

Neolithic to Early Bronze Age Buckinghamshire: a resource assessment

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Inheritance

Mobility

Recently, much more continuity between the Mesolithic and Neolithic in terms of mobility of the population as well as subsistence has been evidenced. Now that this idea is more or less accepted by the archaeological community, more and more evidence for Neolithic settlement has come to light. In Buckinghamshire the most important investigations into this aspect of the early Neolithic have come out of excavations in advance of the construction of Eton Rowing Course and the Maidenhead to Windsor Flood Alleviation Scheme, mainly in the parish of Dorney in South Bucks on the Thames. Three large middens that may have formed over several centuries have been excavated, one containing a large amount of charred cereal grain dated to the earliest Neolithic. No structural remains have been found, but it is likely that any structures were not earth fast. A hearth was excavated next to a former channel of the Thames in one area and there are many artefact scatters attesting to centres of human activity. However, even though this evidence points to intensive use of the area by people in the Early Neolithic, the excavator cannot be certain that the middens point to year-round sedentary occupation or seasonal re-use (Allen et al 2004). Other evidence does point to continued mobility, such as the isolated pit found at St John's Hospital, Stone (Carstairs & Lawson 1992) and the artefact scatters at Scotsgrove Mill, Haddenham (Mitchell 2004) and East Street, Chesham (Collard 1990) for example, certainly not representing sedentary occupation and reflecting use over a long period of time.

Persistent places

There seems to have been a tendency, particularly in the early Neolithic, to carry on visiting those places that were used again and again in the Mesolithic. These persistent places include East Street, Chesham, near to the River Chess where small sherds of Neolithic and Bronze Age pottery were found amongst an assemblage of Mesolithic flint microliths, burnt flint and disarticulated animal bone (Collard 1990, 18) and Late Neolithic to Early Bronze Age activity in the form of pits and ring-ditches at Chessvale Bowling Club nearby (Halsted 2006, 23-8). Another persistent place seems to have been the lower reaches of the River Colne. Recent excavations at the Sanderson Site, Denham, uncovered a scatter of Mesolithic flint, hazelnut shells and red deer bones (Halsey 2005). The nearby site at Three Ways Wharf, Uxbridge, had a number of layers of occupation from the late Mesolithic and Early Neolithic (Lewis 1991). It is likely that there are Neolithic remains nearby over the border in Buckinghamshire as well. A similar sequence was uncovered in excavation and fieldwalking at Bancroft in Milton Keynes, with over 600 flints recovered dating from the Mesolithic and Neolithic from an attractive river valley location (William 1993, 5). And again at Scotsgrove Mill, Haddenham, where the River Thame meets one of its confluences, where a large assemblage (510 flakes, 51 blades, 23 cores and 9 round scrapers) of Mesolithic, Neolithic and Bronze Age flints were found in a field-walking survey (Mitchell 2004, 1).

Use of river valleys

River valleys continue in importance through the Neolithic and Early Bronze Age, evidenced by the burnt mounds at Little Marlow and the investigations in advance of the Eton Rowing Course and Maidenhead to Windsor Flood Alleviation Scheme. Burnt mounds are often near watercourses and at Little Marlow three burnt 'spreads' of Late Neolithic to Early/Middle Bronze Age date utilised a small tributary of the Thames (Richmond & Rackham 1999; Richmond, Rackham & Scaife 2006). The former string of river islands in the Dorney area seem to have been important for settlement, ritual and economic reasons (Allen et al 2004).

Hunting and gathering

There is continuity in subsistence strategies from the Mesolithic to the Early Neolithic, it seems. There is a little evidence for sedentism and arable agriculture, as outline above, but the majority of the evidence points towards mobile groups of people practising animal husbandry and hunting and gathering. Even at Dorney, which has the best evidence of long-term settlement, there is evidence of hunting wild animals, fishing and gathering hazelnuts (Allen et al 2004). See below for more details.

Nature of evidence base

Investigation of Neolithic and Early Bronze Age Buckinghamshire has neither been systematic nor extensive. An example of early excavation in the county was Cock's excavation of a mound in Chetwode, published in the *Records of Buckinghamshire* in 1896. J.F. Head's *Early Man in South Buckinghamshire* (1955) examined Palaeolithic to Saxon remains that had come to light in the Chilterns and along the Thames, mainly from the work of the extractive industries, from dredging operations in the River Thames and from casual field-walking and field survey. The designation of Milton Keynes as a new town in 1967 was followed by a great deal of archaeological fieldwork in the 1970s, for this period, particularly focusing on the ring-ditches of the Great Ouse (e.g. Field 1974 and Green 1974). The excavation of the Neolithic barrow on Whiteleaf Hill by Scott in the 1930s, published by V. Gordon Childe in 1954 who commented on Scott's exhaustive collection of flints, which he had not seen before (Childe 1954, 217). There have also been a few stray papers on stone implements or remains identified in excavation or survey within a wider investigation (e.g. Carstairs 1986; Dalwood 1988; Smith & Wymer 1964; Wise 1991). More recent investigation within the commercial archaeology framework has revealed dense areas of activity in the Dorney area and has refined our knowledge of the Whiteleaf Hill complex (Allen et al 2004; Hey et al forthcoming). Other Neolithic and Early Bronze Age features have been discovered in excavations undertaken as part of the developer-led framework, such as Neolithic pits at Coldharbour Farm on the north-west edge of Aylesbury (and Early Bronze Age examples at Walton Lodge Lane on the south of Aylesbury (Bonner 1994, 2-4), for example.

One of the interesting results of investigation of mounds presumed to be Bronze Age round barrows is that most turn out to date to other periods or be other types of monuments. In Buckinghamshire these include a mound in Chetwode investigated in 1896. The only evidence collected reflected the mound's use as a post-medieval windmill mound. Canon Greenwell advised 'I have come to the conclusion that mounds (cenotaphs) were sometimes thrown up where no interment had taken place' (Cocks 1896, 462-4). Similarly, J F Head excavated the Cop round barrow at Bledlow and published the results in *Records of Buckinghamshire* in 1938. He interpreted it as an Early Bronze Age round barrow despite the fact that the central pit (actually a seventeenth century 'excavation') cut through what was clearly a Saxon burial. M Farley has pointed out this mistake and the barrow is reinterpreted as probably Saxon, but built over an area of earlier occupation, mainly Middle to Late Bronze Age (1992, 11-13). More recently, two mounds thought to be Bronze Age round barrows on Whiteleaf Hill near the Neolithic oval barrow have been found in survey an excavation to be a natural tump and a windmill mound (Hey et al forthcoming). There are several other mounds that are probably monuments other than round barrows.

Fieldwalking events in targeted areas of the county have been the source of the flint collection known from this period. The Aylesbury Past Project (1986-8) used volunteers to field-walk large swathes of Aylesbury's hinterland, generating find of all periods, as well as those we are concerned with here. Local archaeological societies have also taken a lead in field-walking, mainly the Chess Valley Archaeological and Historical Society (CVAHS), who are responsible for many of the flint scatters found around Chesham and Amersham (Stainton 1983; Stainton 1995). In fact, an English Heritage survey found that out of 332 flint scatters in Buckinghamshire, 118 had been found by fieldwalking. 53.4% of these by the volunteers of the County Museum Archaeological Group, 11.9% by professional archaeologists attached to

Buckinghamshire County Museum, 11% for the Aylesbury Past Project and 11.85% by local societies. Individuals and students account for a further 11% (unpub. report). Since then the Whittlewood Project, though focusing on the medieval period, uncovered several scatters of prehistoric flint in north Buckinghamshire and south Northamptonshire (Jones & Page 2006, 39-43). Geophysical survey has also been employed by J Gover, a member of CVAHS, and has revealed a possible mortuary enclosure or short cursus at Ivinghoe Beacon and a possible long barrow at Bulstrode camp, Gerrards Cross (Gover 2000; Gover 2003). Marlow Archaeology Society identified a ring-ditch cemetery at Low Grounds Farm, Marlow from aerial photograph and geophysical survey (unpub. doc. 2002). Metal-detecting has found a small number of artefacts of this period.

There has been a sustained effort to generate aerial photographic coverage of the north of the county, with M. Farley flying out of Haddenham Airfield. Northamptonshire County Council, CUCAP and the NMR have generated other aerial photographic evidence. The aerial photographic coverage has captured images of ring-ditches along the Great Ouse in the far north of the county and along the River Thames, just north of the Chiltern scarp, and a possible mortuary enclosure or short cursus on Southend Hill, Cheddington.

The River Thames has yielded many artefacts over the years, mainly from dredging operations. These range from stone axe-heads to a possible Bronze Age log boat that was lost by 1880 (Head 1955, 77). No other river has been so extensively dredged and therefore the tributaries of the Thames probably still hide these artefacts, if indeed they were deposited there on any scale.

There are a number of sites that have yet to be published and could benefit from reappraisal. These include old excavations, such as those at Lodge Hill, Saunderton, excavated in 1933, and Windmill Hill, Hitcham, excavated in 1884, and more recent ones such as Walton Lodge Lane, dug in 1994 by Buckinghamshire County Museum Archaeology Service and Church Farm, Bierton, excavated in 1996 by Tempus Reparatum.

Meat acquisition and processing tools dominate in the Neolithic to Early Bronze Age, from leaf and barbed-and-tanged arrowheads, to scrapers and awls, presumably tools to butcher animals and process hides. In general, polished stone axe-heads are deposited in what is taken to be more 'ritual' contexts, for instance in rivers and causewayed enclosures, while flaked examples are found in more 'domestic' contexts like flint scatters. The absence of leaf and transverse arrowheads as well as ground axes in the Late Neolithic fieldwalking assemblage from Newton Leys was taken as an indication of a domestic assemblage (Bonner et al 1995, 22). A flaked flint axe roughout was found in the Neolithic assemblage at Coldharbour Farm (Parkhouse & Bonner 1997, 120). In Buckinghamshire most finds of polished axe-heads are stray finds not associated with any other material. These include the polished flint and stone axes found in Boarstall now in the British Museum (Roberts 1999); a polished greenstone axe found in the Colne Brook in Iver (Grimes 1946) and two fragments of polished axes from Stone and Hartwell (Dalwood 1988). However, polished axe fragments were found in the Early Neolithic middens at the Eton Rowing Course site (Allen & Welsh 1997, 31) and a fragment of burnt polished flint axe was found in midden material in one of the banana-shaped pits (probably tree-boles) at Stacey Bushes (R. Bradley pers. comm.; Green & Sofranoff 1985, 21).

