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## BEECHES PIT: FIRST VIEWS OF THE ARCHAEOLOGY OF A MIDDLE PLEISTOCENE SITE IN SUFFOLK, UK, IN EUROPEAN CONTEXT

**ABSTRACT:** *Beeches Pit is an archaeological site of Middle Pleistocene age located about 10 km from Bury St Edmunds, Suffolk, UK. From 1992 exploratory excavations were carried out on the north side of a 19th century brickpit. In 1996 a second phase of archaeological work began on a larger scale. The former brickpit preserves a transect of a former channel aligned roughly from E-W. This channel or creek was initiated in fluvioglacial conditions and silted up during an ensuing interglacial. The two principal archaeological localities, separated by about 20 metres, are on the north flank of the channel, and are incorporated in tufaceous sediments or in clays overlying these.*

*The flints include a number of burnt specimens. In 1996 localised baked sediment was also discovered, which was raised as a block in 1997 for further study. Faunal remains include microfauna and elements of a large deer. Beeches Pit is a rare British site where occupation can be attributed directly to an interglacial period. This follows the Anglian glaciation, and is likely to be isotope stage 11. The archaeological occurrences probably represent repeated sporadic hominid visits to a south-facing channel bank, where springs may have served as a focus for various activities*

**KEY WORDS:** *Lower Palaeolithic – Interglacial – Acheulian – Middle Pleistocene – Europe*

This paper is intended to introduce the archaeology of the Middle Pleistocene site of Beeches Pit and to examine it briefly in the context of the European record. The site is located about 10 km from Bury St Edmunds, Suffolk, UK, in an area of East Anglia well known for its Lower Palaeolithic sites. The site of Beeches Pit has been known since the later nineteenth century (Skertchly in Whitaker *et al.* 1891). From the 1960s there has been intermittent investigation of the palaeoenvironmental and archaeological aspects of the site. A new phase of interdisciplinary work started by D. R. Bridgland, S. G. Lewis, R. Preece and J. J. Wymer has been summarised in Preece *et al.* (1991) and in Bridgland *et al.* (1995). This research has centred on the geology and palaeoenvironmental aspects of the site, but has also been productive in exposing archaeological sections. Our

archaeological work began with test excavations in 1992 and approaches to the work are outlined in Andresen *et al.* (1997), where a series of research questions is set out (see also Gowlett 1997). These questions were intentionally pitched at a general level, but over the last decade the British Lower Palaeolithic record has been much enriched by excavations and surveys which have often served to focus debate on specific issues. Alongside the major excavations at Boxgrove, High Lodge and Barnham (Roberts *et al.* 1995, Ashton *et al.* 1992, 1994), there has been a new emphasis on systematic study of artefact finds in landscapes, especially through surveys such as the English Rivers project (Wymer 1996).

These studies have enlivened debate in British Palaeolithic studies. The refined early hand-axes were unexpectedly early in some eyes. Artefacts clustered around

carcasses have raised questions about site functions and butchery. The form and function of bifaces and choppers have been debated in this context (e.g. Ashton, McNabb 1994, White 1995). The relationship of Clactonian and Acheulian industries has been reassessed (McNabb 1992, 1996). Attempts to provide broader explanatory models (e.g. Mithen 1996) have had to vie with changing views of the chronology and cultural status of these facies. Climate and ecology have also featured in the arguments: Conditions were probably not suitable for continuous human occupation of the British isles, which were part of the continental mainland for much of the Middle Pleistocene – probably until after isotope stage 11 (papers in Preece 1995) – and rejoined the mainland in periods of low sea level.

Until recently few British sites were proven to belong to full interglacial episodes. Debate arose from the theoretical argument of Gamble (1986) that archaic humans may not have had the skills to exploit closed forest environments, coupled with the observation that available faunal biomass was much reduced in such period, and that sites tended to occur in cool periods in glacial/interglacial cycles. Empirical evidence points to full interglacial occupation (Roebroeks *et al.* 1992) but ensuing discussion has tended to move on to the complexity of climate cycles, and the nature of patterns of occupation in relation to them (e.g. comment by Gamble in Roebroeks *et al.* 1992). Recent work also shows the rapid development of framework, evidence and arguments (Bridgland 1996, Bridgland, d'Olier 1995, Gamble 1996a,b, Roe 1996, Roebroeks, 1996).

