



## Chapter 5: Site and artefact studies

*by Andrew Shaw and Beccy Scott*

### LOST IN TRANSLATION: COMMUNICATING THE PALAEOLITHIC RECORD

The Palaeolithic record often appears to be simply composed of dots on maps. This is certainly the form in which it has been translated through into Historic Environment Records – single points where one or more artefacts have been found. Barring the issues of incompleteness that attend such records for any period, this enthusiasm for pointillism actually serves to distort the record as understood and interpreted by Palaeolithic archaeologists. As emphasised throughout this volume, the Palaeolithic is a period investigated and accessed on a variety of contrasting and complementary scales. This chapter aims to return to the nuts and bolts of this record – sites and artefacts – and to explain the scale and texture of the information that can be extracted from them. Such detail is often lost within specialist literature and archive reports, and it is a failing of the academic Palaeolithic community as a whole that, when attempting to communicate our findings to a wider audience, we too often retreat into clichéd stories, or frame our findings in the language of later prehistory. It is precisely this issue of incomplete translation that the ALSF – and this volume in particular – sought to address.

As explained in earlier chapters (see Chapters 2 and 4), a large portion of the Palaeolithic record actually comprises archives (frequently fluvial) of changing climate and landscape. Humans are not necessarily represented within these. In this chapter, we explore specifically what Palaeolithic sites are, emphasising key differences between such sites, and those more familiar to curators, consultants and contract units. As elsewhere in this volume, the key point here is the question of working on an appropriate scale, and asking the right questions of different datasets. In particular, we deal with ‘secondary context’ sites – a topic that illustrates many of the difficulties encountered when translating the importance of Palaeolithic research between academic archaeologists and other stakeholders. To term a whole group of sites and assemblages ‘secondary’ context implies that they are of lesser significance than a whole group of other sites – and thus perhaps not worth dealing with. In Chapter 1, we put ourselves in the developers’

shoes and asked the obvious question: ‘if you already have a large collection of rolled handaxes from this spot, why bother to collect any more?’ We here address the different scales of questions which such collections (which make up the vast bulk of the British Palaeolithic record) can be used to answer, and present ways in which ALSF projects have shown how this can be achieved, both in terms of research and fieldwork.

To the non-specialist, most Palaeolithic archaeologists might seem a little obsessed with stone tools. The temptation, when translating research from an academic to a broader context, is to concentrate on the most aesthetically appealing artefacts, and to gloss over the seemingly arcane details of the lithic assemblage. We here present a broad overview of the changing technologies of the British Palaeolithic record, as currently understood, whilst emphasising this picture is always open to adjustment in the light of new sites, discoveries and dates. Using examples drawn from ALSF projects, we explain the varied ways in which Palaeolithic archaeologists use the information gleaned from stone tools to understand site formation processes, technical decision making, and how whole landscapes were exploited. This latter point is significant; whilst the aggregate archives of Britain have produced the vast majority of the Palaeolithic resource, it is important to look away from the river valleys to the other places where Palaeolithic lives were lived.

### WHEN IS A SITE NOT A SITE?

Having spent some time traversing the perhaps unfamiliar landscapes of the Palaeolithic, readers whose specialism lies outside Quaternary studies might draw some comfort at reaching, finally, a chapter that deals with the twin archaeological certainties of sites and artefacts. These, after all, are the bread and butter of archaeology and, in a curatorial context, what we seek to protect. Sites and artefacts are the raw material from which Historic Environment Records are wrought – findspots reflecting the physical evidence of how humans modify their world, through digging, building, and making things. In HER terms, in fact,



# FLAGSHIPS, SCATTERS AND PATCHES



**A**lthough frequently offered up as a flagship site (Gamble 1996), Boxgrove exemplifies the problem of trying to extend the concept of the 'archaeological site' to the Palaeolithic record. Even though the exceptionally well-preserved archaeology it has produced allows the reconstruction of hominin behaviour on an individual, and ethno-historical timescale, it is better described as a palaeolandscape than a site (Chapter 2). The deposits making up the Boxgrove palaeolandscape have been mapped over 26km, situated at the point where the uplifted chalk and coastal plain intersect. They comprise a sequence of fine-grained sediments of marine, terrestrial and lagoonal origin, dated to around 480,000 BP on biostratigraphic grounds (Roberts and Parfitt 1999).

**S**ince 1982, more than 90 separate areas within the Boxgrove palaeolandscape have been investigated; half of these have produced artefacts (largely reflecting the use of handaxes) and a number are intimately associated with butchered animal carcasses. The archaeology derives from two primary units: a palaeosol (Unit 4c; estimated to have formed over 20-100 years) overlying a series of exceptionally well-preserved landsurfaces established for short periods on inter-tidal silts (Unit 4b). Pope and Roberts (2005) describe the archaeology contained within these units as spanning a variety of preservational gradients – from momentary snapshots of individual action in the lower landsurfaces, to spatially extensive, more time-averaged patterns, whereby the *in situ* record of the palaeosol scatter coalesce into local concentrations ('patches'; cf. Isaacs 1989) through repeated hominin action.

**T**he behavioural evidence preserved within the Boxgrove palaeolandscape is informative at a variety of scales, ranging from the micro-, meso- and macro-scales. The Q1/A knapping scatter captures the moment and movements of an individual thinning one area of a bifacial roughout (Austin 1994), whilst the dynamics of technology and



5.1.2 Handaxes from Boxgrove

butchery are captured within accumulations such as the GTP17, where eight refitting scatters were associated with the butchered remains of a single horse (Roberts and Parfitt 1999). Whilst handaxe manufacture dominated, no handaxes were actually discarded in this area, instead being carried away for use elsewhere (Pope 2002, Pope and Roberts 2005). Combining such instances with the longer-view temporal focus permitted by material from the palaeosol, however, allows these snapshots to be reshuffled to fit into the panorama provided by the whole landscape setting. All tool-using behaviour was essentially organised in relation to the degrading chalk cliff that backs the northern edge of the palaeolandscape (Roberts and Parfitt 1999), and from which high quality nodular flint was available. Material was tested and selected from this, then carried back away from the cliff, primarily to be reworked into handaxes – frequently at butchery sites (Pope 2002; Pope and Roberts 2005).

**T**he spatial and temporal structure of the hominin world is also accessible at Boxgrove; the Q1/B locality represents a seasonally wet waterhole associated with the palaeosol. Excavation and investigation of this locale was

## BOX 5.1



5.1.1: The chalk cliff backing the Boxgrove palaeolandscape, as exposed in GTP 25a

funded by English Heritage (Boxgrove D) These freshwater deposits were rich in butchered animal remains and lithic material, and formed a repeated focus for human action. The artefact assemblage here differs markedly from that recovered from throughout the contemporary palaeosol, being rich in handaxes, flake tools, and antler hammers for flint working (Pope and Roberts 2005, 89). Detailed taphonomic analyses demonstrate that this predominance of handaxes is a behavioural, and not a preservational pattern (Pope 2002). Thus Q1/B represents a position in the landscape repeatedly visited by humans who routinely discarded handaxes. This can be contrast with situations like GTP17, where humans carried their tools away from a single episode butchery site. Overall, handaxes were discarded most frequently close to the cliff and freshwater (Pope 2002; Pope and Roberts 2005). The association of increased handaxe discard near raw material sources and fresh water has been frequently commented upon on a coarse scale, usually based on coarser secondary context patterns and framed in terms of habitat preference (eg Ashton 1998). Critically, Pope's detailed work reintroduces the concept of hominin agency to interpreting such patterns, through investigating them on an ethnohistorical scale (Pope 2002; Pope and Roberts 2005). Within the generational envelope of these time-averaged contexts, hominin behaviour can be seen as having a structuring effect upon subsequent actions.

**T**he flagship individual scatters preserved at Boxgrove are therefore equally informative when viewed either from the ground upwards, or in long shot (repeated behaviour over 20-100 years) and wide view (the structure of the palaeolandscape). Even when dealing with such well-preserved archaeological signatures, it is essential to take account of the different scales over which particular assemblages accumulated. The Boxgrove palaeolandscape represents an exceptional setting within which such relationships can be investigated.



5.1.3 The Q1/A knapping scatter, Boxgrove



5.1.4 Q1/B waterhole, Boxgrove

an artefact can become a 'site' – a single discovery transformed to a dot on a map where somebody in the past dropped something. Most archaeologists would be comfortable, moreover, with accepting the definition of a site as somewhere in the landscape where artefacts and other evidence of occupation (whether actually dwelling, or undertaking other activities) occur together, allowing what people did to be reconstructed on an ethnographic and historical scale. In practical terms, we often think of sites as defined by the presence of cut features and the material contained within them. Such traces are what we are used to dealing with in later prehistoric and historic periods (for instance, pits, ditches, buildings and post holes) and their evaluation and investigation is routine practice.

Simply extending the same definition of sites to the Palaeolithic record becomes problematic. Cut features are rarely left by any hunter-gatherer group and are particularly uncommon in the Lower and Middle Palaeolithic, when evidence for any sort of structure is ambiguous at best. Another way of thinking about sites might be to consider them as places where humanly modified material (stone tools and worked bone) is concentrated. Such material may occur sporadically throughout Pleistocene sediments, but it is only where many such artefacts are concentrated that we can talk about a site in a sense equivalent to how we think about them in more recent prehistory. However, in the Palaeolithic, such concentrations may not be a direct reflection of repeated human behaviour in the past, but of other taphonomic and collection factors – for instance, different fluvial dynamics in different stretches of a river, or the indefatigable nature of particular dedicated collectors who, by their very activities, create clusters of finds within their collecting ambit. Sites where artefacts and evidence of occupation and other activities are preserved in such a way to allow human behaviour to be reconstructed at an ethnographic or historical scale are extremely uncommon, and these isolated occurrences are the flagships around which a flotilla of interpretations coalesce (cf. Gamble 1996).

Palaeolithic archaeology, perhaps even more than any other period, demands an approach that considers human activity within its entire landscape context. A broad distinction can be drawn, then, between two different types of site: those from which humanly worked artefacts have been recovered, and those which do not contain direct evidence for a human presence, but which allow the detailed reconstruction of the environments within which they were active. Reconstructing both the landscapes through which early humans moved and those that they avoided is crucial for understanding hominin adaptations, behaviour, and capabilities (see Chapter 2). Thus, a Palaeolithic site might contain no evidence that humans were ever there and yet be critical to reconstructing the non-analogue environments (in terms of climate, vegeta-

tion and animal biomass) of the Palaeolithic. These 'ghost ships' provide the environmental cargo necessary to float broader behavioural interpretations. Perhaps more importantly, building up a picture of the types of environment that humans could not survive in, or periods in which they were not present, allows us to look at their adaptive capabilities, and especially, in the case of Britain, the conditions necessary for colonising a landmass that fluctuated between island and peninsula.

In Palaeolithic terms, then, an archaeological site is a location that provides evidence upon which inferences about past environments can be built, and which thus can contribute to our overall understanding of changing hominin adaptations. Most deposits encountered within the context of aggregate extraction would fit this broad definition. However, different types of deposit – and the humanly modified material that is sometimes contained within them – are appropriate for addressing different scales of question.

#### SPACE, TIME AND SCALE

Clive Gamble (1996) suggested that the Palaeolithic artefactual record is made up of two main types of site: 'Flagships' and 'Dredgers'. The first group comprises sites that provide detailed information that can be related to an ethnographic scale of analysis – for instance, refitting lithics and cut-marked animal bones, that have been minimally reworked since their deposition. Dredgers, which are far more common, are sites at which reworked artefacts derived from the wider landscape have become associated within a geological deposit. Most of the Palaeolithic artefacts recovered in the context of aggregate extraction could broadly be termed dredgers, although Gamble's intention was not to denigrate the value of the record but to demonstrate that *both* types of site are important. Building up a picture of hominin adaptation and behaviour involves 'tacking' between the scales of analysis appropriate to each preservational scale. Flagship sites are few and far between, but feel familiar to most archaeologists because they allow interpretations to be offered that operate at the historical or ethnographic level – the level of interpretation that we are used to dealing with in later periods. However, relying only on these flagship sites would result in a very partial picture of the Palaeolithic world; isolated snapshots, such as those we can reconstruct from parts of the Boxgrove palaeo-landscape (see Box 5.1).

Since most sites from aggregate sources could fall within the dredger category, it is often difficult to communicate the level of inference they allow, and how these complementary scales allow us to build up a picture of the Pleistocene world. Certainly they are in 'secondary context' and represent clusters of material that was not originally discarded in the place from which it was recovered, but has been deposited by subsequent natural processes: river

## Chapter 5

action, slope processes and the like. But does this justify Palaeolithic specialists, curators and, especially, stakeholders working in development archaeology who do not want to upset the apple cart of preferred client status, writing them off as mere palimpsests? Are they really associations of reworked artefacts of different ages, associated with a particular deposit simply by chance and possessing limited interpretative potential, or do they have value? We would argue the latter.

Dealing with artefacts from secondary contexts of course demands that two fundamental caveats be always borne in mind:

- That the associated materials might originally have been eroded from much older sedimentary envelopes
- That these artefacts might have been originally manufactured, used and discarded long before the deposits within which they are associated were laid down (Hosfield and Chambers 2004, 39)

Certainly, such assemblages are not appropriate for answering fine-grained questions but, as Clive Gamble has pointed out, the problem lies with the appropriateness of the questions posed, and not with the data themselves (Gamble 1996, 65).

The different interpretative scales at which Palaeolithic archaeologists are forced to think operate in a nested fashion. Roughly speaking, artefacts and ecofacts that have become associated within a geological deposit (eg a gravel river terrace) over a very prolonged period of time allow the 'hard framework' of hominin adaptation to be reconstructed. For example, a collection of handaxes brought together within a gravel over many hundreds and thousands of years might indicate only one type of raw material was used, and that this relates closely to the nature of the local solid geology. A change in the physical nature of the local environment (such as a river downcutting into a different type of solid geology) might be indicated by a change in the types of artefacts present, or the raw material used to produce them. Thus, assemblages that have been brought together over long periods of time often allow us to reconstruct the material limits within which more flexible, individual hominin choices were made.