Mildenhall ware, from the early Neolithic, was found in a placed deposit at St John's Hospital, Stone, and in the barrow material on Whiteleaf Hill (Carstairs & Lawson 1992, 24-5; Childe & Smith 1954, 224). Both may be the deliberate incorporation of midden material in ceremonial monuments. The re-interpreted Saxon barrow at Bledlow Cop seems to have been built over an area of Early and Middle Bronze Age activity and Beaker sherds were found in one of the hollows excavated outside the barrow in a non-funerary context, perhaps a case of midden material being redeposited in pits (Farley 1992; 13; Head 1938, 327). Early Bronze

Age Collared Urn sherds were also found in one of the burnt mounds at Little Marlow (Richmond & Rackham 1999, 16-7; Richmond, Rackham & Scaife 2006, 75). Several Beakers and Collared Urns have also been found in funerary contexts, however. Beakers, for instance were found with a crouched inhumation at Church Farm, Bierton and in excavations at Lodge Hill barrows, Bledlow (Tempus Reparatum 1996; unpub MS notes). The final burial in the double-ditched barrow excavated at Gayhurst Quarry was accompanied by a primary series Collared Urn (Chapman et al 1999, 20).

Buckinghamshire's pottery seems to reflect its position on the edge of several traditions where styles of pottery mingled. This is evident in the assemblage from the isolated Neolithic pit at St John's Hospital, Stone, where Plain Ware and Mildenhall style pottery sherds were found together (Carstairs & Lawson 1992, 24-5). The pottery in the Treacher collection from Marlow was described by Smith when it was re-appraised as being of a Western tradition and similar to assemblages from the north of the Thames (Smith & Wymer 1964, 291). The Beakers found with the burial of an elderly woman from a ploughed-out barrow at Little Pond Ground Farm were thought by the excavator to be different from local types, especially nearby Warren Farm, as the fabric was made with a flint temper rather than the local shell (Green 1974, 117). The two traditions of pottery at Stacey Bushes, Grimston and Grooved Ware, were thought to have been related to two different groups using the same area, or to have had two different functions but it is now clear that they are not contemporary and came to be associated with each other after being mixed in a midden (R. Bradley, pers. comm.; Green & Sofranoff 1985, 29).

Early Bronze Age metalwork has only a narrow spectrum of types. Axe-heads are often interpreted as tools for felling and shaping trees, but they would be as useful as weapons. Swords and daggers are more overtly military, but early bronze weapons are likely to have been at least as symbolic as utilitarian, if not more so. Early Bronze Age metalwork is also quite rare, and it is Middle Bronze Age metalwork that is found with more frequency. An important depositional event in the Early Bronze Age seems to have been to put metal items into watery places. It has been suggested that this is could be to accompany a dead body, a display of wealth, or to stake a claim to territory (York 2002, 90).

SMR quantification:

Monument type	Number in SMR
Long barrows	4
Oval barrow	1
Round barrows	61
Ring-ditches	90
Flint scatters	93
Pits	31
Burials (inhumations & cremations)	17

Find type	Number in SMR
Flake	510
Retouched flake	28
Scraper	215
All flint artefacts	1105
Axeheads	93
All stone artefacts	40
Antler artefacts	6
Bone artefacts	29
Metal artefacts	7

Chronology

The conventional sequence is c. 4000 – c.2300 BC (recorded as 2350 in the Buckinghamshire SMR) calendar years for the Neolithic and c. 2300 – c.1600 BC for the Early Bronze Age. The Neolithic is either split into two or three periods. Three periods seems appropriate here, with the Early Neolithic dating to c.4000 c.3300/3200 BC, the Middle Neolithic dating to c.3300/3200 to c.2600 BC, and the Late Neolithic dating from c.2600 – c.2300 BC.

The chronology of artefacts at the Eton Rowing Course and Maidenhead to Windsor Flood Alleviation Scheme sites started with early Neolithic (c. 4100-c. 3300 cal BC) which included carinated bowl, plain bowl, decorated bowl and Ebbsfleet Ware. The middle Neolithic (c. 3300 – c. 2900 cal BC) was characterised by Mortlake and Fengate ware. The late Neolithic (c. 2900 – 2200 cal BC) pottery was mainly carinated bowls; Beaker pottery appeared after c. 2500 BC. Lithic dating could only distinguish between an early Neolithic, middle to late Neolithic and a late Neolithic to Early Bronze Age (Allen et al 2004, 82). The extensive investigations gave an opportunity for a systematic programme of scientific dating of features over a wide landscape. Three Early Neolithic middens were excavated, two at the Eton Rowing Course site and one at Lake End Road West, part of the flood alleviation scheme. Charred emmer grains from the Lake End Road West midden gave a date range of 3900-3500 cal BC (4910 +/- 40 BP (OxA-9891), 4925 +/- 40 BP (OxA-9819), 4895 +/- 50 BP (OxA-9859), and 4935 +/- 40 BP (OxA-9889)). These were the earliest secure dates for cereal cultivation in Britain in 2004. A charred hazelnut shell and a cattle bone also give very early fourth millennium cal BC dates (4995 +/- 40 BP (OxA-9890: 3940-3660 cal BC) and 4970 +/- 45 BP (OxA-9858: 3940-3650 cal BC) (Allen et al 2004, 91).

At Whiteleaf barrow the early Neolithic radiocarbon date was associated with Mildenhall and Ebbsfleet style pottery, leaf-shaped arrowheads, serrated flakes, end scrapers (Childe 1954, 217-9). Human bone from the primary burial was dated to 3760 - 3640 cal BC (4900 +/- 33 BP: OxA- 13567), charred residue from pottery found in the barrow mound was dated to 3660 - 3520 cal BC (4803 +/- 35 BP: NZA-21036) and part of a red deer antler from the upper and outer layer of the barrow mound was dated to 3370 – 3100 cal BC (4537 +/- 30 BP: NZA-20964). The first two dates were taken from material excavated in the 1930s; the red deer antler was found in recent excavations in 2003. The layer it came from was part of a secondary enhancement of the barrow mound (Hey et al forthcoming).

Peterborough style pottery sherds were found residually in later features during the investigation of the Aylesbury to Chalgrove gas pipeline in 1999 at the Chilton Grove North site. Twelve body sherds with a fabric with chalky inclusions represented at least three vessels, two plain and one decorated with incised decoration made with the end of a bird bone. Some grog-tempered pottery was also Peterborough style. The pottery seems to date to the late fourth millennium BC (Taylor & Ford 2004, 3-4).

Peterborough ware was also recovered from a number of 'circular patches' arranged in arcs in the Lavender gravel pit in Iver, in the south-east tip of the county in the 1930s. Workmen alerted A.D. Lacaille to these 'patches' and in the top of one was found some Neolithic decorated pottery and a fine end scraper. Later, some plain pottery and a near complete saucer were also found, and suggested to be of a later, Bronze Age, date. However, S Piggott gave the opinion that all the pottery was of a similar date. It would be useful to reassess this data (Lacaille 1937, 287-292).

A Neolithic pit uncovered prior to the redevelopment of the site of St John' Hospital, Stone contained Early Neolithic Plain Ware pottery sherds and a large Middle Neolithic rim sherd of flint-tempered Mildenhall style pottery. The pit was dated on the basis of these finds to between 3,200 and 2,600 BC (Carstairs & Lawson 1992, 15-17).

Visiting the Marlow brickyard in the 1920s and 1930s, Llewellyn Treacher created a collection of Palaeolithic to Neolithic artefacts that was examined by Wymer and Smith in the 1960s. The context of the artefacts remains unknown, but it is clear that there was activity in the vicinity in the earlier Neolithic period, twenty sherds of 'Western' plain ware being found (Smith & Wymer 1964, 286-91). The Treacher collection also contained earlier Neolithic cores, leaf-shaped arrowheads, a laurel leaf, a sickle, ground flint axes and stone axes. The later Neolithic or Early Bronze Age was also represented by a plano-convex knife, triangular arrowhead, a core and scrapers (Smith & Wymer 1964, 292-5).

The group of tree-boles excavated at Stacey Bushes in Milton Keynes contained Grimston style and Grooved Ware pottery (Zeepvat 1991, 52). The Grimston style pottery, of Early Neolithic type, was associated with a Late Neolithic radiocarbon date from a sealed context, but it is now assumed that the material in the pits had been in a midden for many years before being redeposited (R. Bradley, pers. comm.; Green & Sofranoff 1985, 10).

The flint assemblage from the Chessvale Bowling Club excavations is indicative of a Late Neolithic and Early Bronze Age date. Some local Middle Neolithic presence is suggested by the find of a Peterborough ware sherd in the fill of the ring-ditch. It was intrusive in an upper fill as a radiocarbon date from the lower fill was Early Bronze Age (1900-1730 cal BC (3485 \pm 35 BP: SUERC-9523)). Three pits produced Late Neolithic radiocarbon dates, but two may be from residual material as they are associated with Early and Middle Bronze Age pottery. The one secure date is 2580-2430 cal BC (3975 \pm 35 BP: SUERC-9149). Some of the pits contained Beaker pottery, which could date to the Late Neolithic or Early Bronze Age and much of the rest of the pottery was Early to Middle Bronze Age, such as a Food Vessel in a pit south of the ring-ditch. Activity carries on into the Middle Bronze Age with a Deverel-Rimbury urn in a pit to the southeast of the ring-ditch (Halsted 2006, 10, 24).

Three burnt mounds excavated in advance of sand and gravel extraction by Phoenix Consulting at Little Marlow were dated scientifically. The three sites lay on both sides of a stream tributary of the Thames. One burnt mound was on the south of the stream and the other two on the north. They consisted of large areas of burnt flints and a deposit of dark earth with some structural remains. Site 3 was 50m north of the stream and was dated to 1745-1385 cal BC (3270 \pm 90 BP – Beta-82560). Site 3SE (stream extension) was directly on the north bank of the stream and a date was generated from material from the central core of the burnt spread: 2140-1920 cal BC (3660 \pm 40 BP – Beta- 130864), firmly within the Early Bronze Age. Finally site 3a was around 50m to the south of the stream and was dated again from charcoal from the central core of the burnt material to 2475-2140 cal BC (3860 \pm 60 BP – Beta-130863). This burnt mound was therefore the earliest and dated to the Late Neolithic/Early Bronze Age transition (Richmond & Rackham 1999, 6-13; Richmond, Rackham & Scaife 2006, 78).

The primary Beaker burial in the ring-ditch excavated at Little Pond Ground in Milton Keynes was radiocarbon dated to 2289 to 1876 cal BC (1720 \pm 80 bc: HAR-340) (Green 1974, 116). A pit at Stacey Bushes in Wolverton contained both Grimston and Grooved Ware pottery from a reworked midden deposit and was radiocarbon dated to 2583 – 1856 cal BC (1830 \pm 150 bc: HAR-858) (R. Bradley, pers. comm.; Green & Sofranoff 1985, 10). The Milton Keynes ring-ditch was dated with a sample taken from a charcoal layer in the ditch to 1693-1305 cal BC (1280 \pm 90 bc: I-7144) and was associated with a Beaker sherd (Green 1974, 76). The Cotton Valley ring-ditch was dated from a similar deposit to 1977-1208 cal BC (1340 \pm 160 bc: HAR-471) (Green 1974, 121).