Beeches Pit can contribute to study of at least some of these questions. In 1996 with British Academy funding we uncovered a much greater area of the horizons on this Acheulian site, continuing the excavations in 1997/98. Apart from its artefactual and ecological record, numerous signs of burning on the site, including discrete patches, show that it has major importance in the study of early fire-history in Europe.

## PALAEOENVIRONMENTAL BACKGROUND

Beeches Pit is a former brickpit extending for roughly 50 metres N-S and 70 metres E-W, and having a depth of 5–6 metres. It lies on shallowly sloping land on the north side of the present day Lark Valley. The archaeological levels are in the range 27–30 metres OD. The present land surface slopes down to a level of about 15 m close to the Lark, about 0.5 km to the south. Lower Palaeolithic sites are common in the area. Warren Hill lies about 4 km to the west (Roe 1981, Wymer *et al.* 1991, Bridgland *et al.* 1995); High Lodge and Barnham are a few kilometres to the NW (Ashton *et al.* 1992, 1994).

The brickpit preserves a transect of a former channel aligned roughly from E-W. This channel or creek is cut into chalk bedrock and glacially-deposited clay (Bridgland

*et al.* 1994). It was initiated in fluvio-glacial conditions and silted up during an ensuing interglacial. This process took place through a series of varying climatic conditions (Preece *et al.* 1991). The glacially deposited clay, or diamicton, derives from the one documented glaciation in the area, the Anglian, generally taken as falling in isotope stage 12. Further knowledge of the history and conformation of the channel is emerging from the work of D. R. Bridgland and S. G. Lewis who are continuing geological investigations on the site.

Information about the size and nature of the water-bodies represented in the sequence is also provided by the remarkable molluscan fauna included in the tufaceous sediments (Kerney 1976, Preece *et al.* 1991, Meijer, Preece 1995). Preece *et al.* (1991) record that the diversity of this fauna and presence of woodland species "indicate that the tufa formed in a temperate forest, in association with pools probably fed by springs". Aquatic species suggest that deep water lay nearby. In contrast, in organic lenses contained in the overlying clay sequence (units 2–4), some species of mollusc suggest accumulation in a small pool, perhaps one drying out intermittently in summer. Nevertheless, shared temperate species suggest that the time interval spanning these units may be fairly small. In Britain, interglacial tufa is known from only one other locality, Hitchin in Hertfordshire, which appears to be of the same age (Preece *et al.* 1991).

These findings give very important information for assessing the archaeological contexts – both locally and on the scale of continental correlations. Locally, the archaeological record can be tested in relation to these interpretations. On a wider scale, the existence of a possible timeline could be of great use to archaeological comparison. Occurrence of several tufas with distinctive warm-loving species such as *Retinella* (*Lyrodiscus*) *skertchlyi* appears to offer just such a timeline with a number of localities in France and Germany, all of which have been judged to belong to isotope stage 11 (Preece *et al.* 1991, Rousseau *et al.* 1992).

At Beeches Pit the chronological evidence provided by the stratigraphy and the molluscan data is supported by a U-series date (by P. Roe and T. Atkinson) and preliminary TL assessments (N. C. Debenham), all of which are consistent with an age in the range 360–420 ky, these being the approximate limits of isotope stage 11 as established by the orbitally-tuned oxygen isotope chronology (Imbrie *et al.* 1993, Aitken 1990: 22).

On this evidence, Beeches Pit is one of the few British sites which documents unequivocally the presence of early humans – by inference archaic *Homo sapiens/Homo heidelbergensis* – in horizons which belong to the fully temperate part of an interglacial sequence. The Barnham site may belong to the same isotope stage (Ashton *et al.* 1994), although not necessarily to the same phases within it. Presence of the aesculapian snake *Elaphe longissima* at Barnham and Beeches Pit, as well as Cudmore Grove in Essex (Stuart 1996) may also be suggestive of similar chronology.

