Surrey Archaeological Collections, **103,** 63–90, 2021

Neolithic and Bronze Age occupation at Boxgrove Primary School, Guildford

REBECCA LAMBERT

with a major contribution by
NICK MARPLES

and other contributions by
PHIL AUSTIN, CHRIS GREEN, †PHIL JONES, LUCY SIBUN and DANIEL YOUNG

An archaeological evaluation, followed by a controlled archaeological watching brief, was undertaken in 2012 at Boxgrove Primary School, Guildford in order to fulfil the requirements of the local planning authority. The evaluation revealed two prehistoric tree-throw hollows, a cluster of large postholes/pits and a series of previously unidentified colluvial deposits containing prehistoric flintwork and pottery. The watching brief revealed further prehistoric features, including Late Neolithic/Early Bronze Age tree-throw hollows containing struck flint and other anthropogenic material, pits of Middle Bronze Age date, and further redeposited scatters of struck and burnt flint.

Introduction

Proposals were put forward by Boxgrove Primary School, Guildford and Surrey County Council to construct a new school building and sports ground within the current Boxgrove School and adjacent old school sites (fig 1; TQ 0164 5057). This resulted in the requirement by Guildford Borough Council to conduct an archaeological investigation of the site prior to redevelopment. In its modern situation, the site fronted onto Boxgrove Lane to the north, was surrounded by housing to the east, school buildings to the west and further playing fields to the south (fig 2).

Thirteen evaluation trenches were excavated by the Surrey County Archaeological Unit (SCAU) in July 2012: nine in the open areas surrounding the disused buildings of the old school, and four on the current playing field within the footprint of the proposed new building (fig 2). The evaluation revealed a number of features of archaeological interest, including two prehistoric tree-throw hollows, a cluster of large postholes and a series of localised colluvial deposits containing prehistoric flintwork and pottery (Lambert 2012a). Subsequently, a controlled watching brief was undertaken in October and November 2012 within the footprint of the new school building to identify, excavate and record any additional archaeological features found within the development area (fig 3).

Notes on this report

In the following text, context numbers with the prefix 1 (eg 106) fall within the old school area evaluation, and numbers with the prefix 2 (eg 203) fall within the new school building evaluation. Features found during the controlled watching brief of the new school building begin with the prefixes 3 and 4 (eg 303, 405), 3 being an electric cable trench and 4 the main area of stripping.

Features found in the evaluation that fall within the controlled watching brief area are discussed in the text together with the other watching brief results. Features and deposits found outside this area are discussed separately.

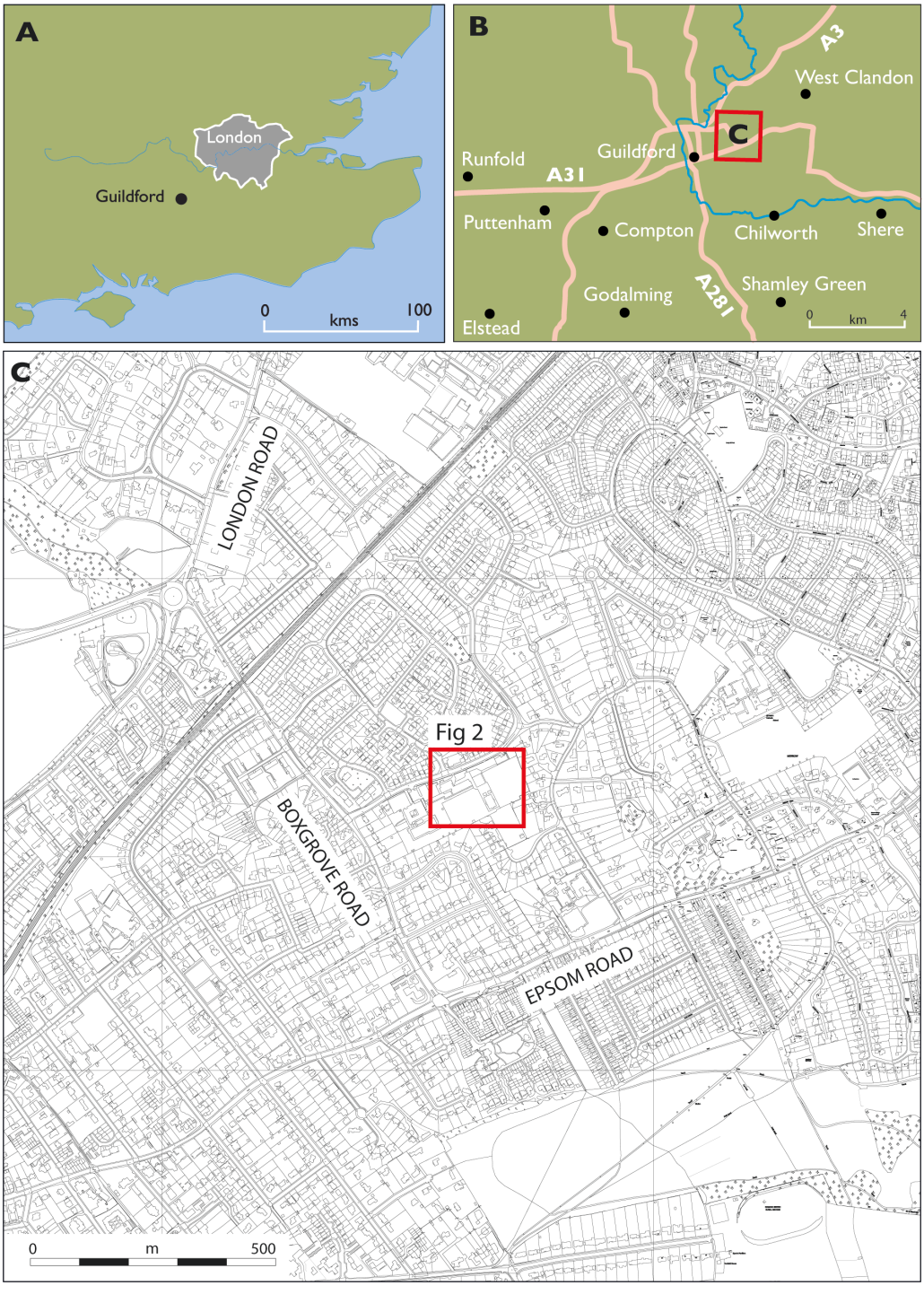


Fig 1 Boxgrove School, Guildford. Site location (© Crown copyright and database rights 2021 Ordnance Survey 100062591).

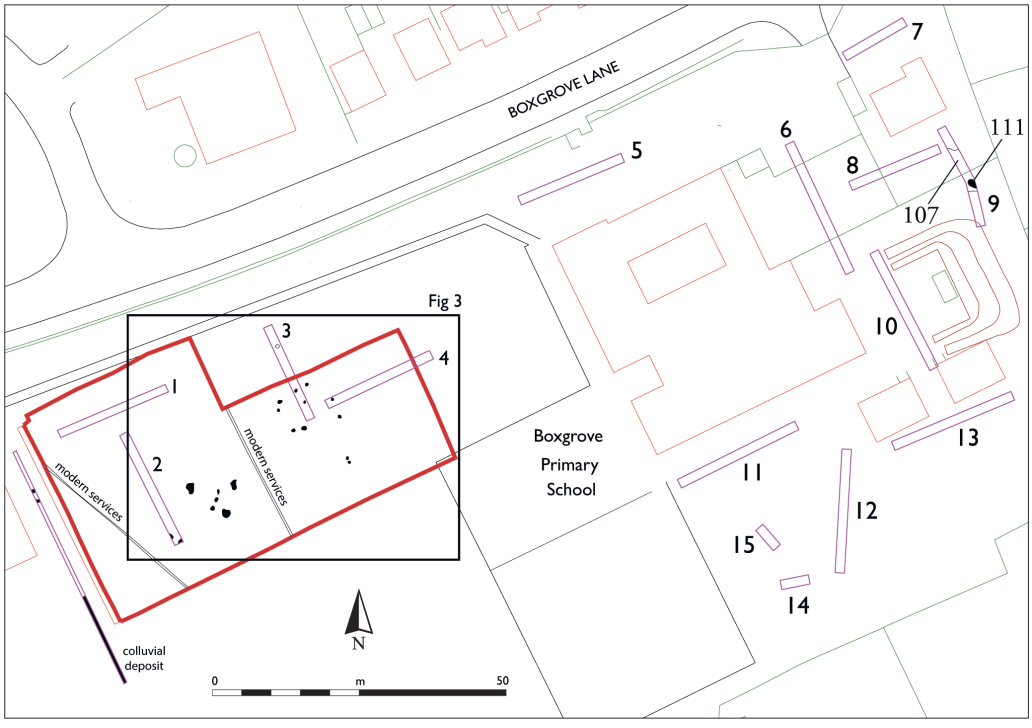


Fig 2 Boxgrove School, Guildford. Location of old (right) and new (left) school sites, trial trenches and watching brief areas.

Setting and geology

The site lay on the lower dip-slope of the North Downs at a level close to 65m OD. The dip-slope rises from the site in a south-easterly direction, gently at first, becoming steeper towards the crest of the chalk escarpment, which is at a level of *c* 127m OD. The relief in the immediate vicinity is very subdued with no well-marked dry valleys dissecting the dip-slope within 1km of the site either to the west or the east (Austin *et al* 2013).

The British Geological Survey (1:50,000 Sheet 285 Guildford 2001) shows the site underlain by the Newhaven Member of the Upper Chalk Formation. No superficial deposits are shown overlying the Chalk. However, the margin of the overlying Lambeth Group (Reading Beds) is shown as less than 0.1km to the north of the site. Elsewhere on the dip-slope, particularly on the floors of the dry valleys, Head deposits are present, described by the BGS as 'silt, sand and clay with variable gravel'. The basal geology as revealed in the archaeological work was orange/brown silty sand with patches of clay, interspersed with clay containing large flint nodules, which the lithostratigraphic description (below) suggests is 'probably a mixture of reworked remnants of the Lambeth Group sediments, weathering residue of the Chalk (mainly flints) and perhaps some material that has moved downslope from the summit area'. The summit of the chalk escarpment is occupied by the outcrop of the Netley Heath Beds ('sand and gravel with some Lower Greensand material'), with the mapped boundary of the outcrop about 1.0km upslope from the site (Austin *et al* 2013).

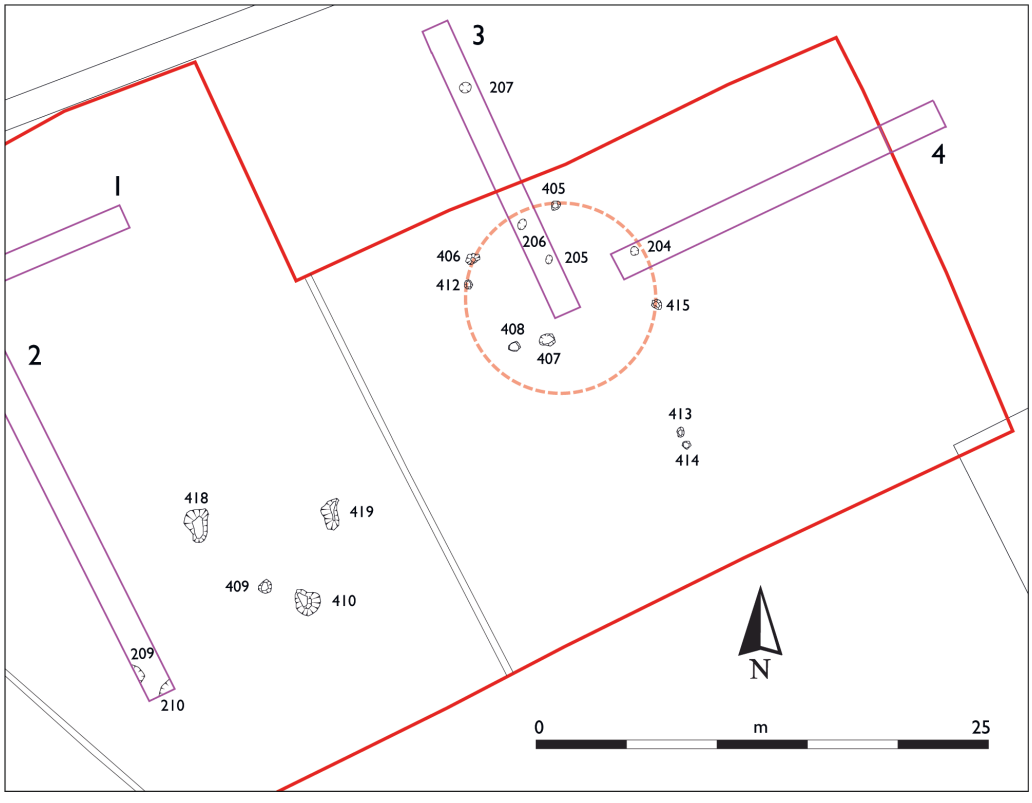


Fig 3 Boxgrove School, Guildford. Detailed site plan of controlled watching brief area, and site section showing colluvial deposits.

