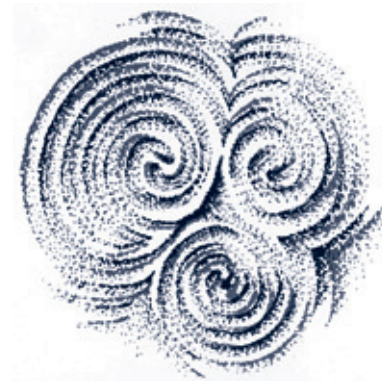


PAST



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THE NEWSLETTER OF THE PREHISTORIC SOCIETY

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EXCAVATING A BRONZE AGE TIMBER PLATFORM AT MUST FARM, WHITTLESEY, NEAR PETERBOROUGH

The Flag Fen Basin is one of those landscapes where if you dig a big enough hole you will find a spectacular prehistoric site buried beneath the peat. Francis Pryor and the Fenland Archaeological Trust did just that in the 1970s and 80s and found the Fengate fieldsystems and the Flag Fen post-alignments. Since 1999, the Cambridge Archaeological Unit of the University of Cambridge has been investigating some equally large holes on the opposite side of the Flag Fen basin, and to date has uncovered the Bradley Fen fieldsystems and the Must Farm post-alignments. In combination, these programmes of excavation have generated a kind of landscape-symmetry on both sides of the basin that has accentuated patterns of prehistoric occupation and deposition. The symmetry is remarkable and sometimes it feels like we are revisiting the same landscapes, which, in a sense, we are. At the same time it also feels as though we are revisiting the same interpretive issues.

Francis Pryor's original interpretation of the Flag Fen platform was as a raised timber settlement, situated roughly centrally within the Flag Fen embayment, and in a watery environment. His reconstruction drawings even had rectangular buildings with smoke billowing out of their roofs. Later, a paucity of material culture, and in particular a lack of insect remains indicative of human inhabitation, encouraged a different interpretation that inevitably



switched from domestic to ritual. Here, abundant items of metalwork, and rare pieces of human bone, were utilised to construct an interpretation of the site as a platform for the dead.

The Must Farm investigations in 2006 revealed hundreds of uprights amongst a mass of fallen timbers. Unlike Flag Fen, the Must Farm posts were found in association with a deep palaeo-channel that was situated along the south-eastern corner of the embayment. The earliest timbers were giant oak piles over four metres in length and arranged in rows resembling the principal Flag Fen alignments. Amazingly, these piles or uprights also shared the same felling dates as the primary rows found at the Fengate Power Station excavations of the Flag Fen post-alignments. Felled between 1283 and 1246 BC, and presumably erected shortly after, the oak piles saw little in the way of deposition beyond a fish-trap, a bone pin-beater and some burnt stones. Later, a major collapse episode brought parts of its superstructure, including massive crossbeams, down into the channel.

The copy date for PAST 64 is 1 March 2010. Contributions to Joanna Brück, School of Archaeology, Newman Building, University College Dublin, Belfield, Dublin 4, Ireland. Email: joanna.bruck@ucd.ie Contributions on disc or as e-mail attachments are preferred (either word 6 or rtf files) but hardcopy is also accepted. Illustrations can be sent as drawings, slides, prints, tif or jpeg files. The book reviews editor is Dr Mike Allen, Wessex Archaeology, Portway House, Old Sarum Park, Salisbury, Wilts, SP4 6EB. Email: aea.escargots@gmail.com Queries over subscriptions and membership should go to the Society administrator Tessa Machling at the London address above.



A steady build-up of silts and thick bands of mollusc shells pointed towards a channel that had been cut-off from the main confluence and reduced to a kind of linear lake. Periods of drying out were indicated by the humification of some of the horizons whilst hundreds of footprints, left by people squelching about the uprights, confirmed that there were times of very low water.

The 'oak' phase of construction was later replaced by an 'ash' phase which saw the building of an oval-shaped palisaded enclosure measuring about 45x30m. Radiocarbon assays for the coppiced ash poles that made up the enclosure repeatedly produced Late Bronze Age dates (c. 1000-800 BC). Larger diameter ash uprights were used to delineate internal structures, and the construction level for the whole configuration was made obvious by hundreds of preserved wood chips. Newer footprints encircled the muddy perimeter of the enclosure, whilst its interior appeared to be kept relatively clean. Pollen, snail, insect and plant analysis suggest that this new structure had been built over a linear lake that was itself situated within a wet, reed swamp environment away from dry land.

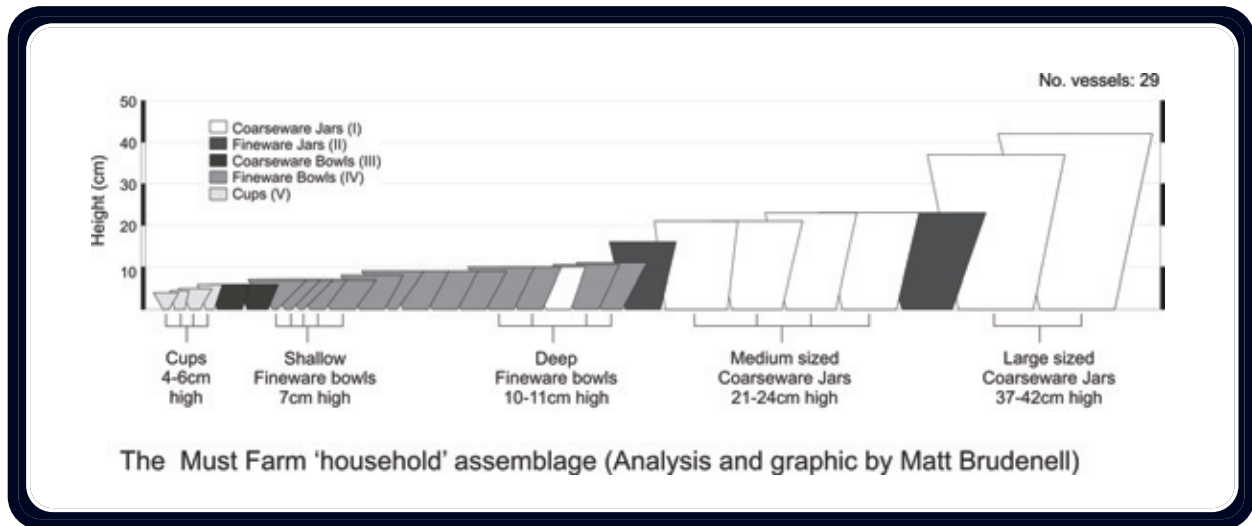
As with any elevated wooden structure, fire can have disastrous consequences, and shortly after its construction the site suffered a catastrophic conflagration. The wood chips that had marked its construction were inundated by charred timbers, including beams, planks and rafters, and in the midst of the burnt superstructure lay an array of blistered and scorched objects. This context was an archaeologist's dream: carbonised fragments of textiles that included clothing, cordage, basket handles and even a bronze bobbin replete with twine were preserved in charcoal-ridden mud. Sprays of small green or blue glass beads were found alongside burnt metalwork (including sickles, gouges, a spear, a razor, rings, punches, awls and a cauldron handle) and there were nearly thirty whole or semi complete pots. Vessels of all shapes and sizes (from cups

through to storage jars) littered the interior, and all of the pottery had been affected by fire (there were spalled surfaces, sooting, and sometimes there was evidence of vitrification). To emphasise the immediacy and devastating character of the conflagration, the pots still retained their contents. Carbonised grain (920-800 Cal BC at 95.4% probability), fish bone and congealed foods spilled out of the vessels, and in one case a small spoon or spatula was found as if still stirring its contents. More conventional later Bronze Age materials such as saddle querns, spindle whorls, burnt stones, burnt flint and calcined animal bone were also part of the assemblage.

