure 216 Settlement pattern: (a) Iron Age and Roman; (b) Early Medieval.

cemetery, close to the River Deben. However, across the survey area, numerous small- to medium-sized pottery scatters indicative of settlement were located. The high status site at Burgh-by-Woodbridge remains the only definite villa-type settlement (Martin 1988), while the high density of potential farm-type settlement sites indicate a large rural population (see Figure 216:a). Site density approaches 1 per 1 km^2 on the edge of the boulder-clay-derived soils, and 1 per 2 km^2 in the Sandling part of the survey area. These settlement densities compare well with those of other areas noted by Ford (1987: 94), as well as showing the greater carrying capacity of the heavier and, potentially, more productive soils. The only parts of the survey area with little evidence for intensive use are the dry former heathland of the Sandlings, and the heaviest boulder clay, upon which the small parishes of Boulge and Debach produced very little that could even be interpreted as background scatter derived from manuring of arable land.

The Roman settlement sites that were found are virtually all characterized by the dominance of common, grey-ware pottery types, and by a lack of contemporary fine-wares or ceramic building material. However, many of the pottery scatters did show evidence for continuity from the preceding Iron Age, with the recovery of handmade, flint-gritted sherds. In south-east Suffolk, the settlement patterns for both periods are very dispersed, as indicated in Figure 216:a; a characteristic of the area which is also discernible in the Anglo-Saxon and Medieval periods. By carrying out a policy of walking all available fields in the survey area, such a settlement pattern can be confirmed. In addition, it has been possible to suggest areas of manured arable land around each site, from the collection of stray sherds; information that will be of value when trying to answer questions about population levels and the possible scale of food production for the Roman period.

Unfortunately the grey-ware pottery sherds found in the field survey do not help with any more precise dating within the Roman period; instead one must turn to the metalwork finds from many of these sites. Within the survey area, this evidence points to a settlement pattern that was largely established by the end of the first century AD, and which flourished through the second and third centuries before declining in the second half of the fourth century. The metalwork evidence also points to a sophisticated, coin using, rural population that was fully integrated into the complex economy of the Roman province at least until the early to mid fourth century.

The Anglo-Saxon period, AD 400–1100

The Early Anglo-Saxon settlement pattern for south-east Suffolk is summarized in Figures 216:b and 217. Figure 217 uses a plot of

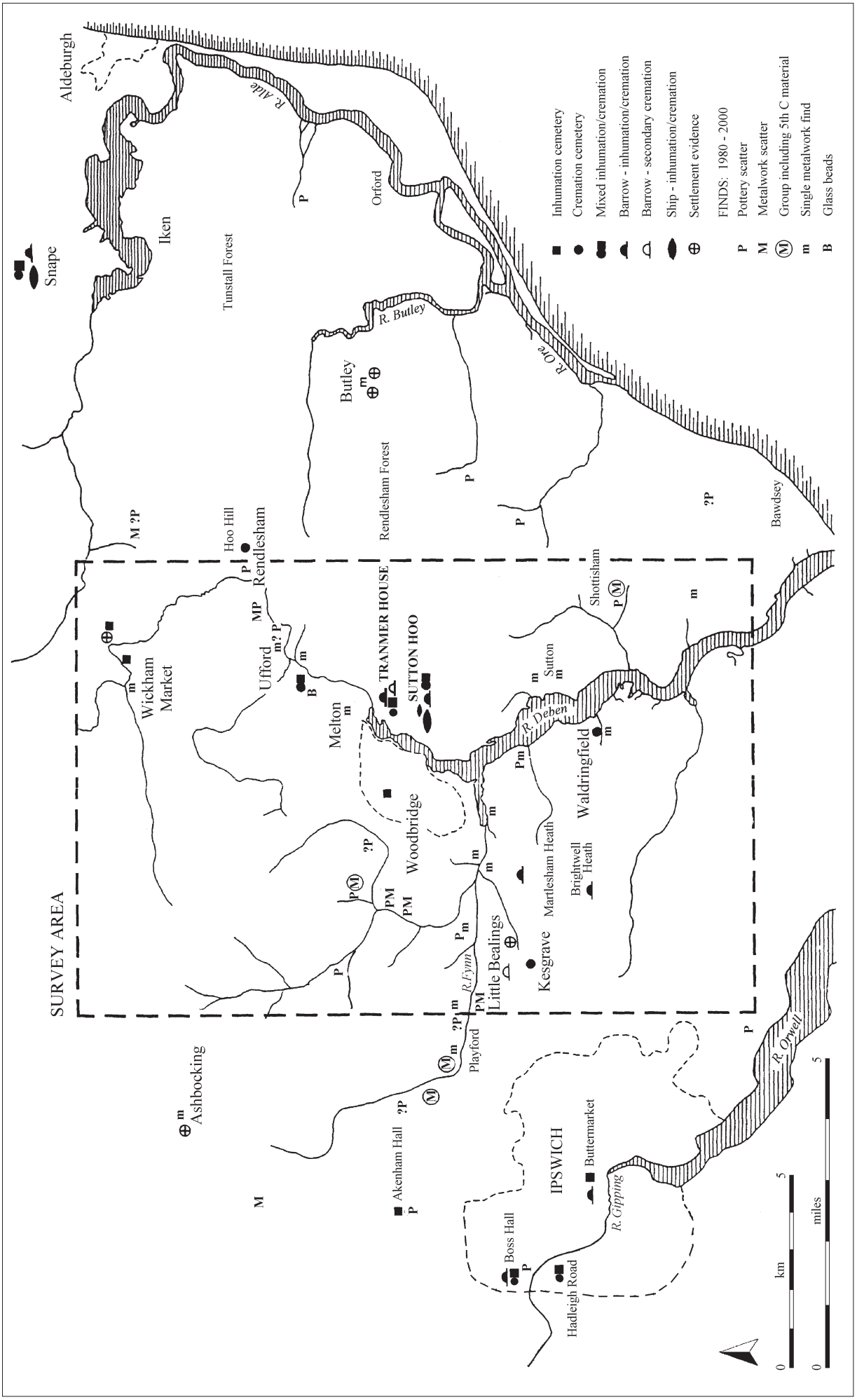


Figure 217 South-east Suffolk, showing Anglo-Saxon sites (geomorphology).

sites known before 1980, and adds pottery scatters found during recent fieldwork as well as metalwork finds reported since 1980. The overall pattern of possible settlements or cemeteries indicates a drop in activity, across the landscape, in the later fourth century, and for at least the first half of the fifth century. Whether this lack of artefactual material, with just four more fifth-century metalwork finds from the Deben Valley area in recent years, marks a real and dramatic fall in population is open to question, but it does appear to be a real possibility.

Dramatic social, economic and cultural changes certainly took place between AD *c*.350 and *c*.450 in eastern and southern Britain, with an identifiable influx of north European soldier-settlers. Evidence from south-east Suffolk supports this general picture of cultural change at around AD 400, and it would be perverse not to posit a decline in settlement numbers at a time of known social and economic stress and transformation. Within the survey area, no datable fifth- or sixth-century material was recovered from the edge of the boulder-clay plateau in its north-western corner, and this negative evidence is from a settlement zone that formerly supported numerous Roman sites (see Figure 216:a and b).

All of the evidence for Early Anglo-Saxon activity in the survey area is concentrated on the light soils of the Sandlings, although, again, a decline in settlement numbers compared to the preceding Roman period can be seen. The metalwork evidence points to an increase in activity from the later fifth century through to the sixth century (West 1998) at a time when a fresh wave of settlers may have crossed the North Sea, in particular from southern Norway (Hines 1984). A close association between potential settlement and cemetery sites, as signified by pottery and metalwork scatters, respectively, can also be discerned at regular intervals along the River Deben and the River Fynn, its tributary, perhaps signifying a stable and mutually agreed division of the landscape by the sixth century, at a time when the nascent power of the Wuffing family was beginning to grow towards its eventual royal control of East Anglia. While the size of these probable Early Anglo-Saxon settlements is difficult to gauge from surface evidence alone, none appear to have been more than single farmsteads or small hamlets, with the exception of Rendlesham, which produced the most extensive pottery scatter.

For the middle and Late Saxon periods it has been possible to rely much more heavily on ceramic evidence, as the region has the distinctive pottery traditions of Ipswich and Thetford type wares. Very few of the Early Anglo-Saxon sites in south-east Suffolk show a continuity of use into the Middle Saxon period. With the presence of a few sherds of Ipswich ware on these earlier sites, a general shift in settlement location probably came in the later seventh or early eighth century, as it did at West Stow (West 1985: 170). It is also from the early eighth century that the more attractive areas of boulder clay in Suffolk were, demonstrably, resettled. All the major Ipswich ware scatters have been located near parish churches in the survey area, as shown on Figure 216:b, a pattern that is similar to the that found in the Launditch area of Norfolk (Wade-Martins 1980: 2). This emphasizes the importance of these areas as nuclei around which the later Saxon and Medieval settlement patterns grew. Of twenty-seven parish churches within the surveyed area, twelve have Ipswich ware scatters nearby, and a further six do not have suitable land close by for fieldwork to take place (see Figure 216:b). The remaining sites close to parish churches fall mainly into a phase of ninth- or tenth-century expansion, when the less attractive areas of drier heathland on the Sandlings, and the heavier boulder clay areas, were settled. It was also at this time that the daughter settlements shown on Figure 216:b began to appear in those parishes that have evidence of a seventh/eighth century nucleus. These daughter settlements are characterized by a small quantity of Ipswich and Thetford type wares, such a combination indicating a ninth century origin. The 'daughter' settlements are usually quite small in size and situated close to parish boundaries (see Figure 216:b). In many cases they can be identified as the lost vills of the Domesday Book, which never achieved parish status. Within the survey, such 'daughter' settlements are Wilford in Bromeswell parish, Byng in Pettistree parish and Preston (or Preiston) in Martlesham parish. This phase of expansion also saw the creation of the small parishes of Boulge and Debach on the heaviest boulder clay soils.

This later Saxon expansion began the process that the dispersed settlement growth of the Medieval period continued. By the thirteenth or early fourteenth century, when the population reached its Medieval peak, each parish had a very dispersed settlement pattern. Occupation of the Middle Saxon nuclei near the churches continued, with the rest of the Medieval settlement pattern being strung out along the lanes and footpaths that criss-cross each parish. A large number of settlement sites were then abandoned in the late Medieval period, indicating a sharp drop in the rural population around the time of the Black Death and the climatic decline of the mid fourteenth century.

In the immediate area of Sutton Hoo, survey has indicated the presence of settlements at Wilford Bridge and Sutton, the latter comparing with Rendlesham in status. The Wilford bridge settlement is situated on the promontory that overlooks the site of the bridge and the probable ford that preceded it in Anglo-Saxon times. It was occupied in the Middle Saxon period, and abandoned in about the eleventh or twelfth century. Further east, and now on the other side of the road, is the site of Gallow Hill, which had become an execution site by the twelfth century, and before that may have been an Anglo-Saxon ritual centre remembered in the place-name Harrough Pightle (Warner 1996: 118). Sutton developed from the seventh or eighth century, and survives as Sutton Hoo's nearest village. Just north of Sutton Hoo (now Tranmer) House lies an Anglo-Saxon site that is probably the nearest contemporary neighbour of the barrow-cemetery. This site was located by field survey and subsequent excavation in 2000, and a brief interim report follows.

The Tranmer House cemetery (Suffolk CSMR BML 018)

The field north of Tranmer House was identified as a site of potential importance in 1984, following the discovery of a scatter of early and Middle Saxon pottery sherds during the systematic fieldwalking survey for the Deben Valley study (for location, see Figure 220, p. 495). In October 1986 ploughing to 10 in. (300 mm) deep, and subsequent harrowing, in this field disturbed parts of a highly decorated, copper-alloy bucket of 'Coptic' or eastern Mediterranean origin (Mango *et al*. 1989: 295; here Plate 62). Referred to as the 'Bromeswell Bucket' – as its find-spot lies in this parish, just beyond the Sutton parish boundary, some 500 m north of the main barrow-cemetery – most of the extant bucket was recovered from the ploughsoil (Plate 63). A rapid metal-detector survey carried out soon after the initial discovery located a scatter of finds indicative of a cemetery of later sixth-

Plate 62 The Bromeswell bucket that was ploughed up in the field immediately north of Tranmer House in 1988 (photograph: Suffolk Archaeological Unit).

or early seventh-century date, including a pendant with a gold coin of Honorious, an early Saxon decorated fragment of gilt bronze, a facetted pin head, fragments of an annular brooch and a Bronze Age spearhead (CSMR BML009). However, access could not be gained to carry out any form of trial excavation during the late 1980s or early 1990s. Therefore the source of the scatter of high quality finds, which could be broadly contemporary with the main Sutton Hoo site, remained unknown until the summer of 2000.