Machining and site stratigraphy

The overburden layers were removed using a tracked 360º mechanical excavator fitted with a 1.8m-wide toothless bucket.

The nature and depth of the layers removed varied within the site area (Lambert 2012a). However, in general, the stratigraphy was seen to consist of 20–30cm of mid-grey/brown sandy humic topsoil (301/401) over 14–35cm of light orangey/brown silty-sandy subsoil (302/402). Across the south-western part of the stripped area, a second layer (305/404) was also prevalent, occurring in irregular patches, sandwiched between 302/402 and the natural geology, and recorded at a depth of 70cm at its deepest point (fig 4 no 2). This was interpreted on site as a localised colluvial deposit (Lambert 2012a), which was confirmed by the geoarchaeological analysis presented below. The gentle slope of the site from south to north was enhanced by this additional deposit, meaning that the depth of overburden removed along the northern edge was very shallow, around 40cm in depth, but along the southern edge it was much deeper, at up to 1.4m. Either the natural geology or the lower levels of the colluvial deposit were exposed across the watching brief area, and two discrete clusters of archaeological features were identified (figs 2 and 3), cutting the colluvial deposit and/or the natural geology; these are described below.

During the archaeological evaluation a large number of struck and burnt flints were collected from the topsoil, subsoil, and from within localised colluvial deposits (Lambert 2012a). Most or all of this material was redeposited, rather than *in situ*, so the collection of such material during the watching brief machining was generally limited to tools, utilised flints or cores.

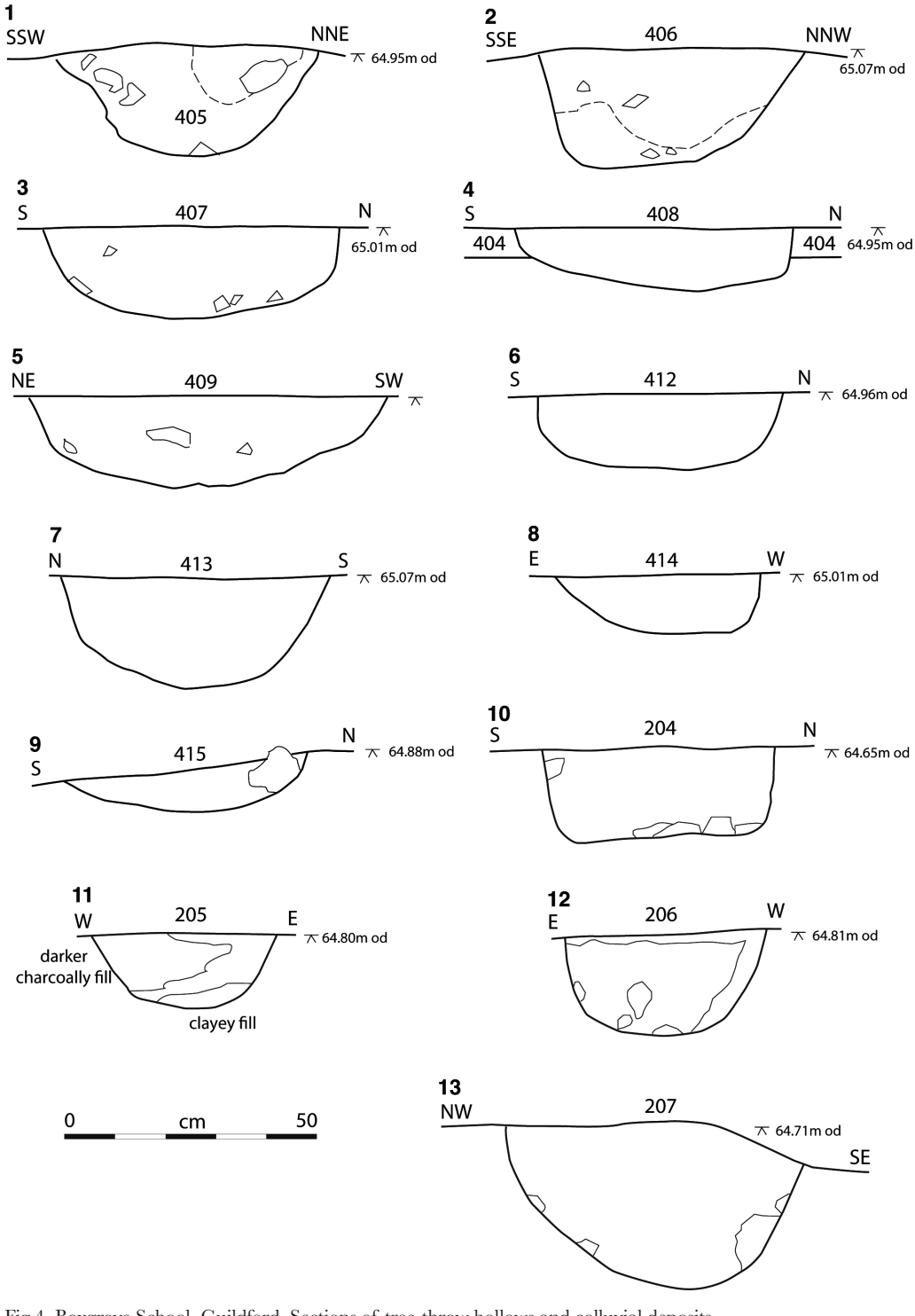


Fig 4 Boxgrove School, Guildford. Sections of tree-throw hollows and colluvial deposits.

Summary of evaluation outside the watching brief area

TREE-THROW HOLLOW 111 AND COLLUVIAL DEPOSITS 107 AND 109 (fig 4 no 8 and fig 5)

Trench 9 was 17.7m long and laid out parallel with the eastern site boundary on a north/south orientation, before dog-legging south-south-east to north-north-west to avoid a tree protection zone. The trench was excavated to 0.9m at its north end, but became much deeper (1.5m) to the south, due to additional colluvial deposits (107 and 109), which overlay the natural geology and contained redeposited Neolithic or Early Bronze Age pottery (including a few small Beaker sherds (fig 22)) and struck flint. Towards the interface between 107 and the undisturbed geology, a feature (111) was identified that contained a cohesive collection of struck flint, bone and large amounts of charcoal. The feature is interpreted as a utilised tree-throw hollow, with hearth material deposited within it. A Beaker pottery sherd from the upper part of the feature, together with the style of the flintwork in it, indicates the feature was infilled in the Early Bronze Age. In section (fig 4 no 8), layer 112 merged with 107 to either side, but was only identified above 111. This seems to imply that the feature was originally formed within 107, material from which subsequently infilled the feature meaning that later reworking made the edges indistinct, with the implication that the latter had accumulated by or during the Early Bronze Age.

OTHER COLLUVIAL DEPOSITS

The colluvial deposit, sometimes with associated flintwork, was also identified in trenches 5 (104), 6 (117), 10 (116) and 11 (115). A concentration of struck flint was also noted in trench 12, in a subsoil deposit (113).

The watching brief area

The controlled watching brief investigated a number of features and deposits visible in the trial trenches that were suspected of being prehistoric, primarily Late Neolithic or Bronze Age in date (figs 2 and 3).

COLLUVIAL DEPOSIT 208/305/404 (fig 4 nos 3 and 4)

The colluvial deposit was found to extend across the south-western part of the area. The colluvium contained relatively large quantities of struck flint, some of it quite fresh, suggesting its derivation from nearby knapping, in the Late Neolithic/Early Bronze Age.

TREE-THROW HOLLOWS 209, 210, 303, 304, 410, 418 AND 419 (fig 3)

Two shallow features (209 and 210 (fig 4 no 4)) were identified at the south-south-east end of the trench cutting the natural surface (203). Both had silty-sandy fills and contained struck flint, but appear to be tree-throw hollows. The remaining features were of similar character, shallow and irregular, with silty-sandy fills.

Features 209, 210, 410 (fig 4 no 5), 418 (fig 4 no 6) and 419 (fig 4 no 7) all had sufficient flintwork to suggest they were infilled in the Late Neolithic/Early Bronze Age. Hollow 303 had less diagnostic material but may be of later Bronze Age date. Feature 304 is undated but seems likely to be prehistoric in date.

MIDDLE BRONZE AGE PITS 407, 408 AND 409 (fig 3)

Located in the eastern half of the site, south of trial trench 3, pits 407 (fig 6 no 3) and 408 (fig 6 no 4) were oval in shape, fairly shallow, and contained fresh burnt and struck flint, daub, charcoal, and two pottery vessels identified as a Middle Bronze Age globular cup (407, fig 7) and a straight-sided cup (408). In addition, 407 contained a small quantity of burnt bone,

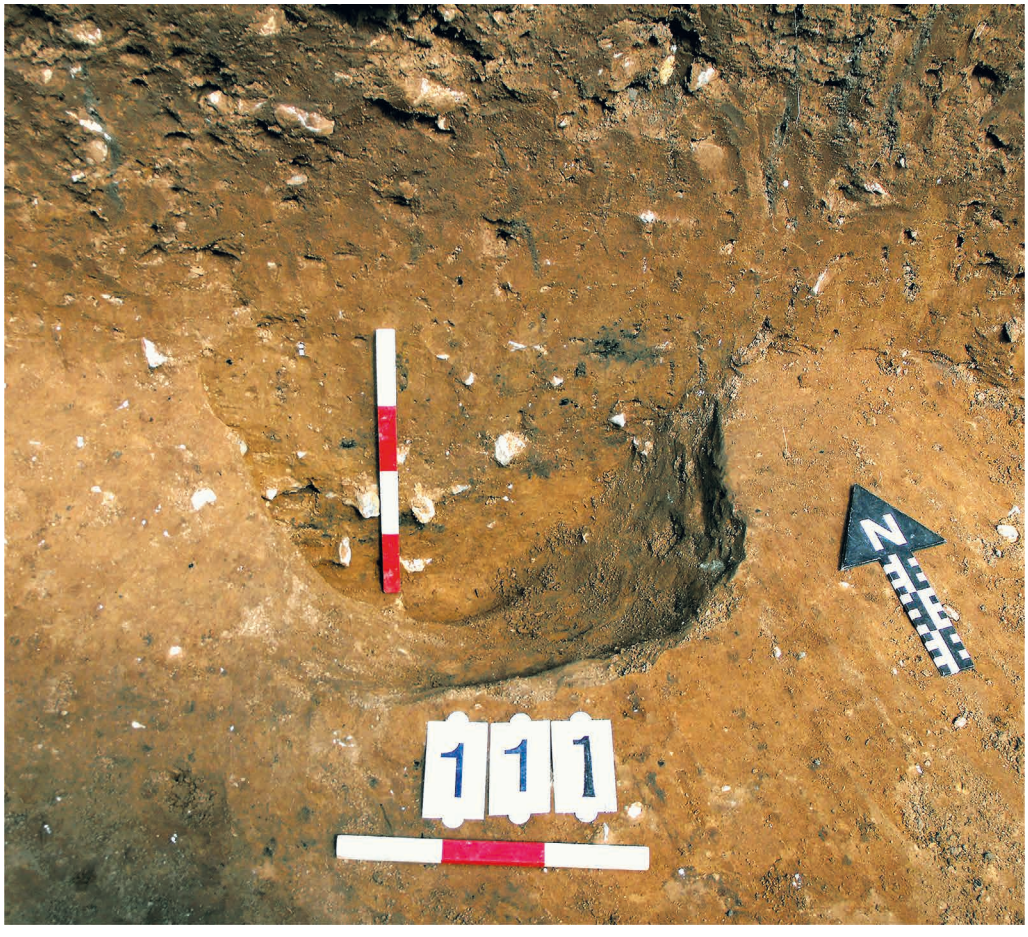


Fig 5 Boxgrove School, Guildford. Photograph of tree-throw hollow 111 in trench 9, after excavation.

but it was not possible to establish whether this was human or animal in origin (see below). While some of this material could be classed as domestic, it seems likely the vessels, given their near-complete state, were placed deliberately, perhaps with a ritual or burial function.