## THE ARCHAEOLOGICAL SITES

The two principal archaeological localities known so far are on the north flank of the channel, separated by about 20 metres. They are incorporated in the calcareous/tufaceous sediments or in clays which overlie these. The western locality, AF, provides the best view of overall stratigraphy. Here the Anglian diamicton at the base of the sequence is overlain by calcareous clay/tufa with a depth of about 2 metres. This has a steep edge of 40 degrees or more, and is mantled by several further clay layers.

This area was first investigated through a number of geological trenches dug in the W flank of the pit (Preece *et al.* 1991). Our western archaeological trench has extended exposures of the calcareous clay, confirming that this sediment is mantled by silty clays from which both faunal and archaeological material have been recovered. It was initially considered that at least some of these clays may have been deposited contemporaneously with the tufaceous material, but as a main section has emerged, it has become plain that they post-date it, although the lowest clay (unit 2) probably consists mainly of redeposited tufaceous material derived from the crumbled edge.

The stratigraphic sequence recognised so far is given here, together with the provisional units used in excavation, modified after Preece *et al.* (1991):

- |    |  |   |
|----|--|---|
| 7  | diamicton with flint clasts in a clayey sand matrix                            | (sterile of artefacts)                            |
| 6  | brownish yellow silty sand with occasional shells                              | (artefacts)                                       |
| 5  | dark yellowish brown sandy silty clay with occasional chalk pellets            | (artefacts)                                       |
| 4  | very dark greyish brown organic clay   | (artefacts, incl. burnt flint)                    |
| 3  | brown organic clay   | (combustion patch) (artefacts, incl. burnt flint) |
| 2b | "tufa spread" – ?redeposited material from collapse of edge of calcareous clay | (artefacts)                                       |
| 2a | greyish brown organic silty clay   | (artefacts, bone)                                 |
| 1a | calcareous clay (tufa)   | (here sterile of artefacts)                       |
| 1  | chalky diamicton   | (sterile)   |

Artefacts are found from unit 6 down to unit 2a, through a vertical range of 2 metres. The calcareous/tufaceous clays are archaeologically sterile at this point, but all the overlying clays preserve large and small flint debitage, so far amounting to several hundred pieces. They probably represent the edge of distributions which had their centre higher up the channel bank. There seems little hope of recovering occupation on top of the bank in this area, since it has been planed off by later erosion and solifluction.

Sand-filled tubular runnels were however found on top of the calcareous clays, probably remains of minor spring channels.

The flints include both large and small flakes, but there is a paucity of retouched pieces. Some cores were recovered. The flints include a number of burnt specimens. In 1996 localised baked sediment was also discovered. In 1997 this was lifted as a 1.5 tonne block for further study. Faunal remains found in the lower sediments at this locality include limb bones and teeth of a large deer, and microfauna (reported by S. Parfitt in Preece *et al.* 1991).

## ARTEFACT DISTRIBUTION IN AH

About 20 metres further east, a small trench recorded by Kerney (1976) was shown to have yielded flint flakes (Preece *et al.* 1991). A sounding made in 1993 yielded artefacts *in situ*, close to the present day surface (which was probably made by a 19th century cart track near the pit edge) (Andresen *et al.* 1997).

The main trench in AH was opened up in 1996 to about 75 square metres. It had been established from the smaller trench that the artefacts extend through a band of less than ca 50 cm vertically. They occur mostly in clay units, overlying a more tufaceous level which contains molluscs. The artefacts appear to be in a lensed distribution that probably slopes gently down towards the channel edge from NE to SW. This lens is covered by further pale calcareous clay, probably part of the tufaceous sequence. This stratigraphy seems to indicate that the whole of the AH archaeological occurrence is older than any of the artefact-bearing units in the western trench, AF.

The excavations in this sector have revealed about 1,400 artefacts, mainly representing various stages of debitage. Through the same levels there are also many natural nodules and pebbles of flint and chalk. These finds outnumber artefacts by about five to one, and have been recorded and retained for their taphonomic value.