Deposits and assemblages that have been brought together over shorter and shorter periods, then, allow insight into increasingly fluid choices, from the choice (or ability) to colonise a particular region, or manufacture a particular type of tool, down to the level of the individual knapper in the case of a refitting sequence. Not all sites that could be described as dredgers are therefore informative at the same scale of analysis, emphasising again the importance of understanding how particular deposits accumulated before dealing with any artefacts they may contain. This question of scale is key and it is important to understand what

timescale a particular site reflects, before offering any interpretative statements based on the artefact collection.

The ALSF commissioned *The Archaeological Potential of Secondary Contexts* project (APSC) in 2002 specifically to assess the value of the secondary context resource for addressing current and future research objectives. Critically, the project emphasised that archaeological assemblages derived from secondary contexts are unique not only in terms of the time over which they accumulated, but also in terms of the catchment from which they derive. Thus some secondary context sites combine artefacts and ecofacts drawn from spatially distant sources (such as an entire region, or river valley), whilst others (where many tools are found together) may reflect the reworking artefacts that have travelled minimally from the place where they were originally discarded (but see Hosfield 1999). Therefore, the three key questions that need to be posed when dealing with archaeology from a secondary context are:

- Between what dates did the deposits containing the archaeology accumulate?
- Where were the artefacts associated with a secondary context originally discarded?
- When were the artefacts associated with a secondary context originally discarded (ie have they been reworked from an older deposit)?

Significantly, the APSC emphasised that in order to ask questions appropriate to the secondary context in question, it is important to recognise the mechanisms through which it accumulated (Hosfield and Chambers 2004). Using models drawn from well-dated Late Glacial/early Holocene fluvial sequences, they emphasise the following temporal characteristics of the fluvial record which affect the composition of assemblages from secondary contexts:

- Rivers are most active, and therefore most likely to rearrange archaeology from the floodplain, during periods of climatic instability – for instance, the transition from glacial to interglacial conditions, but also in response to smaller scale oscillations in climate
- Fluvial sediments are not deposited at the same rate throughout glacial/interglacial cycles, and so archaeology is likely to be preferentially incorporated into fluvial sediments during more rapid phases of deposition (eg Late Glacial/early interglacials). The fine grained nature of interglacial deposits and their position in the terrace 'sandwich' also mean that they are generally more vulnerable to erosion. Furthermore, sediments laid down early in a cycle will be more deeply buried when a river starts to cut-down, and may have a greater chance of survival. This means that the record is naturally biased towards

Two handaxes were recovered during ALSF funded investigations in the Hodge Ditch area of Chard Junction Quarry, located south of the River Axe, where a variety of techniques have been used to monitor and record changes in the sedimentology of the gravel deposits exposed during aggregate extraction (see Chapter 2). The sequence comprises over 20m of sands and gravels (predominantly fluvial in origin) alternating with fan gravels and solifluction deposits originating from the valley sides. The gravels make up a 'stacked' sequence, reflecting ongoing reworking of floodplain sediments and increasing in age the deeper they occur. Although three other handaxes are recorded as coming from the Chard area, these are the first to have been recovered in the context of modern geoarchaeological investigation (Brown and Basell 2008).

The two handaxes were picked up from the quarry floor at a depth of 18m, towards the base of the gravel sequence. They are made of Greensand Chert and are moderately-heavily abraded, suggesting that they have been reworked, although they may not have travelled far. OSL dates from throughout the gravels show a consistent and logical progression, with the oldest dates indicating the aggradation of lower gravel units at  $367 \pm 35$  ka (MIS 10). This date was obtained on a deposit some 6m above the level from which the handaxes were recovered, which means these artefacts must be older; their condition might further indicate that they were derived from an existing, older, and hence reworked, terrace deposit.

On face value, it is easy to dismiss the importance of two rolled handaxes from a secondary context site; however, these represent the earliest and best-dated evidence for hominin occupation of south-west England. Even the least heavily laden 'dredger' can thus contribute to reconstructions of regional colonisation and landuse.



5.2.1 Handaxe from Chard Junction (courtesy of Laura Basell)

preserving evidence from early interglacial contexts, if at all

- Because of the imperfect resolution of geochronological tools (ie OSL dating), the internal geochronology of river terraces is a floating sequence. Secondary context assemblages may thus be placed 'early' or 'late' in stratigraphical relation to unequivocal interglacial sediments, but further resolution is currently contentious
- Fluvial activity in Late Glacial/early Holocene British contexts seems to have operated on a c. 3000 year cycle; thus secondary contexts may combine artefacts derived from the floodplain every few thousand years, although not necessarily in the same stratigraphic position

This last point is significant. Whilst an entire river terrace may have accumulated over a 70,000 year glacial-interglacial cycle, the artefacts within it may reflect the punctuated sweeping of the floodplain surface every few thousand years or so. In such a situation, it might be possible to identify change over time in behaviour, as reflected by stratified artefacts, and to relate this to changes in material conditions, such as climate and environ-

ment. However, given that secondary context accumulations conflate material from the ground surface with that reworked from older deposits, careful consideration must be given to how secondary contexts accumulated, and what impact these specific mechanisms had upon the composition of the assemblage contained therein. It is only on this basis that an appropriate level of analysis can be selected, and the right questions asked.

Historically, secondary context sites have rarely been used to do any more than attempt to build typological sequences (see McNabb 1996b; O'Connor 1997). However, the very fact that they reflect time- and space-averaged behaviour actually means that they are the only sources of data capable of answering particular macro- and meso-scales of question. As Gamble (1996) has pointed out, the fact that repeated patterns are visible in the secondary context record (ie repeated use of particular places, or choice of tool making technique) reflects the fact that these behaviours are selected for. In fact, secondary contexts sites as a category can allow us to investigate processes that operate on an evolutionary timescale.

Through the APSC Hosfield and Chambers (2004, 302) propose a framework for considering what

# REFLOATING DREDGERS 2

# BOX 5.3

The site of Welton-le-Wold was one of the first reinvestigated through the ALSF in 2003. Archaeology and fauna had been recovered from a series of sand and gravel quarries around the village since the 19th Century. The sequence was first described by Straw, following fieldwork between 1969 and 1972 when a 30m section was cleared, which recovered three handaxes, a retouched tool, and mammalian fossils (see Chapter 4). All came from gravel, 3.25m below till. Straw subdivided this gravel into two units (Upper and Lower Welton Members) and the till into three units – from bottom to top, Welton Till, Calcethorpe Till and Marsh Till. It was suggested the Marsh Till was Devensian in date.

The ALSF funded project aimed to reassess the extant excavation archive, to undertake further investigations of the surviving deposits, and to use these investigations as the basis for outreach work and wider public engagement. In particular, the project sought to establish the age, depositional context, and taphonomy of the artefacts and fauna, through reanalysis of the material and resampling of Straw's section. Reanalysis of the artefacts showed the three handaxes and a flake (unretouched) to be in variable condition; one handaxe is significantly more rolled than others. Interestingly, one handaxe shows evidence that it has been reshaped and re-sharpened.

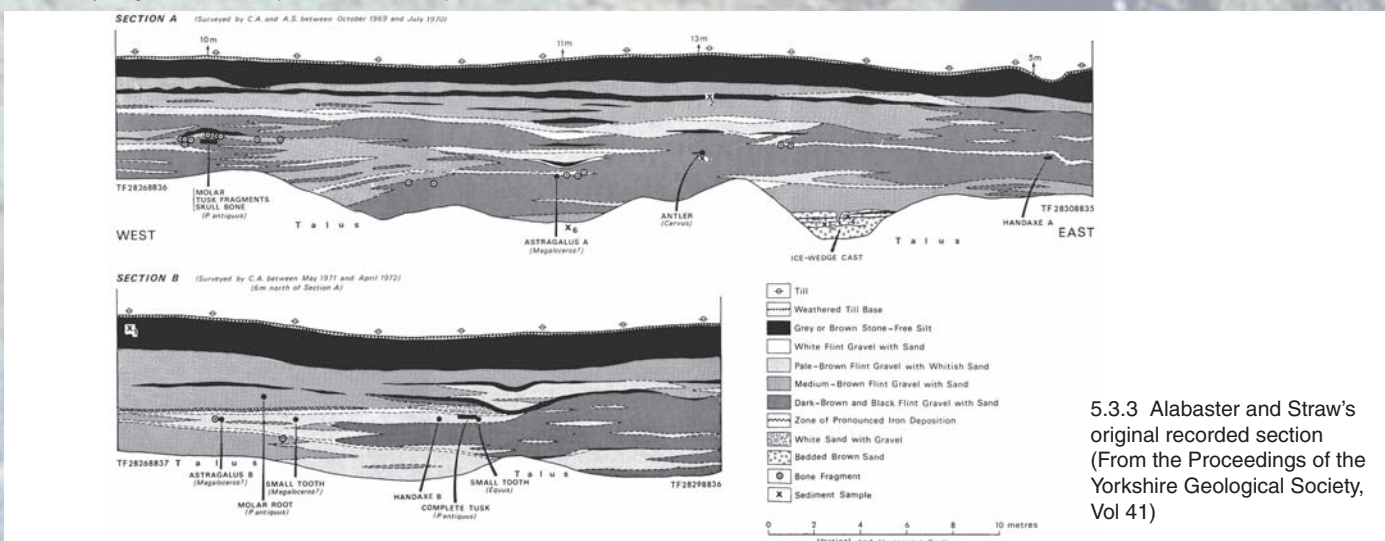


5.3.1 Handaxe from Welton-le-Wold



5.3.2 Excavating the elephant molar from the western quarry face in 1969 (Photo Alan Straw)

Limited fieldwork (boreholes) generally confirmed the sequence recorded by Straw and Alabaster (1976); the Welton Till is separated from the underlying gravels by a thick bed of silt and the gravels subdivided into an Upper and Lower unit. Archaeology was restricted to the Upper gravels – a fluvial deposit some 6 metres thick, reflecting the activity of a small braided river. The silts result from loess deposition within standing water, whilst the basal gravels were laid down during a cold period; diamictons are present towards the base of the sequence, interpreted as having been reworked from the valley sides by solifluction. Provisional OSL dates obtained from throughout the sequence suggest an MIS 8 attribution for the Lower gravels and an early MIS 6 attribution for the lower (Welton) Till, as well as a tentative date of 150,000 BP (i.e. late MIS 6) for the lower part of the Marsh Till, sampled in the Lincolnshire Wildlife Trust Reserve adjacent to Straw's section. This suggests that all the tills at Welton-le-Wold are in fact attributable to MIS 6, and the subjacent gravels to MIS 8/7. The handaxes, being rolled, probably date to an earlier period. The work at Welton-le-Wold demonstrates how comparatively little, surgically targeted (and thus cost effective) fieldwork can actually add an enormous amount of value to existing collections.



5.3.3 Alabaster and Straw's original recorded section (From the Proceedings of the Yorkshire Geological Society, Vol 41)

information can be derived from secondary context sites that takes account of differing spatial and temporal scales of research question. The temporal scale over which a context accumulated and artefacts became incorporated is related to different scales of fluvial process. Thus, short-term accumulations are those which are incorporated within fluvial structures that form over periods of hundreds or thousands of years; conversely, examples of long term accumulations include those which accumulate over a whole glacial-interglacial cycle (ie everything from a particular river terrace). Spatially, they break the catchment from which associated archaeological material is drawn down to three levels, all of which in the terms utilised throughout this volume would (unless combined into regional syntheses) probably fall within the meso-scale of analysis (Hosfield and Chambers 2004, 302):

- On-site – evidence of human activity has been rearranged over distances < 100m
- Off-site – evidence of human activity has been rearranged over distances between 100m and < 1 km
- Basin-wide – evidence for human activity is drawn from the entire upstream catchment of the river (> 1km)

Even the broadest of these spatio-temporal groupings, however, can be used to answer particular scales of research question, and thus are important evidence for building up an understanding of how humans engaged with the Pleistocene world. Recent attempts to use artefacts from river terraces to reconstruct hominin demography on the basis of the number of artefacts contained within different river terraces illustrate this (Ashton and Lewis 2002; Ashton *et al.* 2011). In these studies, *The English Rivers Project* (TERPS) data on the numbers of handaxes and Levallois flakes were extracted for the Middle Thames (Ashton and Lewis 2002) and Solent (Ashton *et al.* 2011). The number of artefacts from each river terrace was considered to act as a proxy for population density in that region (river valley) when the terrace aggraded, with variations in duration of accumulation and collector bias ostensibly taken into account by reference to a 100,000 year base-line and modelling the extent of urbanisation and quarrying (see above for problems with both these assumptions). Because each terrace is dated in relation to others in the same sequence, a rough model of population density through time can be suggested. Whilst there are problems involved in building such models, secondary contexts can be used to provide a rough measure of how frequently artefacts are discarded. Whether this reflects number of people, or a change in how stone tools were treated by hominins, however, remains a moot point. The data drawn from the aggregate record as a whole, therefore, as recorded by the TERPS, can be

used to investigate broad questions of demography and colonisation. However, asking appropriate research questions of individual secondary context sites requires careful assessment of the age and history of each assemblage. The potential of these secondary contexts for developing our understanding of the Palaeolithic has been repeatedly demonstrated through ALSF projects, most notably Chard Junction (Box 5.2), Welton-le-Wold (Box 5.3) and Broom (APSC) (Box 5.4).