Fire, water and the soft silts of the channel had combined to preserve a collection of Late Bronze Age material culture, the existence of which has previously only been inferred. To take the textiles as an example, where the fire had carbonised the material, the water had extinguished the flames before they had turned to ash, and then the silts presented the perfect resting place for preservation. Pots that might usually have become just sherds in a rubbish pit were instead prematurely 'lost' to the bottom of the watercourse - what the fire had captured the river had entombed. Strangely, even with all of these things, the insect record mirrored that of Flag Fen: no synanthropic beetles. Our evidence for occupation or inhabitation (possibly the most complete 'household' assemblage you could ever imagine) was contradicted by an absence of insects that are normally associated with people.

The nearby Bradley Fen excavations have demonstrated that later Bronze Age metalwork deposition was not confined to the Flag Fen post-alignment and platform. Large amounts of weaponry were found in direct relationship with the fen edge and in particular to later Bronze Age field boundaries. Disarticulated human bone was equally ubiquitous and located more often than not in accepted 'domestic' contexts (postholes and watering holes). Conversely, the later Bronze Age domestic structures (round houses) situated on dry land contexts were materially barren.

The material from Must Farm stands out in an area of already very impressive Bronze Age archaeology. Its preservation was dependent on the circumstances of its context both in the present and, more importantly, in the past. A combination of fire and deep water helped to ensure that we got to see something new in what seemed to be a familiar prehistoric landscape. The challenge now is not to diminish its freshness, or reduce its relevance by reciting the same old hackneyed explanation that because it is so 'special' it must therefore be 'ritual'. Otherwise archaeological interpretation just stops at the very moment when we have *something* interesting to say.



The intactness of the materials and the freshness of the uprights (some of the timbers still had what appeared to be green moss adhered to them) gave the context an ‘immediacy’ that none of us had experienced before on a British excavation. There were moments as we excavated the conflagration horizon at Must Farm when it almost seemed possible that the original inhabitants might at any moment return to enquire about what it was we were doing. This immediacy was taken to be an indicator of what had been missing from the ‘dry’ contexts that we were so used to excavating, and therefore could be seen as a kind of gauge on levels of preservation. Soon after, however, we realised we were actually excavating a different kind of later Bronze Age, one that does not sit simply between our archaeological explanations for ‘domestic’ or ‘ritual’ activities, but through the nature of the material itself generates new ways of understanding this period of time.

Acknowledgements

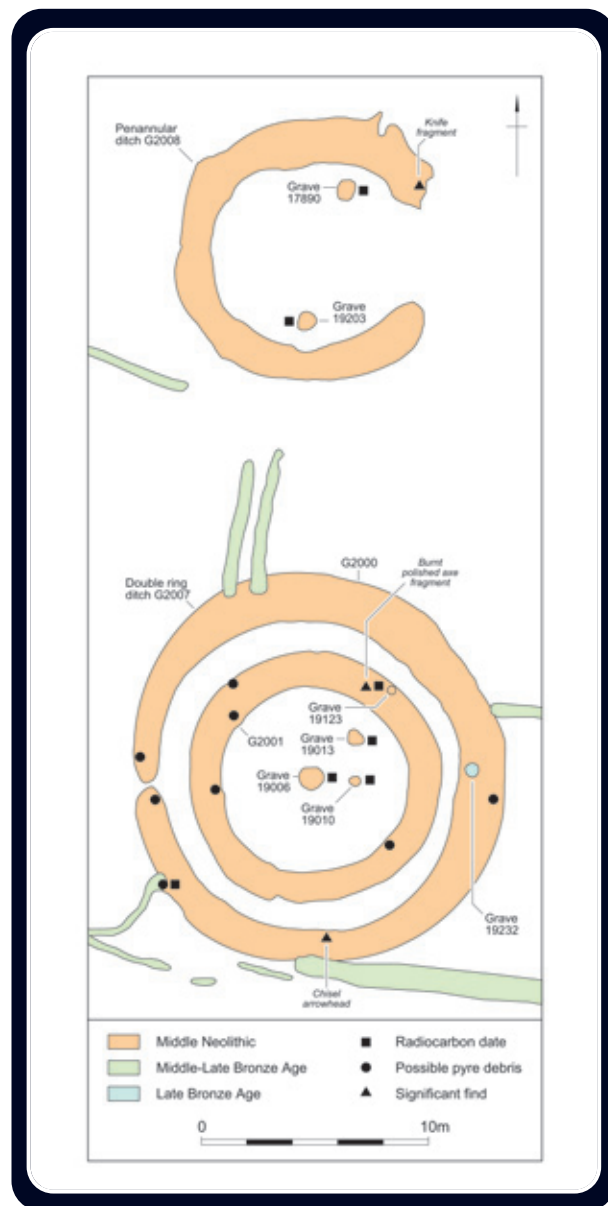
The evaluation of the Must Farm site was undertaken by the Cambridge Archaeological Unit on behalf of the Hanson Building Products (now part of the Heidelberg Cement Group) as part of a planning application for gravel and clay extraction. At present the site is being scientifically monitored as part of a preservation in situ programme set up by Tim Malim of SLR Consulting Ltd and overseen by Kasia Gdaniec of the Cambridgeshire Archaeology Planning and Countryside Advice team (CAPCA).

Mark Knight

NEW EVIDENCE FOR MID-LATE NEOLITHIC BURIAL FROM THE COLNE VALLEY, WEST LONDON

Human burials are generally scarce in southern England during the 1000 years between the abandonment of causewayed enclosures (around 3400 BC) and the appearance of Beaker burials (2400 BC). This is particularly true of sites located on the middle Thames gravels where there is little record of Neolithic human remains and few funerary monuments. However, important new evidence has been revealed during ongoing research at two sites in the Colne valley - Imperial College Sports Ground and Kingsmead Quarry, Horton - both investigated by Wessex Archaeology and funded by Henry Streeter Ltd and Cemex UK respectively.