The full character of the assemblage will not be known until after the 1998 excavations, but a number of statements can be made from analysis of the material excavated so far. It seems that raw material was readily available nearby in the form of large flint nodules. Over thirty cores have been recovered. Their reduction appears to have been aimed at (i) the production of large flakes as biface blanks (ii) production of bifaces from flint nodules, and (iii) small to medium sized flakes unrelated to biface manufacture. All the cores are found in the areas containing the densest concentrations of debitage, suggesting that they were discarded at the location on which they were knapped. In one area, large flint blocks from the primary stages of knapping appear to have been dropped where they were worked. Comparison of the cores and natural nodules weighing greater than 100 g shows that larger nodules were selected by preference from the overall range of raw material available. Nearly 50 % of cores have less than



three flake removals, perhaps indicating testing of flint quality. The abundance of raw material may also help to explain the low number of intensively knapped cores. The combination of abundant material with varied but not intensive flint-working may suggest that this is just part of one extensive knapping area.

Four bifaces have been discovered at the site since the recent excavations began. Two specimens were recovered in the 19th century work, but one of them probably close to the AF sector, following Skertchly's sketch (Whitaker *et al.* 1891). Only one of the new series can be described as "classic". It was found in two halves *ca* 90 cm apart, suggesting that it was broken on-site, possibly during attempted retrimming. The other specimens are less symmetrical and well-shaped. Such specimens are not unusual on other sites, or in the Acheulian elsewhere, although their presence has been somewhat underemphasised in Britain until recently (Ashton, McNabb 1994). The presence of biface thinning flakes and of an abandoned biface roughout is unequivocal evidence that biface manufacture was taking place on-site, but so far no flakes have been found which refit to any of the completed bifaces. This raises the possibility that the hominids imported some of these pieces from another part of the site, or from another site. More intensive lithic analysis will help to clarify this issue.

Retouched flake tools are also an important component of the assemblage, amounting to *ca* 3.5% of the overall flake population. They are interesting in representing a restricted repertoire, with virtually no scrapers. The flake tools are characterised by single or multiple flake removals to produce notches, and in one case a denticulate. At least one notch occurs on a large block.

Steady progress is being made in the refitting of artefacts (Figure 1). At present they amount to 75 conjoining pieces comprising twenty refitting sets. Most of these represent flakes from sequences of parallel flaking, and have been recovered at pair-distances of less than 2 metres, indicating very limited assemblage sorting, as is also witnessed by the size distributions. One notable exception is a flake belonging to a set of three, which was found over 7 m from the other two flakes. It makes a valuable connection between two adjacent sedimentary units – pale calcareous (tufaceous?) clays more distant from the channel, and darker more organic material closer to the channel edge. Artefacts are scarcer in the pale clays. This is the first evidence that the two may have been deposited contemporaneously.

The most complete refitting set is composed of 28 pieces including a biface roughout. The spatial distribution of this set is comparable to experimental flake scatters produced by knapping in a single location (Figure 2). The