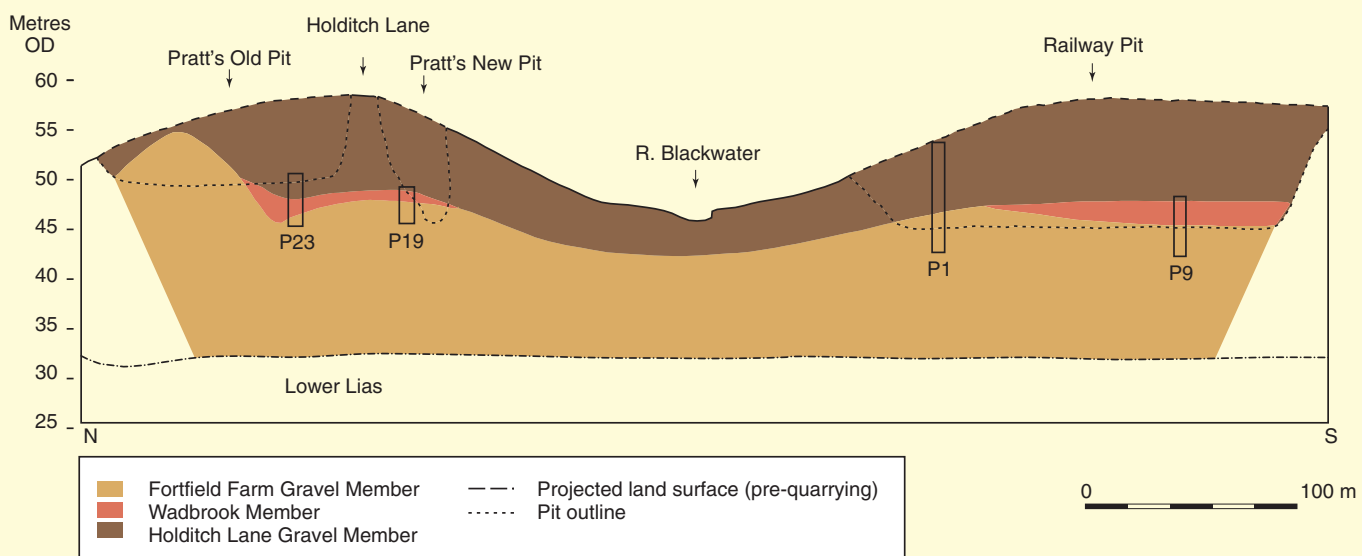
## COLLECTIONS AND COLLECTORS

The Palaeolithic archaeological record is slightly peculiar in comparison with that of later prehistoric periods. As noted many times in this book, by far the majority of the artefacts that fill British museums, and upon which most of our analyses are based, were collected by non-professional archaeologists before the widespread adoption of mechanised aggregate extraction after the First World War. Indeed, the chances of a Palaeolithic artefact ever reaching a museum were dramatically altered after 1918: mechanisation drastically reduced the chances of a workman or collector even noticing an artefact, whilst the drive to build ‘homes fit for heroes’ rendered many of the gravel spreads in West London and North Kent archaeologically inaccessible.

Following the widespread acceptance of the antiquity of the human species in 1859 (Evans 1860; Prestwich 1860), Sir John Evans, the pre-eminent Palaeolithic archaeologist of his day, urged those with an interest in such matters to go out and seek artefacts and bones equivalent to those they had viewed on the continent at St Acheul in the Somme Valley. His call was heeded by a plethora of local collectors – most typically, those with an existing interest in the natural world, and especially fossil animals. This was the age of the great Victorian polymath, marked by the formation of many local learned societies of catholic tastes – for instance, the West Kent Natural History, Microscopical and Photographic Society – and the appearance of popular publications (McNabb 2012) targeted at the ‘learned man’ (and he was almost without exception a man!).

These late Victorian and Edwardian zealots were a disparate group, and the different ways in which they undertook their collecting impacted upon both what was collected and the information that can still be extracted from their collections. Indeed, the records kept by some were extremely detailed, allowing many intricacies of geological and depositional context to be reconstructed. In fact, the careful work of particular local collectors means that their archive material still has much to contribute, both to modern academic research and the protection of the historic environment. For instance, the west London archaeologist John Allen Brown collected from a variety of small gravel pits in Acton and Ealing, as well as taking the occasional foray out towards Slough on the newly constructed Great Western





5.4.1 Schematic section illustrating the Broom Pleistocene deposits (Hosfield and Green 2013, fig 4.1)

The Broom gravel pits are located in the Axe Valley, some 3km downstream of Chard Junction. Artefacts have been recovered from the locality since at least the 1870s, principally from three pits: Railway Ballast, and Pratt's New and Old Pits. Most were amassed by C.E. Bean of Sherborne in the 1930s. At least 2301 artefacts are still extant, predominantly handaxes (1903) or handaxe fragments and roughouts (77). The fluvial sequence exposed in the Broom quarries is up to 20m thick and divided into three units, comprising a basal, flint-rich gravel, surmounted by finer beds of gravel and sand, with a chert-rich gravel capping the sequence.

The reinvestigations of Broom undertaken as part of the APSC project (Archaeological Potential of Secondary Contexts) were multi-faceted, and directed towards establishing the temporal interval over which the artefacts were brought together, the processes which led to the formation of this secondary context assemblage and the size of the catchment from which the archaeology was drawn. On this basis, the Broom assemblage could be used to examine questions relating to handaxe variability within Britain during the MIS 9-8 transition — a time when, in other areas, Levallois flaking was entering the technological repertoire.

Fieldwork at Broom indicates three primary periods of aggradation; lithostratigraphy shows the upper (Fortfield Farm) and lower (Holditch Lane) gravels to reflect cold climate deposition, separated by temperate deposits (Wadbroom Member). A sequence of OSL dates taken indicates a mid MIS 9 - mid MIS 8 date for the Wadbroom Member and a MIS 8-7 date for the Fortfield Farm gravels. Bean maintained careful notes of where and how he obtained his artefacts, allowing artefact position within the gravels to be reconstructed; the assemblage came predominantly from the Wadbroom Member, though material also came from the Fortfield Farm gravels above.



5.4.2 An asymmetrical handaxe from Broom (see Hosfield and Chambers 2009; handaxe no. 234, C.E. Bean collection, Dorset County Museum [DORCM 2005.35.AB820])

Reanalysis of the extant artefact collection suggested that they represent a locally derived, secondary context accumulation — material brought together by the periodic reworking of the adjacent floodplain and contemporary with the Wadbroom Member. Some were then reworked into the overlying Fortfield gravels — there is an erosional unconformity at the top of the Wadbroom gravels. Thus it seems likely that Broom was subject to a single, continuous phase of occupation, perhaps extending over several generations, and restricted to this warm period, but with a complex albeit local post-depositional history. Many of the Broom handaxes are asymmetrical; reanalysis suggests that this relates to a short-lived, local tradition, although the component is not as pronounced as previously suggested.

*Lost Landscapes of Palaeolithic Britain*

Railway. Although not the specific subject of an ALSF project, Brown's sphere of activity was captured by a number of funded initiatives, including *The Middle Thames Northern Tributaries Project* (MTNT), and the *Greater Thames Survey of Known Mineral Extraction Sites*. Because of his recording practices, this material is still useful today. Brown marked the artefacts he found carefully with details of date, depth, and the nature of the deposit from which they came (Fig. 5.1). It also seems that he kept a notebook recording further details of these finds; it is likely that this was kept with his artefact collection when it was sold on after his death, but seems subsequently to have been lost. However, using artefact markings alone, it is possible to reconstruct the basic stratigraphy of the deposits he was investigating (Fig. 5.2; Scott 2011, 32–62). This demonstrates that the handaxes and Levallois flakes collected by Brown from a series of pits around Slough actually come from different stratigraphic positions, whilst reanalysis of the artefacts themselves shows them to be in different physical condition. Thus, through relating these observations to more recent geological investigations of the extant deposits in the area, it has been shown that Levallois flaking, as elsewhere in the Thames Valley (Scott *et al.* 2011), was rarely practised at the same time as handaxe manufacture, and that it is likely to date to around 250,000 BP (Ashton *et al.* 2003). So, observations made over 125 years ago can be used to address questions being posed now about the technological strategies early Neanderthals used to survive.

A large number of ALSF projects included an important archival element that demanded these collectors were investigated (eg TVPP, ProSWeB, Stopes Palaeolithic Project; Welton-le-Wold). For example, the careful observations of Charles Bean formed a significant part of APSC; his skills as a professional surveyor proved invaluable 100 years later when modern scholars returned to his records of the famous chert handaxe site at Broom, Dorset (Hosfield and Green 2013). Similarly, the previously unrecorded collection of Henry Stopes from an area of ongoing intense development around Swanscombe, Kent identified a significant number of previously unknown sites, thus contributing to the management of the modern historic environment (Box 5.5).

Late Victorian collectors were often prevented by their day jobs from spending too much time searching gravel pits. Allen Brown, for instance, took up Palaeolithic archaeology having retired from the family jewellery business. Most opted to



Fig. 5.1 A Levallois core from Creffield Road, Acton, showing the manner in which John Allen Brown marked artefacts. The label reads: 'Creffield Rd Acton 3 pit further W 6F down Oct 30/85'

pay workmen for retaining finds for them – the more conscientious insisting that careful note be taken of context (O'Connor 2007, 86). Socio-economic status thus had an impact upon what a collector might actually be able to secure; for instance, the remarkable London and Luton archaeologist and illustrator Worthington George Smith made a costly mistake early in his archaeological career when he published the location of the London pits from which he was collecting. Smith was not a wealthy man, and he was quickly priced out of the market by other better-off collectors (O'Connor 2007, 87). These wealthier collectors<sup>1</sup> continue to cause irritation to the modern Palaeolithic archaeologist too; many were concerned only with securing the biggest and best implements, whereas researcher-collectors like Worthington Smith were assiduous in retaining *everything* from a particular site. Thus, depending on the calibre of the local collector, the value of extant museum collections can vary enormously. Derek Roe (1981), in

<sup>1</sup> And modern wealthy collectors can still cause problems today. When the TVPP attempted to purchase the remainder of George Turton's collection from the Hilton-Beeston area at auction (Bridgland *et al.* in press), they were spectacularly outbid by a local collector who had no truck with museums or academics. Turton's son had fortunately allowed the project to record and photograph the collection before the sale, but the current whereabouts of the artefacts is unknown. They may just as well have been discarded. Priceless Upper Palaeolithic material (including flints, bones and charcoal) from Kent's Cavern in Devon – all displayed on museum mounting boards – was similarly lost to science that day, this time without record.

## Chapter 5

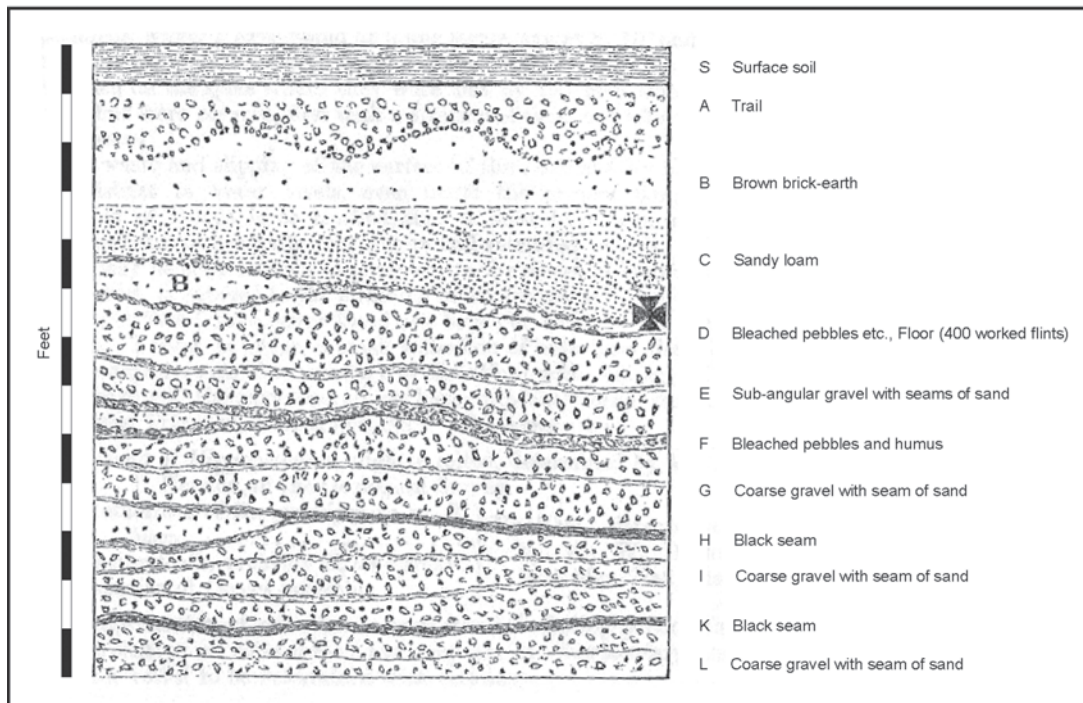


Fig. 5.2 John Allen Brown's section of Pit 2 in the St Barnard's area of Creffield Road, Acton (after Allen Brown 1886). Cross marks position of main artefact level

common with many researchers who have tried to reconstruct the archaeology of the gravel pits between Yiewsley and West Drayton (Middle Thames), has bemoaned the fact that Robert Garraway Rice dedicatedly wrote his name and the fact that he was a Fellow of the Society of Antiquaries on every piece in his collection, rather than details of depth or context!