The opportunity to examine a large area 60 m from the find-spot of the Bromeswell Bucket arose following the acquisition of the Sutton Hoo Estate by the National Trust (see Chapter 1, p. 10 and Chapter 12, p. 472). To facilitate visitor access to the barrow-cemetery, the National Trust proposed an extensive area of car and coach parking north of Tranmer House, close to a visitor centre made up of refurbished existing buildings and new buildings funded by a successful Heritage Lottery Fund bid. As an initial stage of archaeological exploration, prior to any development work, geophysical survey and evaluation trenching were undertaken over the new building areas in 1997. This work revealed relatively little of archaeological interest except for a few ditches of Prehistoric date. The main phase of archaeological work on the development area of *c*.8,000 m^2 (see Figure 218, Plate 63) was therefore specified by the National Trust as a controlled stripping of the area to be followed by the investigation of any resulting features or deposits. The Suffolk County Council Archaeological Service field team carried out this commission during the spring and early summer of 2000 (Newman 2000).

Over the area which already had trial trenches, the evaluation results from 1997 proved to be a true reflection of the

Plate 63 Tranmer House from the air in 1991. In the foreground (right) is the field where the Bromeswell bucket was found; to the left is the site of the excavations of the Tranmer House cemetery. The Sutton Hoo burial ground is in the middle distance to the left of the copse, Top Hat Wood.

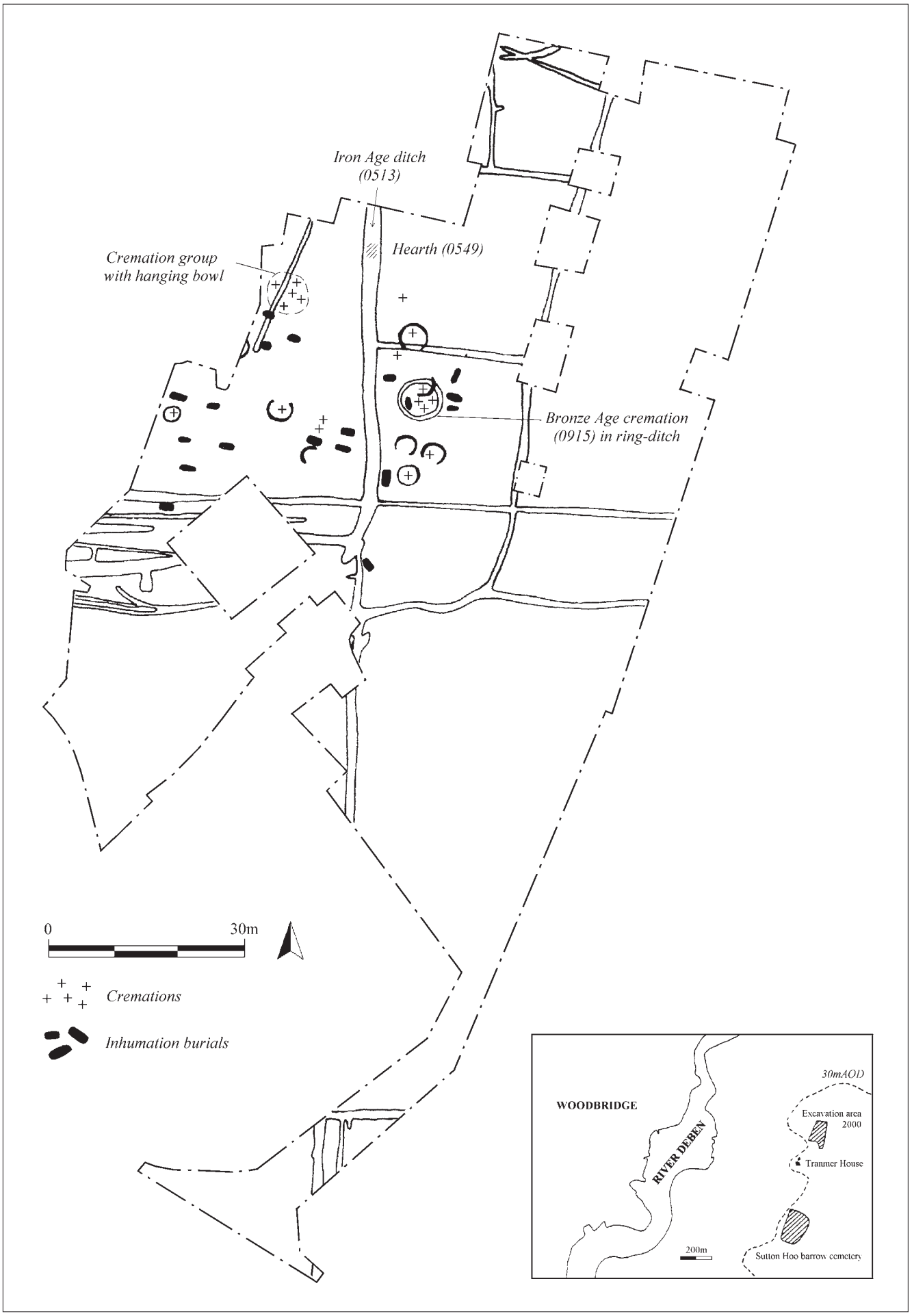


Figure 218 Tranmer House cemetery excavation plan (provisional).

features revealed by the controlled soil stripping, with ditches of probable Iron Age date and a variety of recent features associated with sheep farming and later gardening. Among the earliest features was a ring ditch, *c*.6 m in diameter, associated with a cremation in a pit at its centre (Context 0915). The cremation was dated to the Bronze Age on the basis of a pottery sherd recovered with the cremated bone, and of a radiocarbon date between fifteenth and thirteenth century BC obtained from the same context (Sample AA-43642). The ditches form quadrilaterals that align well with the Iron Age enclosures defined at the Sutton Hoo site further south, and should be part of the same system (see Chapter 11, p. 451). A hearth (Context 0549) stratified halfway up the fill of the main north–south ditch (0513) has given a radiocarbon date of third to sixth century AD (AA-43641), implying that the ditch was a visible feature in the Anglo-Saxon period (cf. Chapter 11, p. 457).

In the north-western quarter of the excavation area, which is the nearest part of the investigation to the Bromeswell Bucket find-spot, a number of cremation and inhumation burials of mainly Early Anglo-Saxon date were revealed and fully excavated. In the area under excavation, cultivation in recent years had led to the truncation or loss of any buried soils. The degree of disturbance was not, however as severe as it can be under mechanized ploughing. In total, nineteen inhumations and seventeen cremations of Early Anglo-Saxon date were investigated, with nine of the latter burials being directly associated with small ring ditches. The Anglo-Saxon cremation burials were different in character from the Bronze Age burial (above), which was on a larger scale: the Bronze Age ring ditch had a much larger diameter, and the central cremation pit was also larger and deeper than any of the later ones.

As Figure 218 demonstrates, the area containing the Anglo-Saxon cemetery (SMR BML018) is moderately large, with the burials being distributed at a relatively low density. The excavation also appears to show a clear eastern edge to the cemetery, where some of the burials cluster around the possible Bronze Age ring ditch; and probable northern and southern limits where the graves fade away within the area investigated. However, the cemetery clearly continues beyond the western edge of the excavation, and ploughsoil finds, including the Bromeswell Bucket, indicate a cemetery area that could extend for at least 100 m across a promontory overlooking the River Deben. This promontory topographically mirrors the landscape setting of the main barrow cemetery to the south. This is also the area proposed by Carver to have contained visible mounds in the early seventeenth century (see Chapter 12, p. 467).

At this still early stage in the post-excavation assessment of the overall results, a variety of funerary rites, especially amongst the cremations, can be noted within the area investigated. Cremations were recovered in handmade ceramic urns of classic sixth-century type, in un-urned deposits that were presumably buried in some sort of perishable bag or container and, in one notable case, in a copper-alloy hanging bowl. Animal bone was included in a number of the samples from the cremations (J. McKinley: pers. comm.). The ring ditches, recorded around nine of the cremations, are of great interest as such survivals are rare in England, though they are better known in the Anglo-Saxon homelands of north-central Germany (Assendorp 1987; Laux 1997). The ring ditches recorded on the site were all 2.5–3.5 m in diameter, making them much smaller than the great majority of known Bronze Age or Anglo-Saxon examples, and the ditch profiles were relatively shallow, with an average 300 mm depth of definable feature surviving below the mechanically removed topsoil. Cremation on site may also be inferred, as some of the ring ditches appeared to contain re-deposited pyre material consisting of burnt bone fragments, charcoal and heat-reddened soil deposits.

The cremation that was contained in a hanging bowl was surrounded by four other cremations, marking what is clearly a high-status burial. It is datable to the later sixth or early seventh century. While this group did not have any evidence for a mound or barrow, each of the surrounding cremations did contain a fragment of a copper-alloy vessel. These small fragments of a metal vessel are, perhaps, 'token' bowls suggesting a direct link to the central cremation within the hanging bowl. From the layout of this discrete group of cremations, the former presence of a mound, albeit without a ring ditch, may be suggested.

The nineteen inhumations, with both furnished and unfurnished graves, also demonstrated a range of burial rites typical of Early Anglo-Saxon cemeteries in East Anglia. There was virtually no bone survival due to the extremely acidic nature of the sand- and gravel-derived deposits across the site, but good body stains were recorded in most of the inhumation graves: indicating that the great majority of the bodies had been lain in a supine and extended position with a few in a flexed position. Of the furnished graves, thirteen can be assumed to be of males with typical weapon sets of a spear and, usually, a shield, while two also contained swords and evidence for shield-boards ornamented with gilt, copper-alloy fittings. Grave goods attributed to women were found in four inhumations, and included copper-alloy annular brooches and bead necklaces.

Initial dating of the grave goods recovered from the Tranmer House cemetery points to around the sixth- to early seventh-century. Two sixth-century brooch fragments were recovered by a metal-detector survey carried out over the area of the Bromeswell Bucket find-spot in the summer of 2000. This cemetery therefore appears to pre-date the main barrow-cemetery to the south, though a chronological overlap in use is a clear possibility. The Tranmer House cemetery appears to have functioned as a community or 'folk' cemetery with a clear link to the general Anglo-Saxon population in the area. Featured in the cemetery were individuals of the highest status, as witnessed by the Bromeswell Bucket find, and by the hanging bowl and its associated cremations. The main Sutton Hoo barrow-cemetery need not, therefore, be seen in isolation. A marked process of social differentiation culminating in a more rigid hierarchy by the early seventh century, as witnessed by the apparently royal burials removed to Sutton Hoo, can be seen to begin among the high-status burials, at Tranmer House and at Snape, within folk cemeteries of sixth-century date.

The cremation within the hanging bowl can also be seen as a likely forerunner in funerary rite to the Sutton Hoo high-status cremations in metal vessels, a rite that has been noted as characteristic of East Anglia overall, and as derived from Scandinavia (see Chapter 8, p. 285; O'Brien 1999: 117). Finally, the cemeteries suggest a funerary landscape overlooking the River Deben. To expect discrete limits to Anglo-Saxon cemeteries may be too simplistic. As has been demonstrated with the Anglo-Saxon cemetery excavations in Eriswell parish at RAF Lakenheath in the west of Suffolk, the cemetery proper may cover a large block of landscape, not all of which is directly used for burial (Caruth 1998: 229, 2000: 520).

Conclusion

As a means of archaeological investigation and research, field survey can only lead to tentative conclusions relating to patterns of past settlement and land use. The artefact content of the ploughsoil is only glimpsed in passing if a large area is to be systematically covered in a reasonable period of time. However, the success of a survey can be measured as more intensive work, including detailed survey and trial excavation, is carried out to test the results of the initial fieldwalking cover of the area. Further phases of fieldwork have been built into the research design for survey associated with the Sutton Hoo Research Programme. While this more advanced stage of investigation has not been formally initiated, some small-scale excavation has had development funding in areas identified as of interest for Anglo-Saxon studies in the area. In addition, a casual, but widespread and often intensive, metal-detector search has been made across much of the survey area by various keen and responsible individuals, leading to an independent check of many areas that were fieldwalked between 1983 and 1990.

During the survey, the area around Grundisburgh parish church was identified as a probable Middle to Late Saxon settlement with extensive scatters of Ipswich and Thetford type wares on the available arable land. This Anglo-Saxon activity was confirmed in 1992, when small scale excavation, prior to a residential development close to the parish church, revealed evidence for a small, timber-built, hall structure associated with Ipswich-ware sherds of Middle Saxon date. Similarly, the large scale excavation of what was, primarily, an Iron Age enclosure site east of Foxhall church, confirmed the Middle to Late Saxon settlement activity hinted at by surface collection, as evidence for two timber-built hall structures was recorded. The identification of surface-collected Early Anglo-Saxon pottery sherds has proved more problematic, as the abraded material is easily confused with earlier Iron Age sherds with similar fabrics. Therefore, the confident recognition of definite concentrations of fifth- to early seventh-century ceramic finds that can be associated with settlements or cemetery sites has proved difficult when supporting evidence is absent. However, as noted above, much of the area surveyed has been subject to casual metal detecting since the late 1970s, and most of the recovered material has been recorded by the Archaeological Service at Suffolk County Council. Similarly, metalwork evidence can add valuable additional evidence where Middle and Late Saxon sites have been identified through the collection of Ipswich and Thetford type wares, respectively.