At Imperial College Sports Ground, a pair of adjacent circular monuments, one a double ring-ditch, the other a U-shaped or penannular ditch,



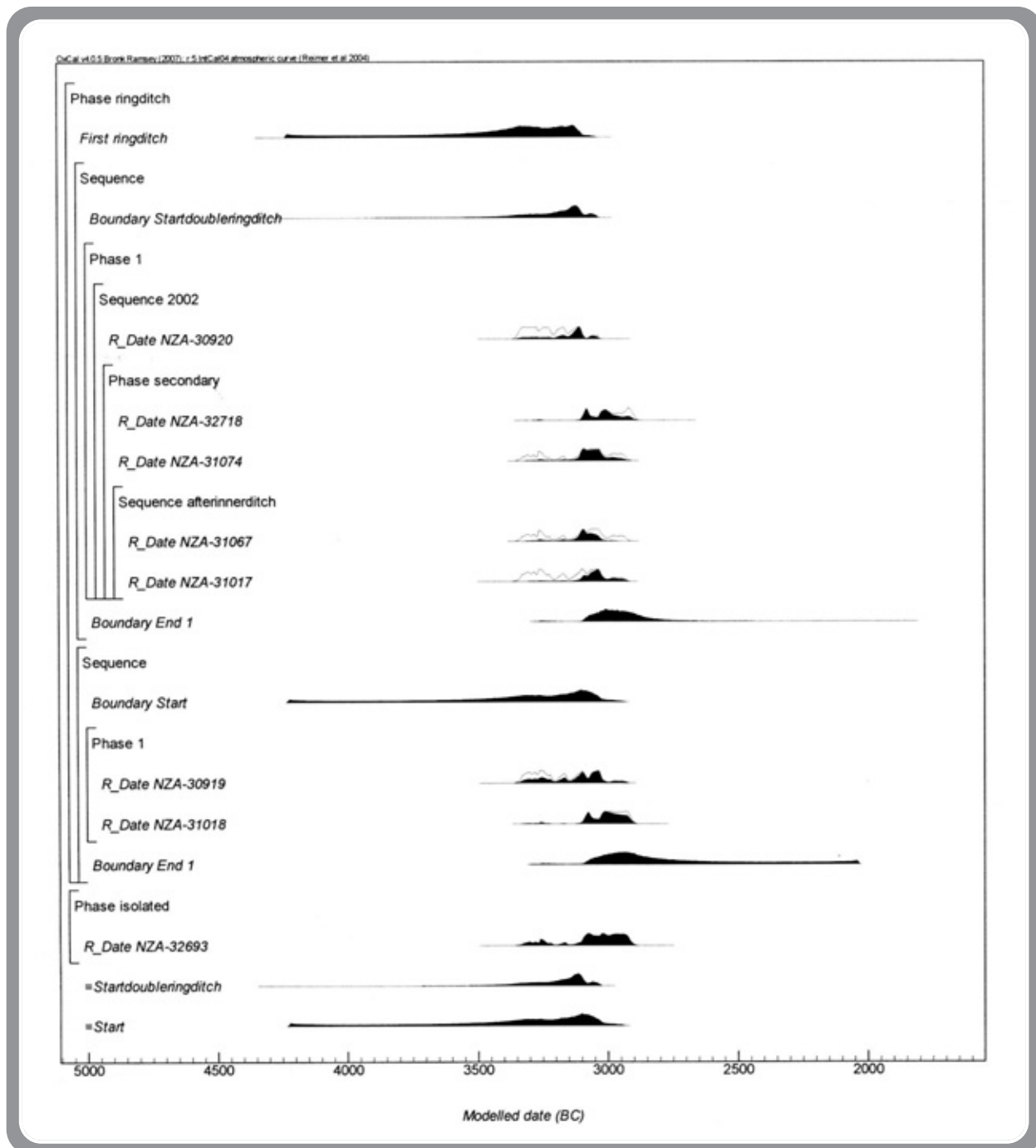
The two Neolithic ring ditches (© Wessex Archaeology)

were found to be associated with a series of graves containing the remains of unurned burials of uncertain prehistoric date. One grave was associated with pottery - fragments of an urn considered to belong to the local Deverel-Rimbury tradition - but the character of both monuments matched other Neolithic ring-ditches in the area, most notably at Manor Farm, Horton, excavated by Steve Ford (TVAS), and Phil Jones's recently published site at Staines Road, Shepperton. Imperial College Sports Ground also contained a long mortuary enclosure, a second U-shaped enclosure and a spread of over 20 pits containing Mortlake Ware; a further 60+ pits with Mortlake Ware were recorded at the adjacent site of RMC Land. Collectively, the monuments form a small cluster or complex of a type well recognised in other parts of the Thames Valley and the Midlands. In addition, the site is less than 4 km from the Stanwell (Heathrow) cursus complex.

The possibility that the cremation graves belonged to the Neolithic was suggested by the recovery from the monuments' ditches of a chisel arrowhead, scraps of Peterborough Ware and, most significantly, a burnt chisel or axe that could represent a pyre good which had been placed in the outer ring ditch. Deposits of possible pyre debris were recorded from the double ring-ditch, while all of the cremation graves only contained bone. In the absence of clearly associated artefacts, a programme of radiocarbon dating was undertaken by the Rafter Radiocarbon Laboratory, New Zealand, and dates were obtained on cremated bone from the two graves within the U-shaped ditch and from four graves from the interior of the double

ring-ditch, as well as from one of the deposits of possible pyre debris from the outer ring-ditch. In addition, a number of isolated cremation graves were also dated from elsewhere on the site, one of which returned a Neolithic result.

The eight results are shown in the plot and can be seen to fall within the last few centuries of the fourth millennium BC, at a time when Mortlake Ware would have been current. With the exception of the outlying grave, which consisted of cremated bone within redeposited pyre debris, the graves all contained the intact remains of cremation burials. Most of the graves contained single individuals



Modelled data from ICSG

which comprised four immature individuals (between 3-16 years), one male c. 15-20 years and two adults; one of the adults, possibly female, had been cremated with a young child.

These results go some way to filling a gap in the funerary record and they confirm the long held suspicion that cremation represented the prevalent mortuary rite at this time. The site draws obvious parallels with the numerous cremation cemeteries excavated at Dorchester-on-Thames by Atkinson and others which, from their associated grave and pyre goods, are likely to belong to the late fourth and early third millennia BC, as well as with the slightly later cemeteries at Duggleby Howe and Stonehenge. However, these sites are all notably monumental and all can be seen as regional centres, while the ring ditches at Imperial College Sports Ground are perhaps more ordinary.

Seven kilometres southwest of Imperial College Sports Ground is the site of Kingsmead Quarry, located on a former gravel island within the Colne Valley, adjacent to the Horton oval barrow and not far from the Staines causewayed enclosure. Recently discovered at the site were an Early Neolithic house, an adjacent cluster of Early Neolithic pits of slightly later date (containing bowl pottery similar to that from the Staines enclosure), a small number of pits with Grooved Ware and a hengiform ring ditch. Also revealed was the remains of an unaccompanied inhumation burial of a woman, whose close proximity to the pit cluster and the house suggested that it could have been of a similar date - although another possibility was that it belonged with the extensive coaxial field system of Middle Bronze Age date that covered much of the immediate island. To our surprise, radiocarbon dating indicates that the person died during the Late Neolithic (NZA-32873 $4066 \pm 25BP$ 2840-2490 cal BC) and was therefore contemporaneous with the henge and the scatter of pits with Grooved Ware. Other human remains of this date are known from the River Thames, Eton, Goring, and Radley, as well as from the secondary fills of the West Kennet long barrow - all within the Thames Valley.

Alistair Barclay, Nancy Beavan, Pippa Bradley, Gareth Chaffey, Dana Challinor, Jacqueline I. McKinley, Andrew Powell and Peter Marshall

POTS FOR THE AFTERLIFE: ORGANIC RESIDUE ANALYSIS OF BRITISH BRONZE AGE POTTERY FROM FUNERARY CONTEXTS

In the absence of written accounts throughout the prehistoric period, archaeology faces this challenge by applying chemical analysis to preserved traces of everyday life in the form of numerous and diverse objects recovered from either domestic or ritual contexts. A significant proportion of archaeological materials from various archaeological sites is represented by pottery. Further information can now be gained by investigating the organic molecules preserved either in visible or absorbed food residues, thereby affording new insights into the modes of use of individual vessels, the commodities processed in them, and the wider economic and social implications. Since food has always played an important role as an essential commodity and facilitator of social relations, organic residue analysis presents an excellent opportunity to better understand the functions of pottery in an active rather than passive role.