Investigations at Walton Lodge Lane in 1994 uncovered a series of probably Early Bronze Age pits. One contained four sherds of collared urn while another contained decorated pottery including two Beaker sherds (Bonner 1994, 4). Not far away at Church Farm, Berton, just

west of Aylesbury, a cord-decorated Beaker burial was excavated in 1996. Other grave goods included a barbed-and-tanged arrowhead and a strike-a-light (Tempus Reparatum 1996). The final burial at the top of a double-ditched barrow excavated at Gayhurst Quarry in 1999 was a cremation accompanied by a primary series collared urn decorated with whipped-cord decoration. This followed four burials, starting with a central inhumation, followed by an unurned cremation in the upper fill of the primary burial. Above this was another inhumation burial in a plank-lined grave cut into the barrow mound: two plano-convex flint knives and a red deer antler had been placed on the lid and had slumped into the grave when the wood rotted. Another unaccompanied cremation was placed above this before the collared urn cremation. There was also a cremation beyond the outer barrow ditch in an inverted collared urn (Chapman 1999, 17-20).

An early discovery of 'British' pottery in Wycombe Marsh, in a field known as Barrow Crofts, is from a possible Early to Middle Bronze Age cremation. There were two cinerary urns, one large, and an incense cup. It was said at the time that the incense cup frequently accompanied 'early interments', but this cremation is likely to date to the end of the period under consideration here (Parker 1889, 259-60).

An assemblage of struck flints was found in an evaluation in advance of a decision on scheduled monument consent to build a number of houses over the road from Desborough Castle, thought to have a Neolithic or Early Bronze Age barrow truncated by an Iron Age hillfort which was then built on with a medieval ringwork. The length to breadth ratio of the flints suggests they date from the Late Neolithic or Bronze Age (Collard 1988, 15-16, 25).

The Chilterns flint industries from the late Mesolithic to the Late Bronze Age seem to have two traditions. One produces roughly worked squarish flints and the other fine blades and flakes with a white patina. Whether these traditions represent a difference in date or function is difficult to ascertain (unpub. MS notes).

Landscape and land use

Environmental samples taken as part of the investigations at the Sanderson Site in Denham may be able to provide some information about the environment at the Mesolithic-Neolithic transition when they are analysed (Halsey 2006, 91). As seen elsewhere along the Thames and other rivers in the south-east, there seems to have been a particular importance put on river islands, or eyots, and confluences. The causewayed enclosure at Dorney Reach may have been on a river island when it was constructed, as were the early Neolithic middens excavated in advance of the construction of the Eton Rowing Course (Allen et al 2004). Cereal grains found in the middens also suggest the use of the islands for early arable farming. It has been suggested that river islands may have seemed safe places for early farmers, protected from the wider world by water (Allen et al 2004, 95).

The tree-throws at Coldharbour Farm near Aylesbury were thought to have been deliberately cleared in the Neolithic rather than to be the result of natural death of the trees (based on the find of a flint axe rough-out in one of them) and that they all seem to have been cleared at roughly the same time. Only two of the tree-throws were investigated and both revealed man-made artefacts, the rough-out and some burnt flint (Parkhouse & Bonner 1997, 80, 133).

The charcoal found in the tree-boles at Stacey Bushes in Wolverton was of 'fairly large timbers', suggesting woodland clearance. One occurrence of charcoal of Old Man's Beard reflected some local open ground. Small charcoal fragments included conifer and this argued for a pre-Neolithic date (though it was likely from a mixed context). The land mollusca indicated shaded conditions. Hazelnuts argued for an occupation in early autumn (but storage was also a possibility). The very small fragments of animal bones included cattle, pig and rabbit and it was commented that perhaps they were intrusive. There was a question whether the red soils indicated a relict paleosol or were the result of weathering due to grazing and

cultivation (R. Bradley, pers. comm.; Green & Sofranoff 1985, 19). The landscape of Whittlewood was one of broken woodland and open tracts of grassland in the Late Neolithic/Early Bronze Age (Jones & Page 2006, 40).

On the main Eton Rowing Course site, as well as at Lake End Road West, Marsh Lane West and East and the Taplow Mill site, there were many tree-throws, but it was not clear whether they were cleared by man or by natural events. They were filled with midden material soon after the trees had fallen (Allen et al 2004, 91). At the time of publication of the interim results of the Eton Rowing Course and Windsor, Maidenhead and Eton Flood Alleviation Scheme the excavators claimed to have the earliest secure scientific dates for cereal cultivation in Britain. Charred emmer grains from the Lake End Road West midden had a date range of between 3900 to 3500 cal BC. The quantity of charred cereal grains was not large, only 93 in a midden containing 670 sherds of Plain Bowl pottery and 870 flints, and there were also many hazelnut shells representing a continuation of a gathering culture alongside perhaps small-scale arable. Animal remains also suggested some domestication, with a predominance of cattle, though other domesticated species included sheep, pig and dog. Pottery fragments had contained milk, it was revealed through lipid analysis, perhaps of cattle or sheep, confirming that dairying was also practiced at this site in the Early Neolithic. The cattle are said in this brief contribution to have been “traditionally woodland browsers” but this statement is puzzling (Allen et al 2004, 91). However, this was combined with a continuation of hunting and gathering. Along with evidence of mixed agriculture there were also a number of animal bones from wild species suggesting hunting. The species included aurochs, wild boar, red deer, roe deer, badger, beaver and fox. Allen suggested that the last three might have been hunted for their pelts. An extensive Early Neolithic flint scatter was identified at the Eton Rowing Course excavations, in an arc around a hearth that had probably been used several times. The flint debitage included 32 rough-outs or misshapen leaf-shaped arrowheads, which was suggested as an indication of the site's use as a hunting camp where the tools of the job were made before being used (Allen et al 2004, 94). The people who created the Lake End Road West midden also gathered hazelnuts, another continuity of Mesolithic practice, as well as fished. The only fish species found was pike, suggesting that particular importance was placed on this fish. One of the crouched Middle Neolithic burials found in advance of the construction of the Eton Rowing Course had a pike bone in front of the body between the arms and legs, perhaps deliberately placed (Allen et al 2004, 91). This summary is exceedingly brief and one will have to wait for the full publication to confirm all the remarks made.

Cores were taken of the peat at the edge of the stream tributary of the Thames near the burnt mounds at Little Marlow. After a hiatus in peat growth in the Mesolithic, it started growing again in the Neolithic near woodland of oak, lime and hazel. In the Late Neolithic/Early Bronze Age the pollen has evidence for the lime decline. It reflects a wider woodland clearance that probably contributed to the accumulation of peat through a higher water table leading to anaerobic conditions. The wood that was used for the fires set at the burnt mounds was quite varied, including maple, hazel, oak, ash, beech, alder, holly, blackthorn, hawthorn, willow and pine. There was no preference for species and no evidence of woodland management as the charcoal was poorly preserved. There is evidence of a Late Neolithic/Early Bronze Age mixed agricultural economy from the Little Marlow burnt mounds. The pollen analysis picked up cereal pollen and that of associated weeds as well as fallow plant pollen, such as grasses, daisies, dandelions, sow thistles and hawk-bits, reflecting pastoralism as well, suggesting both arable and pastoral subsistence strategies (Richmond & Rackham 1999, 33-4; Richmond, Rackham & Scaife 2006, 77-8, 80-1).

Animal bones were found at Whiteleaf during the excavation by Scott between 1934 and 1939, 45 bones from the inner mound were identified and included in descending order of importance: bones of red deer, pig, sheep, ox, roe deer, 1 beaver incisor and two bird bones. However, there is no comment on the bones or indication of a separate report. Plant

impressions of club wheat grain, emmer grain and emmer spikelet on two pottery sherds (Childe 1954) attest to the presence of these two different types of cereal crop at that time. The land molluscs from a buried soil below the mound were identified by Kennard (Childe 1954, p. 230) and indicated a wooded environment on poorly drained ground, probably clay with flints. These conditions are pre barrow and may not reflect the Neolithic period itself. All these results are of a very limited nature. Recently, in 2003, a program of retrieval of snail columns and bulk samples has been carried out during the excavations prior to the reinstatement of the Neolithic barrow; an interim report has been produced for the excavation (Hey et al forthcoming).

There is evidence of animal husbandry from other sites, but little other evidence of cereal cultivation. The double-ditched barrow in Gayhurst Quarry contained a large amount of domesticated cattle bone; 183kg was recovered from a 50% sample (Chapman et al 1999, 20). Domesticated animal bone, including ox, sheep and pig was found at the Bronze Age settlement site at Windmill Hill, Hitcham, associated with Beaker pottery and a fragment of polished stone axe (Head 1955, 158; unpub. MS notes). Domestic animal bones found in the ring-ditch at Warren Farm in Milton Keynes were identified as those of cattle, sheep, fowl and dogs. The excavator suggested that the lack of pig suggested an open environment, which was supported by the molluscan evidence for open grassland with a lack of arable agriculture. Wild animals included horse, red deer, fox and bird, which may have been hunted for meat or, in the case of the fox, for its pelt (Green 1974, 97, 100).

The molluscan evidence from dry valley deposits at Pitstone suggested a mixed deciduous wooded environment from the sixth to fourth millennia BC that was cleared in the early second millennium BC, based on a radiocarbon date on associated charcoal of 1960 +/- 200 BC (Holgate 1995, 3).

Excavations at the Wyeth Laboratories site in Taplow in 1993 uncovered a number of possible Late Neolithic to early Bronze Age gullies and a pit. The gullies were thought to represent rudimentary field boundaries. However, the dating evidence was not good. The flint tools were not diagnostic in terms of date but were hard-hammer struck, which suggests a Late Neolithic or Early Bronze Age date. Not all features contained these flints, either, but were of similar dimensions, orientation and had similar fills and so were assumed to be contemporary (Hardy & Keevill 1993, 3-5). Nearby excavations at Taplow Court revealed a number of intercutting scoops, a possible ploughsoil and a short length of ditch under the later Taplow hillfort containing Early Bronze Age pottery sherds (Allen et al 2000, 23; Lamdin-Whymark 2004, 19). Another gully containing worked flint overlain by a silty layer also containing flint was identified at Danesfield Camp, Medmenham in 1990. The flints were tentatively dated to the Neolithic and the site interpreted as being on the edge of a domestic area with midden material that had been re-deposited here (Keevill & Campbell 1991, 90- 97). The ancient land surface and a number of gullies and ditches were identified over several trenches at Chequers Manor Farm, Cadmore End in advance of the construction of a golf course. Unfortunately, again, the flint artefacts were not typical of any one period, with tools dating from the Late Mesolithic to the Late Bronze Age (Hunn & Lawson 1991, 1-15).