The combined evidence for the Early Saxon period from fieldwork, where pottery scatters have been identified, and from metalwork finds is summarized in Figure 217. A close association between the two forms of evidence for fifth- to early seventh-century activity can be clearly seen. Paired settlements and cemeteries, linked by ceramics and metalwork, have been identified in Playford and Shottisham parishes (Newman 1995: 87). The location of pottery scatters with, or very close to, all of the major metalwork scatters has served to validate the survey as a representative account of Early Anglo-Saxon activity in the Deben Valley. No Early Anglo-Saxon site appears to be invisible to the traditional fieldwalking survey if suitably weathered arable land is available for examination in the relevant areas.

The Middle and Late Saxon sites in the survey area can be approached with more confidence when the collected ceramic evidence is reviewed, as both the Ipswich and Thetford type wares will resist continual ploughing. Here, the metalwork evidence is more useful as an aid for closer dating and for gauging the relative status of the various sites. One of the aims of the Deben Valley survey has been to create a settlement hierarchy based on the size and density of the ceramic scatters. On this basis, Rendlesham stands out as by far the largest scatter of Early and Middle Saxon pottery sherds and, as already noted, Bede gives a royal association for the settlement in the seventh century. In addition, Rendlesham is the only Early Anglo-Saxon pottery scatter in the survey area that shows a clear continuity of activity through the following Middle and Late Saxon periods. However, Rendlesham has not seen any metal-detector searches. The next largest scatter of Ipswich ware was identified at Sutton village, and it is reassuring to note that its status was here corroborated by the metalwork scatter, which included a number of Middle Saxon coins and artefacts (West 1998: 97). The Sutton site is larger, and of apparently higher status, than smaller scatters of Ipswich ware, such as those identified at Foxhall, Grundisburgh or Ramsholt. Similarly, those pottery scatters close to present parish boundaries, which have been suggested as Middle to Late Saxon 'daughter' settlements on the basis of small quantities of Ipswich ware with Thetford-type wares and metalwork evidence, support a foundation date in the ninth or earlier tenth century. The best examples of this latter category of settlement are Wilford, in Bromeswell parish, and Byng, in Pettistree parish, where ceramic and metalwork evidence is available.

In summary, therefore, the Deben Valley survey can be seen as having been successful in locating concentrated artefact scatters of all periods, which can generally be identified as settlement foci for, at least, the later Prehistoric, Roman and Early Medieval periods. Supporting evidence has also come from metalwork evidence, and it is noteworthy that no major sites for the Roman or Early Medieval periods located by metal-detector users were missed during the surface collection survey.

A site hierarchy based on surface collections of ceramic material also looks plausible. However, it will take more detailed work, including sample excavation, to fully validate suggested models of settlement change and growth through the Roman and Early Medieval periods, and to fully understand the cultural and social context for Sutton Hoo. In addition, environmental evidence is required to gauge the true extent of settlement and economic change, and possible decline, in the later Roman and Early Anglo-Saxon periods. A convincing picture of depopulation in the early fifth century, followed by the growth and development of an increasingly marked social hierarchy, can be made from the artefact evidence. The possibility must, however, remain that an archaeologically invisible sub-Roman population did survive which has yet to be identified in East Anglia.

Acknowledgements

The Deben Valley survey would have been impossible without support from the Sutton Hoo Research Trust and the numerous landowners who generously allowed free access for survey in the 1980s. In addition, the often-difficult identification of surface-collected artefacts drew on the extensive experience of Edward Martin, Judith Plouviez and Keith Wade; finally, thanks are due to Emma Parker for turning rough copy into a presentable contribution to this volume.

Chapter 14

Sutton Hoo in context

Martin Carver

Introduction

The objectives of the research programme were to gather evidence for the sequence of burials at Sutton Hoo, and to place them in a geographical and historical context. It was always to be a partial exercise, because total excavation was deemed unethical, and a total survey impossible (see Chapter 2). It was a scientific inquiry in the sense that observations were systematically selected, recorded, interpreted and monitored to serve a predesigned set of data (see Chapter 3). These controlled observations, supported by free interpretative commentaries written on site and later, were used to construct individual models of what happened at each burial (see Chapters 4–6, 8 and 9).

Up to this point, the collaborative dialogue that characterizes an archaeological report has provided a reasonable level of consensus, with a number of more equivocal matters noted here and there. But the reward of archaeological research is not only new data, but also a new image of the past, and this requires a journey taken beyond observation, analysis and interpretation into imagination. Attempts to grasp this elusive image have been made in a number of previous publications (e.g. Carver 1998a, 2001), and some of those ideas are cited below. These attempts proceed from a conviction that Anglo-Saxon burial was meaningful, and that different types of burial imply that different meanings were intended. The Sutton Hoo burials are here assumed to be expressive, and our task is to decide what it was that was being expressed.

This chapter offers a summary of the conclusions of the studies of the burial ground and its context, rearranged in narrative form (*Sutton Hoo in sequence*), followed by some reflections on how valid the sequence is likely to be (*Critique*). The next section explores the social context of the burial ground in the early Middle Ages by making reference to contemporary cultures in the Sandlings, the East Anglian kingdom and the North Sea cultural zone (*Sutton Hoo's societies*). A concluding passage draws some irreverent equations with the documentary record and suggests a way to situate *Sutton Hoo in history*.

Sutton Hoo in sequence

The inheritance of the land

The Sutton Hoo site features a series of small promontories on the 30 m terrace that overlooks a gentle slope, westwards, towards the River Deben (Figure 220). The river, which is almost at its tidal limit, at one time spread out broadly at this point, providing a natural resource for fish and wildfowl and, according to early maps, a 'marina' or haven (see Chapter 12, p. 460). The first clearance of the woodland seems to have occurred in the late Neolithic or Early Bronze Age, and was applied to the slopes down to the river, where oak, alder and, latterly, hazel were then growing. On the more level terrace above, clearance was followed by the imposition of a system of large boundary ditches marching across the landscape – a decisive development presumably signifying the control of land. This grid of ditches enclosed fields that were alternately under the plough or grass, and were served by farmers resident at intervals of 50 m or so. In the Late Bronze Age or Early Iron Age the ordered ditches were abandoned and filled in, and a large subrectangular area was palisaded, presumably to contain sheep. In the Iron Age the surface of the land was again reconfigured, becoming a network of small, square ('Celtic') fields in which stock was reared or cereals, vegetables or fruit were grown (see Chapter 11, pp. 451–6). By AD 600, over two millennia of ploughing the light sandy soil had reduced its thickness from an estimated 900 mm to 400 mm, the eroded soil moving down the slope and ultimately into the River Deben (see Chapter 10, p. 376). The inheritance of the Sutton Hoo landscape was predominantly its fertility, by means of which a small population could produce a surplus, using a cycle of arable and pastoral farming that was to continue into the twenty-first century. The site was also one that provided ready access to the river, near a point at which it could be crossed.

The Tranmer House cemetery

In the sixth century AD a cemetery was established at the site of the later Tranmer House, in the northern part of the Sutton Hoo

area (see Chapter 13, p. 483). The burials (furnished cremations and inhumations) continued into the early seventh century, and included a number of small mounds and a cremation in a bronze hanging-bowl: showing that social aspirations are already being exercised in these funerary rites. The successor burial ground, 500 m further south at Sutton Hoo, was opened at the end of the sixth century to commemorate people with enhanced social pretensions. These were people who were doubtless known or related to the folk buried at the Tranmer House site.

The seventh-century burial ground

The new burial ground (which we know as Sutton Hoo) was established on the edge of the terrace, and was visible from the river, Melton and the previous, Tranmer House, cemetery. Here the 'Celtic fields' had turfed over, leaving a set of square areas marked out by low banks and shallow ditches. At least one track, running nearly north–south, seems to have remained in use from the Iron Age (see Chapter 11, pp. 455–8), providing an eastern boundary for the new site. Burials seem to have begun in the late sixth or early seventh century, the first mound-burials being placed on the banks of the Iron Age earthworks situated at the edge of the terrace. As argued in Chapter 8, the use of the cemetery was short-lived and its development probably polyfocal (Figure 219; Table 104). An initial focus is thought to have been provided by Mound 5, followed by Mounds 6 and 7 (Group A in Figure 219). These were aristocratic males, whose remains were cremated and placed in bronze bowls, and whose graves were enriched with horses and food animals, playing pieces and, originally, much else besides. The subjects of the simpler cremations, Burials 13 and 14, may have fallen within their social orbit (see Chapter 8, p. 285). Mound 3, its cremation placed on a wooden trough or boat, may have provided another focus (Group B in Figure 219), to which Mound 4, a cremation in a bronze bowl, belonged. At this stage, supposed as taking place *c*.590–*c*.610, the two groups (two families?) signalled high status and affiliation to the cultural practices of Scandinavia and north Germany (see Chapter 8, p. 310).

Mound 17 then follows, between AD *c*.600 and *c*.620. It lies within the Mound 5 group, but has a new funerary composition: a horse-and-rider burial with both Frankish and Scandinavian allusions (see Chapter 8, p. 298). Each of the two foci (A and B) then acquired a ship-burial, two major investments that would seem to be closely related and nearly contemporary, dating to around AD 630. Mound 2 (to the north) covered a ship up to 20 m long, which itself covered the chamber grave of a man that was originally richly furnished. Mound 1 (to the south) covered a ship 27 m long that contained a chamber, erected amidships, where a man lay on a bed or a platform, or in a coffin, with a wealth of regalia, weaponry, feasting equipment and personal apparel. The principal investment in this burial rite was the burial of a ship, thus making common cause with Baltic practice and ideology, even if the artefacts make references to Francia, Byzantium and Rome (Carver 1995b and 2000; see Chapter 8, p. 301). The ships were most probably heaved up one of the valleys to the north of the burial ground, or were taken up the longer but more gentle trajectory from the south (Figure 220). The re-entrants to the immediate west (proposed by Bruce-Mitford, SHSB I: 22) seem too steep for ships of such size. The Mound 1 and 2 ship-burials are seen as major political constructs and as monuments of unusual public expression. Their form

Table 104
Time-line for the Sutton Hoo site, from the sixth to the twentieth century

Event/century	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Tranmer House cemetery	X	X													
Princely burial ground															
Mound 5	X	X													
Mound 6	X	X													
Mound 7	X	X													
Burials 13 and 14															
Mound 18	X	X													
Mound 3	X	X													
Mound 4	X	X													
Mound 17		X													
Mound 2		X													
Mound 1		X													
Burials 12, 15 and 16		X													
Burial 14		X													
Burial 56		X	X												
Executions of Group 1			X	X	X	X									
Executions of Group 2			X	X	X	X									
Sheep walks, hearths and warrens							X								
Ploughing								X	X	X					
Tracks 1 and 2									X	X					
Campaign of barrow digging (1)											X	X			
Ploughing													X		
Campaign of barrow digging (2)														X	
Ploughing														X	
Heath														X	

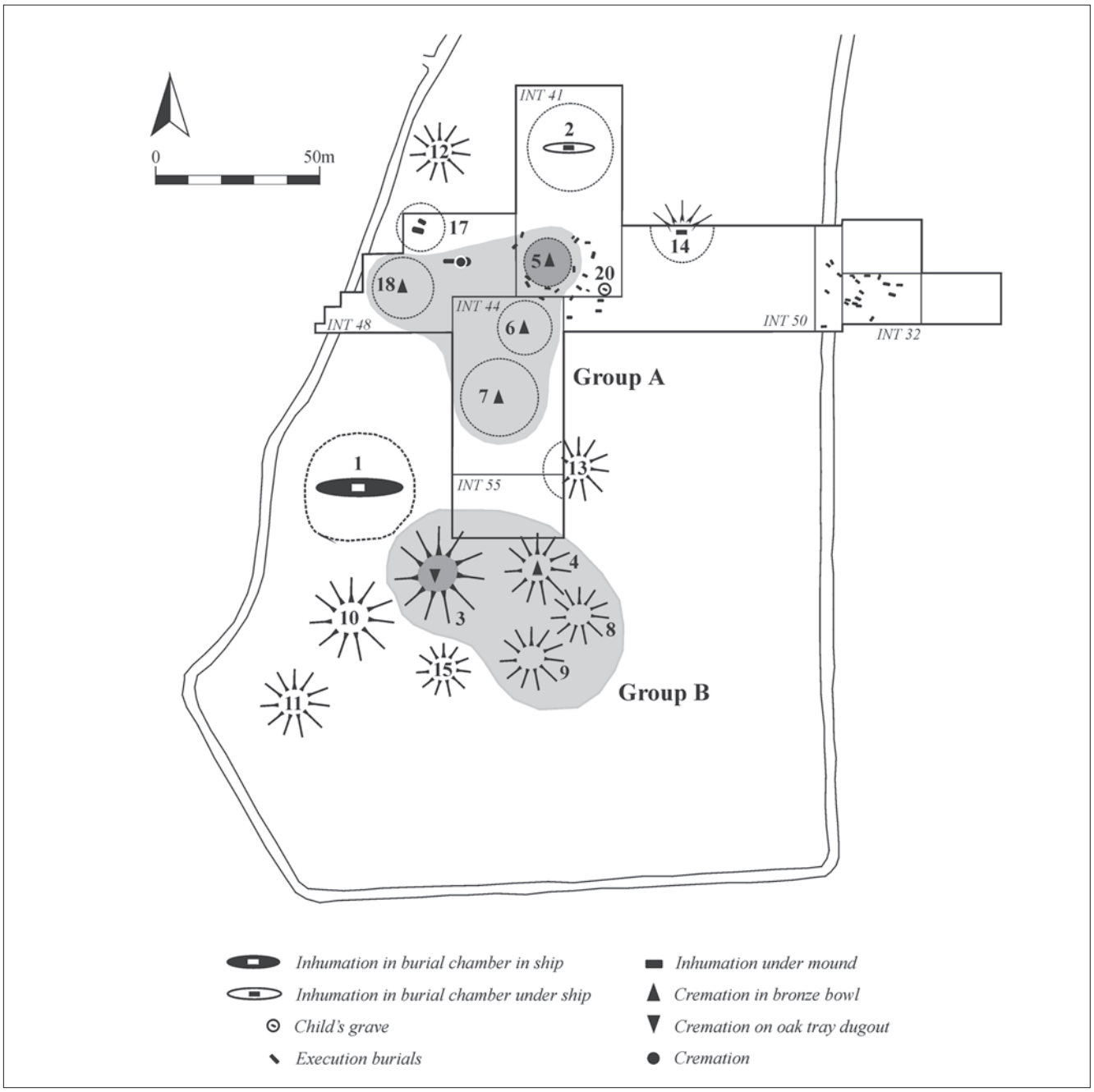


Figure 219 Model for the polyfocal development of the Sutton Hoo site.