Old collections can thus be used to address many aspects of current research agendas, and can supply information to modern HER records that may not be available within published sources. They may also provide curators and units with an impression of an area's value and potential at the desktop assessment stage. However, dealing with them requires careful treatment, and a respect for the level of reliable information a particular collection can provide. Before beginning a full reassessment of any museum collection, a nested approach can be taken to assessing its potential value:

- *What is the curation history of a given collection?* This can be defined by consulting all original accession documentation and museum archives (purchase and transfer documents; curatorial notes) to assess how it was obtained, whether it was obtained in its entirety, and what elements may have been lost from (or added to) the collection over time. A visual examination of the collection may be necessary to confirm whether the paper records accurately reflect the composition of the collection: are elements present with different markings (ie handwriting or catalogue numbers)?

- *How reliable is the collector in question?* This requires assessment of published sources; any extant documentation (letters, artefact catalogues, markings on artefacts) may also provide evidence of collection policy – did the collector cherry-pick, or retain everything? Did they visit gravels pits themselves, or purchase second-hand from other collectors on the ground? A visual survey of the collection may also indicate collection policy – does the collection only comprise retouched tools, or is there much small debitage, indicating that everything was retained
- *How much detail concerning position and context can the collection and its associated documentation provide?* An assessment of the paper record, and a visual examination of the artefacts themselves, will indicate what level of detail can be extracted from a given collection

In short, it is critical to maintain rigorous standards of sample hygiene when dealing with old collections.

#### TYPES, TECHNIQUES AND TOOLKITS: LOWER AND MIDDLE PALAEOOLITHIC ARTEFACTS

The handaxe casts a long historical and aesthetic shadow. Easily the most identifiable of all Palaeolithic artefacts, it is predominantly handaxes that have always made it into the hands of quarry workers, collectors, and – eventually – into local HERs. Indeed, the fact that handaxes are so recognisable has led to the impression that they are the only

# STOPES PALAEOLITHIC PROJECT

The Stopes Palaeolithic Project (Wenban-Smith 2004, 2009) focused on the work of a single, dedicated collector, Henry Stopes (1852–1902). Stopes amassed an estimated 100,000+ artefacts in the late 19th century. He did not publish widely, and thus is not well known. However, his collection and associated documentation form a critical resource for identifying sites in the Swanscombe area that were not yet recognised and incorporated into either the Southern Rivers Project or the Kent Historic Environment Record. The Swanscombe area (within the Lower Thames corridor) is both a key area for the Palaeolithic and also subject to intense ongoing development. The primary objectives of the project were:

- To identify the locations of Stopes' find-spots, especially locations with surviving Pleistocene sediments not yet recorded by other projects
- To identify the stratigraphic context of Stopes' artefacts, and to relate this to mapped Pleistocene sedimentary units
- To assess the research potential of the artefacts in the Stopes collection
- To determine appropriate evaluation and/or mitigation strategies for surviving deposits at Stopes' sites

The extant Stopes collection comprises at least 20,000 artefacts, around half of which are Palaeolithic, and which predominantly come from the Swanscombe area. Crucially, Stopes maintained a detailed catalogue of his finds, allotting each a number indicating the locality it came from, and other information on its source and provenance. Some detailed catalogue entries provide indications of site location and specific stratigraphic context. He was also one of those collectors who kept everything, so his collection gives a good snapshot of the knapping techniques and range of tool types at certain sites that were the focus of his collecting activity, in particular Dierden's Pit, Knockhall and Barnfield Pit, Swanscombe.

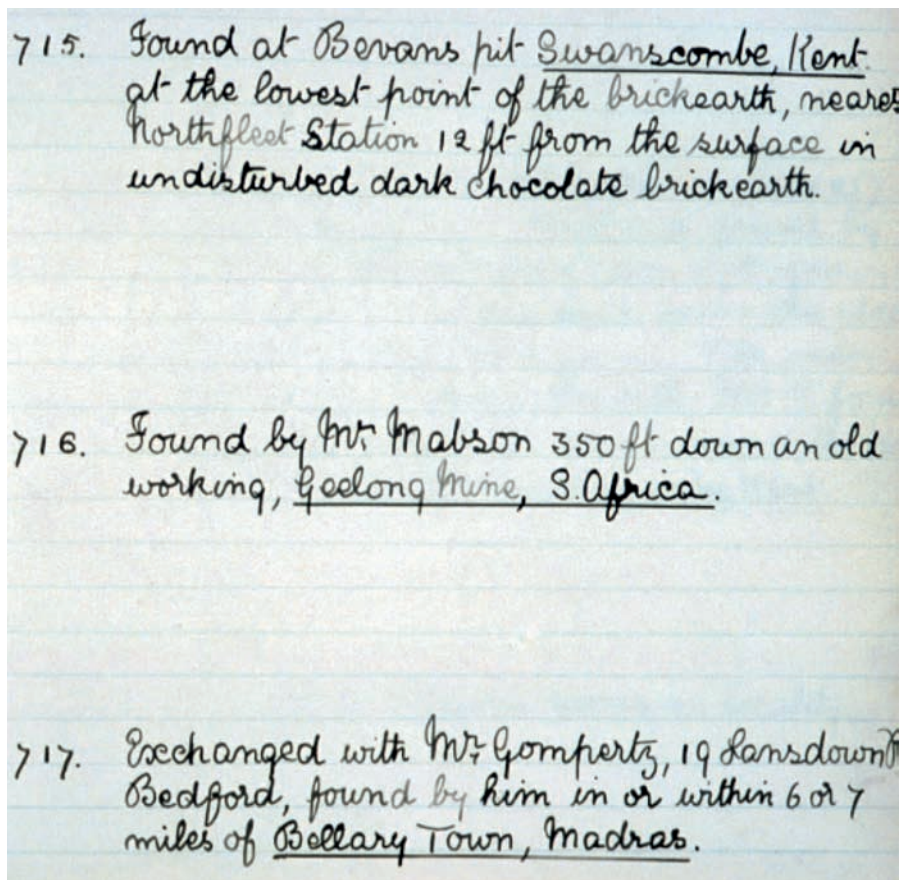
The Stopes Palaeolithic Project successfully used this information to reconstruct where Stopes had collected from, in combination with technological analysis of the collection, now housed in the National Museum of Wales. Often specific sites had been given slightly different names which needed combining; other sites were not clearly named, but could be relocated by reconstructing changing pit location and building work in the Swanscombe area through map regression. More than 50 individual Palaeolithic find spots were identified, a major enhancement of Kent HER data. Significantly, a previously unknown major site (Bevan's Wash Pit) was identified within a block of land to be impacted upon by development around Ebbsfleet International Station.

Matching-funding for the curatorial side of the Stopes Palaeolithic Project was provided by the National Museum of Wales. A notable portion of the Stopes collection was repacked, reflecting the relative significance of different elements of the collection, and each artefact was documented to item-level to enhance its accessibility to academic researchers. The project additionally involved a number of outreach initiatives, forming a core theme within the National Museum Cardiff exhibition 'Why we Collect'; artefacts from the collection were used in guided handling by visitors, as well as within educational settings from primary schools to universities. An index of all archive material consulted during the project was lodged with Dartford Borough

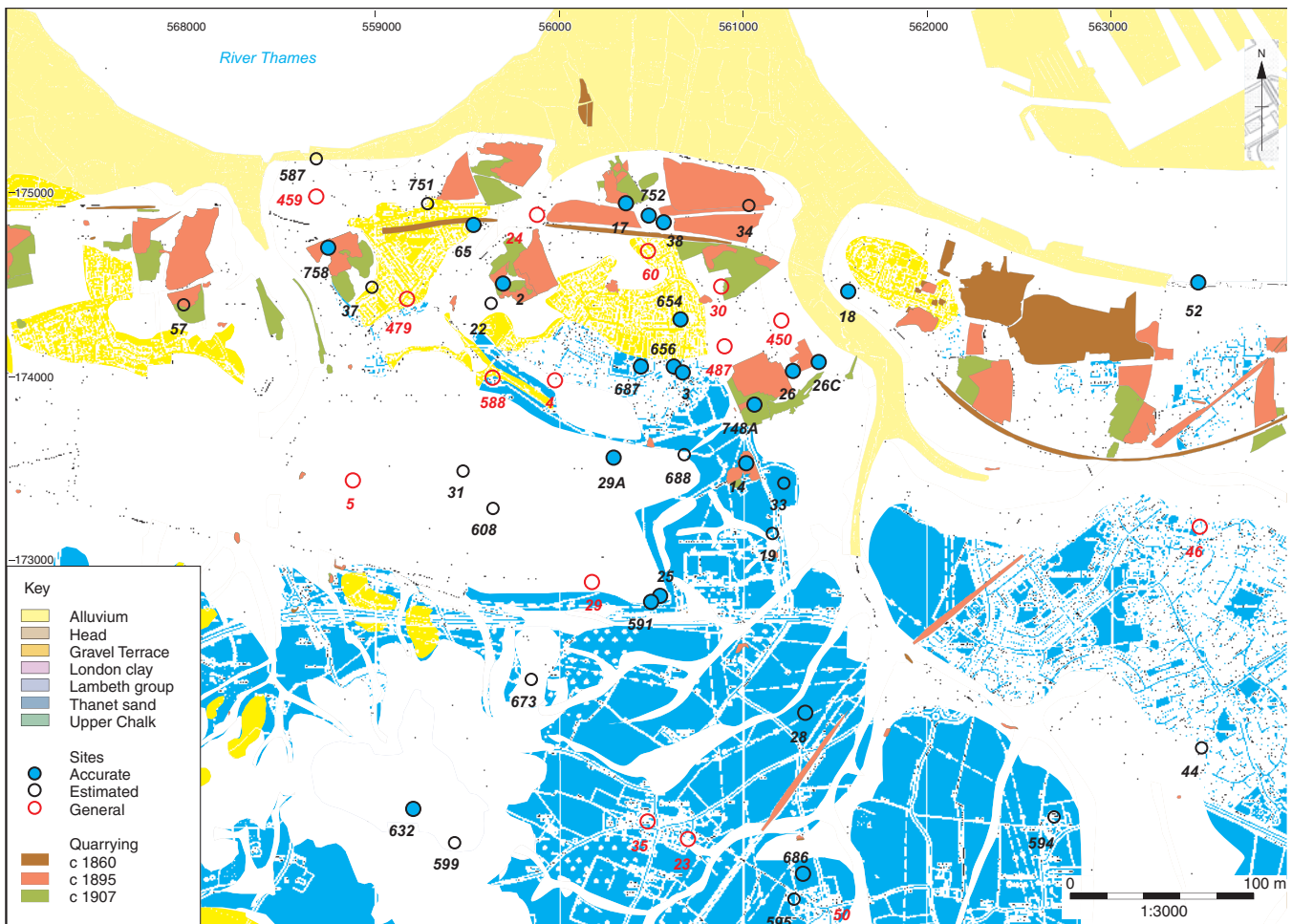


5.5.1 Lithic artefacts marked by Stopes

Library, English Heritage, National Museum of Wales, Kent County Council (Archaeology Section) and the Centre for Kentish Studies, Maidstone. The Stopes Palaeolithic Project demonstrates the rich resource that museum collections and archives represent in terms of the Palaeolithic heritage. When carefully handled, this museum resource can help address major academic research questions and enhance protection of the surviving Palaeolithic heritage, and, crucially, communicate how this is achieved to a broader public audience.



5.5.2 Typical entries from Stopes' catalogue



5.5.3 GIS screenshot, Stopes' findspots around Swanscombe, Kent (Stopes Palaeolithic Project Area 2, Wenban-Smith 2004)



## Chapter 5

significant class of artefact that might be recovered from Pleistocene deposits – an impression only reinforced by a tendency amongst some researchers to talk about debitage products as ‘waste’ flakes. In fact, all classes of lithic artefact have the potential to provide evidence of past technologies and the ways in which early humans engaged with their material world.

### The earliest occupation

Thus far, we have no evidence that the first hominins to colonise northern Europe manufactured handaxes; flint tools from Happisburgh (dated to at least 800,000 BP) on the north Norfolk coast comprise cores, flakes, and a number of retouched tools (Box 5.7; Parfitt *et al.* 2005). Certainly, no handaxes have been recovered from the earliest deposits at the site, and neither have any flakes which unequivocally result from their manufacture, and which might indicate that handaxes were made in the area, but were carried away and discarded elsewhere. The technology used to produce the Happisburgh assemblage is simple, and one which persists throughout the Lower Palaeolithic: fine-grained, brittle stone – like flint or chert – is struck in a controlled manner with a stone, bone or antler hammer in order to detach flakes. These flakes may be struck either in order to shape an internal volume (in which case, the resultant flakes may well be ‘waste’ material), or to produce flakes as an end in themselves.

The products – core and flakes – resulting from the process can vary enormously, depending on a number of factors (Fig. 5.4). Because lithic raw material is not malleable (like for example the clays used in ceramics) working stone is an irreversible process. Importantly, many of the choices made during stone working leave particular sorts of ‘landmark’ on the worked stone. Lithic specialists can read these landmarks and so build up a picture of the particular actions and gestures used to produce each artefact. This applies just as much to ‘waste’ material as to deliberately shaped artefacts: each flake retains on its dorsal face the scars of previous removals, which can be used to recreate the flaking sequence through which it was produced. Much of the work done on Palaeolithic artefacts involves recreating the choices made by hominins when working stone, and inferring why such choices were made; this is the process of building up a picture of the ‘reduction sequence’ or *chaîne opératoire* (see below). Precisely because lithic material is so durable (even when repeatedly reworked by a river) lithic artefacts are our primary source of insight into past hominin action.