A recent excavation at the Chessvale Bowling Club near Stratford Yard, Chesham, has given rise to a program of sampling for environmental information. So far the results have been made available through the evaluation and the post-excavation reports (Halsted 2006). Twenty-five samples were studied. Charred plant remains included barley and bread wheat (term used here *Triticum aestivumcompactum*) and the type of weed seeds usually found with cereal crops. The plants were more abundant in pits where by-products of agricultural processing and wild plants tend to be thrown away. Tables were present in the report but no full quantification of the material was made. More work needs to be done on these samples before any conclusion can be reached. The charcoal was analysed but was very fragmented

but included hazel, beech, oak, Pomoideae (hawthorn/apple/pear/ rowan). The small range of species indicated more the poor state of the charcoal rather than the distribution of taxa in the landscape. The analysis of the land molluscs came from items from the same bulk samples. The shells were well preserved, all ecological groups were found with woodland/shade loving species and open country species being the most abundant. The shells appeared mixed in the samples of later dates. The samples were very uniform in composition and no further work was recommended in the assessment. It must be noted that snails from bulk samples are not going to give the best evidence as it is recommended to take column samples to obtain meaningful results. One sample was analysed for pollen, but not very surprisingly in this very chalky environment, the few pollen grains surviving did not yield any information. More surprisingly, the animal bones assemblage was tiny, including eight bones from eight contexts including: deer (4), cattle (2), and one bone each of pig, horse and cat. There was some indication of butchery but this assemblage has very little archaeological potential.

The cop round barrow at Bledlow (Head 1940) on the Icknield way is now destroyed but was occupied in the Bronze Age through to the Saxon period. The excavation gave rise to a bone report of a young woman and very fragmented animal bones, fragmented maybe to get at the marrow it was thought. The animal bones included in order of importance ox, pig, sheep, roebuck, red deer, horse, dog, badger, and hare. The ox was small compared to a small breed in the British Museum collection; the sheep bones indicated small animals as well. There was no trace of working on these bones with tools.

Social organisation

Little research has been done on how the evidence from Buckinghamshire reflects social organisation in the Neolithic and Early Bronze Age. It is possible, from the small number of burials, to say that there was a hierarchy in society where only certain people merited burial. Green's analysis of the ring-ditches along the Great Ouse, including Milton Keynes and North Buckinghamshire, suggested that women stayed behind close to the river in the ancestral homelands while the men travelled further to herd animals and/or to hunt (1974, 130). Much more analysis needs to be done in this area.

There is also little analysis of the evidence to reflect households and domestic life. The Early Neolithic and Early Bronze Age flint scatters and hearths excavated at Eton Rowing Course suggested occupation sites next to a river or next to the floodplain with people knapping flint for on-site tasks in an arc downwind of the fire (Allen & Welsh 1996, 26). These were probably groups consisting of more than just a household.

Buckinghamshire of course did not exist in the period under discussion. It is likely that different areas of the modern county were part of wider tenure networks. North Buckinghamshire and Milton Keynes were probably part of the Great Ouse valley community. It has been suggested that land along the Ouse was divided into territories as ring-ditches and their associated settlements are spaced about every 6km along the river (Green 1974, 130; Jones & Page 2006, 41). The lands around the River Thames and its tributaries were probably part of another community. The Chiltern scarp has a string of ritual monuments, which may suggest an important role for this area either at the head of the Thames' tributaries or for communities in the Vale of Aylesbury. A few sites excavated in the southern portion of the Vale of Aylesbury, such as at Coldharbour Farm, Aylesbury and St John's Hospital, Stone, suggests the existence of a small population in the area, but there is very little evidence for activity in between the Rivers Thame and Great Ouse.

Settlement

Neolithic and Early Bronze Age flint scatters have been found in field-walking exercises across the county, and more informally, collections of flints of a similar date from the same general location have been found over a number of years by members of the public. English Heritage did a survey of flint scatters in the county as part of a pilot project and guidance for

managing them published in 2000. Buckinghamshire had 333 flint scatters at that time. 82% of the flint scatters contained a Neolithic element and 46% a Bronze Age element. A very small percentage of each was determined as being of domestic, industrial or ceremonial character and most, around 90%, had an unknown function (Schofield 2000, 5-6). Not many are very large or closely dated. Of the unpublished flint scatters, Scotsgrove Farm was investigated by fieldwalking in 1979. 510 flakes, 51 blades, 23 cores, 9 round scrapers were found dating from the Mesolithic to the Bronze Age (Mitchell 2004, 1). The County Museum Archaeology Group, made-up of volunteers, identified an Early Bronze Age flint scatter from Brockhurst Farm, Latimer in fieldwalking in 1997. The 81 struck flakes were broad, indicating a late date, though there was also one blade (unpub. MS notes). Several scatters have been found in the Chess and Misbourne valleys by the Chess Valley Archaeology and History Society, for instance at Ley Hill, Copperkins Lane, Hyde Heath, Raans Farm, Sarratt Bottom, Latimer Park Farm, Mount Wood and Little Missenden. Some of the concentrations of burnt flint along the Chess valley were thought to possibly be the remnants of burnt mounds (Stainton 1995, 127-8). Two dense flint scatters in Leckhampstead and Lillingstone Lovell in the north of the county were found in fieldwalking during the Whittlewood Project. Both lie close to streams but the first is on sand and the second on gravel. They were thought by the investigators to be settlement sites. The concentration at Leckhampstead seems to be related to a group of ring-ditches on the Great Ouse, which fits with Green's assessment of settlement remains and ring-ditches in Milton Keynes (see below; Jones & Page 2006, 40). Other than this, it is difficult to interpret these flint scatters, which have not been sufficiently analysed or published, as anything other than indicative of Neolithic to Early Bronze Age activity in the Chess and Misbourne valleys.

One of the few excavated flint scatters was at Desborough Castle in High Wycombe. 83 struck flints and 24 fire-cracked flints were recovered from the piece of land over the road from the possible hillfort/ringwork. Four of the flakes had deliberate retouch and there was also a spurred piece of flint, a burin, two scrapers and one snapped blade with retouch along the break. The breadth: length ratio of the flints suggested a Late Neolithic to Early Bronze Age date. Many of the flakes had cortex remaining, but this probably reflects the poor quality of the flint rather than a site of primary flaking (Collard 1988, 24-5).

Several other flint scatters have been identified in pipeline watching briefs. Fawley Court was found on a British Gas pipeline and the excavator concluded it represented seasonal or short-term settlement from the Late Mesolithic to the Bronze Age (unpub. MS notes). This is similar to the flint scatter recovered from an evaluation at Chequers Manor Farm, where a number of flints were dateable to periods from the Late Mesolithic to the Late Bronze Age (Hunn & Lawson 1991, 15). The scatter of secondary flakes overlaying a gully at Danesfield Camp, Medmenham were generally thought to date to the Late Neolithic, being hard-hammered, but was also thought to be peripheral to a nearby centre of activity (Keevill & Campbell 1991, 97). At the Eton Rowing Course, Early Neolithic bankside flint scatters and hearths have been distinguished from Early Bronze Age smaller flint clusters at the terrace edge (Allen & Welsh 1996, 26).

Allen et al have suggested that the later Neolithic pits excavated as part of the Eton Rowing Course and Maidenhead to Windsor Flood Alleviation Scheme are an extension of earlier Neolithic and Mesolithic middening in tree-throws. Indeed, the large Early Neolithic middens at the Eton Rowing Course site were sites in the hollows left by silted up palaeochannels (2004, 88-2). Hollows formed 'naturally', by water or by tree fall, seem to have been seen as places made for dumping rubbish. There may have been both utilitarian and ritual reasons for this. As tree clearance became more common, so tree-throws become man-made things, and it is a short step from there to digging pits especially to take rubbish. Midden material also seems to have been frequently reworked, so that deliberate filling of tree-throws is done with weathered artefacts that have lain on the surface for some time (Allen et al 2004, 91).

Three Neolithic domestic sites in the Milton Keynes area were thought to be defined by pits at Stacey Bushes, where Grimston style and Grooved Ware pottery were found stratified in the pits, and at Heelands and Secklow. At Stacey Bushes in Wolverton, one of the pits was elongated and curvilinear. The excavator suggested that it was a drip-gully around a roundhouse. There was a small post-hole within the area encompassed by the arc, which would have made a possible house around 5m in diameter. They are now thought to have been tree-boles. The site is interesting for its evidence of local pottery making. The local clay matched the fabric of the Grimston style pottery found on site (R. Bradley, pers. comm.; Green & Sofranoff 1985, 15, 19).

At Heelands, eight pits were spread over an area covering 70m along a hill-slope. Three of the pits were crescentic in shape. Two of the pits were excavated and contained pottery sherds, flint debitage and tools, including scrapers and a projectile point. Similar pottery sherds were found in a hollow under the Saxon Secklow mound (MKSMR). It may be the case that these were tree-throws as well.

In excavations in advance of the construction of a golf course next to Dinton Castle, a Neolithic pit containing a retouched blade was also found. Another pit with no finds may also have been prehistoric (Hunn et al 1994, 91). Nearby in Stone a Middle Neolithic pit was excavated before the redevelopment of the St John's Hospital site. It contained waste flakes from core trimming and blade production, a large sherd of Mildenhall pottery and others of Plain Ware and a large piece of burnt ammonite, a common fossil to be found around this area (Carstairs & Lawson 1992, 16-17). Early Bronze Age pits were identified a Walton Lodge Lane in Aylesbury, one containing fragments of collared urn and another Beaker sherds and flints (Bonner 1994, 4). A Neolithic pit was also discovered at Coldharbour Farm just outside Aylesbury in excavations in advance of the construction of a housing estate (Parkhouse & Bonner 1997). One pit, in this case associated with a hearth, was excavated in 1954 under the Roman villa at The Rye, High Wycombe. Ebbsfleet and Beaker pottery were found close by and in the pit (Hartley 1959). Excavations at the Taplow Mill site also uncovered a number of pits or tree-throws, one of which contained struck flints and a barbed and tanged arrowhead, suggesting a Late Neolithic or Early Bronze Age date (OAU 1997, 32).

Three Early Neolithic middens were excavated in advance of the construction of Eton Rowing Course and the Maidenhead to Windsor Flood Alleviation Scheme. These seem to have been the result of either permanent sedentary settlement or repeated use over many years. The two middens excavated as part of the Eton Rowing Course investigations produced a huge amount of material. The midden in area 6 formed in the hollow left behind by a silted up palaeochannel of the Thames. Less than 20% of the deposit, that was 200m x 25m x 0.2m deep, was excavated in detail and it rendered 32,000 artefacts including 6000 sherds of pottery. In Area 10, 5000 artefacts (1600 pottery sherds) were recovered from a 600 sq m sample of the midden, also in a hollow. The pottery, being of carinated bowl and Plain Bowl ware, was dated to the primary Neolithic. Both these middens were situated on former islands formed by palaeochannels of the River Thames. Allen suggested that those practising the earliest farming in the area, whether they were settlers or locals adopting new practices, it may have seemed safer to be on islands surrounded and protected by water (Allen et al 2004, 84, 95).

The midden material at Whiteleaf is similar to the midden assemblages from Dorney, despite the difference between the assumed functions of both sites. The author, however, suggested it remained from feasting during the construction of the mound or as refuse from a nearby settlement or flintworking site (Childe 1954, 217).