The Early Bronze Age was chosen as the focus for this project because it was a period of significant technological, social and ideological changes. Within Bronze Age graves, ceramics occur both as grave goods and funerary urns. A key question is whether these vessels, which are typologically and technologically similar, sometimes even identical, were being used differently to domestic wares or were being produced specifically for funerals. Directly investigating their contents can help us to better understand both the social and ideological changes which were occurring during this period, and will offer unique insights into the foods consumed at the grave-side or 'in the afterlife'. During the second millennium BC, a change can be observed in relation to burial practices: there is a slow shift from single inhumation towards multiple cremation graves that were accompanied by a variety of grave goods, including pots, which acted as containers for ashes, food and beverages, as ritual offerings and as representations of the human body.

Lipids are ubiquitous in everyday life, allowing us to explore past human activities through studying the lipid residues preserved within excavated archaeological artefacts. Porous archaeological materials such as ceramic vessels, soil, sediments, bones, teeth, plant remains and amorphous deposits (resin, tar, bitumen) absorb and preserve organic molecules. By analysing remnant lipids and identifying their structure and distribution, it is

possible to determine their original source by applying the biomarker approach. Archaeological biomarkers are preserved organic molecules or mixtures of compounds that undergo little or no chemical alteration through time and are specific to organisms or commodities that were present or exploited in the past. By comparing them to the composition of modern reference materials, we can reliably identify their source. Previous lipid analyses of British Bronze Age pottery undertaken by the Organic Geochemistry Unit, University of Bristol, have shown good preservation of lipids with approximately 50-60% of potsherds containing appreciable lipid concentrations. However, the vast majority of Bronze Age potsherds (71%) analysed in previous studies originated from domestic contexts, with only a handful (2%) from funerary sites. Here we present some preliminary results from Beakers and Collared Urns alone.

Mythic Beakers

Beakers are one the most intriguing Late Neolithic/Early Bronze Age pottery types and are often considered to be prestige or high-status items due to their elaborate decoration and innovative fine fabric. Andrew Sherratt's interpretation of Beakers as drinking cups, used to consume alcoholic beverages or narcotic substances at ritual gatherings, was responsible for these vessels gaining an almost legendary status that has still not been scientifically demonstrated till this day (lipids have been found inside Beakers but evidence for narcotic substances and alcoholic beverages has yet to be identified). All these interpretations of Beakers' functionality have mainly been due to their greater abundance within burial contexts. In recent years, Beakers have obtained a more earthly and mundane character, since they have been frequently found within settlements as well.

Lipid extracts from Bronze Age Beakers have been analysed as part of research projects carried out by Mukherjee and Dudd under Prof. Evershed's supervision at the University of Bristol. These studies have shown not only good preservation of organic compounds, but also a potential new connection to the foodstuff that was processed within. A total of 82 Beakers were analysed by Mukherjee and Dudd with a 67% recovery rate of lipids. Fourteen potsherd extracts were submitted for carbon isotope ratio measurement and 86% could be attributed to ruminant dairy fats, indicating that Beakers were perhaps used for drinking or storing dairy beverages (fermented or unfermented). The presence of beeswax and plant waxes, that might have confirmed Sherratt's mead drinking story, were confirmed only in the case of a cist grave from Udny Green. A pilot study by Brettell on funerary Beakers from the Czech Republic came to similar conclusions - lipids of animal and plant origin were detected in

five vessels and beeswax in one (published in PAST in 2007). A further 39 Beaker vessels have been analysed for our own research project and preliminary results concur with previous studies displaying predominantly ruminant dairy and adipose fats absorbed in vessel walls.

Collared Urns between domestic and funerary worlds

Although Collared Urns received their name from their occurrence in funerary contexts, they have been discovered in domestic contexts as well. Collared urns were manufactured in a wide array of sizes and were not solely created for funerary use. Their wide range of volumes together with the frequent occurrence of visible, charred organic remains adhering to pot surfaces suggest their most likely domestic use as cooking and storing pots. Collared Urns found in funerary contexts served as containers and accessory vessels and are associated with a range of funerary practices (inhumation, urned cremation and un-urned cremation), although cremation was predominant.

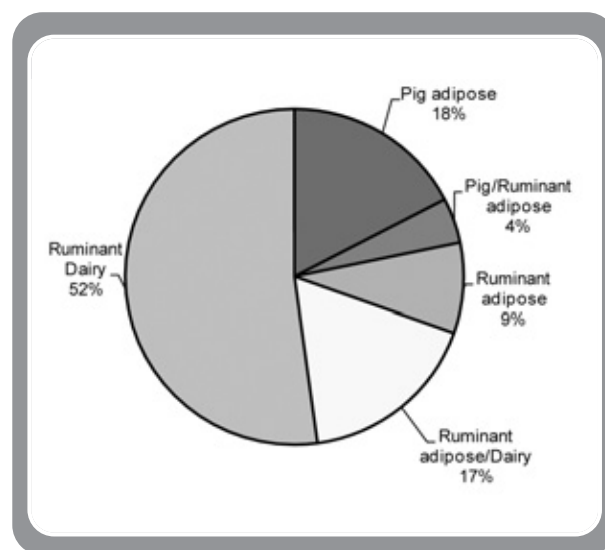


Chart showing the different commodities processed within Collared Urns according to stable carbon isotope measurements

67 sherds of Collared Urns from 13 different sites (domestic and funerary) have been analysed so far for this project and they have shown appreciable lipid preservation in 39% of cases. Comparison of results from domestic Collared Urns and funerary urns shows a higher mean lipid concentration and a higher concentration span in the latter vessels. This might indicate re-use of domestic pottery for funerary purposes since long-term use of pottery causes the accumulation of lipids. By measuring $\delta^{13}\text{C}$ values (stable carbon isotopic ratio) of major fatty acids (palmitic and stearic acid), it was possible to determine the broad commodity group (see pie chart). Ruminant dairy fats were predominantly present in 53%, followed by a mixture with ruminant adipose fat (17%) and porcine fat (17%).

Although the lipid preservation was good, it was not possible to detect any plant leaf waxes or beeswax. Collared Urns were obviously heavily used for everyday cooking and later in their life history their function extended into the realm of the dead by participating in funerary rituals.

Conclusions so far . . .

Early Bronze Age pottery shows well-preserved traces of ruminant fats (cattle, sheep and goat), indicating dairying activities. A similar trend has been observed in the faunal assemblages of analysed sites, with ruminants dominating, although pigs are also represented. In contrast, the presence of porcine adipose lipids is rarely attested in Early Bronze Age pottery. This can perhaps be explained by alternative ways of porcine meat preparation that did not necessarily involve pottery - spit roasting is one obvious possibility, as suggested by Mukherjee *et al.* in *Antiquity* 81. Reassessment of the diverse functions attributed to Early Bronze Age pots will have to be made in order to better understand their life histories and their roles within funerary rituals and contexts.