may be compared to the composition of a poem, where ideas and allusions are presented together in a rich tableau of theatrical complexity (Carver 2000; cf. Andrén 1993: 50 and Varenius 1995). It is possible, as suggested by Herschend (2001: 87), that the disposition of coffin, chamber and ship represents changing views of cosmology, as the Christian view of the hereafter began to command more space in contemporary intellectual debate. It may be that some of the furnishings of the Mound 1 burial (for example, the 'standard' and the 'wand') recall a shamanistic role, as has been suggested for burials with staffs of the Viking period (Price 2002). In the present interpretation, such offices would be subsumed into that of a political leader, so that the burial ground, as well as the hall, acts as a religious as well as a secular focus (cf. Herschend 1993, Williams 2001a). The Mound 1 ship-burial can be seen as an original and innovative composition that reflected the complexity of political philosophy in East Anglia on the eve of Christian literacy.

This was the climax of the princely burial ground. Less extravagant burials followed into the middle of the seventh century: children or young persons in coffins, boat-pieces or beds (Burials 12, 15 and 16); a wealthy woman adorned with silver in a chamber, and perhaps on a bed (Burial 14); and, towards the end of the century or perhaps even beyond it, a furnished inhumation robbed beyond definition (Burial 56).

The significance of these graves is that they are situated in a burial ground that is separated from the folk cemeteries, and is largely restricted to an elite. The burial investments that are made, especially the richer investments, ought, therefore, to have a status that reaches beyond a local kin group. Reading them in this way, it is possible to propose that the patrons of the burial ground used it as a theatre in which they marked the passing of a leader with a memorial that recorded both an appreciation of the person and a vision for the future, both his and theirs. The burial rites employed do not in general represent

a continuation of previous practice. They are not the last of a tradition, but instead are the beginning of a new seventh-century repertoire. The burial rites adopted carry connotations of political alignment, often with Scandinavia, but the artefacts show clear knowledge of the material language of other cultural zones. In the present interpretation, the burial rite is seen as having primacy, so that its effective message is that of alliance with the pagan maritime polities of the North Sea and Baltic regions, and antipathy towards the Christian power bloc of Francia with its most recent satellite, Kent (see Chapter 8; also Carver 1986a, 2000 and 2001). It is possible, although not necessary for the argument, to associate the high-status burials at Sutton Hoo with leaders cited as the named kings of East Anglia from the later sixth to the early seventh century (see below).

The execution burials

The remaining burials at Sutton Hoo, Burials 17 to 55, are disposed in two groups, one group around Mound 5 and the other on the eastern periphery of the barrow-cemetery. The bodies were found in a variety of positions, including face down, kneeling, crouched, with the wrists or ankles laid together, decapitated or with a broken neck. It is argued in Chapter 9 (p. 348) that these are predominantly the victims of deliberate killings of ritual character and judicial intent (see also Reynolds 1999: 55, 105–10).

The two execution sites appear to be contemporary, and span the period from the eighth to the eleventh century. On the basis of stratigraphy and radiocarbon dating, the earliest execution burials could be contemporary with some of the princely burials, but the verdict given here is that they were not. Sutton Hoo was adopted as a place of execution only after it had ceased to be a princely burial ground. It then became a *cwealmstow*, a killing place or place of public execution, for which there was to be an enduring role in the English landscape. Probably by the twelfth century the gallows were removed to a site further north at Gallows Hill, overlooking the new bridge at Wilford, and remained there until at least the seventeenth century (see Chapter 12, p. 459).

The two places of execution were on Mound 5, and on the eastern side of the cemetery. Both were beside tracks, but we should look for other reasons for their location. The eastern site was probably originally marked by a tree, while the original occupant of Mound 5, presumably remembered after a little more than century, may have influenced the siting of the gallows there. Execution was by hanging and, possibly, decapitation. The bodies often exhibited considerable abuse or dismemberment likely to have been caused by suspending the corpse on a gibbet. There was no marked difference in the treatment of the body between the two execution sites, except that some of those at the eastern site had coffins. If, as the radiocarbon dates imply, the difference between the sites was not chronological, then there may have been a difference in the original felonies that led the victims there – say, distinctions between treason and homicide, crimes against the king or crimes by the unconverted or the apostate – and for which the new authority exacted its retribution.

If the argument for a date of the eighth to eleventh century is accepted, execution began under the Christian kings of East Anglia, to whom we should look for its rationale. In the late ninth and early tenth centuries these rulers included Danes, and it may be worth considering if there is any necessary Danish connection. Arriving, most aggressively in AD 870, Viking warlords seized the 25-year-old East Anglian King Edmund, tied him to a tree, beat him, used him as a target for their spears until he 'bristled like [St] Sebastian', and then decapitated him (*Edmund*: line 96–9; Arnold 1890: I, 16). Lord Francis Hervey argued that the Viking band landed at Orford, murdered Edmund on 20 November at *Haegelisdun* and buried him at Sutton (1929: 13–14, 19; Arnold 1890: I, 27). After King Alfred's victory at Edington in AD 878, Guthrum (baptized as Aethelstan I) ruled East Anglia, followed by Eohric and Guthrum (Aethelstan II) until AD 921 (Hervey 1929: 24). Towards the end of Alfred's reign (AD 899), the head of Edmund was rediscovered (with the help of a wolf), and head and body were buried at the new Christian foundation of *Beaduricesworth*, later Bury St Edmunds (Hervey 1929: 17).

The possible association between the death of Edmund and Sutton Hoo is suggestive but hard to endorse. The Sutton in question need not be Sutton Hoo or the village immediately adjacent to the east, and a case has been made for both Sutton and *Haegelisdun* being located near Bradfield St Clare in west Suffolk (West 1983; E. Martin: pers. comm.) Some examples from the two groups of hanged and decapitated young men at Sutton Hoo must belong to the time of Edmund's murder, but the dates of the victims are too widespread to attribute them all to a moment of Viking excess. It seems, rather, that the execution place served the reigns of Edmund and his Danish successors with equal favour. If the initial impetus for execution at Sutton Hoo was the protection of Christian values, the protection of the authority of the king probably soon came to provide a pretext that was sufficient in itself.

Sutton Hoo as monument

Since their construction in the seventh century, the Sutton Hoo burial mounds have remained a feature of the landscape, attracting the attention of subsequent generations to different degrees and raising different expectations. In the twelfth century, after the gallows had moved, the old cemetery reverted to rough grazing, and shepherds made fires within the shelter provided by the quarry ditches. The mounds were apparently respected, although Mound 2 (and probably other mounds) became warrens for the systematic farming of rabbits, which indulged in light excavations of their own (see Chapter 12, p. 461). The arable–pastoral cycle continued. Before 1601 the slopes to the river were ploughed, and then the land on the terrace at 30 m AOD, including the mounds that stood upon it, was ploughed too. Ploughing spread the soil that made up the mounds, reducing their height and filling the quarry ditches and pits with pale sand. Sometime in the sixteenth or seventeenth century the first major campaign of digging in the mounds took place, and it was on this occasion that most of the mounds were thoroughly pillaged, using shafts driven down in their centre. Only those shafts dug into Mounds 1 and 17 are known to have failed. This campaign, attributed to a member of the new generation of post-Reformation landowners, perhaps Robert Mather, was presumably motivated by the desire to acquire bullion, an asset-stripping exercise from which no legacy has survived.

Other episodes of ploughing that spread the mounds further took place in the eighteenth and early nineteenth centuries (see

Chapter 12, p. 459), as farmers struggled to match rising demand and falling fertility. In the 1860s a second major excavation campaign, perhaps due to a local tenant, Mr Barritt, left its mark on the mounds. It used large east–west trenches, cut across the positions of burial chambers and systematically dug them out, but little was apparently found. From the layout of these excavations, it can be inferred that labour was carefully directed, soil was sieved and the less shiny artefacts were valued. This would suggest the work of the new doyens of antiquarian scholarship, intrigued by the Anglo-Saxon people and promoting their inheritance as part of the stewardship of the land. A tradition of responsible curiosity also initiated the third campaign in 1938, in which the landowner, Mrs Edith Pretty, had trenches cut through Mounds 3, 2, 4 and 1. The direction of this inquiry was guided by a new kind of employee, intellectual labourers or labouring intellectuals, otherwise archaeologists, among them Basil Brown and Charles Phillips. These new explorers aimed to define their discoveries in terms of the cultural achievements of people already known to history.

Sutton Hoo as object of research

In the three decades after 1940 this objective came to fruition through the studies of Rupert Bruce-Mitford and his team at the British Museum. Their researches, which included the identification and conservation of the artefacts and (in 1965–71) a further campaign of excavation, offered a detailed understanding of what had been in the Mound 1 ship-burial, and of its cultural connections. A generation of Anglo-Saxon scholars was ready to declare that Sutton Hoo was the burial ground of the early kings of East Anglia, to give names to those buried in the mounds by making equations with the documentary record and to show that links must have existed between them and aristocrats overseas, particularly Scandinavia (SHSB I).

The idea of searching for a context for the ship-burial was continued and extended by the project that began in 1983. To begin with, the principal objective was to map the emergence of an aristocracy and, eventually, of kingship in Anglo-Saxon society, using burial, and the burial sequence at Sutton Hoo in particular, as the indications. The excavations and surveys were designed to test models of the way Sutton Hoo's society changed during the fifth to seventh centuries, and the systems and processes implied (*Bull.* 4: 45). This objective was modified by the gradual discovery that the usual types of Early Anglo-Saxon burial were not to be found at the site, and subsequent readings have emphasized the idea of the burials as monuments that were individually significant (Carver 1992b: 351). The present interpretation regards the Sutton Hoo burials as evidence for the way people thought, and for what motivated them to bury their dead in the way they did, when they did. This has required a consideration of what was happening in adjacent territories, and in the intersecting societies of the locality, East Anglia and the wider maritime zone, to which the members of the Sutton Hoo burial parties belonged (below).

Critique

There are a number of uncertainties in this newly reported sequence which have not been resolved, and which leave important questions for the future. The investigation of the river regime was incomplete, so that the supposed 'marina' was asserted from later map evidence, rather than being mapped directly using augers. The survival of environmental evidence was meagre for all periods. Although the mechanical signs of cultivation were clear enough, there were few indications of what was being grown, or what animals were being raised. The structural evidence for Prehistoric settlement was so truncated by ploughing that it was often hard to tell what sort of settlements they were. The exploitation of the site in the Roman and early Saxon period, so relevant for its selection as a burial ground, remains almost completely unknown.

Problems of disturbed assemblages – caused not only by the ploughing of the mounds, but also by their pillaging by previous excavators – beset the study of the Early Medieval cemetery. The organic fraction, where burnt, had been scattered; and where unburnt, had often decayed beyond recognition. The sex and age of the buried persons were usually in doubt, and their accompanying assemblages were usually incomplete. Dating has thus often depended on surviving artefacts that were not necessarily representative of the assemblage as a whole. The stratification was usually illegible, even under contrived conditions of intensive scrutiny. It failed to offer good evidence for the ordering of the burials, and left some major questions in a state of ambiguity (notably the relationship of the earliest execution burial to Mound 5).