There is a striking tradition of domestic remains mingling with funerary or ceremonial, as identified at ring-ditches excavated on the River Great Ouse by Stephen Green. A ring-ditch

excavated in Milton Keynes, 400m from the River Ouzel, a tributary of the Great Ouse, was the remaining feature of a barrow constructed on an occupation site, identified by a scatter of Mesolithic to Early Bronze Age flints, including a scalene triangle microlith, a burin, a laurel leaf and scrapers and a scaled knife as well as Beaker pottery (Green 1974, 81, 86). The Warren Farm ring-ditch seemed to be placed on cleared and grazed land from the molluscan evidence and become the focus for later settlement. Flint implements, including Mesolithic blades and cores, a leaf-shaped and a chisel arrowhead, scrapers, and Fengate pottery was found scattered around the ring-ditch, and Bronze Age pottery and animal bone, reflecting animal husbandry and hunting, was dumped in the ditch (Green 1974, 97-108). It was suggested by the same author that the burials in ring-ditches excavated in the Milton Keynes area, because they were of women and children, reflected a transhumant society in which men travelled with herds of animals and to hunt and women were more sedentary. He felt this would also explain the distribution of ring-ditches in the Great Ouse valley, with clusters and more isolated outliers (Green 1974, 130). A collection of flints from an evaluation at Newton Longville dated from the Late Neolithic to the Late Bronze Age and the ratio of tools to waste flakes suggested a domestic function to the site (Bonner et al unpub. 22).

Neolithic and Early Bronze Age pits that are found isolated from any other evidence of activity represent commemorative burial of part of the rubbish generated by that visit, perhaps only a single visit to that location. There is evidence, from the discovery of carbonised hazelnut shells, that the one at Coldharbour Farm may have been the result of seasonal mobility (Parkhouse & Bonner 1997, 80). There is a cluster of isolated pits close to Aylesbury, with Coldharbour joined by Stone and Dinton. The Stone pit may be the earliest, dating to the Middle Neolithic (c. 3200-2600 BC), and the complex of pits at Walton Lodge Lane appear to be the latest at Early Bronze Age (Bonner 1994, 4; Carstairs & Lawson 1992, 17). This area seems to have had low level repeat visiting throughout the period under study. The pits extend along the modern A418 corridor, which roughly follows the line of the River Thames and if the uncertain features and artefacts at Ashendon (Slatcher & Samuels 2004, 4), Long Crendon (Moore 2006) and Chilton (Ford et al 2004, 1-7) are accepted as possible additions to the group, it gives a possible route through the landscape, but this is probably a biased impression based on where archaeological fieldwork has happened to take place. It would be expected that there would be more development around the Oxford to Aylesbury road than further north in Aylesbury Vale.

Nevertheless, these sites, characterised by pits or hollows filled with worked and burnt flint and sometimes pottery, represent short-lived stopping places in the probably seasonal cycle of mobility in the Neolithic and Early Bronze Age. Some flint scatters may be the churned up contents of further pits and hollows, but some of the excavated flint scatters reflect long-term repeated visits to the same favoured location. The build up of flints is not so great that this visiting is as often as once a year, or for long periods of time. Again, these are short-term occupation sites. They do not tend to have pits containing what appear to be commemorative deposits of rubbish, suggesting that the two systems are mutually exclusive either in function or in terms of the people involved in them.

The Early Neolithic middens in Dorney parish in the south of the county are evidence of permanent or long-lived seasonal settlement. Elsewhere, such spectacular deposits are not in evidence. There has not been the same amount of intensive archaeological coverage anywhere else in the county, however, and so it is difficult to compare the Dorney complex with the rest of the county. It may be that the picture of mobile communities visiting some locations frequently and others less frequently is close to the ancient reality, but it may be a result of a differential fieldwork bias.

The built environment.

There is little evidence of post-holes or beam slots from this date. Dwellings were probably

freestanding structures for the most part. There were a number of post-holes recorded at the latest burnt mound at Little Marlow. The post-holes were thought to support an awning, weighted down with large unburnt stones, that covered the edge of a now silted up palaeochannel, into which heated flints would have been thrown to create steam for a sauna (Richmond & Rackham 1999, 10; Richmond, Rackham & Scaife 2006, 95).

One possible arc of drip-gully and a single post-hole was all the evidence for a Late Neolithic roundhouse at Stacey Bushes in Wolverton. It was partly truncated by the digging of a modern boundary ditch. There were other curvilinear borrow trenches that were interpreted as clay-pits for roundhouse wall repair, but they may also have been for potter's clay. They are more likely to have been tree-boles (R. Bradley, pers. comm.; Green & Sofranoff 1985, 15). Another structure was the mortuary house under Whiteleaf barrow. Scott believed there were four post-holes when he excavated it in the 1930s, but re-excavation and evaluation of his results suggests only two post-holes were genuine. This is thought to have supported a tent-like wooden structure under which the body of the individual later covered by the barrow was laid on death (Childe & Smith 1954, 215-6; Dennis 2004, 17).

The possible Neolithic or Early Bronze Age palisade trench sealed by Early Bronze Age scoops at Taplow Court (Lamdin-Whymark 2004, 18) could be the earliest enclosure on the hill and a valuable addition to the number of built structures known of this period. Final interpretation is awaited.

The causewayed enclosure at Dorney Reach could be a communal structure of some kind, based on interpretations of other causewayed enclosures, but there is no evidence for its use or any associated structures as no fieldwork has been done; it is only known as a cropmark from aerial photographs.

Ceremony, ritual and religion.

Round barrow cemeteries indicated by ring-ditches caught on camera in aerial photographs also seem to follow rivers. There is a concentration of barrows, some of which have been investigated, on the River Great Ouse and its tributaries in Milton Keynes and north Buckinghamshire. Seven ring-ditches were identified in Gayhurst Quarry, four to the south and three to the north of a silted up palaeochannel tributary of the Great Ouse (Chapman et al 1999, 17). This forms part of the group of at least 190 ring-ditches along the Great Ouse in the east Midlands (Field 1974, 60). The distribution of ring-ditches in Aylesbury Vale, away from the River Great Ouse also roughly follows the line of the River Thames, a tributary of the Thames. Many of the mounds that do not respect this distribution have either been reinterpreted as other features, such as windmill mounds or garden features, or the interpretation is in question.

A number of ring-ditches were excavated at the Eton Rowing Course site. Five ring-ditches were identified in aerial photography at either side of a palaeochannel, one that contains an Early Neolithic midden. On excavation only four of these were found to exist, the fifth being a Roman burial (Allen & Welsh 1997, 30).

Another group of ring-ditches have been identified on the Thames floodplain from geophysical survey west of Marlow (Minas Toroth Ltd 2004). Two double ring-ditches have been recorded in aerial photography in Thorney, Iver. However, relatively few ring-ditches are known from this stretch of the Thames due to the restriction on flying due to the vicinity of Heathrow. As Green noted in his survey of the ring-ditches along the Ouse, life and death seems to have lived in close vicinity along the river valleys (1974, 126). The incidence of ring-ditches in river valleys could be attributed to the responsiveness of the drift geology rather than a real distribution.

If not along the course of a river, barrows are on hills. There are a number of round barrows along the Chiltern scarp, though the ones at Bledlow Cop and on Whiteleaf Hill could be discounted, based on recent reinterpretations. On Lodge Hill, Bledlow, Beacon Hill, Ellesborough, Bacombe Hill, Wendover, Pitstone Hill, Pitstone and Ivinghoe Beacon, Ivinghoe, barrows occur either alone or in small groups or dispersed cemeteries. It is interesting to note that the barrows occur on isolated hills in front of or promontories jutting out from the Chiltern scarp, perhaps the more striking features in the landscape. One concentration, at Bledlow, is situated at the head of the Wye valley and the group at Ivinghoe is at the head of the Bulbourne valley (Holgate 1995, 14). There are several groups of barrows or ring-ditches deeper into the Chilterns, such as at Saunderton, Bradenham, High Wycombe, Stokenchurch, and Hambleton. These have not been excavated and are only known from aerial photography and field survey.

The three burnt mounds at Little Marlow took advantage of the natural resources in the area, next to a stream tributary of the Thames and close to woodland. Burnt mounds tend to be situated next to watercourses, the water being heated up with hot flints. The latest burnt spread, dating to the Early Bronze Age was on the edge of a silted up palaeochannel of the stream and may have had an awning, supported by several post-holes, out into the stream itself. The excavators suggested that water from flints was poured directly onto hot flints to create steam to create a sauna. The earlier burnt spreads, further to the south on either bank of the existing stream, had artificial troughs to hold the water that was to be heated. The woods used in the fires to heat the flints were not exclusively wetland species and demonstrate more widely available species from the gravel terraces. The movement of the burnt spreads to the north through time reflects the migration of the stream and the rising water table (Richmond & Rackham 1999, 10, 12-13, 29, 36-37; Richmond, Rackham & Scaife 2006).

The oval or kidney-shaped barrow on Whiteleaf Hill is the only Neolithic or Early Bronze Age barrow to have had modern excavation in Buckinghamshire. Oval barrows have elsewhere been found to date to the later Neolithic (e.g. Thickthorn Down barrow, Dorset: Drew & Piggott 1936) but radiocarbon dates on the human bone from Whiteleaf has rendered a very early date. Sir Lindsay Scott believed he had found four post-holes supporting a mortuary structure under the mound, but recent re-evaluation of his work and re-excavation has refined this view so that only two post-holes are now posited for the mortuary 'house' (Hey et al forthcoming). Only parts of the left foot, skull fragments and a tooth from one individual were found within the mortuary house, the rest was found scattered to the east but still under the mound. Neolithic pottery, flint flakes and animal bone was found scattered through the mound material. The pottery had much in common with Mildenhall and Ebbsfleet ware and as many as fifty or sixty vessels were represented, though connecting sherds represented no more than a third of a vessel. At least 570 flints were found, including 240 utilized blades and flakes, seven retouched. There were also 32 serrated blades, four arrowheads, three end scrapers, a small hollow scraper, a notched blade and two cores. Animal bone was represented by a majority of wild animals, red deer, roe deer, beaver and two bones from an unidentified bird. There was also domestic animal bone from pig, ox and sheep. The animal bone, flints and pottery sherds were interpreted as the remains of feasting during the building of the mound, or as midden material that was incorporated into the barrow, although the recent investigations refined this idea, as the pottery was very fresh it was probably not in a midden for any length of time before deposition (Hey et al forthcoming). The individual that was buried was a middle-age man with abscesses in his teeth and arthritis. Either he was exhumed and bits of his skeleton were collected afterwards for interment or a full inhumation was disturbed after burial (Childe 1954). As well as a funerary monument, it is likely that before and after the mound was constructed, Whiteleaf barrow was the scene of various ceremonies, perhaps involved feasting, as indicated from the animal bone assemblage. There may have been a gap of between 45 and 150 years between the deposition of the corpse and the raising of the burial mound (Hey et al forthcoming). The

forecourt that Scott identified was re-found in recent excavations; there seems to have been a wide berm between the ditch on the east of the barrow than on the other sides, and this is where most of the skeletal remains were recovered from, suggesting some kind of ceremonial use of the remains of this individual (Dennis 2004, 18; Scott 1954, 215). Other long barrows may be at Bulback Barracks at Halton Camp and in Bulstrode Camp hillfort in Gerrards Cross, though both of these are dubious. The Bulback barracks long barrow was investigated in the 1920s. A trench was dug across the barrow. Neither a surrounding ditch nor any human remains were found. The mound was made up out of about 1.5m (4-5 feet) of chalk marl and rubble above chalk. Pottery, charcoal and animal bones were, however, recovered from the mound, and an area of burning representing a possible hearth (Reader, 1926). Interpretation of this site is difficult in consequence. The possible long barrow at Bulstrode Camp was identified in geophysical survey. It is an indistinct structure aligned east-north-east, 60m x 15m but otherwise nothing is known about it (Gover 2003, 5).