Lucija Šoberl, Organic Geochemistry Unit, School of Chemistry & Department of Archaeology and Anthropology, University of Bristol

Joshua Pollard, Department of Archaeology and Anthropology, University of Bristol

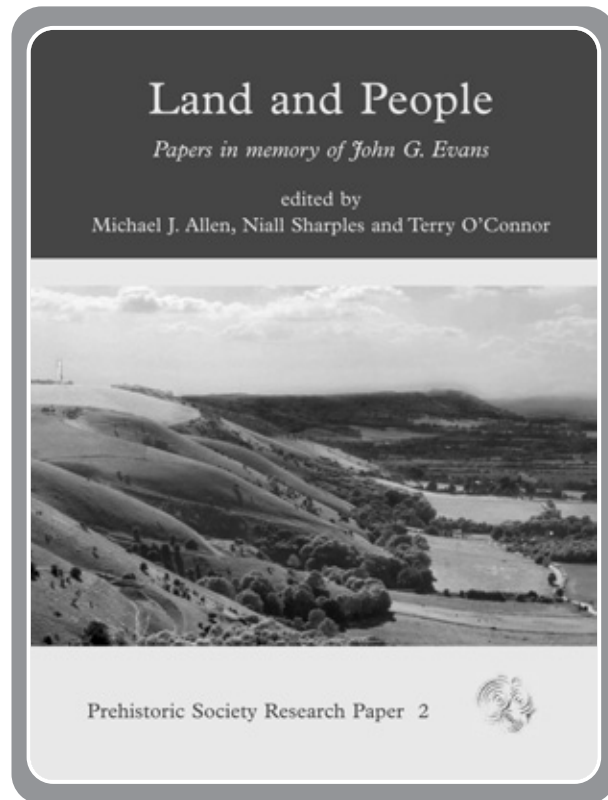
Eichard Evershed, Organic Geochemistry Unit, School of Chemistry, University of Bristol

SUCCESSFUL RESEARCH PAPERS SERIES LAUNCHED

The Society has a raft of new initiatives, one of which is a whole new publication series, the *Prehistoric Society Research Papers*, which was launched this year. So far, two volumes have been published, a third is in press and a fourth is in production. The series with its pleasing cut-down A4 hardback format has been warmly welcomed, and individual papers are already being cited as cutting edge and new advances in prehistory. Our publishing partners, Oxbow Books, have dedicated a whole page of their catalogue to the series and you may have seen notes about it in *Antiquity*, *British Archaeology* and *Salon* as well as various other specialist group websites.

It is perhaps not the cleverest way to launch a new series with a festschrift that has to be kept secret, but *From Bann Flakes to Bushmills* was just that - a collection of papers in honour of Professor Peter Woodman, edited by Nyree Finlay, Sinéad McCartan, Nicky Milner and Caroline Wickham Jones. It was one of the worst kept secrets in that

100s of people knew of its production, but it was kept secret from Peter, probably helped by his own modesty in that he did not expect to receive such an honour. It was handed to him in May at our successful Europa conference in York.



Only four months after that, our second volume edited by Mike Allen, Niall Sharples and Terry O'Connor, *Land and People: Papers in Memory of John G. Evans* (in conjunction with the Conchological Society of Great Britain and Ireland), was launched at the Association of Environmental Archaeology's 30th anniversary conference. This contains 20 papers covering aspects of prehistoric landscape, environment and social archaeology. As a collection, the papers in this volume provide a diverse and cohesive picture of how archaeological landscapes are viewed within current research frameworks, and a holistic approach to landscape interpretation.

The third volume, *Materialitas: Working Stone, Carving Identity*, edited by Blaze O'Connor, Gabriel Cooney and John Chapman, is in the final stages of production and will be published shortly after this edition of *PAST*. This exciting volume published in conjunction with University College Dublin Humanities Institute of Ireland includes some fantastic images by Aaron Watson, many reproduced in full colour, and a range of thought-provoking and stimulating papers on the subject area. The production of this volume is marred by the premature death of the principal editor, Blaze O'Connor, who was heavily involved in the

organisation of the conference from which this volume is derived, and who worked enthusiastically and meticulously with us on the book. That work was something that kept Blaze going while she was having medical treatment and she was delighted to see it at final proof stage; the volume is dedicated to her memory.

A fourth volume, *The British Chalcolithic: People, Place and Polity in the Later 3rd Millennium* is already underway for publication next year. Details of the volumes, and order forms, can be found on the Prehistoric Society website and the Oxbow Book catalogue and website. Members of the Society are entitled to a 25% discount on the cover price of each.

Mike Allen, Series Editor

THE PREHISTORIC SOCIETY'S 75TH ANNIVERSARY

Next year marks the 75th anniversary of the Society in its present form, when the Prehistoric Society of East Anglia was renamed to reflect its national role. To celebrate the occasion, we are planning a series of events over the summer and autumn of 2010, including site visits and talks that reflect the Society's history. Full details and booking forms will be posted on the website and included in the next issue of *PAST*, which will also have an anniversary theme.

CONFERENCE NEWS

Wessex Culture: 'Revolution' or Late Beaker 'Evolution'? Defining changes in the early Second Millennium BC

Prehistoric Society conference, Bournemouth University, 17-18 April 2010

Our conference next April will address a problem that archaeologists of the Early Bronze Age have faced since William Cunnington and Sir Richard Colt Hoare first dug into the barrows of Salisbury Plain. What happened to Beaker burial practice in southern Britain between the late third and early second millennium BC? In cemeteries across Wessex, burial practices changed from inhumation to cremation burial in a relatively short time. This general change was also accompanied by changes in barrow form, mound use, agricultural patterns, ceremonial monuments and artefacts.

Archaeologists, however, have found it difficult to characterise the difference between practices because at the specific level, several barrows at the interface of this change share traits from both practices. Recently, researchers have also shed doubt on the appearance of new artefacts as an indicator of change. This has led some to see this as a period of evolution of the Beaker phenomenon. Yet changes across the board were so pronounced that others have seen it as more of a revolution - the possible result of an influx of ideas and artefacts from the Continent.

This conference aims to pool knowledge from archaeologists working with artefacts, burials and other evidence from southern Britain and the Continent to better understand the dynamics of this change. Speakers include: Stuart Needham, Tim Darvill, Paul Garwood, John Barrett, John Hunter, Ann Woodward, Jonathan Last, John Gale, Mike Allen, Sabine Gerloff, Anthony Harding and Wessex Archaeology.

Further details and booking will be made available on our website www.prehistoricsociety.org and the website of School of Conservation Sciences, Bournemouth University.

Andrew Martin & Mike Allen

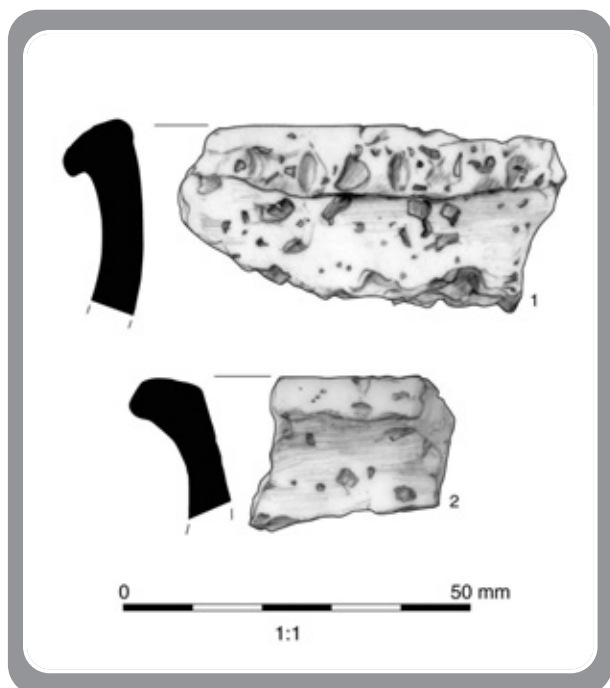
EARLY NEOLITHIC POTTERY FROM DARTFORD, KENT

During excavations on the line of the A2-A282 Improvement Scheme carried out by Oxford Archaeology near Dartford, Kent, a long sequence of archaeological deposits were revealed spanning the Palaeolithic to the post-medieval periods. This note focuses on the Neolithic deposits but the site will be published as an Oxford Archaeology Monograph in the near future.