The question of why there should be two places of execution, apparently contemporary and next to each other, remained unresolved. Their dating depended on radiocarbon determinations, applied to every viable sample, but this did not include every grave. The bodies in the execution cemetery were pseudomorphs consisting, mainly, of sand. Although their identification as persons who had suffered death by hanging or beheading was not in doubt, the samples of bone were usually too fragmentary to determine trauma at the time of execution or earlier. We therefore know little about these unfortunates, such as whether they represent a criminal or a dissident class.

In spite of some assistance from documents, details of the Medieval and later history of the site were elusive. The question of whether ploughing followed robbing, or the other way round (as now decided), was particularly knotty; even the fact that the mounds had been ploughed at all was not recognized until the project was well under way.

All these uncertainties were owed, in part, to the condition of the site, and to the processes that had left such poorly stratified, and badly decayed and disturbed deposits. However, there were inadequacies in the evaluation too. Although the evaluation was comprehensive by any standards (at a length of three years, it understandably tried the patience of sponsors), there is little doubt that it should have been still more intensive. A full geophysical survey of the area using more sensitive equipment than was then available now seems a necessary concomitant. Were we to start again this would be the first item on the agenda, so that the graves – not only at Sutton Hoo, but also at the Tranmer House cemetery – could be mapped while they were still covered by turf (for a first trial of the caesium magnetometer at Sutton Hoo (in 2000), see Chapter 3, p. 56. The sampling exercise would then be much less blind, and the yield of destructive intervention (by excavation) much more measurable. There is also a retrospective case for choosing Mounds 6 or 7 (rather than Mound 2) as a test case during the evaluation stage. This would have resolved the matter of 'ship-dents' (see Chapter 12, p. 465) in advance, and thus indicated

that the majority of mounds had already been trenched, affecting the project design accordingly.

If the research programme contained its disappointments, the management programme by contrast outstripped initial hopes. After 1983, the site was retrieved from a condition of semi-dereliction, and the rate of attrition was dramatically decelerated. It is now mown, fenced, free of rabbits, receptive to benevolent visitors, and entrusted to the long-term care of the National Trust. Sutton Hoo is recognized as a national asset, both as a monument and as a resource for researchers. However, its future also depends on respect for the principle of value-led investigation that has been promoted during the recent campaign. This idea simply requires, as in 1986, that access to the archaeological resource be publicly negotiated on the basis of the historical value anticipated from an intervention, as expressed in a published project design. We know a lot more about the condition of the site underground than we did then, and would currently be less optimistic about our ability to read more from it by digging. The development of much better remote mapping, both on- and off-site, seems an essential prerequisite to any further investigation if more information is to be won without further attrition to the site.

The sequence of studies, 1860–1983, shows how important it is that each excavator learns from those who preceded them. Later interpretations enhance rather than replace the earlier ones, because different questions are being asked. At the same time, each campaign is aware of the extravagance of the one before, because more is already appreciated (or should be) about the character of the site. Each generation asks more sophisticated questions, and for ethical reasons is entitled to use less of the archaeological resource to answer them. Future excavators would also be expected to enhance, rather than reduce, the standards of inquiry already set. It is to be hoped that such principles would guide any future studies at Sutton Hoo.

In addition, it could be argued that many, or even most, of the key questions on a modern research agenda cannot be answered at the site itself. Was Sutton Hoo unique? Clearly its position of pre-eminence and royalty would be dented if there appeared to be a number of similar sites in the area. Was Sutton Hoo 'foreign'? The identification of intrusive cultural elements can only be discerned by comparing its battered assemblage with those of neighbouring cemeteries. Was there a real social change, resulting in an aristocracy and kingship, or only a change in the way that social class was signalled? This cannot be determined from the study of cemeteries alone: settlements and other kinds of investment must be considered too. The first option (there was real social change) would be corroborated if a new hierarchy could be discovered in seventh-century settlement, and this requires exploration on the wider canvas of East Anglia. How was the kingdom of East Anglia defined? When did it come into being? How did it see itself before Sutton Hoo, after conversion, at the time of Danish domination? Did East Anglia follow a different political programme to its English neighbours? Did the Sutton Hoo community, as asserted here, take part in an international debate about the way Europeans should live? All these matters can only be addressed through investigations, not at the site itself, but in its immediate hinterland, in the kingdom of East Anglia, and in the broader theatre of the North Sea region. Future and fuller comparative studies of this kind would greatly enrich or correct the preliminary essay which follows.

Sutton Hoo's societies – the 'Sandlings Province'

The immediate geographical context of Sutton Hoo is provided by that part of the Deben Valley visible from the site (Figure 220). If the mounds were originally 2–3 m high (see Chapter 10, p. 370), and the later plantations of conifers are disregarded, this visibility would extend up and down stream, westwards over the river and eastwards inland, perhaps as far as the Rendlesham Forest. Redstone describes the prominence of the Sutton Hoo site, and its visual impact at the turn of the twentieth century, in this way: 'As you sail up the Deben the land undulates on the right bank reaching its culminating point between Sutton Ferry and Wilford Hollows. Upon the summit of this high ground is a cluster of mounds like those seen in other parts of Suffolk and called "Seven Hills". As a matter of fact in no case is seven the exact number of mounds; there may be as at Sutton Haugh seven prominent mounds, but there are also smaller ones in close proximity … the name Haugh has for centuries been the term applied to the Sutton mounds … they stand upon a most conspicuous spot from which an outlook might be obtained for miles around, and are near to a creek once navigable by vessels of many tons burden' (Redstone 1900: 57). The navigable water is supposed to have widened at this point to some 400 m (see above), and to have promoted the development of Woodbridge from a putative predecessor. The *Udebryge* itself, surmised as having a Saxon or pre-Saxon existence, can no doubt be seen as serving early sites at Kingston and Melton, and as perhaps providing communication across wet ground between them (Redstone 1897). The river itself was crossed further north at Wilford, the eventual site of the first bridge. The view from Sutton Hoo took in much of a (populated) crossroads of communications by land, river and sea. The siting of the burial ground was thus part of its message (Carver 1998a: x, 107; Williams 2001a).

In assigning a character to this landscape, we should be aware of how many other burial mounds and settlements there may have been, even close by. Redstone writes (1897: 345) of 'numerous haughs' which were the traces of the 'encampments, burial grounds and homesteads of our ancestors', drawing attention to Kingston and Melton as possible sites of royal settlements (*tun*), both of which lie across the Deben from Sutton Hoo (see also Wood 1991: 13). 'Woodbridge' has produced a possible barrow site, and Melton a polychrome triangular buckle-plate (West 1998: 81, 105). Further up river, this time on the east bank, lies Rendlesham, which was mentioned by Bede (see below) and is the only Sandlings site so far to produce Early, Middle and Late Saxon pottery, and the largest surface spread (see Chapter 13, p. 487). Rendlesham (CSMR RLM006, 012–014) features an early cemetery with cremation urns, probably some burial mounds (at Hoo Hill, adjacent to the north), the church of St Gregory (the site of which is extant), and extensive settlement of the fifth to tenth centuries (Bruce-Mitford 1974: 73–113; West 1998: 91).

In its primary phase, Sutton Hoo was a burial ground reserved for the elite, but it did not stand alone. In what way was it unique? How far can it be said to be royal? The concept of 'royalty' is a historical one that will be deferred here and addressed below. The archaeological question is whether the prominence of Sutton Hoo is owed to an accident of discovery or to a genuine pre-eminence in rank and wealth. Comparison with burials of the same date at sites in the region, and in England as

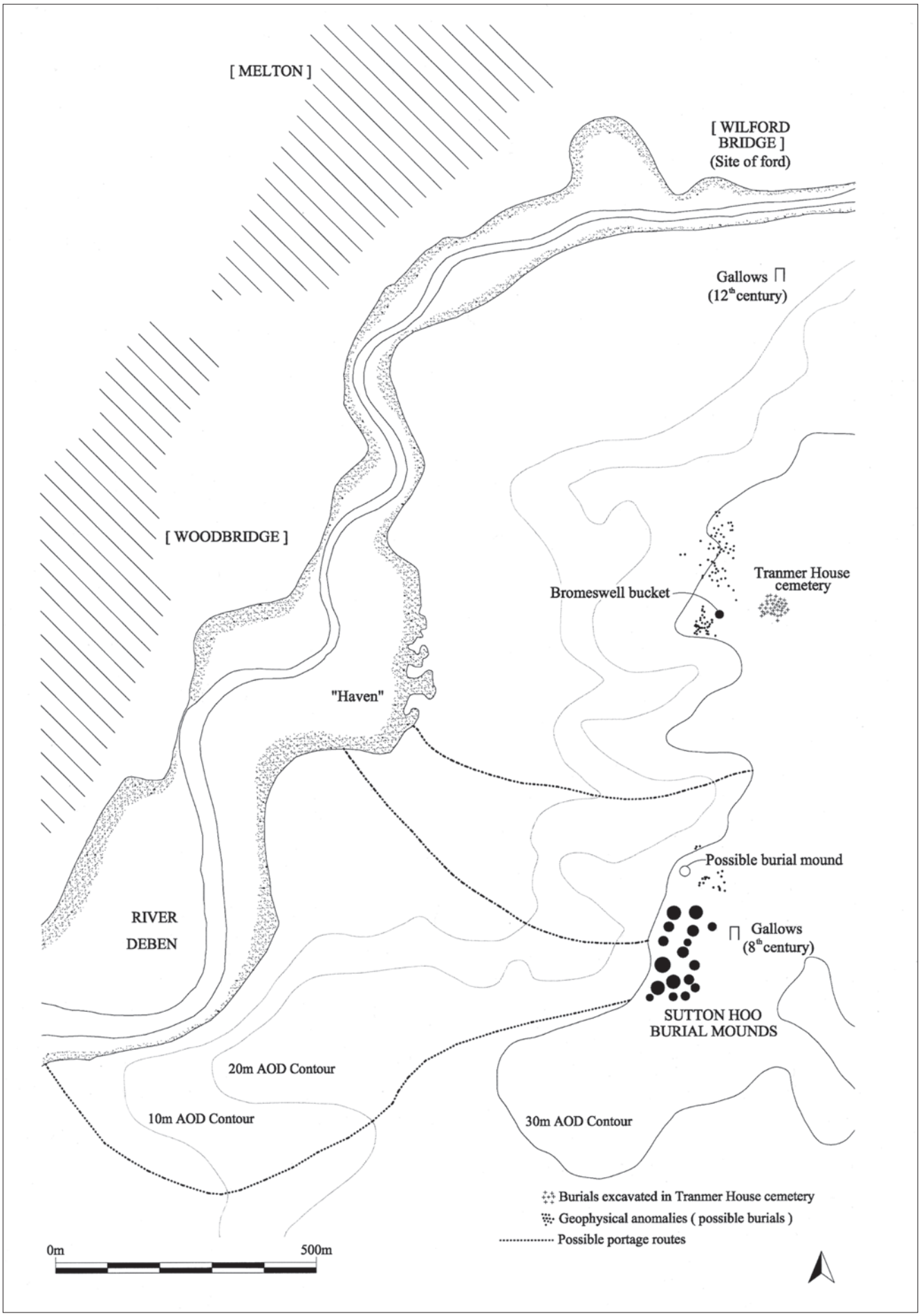


Figure 220 Plan of the Sutton Hoo area in the Early Middle Ages.