Simple core and flake working, as described above, typifies the Lower Palaeolithic; flakes may have been used in their unretouched state, or deliberately modified in order to change (or conserve) the functional properties of their edges. Flakes that have been modified in this way are usually referred to as ‘flake tools’. In the Lower Palaeolithic these usually

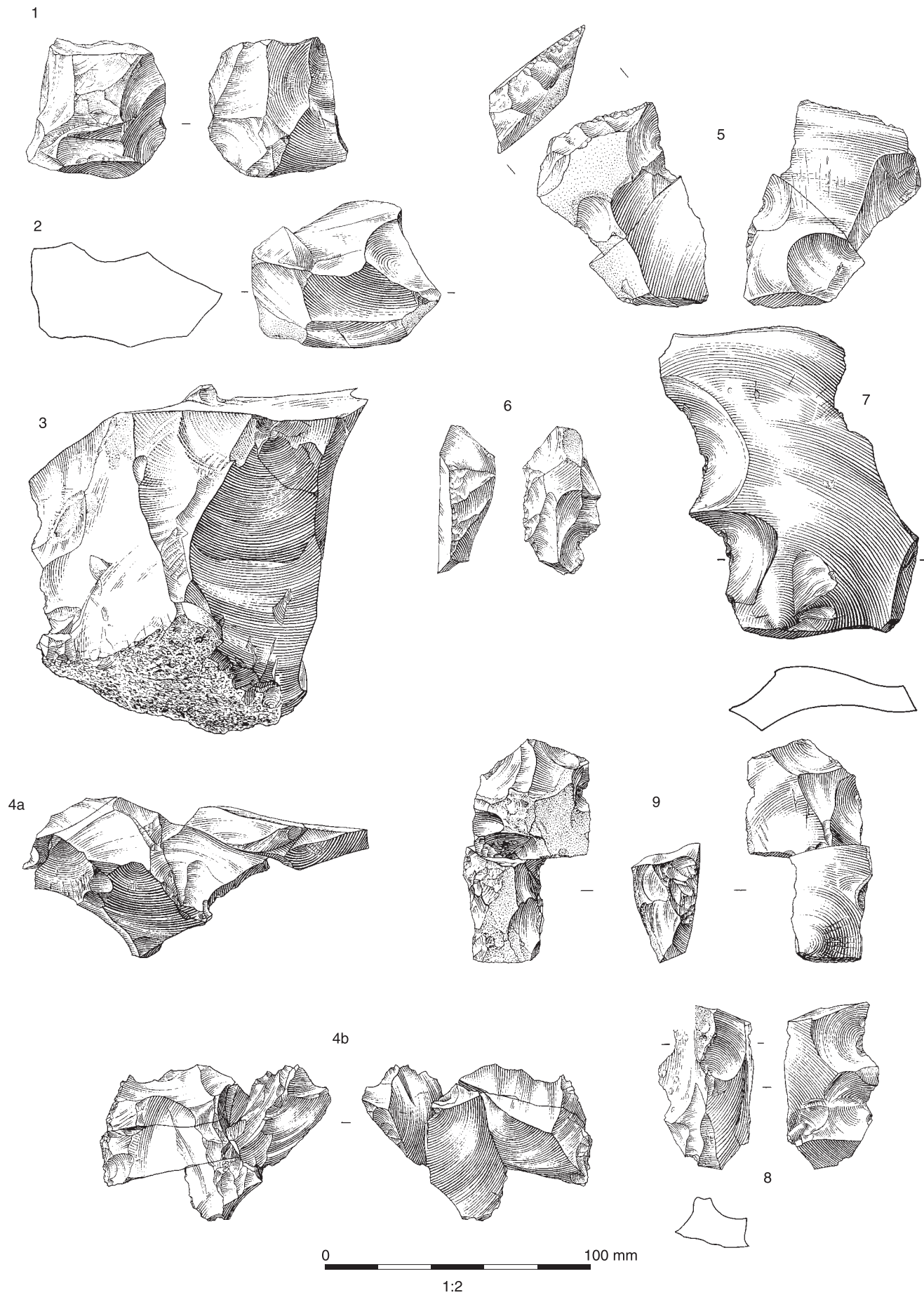
comprise scrapers (a flake on which one or more edges has been repeatedly retouched to become stronger and steeper than it was in its unretouched state) or flaked flakes – flakes from which a further flake (‘notch’), or series of flakes (‘denticulates’), has been struck. Sometimes it is difficult to tell whether a flake worked in this manner would have been used as a tool, or has simply been used as a core itself (Ashton *et al.* 1991).

### Lower Palaeolithic handaxe and non-handaxe assemblages

From about 500,000 BP, Palaeolithic archaeology becomes much more visible in Europe as a whole. From this point onwards over much of western Europe handaxes seem to be the main instrument around which the Lower Palaeolithic toolkit is conceived, although these occur within the background of cores and flakes/flake tools described above. In part, this enhanced visibility of the Palaeolithic record reflects the elevated likelihood of such tools being collected (in comparison to simple cores and flakes), but it also reflects the fact that humans equipped with such tools were much more successful at exploiting northern European environments than the human groups that preceded them. Handaxes were often manufactured using bone or antler hammers which, being slightly elastic, produced flakes markedly different from those produced using a hard hammer – they tend to be thinner and show less exaggerated percussion features such as bulbs of percussion. Such artefacts have a propensity to be under-represented within coarse-grained secondary context situations, being susceptible to breakage and winnowing; handaxes, however, are robust, heavy and highly visible. Although usually fairly symmetrical in planform, handaxes can vary enormously in terms of shape, refinement, degree of working, and techniques of resharpening – and much ink has been spilt discussing the factors that influence such variability (eg Ashton and McNabb 1994; White 1998; McPherron 1999; 2006; Ashton and White 2003). Handaxe assemblages were a key focus for many ALSF projects, including TVPP, MVPP, Stopes Palaeolithic Project, PRoSWeB and NIAN, to name just a few.

Not all Lower Palaeolithic sites contain handaxes, and much research attention has historically focussed upon why this might be so. In Britain, a particular interval of the Lower Palaeolithic – between 426,000 and 394,000 BP (early MIS 11) – is currently viewed as a period within which the regular manufacture of handaxes was not practiced. This peculiarity is referred to as the ‘Clactonian’, after Clacton-on-Sea, where Samuel Hazzledine Warren first noted this lack (Warren 1912; 1926). The Clactonian has been interpreted – or argued away – in a number of ways. As with the earliest, non-handaxe sites, it is always difficult to know whether one is dealing with simply a site that lacks evidence for handaxe manufacture, or whether the pattern is robust, and holds true on a wider spatial and tem-

*Lost Landscapes of Palaeolithic Britain*





poral scale. Secondary context assemblages actually hold the key to answering such questions. If a large collection of artefacts, derived from an extended spatial catchment and reflecting time-averaged behaviour, lacks handaxes, then the observation that handaxes were not routinely manufactured at that time in that region becomes increasingly robust (White 2000). The fact that there are only three artefacts (amongst many hundreds of thousands) that can be described as handaxes which can be shown to have originated from the Swanscombe Lower Gravels (albeit 'non-classic'; cf. Ashton and McNabb 1994; McNabb 1996a), is strong evidence that the Clactonian is a robust feature of the Palaeolithic record of the Thames Valley. However, it is a pattern that requires continuous testing, rather than a feature that can be regarded as fact.

It is tempting to regard the Lower Palaeolithic as something of a monolithic, and monotonous, entity – certainly in technological terms. However, it is arguable that this perspective results from failing to 'tack' (cf. Gamble 1996) successfully between scales of analysis – the secondary context sites, that illuminate the 'hard framework' of adaptation, and the flagship sites, that spotlight individual moments in time. As the chronological resolution of the Palaeolithic record continues to improve through refinements in AAR and OSL dating, so changes within the Lower Palaeolithic begin to become visible. Hosfield and Chambers' (2004; 2009) work at Broom illustrates this: Broom is one of several sites allotted to late MIS 9 – early MIS 8 that exhibits novel technological features when compared to earlier, handaxe-dominated sites (in this case, elevated asymmetry in handaxe planform).

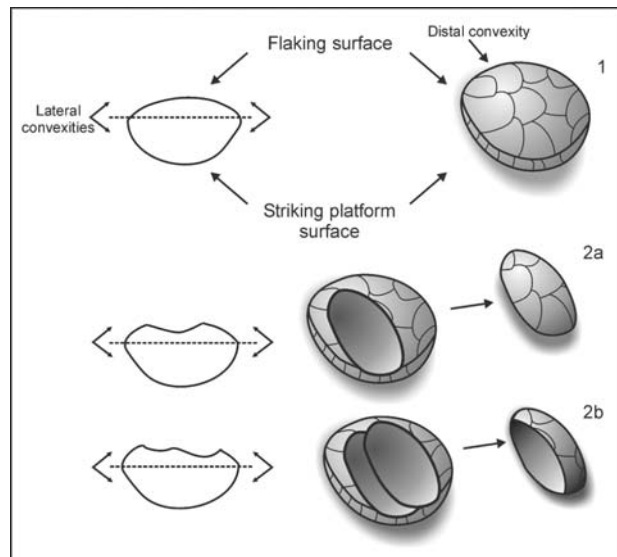
### Levallois and the beginnings of the Middle Palaeolithic

The most striking example of this emerging technological novelty is the site of Purfleet, in the Lower Thames Valley. Here, artefacts have been recovered from throughout gravels of the Mucking Formation of the River Thames, largely as a result of the efforts of Andrew Snelling, who collected material during quarrying at Botany, Greenlands and Bluelands Pits during the 1960s. Artefacts from the Purfleet gravels recorded the presence of humans throughout MIS 9 and as cooling began leading into the MIS 8 glaciation. Notably, there are typo-technological differences between the assemblages collected from different parts of the terrace; handaxes are largely absent from the earliest deposits, but present when the temperate climate sediments that comprise the majority of the sequence accumulated. However, the

*Fig. 5.4 (opposite) A series of typical Lower Palaeolithic flint cores (1-3), a group of refitting flakes (4), scrapers (5-6), flaked flakes (5, 7-8) and a denticulate (9). All from Barnham, Suffolk. Images reproduced courtesy of the British Museum*

assemblage from the uppermost units (Botany Member) is particularly interesting. Many of the cores display features that show that they were being worked in a different, and perhaps more thoughtful, fashion. Care was taken to prepare a platform, and then to preferentially flake only one surface of the core, removing one or several large, flattish flakes. This is in contrast to the way that working of Lower Palaeolithic cores usually proceeded – relying on alternate flaking sequences, with platforms being shifted around as they became exhausted – and is analogous to Levallois flaking (see below) in terms of how stone working was organised (White and Ashton 2003). Purfleet is one of a select handful of European sites that illustrate the different ways in which Levallois flaking emerged in different places around MIS 9/8. Recent ALSF-funded studies have shown a similar technology at the contemporaneous site at Dunbridge (Box 5.6).

After the end of the MIS 8 glaciation, the British Palaeolithic record is dominated by one technological strategy – Levallois flaking. Levallois flaking is a technique that involves deliberately shaping a core surface so that if a removal is struck across this prepared surface, a flake of predetermined size and shape is produced. The specific manner in which this surface is prepared means that the knapper can choose to manufacture particular types of product, and adapt what they are doing throughout reduction (Fig. 5.5). Thus particular techniques produce points, others blades, and still others broad flakes



*Fig. 5.5 Schematic depiction of the process of Levallois flaking. The Levallois concept is defined by the volumetric construction of the core (distal and lateral convexities). It is asymmetric and divided by a secant plane, one surface functioning solely as a striking platform surface, the other as a flaking surface. Flakes are removed from the upper flaking surface, parallel to the plane of intersection (2a and 2b). The number of predetermined blanks produced is limited by the volume existing between the Levallois preparation surface and the plane of intersection (after Boëda 1988)*

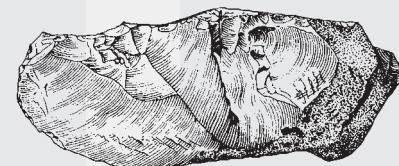
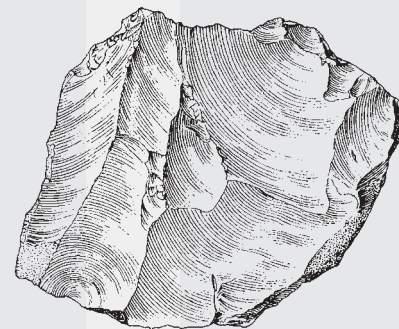
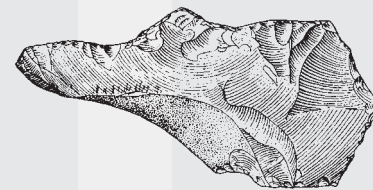
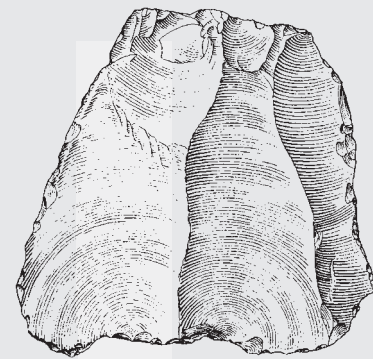
# EARLY LEVALLOIS FLAKING

The ALSF funded work at Dunbridge, Hampshire was carried out in order to enhance understanding of the context and dating of archaeology recovered from the area. Almost 1000 handaxes have been recovered from Dunbridge – a very substantial concentration for the Solent area – predominantly in the early 20th century by White (1912) and Dale (1912, 1918). Significantly, early Levallois material was also recorded (Roe 1968).