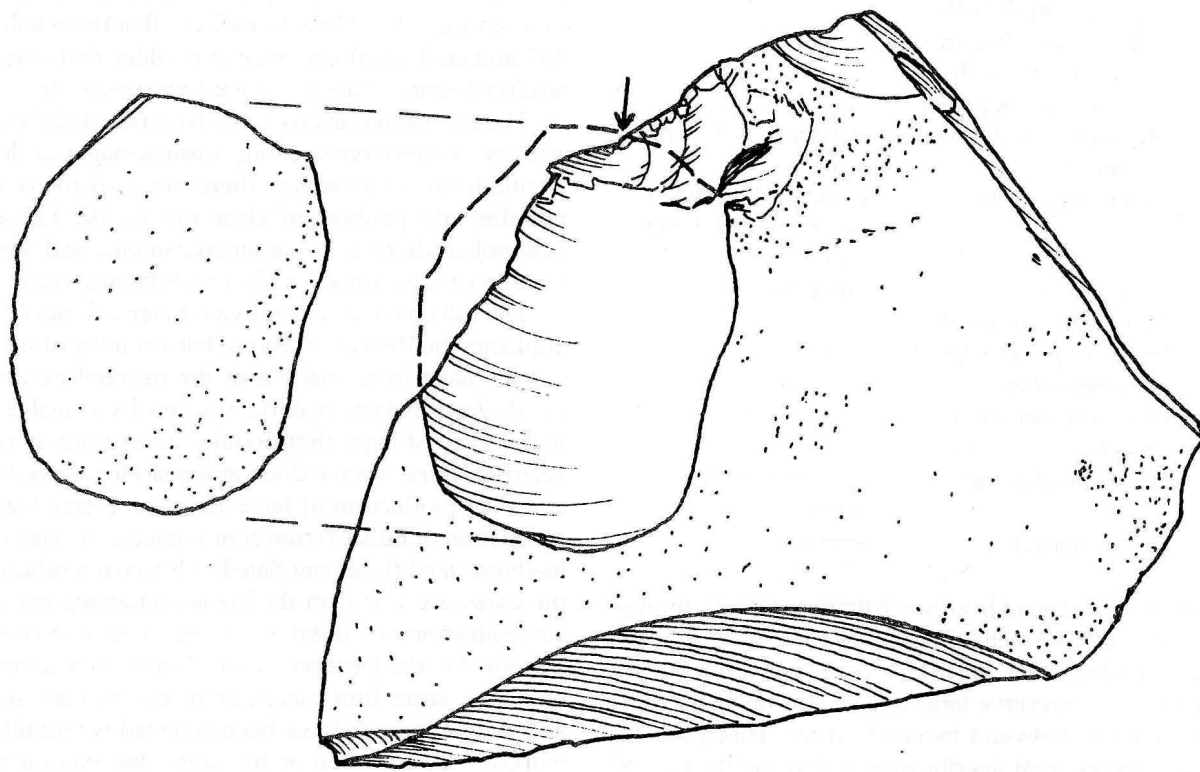


FIGURE 1. Beeches Pit: a pair of refitting flakes from AH excavation (actual size).

#### Spatial Distribution of Refitting Biface Roughout

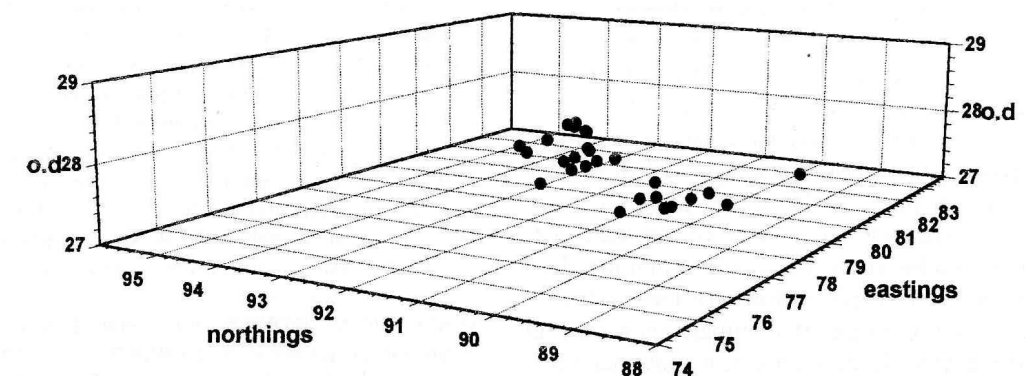


FIGURE 2. Oblique view of the grid of AH excavation, giving an indication of the 3D distribution of the largest refit group.

biface roughout was abandoned together with the debitage, perhaps owing to a large flaw within the flint nodule exposed by flaking.

Our initial work has involved various measurements of size spectra of artefacts, and weight distributions (Andresen *et al.* 1997). The high numbers of conjoining pieces and their spatial distribution are further confirmation that the artefacts in this sector are relatively undisturbed by natural processes, and that knapping scatters are preserved *in situ*. Vertical dispersions of around 10–15 cm suggest minor up/down movement; otherwise, the internal patterning of the artefacts suggests that spatial disengagement of the different stages of reduction did not occur, and intra-site movement of artefacts was minimal. Nodules were reduced in single locations and the spatial distribution of the debitage does not suggest the occurrence of "activity zones" within the site. The separation of bifaces from their debitage, if confirmed, may however suggest that these artefacts were curated, and moved around to a greater or lesser extent.