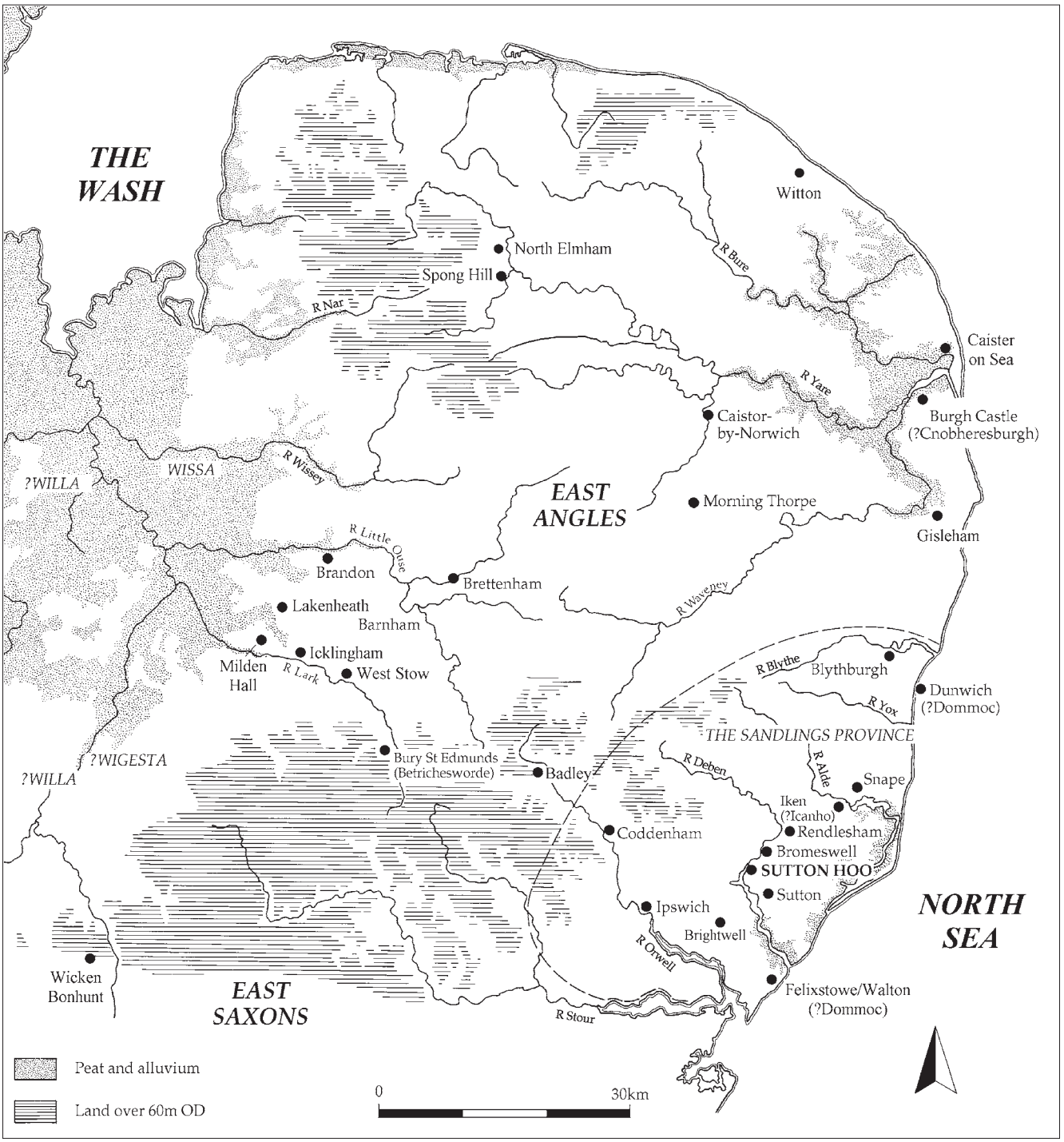


Figure 221 East Anglia.

a whole, should indicate the degree to which we can label Sutton Hoo as special and talk about a first among equals (Geake 1997; West 1998). This is by no means easy to argue from a body of material that mostly still lies underground; but drawing on Stanley West's detailed survey of Suffolk, we can note that there are seventh-century burials in the majority of its sixty-six cemeteries, and that most of the Sutton Hoo burial rites may be found amongst them. Cremation in a bronze bowl under a mound is known from Brightwell Heath, across the Deben from Sutton Hoo, horse burial is found at Snape and Lakenheath, and ship-burial at Snape (see Chapter 8, p. 283). Byzantine buckets or bowls (which may or may not have been used for burial) are known from Wickham Market, Chilton, Badley and the field adjacent to the Tranmer House cemetery (West 1998: 18, 104, 301; Mango *et al*. 1989; see Chapter 13, p. 483). The mood proclaimed at Sutton Hoo is prefigured in the older cemeteries. It is also likely that Sutton Hoo was not the only segregated group of barrows that appeared in the Suffolk landscape in the seventh century. There are twenty sites that may once have featured barrows, some of which may once have contained rich finds (West 1998: 276). Finds of polychrome jewellery at Melton (see above), Freston (TM1739), Stanton (TL9574), Tostock (TL9563) and Wetheringsett-cum-Brockford (TM1365), while not certainly from graves, allow us to associate another five places with an ability to command wealth (West 1998).

The 'Sandlings Province', which may be defined by the group of rivers from the Blythe to the Orwell, forms a natural hinterland to Sutton Hoo. The occupation of this area in early Saxon times

does not yet appear to be intense (Figures 217 and 221). The Shotley and Felixstowe peninsulas are virtually devoid of settlement up the rivers for five miles from the coast, apart from possible sixth-century occupation of the Roman fort at Walton and the outlying sites at Butley, Capel St Andrew and Boyton. The concentration of sites around Sutton is paralleled by others, to the north and south. North-east of Sutton lies Snape, with its important cemetery, and beyond that, after a gap, the rich if damaged cemetery at Bloodmoor Hill, Gisleham, which perhaps belongs to a Waveney Valley settlement zone (Newman 1996). To the south, the Gipping Valley contains a string of fifth- to sixth-century sites from Ipswich to Coddenham, forming a corridor from the Sandlings towards the Lark Valley. At Ipswich, the Hadleigh Road cemetery stands out in East Anglia by virtue of its strong contacts with Kent and the Continent in the sixth and early seventh centuries (West 1998: 275). By contrast, the sixth- to seventh-century cemetery at Boss Hall (IAS 3104) that is in view across the River Orwell is more markedly Anglian in assemblage, and includes a rich female grave of the later seventh century (West 1998: 275). A third Anglo-Saxon cemetery inside modern Ipswich town, but probably just outside the Middle Anglo-Saxon settlement, at the Buttermarket (IAS 7914) featured tree-trunk coffins and included a chamber grave with a sword, shield, spear and two glass palm cups – in all some eighty-three graves dating (by radiocarbon) to the seventh (Chapter 8, p. 310; Scull 1999). All three of the Ipswich cemeteries were being used by their distinct groups at the time of Sutton Hoo, and all three included elite burials.

A most useful local comparison for Sutton Hoo is provided by the recently researched cemetery at Snape, which lies 17 km to the north-east, and which forms part of the same world, both for those tied to the land as well as those free to travel and communicate by river and sea. The variety of burial rites here was even greater than that at Sutton Hoo, and the cemetery was in use for much longer (Filmer-Sankey and Pestel 2001). Furnished cremations in urns began in the fifth century, and continued as secondary burials in mounds into the seventh century. Furnished inhumations of different ranks are placed under burial mounds, and in three cases the body rests in a small boat about 8 ft (2.5 m) long. There was one disturbed horse burial, and at least one rich but robbed ship-burial, which was excavated in the early to mid nineteenth century, and is probably datable to the early seventh century (see Chapter 8, pp. 300 and 305).

Sutton Hoo and Snape have much in common, but they differ in two significant ways. Snape begins in the fifth century and ends in the seventh. Sutton Hoo begins and ends within the seventh century, lasting less than a hundred years. Snape has many graves of middle rank, both cremations and inhumations, together with some poorer and some very rich, including those with the status implied by ships and horses. Towards the end of the sixth century, Snape reflects the increase in investment for selected graves that characterizes the developing mortuary behaviour in the Anglo-Saxon lands as a whole. Sutton Hoo represents a particular stage of this development, when the investment of high-ranking graves has broken off from its folk context and is set up as a private, separated monumental centre, the process known to German scholars as *Separierung*. Here only the rich may enter and, since the rich are still being buried at Snape (and at Tranmer House), it is probably only the rich of a restricted family-group that Sutton Hoo is intended to celebrate. Sutton Hoo and Snape are thus complementary: the one representing a development of tendencies that are manifested on a more modest scale in the other. This pair of cemeteries permits us to think, more than one alone ever could, that we are witnessing the emergence of kingship, or something very like it.

In its locality, Sutton Hoo is currently pre-eminent in the rank and variety of burial. It features one of the largest mounds, and the largest ship yet known in pre-Viking north-west Europe, together with some highly symbolic artefacts; but it is also a site which has received unusually intensive investigation. If we accept, for the time being, that it is the first among equals, it must also be inferred that it emerged from a landscape in which the basic funerary language of an elite was being widely developed. It is not impossible that other isolated barrows or groups of mounds were sited along the rivers, as rich families left the traditional folk burial grounds. In a comparable process, elite settlements (*tun*) may have been sited near these mounds, as suggested by the place-name Sutton. One among these places might have had a 'central-place' function, providing a focal point that Lotte Hedeager (2002: 3) has argued to be an essential feature of the pre-Christian ideological universe . This pattern of elite centres, one perhaps more iconic than the others, may have provided a precursor to the more extensive changes in the landscape, associated with Christianization, that were to occur in the later seventh and eighth centuries. Such changes can be brought into focus more easily by looking at the larger region of what is now East Anglia.

The kingdom of East Anglia

East Anglia is a generally low-lying piece of land marked by a series of estuaries from the Wash to the Crouch (Figure 221). Between the sandy drainage basins of the rivers running into the North Sea are belts of slightly higher clay land. It is an unaccentuated landscape, without obvious topographic boundaries (apart from rivers), in which to set a geographically determined agenda. Within Suffolk, the distribution maps show a division between west Suffolk (the Lark valley region) and east Suffolk (the Sandlings) from the Neolithic to the Iron Age and Early Anglo-Saxon times. In the Late Iron Age two documented peoples, the Iceni and the Trinovantes, seem to have been located either side of the same division (Dymond and Martin 1988: 33; Moore 1988: fig. III.9). This might suggest that, in the Early Anglo-Saxon period, the Sandlings (and Sutton Hoo) would have lain in the Essex (Trinovantian) culture zone, rather than in (Icenian) East Anglia culture-zone. Parker Pearson *et al.* (1993) made a similar case for the seventh century, using documentary inference, symbolism and grave goods. However, in the sixth century material culture seems divided more clearly across the present Suffolk–Essex boundary, that is the River Stour; while in the seventh century, as Geake (1997) has shown, the objects are unspecific to locality and signify a more national community: a king would now look similar in any part of England. The burial rites, though, do seem to be more clearly zoned, and here Sutton Hoo belongs with Snape and East Anglia rather than with Essex. Sutton Hoo is also situated in Medieval East Anglia, as defined by the diocese of Norwich (Scull 1992: 5). By the seventh century Ipswich ware has become a cultural indicator: it marks out East Anglia (Wade 1988), although it is

widely distributed in Essex too (Rippon 1996: 118, fig. 1). Ipswich, generally seen as belonging in East Anglia, is south of Sutton Hoo, which implies that the latter too lay in East Anglia.

Assuming East Anglia to comprise Norfolk and Suffolk (as in Figure 221), there are some notable changes in its material culture from the fifth to the seventh century (Carver 1989; Scull 1992). The region is one of the first in Britain to manifest Germanic grave goods, and specifically womens' grave goods, which are held to imply settlement. This occurs in the early fifth century. The interpretation offered in the literature is that the territory that was to become East Anglia was the first to be settled by immigrants from the Continent (Böhme 1986). This may be true, but the most one can reliably say is that it is one of the first regions in which women living in Britain are giving their allegiance to the Germanic cultural idea. If this signal is vaguely Germanic in the fifth century, by the sixth the signals emanating from the cemeteries begin to suggest a firmer cultural zonation between 'Angles' and 'Saxons' (Hills 1983).

Towards the end of the sixth century, the changes observed in the settlements of the region are marked. Using the few examples that have been excavated and published, the earlier (fifth- to seventh-century) settlements (of which West Stow remains the type site, not just for Suffolk and East Anglia but for England as a whole) are small and dispersed. Even if their continual rebuilding gives an initial impression of a metropolis, later analysis has demonstrated that the number of buildings occupied at any one time was small and clustered (West 1985). These settlements, as Newman has demonstrated, rarely lie more than a kilometre from running water: separate clusters hug the Lark basin, the Deben, the Orwell and the Waveney (see Chapter 13, p. 480).

In the seventh century new types of settlement appear which, although a satisfactory terminology has still to be agreed, may equate to manor, palace, monastery and trading place. Wicken Bonhunt in Essex shows evidence for a planned layout and the storage of surplus in grain and meat (Wade 1980). North Elmham in East Anglia is a similar centre, but one dedicated to the church – a Bishop's manor (Wade-Martins 1980). Brandon in Suffolk is an ordered settlement with an integral church and evidence for writing (styli and a gold book plaque bearing an incised figure of St John). This was a monastery, or else a seigneurial establishment with an ecclesiastical base (Carr *et al.* 1988). The way that estates reflect this changing political configuration in their use of land has been demonstrated by the study of the East Anglian parish of Witton (Wade 1983). Here the earliest centres are small – 'a small community disposing of a large territory', with little of it as yet exploited. By the seventh century the land under the plough had doubled, and by the ninth the arable had doubled again. This could mean that the population has doubled too, but it more probably means that arable is being taken from pasture, with wheat superseding meat as a preferred crop. In other words, choice is being exercised, in this case the choice of which commodity – pasture or arable; meat, wool or grain – is most likely to create wealth and provide taxable income (Carver 1994: 3).