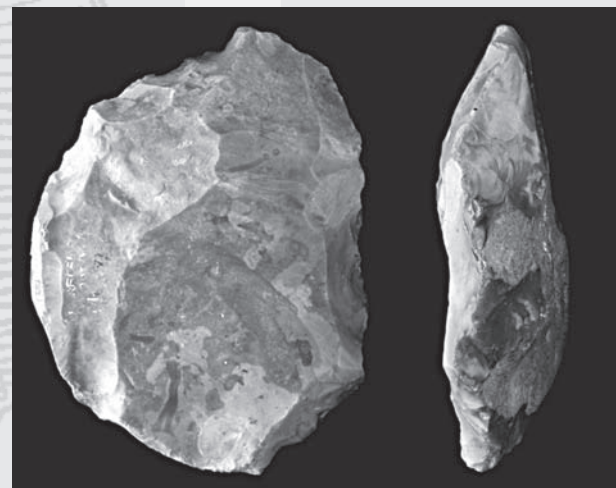
The emergence of Levallois technology is a tipping point in human cultural evolution. Few sites in Britain have as much relevance to this as Purfleet in the Lower Thames Valley (White and Ashton 2003; White *et al.* 2011), where Acheulean and Levalloisian artefacts were recovered from gravels exposed in four separate quarries. These gravels represent the Lynch Hill/Corbets Tey formation of the Thames, banked up against a steep chalk ridge, separating them from the modern river. Towards the top of each sequence, Levallois appears. Andrew Snelling recovered large numbers of artefacts from Botany Pit described as 'proto-Levallois' (Wymer 1968) or 'reduced' Levallois – which appear to show the evolution of the technique from handaxe manufacture (White and Ashton 2003). Notably, such cores are not well represented in the earliest gravels at Purfleet, where the technological strategy was focused around the production of handaxes. The assemblage at Dunbridge is of a similar age, and therefore potentially important to this ongoing research programme

Dunbridge is located on the western side of the River Test, some 500m south of the Dun confluence. Between 1991 and 2007 a watching brief was conducted at Kimbridge Farm Quarry.

Artefacts were recovered from both the quarry and the wash plant. Artefacts from the wash plant were provenanced by relating the discovery date to records of changes in the extent or direction of quarrying between visits. Overburden was removed from the entire site before quarrying, except at the very edges of the excavations. 198 artefacts were recovered during monitoring, 60 within the quarry itself, and 190 of which could be related to position. This included 61 handaxes and roughouts (most of which are rolled and stained), 3 developed Levallois cores (sharp or only slightly rolled, with incipient cones on their faces), and 3 simple prepared cores in similar condition to the handaxes. Dunbridge thus represents the best evidence for the appearance of Levallois flaking in the region. The co-occurrence of simple prepared and developed Levallois cores in different states of condition suggests that, as at Purfleet, the sequence may record the local emergence and adoption of the technique.



0 100 mm



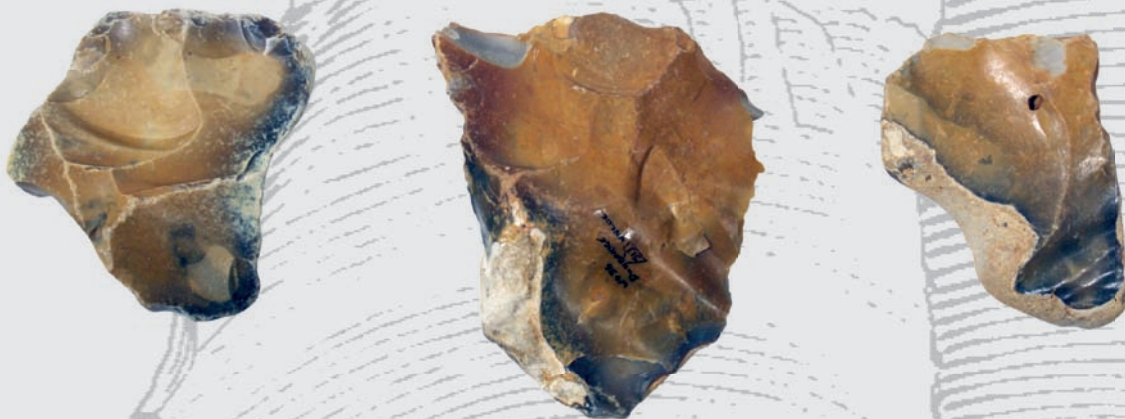
5.6.1 Simple prepared cores from Purfleet, Essex (adapted from Pettitt and White 2012)

## BOX 5.6

Two main fluvial units were identified at Dunbridge; the Belbin and Mottisfont Formations. The Belbin Formation is higher (and older) and is a well-bedded fluvial gravel; the Mottisfont gravel is fluvially bedded, frequently within a loamy matrix, which suggests a soliflucted contribution to the river's bedload. Most artefacts came from the Belbin gravel; the simple prepared cores were recovered from the Wash Plant when only these gravels were being worked, indicating that they could not have come from anywhere else in the quarry.

The significance of Dunbridge is twofold. First, maintaining a long-term watching brief was a pioneering attempt to integrate the investigation and protection of the Palaeolithic resource into the process of aggregate extraction. As the significance of this resource has been increasingly

accepted by curators, provision has been made to incorporate more targeted sampling strategies, directed towards the quantification of artefacts and the recovery of palaeoenvironmental remains (see Chapter 2). Dunbridge was one of the pioneering projects through which different approaches and protocols were tested in the field. Secondly, Dunbridge represents a location at which simple prepared cores (in this instance with handaxes) were recovered from a situation stratigraphically subjacent to gravel containing fully developed Levallois flaking. The former, secondary context industry is dated to MIS 10/9, and the latter to MIS 8. Thus Dunbridge seems to represent another British location at which the mosaic process of the development and adoption of Levallois flaking is attested – a process which occurs at different times in different ways across Europe and the wider world (White and Ashton 2003, White *et al.* 2011).



5.6.2 Simple prepared cores from Dunbridge, Hampshire



5.6.3 Fully developed Levallois core(s) from Dunbridge, Hampshire

### Lost Landscapes of Palaeolithic Britain

(Boeda 1986; 1995; Van Peer 1992). Levallois flaking is both a very economical and a very flexible technological strategy – a hominin carrying a Levallois core could reconfigure it to meet any number of future requirements, freeing them up from the need to remain close to sources of raw material. Indeed, on the continent, where raw material sourcing studies are possible, Levallois cores and flakes, especially when retouched, tend to be transported much further than other types of artefact (Geneste 1989; Turq 1989; Feblot-Augustins 1999).

Although Levallois flaking dominates the British Palaeolithic record after the MIS 8 through to when Britain was abandoned by humans in advance of the MIS 6 glaciation, this does not mean that all Levallois artefacts, or deposits containing Levallois artefacts, can be dated to this interval – the British early Middle Palaeolithic (cf. White and Jacobi 2002). This is a fact often not appreciated by geologists, who since the earliest years of the 20th century have desperately sought to use artefacts as ‘zone fossils’ (eg Harding *et al.* 2012). The apparent restriction of particular techniques to particular points in time is again a question that requires testing, especially as there are suggestions that such patterns may be only regionally robust. Whilst Levallois flaking appears to be the favoured problem solving strategy adopted by hominins in the Thames Valley between MIS 8–6, handaxes being rarely manufactured, if at all, the same cannot be said of Wales and south-west England. For instance, the site of Pontnewydd (MIS 7) has produced a substantial lithic assemblage, predominantly manufactured on local volcanic material of variable workability. Handaxes are the most common tool type, though Levallois flaking was also practised (Green 1984; Aldhouse-Green *et al.* 2012). Similarly, the site of Harnham in Wiltshire, which includes refitting material, is dominated by evidence of handaxe manufacture; OSL dating places somewhere within MIS 8 (Whittaker *et al.* 2004). A number of ALSF projects were focussed on this period of major technological and behavioural change, including Stanton Harcourt and Welton-le-Wold.

An interesting feature of the archaeological record from MIS 7 onwards is that human groups seem to have been using their landscapes in new ways – ways which, crucially, impacted upon the likelihood of their tools actually entering the archaeological record at all, let alone being recovered in the context of modern aggregate extraction or construction. Whereas during the Lower Palaeolithic (prior to MIS 8) human groups seem to have preferentially discarded their tools in locations where the necessary materials for survival co-occur – fresh water, prey, and workable stone – from MIS 8 onwards they seem to deliberately target particular places in the landscape for specific purposes. Thus they targeted one place as somewhere to extract raw material, gear up with Levallois cores and flakes, and then moved off to actually use these tools elsewhere in the landscape. So, in Britain there

is a pronounced contrast between these two types of site – extraction and production sites, on one hand, and ephemeral, or ‘use’ sites, on the other (Scott 2011, 187–189). In fact, the potential for the recovery of ephemeral/use sites (Turq 1989) is very limited for a number of reasons:

- Ephemeral sites may only comprise a tiny collection of artefacts with a reduced likelihood of being seen, even during pre-WW1 manual quarrying
- Extraction and production sites are generally located in direct association with raw material sources (for instance, coarse gravel river banks and bars). Such raw material sources have historically become targeted for aggregate extraction, bringing these sites to light
- The material discarded at ephemeral/use sites is often heavily curated, and thus small and worked down. This pattern reflects the fact that Levallois technology freed humans up from the need to constantly access raw material. They were travelling equipped to exploit unpredictable opportunities, and discarding material wherever they needed to use it, rather than it being concentrated at specific points that were repeatedly visited
- Ephemeral/use sites are therefore ‘off site’ contexts – they are likely to exist in places where we have historically failed to look – for instance, within isolated capture points on the downland away from river valleys, such as solution features and fissures

Because of these factors, our picture of Neanderthal behaviour in Britain from MIS 8 onwards is partial at best. Concentrating only on those sites already known through historical focus on the gravel archives of rivers has blinded us to the potential of other types of capture points, and potentially skewed the British view of the record. For instance, there are very few British archaeological sites that date to the end of MIS 7/beginning of MIS 6 (only Crayford, and this is as yet poorly age-constrained; Scott 2009), whilst such sites are common on the continent. In continental Europe they are usually recovered from fine-grained deposits (such as loess) collected within solution features, dry valleys, or on top of terraces. Although less thick and widespread than on the continent, loess deposits have historically been targeted for brickmaking throughout south-east England, but are under-researched in terms of their archaeological potential. Similarly, such capture points, away from the extraction sites associated with outcropping flint, have the potential to inform us about whole patterns of Neanderthal behaviour – how they moved, used stone tools, and hunted – away from the river valleys. Logistically, however, and particularly from the point of the developer and curator, finding these sites is like looking for the proverbial needle in a haystack, and depends largely on luck.

## EVIDENCE OF ABSENCE AND OTHER STORIES

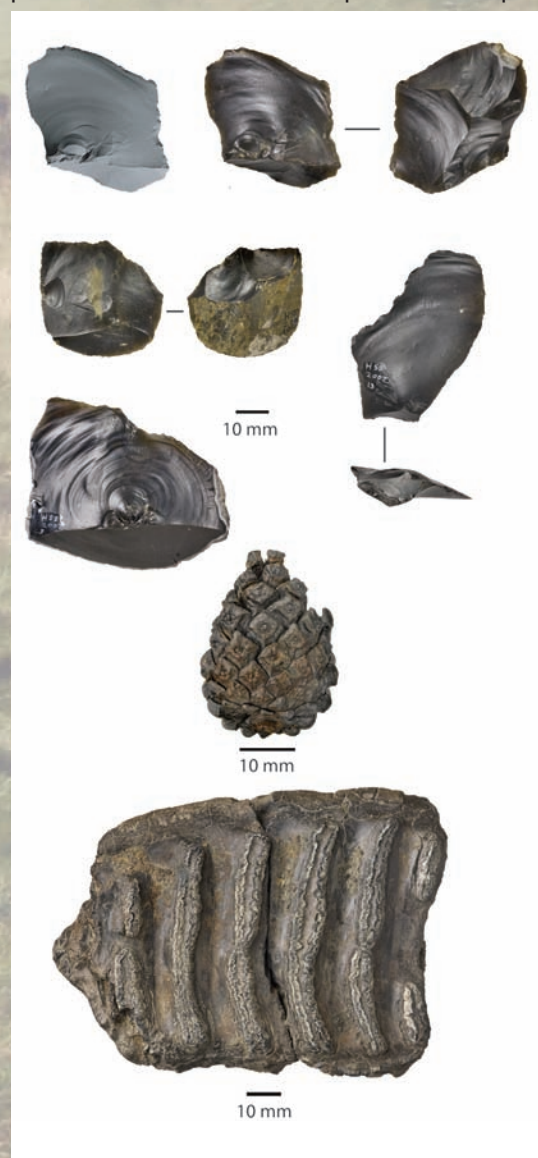
**A**s an island at the northwestern-most edge of the Palaeolithic world, Britain offers some distinct advantages to the Palaeolithic archaeologist. Situated close to a limit of ice advance during cold periods, Britain would have been amongst the first areas of Europe to be directly affected by global cooling. Thus, human groups colonised Britain repeatedly when conditions allowed but also went repeatedly and locally extinct. This resulted in a stochastic pattern of human presence and absence, as reflected by both absolute numbers of artefacts and numbers of sites (cf, Ashton and Lewis 2002; White *et al.* 2006; Scott *et al.* 2011, Pettitt and White 2012). At the edge of their range, hominins are acting at the limits of their biological and cultural adaptations; thus, establishing basic patterns of presence and absence is key to understanding how their adaptive capabilities changed over time as well as how and why particular behavioural packages caught on (Roebroeks *et al.* 2011).

**T**he effects of a group expanding to the limits of its tolerance is compounded by the alternating island-peninsula nature of Britain (see Chapter 3). At different times, it may have been more difficult – or even impossible – to get into Britain, and particular routes may not have been passable. Understanding when early humans and other animals were present and absent in Britain, compared to adjacent areas of the continent, may allow us to understand how accessible Britain was, and when different routes across the submerged landscapes of the North Sea plain and Channel River valley were impassable.

**I**nvestigating these questions involves building up an accurate picture of human presence and absence. These questions have been a central focus of the AHOB project (Ashton *et al.* 2011). A key result has been the realisation that humans were able to colonise Britain much earlier than had previously been thought, as shown by the discoveries at Pakefield and Happisburgh. (Parfitt *et al.* 2005; Parfitt *et al.* 2010), and that they were capable of adapting successfully to boreal conditions similar to those found in southern Sweden today. These discoveries together pushed back the earliest occupation of Europe to over 300,000 years earlier than had previously been thought.