The Early Neolithic was represented by a series of pits containing pottery and worked flint. Pit 10187 contained a small number of sherds weighing 29g of a fine walled, flint tempered pot. This was highly fragmented and no feature sherds were present. A radiocarbon date of 5095 ± 35 BP (3970-3790 BC; SUERC-23713) was obtained from the fill of this pit. A further pit contained a small number of sherds from at least two other pots in a flint tempered fabric which appear to be large s-profile vessels, although only carinations and wall sherds were present, making firm identification difficult. It is likely, however, that these sherds belong to carinated bowls. This pit contained no material suitable for

radiocarbon dating. A further 60 sherds of fine walled, flint tempered pottery were recovered from pit 20082, alongside a number of sherds in a fabric containing grog and burnt-out organic material. Feature sherds in both fabrics comprised a single small fragment of a rolled rim and a fragment of a possible carination. Two sherds were decorated, one with a fingernail impression and another with a possible bone impression, although the latter was a tiny sherd and the surface was eroded, making identification difficult. A flint axe and a radiocarbon date of 4820 ± 35 BP (3700-3680 cal BC; SUERC-23719) were also recovered from this context.

A total of 405 sherds weighing 2427 g were recovered from the fill of pit 20076. This material comprised fragments of a number of thicker-walled vessels in at least three fabrics. The majority of the material was flint tempered and comprised fragments of at least 17 vessels. These included 25 rim sherds, most of which were expanded or externally enlarged and at least three of which were of 'thumb groove' style. At least two vessels of a sandy fabric were also present and this included 15 sherds (94 g) of a sand/flint/organic tempered vessel with fingernail decoration along the outer edge of an externally enlarged rim. Similar sandy sherds were also recovered in small numbers from other fills within the pit. The vessels with surviving rims were dominated by bowls (defined as having diameters larger than 120 mm), with a single cup (diameter of less than 120 mm) represented, although this data should be treated with some caution as no complete vessels were present and rims were fragmentary. A radiocarbon date of 4755 ± 35 BP (3640-3500 cal BC; SUERC-23720) was obtained from context 20097.



Sherds from pit 20076

The pottery from the pits at Dartford comprises both fine walled, relatively well-made vessels and larger, heavier vessels. The earliest date came from a context containing fine walled pottery, but it was not possible to ascertain if this material belonged to the carinated bowl tradition. The material with a slightly later date from pit 20082 included decorated and carinated sherds, although in a highly fragmented state. The majority of the pottery recovered from the site were plain bowls from a single pit, although decorated bowls also occurred in the same context. The radiocarbon dates appear to confirm the early occurrence of fine carinated bowls, with plain and decorated bowls occurring slightly later in the sequence in this part of southern England. The number of vessels is also notable, as previously only small numbers of vessels have been recovered from Neolithic contexts in this region, Dunning's paper on the Neolithic of Kent in the *Antiquaries Journal* for 1966 recording five Neolithic bowls from a pit at Mill Road, Deal, and another five from Creteway Down, Folkstone.

David Mullin, *Oxford Archaeology*

RUN OF PPS

Free to a good home: PPS vols 50 (1984) to 55 (1989) inclusive; vols 57 (1991) to 67 (2001) inclusive; and vols 69 (2003) and 70 (2004). Interested parties must be willing to collect or to pay for postage. For further information, please contact Mrs. Pat Atherton, 102 Preston Road, Chorley, Lancashire PR7 1PT (or email pat.atherton@bdp.com)

PREHISTORIC SOCIETY STUDY TOUR TO SARDINIA

Between the 11th and 19th of September 2009, thirty members of the Prehistoric Society toured Sardinia in a three-centre tour led by Colin Burgess and ably abetted by Caroline Lynch, who acted as translator and general factotum.

Departing from Gatwick (very) early, we left Olbia airport mid-morning, heading for our first Nuraghe (La Pisciona), where Prof Angela Antona showed us the central tower and her excavation of the surrounding circular huts. Overall, we visited fourteen nuragic complexes. Each had a central monumental tower, with subsidiary towers. They were often surrounded by small circular huts which, on excavation, appear to have been used for craft activities. The towers are massive, built of huge stone blocks, with corbelled roofs. The central, ground-

floor chamber rises to great height. Leading off from the entry, there is usually a stone staircase winding clockwise to one or more rooms above or to a balcony supported by large 'bracket' stones.

At Santu Antine, the tower has two superimposed corbelled chambers, with the footings for a third chamber above and may have been more than 85 feet high. At Su Nuraxi Barumini, the ascent of the tower led to a series of passageways, culminating in a nerve-wracking descent to the central courtyard, emphasising its domestic unsuitability. Other buildings often clustered outside the tower complexes. Larger circular structures are interpreted as meeting halls. They have benches around their internal wall and a central altar, which in form resembles a sliced cake. An original altar from Nuraghe Palmavera was preserved at the National Museum at Sassari. There are also 'bench and basin' buildings, smaller circular structures with benches on the internal wall surrounding a central stone basin. These often have a cistern and possible means of heating water attached to them. In the usually locked site of Sant'Imbenia we saw two of these bench and basin buildings. Could these be ancient saunas? The little bronze models of boats found in some of them would have made excellent dippers for pouring water.

On an island where there are few rivers, fresh water was an important feature of 'well temples' which are - almost uniquely - built of the finest ashlar stonework. Colin noted that Sardinia has more ashlar than in the whole of the Mediterranean together. We visited two examples of well temples utilising high altitude springs; our walk to the temple of Su Tempiesu, high in the mountains of eastern Sardinia, was a highlight of the trip, and our climb uphill in search of the temple above the Gremanu complex was also memorable. More often, these temples are in lower positions in the landscape, for example at Predio Canopoli, Santa Vittoria de Serri and Santa Cristina. They are built in the shape of a keyhole, with a benched entrance area narrowing back to a set of steps which descend to a well at the far end of the building. From the well, it is possible to look up past the ashlar-lined, corbelled roof to the sky above.

Santa Cristina is a site of particular interest, as it includes a modern festival village (a *muristena* or *cambassia*) which is still used for annual religious festivals. People congregate in the area around the church, living in small cottages. Is it possible that such pilgrimage sites predate Christianity and were a feature of prehistoric life, in which the various nuragic complexes also played a part? At Su Romanzesu (see photo) we saw another nuragic site featuring an assembly area and 'temples', with a large elongated pool area, surrounded by steps suitable for seating a large audience and fed by a well at one end.