A further pit (409 (fig 6 no 5)) was identified in the western half of the site, and although it contained no pottery, it was a similar size and shape to 407 and 408, had a similar charcoal fill, and contained burnt flint, struck flint and daub. No other features except these pits contained daub, so it is probable that 409 is also of Middle Bronze Age date. All three pits also cut colluvial deposit 404, so must at least be later in date than the Late Neolithic/Early Bronze Age.

EARLY–MIDDLE BRONZE AGE PITS/POSTHOLES 204, 205, 206, 207, 405, 406, 412, 415 (fig 3 and 6 nos 1, 2, 6, 9 and 10–13)

A group of small pits/postholes was identified. None of these contained material that could clearly date them (pit/posthole 415 was the only one with pottery; an unidentifiable sherd of general prehistoric type); however, their close grouping, charcoal-flecked fills with fresh burnt and struck flint, and the fact that several cut through colluvial deposit 404, indicates they are likely to be Early–Middle Bronze Age in date.

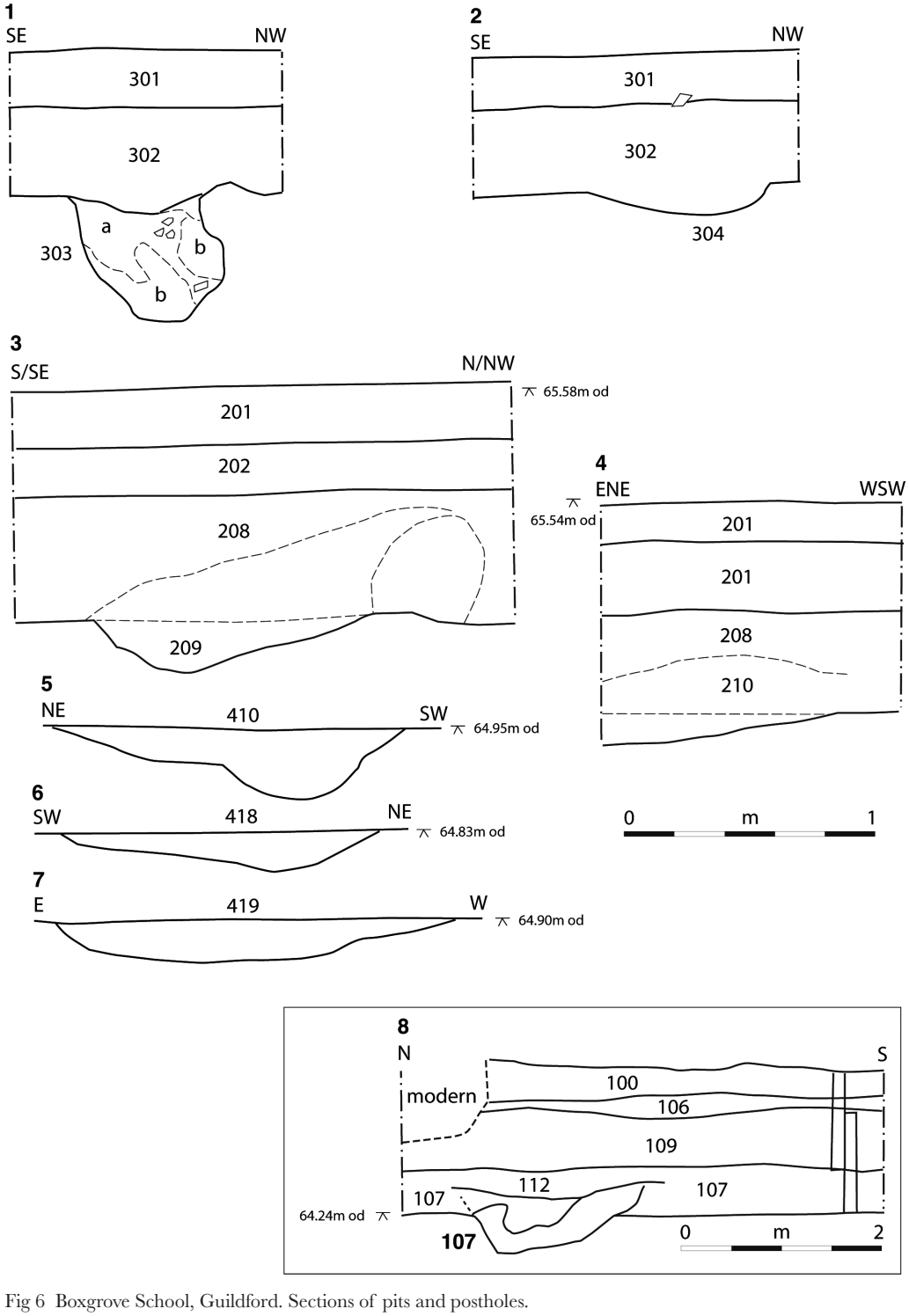


Fig 6 Boxgrove School, Guildford. Sections of pits and postholes.

Fig 7 Boxgrove School, Guildford. Photograph of pit 407 with Bronze Age globular cup *in situ*.

Five of the features were clearly identified as postholes, with a further three being classed as small pits/postholes. Features 204, 206, 207, 405, 406 and 415 contained large flint nodules that may have been used as post packing. The concentration of postholes in this area, and the lack of these features elsewhere on the site, raises the possibility that this may have been the location of a small Bronze Age structure.

UNDATED POSTHOLE/PIT 413 AND POSTHOLE 414 (figs 3 and 6 nos 7 and 8)

Two steep-sided, but fairly shallow pit/postholes were located adjacent to each other, south of the Bronze Age features discussed above. It is possible these features are also prehistoric in date; however, both contained small flecks of chalk, flint and burnt flint in poor condition (probably residual material), and 414 an iron washer, which although potentially intrusive, could indicate these two features are actually more recent in date.

The flintwork, by Nick Marples

(figs 8, 9, 11, 13 and 17–19 and tables 1–7 can be found in the online supplement: see *Endnote*)

INTRODUCTION

The archaeological evaluation and excavation at Boxgrove School produced 1296 lithic artefacts (including 544 chips), weighing 11,734g. These derive from a total of 87 individual contexts, comprising three layers, eighteen features, plus unstratified finds from various

locations across the site. The material has been quantified in table 1 (manually collected flintwork) and table 2 (bulk sample flintwork). Individual feature totals range from one to 218 (86 excluding chips), or from one to 46 struck flints excluding all bulk sample totals.

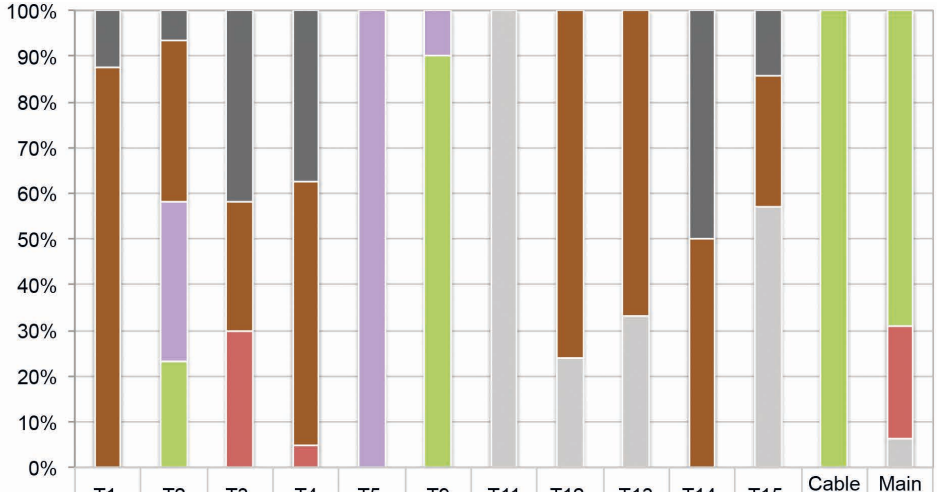
A total of 12% by number and 18% by weight of the recovered total was excavated by hand from identified features. Almost 30% by number and 78% by weight was manually collected from machined layers and unstratified contexts, while 59% by number and just 4% by weight was retrieved from twelve processed bulk soil samples taken from ten individual features.

The material has been listed by context groups in table 3, and the overall composition of their respective lithic assemblages, excluding chips, is illustrated in figure 8. The overall proportions of flintwork recovered for each context group, also excluding chips, are presented in figure 9. Flint totals and the overall proportions of the context types represented, inclusive of chips, for each trial trench and the two watching brief phases, are presented by context group in figure 10.

Most of the flints retrieved from layers and features, as well as most unstratified items, are likely to be of Late Neolithic/Early Bronze Age date. A handful of Middle Bronze Age flints has been identified from two pits (407 and 408) containing Middle Bronze Age pottery, a tree-throw hollow (303) and, less certainly, from two scoops (416 and 417), thought to be the result of rooting or burrowing (not shown on fig 3).

METHODOLOGY

The main artefact categories used in the classification follow the definitions of Ballin (2000), except for the substitution of 'irregular waste' and 'core dressings' for that author's



	T1	T2	T3	T4	T5	T9	T11	T12	T13	T14	T15	Cable WB	Main WB
Topsoil	2	6	21	24	0	0	0	0	0	7	1	0	0
Subsoil	14	32	14	37	0	0	0	80	2	7	2	0	0
Colluvium	0	32	0	0	1	11	0	0	0	0	0	0	0
Tree-throws	0	21	0	0	0	100	0	0	0	0	0	6	564
Pits/postholes	0	0	15	3	0	0	0	0	0	0	0	0	203
Unstratified	0	0	0	0	0	0	10	25	1	0	4	0	51

Fig 10 Boxgrove School, Guildford. Contextual derivation of the trial trench and watching brief lithic assemblage (excluding chips; WB = watching brief).

'indeterminate pieces' and 'core preparation flakes'. Tools have been classified according to generally agreed morphological descriptions, such as those provided by Healy (1988, 48–9). The term 'modified pieces' is used here generally to classify all struck flint with macroscopically visible evidence of deliberate edge modification (retouch), or surface grinding, excluding only core platform edge alteration (ie trimming, abrasion or retouch). The use of all other terminology is in accordance with the definitions given in Marples (2017, 166–8).

The principal aims of this analysis include an assessment of the comparative condition of lithic artefacts, a description of the technological aspects of the lithic assemblage, and an attempt to date its constituent elements, all with reference to the contextual provenance and horizontal and vertical distribution of artefacts across the investigated areas. Inferences have been made from the results of this analysis, and from similar data relating to other finds, to attempt to define the nature of past human activity on the site, and to locate the flintwork in relation to other archaeological discoveries in the area, as well as further afield.