Several ring-ditches have been excavated in Milton Keynes. Beaker sherds were found in the ditch which encircled a burial and probable mound 400m to the east of the River Ouzel and a radiocarbon sample taken from the lower fill of the ditch gave a date of 1693-1305 cal BC. Ploughing had disturbed the burial but of what was collected it was possible to say that the cremated individual had been a youth of 8-16 years (Green 1974, 78). The Warren Farm ring-ditch, also in Milton Keynes, was 800m south-west of the Great Ouse. Ploughing had again disturbed the grave pit but the lower part of the grave had survived intact. A woman, aged between 15 and 20, had been cremated with a newborn baby or foetus and buried without any grave goods, except two pig teeth, which may have been residual. A secondary crouched inhumation of another young woman, aged between 20 and 25, was placed in the ditch and covered with a small cairn. Another cremation of a neo-natal child was placed 28m to the west of the ring-ditch (Green 1974, 93). The ring-ditch at Little Pond Ground Farm was intervisible with the Warren Farm ring-ditch. The primary burial was a crouched inhumation of an elderly female accompanied by two Beakers and a double-pointed copper or copper alloy awl. The skull of a nine-month old was found in the ditch, which had been disturbed. The central burial was radiocarbon dated to 2289-1876 cal BC (1720 +/- 80 bc: HAR-340). Some artefacts in the grave pit were residual; probably the cattle and sheep bones, Grimston style pottery and a utilized flint flake, possibly from earlier occupation on site (Green 1974, 108-116). The Cotton Valley ring-ditch surrounded two cremations, possible of the same date. They were both placed in inverted Collared Urns. A hearth or clearance horizon in the lower fill of the ring-ditch was radiocarbon dated to 1977-1208 cal BC (Green 1974, 120). Each of these ring-ditches was sited on earlier or became the focus of later occupation (Green 1974).

Ravenstone Farm ring-ditch appears to have dated to the Late Neolithic or Early Bronze Age. This was excavated in advance of gravel extraction in 1978. The ring-ditch was broken by four narrow causeways, suggesting access was needed to the mound after it was constructed, perhaps for memorial ceremonies. Two central burials were found. One was a cenotaph that contained a coffin and part of an antler spatula but no human remains and the other contained a crouched female burial accompanied by a Beaker, awl, flints and a button (MKSMR).

The two ring-ditches south of the palaeochannel at the Eton Rowing Course site were disturbed by later activity but there were scraps of Beaker pottery from the western ring-ditch and later burials in the ditch and outside the eastern barrow, one with a Middle Bronze Age globular vessel. The two north of the palaeochannel were also disturbed (Allen & Welsh 1997, 30-1).

The ring-ditch excavated at Chessvale Bowling Club gave a radiocarbon date of the Early Bronze Age from the lower ditch fills but no burial was found as over half of the ring-ditch had been truncated by later activity. The occurrence of partial Beaker and Food Vessel pots in pits around the ring-ditch was interpreted either as re-interments of pottery originally

deposited in the ring-ditch interior or burial of heirloom vessels with pieces taken as keepsakes (Halsted 2006, 12, 24-5).

In general, round barrows and ring-ditches, most of which are assumed to be the remains of ploughed out barrows, appear in pairs or larger groups. Some of the major groups in the county are at Ivinghoe Beacon, Gayhurst Quarry, Molins Works, Saunderton and none has received modern excavation. Marlow Archaeology Society has investigated the possible barrow cemetery at Harleyford Manor through geophysical survey, fieldwalking and test-pitting (Kupfermann & Fairclough 2000).

There are at least two round barrows at Lodge Hill, Saunderton, one of which was excavated in 1933. Beaker fragments, flint, animal and possible human bone were found (unpub. MS notes). Two of the barrows that form a small cemetery at Molins Works, also in Saunderton, were opened in 1858, but with no results. They have since been ploughed down and built on. A single ring-ditch was excavated at Church Farm, Bierton. A complete Beaker was lifted from the primary crouched inhumation, and micro-excavation was done in the lab (Borg 1997; Tempus Reparatum 1996).

There are also some burials that have been found that are not associated with encircling ditches and may never have been. These include two unaccompanied Middle Neolithic flat graves at the Eton Rowing Course in Dorney (Allen et al 2004, 84); a possible Early Bronze Age cist inhumation of an adult male associated with flint tools near Gomm's Wood in High Wycombe found in the 1930s (Head 1955, 54); a Late Neolithic or Early Bronze Age crouched burial with a flint knife but no sign of a ditch around it was excavated in Pitstone quarry 2 in the 1960s (unpub MS notes); a crouched inhumation of an adult male with no grave goods was found at the Taplow mill site 1 in excavation and tentatively dated to the Neolithic (OAU 1997, 48). Burial remains were found in the garden of 28 Crossfield Road, Princes Risborough in 1992 and thought to be prehistoric, possibly of the period under discussion (BSMR). In light of the excavation of these flat graves, some of them unaccompanied by grave goods, future unaccompanied burials should be radiocarbon dated.

It is clear that all those buried, whether under barrows or in flat graves, do not represent the total Neolithic to Early Bronze Age population. A human skull was found next to the River Great Ouse in Newport Pagnell after dredging operations and was thought to be of a Neolithic shape (Wright 1978). Though as the author of the piece pointed out, practice of assigning cultural affinity by headshape is now discredited. Another skull was found in the former channel of the Thames at Eton Rowing Course along with an Early Neolithic pot. It perhaps dates to this period under discussion (Allen & Welsh 1997, 31).

From aerial photograph evidence, the causewayed enclosure at Dorney Reach appears to be made up of three lines of interrupted ditches. Unfortunately a pipeline cut through the southern part, but it may be that the enclosure was merely an arc with the Thames used as the southern boundary (Carstairs 1986, 164).

Two possible cursus monuments have been identified at Southend Hill, Cheddington, on the slopes of the hill on which a later Iron Age hillfort stands, and under Ivinghoe Beacon hillfort. The first is known from aerial photographs, is orientated north-west to south-east and appears as a rectangle open at the northerly end. There is an ovoid cropmark close to the southerly end that may be remains of a mortuary structure. The Southend Hill site could have been ploughed flat, as the hillfort has been, and may actually be the remains of a long barrow. The posited cursus on Ivinghoe Beacon was discovered in a geophysical survey of the hilltop. It is situated in the middle of the Late Bronze Age hillfort and is 140m x 30m and has an entrance on the eastern side. It may have been extended towards the north at some point. There appears to be a ring-ditch within the 'cursus' that was also seen in the geophysical survey. There is a causewayed enclosure nearby at

Maiden Bower just over the county boundary in Bedfordshire that is also overlain by a hillfort (Gover 2000, 8). However, no sign of the monument was found in excavation in the 1960s (Cotton & Frere 1968).

It is debatable whether burnt mounds are ceremonial monuments. Discussion has generally centred around two main possible uses: cooking sites or saunas (Barfield 1991; Ó Drisceoil 1988). If the sites were used for cooking, they are often seen as utilitarian, whereas saunas would have a more ceremonial purpose, using the analogy of Native American sweat lodges. Ó Drisceoil pointed out that medieval Irish texts described them being used for both purposes, one after the other (1988, 673). The Late Neolithic and Early Bronze Age burnt mounds at Little Marlow had little animal bone associated with the burnt flint, a few fragments of domestic cattle and pig and two red deer bones, and very little pottery. The excavators tended towards the sauna option, a ritual annual or seasonal 'bath'. There were some structural remains, five pits, some post-holes and a ditch defining the edge of the earliest burnt mound at Little Marlow. The pits may have been used as fire-pits or been troughs for heating water. The later mound, dating to the Late Neolithic/Early Bronze Age transition, had a more conventional rectangular vertical-sided trough, whereas the most northerly and latest, dating to the Early to Middle Bronze Age, seems to have used a palaeochannel as the source of water. This burnt spread was also defined by gullies and was associated with a number of post-holes. The excavators proposed that these supported an awning set up over the edge of the stream, perhaps used as a 'sweat-lodge'. There were a number of large unburned stones that may have been used to weight down a cover. All the burnt spreads were contained within a cut, perhaps old pits being re-used to contain the used flints (Richmond & Rackham 1999; Richmond, Rackham & Scaife 2006, 95-8).

Several Neolithic polished stone axes have been found in the Buckinghamshire stretch of the Thames. One polished greenstone 'celt' was found at Taplow Mills in the late nineteenth century; two polished flint and one polished stone axe was found at Marlow in the early twentieth century. Another greenstone polished axe was found in the Colne Brook, a tributary of the River Colne (Grimes 1946). There is always the debate as to whether the artefacts were eroded out of the riverbank but it must be accepted that a large number of the artefacts found in rivers were placed in rivers. This deposition continues into the Early Bronze Age when one flat axe-head was found in the Thames at Taplow. The number of artefacts from the river is not great, unlike downstream, and possibly reflects a lesser degree of dredging this far up the Thames, as well as the short stretch of Thames that abuts the southern part of the county. The lack of artefacts from other rivers also reflects a relatively small amount of dredging.

The many pits discussed in detail elsewhere seem to have many examples of votive or placed deposition. A large part of the placing of deposits seems to be redeposited midden material, which is found in pits and tree-holes at the Eton Rowing Course (Allen et al 2004, 91-2), Stacey Bushes (Green & Sofranoff 1985, 13), and in the mound of Whiteleaf Barrow (Childe & Smith 1954, 217). A red deer antler was probably deliberately placed in the ditch of the barrow (Dennis 2004, 18). Quartzite pebbles were part of the placed deposit at the Taplow Wyeth laboratory site where three burnt quartzite pebbles were placed with some struck flint into a sub-rectangular feature (Hardy & Keevill 1993, 3-4) and a burnt piece of quartzite rubber or smoother was found in the excavations of the three burnt mounds at Little Marlow (Richmond & Rackham 1999, 18). A piece of burnt ammonite was placed in the pit at St John's Hospital, Stone. This is a common fossil around the area, and may have been chosen as something local (Carstairs & Lawson 1992, 16). It is difficult to say whether the amber bead got into the pit at Coldharbour Farm deliberately or on purpose as it is so small it could have dropped in unnoticed (Parkhouse & Bonner 1997, 120-1).

Material culture.