**I**t is extremely important, however, to note that the Cromer Forest Bed, the geological deposit within which both sites were discovered, was previously best known for not producing any humanly worked artefacts, despite being a magnet location for collectors since the late Victorian era. The Cromer Forest Bed is not only rich in faunal remains, which initially attracted collectors to the area, but was also one of the key deposits from which ‘Pre-Palaeoliths’, or ‘Eoliths’ were collected in the early 20th century (O’Connor 2007). These were flints that are now known not to result from human workmanship but from natural processes, yet early collectors would spend enormous amounts of time searching the exposures of the Cromer Forest Bed around the north Norfolk coast in the hope of finding them. Despite over a century of prospection, these deposits refused to yield evidence for an early human presence (Roebroeks 2005). Thus it becomes even more important not to disregard sediment exposures because they have not previously produced artefacts, or because they date to a period where, presently, we do not think people were there. Any such supposition requires testing.

**I**n a similar vein, a strong body of evidence suggests that Britain was not occupied during MIS 5e (see Chapter 2). A review of all sites confidently dated to this interval in Britain demonstrated that none contained incontrovertible evidence for a human presence (Lewis *et al.* 2011). This is a pattern in marked contrast to the continent, and may therefore tell us something about the accessibility of Britain as an island during this warm phase. However, the fact that humans have not thus far been shown to be present in archaeologically visible numbers in Britain during this period does not mean that all deposits laid down during this interval are of no archaeological significance. Not only do we need to test whether humans were absent, but also to explain why – through rigorously building models of climate and environment in relation to changing human adaptations. In the Palaeolithic, the old archaeological truism that absence of evidence is not evidence of absence has never held more true.



5.7.1 Hapisburgh artefacts and ecofacts (images courtesy of the Natural History Museum)

### Hiatus

Thus far, very few artefacts have been recovered from deposits laid down between the beginning of MIS 6 and the early MIS 3 (Box 5.7). It therefore appears that Britain was for a long time abandoned by humans, and not successfully reoccupied during the warm conditions of MIS 5e, when sites certainly are known from the near continent (eg Caours: Antoine *et al.* 2006). Of those artefacts that have been found, questions have been raised concerning whether they are true artefacts, whether they are indeed contemporary with the deposits from which they came, and the reliability of the dating methods used (Lewis *et al.* 2011). However, as emphasised in Chapter 2, the suggestion that humans were not present during this period remains a hypothesis that requires testing. It cannot be taken as a given, and all deposits of this date ignored from an archaeological point of view (Box 5.7). Again, though, from the point of view of developer-funded archae-

ology, deposits from MIS5e-4 may reasonably be given a light touch until properly funded research projects have determined whether this absence is real or not, but they should not be ignored. It is a well-worn axiom that the absence of evidence is not evidence of absence, and only one convincing site is needed to overturn an absence. Moreover, if the hiatus is real, it is only through environmental examination of sites of the right age that we might be able to further unravel the reasons behind it.

### The late Middle Palaeolithic

The first significant evidence for human groups reoccupying Britain occurs around 60,000 BP. Although fossils from mainland Britain are sparse, these human groups were classic Neanderthals – in both phenotypic and behavioural terms. Their technology is marked by a return to the regular manufacture of handaxes, whilst Levallois flaking appears no longer to have been practised in Britain.

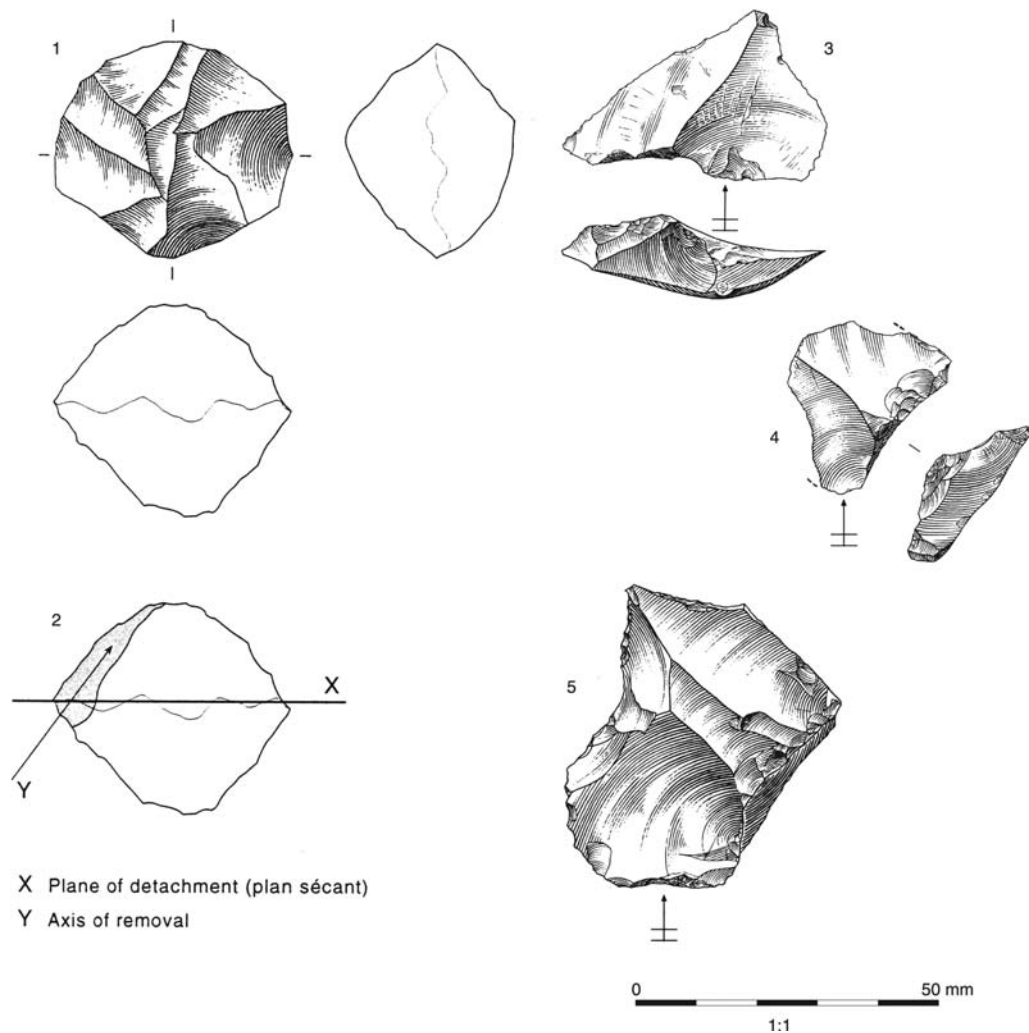


Fig. 5.6 Diagrammatic representation of the technique of discoidal flaking: (1) view in plan and cross-section and (2) schematic representation of the method of flake removal (after Boëda 1993) together with a series of chordal flakes (3-6) from Oldbury, Kent, reproduced courtesy of the Lithic Studies Society

## Chapter 5

Instead, the working life of cores is prolonged in a different way; they were worked alternately from a continuous platform extending around the core, with each flake removal serving to recreate the correct angle to continue flaking. These cores become flattened when extremely exhausted, and almost disc-shaped – witness the fact that this technique is called ‘discoidal flaking’ (Fig. 5.6). Discoidal flaking is a very economical way of working stone, and results in a variety of short, squat flakes that are ideal for retouching as scrapers (Cook and Jacobi 1998). In Britain, discoidal cores and flakes seem to be more common away from areas where lithic raw material was freely available; thus it was not frequently used in the south of England, but is well represented where humans occupied limestone caves in the north and west (for example at Creswell Crags).

Even in the south, when Neanderthals travelled over the dissected plateau of the Kent and Sussex Weald, they used this flaking strategy to keep them going over the flint-impoverished Greensand uplands. Although as yet undated, numerous discoidal cores have been collected and excavated from around Oldbury Hatch, near Ightham, in Kent, by the legendary late Victorian polymath and grocer, Benjamin Harrison (Cook and Jacobi 1998). These cores are associated with small handaxes of a very particular type (see below), which have been reworked and remodelled many times. In fact, discoidal cores and handaxes from the area were often transformed from one to the other – handaxes becoming small, reduced discs, used as sources of flakes, and cores becoming flattened, with continuous cutting edges. The date and depositional context of the Oldbury material is as yet poorly understood, but the geographical situation is significant; most of the material probably came from a flattish area below a continuously eroding, soft cliff (Folkestone Beds), and was probably sealed and preserved by the slope deposits derived from these. The area itself commands excellent views over the Darenth Valley, right across to the chalk hills of the Medway. Thus Oldbury probably has the potential to tell us much about late Neanderthal behaviour away from the river valleys, and represents another potential form of geological capture point which is curiously under-researched in Britain.

Although discoidal flaking is important in late Neanderthal Britain, the quintessential tool was once again the handaxe (White and Jacobi 2002). However, these handaxes seem to have been different in conception than those manufactured in the Lower Palaeolithic; often, particular areas around their edge were modified in different ways – to form a scraper, or a notch – or were deliberately blunted, to form a hand-hold opposed to a working edge. In effect, although still a core tool, handaxes were being used as tool supports – blanks that could be retouched and remodelled in the same way as a Levallois flake. They also seem to have been worked and shaped in very separate phases (Boëda 2001 and

Cliquet *et al.* 2001). Moreover, particular handaxes show deliberate imposition of form – there seems to be an idea that a particular tool had to look a certain way. These handaxes have ‘D-shaped’ tips, curiously flat bottoms and noticeably cut off corners, and are usually termed ‘*bout coupés*’. Where dated, they seem to be restricted to the interval 59,000–41,000 BP, and may well represent a particular, British regional variant of the Mousterian of Acheulian Tradition (MTA) in northern France – where the equivalent regional form is a flat-butted triangular handaxe (White and Jacobi 2002). ‘True’ *bout coupés* (cf Tyldesley 1987) are often found as single finds (ephemeral/use sites) – and sometimes seem to have been deliberately cached (as at Coygan Cave in south Wales). However, ALSF funding allowed the excavation and publication of a substantial late Middle Palaeolithic assemblage from Lynford Quarry, Norfolk which has dramatically changed our understanding of this period in Britain (Box 5.8).

### INTERPRETING PALAEOLOGIC ARTEFACTS

Precisely because stone tools are durable, the vast majority of the Palaeolithic record is made up of this one class of evidence. Organic tools and materials must have comprised a significant component of hominin tool kits. European evidence suggests that hafting using pitch mastic was practised by at least 190,000 BP (Mazza *et al.* 2006), and in exceptional circumstances wooden javelins and composite (hafted) tools have actually been excavated (eg Schöningen: Thieme 1997), whilst in others, the pseudomorphs left by wooden furniture remain within cave sites (eg Abric Romani, Spain: Castro-Curell and Carbonell 1995). The sole British wooden artefact remains the Clacton spear, recovered in 1911 by Samuel Hazzledine Warren from the Temperate Beds at Clacton-on-Sea (Warren 1911); while Box-grove has yielded percussors of antler and bone. Given this apparent paucity, it is to stone tools that we must turn for most evidence for human activity, although both researchers and units should be aware of the potential for preservation of wood and other organics (they are found for example at High Lodge, Happisburgh, Cudmore Grove, amongst others), some of which may one day prove to be artefactual.

Three main questions can be addressed using lithic evidence: firstly, how the assemblage itself formed (taphonomy); secondly, what actions were undertaken at the site itself; and thirdly, how the actions undertaken at the site itself relate to those undertaken elsewhere in the landscape (technology). Broadly speaking, it is necessary to examine each of these areas in turn to accurately move onto the next.

### Taphonomy

Two principles underpin the use of artefacts as a taphonomic tool; firstly, that artefacts, like any other clast subject to movement, will experience damage.

## OF MAMMOTHS AND MEN

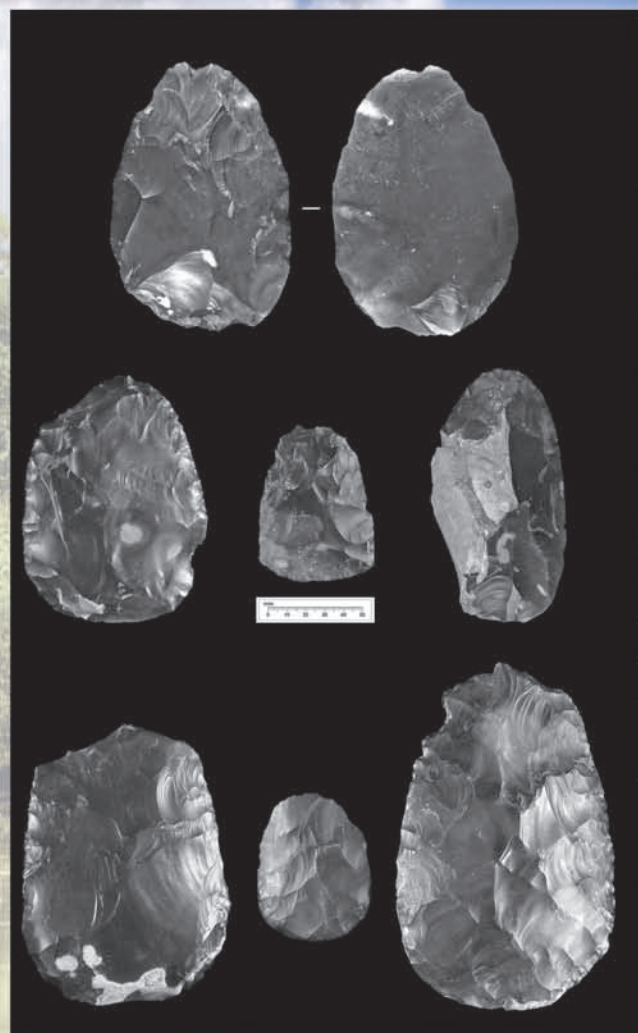
## BOX 5.8

In spring 2002, an archaeological watching brief undertaken by John Lord at Lynford Quarry in Norfolk revealed a spectacular *in situ* association of mammoth bones and a substantial stone tool assemblage within a palaeochannel infilled with rich organic sediments. Excavation was funded by the ALSF, supported by the quarry owners, Ayton Asphalt. The restricted size of the palaeochannel, the quality of the organic remains preserved within it, and the association of near primary context stone tools with well-preserved faunal remains, provided a rare opportunity to investigate late Neanderthal behaviour in Britain on an ethno-historical scale. Schreve (this volume) has already discussed the environmental data and Neanderthal subsistence strategies. Here we discuss the results of the lithic analysis and what it can tell us about Neanderthal technology at the micro and meso-scale.