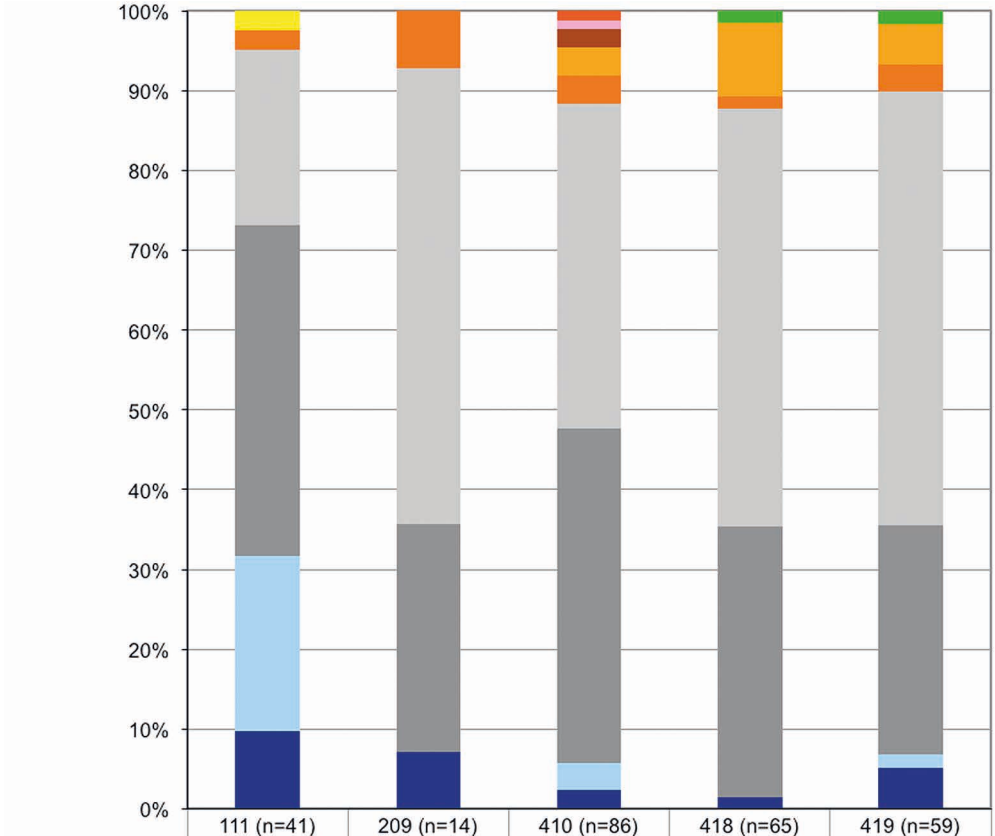
RAW MATERIAL AND CONDITION

Most of the flintwork is mottled pale to dark grey with off-white to buff cortex which, where not weathered post-depositionally, is usually quite fresh. This is likely to derive from a chalk flint or superficial Clay-with-Flints source, and was probably procured from surface deposits or shallow sub-surface exposures along the North Downs immediately to the north of the site, especially in view of its tendency to fracture along thermal flaws – a characteristic of much of the chalk flint used in the Merrow area, *c* 2km to the east of this site (Marples forthcoming a). Crystalline inclusions and voids are present within some pieces (fig 18 no 1; fig 19 no 2).

A few flints are mineral stained red-, green- or yellowish-brown (eg fig 17 nos 27–8 and 30–32). These include all of the finds from tree-throw hollow 303, a few others from Middle Bronze Age pits 407 and 408, and a handful from topsoil, subsoil and colluvial deposits across the site. The cortex on most of these pieces, where present, is generally much thinner than on those lithic artefacts likely to derive from a chalk flint source, and they may be of more local origin, possibly originating within nearby Head deposits. Although most of the identified later Bronze Age flints are of this type, at least one artefact, a large end- and side-scraper (fig 20 no 6), can definitely be attributed to the Neolithic period.

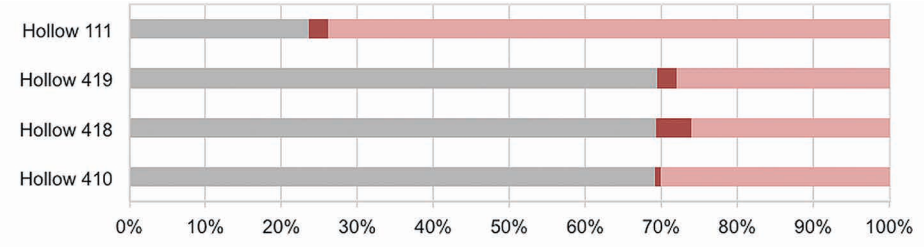
Fig 12 Boxgrove School, Guildford. Total number of worked flints, burnt worked flints, and burnt unworked flints recovered, by phased context group.

The proportions of artefacts in fair to poor condition are illustrated for each context group in figure 11A, where it can be seen that there is a general decrease in the percentages of such pieces present through the soil profile, and that all the flintwork recovered from Late Neolithic/Early Bronze Age tree-throw hollows (with the exception of one possibly intrusive item) is in good condition. Twenty-three flints are patinated (recorticated) pale blue/white (eg fig 11B no 3). Very small numbers of these are found in most context groups, and they cannot be differentiated on technological grounds from the rest of the flintwork from the site.



	111 (n=41)	209 (n=14)	410 (n=86)	418 (n=65)	419 (n=59)
Knives	0	0	1	0	0
Serrates	0	0	1	0	0
Scrapers	0	0	0	1	1
Piercers	1	0	0	0	0
Misc retouched	0	0	2	0	0
Blade fragments	0	0	3	6	3
Blades	1	1	3	1	2
Flake fragments	9	8	35	34	32
Flakes	17	4	36	22	17
Irregular waste	9	0	3	0	1
Cores	4	1	2	1	3

Fig 14 Boxgrove School, Guildford. Flintwork from the Late Neolithic/Early Bronze Age tree-throw hollows (excluding chips and context 210, which only produced three flakes).



	Hollow 410	Hollow 418	Hollow 419	Hollow 111
Worked flint	85	61	57	37
Burnt worked flint	1	4	2	4
Burnt unworked flint	37	23	23	116

Fig 15 Boxgrove School, Guildford. Proportions and total numbers of burnt and unburnt flints recovered from Late Neolithic/Early Bronze Age tree-throw hollows 111, 410, 418 and 419.

Only nineteen worked flints were also burnt (fig 17 nos 17–18 and 29). Three of four flints recovered from Middle Bronze Age pit 407, which are likely to be of the same date, were lightly burnt, suggesting that these pieces may derive from an occupation deposit. Figure 12 shows that burnt unworked flint totals are much higher for the Middle Bronze Age feature group.

Flake and blade fragments (fig 17 nos 5–10 and 14–16) together constitute almost one-third (31%) of the assemblage, excluding chips, a figure only slightly lower than the 35–40% of all flints reported for Neolithic assemblages in general (Anderson-Whymark 2011, 17). Many of these breaks are likely to be deliberate, and some of the characteristics of intentional breakage highlighted by Anderson-Whymark (2011, 16–17) are evident on the flint fragments from this site.

SPATIAL DISTRIBUTION (fig 16)

Four areas produced cores and debitage in sufficient numbers to indicate the former presence of knapping scatters. In trench 9, one tree-throw hollow, context 111, located at the eastern extremity of the site, produced 100 lithic artefacts in mint condition, including 59 chips. A colluvial deposit, context 107, possibly truncated by this feature, yielded eleven more flints, also mostly in very good condition. The manually collected sample is of similar modest proportions to those retrieved from other tree-throw hollows and colluvial deposits in trench 2 and just to the east of trench 2. Approximately 50m south-west of trench 9, 105 lithic artefacts were collected in the course of machining from subsoil and unstratified deposits within trench 12. Lesser quantities of flintwork ranging from three to fourteen items were recovered from similar deposits within neighbouring trenches 11, 13, 14 and 15. To the north and west of trench 12, trenches 3 and 4 produced 50 and 64 flints respectively from topsoil and subsoil deposits. Most finds were in fair to poor condition. All except two of the eighteen worked flints recovered from pits or postholes in these two trenches were in good condition. Sixteen and 70 lithic artefacts respectively were collected from topsoil, subsoil and colluvial deposits in trenches 1 and 2, located *c* 30m to the west of trench 12. The majority of these finds had clearly been subjected to varying degrees of post-depositional modification, except within the colluvial deposit, context 208 (confined to trench 2), from which 25 of the 32 flints recovered were in good condition. All 21 of the lithic artefacts found within the exposed parts of two tree-throw hollows identified in trench 2 were also in a fresh, unweathered state.

Most of the features identified in the watching brief phase, located around trench 3 and to the east of trench 2, contained fresh, unweathered flint artefacts. Just under half of the unstratified finds recovered at this time are in similar condition, and it is clear from the mint

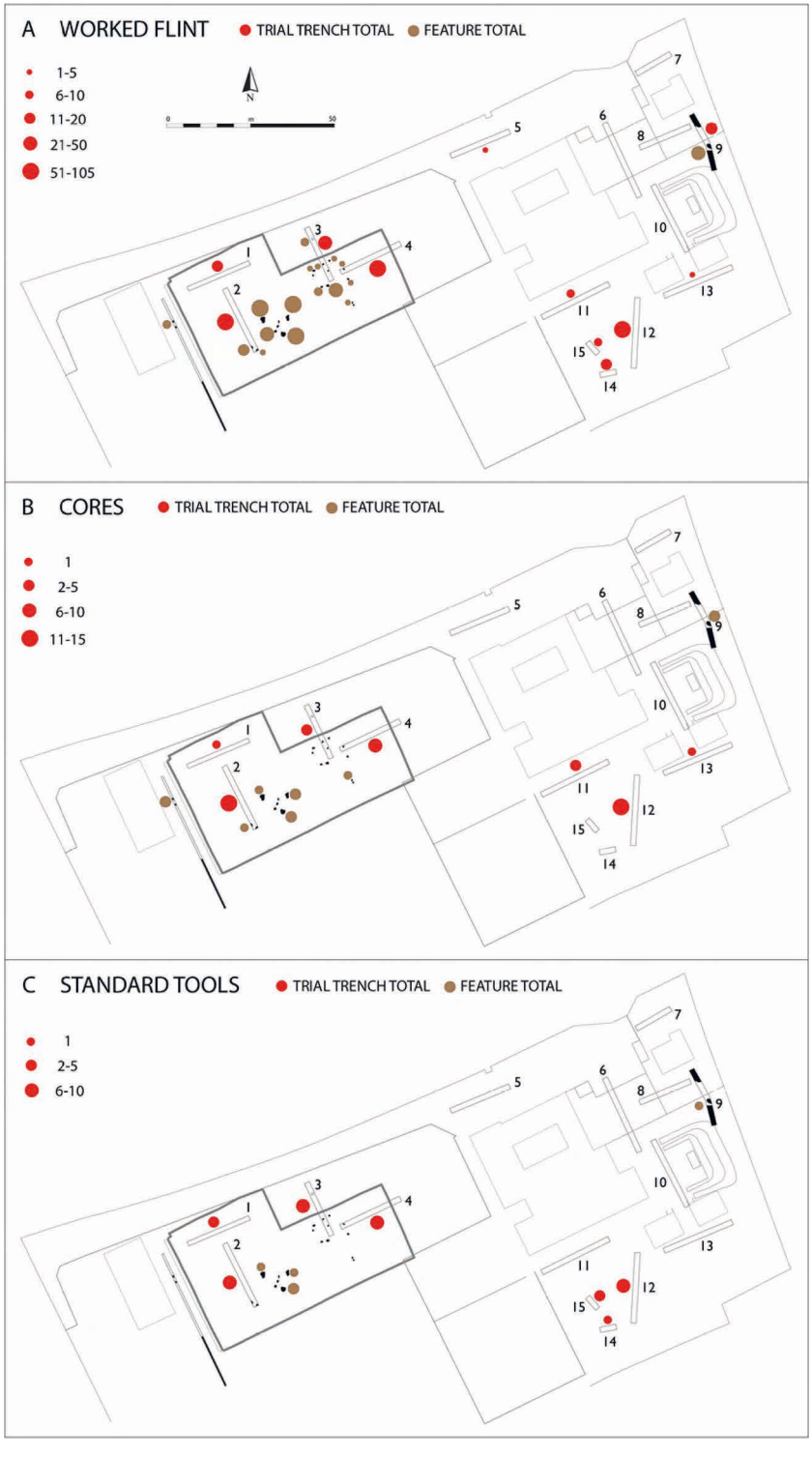


Fig 16 Boxgrove School, Guildford. Flintwork distribution.

condition of some that they must have originated from within intact features or colluvial deposits.