The seventh century also sees the appearance of the *wic*, an English analogue to the Scandinavian beach-market, of which Ipswich, Sutton Hoo's neighbour, is one of the best explored, although (at the time of writing) the most sparsely published. Christopher Scull has shown that during the seventh century Ipswich was an estate centre with Christian Continental affiliations, with its elite burying at the Buttermarket cemetery. In the eighth century it became an organized trading place with strong contacts with its hinterland (Scull 2002). On this model, Sutton Hoo was contemporary with the establishment of a rich neighbour, which became a *wic* only on the demise of the Sutton Hoo burial ground and the rise of the Christian kingdom. Such *wics* are notable for their concentrations of exportable and imported material, and must have constituted an essential part of the new kingship apparatus, allowing an authority with pretensions to territorial control not only to stimulate the exchange system, but to canalize and tax it (Hodges 1989; Carver 1993: 53; Stoodley 2002). Ipswich could not have functioned in isolation, and a network of markets (or tribute delivery points) should be envisaged, placed for the most part at sites we know as palaces or monasteries. A role also seems to be played by a new kind of site, knowledge of which is largely owed to extensive metal-detector surveying, which consists of scatters of sceattas in the open, apparently without buildings. These might be dubbed 'moor-markets' (as opposed to beach-markets), where duty could be discharged or commercial opportunity taken (Newman 1995; Ulmschneider 2002).

Seventh-century Ipswich and Sutton Hoo, therefore, relate to each other, and the location of Ipswich may also help to explain why Sutton Hoo is where it is. In the fifth to seventh centuries, at least, we can assume that the population was dependant on the rivers and the sea for their transportation. On this basis, Sutton Hoo lies not on the periphery of a kingdom, but at its front door. It is true that there is a choice of two kingdoms, and several front doors to each of them: for East Anglia there is the Wash and the Waveney, for example. The Deben is the central of three navigable entries to a singular part of East Anglia, namely the Sandlings. Such a territorial unit, our 'Sandlings Province' (*Bull.* 4: fig. 32), with its allegiance as yet local, would no doubt have formed one of the building-blocks of the seventh-century kingdom (Basset 1989: ch. 1; Carver 1989; Scull 1992).

The changes in the cemeteries are compatible with those in the settlements. In the fifth to sixth centuries the large 'folk cemeteries', with their cremations and inhumations, show a measure of social organization, but no groups of burials that are especially privileged. Christopher Scull, for example, sees unequal social relations in the Anglo-Saxon cemeteries, but notes little evidence for a regional or paramount elite before the later sixth century (1999: 21). Although barrows and relatively rich graves have been present from the fifth century, in the sixth century there was a period of escalation, particularly in Kent, in which small barrows proliferate in large cemeteries; and there was a period of climax in the late sixth and early seventh centuries, in which large barrows emerge, if unevenly, all over the English territories (Shepherd 1979; Carver 1986). Some of these, termed 'princely burials', represent a new order of investment in burial, both in terms of wealth and of size of mound (a type of site well-known in Early Medieval Europe and one whose general meaning is widely accepted, see Figure 222). 'Without question,' to quote Michael Müller-Wille (1993), 'the burials in large mounds generally represent members of leading aristocratic and royal families' and may indicate 'visible signs of consolidated power and territorial claims'. In East Anglia and England the crucial factor is that such burials do not seem to

have been there before the late sixth century; it is these new manifestations of wealth and power that, above all, suggest a moment of important social change.

That the barrows have a complex meaning is not disputed. They may not simply be signs of social stratification, of more wealth being concentrated in fewer hands; they may not just indicate the cultural affiliations of the grave goods contained in them; and they may not reflect a system of belief. But it can be agreed that the composition of a burial mound is not haphazard but creative, and that there is, therefore, some meaning to discern and define. The emergence of monumental burial mounds may signal the emergence of social stratification (as argued in Scull 1999: 22, for example); but, in an alternative reading, it may rather indicate a historical circumstance in which proclaiming an existing social stratification had become crucial. The investment of mound-burial does not happen always and everywhere. The questions which arise from the Sutton Hoo mounds are not only why they were built, but why there and why then (Carver 1998b, 2000 and 2001).

During the seventh and up to the early eighth century, the people of eastern Britain were opening a new chapter in the way they used grave goods and invested in special burials. In Helen Geake's thesis (1997) this is not so much the 'final phase' of what went before, but more a new phase, with a new language and a new message. The emphasis was on artefacts which give direct references to Rome and Byzantium, and the burials signal a new cultural unity between the kingdoms of the heptarchy, as if, in wishful imagination at least, a unified England already existed.

The making of kingdoms in Anglo-Saxon England is indicated, paradoxically, by those kingdoms becoming all very much like each other and therefore very difficult to distinguish. They all appear to have followed the same strategy of using their material culture deliberately to construct a 'continuity from Roman Britain, allowing their rulers to claim a legitimate power' (Geake 1999a: 214). If we knew nothing else, the archaeological evidence would thus point to the early seventh century as a watershed at which settlement, economy, burial practice and ideology were being reorganized. It seems legitimate to associate these changes with the more rigorous levels of social control and territorial identity that would be concomitant with the creation of a kingdom of East Anglia. The territory of the East Angles, with its estuaries, fens and long coastline, is geographically distinct, then as now. Provoked by the anxieties of the age, leaders emerged, from prominent families, who were to protect the people's perceived interests. These leaders soon found it necessary to acquire the conceits of kingship: genealogies, regalia and monumental burial mounds. This defining moment took place within the political context of the communities of the North Sea.

The North Sea kingdoms

Between the fifth and the tenth century the peoples of northern Europe experienced one of the most fundamental transitions in their history. At the beginning of this period, their lands were divided between the imperial provinces of the Roman Empire and the tribal zones beyond; by the end of it, all had been constructed into kingdoms which have names by which we can still recognize and locate them – Norway, Sweden, Denmark, France and England. The age of Sutton Hoo is thus the age in which the modern nations of Europe were beginning to be created.

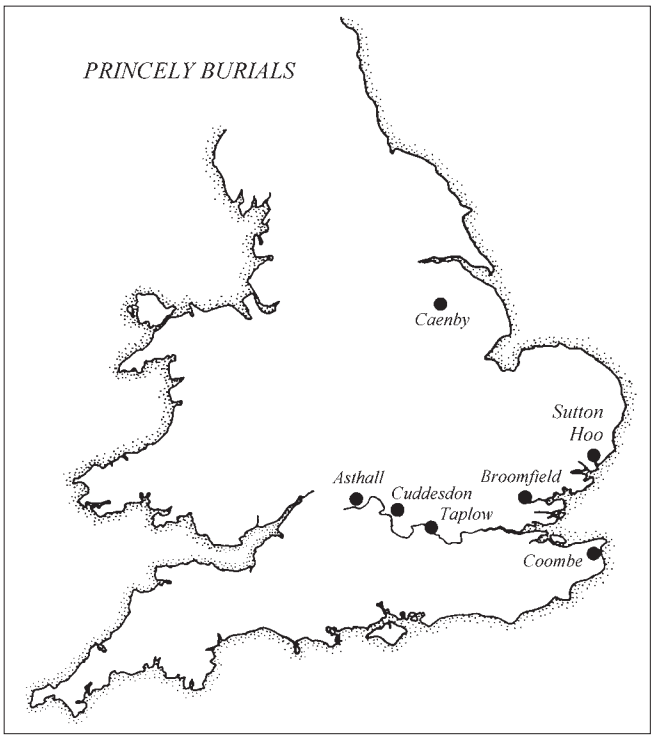


Figure 222 Princely burials in Britain.

Our project design assumed that the social and political formations we seek to track are expressed by material culture as well as documents; that is, that the emergence of a kingdom is marked not only by the arrival and survival of genealogies, law codes and taxation, but by particular forms of burial practice and settlement geography. Scholars in the modern European nations have attempted to use this material culture to infer and map the earliest kinds of territorial control, and so demonstrate the role of such territories in building the nations we now promote on the world stage. It is a hard job, because to the modern citizen and taxpayer the modern nation appears as the inevitable destination of all the early experiments. In this country the topic we are studying is deemed to be 'early England', and it is difficult to remember that throughout most of this formative period there was no England, and that its creation could by no means be anticipated. The land and the sea of north-west Europe were the same as they are now, but the territories proclaimed on them were smaller, vaguer, lay either side of water and had different alliances than they do now, after fifteen centuries of boundary disputes.

Studies undertaken in recent years have proposed that units of social control – variously termed 'early state modules', 'chieftain territories' or 'kingdoms' – appeared all around the North Sea, Irish Sea and the Baltic between the fifth and the ninth centuries. Scull prefers the terms 'local descent group' or 'conical clan' for indicating an extended family that gives leadership to a local community without, initially at least, needing fixed boundaries (1999: 23). Attempts to find territories in England using archaeology alone have not been very convincing, but in some cases we have documentary evidence that these territories existed (such as the kingdom of the East Angles mentioned by Bede), even if the locations of their borders remain inferential (see above). Similarly, Procopius' mention, in the sixth century, of thirteen populous Baltic tribes each led by a king has encouraged Scandinavian archaeologists

Figure 223 The North Sea province, showing locations of hypothetical early kingdoms (sources: Carver 1992a; Myhre 1987; Ramqvist 1992: 22).

to hunt for their homelands. Per Ramqvist (1992: 24, fig. 7) proposes fifteen such territories, implied not so much by culture-zones as by the presence of major monumental sites that can perform the role of central places. Thus the mound cemetery at Högom implies a sixth-century dominion in central Noorland (Ramqvist 1992: fig. 8). Armed with sufficient audacity, we can make a hypothetical map showing some of these building blocks of northern Europe, a snapshot taken at a moment when some are unreconstructed kin groups and others are already Christian kingdoms (Myhre 1987; Ramqvist 1992: 22; Carver 1992c; Figure 223).

The idea of mapping kingdoms from central places has been exemplified by Björn Myhre, whose analysis used not only rich graves but also hill-forts and ship-sheds to find central places in south-west Norway. Each of the classes of evidence could be ranked, and a concentration of highly ranked sites constituted a central place. The combined rankings of the central places allowed territories to be created by the geographical method of Thiessen polygons. The resulting territories coincided well with regional borders known from the later historical record, increasing confidence in their identification as early units of social control (Myrhe 1987). The Norwegian territories found by Myhre have an ecological logic (they embrace a valley from the mountains to the sea), and it may be that this controls their formation to a high degree. Forests, rivers, fjords and mountains can create ecological niches in which segmentary kin groups can develop with some independence from each other, and then provide the basic units for subsequent social interaction and development (Callmer 1991).

In a recent study of the hinterland of the Vendel cemetery in Uppland, Sweden, Anton Seiler (2001) describes such a segmentary society, governed by a network of chiefs 'with no lasting overlords'. The 'Vendel people' originated from the Lake Mälar area, where they were deployed in small areas defined by lakes, rivers and forest. They colonized the Vendel area in the fifth century AD, where they practised a mainly pastoral economy and constructed a new network of linked clearings. Where there were no natural barriers, the new territories were marked out using burials in small barrows (Seiler 2001: 151).

A model by Charlotte Fabech shows how such units might develop into seventh-century power centres. The centre would now be multifunctional: featuring a lord's hall, which may double as a ritual hall or *hov*, a cemetery of mounds, a beach-market and related farms of lesser kin – all within sight, but spread over a tract of land (Fabech 1999: fig. 8). Ideological links between such centres were signalled by bracteates and *guldgubbe*, which were now associated with the *hov*, rather being than deposited, as previously, in a bog (Fabech 1999: 38). Such a system prefigures the Christian village, so that hall and *hov* can become manor and church with a high degree of continuity.

Other behavioural traits, apart from the deposition of bracteates and *guldgubbe,* also imply that these communities shared ideological zones. If one example can serve for many: the distribution of ship- and boat-burials (Müller-Wille 1996; Schön 1999) does not imply a lordship or emergent nation, but rather a territory where there is commonalty of ritual practice and thus, perhaps, of belief. Work over the last ten years has also shown that there are supra-regional places in which both ritual and exchange are important, such as the Gudme/Lundeborg complex on Fyn (Nielsen *et al.* 1994), although it is not yet known how large the zones to which such sites refer are.

The vision of fifth- to eighth-century social organization in Scandinavia is thus becoming increasingly sophisticated: it is likely that a person would belong, at one and the same time, to a series of 'zones of cohesion' of increasing size: family, kin group, folk, religious group and confederation. Communities were not evolving from tribe to chiefdom in a linear manner. Instead, the change experienced during the four centuries in question appears to be that the exercise of power moves to ever higher levels in larger territories, leaving the lower 'zones of cohesion' in place. The kingdoms are not so much 'forming', as adapting to opportunities for more extensive control. The material culture may be reporting membership of a particular zone when it becomes politically relevant, rather than when it comes into being. Nevertheless, the end-product is the promotion of a political entity, and its recognition by others. Ringtved sees a new homogeneity in the south Scandinavian material in the late sixth and seventh centuries, 'most likely reflecting the establishment of an overall political structure or political dominance by the Danes' (1999: 49). He sees segmented kin groups with local territories forming tribal confederations and then kingdoms (Ringtved 1999: 51, 59), a process involving continuous conflict, in which the Danes emerged as dominant by AD 600. Their new agenda, from AD 700, was to defend their dominion from the expansionist Franks (Näsman 1999: 5–6). This trajectory is similar to, if not exactly contemporary with, that proposed for East Anglia (see above).