The transport patterns and spatial organisation of lithics at this locality suggest repeated sporadic hominid visits to the same location in the landscape over a relatively brief period of time. The discard of imported artefacts, on-site knapping of flint nodules (with export of certain components) are responsible for the build up of lithic material in this area.

#### COMBUSTION EVIDENCE

From August 1997 it has become plain that evidence of burning is represented in every main area and level of the archaeological sites, in a variety of facies that is not known to us from any other Lower Palaeolithic site. It would be premature for us to try and interpret this here. We give simply the main outlines of evidence, and the main possible hypotheses.

(1) There are scatters of burned flints – sometimes deeply

reddened and crackled – across AH excavation and at more than one level of AF excavation.

- (2) There are discrete patches of burned sediment or sediment including burnt material on both AH and AF excavations. In each case one or more bone fragments are associated with these patches or very close to them.
- (3) The dark unit 4 on AF contains burnt material, which the excavation and a sounding of 1997 on the opposite side of the channel show must be very extensive.

Without further discussion of evidence several hypotheses are possible. The variety of the evidence may suggest that more than one hypothesis of explanation will be needed.

There are three immediate hypotheses: (1) that the concentrated patches represent hearth features, indicating controlled fire-use; (2) that burnt patches and scattered burnt flints are incidental features of hominid fire-use; (3) that the broader concentrations of burnt material are essentially natural features stemming from forest fires.

Our intention is to work towards providing objective answers. These may lie partly in assessing all burning evidence on the site, particularly the distribution of burnt flints. Magnetic studies started by Sue Haritou and Alf Latham at Liverpool may be especially helpful, and have already suggested that some flints may have been burnt more than once.

#### ARCHAEOLOGICAL INTERPRETATION AND CONCLUSION

The archaeology of Beeches Pit can be evaluated in its local East Anglian setting, but also in the context of approximately contemporary sites in NW Europe, such as Bilzingsleben, Schöningen, Kärlich and the Somme sites (Mania 1995, Thieme 1996, Bosinski *et al.* 1986, Tuffreau *et al.* 1997). Our analyses are still at a preliminary stage. The artefacts of AH have some similarities to sites such

Cagny l'Épinette, where there are similar occurrences of non-classic bifaces, and notches on large and small pieces (Tuffreau 1992), but cores are relatively scarce there (Tuffreau *et al.* 1997), whereas at Beeches Pit they are common.

The archaeological occurrences at Beeches Pit probably represent repeated sporadic hominid visits to a south-facing channel bank, where springs may have served as a focus for various activities, including flint knapping from a local source. It could be that this "favoured place" offered opportunities for extended occupation. In that case, AH would amount to a lobe of this occupation, in a localised sedimentary context not exposed for very long; whereas AF would preserve a fringe of occupations recurrent through a longer period. In each case, it is quite plain that this occupation took place in fully temperate climate. This does not yet tell us how closed an environment the hominids could cope with, because even if the local forest was dense, it may have contained localised clearings, perhaps especially in the neighbourhood of sediment deposition by springs.

The environmental evidence reviewed above points strongly in the direction of a land connection with continental Europe – demonstrated by similarities of the fresh-water molluscan fauna, and in the varied reptilian and amphibian fauna of stage 11 sites (Meijer, Preece 1995, Stuart 1995) – although Turner (1995) regards the absence of the hyena *Crocota crocuta* as possible evidence for British insularity. There is thus a logic in making archaeological comparisons with European evidence – for example concerning the possible role of fire – and good reason for trying to improve chronological precision. Our research at Beeches Pit has also been aimed to have consistency in approach with techniques practised on East African excavations. This allows another set of comparisons, especially in stone tool production and taphonomy. Are such wide-scale comparisons rewarding? Bosinski (1982) regarded Lower Palaeolithic sites as "open to world-wide discussion", arguing that they included little if any culture-specific differentiation. This is a point which still requires much further testing, inevitably based on comparisons of site-groups within and between regions.

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