Exploring the ceremonial water complex at Su Romanzesu

Model nuraghi in stone and terracotta have been found on nuragic sites, sometimes within the central tower and sometimes on the altar in the meeting houses. This monumental phase of nuragic culture seems to have begun immediately after the Copper Age (i.e. around the beginning of the second millennium BC). Colin believes that this monumental phase, with the nuraghe as an important cult symbol, ended towards 1000 BC and did not extend into the first millennium. From the twelfth century BC, there was a strong east Mediterranean influence in Sardinia, with examples of Late Bronze Age Cypriot cauldron pieces in Nuoro Museum. Early in the first millennium BC, the Phoenicians arrived. As their artefacts are often found on nuragic sites, this begs the question, 'what was their relationship with the native Sardinian cultures?'

Yet another Sardinian 'speciality' is the *tomba di giganti* or giants' tombs. Similar to the *allées couvertes* of Atlantic Europe, these Neolithic tombs continued in use into the Early Bronze Age, but were 'enhanced' with semi-circular courtyards and a monumental frontage culminating in a massive carved portal stone over the usually small entrance. We visited Coddu Vecchu and also the Madau tombs, where two well-preserved tombs and two tomb remnants are grouped along a low u-shaped ridge around a possible assembly area. We were also able to visit other Neolithic sites: the *domus di janus* (fairy houses) were rock cut tombs, often sealed at the end of the Copper Age, which incorporated elements of house structures including architraves around doorways, roof thatching, and sometimes horn decorations into their structures; the strangest site was Monti D'Accodi, whose unique multi-period 'ziggurat' was accessed by a ramp running up one side. In the museums, we were impressed by the *bronzetti*, bronze figures of men in armour, mothers with babies, cattle, boats, model nuraghi and rapiers. At Barumini, the museum was built over a nuraghe, visible below a glass floor, while the museum at Laconi featured 40 carved statue-menhirs.

The standard of the hotels during the trip was excellent. At lunchtimes, we alternated between picnics in the open air and sampling local pasta. Apart from one spectacular thunderstorm, the weather was warm and sunny. Our packed schedule enabled us to see examples of every type of Sardinian monument. Transportation through the interior involved winding roads and congested villages, but our driver Tonino rose to the challenge. On behalf of everyone on the trip, I would like to thank Colin for all his hard work in planning and delivering this fantastic tour (including his invaluable 32 page personal briefing on the island's prehistory along with a comprehensive 88 page booklet of plans and illustrations) and Caroline for her sustained efforts to keep us on schedule and for providing help, guidance and friendship.

Veronica Edwards

NEW FEATURES AT AVEBURY FROM HAND CORING: GEOARCHAEOLOGY IN ACTION!

A small programme of geoarchaeological work was conducted in May 2009 in the field south of Rough Leaze (outside the southeast sector of Avebury). Excavations conducted previously in Rough Leaze by Josh Pollard, Dave Robinson, Nick Snashall and Ros Cleal in 2007 as part of the *Between the Monuments* project recovered important evidence of Mesolithic and Neolithic activity preserved in tree hollows and also ephemeral stakehole features. To complement this and explore other aspects of this landscape, geoarchaeological work this year comprised a series of hand-cored auger holes conducted immediately southeast of, and c. 10m from, the bank and south of Rough Leaze in an area under long-term pasture. Access for our study was kindly granted by the National Trust and their tenant farmer, Mr Tony Farthing.

The augering programme was conducted as part of the University of Reading School of Continuing Education archaeology course (*Geoarchaeology in Action*) led by Mike Allen. The aims were modest and fieldwork was limited to one day with 17 keen students. In addition to providing an ideal learning opportunity, the archaeological aims were simple: to characterise the soils in the field south of Rough Leaze; establish the depth of former ploughsoil; attempt to locate any further tree-throw hollows which might be of archaeological significance (though this would be a little bit of a needle-in-a-haystack job); and examine if any of the Avebury bank had eroded some 5-10m from the extant

bank into the field and potentially preserved any buried soils.

Set with 17 keen, enthusiastic and primed students, we set off on a May morning to conduct this simple research exercise. Two augering programmes were conducted: i) a small 20m long transect running perpendicular to, and 10m from, the base of the bank into the field; and ii) a probabilistic auger survey in the field immediately south of the boundary to Rough Leaze. A total of 13 hand auger holes to depths of up to 80cm were recorded and mapped.

Our probabilistic survey clearly demonstrated the presence of a long term, but formerly ploughed, soil which survived to depths of 22cm on the slope and crest as a brown rendzina, but downslope as a slightly thicker brown earth or colluvial brown earth. Although no tree hollows or archaeological features were found, the thickness of soil indicates that any features that did survive would be subject to plough damage. In one location, an odd chalk deposit was recovered - more about that below.

Our short 20m long transect perpendicular to the bank cored six holes at 5m intervals and showed that there was no evidence of chalk eroding from the bank to the northwest, but did record shallow colluvium to depths of 65cm at the base of the slope and edge of the field eroding from the southeast. Here, therefore, was a narrow zone not much more than 15m wide of potentially better preservation. At one point along this transect, a layer of compacted chalk marl cementing many fine chalk pieces and containing a very small fleck of possible pottery at a depth of 29-40cm was identified. This overlay another 5cm of colluvium (hillwash) before reaching the chalk. Indeed, during our probabilistic survey, another almost identical layer was encountered at 20cm below the surface and directly overlying the chalk. Both of these were clearly not 'natural' deposits, nor were they in archaeological features; one lay on the chalk and the other within hillwash. Further judicious augering also indicated that the deposit within the colluvium was highly localised, ended abruptly, and did not extend very far.

What have we found?

The chalky cemented deposits are difficult to fully assess from a 4cm diameter hand auger - nevertheless they seemed to be clearly cultural layers of cemented chalky marl with a number of fine chalky pieces, and contained submicroscopic pieces of what looked like pottery. They are akin to a chalky made surface that has been preserved because of the depth of protecting hillwash. Although this could be a chalky trackway or even date to the 1940s, the similarities in the matrix of the material and its location just outside the henge is strongly reminiscent of the Neolithic hut floors found by Prof. Parker Pearson's team at



Aerial photograph showing location of Rough Leaze, our area of augering and the approximate location of the auger transect

Durrington Walls! Clearly it is unlikely that the Durrington 'houses' are alone; they have survived by being protected by hillwash and bank material, just as at Avebury our layers survive due to the localised thicker colluvial soils. Houses such as those found at Durrington produced few features cut into the chalk, and thus one ploughing would destroy and remove them in other more normal contexts.

What are the implications?

Without getting too excited about the evidence from just two 4cm diameter auger holes, the possibility that Neolithic houses lie within the vicinity of some of the great monuments is not just likely, but probably the norm. The survival of buildings such as those at Durrington Walls is largely dependent upon accretion of soil deposits or archaeological material - a rarity in chalk landscapes where long attrition by the plough is normal.

What next?

Although optimistically we might believe that we have potential evidence for Neolithic buildings, we have no date nor any context for the slim but intriguing evidence we have. Clearly some further field intervention is needed to establish the nature and extent of these features. Where our fragile layer occurs on the slope, it lies at the base of the shallow soil and if allowed to be ploughed would be destroyed just as ploughing may have done for features elsewhere in the Stonehenge area. Further, if we can establish that these are indeed houses, then

what is the extent of them here? Are they present elsewhere round the Avebury monument, do they survive or are they present around Silbury, Marden, Mount Pleasant or other major Neolithic sites?