Only four of the original fifteen trial trenches (trenches 6–8 and 10) failed to produce any lithic artefacts, and each of these except for trench 10 had been subjected to varying degrees of modern disturbance. Variations in the total number of flints recovered from topsoil and subsoil deposits indicate areas of higher density in trenches 2, 3, 4, 9 and 12 (fig 16A), but the full extent of these apparent concentrations and, indeed, of their parent scatters, remains undetermined.

Small sample sizes and differing recovery methodologies for different types of layers and feature limit the scope of detailed comparison. These sampling issues aside, the adoption during trial trenching of a relatively consistent collection methodology does allow some comparison to be made between the lithic assemblages deriving from the three identified layers. Cores and irregular waste pieces are more strongly represented with depth through the soil profile, while a corresponding decline in the proportions of modified pieces is evident across the topsoil, subsoil and colluvial finds groups (a trend that extends to the identified features; see fig 8). Both variations (the former mirrored by an increase in the respective overall mean lithic weights of 14.5, 21.7 and 32.7g for the three layers) may be due to taphonomic factors, most likely relating to the effects of tillage. Cores and standard tools are distributed fairly evenly across those parts of the site unaffected by modern disturbance, with minor concentrations of both artefact categories in trenches 2, 4 and 12, which all produced higher numbers of worked flints overall (cf fig 16A–C).

TECHNOLOGY: CORES AND DEBITAGE (figs 17–19)

Most of the assemblage is made up of hard hammer struck flakes and flake fragments, which together constitute 63% of the lithic total, excluding chips. Blades and blade fragments (eg fig 17 nos 1–7) comprise just under 5% of the site total. Linear butts and diffuse bulbs of percussion, often associated with antler hammers, are occasionally present (fig 17 nos 6–7 and 20), but circular impact scars characteristic of hard hammer usage are visible on the platform remnant of one illustrated blade (fig 17 no 2), and the total numbers of blades recovered from the Neolithic/Early Bronze Age tree-throw hollows are very low. Typical by-products of a hard hammer technology are split bulbs (*siret* knapping accidents, eg fig 17 no 26), and hinged terminations, caused by the application of insufficient force to the objective piece, which are present in some numbers.

Cores from the site are exclusively of flake types, with variable numbers of intact striking platforms (see table 5 for full classification). Their co-distribution indicates no preference for any narrowly defined method of core reduction based on the number of intact striking platforms, but is more likely to be the product of an adaptive response to the vagaries of a flawed raw material source.

There are ten keeled non-discoidal cores (one illustrated: fig 19 no 2) and, although these forms were also produced in the later Bronze Age, their presence in such numbers can be taken as a likely indicator of Neolithic flintworking (cf Healy 1983, 29; 1988, 46). More certainly attributable to the Late Neolithic period are three Levallois-like core roughouts. One of these (fig 18 no 2), recovered from tree-throw hollow 111 in trench 9, is clearly of 'tortoise' form, with a domed dorsal surface. Most flakes are characterised by plain butts, and tend to be as long (fig 17 no 22) or slightly longer (fig 17 nos 12–13 and 19–21) than they are broad, although there are some markedly squat flakes typical of later Bronze Age flintworking, including two with cortical butts from tree-throw hollow 303 (fig 17 nos 30–31). Three fragmentary, crudely-worked cores associated with this feature were also produced from thermally flawed nodules.

The mean weight for all complete cores from the site is 85g, with values ranging from 70 to 97g for individual context groups (see table 5). Concomitant with the generally large size of abandoned cores is a lack of evidence for their intensive reduction. The Late Neolithic

keeled discoidal core weighing 29g from tree-throw hollow 419 (fig 18 no 3), and a single platform core from tree-throw hollow 418 weighing 21g (fig 18 no 1), are both exceptions to this generalisation, and these pieces clearly represent the end-products of rather longer knapping sequences, although they could have been recycled from broken implements. The flawed character of much of the raw material used for the production of flakes is again illustrated by the thermally-fractured striking platforms employed on many cores. There is little evidence for core maintenance or preparation and this trait is characteristic of Late Neolithic and Bronze Age flintworking.

Chip totals, usually regarded as a good indicator of knapping activity if present in large numbers, range between four and 132 for seven bulk sampled features, comprising five Late Neolithic/Early Bronze Age tree-throw hollows, one Middle Bronze Age pit, and one pit of uncertain date; for details see figure 13 and table 2. These totals, which were retrieved from single 10-litre samples, with the exception of context 111 (three bulk samples), clearly represent only a small fraction of the numbers originally present, but sufficient quantities were recovered to indicate that knapping took place either within or in close proximity to these features. An alternative explanation, namely that such material may have been collected onto hides in the course of knapping and then dumped into features, seems less plausible in view of the similar proportions of chips retrieved from Middle Bronze Age pit 407 (which produced only 30 other flints) and undated pit 409 (which produced only 28 other flints, none of which were found in the course of excavation). However, rather than representing the products of later Bronze Age flintworking here, it can be suggested that these chips may relate to windblown or similarly redeposited material originating within extensive Late Neolithic/Early Bronze Age knapping scatters, which subsequently became incorporated into later features and layers.

TECHNOLOGY: TOOLS (figs 20–21)

A relatively modest range of tool forms has been identified, and three classes of artefacts are represented by just one or two examples (table 6). Scrapers (*sensu* Reynier 2005, 133) constitute the principal 'standard' tool category present, with just under 25% of all retouched pieces, while most of the classified combination tools (eg fig 21 nos 6 and 8) also incorporate one or more scraping edges. Both end- (fig 20 no 5) and side-scraper (fig 20 no 1) forms are present. One large and more elaborately scale-flaked scraper may be a fragment of a 'horseshoe' type, usually dated to the Late Neolithic (cf Butler 2005, 167), but most scrapers from the site are very much smaller, and the application of retouch is generally more restricted. At least three scrapers (fig 20 nos 1 and 5; fig 21 no 1) are small enough to be classed as 'thumbnail' types with possible Beaker affinities (cf the examples from the Marlborough Downs illustrated in Harding 1992, fig 91 nos 1–6), while the two denticulate types (one illustrated: fig 21 no 5) are of similar form and proportions to their later Bronze Age counterparts from the same locality (cf especially Harding 1991, fig 45 no 34). The denticulate scraper has been produced on an irregular thermal fragment, as have a small number of other scrapers collected in the course of machining, some with similar ragged edges unsuitable for hide scraping, and which are also probably of later Bronze Age date. Their uses have still to be determined (Harding 1991, 85), although they could have been employed in woodworking or, as suggested by Brown (1992, 92), in flax stripping. The larger double end-scraper manufactured on a thermal blank (fig 21 no 7) could also be of later Bronze Age date, although this piece has some affinitiy to Beaker-associated scrapers from Fengate and the Marlborough Downs (cf Beadsmore & Evans 2009, fig 4.14 no 4; Harding 1992 fig 91 no 6).

Most of the piercers have been produced on flakes or irregular blanks, but the small number recovered does not suggest intensive activity in the Bronze Age, as these tool forms are usually found in high proportions within later Bronze Age industries (Healy 1983, 30).

Two artefact types that can be assigned to the Neolithic or Early Bronze Age periods are represented by single examples retrieved from tree-throw hollow 410. A serrated blade

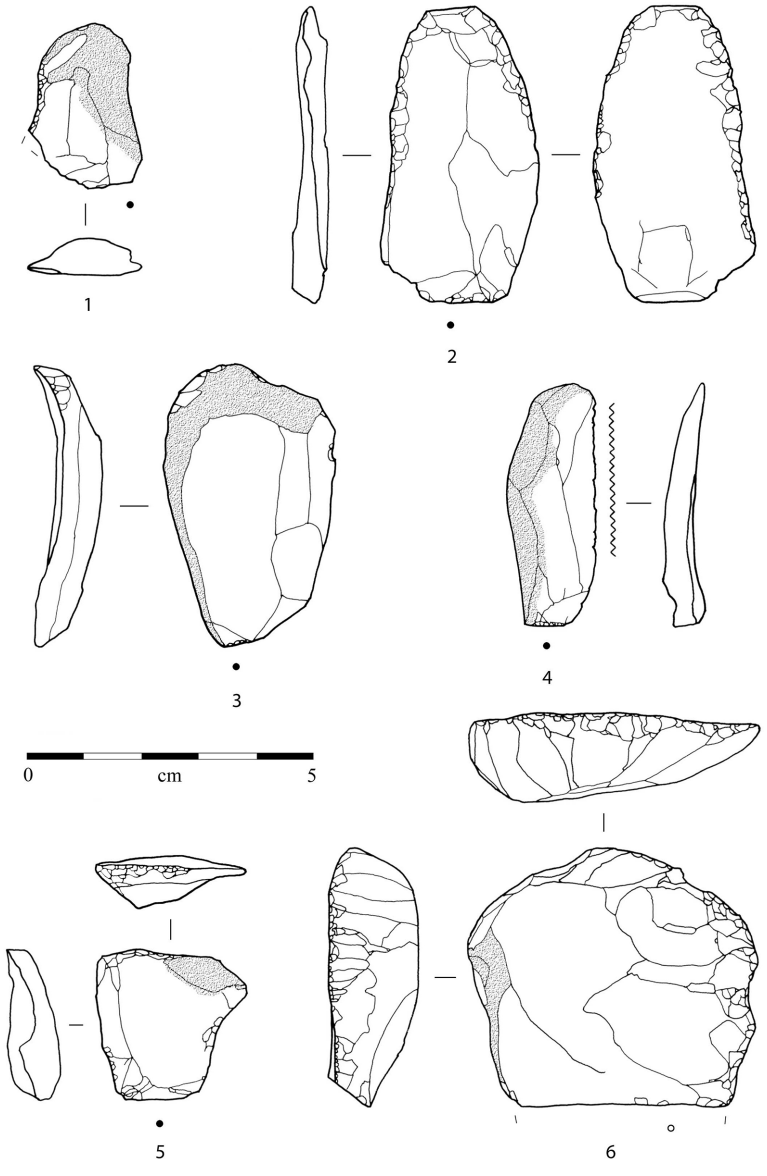


Fig 20 Boxgrove School, Guildford. Flint tools. Grey shading indicates surviving cortex.

(fig 20 no 4) bears very faint traces of sickle gloss, usually associated with the processing of silica-rich plant materials, on parts of one dorsal lateral edge, and there is also a bifacially retouched 'backed' knife (fig 20 no 2) with comparable indications of use. A further bifacially retouched fragment from the same feature (fig 21 no 3) could represent the basal portion of a transverse arrowhead. These three pieces, together with the scrapers from tree-throw hollows 418 and 419, provide clear evidence of domestic activity in the area at this time.

Representation of all classified tool types appears to be fairly evenly distributed across the site, with slight concentrations of scrapers in trenches 4 and 12 corresponding to the higher densities of all lithic artefacts identified there.