Pottery often seen as confined to funerary contexts has been found in more domestic settings in Buckinghamshire, including Beaker and Grimston pottery, as mentioned above. Some local pottery is of poor quality, such as that found during an assessment in advance of the

Lavendon bypass in Cold Brayfield where 47 sherds of soft orange fabric were thought to be Neolithic (unpub. rep.). Many other pieces are very friable and are thought to be of local manufacture (see below for more details). It was probably used for cooking and serving food and liquids, as well as for accompanying the dead or holding the ashes in death.

The majority of flint tools are made with local inferior quality flint, perhaps river or surface gravel or pebbles. Many of the assemblages are predominantly flakes and debitage, rather than any retouched implements. Some of the flakes have been utilised, however. The most common retouched tool is a scraper (see discussions above), for instance at Walton Lodge Lane (Bonner 1994, 6) and the six scrapers out of 100 flint flakes and tools at Chequers Manor Farm (Hunn & Lawson 1991, 15) and there are also several awls. Hide processing seems to have been a large part of a Neolithic person's work, possibly women's work, as two copper alloy awls were found with crouched inhumations of two women, one in a ring-ditch excavated at Little Pond Ground Farm and one at Ravenstone Farm, both in the Milton Keynes area (Green 1974, 113; MKSMR).

A certain amount of burnt flint is found on every domestic site and reflects heating of water, probably mainly for cooking. On many occasions an assemblage is made up of only burnt flint, but on this evidence it is difficult to distinguish between a Neolithic and a later site.

Polished and ground flint and stone axes found their way to Buckinghamshire probably through a system of gift exchange. Axes from the Great Langdale factory, from Cornish sources and from the Charnwood Forest area in Leicestershire all made their way to Buckinghamshire (see below for more detail). One axe found in Olney may have been made of obsidian (unpub. MS notes). Many of the stone axes were reworked when broken, suggesting the value of the material to people in the Neolithic. This includes a rechipped one found near Kickles Farm in Newport Pagnell, an axe reused as a burnisher from Bedlam Spinney, Chicheley and a butt end of an axe found in Stone used as a hammer (Adkins & Mynard 1978, 631; Dalwood 1988, 181). Just the fact that many are found broken suggests that they were used as practical tools to work wood. They are usually found in isolated locations away from other evidence of Neolithic or Early Bronze Age occupation. The majority of commentators suggest they were lost during tree clearance activities and that their distribution is an accident of archaeological coverage and chance finds (Dalwood 1988, 181-3).

Some flint axes and larger artefacts such as laurel leaves were possibly made with flint from mines. The closest is at Peppard Common in south Oxfordshire, though this is also uncertain (Barber et al 1999, 2), but other sources are Grimes Graves in Norfolk and Cissbury in Sussex. The lithic objects that Smith evaluated from the Treacher collection from Marlow brickyard included a non-crescentic sickle, a chisel and fragments of two ground flint axes that were of a creamy grey flint, probably mined. After breakage both of the ground flint axes were used as hammers (Smith & Wymer 1964, 293-4). It is likely that artefacts made out of mined flint would, having been received as gifts and being rare artefacts far from the source for a replacement, been treated with care and either curated for long periods and reworked when broken, as many stone axes were, or used for ceremonial purposes, perhaps as votive deposits.

A fragment of ammonite, a common fossil around the Stone area, was found burned in the pit at St John's Hospital (Carstairs & Lawson 1992, 16). An amber bead was found in the excavated pit at Coldharbour Farm near Aylesbury. It was very small and may have originally been one of many on a necklace or for decorating hair (Parkhouse & Bonner 1997, 120-1). Amber from the Baltic Se would have been found on the east coast of England and Scotland.

The number of Early Bronze Age, verging on Middle Bronze Age, metal objects from

Buckinghamshire can almost be counted on one hand. A bronze axe-head with 90% copper content was found in Brickfield, Hazlemere and a similar example from Six Acres bungalow in Ivinghoe Aston; an Arreton type rapier and a dagger were found in the Thames at Bourne End and an axehead was found in the Thames at Taplow; a knife-dagger was found on Aston Hill in Aston Clinton; a possible Early Bronze Age awl was found by a metal-detectorist on the Shardeloes estate, but may be later in date; another dagger was found in an old chalk pit in Rignall's Wood, Great Missenden; and a flat non-looped axe-head was found in a garden at Shenley Brook End but may have come from material dumped there some years previously. These artefacts were found in dredging, metal detecting or by chance from disturbed ground, and not from secure, well-dated contexts. Metalwork is rare in domestic contexts, anyway, but it is difficult to say how these artefacts were deposited in the first place.

Since the idea of the Neolithic Icknield way seems to have been thoroughly discounted (Harrison 2003), that these artefacts arrived in Buckinghamshire from around the British Isles probably reflects a system of gift exchange rather than a modern market economy. The River Thames would have been a great highway, but it is likely that people travelled in order to meet with each other at places like the causewayed enclosure at Dorney Reach, and brought their local 'specialities' with them to exchange with items from this region.

Defences

There was possibly a palisade at Taplow Court in the Neolithic or Early Bronze Age. The postholes themselves did not contain any diagnostic finds but some were cut by an Early Bronze Age scoop. They did, however, mirror a Late Bronze Age palisade trench and so could be later in date. The post-holes got bigger towards the centre of the excavation to terminate at a large double posthole arrangement, possibly an entrance (Lamdin-Whymark 2004, 18). The final report is awaited.

Crafts, trade and industries

Most 'industries' were probably done on a domestic craft scale. There is no evidence of pottery making in Buckinghamshire, but it is difficult to identify and may just have taken the form of a bonfire or clamp kiln, leaving merely a burned patch of earth, like any hearth seen at Neolithic occupation sites. The predominant temper seems to be flint, though there are some shelly wares, too. A lump of what was thought to be potters clay tempered with flint particles was found in a pit at Lavender's gravel quarry in the 1930s. In other nearby pits contained Peterborough ware and there were a few flint tools, including scrapers, associated as well (Lacaille 1937, 289-91). Two possible clay 'borrow trenches' were identified in excavation at Stacey Bushes in Wolverton. These two slightly curvilinear trenches were interpreted as either getting clay to repair house walls with daub or, as the clay was found to be very similar to the Grimston style pottery fabric found on site, for pot-making (they may have been tree-boles: R. Bradley, pers. comm.). Indeed, the form of some of the Grimston pottery was very unusual and was thought to be a domestic production rather than by a 'professional potter'. The Grimston style pottery had fossil shell as a temper, whereas the Grooved Ware pottery contained grog (Green & Sofranoff 1985, 15, 25-6). The fabric of the Early Neolithic pottery from the middens at the Eton Rowing Course was also from a local clay (Allen et al 2004, 90). The Plain Ware and Mildenhall style pottery from St John's Hospital, Stone was flint-tempered (Carstairs & Lawson 1992, 24-5).

Flint-knapping seems to have been an activity done on every occupation site. Flint tools were made as and when they were needed. There may have been specific flint-knapping areas for a more general tool-kit. A large number of flint-knapping areas were found over the whole area uncovered during the Eton Rowing Course and Maidenhead to Windsor and Eton Flood Alleviation Scheme. The evidence of the Early Neolithic middens points to long-term and possibly permanent settlement, though there seems to have been movement around the river islands. Though these sites, including the Early Neolithic bankside settlement with an arc of flints fanning out from a hearth area is domestic in character, 'off-site' artefacts were found,

including laurel leaves, leaf shaped arrowheads and fragments of polished axe. It's a similar story for the terrace edge Early Bronze Age flint clusters, which contained barbed-and-tanged arrowheads (Allen & Welsh 1996, 23, 26). The differences between assemblages on domestic and hunting sites are difficult to uphold. Some Early Bronze Age scoops excavated at Taplow Court contained dumped struck flints and fragments of Collared Urn, probably representing knapping sites (Lamdin-Whymark 2004, 17).

Antler seems to have been the part of an animal that was worked most often, perhaps to create picks for digging into chalk and other subsoils. An antler pick was found in a railway cutting south-east of High Wycombe, a find that lent credence to the idea of a flint mine in that location; several were found, some worked, from Larborne Farm in Thorney; another worked piece was found at the Ellesborough golf club site, possibly for breaking up the ground and digging the gullies; several perforated antlers, for hafting, were probably found in the Thames at Taplow; A worked antler beam of red deer was found at Whiteleaf barrow in the 1930s, along with a worked sheep bone, made into a pin and a beaver's tusk that had been split. Further antlers were found in the barrow ditch in the 1930s and another in the barrow mound in the 2002-3 excavations (Childe & Smith 1954, 216, 219; Dennis 2004, 38). Antler must have been available quite freely as the picks were discarded, it seems, with little thought. They are often sawn off or have other signs of having been detached from a deer rather than being picked up after shedding.

Probable Early Bronze Age bone daggers were found in the Thames at Temple Lock and Hedsor. As well as the bone pin from Whiteleaf, a bone pin was found close to a Beaker and a tanged arrowhead in Chesham but nothing more is known about them and a bone awl was found in excavation of the Early Neolithic middens at Eton Rowing Course, Dorney (Allen et al 2004, 90). A fragment of worked oak was found in the deepest part of a silted up palaeochannel near Fawley Court close to the River Thames (unpub MS notes). Polished and flakes axes would have been used to work wood as well as to fell trees, though fire-setting and bark-ringing would have also been felling methods (Dalwood 1988, 181).

It is unlikely that metalworking and flint tool production were done on a scale that could be called industrial (Budd & Taylor 1995). Nevertheless, there is no evidence of metalworking dating to the Early Bronze Age in Buckinghamshire. The small number of bronze artefacts were probably made elsewhere and exchanged between people until they ended up in this area. The two possible flint mines in Buckinghamshire are both very unlikely to be so. One on London Road, High Wycombe, is said to have been damaged by the construction of the railway and an antler pick was found by the workmen in 1902 (Head 1955, 38), but test-pitting and a watching brief on the posited site at the former Ercol factory site in 2002 by AOC uncovered two undated pits and two undated post-holes, but no evidence of quarrying (Palmer 2004, 7). Post-medieval and medieval quarrying at Pitstone Hill may have destroyed much of the evidence of that possible flint mine (Barber et al 1999, 2, 79). A clay-with-flints deposit at Whiteleaf Hill may have been mined for flint nodules, probably in the late Neolithic (Hey et al forthcoming). It is unlikely that flint 'mining' would be on a scale to rival the large flint mines of East Anglia and Sussex.