How far might the people of East Anglia have been aware of the changing social and ideological picture in Scandinavia, and have emulated it? In Early Medieval Europe 'peer polity interaction' (Renfrew and Cherry 1986) is a useful descriptive model, because it assumes an equality of opportunity between the players, as opposed to 'core and periphery' models which assume that one actor is dominant and is delivering a more sophisticated agenda to a less sophisticated people. The evidence emerging from the neighbours of France and Britain is that the non-Christian countries are already socially and ideologically sophisticated: the interaction is thus likely to be an argument between equals (Carver 1993).

To accept that these polities can freely influence and interact with each other is to assume that contact across the North Sea was both possible and frequent: so the processes of ideological mission and political emulation or confrontation can function without the need to suppose migrations, invasions, diplomats or missionaries. In short, the North Sea needs to be seen not as a barrier, but as a thoroughfare or arena. Näsman (1984: 102–3) sees 'a largely interlinked North Sea' in the period AD 550–650, and for Hines (1984: 278) 'the North Sea in the fifth–sixth century seems to have been a web of routes for migration, trade and diffusion of craftsmen's skills' (see also Carver 1990; Ringtved 1999: 57). Discussions of the affiliations of artefacts found at Sutton Hoo and elsewhere have also supposed close links with Sweden, Denmark and Francia. Karen Høilund-Nielsen (1999) has used correspondence analysis of Style II to distinguish two valencies of contact: Kent linked with Francia, and East Anglia (including Sutton Hoo) linked with the Denmark area. Whatever the qualifications that might subsequently be placed on these specific relationships, they show that there was shared artistic knowledge across the

North Sea, to which can be added the likelihood, from burial rites, that ideological knowledge was also shared (see Chapter 8).

Throughout the formative period mutual interaction between the incipient polities would, therefore, have influenced their agenda and alignment, which in turn would be reflected in their monuments (Carver 2001). In England we expect the relevant protagonists of new ideology and allegiance to be Scandinavia and France; but we must recognize the attractive authority of the Celtic realms and, still more important, if only in the mind, the abstract and persistent power of Germanic paganism, the vision of imperial Rome and the competing versions of the Christian message. The East Anglian leaders of the seventh century had a rich intellectual repertoire on which to draw, and from which to select, refashion and express their missions in the form of monuments, burial rites and artefacts (cf. Wormald 1978; Higham 1997: 21 et seq.; Carver 1986, 1993, 1998a and 2001).

The people of Sutton Hoo may thus have belonged to a local kin group in the Deben valley and to a broader kin group in the Sandlings province that shared approaches to political issues. At the same time, they may have felt themselves part of a 'south folk' that included people in the Lark Valley and the broader federation of Angles occupying much of middle and eastern England. Their ideological zone may have been wider still, shared in this case with Danish and Swedish communities rather than with neighbours in Britain. Christianity offered a new ideological zone with practical as well as spiritual benefits, but with implications for new alliances and an anxiety that perhaps equated to a perceived loss of sovereignty. The kingdom of East Anglia, arising from territorial competition or pressure from Christian France and Kent (Basset 1989), emerged in the later sixth century out of these complex loyalties and new opportunities.

The task of mapping the emergent territories from which northern Europe was built, and of defining their political itineraries, has scarcely begun, but it is an exciting prospect, and one with relevance for modern Europe. Each new insight that the work brings will improve understanding of the context of Sutton Hoo. At present we can note that the burial ground reported here was likely to have been part of an apparatus of power situated in a new kingdom belonging to a group of energetic contemporary maritime communities, each with different views of the world and with disputed opinions about its future, who were engaged in political experiment, and who faced each other across busy seas.

Sutton Hoo in history

As a final exercise in the search for context, we can return to the Sutton Hoo burial ground, and attempt to situate its archaeological narrative in history. Contemporary records point to two interconnected agents of change in the seventh century: the development of kingship and the conversion to Christianity. The Venerable Bede's *History*, written in the eighth century, has understandably provided a long-accepted text for the origins and early development of the English nation. In it we read that the English were migrants from northern Germany, and that they were formed into a number of kingdoms, of which East Anglia was one. The people in this part of Britain are said to have been descended from the Angles, that is, from people from the country known as *Angulus*, which lies between the provinces of the Jutes and Saxons and is said to have remained unpopulated to his day. This was also the source of the Mercians and all the Northumbrian stock (*HE* I.15). Bede traces the course of the conversion of the English people to Christianity, explaining the events in terms of decisions made by a succession of named kings. Bede acknowledges Abbot Albinus, through Nothelm, as the source of some of his information about the bishops and kings of East Anglia, as well as a certain Abbot Esi, and 'old traditions and writings' (*HE*: preface, 34–5).

The acceptance of the Christian faith by the province of the East Angles is described in *HE* II.15. King Raedwald, grandson of Wuffa, and son of Tyttla, received baptism in Kent 'long before' AD 627, but on return to East Anglia he set up altars to Christ and to 'devils' side by side in his temple, having been persuaded to revert to his former allegiance by his wife and 'certain perverse advisors'. This temple had been seen by King Ealdwulf (d. 713) when he was a boy, although it is unfortunately not described. Raedwald (d. *c.*626) was the fourth 'Bretwalda', who, even during the life of King Aethelbert of Kent (the third Bretwalda), was winning pre-eminence for his people (*HE* II.5). Eorpwald, son of Raedwald, was converted by Edwin of Northumbria, but 'not long after' Eorpwald was killed by a pagan named Ricbert, and for three years the province lapsed into paganism. Eorpwald's brother, Sigeberht, succeeded him (*HE* II.15). This was a Christian monarch, baptized in Francia, who converted the whole province with the assistance of Bishop Felix of Burgundy. Sigeberht took early retirement to a monastery, and was succeeded by Ecgric. 'A considerable while later' Ecgric extracted Sigeberht from his monastic retreat to meet the attack of Penda, but both were killed (*HE* III.18; *c.* AD 636/7). Anna then became the new king of the East Angles. He endowed the monastery founded by Fursa at Burgh Castle (in *c.*633) with buildings and gifts, but Fursa subsequently withdrew to build a new monastery in France (*HE* III.19). From the time of Anna, East Anglia remained nominally Christian, but members of the royal house seemed to be still active in the pagan cause in *c.*655, when Aethelhere, Anna's brother, fell in battle on the side of Penda, the militant anti-Christian of Mercia (*HE* III.24).

This provides the essential sequence that any model of Sutton Hoo feels obliged to match. At the same time, Bede's was 'an ecclesiastical history of the English people', and his mission is evident in the key words of his title. He has been seen as prosecuting a specific project, designed to secure acceptance of the Christian English as the legitimate inheritors of Britain (Wormald 1983). For this reason he may not have wished to mention the honour that was done to pagan kings, even if he had learnt it from 'old traditions'. The earliest person in the East Anglian genealogy known to have ruled as a king is Wehha, whose successor, Wuffa, died in AD 578. Six earlier ancestral figures are traced back to Caesar and Woden (SHSB I: 683 *et seq.*). This might be held to point in the same direction as the archaeology: namely that the people of early East Anglia were not subjects of a kingdom, but rather a kingdom and its past were being created together some time in the late sixth century (Dumville 1977; Wallace-Hadrill 1975: 181–2). The kingdom certainly need not exist from the beginning of the Anglo-Saxon settlement described by Bede; indeed a kingdom of East Angles could hardly be named before Angles had settled to the west (Carver 1989). The leaders of the new kingdom appear to have experienced considerable uncertainty as to whether they

belonged to people of Woden or people of Caesar; or whether their kingdom was to be developed in the Christian and Frankish, or the pagan and Scandinavian, ideology.

In addition to the framework provided by historical writing, there has always been a hope that glimpses of early English people and their thinking can be extracted from the very difficult medium of literature. For Sam Newton, the greatest Anglo-Saxon poem of all, Beowulf, is a product of East Anglia with its roots in the seventh century (Newton 1993). The lines in this poem that describe Scyld's burial in a royal vessel are often quoted (and rightly) for their evocation of the Mound 1 burial:

> They stretched their beloved lord in his boat, laid out by the mast, amidships, the great ring-giver. Far-fetched treasures were piled upon him and precious gear. I have never heard before of a ship so well furbished with battle-tackle, bladed weapons and coats of mail… (Heaney 1999: 4)

Beowulf himself was cremated, and his ashes buried beneath a 'mound on a headland, high and imposing, a marker that sailors could see from afar…' which took the Geats ten days to build (Heaney 1999: 99).

But there are dangers in arguing too direct an equivalence, or in assuming that the Beowulf poet knew of Sutton Hoo or something like it. Beowulf and Sutton Hoo resemble each other in certain particulars because both draw on the same stock of images. The composition of a burial, no less than that of poetry, draws on the time and space of the imagination, creating not a direct cultural statement but a palimpsest of allusions; and the burial of the great is itself a reified poem (Carver 2000): thus the difficulty of using either as a basis for the reality of the other (Frank 1992).

The meaning of Sutton Hoo rests on three initiatives that are particular to the site: the suite of cremations in bronze bowls under mounds (AD 590–610), the ship-burials (AD 610–30) and the execution burials (AD *c*.700–*c*.1100). These events are by no means incompatible with those reported in the records. The bronze bowl burials belong to the first decades of effective pagan leadership in East Anglia, the times of Wehha, Wuffa (d. 578) and Tyttla (d. 599). The ship-burials belong to the time of Raedwald (d. 624/5), Eorpwald (d. 627/8) and Sigeberht (d. 636). From AD 636 the kings of East Anglia are Christian, and the execution burials may begin in the days of Anna (d. 654), Aethelhere (d. 655), Athelwald (d. 663/4), Eadwulf (d. 713) or his successors (see above).

To accept this equation, we do not need to assume that Sutton Hoo was a royal (or *the* royal) cemetery for East Anglia and resort to the invidious task of naming the burials of individual kings; but the temptation is always there. The person buried in Mound 1 has been identified variously as Raedwald (Chadwick 1940; SHSB I; Werner 1982), Sigeberht (Wood 1983: 14), Sigeberht or Eorpwald (Wood 1991: 11), Raegenhere (Arrhenius 1978), Aethelhere – brother of Anna (Stenton 1959), and Saebert of Essex (Parker Pearson *et al.* 1990). The occupants of the other mounds have not presented such an irresistible challenge to historians, though the cemetery, as we know it now, is quite capable of accommodating them, if only in the thin air of conjecture. If Mound 5 were the earliest mound, then the young person who had his head split with a heavy sword blow would be Wehha, the first credible name in the genealogy and the 'first to rule over the East Angles in Britain' (SHSB I: 695n; Stenton 1959: 48n). Mounds 6 and 7 could remember Wuffa (died AD 578) and Tyttla (died AD 599). Raedwald and Sigeberht represent East Anglia at the peak of its power, and it would be sensible to put one in Mound 1 and the other in Mound 2, although Eorpwald son of Raedwald, whose death was followed by a return to paganism, might be an equally appropriate candidate.

Raedwald's unnamed queen appears to have been an influential figure in both religious and political matters. She was a source for Raedwald's decision to mitigate the commitment of his conversion by worshipping Christ with other gods in his temple at Rendlesham (*HE* II: 15; see above), and on another occasion she advised him against the murder of Edwin, the refugee prince of Northumbria, as unworthy and dishonourable (*HE* II: 12), even though this might have enhanced the support of the pagan leader Aethelfrith. Her counsels were, therefore, ethical rather than dogmatically pro-pagan. It is not excluded that this politically astute person was the brain behind the composition of the Mound 1 ship-burial (for women as burial managers and religious authorities, see Geake 2003, Staecker 2003 and Gräslund 2003). She herself should have been commemorated at Sutton Hoo, and perhaps a burial like Mound 14 was her memorial.

These attributions belong to the realm of the fantastic and unknowable, and indeed to the unnecessary. It is one way of presenting archaeology and history that has immediate appeal, but which is unprovable and contrived. More useful, if we would seek to understand this pivotal period in English history, is to notice that the archaeological and documentary notices run in parallel. The people named by Bede took part in a struggle for the ideological allegiance of East Anglia – for which the power blocks of Frankish Christianity and Scandinavian paganism competed. The protagonists perished within a few years of each other, and other people must have buried them who deliberately or subconsciously reflected the aspirations and anxieties of their day. Given this historical vignette, and the widespread and expressive language of material culture used by the pre-Christian Anglo-Saxons, we should expect an elaborate pagan cemetery somewhere in East Anglian territory. The short-lived Sutton Hoo cemetery admirably fills this role, for the time being. Here we see material culture at its most symbolically potent: not only invoking the assistance of the old gods as protection against the new, but also proclaiming what mattered to the East Anglian dynasty at a crucial moment. If non-Christian autonomy had prevailed, the subsequent history of England might have been very different. As it is, the Sutton Hoo burial ground explains much that happened afterwards, and is happening still in our own day.

Acknowledgements
I am very grateful to Stanley West, Phillip Rahtz, Leslie Webster and Helen Geake for comments on earlier versions of this chapter.