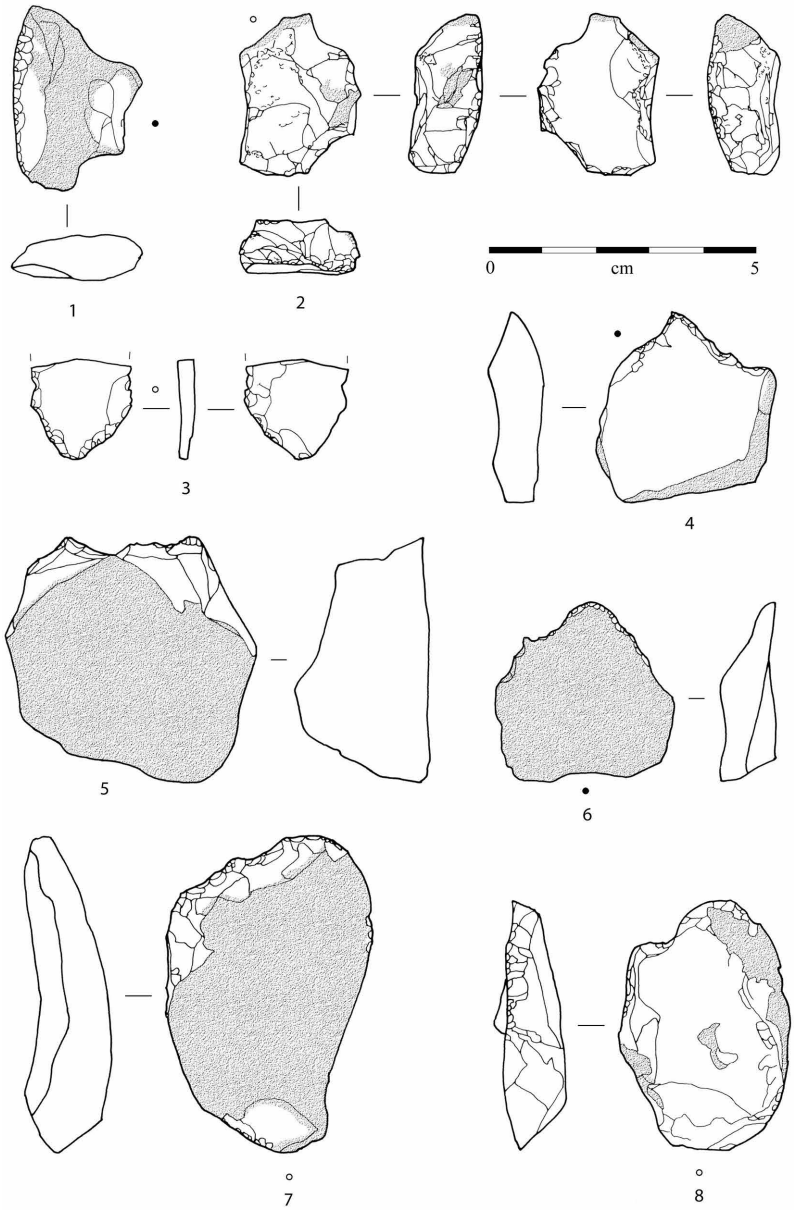


Fig 21 Boxgrove School, Guildford. Flint tools. Grey shading indicates surviving cortex.

BURNT FLINT

Unworked burnt flint was recovered from 39 individual contexts, including two contexts (209 and 111B) for which bulk samples provided the only material collected (table 7). Only token numbers of burnt flints were retained in the course of machining. One hundred and sixty-three burnt flints weighing 2419g were retrieved by hand from seventeen features, while a further 481 burnt flints weighing 2615g were recovered from nine processed bulk samples taken from seven features. Figure 12 shows that, overall, unworked burnt flint was more abundant within Middle Bronze Age pits and tree-throw hollows than in any other context group.

Just under two-thirds (59%) of the total number were heavily cracked and calcined white or pale grey, while the remainder were more lightly burnt pinkish-red or pale grey, with only surface fissures present on many pieces. Rather more of the lightly burnt material was present in Late Neolithic/Early Bronze Age tree-throw hollows 418 and 419, undated pit/posthole 207, and Middle Bronze Age pit 407 (see table 7).

With the exception of one piece of Bullhead flint, all the unworked burnt flint is likely to have been procured locally from a similar source, or sources, as is the unburnt worked flint recovered from the site. Many of the undated pit/posthole group of features also included some burnt flints in moderate to poor condition, while the freshest material was recovered from Middle Bronze Age pits 407 and 408 and possible Early Bronze Age tree-throw hollow 111.

The pottery and other finds, by Phil Jones

(Tables 8 and 9 can be found in the online supplement: see *Endnote*)

EVALUATION RESULTS

A small collection of pottery was retrieved from the two phases of evaluation at Boxgrove School (table 8). The majority of sherds came from contexts containing redeposited material, including topsoil, subsoil and colluvial deposits. Of particular interest, however, is the Chalcolithic or Early Bronze Age Beaker pottery from trench 9 (fig 22). Pottery of this date is relatively rare in south-east England, and the presence of these sherds in both utilised hollow 111 and colluvial deposit 107, in association with struck flint and charcoal, indicates settlement activity in the immediate environs during this period.

Fig 22 Boxgrove School, Guildford. Beaker sherds from colluvial deposit 107 and tree-throw hollow 111.

WATCHING BRIEF RESULTS

A further collection of pottery was retrieved from the controlled watching brief (table 9). Single, small sherds of Saxon grass/chaff-tempered ware and early prehistoric calcined flint-gritted ware, were recovered from tree-throw hollow 410 and shallow scoop or posthole 415 respectively, and a larger (14g) body sherd of medieval 12th or early 13th century grey/brown sandy ware was retrieved from subsoil context 402.

Three more sherds of early prehistoric pottery were found in colluvial deposit 404, including two tempered with calcined flint grits, one of which retains sooting on its exterior, and another tempered with coarse shell fragments that have since dissolved to leave plate-like voids. On the basis of these sherds, and the accompanying collection of struck flints (see section 2), the layer is likely to have accumulated during the Neolithic or Early Bronze Age.

On the basis of the single vessels placed inside them, two small pits nearby seem likely to have been slightly later than layer 404. One is the lower part of a cup based on the (usually larger) Globular Urns of the Deverel-Rimbury ceramic tradition, and the other is just as small, but based on the Barrel Urn of that same Middle Bronze Age repertoire of vessel forms.

Pit 407 contained many joining pieces (0.73kg) from the lower part of a globular cup with a base diameter of *c* 10cm (fig 23). It survives to a little above its maximum girth, where the walls become thinner and where it may be possible to discern burnishing, although the degree of chemical erosion excludes certainty of this. It seems most likely that the upper part of the cup was lost by truncation by the plough. The vessel is tempered with frequent coarse grits of crushed calcined flint, and a few quartz sand grains that were probably part of the original clay. The underside of the base is covered with a profusion of the same calcined flints as comprise the temper.

Pit 408 contains many joining pieces from the side of a straight-sided cup that represents its full profile (fig 23). It stood about 11.5cm high, has a rim diameter of *c* 9cm, and its surfaces were left rough. It, too, contains many coarse calcined flint grits that also cover its underbase surface, but its moderate amounts of quartz sand grains may have been deliberately added as a temper, as with the flints.

Both vessels share areas that are cream coloured, indicating the use of a clay that is relatively free of iron compounds. A few metres north from the school grounds Chalk gives way to the outcropping band of the Reading Beds (Lambeth Group), the basal lithology of which includes a band of just such a clay that was used to produce, for example, whiteware

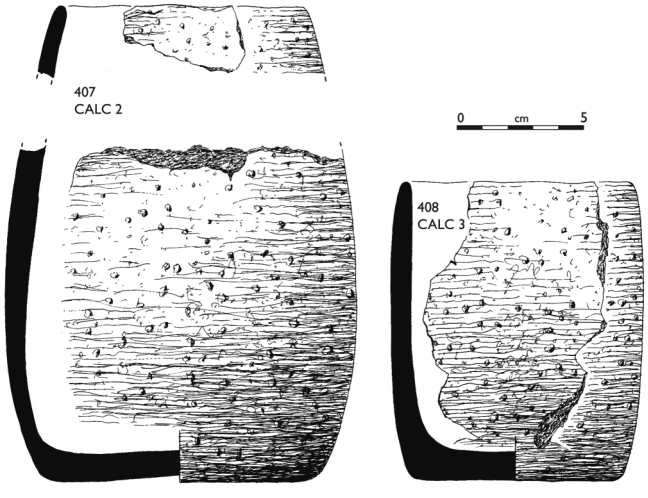


Fig 23 Boxgrove School, Guildford. Pottery vessels from features 407 and 408.

during the medieval period. It is not unreasonable to assume that this had been the source of clay for the manufacture of both cups.

Both the vessels themselves, and the nature of their almost certainly deliberate emplacements, suggest ritual activity – possibly associated with burial – like some very similar small vessels interred at North Park Farm, Bletchingley that contained burnt human bone (Jones & Hawkins 2019, 135–6). However, only a small quantity of unidentifiable bone was recovered from the fill of pit 407.

The only other materials recovered, apart from the vessels and flint debitage, were many comminuted and amorphous fragments of baked clay from the above pits, the majority retrieved from the 4mm and 2mm residues of environmental bulk sample 5, pit 407. These contained naturally occurring sand grains and rare pieces of calcined flint, as well as burnt rootlets that suggest a near-surface clay source. A small quantity (9g) of similar baked clay material was also retrieved from bulk sample residues from 408 and 409 (environmental bulk samples 6 and 7).

The environmental analysis, by Phil Austin, Lucy Sibun, Chris Green and Daniel Young

(Tables 10–12 can be found in the online supplement: see *Endnote*)

INTRODUCTION

The archaeological evaluation and watching brief recovered bulk samples from the infill of tree-throw hollow 111B and pits 407, 408 and 409; these samples contained large quantities of charcoal and some fragments of bone. In addition, two column samples were taken through the sedimentary sequence in trench 9 to clarify whether the deposits were of colluvial or alluvial origin. The methods undertaken for this were completed using standard analytical techniques (for full details of techniques and results see Austin *et al* 2013).

RESULTS AND INTERPRETATION OF THE LITHOSTRATIGRAPHIC DESCRIPTIONS

The lithostratigraphic descriptions of column samples <1> and <2> from trench 9 are displayed in tables 10 and 11. The sediments recorded in the column samples comprised a consistent sequence of sandy silt with traces of clay and gravel. These sediments are also considered to be representative of the deposits across the site as a whole (Lambert 2012a).

As outlined above, the site is low on the dip-slope of the North Downs and the thin superficial cover over the Chalk is probably a mixture of reworked remnants of the Lambeth Group sediments, weathering residue of the Chalk (mainly flints), and perhaps some material that has moved downslope from the summit area. The sediments recorded are, therefore, likely to be colluvial in nature. This interpretation is supported by the lack of a watercourse or drainage line anywhere on or near to the site.

RESULTS AND INTERPRETATION OF THE CHARCOAL ASSESSMENT

The results of the charcoal assessment are displayed in table 12. A total of four taxa, all indigenous, were recorded: alder (*Alnus glutinosa)*, hawthorn/sorbus/apple type (Maloideae), oak (*Quercus* sp.) and buckthorn *(Rhamnus cathartica)*. The two native species of oak (*Quercus* spp.) cannot be differentiated anatomically. The Maloideae, a sub-family of the Rosaceae, includes hawthorn (*Crataegus* spp.), apple (*Malus* spp.), pear (*Pyrus* sp.), whitebeams (*Sorbus* spp.) and wild service (*Sorbus* sp.) also cannot be differentiated anatomically. Taxa listed as 'cf' are those where the identification made is almost certainly that of the taxon listed but conclusive identification could not be made. The six fragments listed as 'indeterminate'

could not be identified, beyond having derived from hardwood (Angiosperm) taxa. Almost all the fragments examined were poorly preserved.