Generally, flint nodule gathering and knapping seems to have taken place when tools were needed but some procurement and primary knapping may have been done outside a domestic setting. Sites interpreted as domestic or as hunting camps both have evidence of flaking and further processing of flints. For instance, the pit at St John's Hospital, Stone, had waste flakes from core trimming and blade production as well as scrapers and finished blades (Carstairs & Lawson 1992, 17). The Late Neolithic to Early Bronze Age flint scatter excavated at Desborough Castle in High Wycombe was made up of mainly flakes, many retaining cortex reflecting the small size of nodules being worked with. Only 4 out of 83 struck flints were retouched, although there were two scrapers and a blade with retouch as well (Collard 1988, 24). Fieldwalking done by Marlow Archaeology Society at Harleyford Manor Farm generated

an assemblage of waste flakes and tools from the Late Mesolithic to the Iron Age. The Bronze Age assemblage included several notched flakes for woodworking (Kupfermann & Fairclough 2000, 6). The Late Neolithic flint assemblage from Danesfield Camp, Medmenham, is made up completely of secondary flakes and no refitting pieces, leading the excavators to suggest that the area was peripheral to an area of domestic activity and middening (Keevill & Campbell 1991, 97). The Chequers Manor Farm assemblage, dating from the Late Mesolithic to the Late Neolithic, included 85 debitage flakes, 36 of which came from blade production, six scrapers, four retouched flakes, a hammerstone and fourteen cores (Hunn & Lawson 1991, 15). The large flint assemblage from the mound of Whiteleaf Barrow was attributed as being either from a domestic midden or from a nearby flint-working site. It included 537 waste flakes, 32 serrated blades, four arrowheads, four scrapers and two core stumps (Childe & Smith 1954, 217-9). The Early Neolithic flints that made up the bulk of the midden assemblages from Eton Rowing Lake had very few refitting pieces, but a high proportion of utilised material, between 50 and 65% (Allen et al 2004, 90). The Middle Neolithic assemblage from the pit at Coldharbour Farm included eight knives, two scrapers and a flint axe roughout. There were no primary flakes and only a small number of cores, suggesting that procurement and primary knapping took place off-site. The assemblage was also interpreted as largely domestic, with no arrowheads or ground axes (Parkhouse & Bonner 1997, 120).

Much of the flint knapped for tools in Buckinghamshire seems to have been local, mainly river or surface gravel. The Late Neolithic or Bronze Age flint assemblage at Desborough Castle, High Wycombe, was made up of flakes, some of which retained cortex made on poor quality surface nodules (Collard 1988, 24). The flint used for the Late Neolithic/Bronze Age flints found above a gully at Danesfield Camp in Medmenham was hard-hammered from locally available large nodules (Keevill & Campbell 1991, 97). The flint tools excavated at the Wyeth Laboratory site in Taplow were thought to be of local provenance, but good quality, with a thin cortex (Hardy & Keevill 1993, 5). The nodules for the flint industry at Stacey Bushes in Wolverton probably came from nearby Boulder Clay deposits (Green & Sofranoff 1985, 23). The Middle Neolithic flints from Coldharbour Farm were made with local flint. Seven large pounders were made with a very low quality flint with many inclusions, whereas the flaked tools were made with a better quality, semi-translucent flint (Parkhouse & Bonner 1997, 120).

In contrast the Early Neolithic assemblage found in a pit on the site of St John's Hospital, Stone in 1992 was of higher quality and was probably from quarried chalk flint nodules from the Chilterns (Carstairs & Lawson 1992, 24). The flint assemblage from Chessvale Bowling Club was also thought to be chalk flint from the Chilterns and was characterised by a lack of primary flakes (Halsted 2006, 24). There is little evidence for the flint mines in the Buckinghamshire Chilterns, so the nearest one may have been at Peppard Common in Oxfordshire. Flint tools found on a newly ploughed field in Longwick were black with a thick white cortex, suggesting they were also from mines on the chalk (unpub. MS notes). A similar provenance was suggested for the flint used to make the polished flint axe fragments found at Hartwell and Stone (Dalwood 1988, 181). A small flint axe from Silver Street, Newport Pagnell, was of non-local flint, suggesting a mined provenance as well. The flint for some of the artefacts in the Treacher collection, found in the Marlow brickyard in the 1920s and 1930s, was thought when examined in the 1960s to be chalk flint. A chisel, several ground flint axes and a non-crescentic sickle were thought to have been made from mined flint. One of the ground stone axes was thought to be from Great Langdale (Wymer & Smith 1964, 292-4). Another ground stone axe found in the Colne Brook, Iver was deemed similar to Cornish greenstone found south-east of Marazion (Grimes 1946, 363).

A fragment of polished stone axe found with a fragment of quartzite axe at Walton Court came from the Group XX, Charnwood Forest area in Leicestershire as did a complete axe-head from Hill Farm, Haversham; half a tuff axe-head was found at the End Cottage,

Whiteleaf, and is of similar material to Group VI stone from Pike O'Stickle/Great Langdale; as was an axe-head found on the edge of Shire or Chalfont Lane in Chalfont St Peter, an axe fragment found between Kickles Farm and the River Great Ouse in Newport Pagnell and a complete axe-head found at Bedlam Spinney, Sherington (Adkins & Mynard 1978, 631); a granite axe-head found in the grounds of the Pheasant Inn in Amersham was probably from Cornwall; an axe fragment from Stone was of similar material to Great Langdale stone (Group VI) and was reworked after the break (Dalwood 1988, 181). Another axe was probably made from a glacial erratic: the Early Bronze Age perforated mace-head of hornblend schist found in Hulcott Rectory Garden. An axe-hammer fragment found in Loughton was identified as Group XIV from Nuneaton, Warwickshire. Most of the whole and fragmentary stone axe-heads found in Buckinghamshire do not have well-provenanced sources, sometimes due to lack of analysis and at others because the stone is not from a recognised axe factory. However, of those provenanced, by far the best represented axe factory is Great Langdale.

Clay for pottery was no doubt dug up locally. A lump of potter's clay was found in a pit at Lavender's gravel pit in Iver, South Bucks, in the 1930s. It was already tempered with flint particles, probably locally crushed flint (Lacaille 1937, 289). Two possible small clay-pits (or treeboles) were identified at the Stacey Bushes site in Wolverton. The local clay was compared with the fabric of pottery excavated on site and matched with one of the Grimston ware fabrics (Green & Sofranoff 1985, 26). Possible Bronze Age (though possibly Middle Bronze Age from the find of Bucket Urn sherds in one pit) limestone quarries were identified in excavation at Church Farm, Bierton. The 'quarries' were irregular scooped hollows later filled with Bronze Age rubbish (Tempus Reparatum 1996).

Recent trends have been to move away from a market economy model to explain the movement of artefacts in prehistory. It is likely that items moved as gifts from group to group, although it is possible that some groups or individuals travelled long distances for opportunities to exchange gifts. Causewayed enclosures may have been the 'standard' recognised arena in which to perform the giftgiving ceremonies. The gift giving itself may have taken the form of competitive feasting, dowries on the occasion of a marriage or tribute and reciprocal loyalty 'payments'. It is likely that a number of mechanisms were in place and artefacts managed to travel long distances, whether by wholly artificial means or whether helped by natural processes. The two items that travelled the furthest distance in Buckinghamshire are the amber bead found in a pit at Coldharbour Farm in Aylesbury, eroded out of the amber deposits in the Baltic Sea and washed up on the eastern shores of England, it was possibly only then that human agency played a part in the journey towards Buckinghamshire. The possible obsidian axe-head from Olney required greater human effort to bring it to Buckinghamshire from the Mediterranean or Eastern Europe.

Transport and communication.

As Harrison has so ably pointed out in her article for the *Archaeological Journal* (2003), the idea of the Icknield Way as a Neolithic routeway should be jettisoned. Its first mention is not until the twelfth century, when the route itself was not securely located; later monuments, particularly Iron Age and Saxon dykes, cross the supposed alignments; place-name evidence is only available in east Oxfordshire and west Buckinghamshire; the theory that prehistoric sites were predominantly based on light chalk soils has now been superseded by the enormous amount of evidence of the use of river valleys; the idea of a capitalist trading system in prehistory has also given way to theories of complex networks of gift exchange to account for movement of artefacts; and finally, recent archaeological excavation in advance of the construction of the Aston Clinton bypass in Buckinghamshire revealed that the traditional route of the Icknield Way slighted an enclosure and trackway in use from the Iron Age to the Saxon period (Harrison 2003, 1-11).

The alternative is to take the evidence for intensive use of river valleys as a suggestion that the rivers themselves provided routeways through the landscape. This shifts the axis of the southern half of Buckinghamshire from east-west transport networks to those aligned broadly north-south, from the Chiltern scarp to the Thames. Whether the Wye, Misbourne, Chess and Colne were navigable in prehistory is to be discovered, but even if not, the waterways themselves would have acted as a visible route through the landscape with a known destination at the end. With these links to the Thames the southern half of Buckinghamshire would have had better links with or access to communities or land along the river itself, the Thames' other tributaries and out to the North Sea/English Channel.

In contrast, the axis of transport, if relying on river valleys, in the northern half of Buckinghamshire would still be aligned east-west. The River Thames, which does seem to be the focus of some Neolithic to Early Bronze Age activity, flows through Haddenham and past Aylesbury and joins the Thames at Dorchester. In the far north of the county, the River Great Ouse provides a link to the east Midlands, Bedfordshire, Cambridgeshire and the Wash and, ultimately, the North Sea.

Little analysis has been undertaken on the animal remains from any of the above sites to distinguish between animals bred for meat or for use as pack animals. Those found slumped into the secondary fills of the inner ditch of a double-ditched round barrow excavated in advance of gravel extraction at Gayhurst Quarry had signs of butchering for meat and may have been the remains of a feast to commemorate the digging of the outer ditch and enlargement of the mound (Chapman et al 1999, 17-20). The many cattle bones found in middens in the excavations in advance of the construction of Eton Rowing Course and the Maidenhead to Windsor Flood Alleviation Scheme are assumed to have been raised for meat, and there is also evidence from residue analysis of pottery fragments that some contained animal lipids from milk, suggesting some dairying (Allen et al 2004, 91). It seems likely that humans themselves did much of the hauling and carrying necessary to sustain the semimobile lifestyle that seems to have persisted in the Neolithic and Early Bronze Age.

Legacy

There was much later re-use of many of the Neolithic and Early Bronze Age sites mentioned in this paper. Whiteleaf barrow became the focus of later burial and ceremony, in the Middle Bronze Age and Roman period (Dennis 2004, 25-8). The siting of the post-medieval chalk-cut cross may also have been influenced by the presence of the Neolithic barrow. The possible mortuary enclosure and the round barrows at Ivinghoe Beacon may have played a part in the use of the hilltop for a hillfort, and there are suggestions that a funerary function also continued (Brown 2001, 21-2). The Dorney area continues to be important in the centuries following the Early Bronze Age. The Saxon and later periods have been partly published (Formes et al 2002) and more will be published of earlier periods in the near future.

Burnt mounds become more common in the later Bronze Age, with several being found at the Eton Rowing Course site as well as at Chalfont St Giles along the River Chess (Allen 1995, 31; Smithson 1984).

Perhaps there is more continuity than imagined between the Neolithic/Early Bronze Age and the later Bronze Age. The apparent sedentism and mixed agriculture, as well as individual burial, of the later period has many precedents in the earlier, as evidenced above. There is, however, a marked difference in the reliance on wild food sources (S. Kidd, pers. comm.).

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