The main depositional unit of organic silts and sands (Association B) produced a lithic assemblage comprising 2,720 artefacts, some of which could be refitted (technological refits, as well as breaks). 41 complete and 6 broken handaxes were recovered; these are predominantly cordiform, ovate and subtriangular in planform, and included the exaggerated, classic *bout coupé* form. The refitting pieces reflect the use, modification and recycling of tools, especially handaxes — one large example shows a distinctive break to the tip, probably caused by twisting and applying significant force. The flake assemblage primarily reflects the later stages of handaxe production — thinning and finishing; large, cortical flakes such as might result from flint selection and roughing out are not present. The largest and best-made handaxes from the site are the most extensively worked and rejuvenated, suggesting that they were carried in ready-made. Other less intensively worked pieces were also manufactured on local cobbles and flakes; Neanderthals at Lynford were employing both curated and expedient technological solutions in combination (White 2012). The only other British open air site from which a substantial handaxe collection has been recovered is Little Paxton, Cambridgeshire (Paterson and Tebbutt 1947), which shows a similar dichotomy between well-made imported handaxes and less intensively worked examples on local cobbles. The Lynford excavations also produced a sandstone block, which is interpreted as bearing traces resulting from rubbing a softer material against it — perhaps in the context of fire-lighting.

The Lynford excavations exemplify best practice in terms of co-operation between archaeologists and the aggregates industry; Aggregates Levy funding permitted the total excavation of this extraordinary locale, without placing the entire funding burden upon the quarry company unlucky enough to expose such remains. The site itself provides an unparalleled opportunity to investigate late Neanderthal behaviour at the north-western edge of Europe on an ethno-historical scale, and in relation to fine-grained environmental proxies. The Lynford faunal and lithic assemblage allows behaviour at the site to be reconstructed, but also allows inference concerning how British Neanderthals engaged with their wider landscapes.

Late Neanderthal archaeology is poorly represented in Britain; most British sites of this date comprise only a handful of pieces, with Lynford being only the second substantial handaxe-dominated site yet known. In fact, the period reflects the inverse pattern to that apparent for the earlier Middle Palaeolithic, where extraction sites dominate — these are unknown for the middle Devensian. In part, this might reflect the inaccessibility of most fluvial middle Devensian sites, many of which lie below the modern floodplain, but also might reflect the difficulties of surviving in Britain during the 'failed interglacial' conditions of MIS 3. Neanderthals may only have been sporadic summer visitors to Britain (White 2006). Given how little we still know about the late Neanderthal inhabitants of Britain, the contribution Lynford makes to our understanding of the interval cannot be understated — and yet one site remains one site. Until we can access and excavate sedimentary contexts of equivalent date, it provides a rare glimpse of the vistas more familiar to continental workers.



5.8.1 Handaxes from Lynford (from Pettitt and White 2012)



## Chapter 5

This is usually divided into two categories – edge damage (where chips have been taken out of the delicate, sharp edges of the stone) and abrasion, where the intersections between flake scars have begun to become rounded. In extreme cases, a handaxe can become so heavily edge-damaged and abraded that only the shadows of flake scars survive, with no sharp edges being visible at all. Certain raw materials are more prone to damage than others; generally, the more granular the stone, the more heavily it will be abraded. This has the knock-on effect that in flint impoverished regions, where quartzites and volcanic rocks may be used, artefacts have less chance of surviving once they enter an active sedimentary context, such as a river. These factors may have a significant impact upon apparent patterns of occupation investigated during ALSF-funded projects, with the Palaeolithic English Midlands (TVPP) and south-west seeming sparsely populated at best (ProSWeB).

Evaluating the degree of damage, and thus transport and redeposition, that an assemblage has undergone also requires an assessment of context. For instance, heavily rolled and edge-damaged artefacts within a fine-grained, fluvial deposit do not belong there – the damage that they have suffered could not have been inflicted by such a quiescent sedimentary regime. Usually, degree of damage is assessed by dividing material into ordinal categories, splitting up the continuum of variation from mint fresh (as if they had been knapped that day) to heavily abraded (Wymer 1968). This approach has the benefit of being extremely quick and easy, and requiring no specialist equipment. The broad assumption is made that the most heavily rolled and edge-damaged artefacts have travelled further, or within a more energetic sedimentary regime, than those which are not as damaged. This approach is a useful taphonomic tool, allowing the analyst to divide an assemblage into groups that have undergone more or less movement, and adapt the questions they ask of the material accordingly. However, it is worth noting that degree of rolling does not directly reflect how far travelled an artefact might be, as demonstrated by a pair of rolled, but refitting, artefacts from the cobble band at Barnham (Nick Ashton pers. comm.). These two pieces appear to have sat among a cobble band and been battered by passing clasts.

Chambers (2003) has developed a more detailed methodology for analysing changes to artefact state resulting from transport which was applied during several ALSF projects including APSC and Welton-le-Wold. It is based upon the microscopic measurement of the intersection between flake scars, as advocated by Shackley (1974). Taking account of the fact that any artefact, once incorporated within a fluvial system, behaves like a clast (cf. Harding *et al.* 1987), she proposed that microscopic recording of abrasion to different areas of the handaxe can be used to build up a picture of how each artefact has been moved, through comparison with experi-

mental (flume tank) data. On this basis, she proposed that the Broom assemblage (Box 5.4) has in general travelled less than 300m, and that the primary mode of displacement for the handaxes was saltation. However, this methodology has not been widely applied to secondary context sites, relying as it does upon transporting equipment, experience in applying the method and untested assumptions regarding state and distance.

The second principle that underpins the use of artefacts as a taphonomic tool is the fact that, because stone working is a reductive process, particular elements must have been present at some point during working. Thus one can compare what should be there (ie by comparison with experimentally produced assemblages) with what is actually there, and work out what is missing – as well as what processes could have removed it. Probably the best example of this is the fact that most of the volume of material resulting from any knapping episode is actually tiny chips (< 20mm). Such material is small, light, and, in a fluvial context – or even on an exposed land surface – is easily transported away by natural action (Schick 1987). If an assemblage comprises mostly large pieces, then, depending on depositional context, it could be interpreted as a lag, left behind when smaller, lighter pieces have been winnowed away. These coarse taphonomic approaches are suitable for dealing with material from secondary or near primary context; however, dealing with less heavily modified, or near *in situ* assemblages, more precise taphonomic methods are required.

### Technology

It is forgivable to think that it is only through the analysis of pristine, refitting assemblages of stone tools that one can begin to build up a picture of the technological choices made by past hominins. Much academic emphasis has been placed upon this as a route for reconstructing technology, and, more esoterically, the mental constructs underlying these technical choices. In Francophone literature, the study of how technical choices are made is termed the study of the *chaîne opératoire* (sequence of operations); in Anglo-American literature the term more normally used is reduction sequence – which means broadly the same thing, though largely stripped of its socio-cognitive implications. Studying reduction choices is, however, possible using assemblages recovered from a variety of preservational gradients; as ever, the key to extracting useful information is to ask questions of appropriate scale. Indeed, when dealing with refitting lithic material, it is sometimes too tempting to become bogged down in the intricate details of any individual refitting group, seduced by the intimacy of recreating each and every gesture – which ultimately, may inform us only about that isolated moment in time. Such individual moments are useful only if animated within their historical and landscape context.

The way in which stone tools were made and used can be reconstructed in very different ways, depending on the taphonomic history of the assemblage in question. Again, the interpretative statements that can be made vary in terms of the scale of question. The irreversible nature of lithic-working means that it is possible to read something of how an individual artefact was produced from the artefact itself. The scars left by striking previous flakes from the same core, or from the surface of a bifacial tool, are retained on the artefact. Specific 'landmarks' allow one to reconstruct technological features, such as the direction flakes were struck from, how many flakes were struck, how hard, and what type of percussor was used. Thus it is possible to build up a picture of the acts and gestures through which even a single artefact was shaped – and why particular choices may have been made. Thus, even artefacts from secondary-context sites that combine material from a wide geographical (basin wide) catchment can shed light upon chosen technological options at particular times.

Just as comparing an archaeological lithic assemblage with an experimentally generated one can be a useful tool for understanding what natural processes have affected it (see taphonomy above), so the same principle can be used to assess what pieces of the expected reduction sequence are missing because of human action. According to the overall technological strategy adopted, characteristic products are associated with different points in the reduction sequence. At the beginning of reduction, large, thick flakes bearing a lot of cortex (the outer rind of the nodule) are produced. So, collections of material resulting from selecting nodules, roughing them out, and preparing cores or handaxes, contain a lot of these flakes. This is the case with the artefacts from near the cliff in the Boxgrove palaeolandscape (Box 5.1; Pope and Roberts 2005). Conversely, the assemblage from Lynford (Box 5.8) lacks these sort of flakes in the proportions one would expect if all stages of handaxe manufacture – from raw material selection to remodelling and discard – had been undertaken at the same place (White 2012). In fact, the Lynford assemblage contains many flakes that are characteristic of the final stages of handaxe working and remodelling: small flakes scars with scar patterns coming in from converging directions, and pieces that refit to broken tips (*ibid.*).

The lack of these characteristic products within *in situ* or minimally modified sites with refits allows a picture to be made of what general actions have been undertaken at a particular place, and thus helps to reanimate the static residues preserved within them. Where taphonomic factors can be filtered out, the same patterns can be extended to assemblages further along the preservational gradient, where assemblages may have been rearranged, but reflect repeated action within a given place. For instance, many early Middle Palaeolithic sites in the Thames Valley contain signatures reflecting raw material

extraction, Levallois core preparation and exploitation, and the export of particular products from them (Scott 2006; 2011). Very few of these contain refitting products, but their technology is still informative on a meso-scale. At Creffield Road, near Acton, for example, it is obvious that parts of the reduction sequence must be missing; the site is dominated by a peculiar combination of, on one hand, very large Levallois points, and on the other, exceedingly small Levallois point cores. The cores are totally exhausted, having been reworked many times, and the final attempt to exploit them appears to have been a failure. If all the technical stages between the production of these big points, and the discard of these small cores had been undertaken at the site, then one very characteristic type of flake (a *débordant*, or core edge flake) should be present. None have been recovered, and it is impossible to account for this lack in terms of taphonomic factors or collection history (Scott 2011, 61–62). Rather, we are dealing with a lithic signature that shows how Neanderthals went to Creffield Road to tool-up before going out into the landscape to carry on the day-to-day routines of hunter-gatherers, then returning to replenish their stocks again once the tools and cores were used up. Thus it is possible to look from an old assemblage, recovered by quarrymen working for a collector in the 1880s, out into the wider taskscapes created by the humans moving through them.

## DISCUSSION

Projects funded through the ALSF reflect the full texture of the Palaeolithic artefact record as generally encountered in Britain, and exemplify the approaches adopted and adapted to dealing with sites and the archaeological material recovered from them. The strength of the British Palaeolithic record is undoubtedly its history and the actions of the indefatigable researchers – modern researchers are adept at standing on the shoulders of such giants, and wringing blood from old stones. ALSF projects that reflect this tenacity in mining the existing museum resources to answer new research questions include the *Stopes Palaeolithic Project*, together with work on the artefact collections from Broom and Welton-le-Wold. The Stopes project in particular demonstrates that unpublished archives must be used to extract a full picture of where artefacts have historically been collected, while Broom and Welton-le-Wold show what value can be added to existing collections by a very limited amount of fieldwork. Indeed, Palaeolithic artefacts are essentially ornaments without a well-understood geological, temporal, and environmental context.

ALSF projects encompassed material derived from contexts which accumulated from very different spatial and temporal catchments: from material reworked into secondary context 'dredgers', such as Broom, Dunbridge and Chard Junction to the isolated snapshots apparent within

## Chapter 5

the Boxgrove palaeolandscape. Combining such different preservational catchments involves adopting a nuanced and flexible approach, and asking questions at a scale appropriate to the assemblage being studied. Moreover, small scale (*in situ*) is not necessarily 'better' when dealing with the Palaeolithic record, unless reanimated by being placed within a broader behavioural and landscape context. For example, reconstructions of Neanderthal behaviour at Lynford, as recorded by the faunal and human assemblages, has been extrapolated well beyond the confines of the site itself, to broader engagement with the regional environment.

Dealing with the Palaeolithic record requires a complete change in approach – moving away from simply responding to where material is already

known, to a more nuanced approach, which acknowledges the potential of particular types of geological capture point away from the river valleys and evaluates how these help us to build a more complete picture of past hominin lives throughout the entire Lower and Middle Palaeolithic. Such capture points include fissures (frequently impacted upon through quarrying Greensand, as in West Kent and Sussex) and solution features on the chalk (often exposed in road cuttings and similar works), both of which trap loess and other fine grained sediments capable of preserving primary context, if not *in situ* archaeology. If our reconstructions of the lost landscapes of the Palaeolithic are to cease to be dominated by fluvial basins – White's 'normal' locations (Pettitt and White 2012) – then we need to start considering these landscapes in their entirety.