The quantity of oak present in the assemblage strongly suggests that it was being selected preferentially, presumably as fuel-wood. Most of the oak charcoal studied was recovered from feature 111 in trench 9 described as a 'refilled tree hollow'. The properties of the charcoal itself are not inconsistent with this interpretation. The charcoal in this feature is probably redeposited fire debris. However, it is unknown how many fire events the charcoal in this deposit may represent or the exact nature of those events, but the presence of human bone among the charcoal raises the possibility of fuel for a cremation pyre. Like oak, alder is an excellent fuel-wood and, additionally, produces good quality charcoal. While it is possible that the presence of alder wood in samples <5> and <6> is the result of a selective process, it remains unclear whether any of the other woods identified were used preferentially. The presence of any of the woods may be incidental, the result of opportunistic exploitation of whatever was most readily available and/or accessible.

Alder flourishes in riversides, fens and wet woods. Its presence here suggests that some form of wetland environment was probably present locally. Oak and the other taxa identified would have grown close to the site where suitable, drier, conditions prevailed; oak tolerates a range of soil types and conditions, buckthorn, a spiny shrub, would most likely have been confined to areas of chalky soil.

RESULTS AND INTERPRETATION OF THE CREMATED BONE ASSESSMENT

Small quantities of burnt bone from two contexts were received for assessment; context 111B, potentially dated to the Early Bronze Age or Beaker phase (but see 4.5 below) and 407 dated to the Middle Bronze Age (table 13). Unfortunately, while human bone was positively identified in 111B, the burnt bone in 407 was unidentifiable. Context 407 contained a total of 20.1g of burnt bone, the majority of which was calcined white. All bone fragments appeared to have suffered from a slight degree of surface abrasion.

The assemblage from feature 111 contained a total of 87.3g of cremated bone, the majority of which was recovered from sample <4>; context 111B. It would appear that the cremation deposit contained the remains of a single individual, with no repeated elements noted. Owing to the high degree of fragmentation, fragments enabling age at death to be confidently established were not present and a juvenile/adult estimate is based on fragment size alone. No sexually diagnostic fragments were identified and no evidence of pathology was noted on any fragments. The cremation process was highly efficient and all bone was an off-white colour.

Table 13 Results of the cremated bone assessment

		Weight (g)								Identifiable			
		Fragment size (mm)					Total						
Context	Sample	0–4	5–8	9–20	21–30	30+	(g)	Age	Sex	S	A	U	L
111B	1 & 2	<1					<1	?	?				
	3	0.2	2.4	2.5			5.1	J/A	?	√			
	4	22.7	40.6	15.5	3.4		82.2	J/A	?	√			
						Total	87.3						

Key: S = skull, A = axial, U = upper limb, L = lower limb; J = juvenile, A = adult

RADIOCARBON DATING

Cremated bone fragments were extracted from sample <4>, context 111B for radiocarbon dating, and submitted to the Oxford Radiocarbon Accelerator Unit. These gave a calibrated date of 3854–3712 BC (95.4% probability; fig 24).

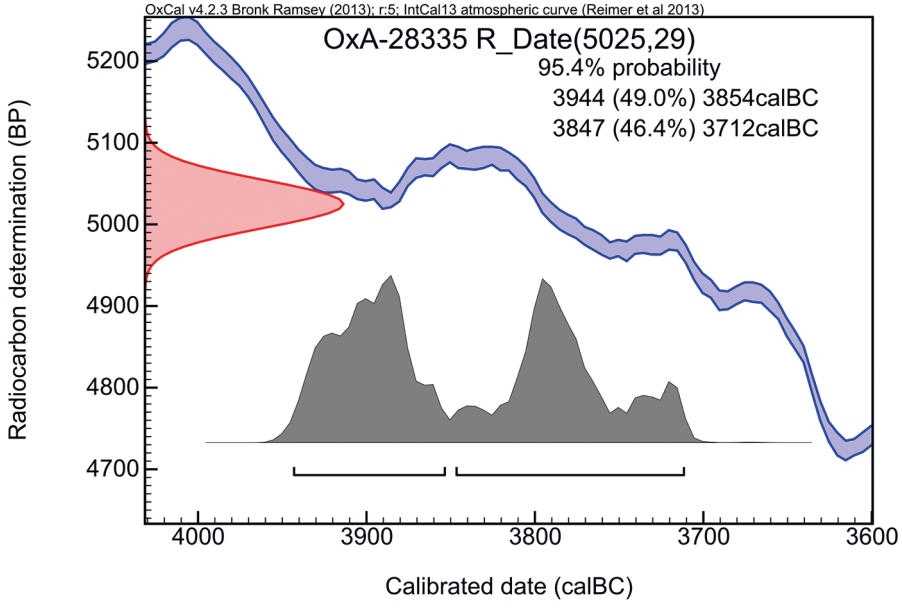


Fig 24 Boxgrove School, Guildford. Calibration of radiocarbon date on cremated human bone from context 111.

CONCLUDING SUMMARY

The column samples have been used to identify that the sediments recorded across the site are likely to be localised colluvial deposits. This correlates well with geological descriptions of the surrounding area.

Oak dominated the charcoal assemblage strongly suggesting that it was being selected preferentially, presumably as fuel-wood. Alder was the next most recorded taxon, which may also have been preferentially selected for fuel. It is less certain whether the remaining, less common wood types were specially chosen for burning purposes.

Assessment of the cremated bone from 111 has demonstrated that the identifiable fragments are from the skull(s) of a juvenile/adult, but it is not possible to make a confident age or sex estimate for the individual represented.

Discussion, by Nick Marples with Rebecca Lambert

The work at Boxgrove School has produced results that are fragmentary but nevertheless of considerable interest and importance. A number of features and a colluvial deposit, all clearly filled or developed during the Late Neolithic or Bronze Age, were identified.

The site produced no firm evidence of Mesolithic activity. Seemingly the only pointer to Early Neolithic activity comes with the radiocarbon date on cremated bone from tree-throw hollow 111, which has a calibrated date range of 3944–3712 calBC (fig 24). The hollow (see next paragraph) seems clearly dated to the Late Neolithic/Early Bronze Age from its finds, especially flintwork. It seems improbable that the human bone is from a different period of occupation for which there is no other evidence on site, and the date therefore seems anomalous.

The earliest closed groups of lithic artefacts, all from features interpreted as tree-throw hollows, can be dated to the Late Neolithic/Early Bronze Age period on technological grounds and by the presence of associated tool forms. With the exception of a single sherd of Beaker ware recovered from the surface of tree-throw hollow 111, there is an absence of associated ceramics. This sherd, together with another from the colluvium, is, however, of particular interest on account of the rarity of such finds from south-east England, and for its occurrence in association with cremated human bone and plentiful unworked burnt flint and oak charcoal. The finds are clearly the result of deliberate deposition of material from a funeral pyre in the tree-throw hollow.

Three tree-throw hollows in trial trenches 2 and 9 (contexts 111, 209 and 210) were only partially sampled, so their overall totals of lithic artefacts cannot usefully be compared. However, three hollows of similar dimensions and fill types (contexts 410, 418 and 419), all located to the east of trench 2, each produced small assemblages of between 59 and 86 artefacts, excluding chips. The respective total numbers and overall proportions of lithic artefacts from each Late Neolithic/Early Bronze Age tree-throw hollow are listed and illustrated in figure 14. It can be seen that there is little compositional variation between their respective lithic assemblages, although hollow 111 contained rather higher totals and proportions of irregular waste pieces. A similar uniformity is apparent with regard to the total number and proportions of chips retrieved, except for the partially excavated hollow 209 (see fig 13). Breakage rates for hollows 209, 410, 418 and 419 range from 45 to 62% of all lithics excluding chips, but only 22% of all lithic artefacts recovered from hollow 111 are broken. Similar variation is evident in relation to the proportions of burnt unworked flint recovered, with hollow 111 producing significantly larger quantities (see fig 15).

For hollows 410, 418 and 419, the compositional similarities, coupled with the use of an identical raw material source and hard hammer technology based on the production of flakes, with small numbers of blades or blade-like blanks perhaps only associated with the earlier stages of core reduction, strongly suggest their contemporaneous formation. Breakage rates for the flintwork from these features are comparable to those reported for Late Neolithic assemblages in the Middle Thames (Anderson-Whymark 2011, 17–18) – a Grooved Ware-associated pit at Barrow Hills in Oxfordshire (Bradley 1999, 87), and three Late Neolithic pits excavated at Hengrove Farm in Staines (Marples 2017) – and some breaks are likely to be intentional (cf Anderson-Whymark 2011).

Although the proportions of burnt worked lithics at Boxgrove School are smaller than those generally reported for Late Neolithic features, the overall proportion of burnt lithic material including burnt unworked flint is in fact closely comparable, at around 30% of the overall totals for hollows 410, 418 and 419, to the figures for three Late Neolithic pit groups from Hengrove Farm (Marples *loc cit*).

Although hollow 111 was only partially excavated, the compositional variations between the flintwork from this feature and from hollows 410, 418 and 419 noted above, suggest that it may be of slightly later origin.

Comparable lithic assemblages from tree-throw hollows of Late Neolithic to Early Bronze Age date have rarely been recorded in Surrey. None are noted in the period synthesis by Cotton & Field (1987) or in Cotton's update of more recent work within the county (Cotton 2004), but more recently identified assemblages (all with Beaker associations) include single features at St Ann's Heath School, Virginia Water (hollow 927; Marples 2013), Mercer's Quarry, Nutfield (hollow 463; Marples forthcoming b) and Home Farm, Laleham (hollow 772; Marples 2017). Two tree-throw hollows containing Grooved Ware have also been identified at Hengrove Farm in Staines (hollows 6154 and 6291; Marples 2017, 257).

Compositionally, the material from Staines is remarkably similar to that from Boxgrove School, with a comparably small tool component – very much smaller than that present within Late Neolithic pit groups from the same site, and with matching proportions of burnt worked, and burnt unworked, lithics. Although more numerous analogues are provided by Lamdin-Whymark in his study of Neolithic depositional practices in the Middle Thames

Valley where he lists 21 such features, most with similarly small-sized and compositionally comparable lithic assemblages, very few of these are securely dated (Lamdin-Whymark 2008, 90–3 and table 28; compare with table 26). He also notes a complete absence of Beaker pottery within tree-throw hollows across the same study area (*ibid* 2008, 95).

The Late Neolithic or Early Bronze Age features at Boxgrove School contain clear evidence of flintworking, together with a small, possibly token, element of domestic activity. While the former appears to be principally associated with the utilitarian production of flakes or tools, employing small nodules of abundant, locally available flint, some evidence of specialist flintknapping is provided by one tortoise core and two roughout forms, perhaps intended for the manufacture of transverse arrowheads or discoidal knives, the successful production of which has clearly been compromised by thermal flaws present within the raw material. Hunting, the working of animal hides, and the cutting and processing of cereal crops or wild plants, are all aspects of the daily round of activities suggested by a few tools found in association with this general flintworking waste. The presence of several similar tree-throw hollows in close proximity to one another, with analagous infillings and material contents, implies orchestrated activity at this time, probably associated with temporary or longer-term occupation either on the site itself, or in the immediate neighbourhood.

A small but important sample of flintwork collected from colluvial deposits across the site would appear to be coeval with the contents of the Late Neolithic/Early Bronze Age tree-throw hollows, and in some areas is only marginally inferior in condition overall. It is impossible to gauge the exact density or extent of this material from such a small sample collected, owing to the constraints of trial trenching, in a largely *ad hoc* fashion, and the inconsistent appearance of the colluvial deposits on the site. Eight cores were, however, recovered in the course of machine stripping colluvial deposits within part of trial trench 2, and such a total would ordinarily be taken to indicate the presence of a knapping scatter of some archaeological significance, suggesting a potential focus for knapping activity in this area of the site. Further evidence of the wide spread of this activity is given by the recovery of 24 cores from topsoil and subsoil deposits, and twenty more unstratified cores, albeit in markedly inferior condition to those finds retrieved from tree-throw hollows and colluvial deposits, from which it was presumably disturbed.

Two Middle Bronze Age pits were identified, one (407) containing much of a globular cup, and the other (408) a large part of a straight-sided cup, both clearly in the Deverel-Rimbury tradition (fig 23). These are clearly ritual, perhaps burial (although the cremated bone that was associated could not be identified as human) deposits. Neither feature produced significant quantities of flintwork, and most of the relevant material retrieved from bulk samples is likely to be of earlier date. The few flakes and cores that can be assigned to this period (including five pieces retrieved from a tree-throw hollow (303) to the west of the main cluster of features) are of slightly different appearance to the Late Neolithic/Early Bronze Age flints recovered elsewhere, and are likely to be the products of a rather less proficient reduction strategy. Similar material was collected in the course of excavations at Christ's College School in Guildford, just over 2km to the north-west of this site, from a range of features of later Bronze Age and Roman date, as well as from within two flint scatters (Marples 2012, 17–29). At Boxgrove School, later Bronze Age flintwork is also likely to be present within the topsoil and subsoil samples and, although in general this cannot be reliably differentiated from the products of Late Neolithic/Early Bronze Age flintworking, some characteristic tool forms have been identified. It is also possible that some flint deriving from earlier episodes of knapping at Boxgrove School was recycled at this time.

A group of small features in the eastern part of the watching brief area (fig 3) lacked finds that clearly dated them but their close grouping, charcoal-flecked fills with fresh burnt and struck flint, and the fact that several cut through colluvial deposit 404, suggests they may be of similar date to the Middle Bronze Age ritual pits nearby. Five of the features contained large flint nodules that might have been used as post packing. The concentration of postholes suggests a small Bronze Age structure, and a circle of 10m diameter placed over them (fig 3)

includes four of those with post packing and three others on or close to its circumference. It is necessary to assume that the southern side of the structure did not survive, either because it was never defined so well or because of greater truncation. Later Bronze Age post-built roundhouses of about this size, often with equally irregular plans, are well known (eg Lambrick & Robinson 2009, 133–41; Hayman 2018, 9–13) and the interpretation seems hard to resist here. The building would, however, have encompassed the pits 407 and 408 and these must either represent pits within the roundhouse or belong to earlier or later activity. The former interpretation need not mean that the finds do not represent structured deposition, although it may be that cremation is a less likely interpretation since such deposits seem to be generally separated from dwellings (eg Hayman 2018, esp 70–5), since roundhouses elsewhere have produced comparable examples of significant deposits within pits (Lambrick & Robinson 2009, 148). Needham (1987, 129) noted the 'poverty of material' of this period from this part of the North Downs and the present site is a rare addition to that. It is best seen as a small domestic settlement, but it is interesting that no indication of associated fields was found, in contrast to the river valley site at Christ's College (Lambert 2012b). The implication may be that the context for the present site was the exploitation of an area of extensive pasture and woodland, rather than a managed mixed farming economy (cf Poulton 2004, 60).

Archive

It is intended that the archive will be deposited with Guildford Museum but circumstances at the time of writing (April 2020) have not allowed this to be confirmed and the material remains with the Surrey County Archaeological Unit, Surrey History Centre, Woking GU21 6ND.

Endnote

The figures and tables listed below are available on the Archaeology Data Service website: https://doi.org/10.5284/1000221
Select *Surrey Archaeological Collections* volume 103 and the file is listed as supplementary material under the title of the article.

FIGURES

Fig 8 Boxgrove School, Guildford. Overall lithic composition of the identified context groups (% recovered for each group, excluding chips)
Fig 9 Boxgrove School, Guildford. Overall proportions of flintwork recovered for each context group, excluding chips
Fig 11 Boxgrove School, Guildford. (A) Flintwork condition by phased context group (% of each group in fair or poor condition, with the remainder in good condition) (B) no 1 flake in good condition (410); nos 2–3 flakes in fair (T4 201 strip 6) and poor (T12 202 strip 5) condition respectively
Fig 13 Boxgrove School, Guildford. Flint chip totals from seven bulk sampled features, and % of all flintwork recovered
Fig 17 Boxgrove School, Guildford. Flintwork, mainly debitage
Fig 18 Boxgrove School, Guildford. Flint cores
Fig 19 Boxgrove School, Guildford. Flint cores

TABLES

Table 1 Boxgrove School, Guildford. Flint catalogue
Table 2 Boxgrove School, Guildford. Flint collected from environmental bulk samples

ACKNOWLEDGEMENTS

The fieldwork was commissioned by Surrey County Council, and Surrey County Archaeological Unit would like to thank them for their co-operation and support for the project. Thanks are also due to Tony Howe, the Surrey County Council Heritage Conservation Officer, for his advice to the client and archaeological team.

In addition, the author would like to thank the following SCAU staff for their contribution to this project: Nigel Randall and Simon Hind for assisting with the fieldwork, Phil Jones, Nick Marples and Tom Munnery for completing the post-excavation work, Giles Pattison for producing the illustrations, and Rob Poulton and Nowal Shaikhley for their overall management and organisation of the project and reports.

Recognition also goes to Mercedes Planas of Souterrain Archaeological Services, for producing the GPS site plans, and the QUEST team at Reading University who coordinated the environmental analyses.

BIBLIOGRAPHY

Anderson-Whymark, H, 2011 Intentional breakage in the British Neolithic: some comments and examples, *Lithics*, **32,** 16–22

Austin, P, Sibun, L, Green, C, & Young, D S, 2013 Boxgrove School, Guildford (site codes: BNSG12 and BOSG12): interim environmental archaeological assessment report, unpubl QUEST client report

Ballin, T B, 2000 Classification and description of lithic artefacts: a discussion of the basic lithic terminology, *Lithics*, **21,** 9–15

——, 2011 The Levallois-like approach of Late Neolithic Britain: a discussion based on finds from the Stoneyhill Project, Aberdeenshire, in A Saville (ed), *Flint and stone in the Neolithic period*, Neolithic Studies Group Seminar Papers, **11,** 37–61

Beadsmoore, E, & Evans, C, 2009 Edgerley Drain Road, Fengate North, in C Evans, E Beadsmoore, M Brudenell & G Lucas, *Fengate revisited: further fen-edge excavations, Bronze Age field systems, and the Wyman Abbott/Leeds Archives*, Cambridge Archaeological Unit, Landscapes Archives Series, Historiography and Fieldwork, **1,** 114–82

Bradley, P, 1999 Worked flint, in A Barclay & C Halpin, *Excavations at Barrow Hills, Radley, Oxfordshire: volume 1, the Neolithic and Bronze Age monument complex*, Oxford Archaeol Unit, Thames Valley Landscapes Monogr, **11,** 211–28

Bronk Ramsey, C, & Lee, S, 2013 Recent and planned developments of the program OxCal, *Radiocarbon*, **55.2–3**, 720–30

Brown, A, 1992 Worked flint – Late Bronze Age, in J Moore & D Jennings, *Reading Business Park: a Bronze Age landscape*, Thames Valley Landscapes: The Kennet Valley, **1,** 90–3

Butler, C, 2005 *Prehistoric flintwork*, Stroud: Tempus

Cotton, J, 2004 Surrey's early past: a survey of recent work, in Cotton *et al* (eds) 2004, 19–38

Cotton, J, Crocker, G, & Graham, A (eds), 2004 *Aspects of archaeology and history in Surrey: towards a research framework for the county*, Guildford: SyAS

Cotton, J, & Field, D, 1987 Neolithic Surrey: a survey of the evidence, in J Bird & D G Bird (eds), *The archaeology of Surrey to 1540*, Guildford: SyAS, 71–96

Harding, P, 1991 Stratified groups from Rowden and Cowleaze, in P J Woodward, *The South Dorset Ridgeway: survey and excavations 1977–84*, Dorset Natural Hist Archaeol Soc Monogr Ser, **8,** 73–87

——, 1992 The flint, in C Gingell, *The Marlborough Downs: a later Bronze Age landscape and its origins*, Devizes: Wiltshire Archaeol Natur His Soc Monogr, **1,** 123–32

Hayman, G, 2018 Neolithic and Bronze Age discoveries at Home Farm, Laleham, 1991–1999, in G Hayman, N Randall, & T Collie, 2018 *Neolithic, later Bronze Age, Middle Iron Age and medieval discoveries in Ashford and Laleham*, SpoilHeap Publications Occas Paper, **9**

Healy, F, 1983 Are first impressions only topsoil-deep? The evidence from Tattershall Thorpe, Lincolnshire, *Lithics*, **4,** 28–33

——, 1988 The artefacts: lithic material, in F Healy, The Anglo-Saxon cemetery at Spong Hill, North Elmham, part VI: occupation during the seventh to second millennia BC, *E Anglian Archaol Rep*, **39,** 30–61

Jones, P, & Hawkins, K, 2019 The pottery in Marples, N, & Poulton, R, 2019 *Prehistoric and early medieval landscapes at North Park Farm, Bletchingley, Surrey*, SpoilHeap Publications Monogr, **21**, 132–49

Lamdin-Whymark, H, 2008 *The residue of ritualised action*, BAR Brit Ser, **466**

Lambert, R, 2012a An archaeological trial trench evaluation at Boxgrove Primary School, Guildford, Surrey (TQ 0157 5057), unpubl SCAU client report

——, 2012b *Bronze Age and Roman farming and settlement at Christ's College School, Guildford*, SpoilHeap Occ Paper, **2**

Lambrick, G H, & Robinson, M A, 2009 *The Thames through time, the archaeology of the gravel terraces of the upper and middle Thames, the Thames valley in late prehistory 1500 BC–AD 50*, Oxford Archaeology, Thames Valley Landscapes Monogr, **29**

Marples, N J, 2012 The flintwork, in Lambert 2012b, 17–29

——, 2013a The flintwork, in R M Lambert, A Margetts, & J Robertson, 2013 *Prehistoric, Roman and Saxon discoveries near Thorpe and Virginia Water*, SpoilHeap Publications Occas Pap, **3,** 52–70

——, 2017 The flintwork, in R Poulton, G Hayman, & N J Marples, 2017 *Foragers and farmers: 10,000 years of history at Hengrove Farm, Staines. Excavations between 1997 and 2012*, SpoilHeap Publications Monogr, **12,** 101–69

——, forthcoming a *Early Neolithic and later flintwork from excavations in Merrow, on the North Downs near Guildford in Surrey*, SCAU report

——, forthcoming b The flintwork, in *A later Bronze Age field system, Iron Age settlement and medieval activity at Mercers Farm, Nutfield, Surrey,* SpoilHeap Publications

Poulton, R, 2004 Iron Age Surrey, in Cotton *et al* (eds) 2004, 51–64

Randall, N, 2012 A desk based archaeological assessment of the proposed development at Boxgrove Primary School, Guildford, Surrey, unpubl SCAU client report

Reimer, P J, Bard, E, Bayliss, A, Beck, J W, Blackwell, P G, Bronk Ramsey, C, Grootes, P M, Guilderson, T P, Haflidason, H, Hajdas, I, Hatté, C, Heaton, T J, Hoffmann, D L, Hogg, A G, Hughen, K A, Kaiser, K F, Kromer, B, Manning, S W, Niu, M, Reimer, R W, Richards, D A, Scott, E M, Southon, J R, Staff, R A, Turney, C S M, & van der Plicht, J, 2013 IntCal13 and Marine13 radiocarbon age calibration curves 0–50,000 years cal BP *Radiocarbon*, **55.4,** 1869–87

Reynier, M, 2005 *Early Mesolithic Britain: origins, development and directions,* BAR Brit Ser, **393**

Watson, W, & Sieveking, G, 1968 *Flint implements: an account of Stone Age techniques and cultures,* 3 edn, London: British Museum