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RECENT (AND NOT SO RECENT) EXCAVATIONS IN THE VALE OF PICKERING

Since 2008, a programme of archaeological and palaeoenvironmental fieldwork has been carried out in the eastern Vale of Pickering (North Yorkshire) to study the relationship between Mesolithic hunter-gatherers and their environment. As part of this project, two seasons of fieldwork have been carried out at a Mesolithic site at Flixton School House Farm. The site lies on the southern shore of palaeo-lake Flixton, a late glacial lake that was gradually succeeded by wetland environments of reedswamp, fen and carr during the early Holocene. The development of the wetlands led to the formation of peat deposits that built up across the Mesolithic landscape as the lake became infilled, preserving a detailed archaeological and palaeoenvironmental record.



The southern part of the trench during excavation, with the former Lake Flixton in the background

The Flixton School House Farm site is just one of a number of Mesolithic sites that have been recorded around the shores of the lake. The site of Star Carr, excavated by Graham Clark in the late 1940s and currently the focus of new investigations (PAST 56), lies less than 3km away on the northwest shore, while fieldwork carried out by the Seamer Carr Project (1975-85) and the Vale of Pickering Research Trust (1985-present) have recorded a further seventeen areas of Mesolithic occupation.

The Flixton site was first discovered in November 1998 by a small group of cold, wet and slightly miserable students (including myself) and was investigated in more detail the following summer by the Vale of Pickering Research Trust. The current project has drawn together the results of these earlier phases of work and undertaken two further seasons of archaeological and palaeoenvironmental investigations. This has included detailed auger surveys of the buried Mesolithic landscape, palaeoenvironmental analyses of samples taken from the peat, and test pitting and open area excavation in both the 'wetland' and 'dryland' parts of the site. Work is still ongoing but the results of the recent fieldwork have already provided some exciting new discoveries.

During the Mesolithic, the site occupied a small hill adjacent to the shores of Lake Flixton. From about 9600 cal BC, a thin fringe of willow (*Salix*) and aspen (*Populus*) trees would have grown on the wet soils near the base of the hill and dense beds of reeds (*Phragmites*) would have formed in the shallow waters of the lake margins. Beyond the wetland edge, birch (*Betula*) and pine (*Pinus*) woodland grew with an understory of male fern (*Dryopteris*) and behind the hill was a small pond, hydrologically separate from the main body of the lake. During the time that the site was occupied, however, these environments gradually changed. As peat began to form in the



Red mineral with incisions across one face

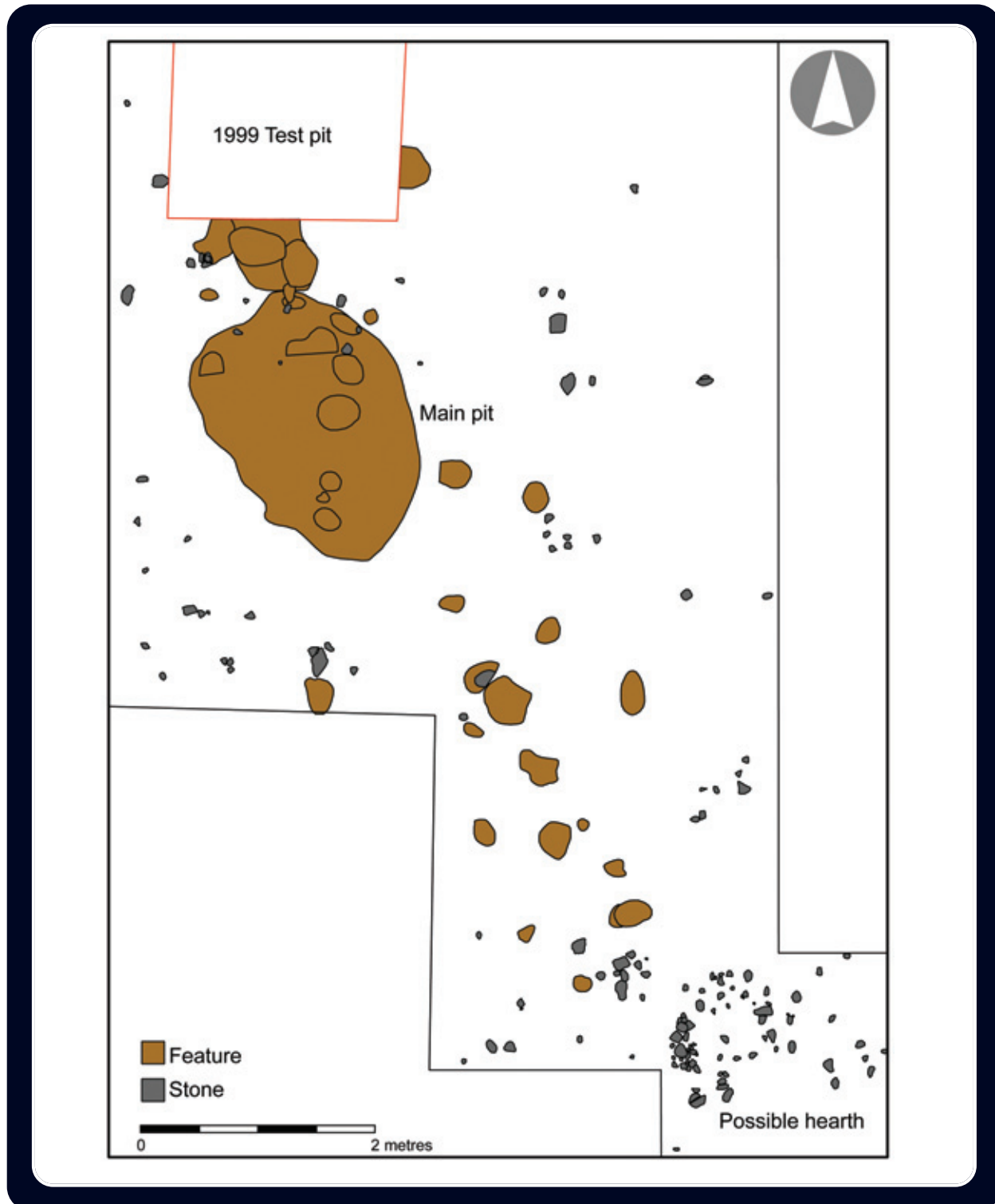
shallow waters of the lake, a wooded fen carr of willow, aspen and sedge (*Carex*) developed, flanking the sides of the hill and encroaching across the former lake margins. On the higher ground, hazel trees (*Corylus*) became more established and the small pond slowly silted up and was colonised by willow carr. By the start of the late Mesolithic (c.7500-8000 cal BC), hazel woodland dominated the terrestrial environment while a thick band of wooded, boggy fen carr separated the hill from the lake. This gradually built up across the low ground on either side of the hill and by about 4000 cal BC the hill had almost become an island within the wetlands.

Evidence for Mesolithic activity occurs across the whole of the hill but the main concentration of archaeological material is focused on its northern edge. Here, a dense scatter of worked flint, over 6000 from c. 75m², including both early and late Mesolithic material was recorded as well as a small assemblage of other worked stone tools. A more unusual find was a small fragment of a red mineral that had been worn and then incised, possibly to extract material for use as a pigment.

What was more unexpected, however, was the discovery of a relatively large number of Mesolithic features, mostly pits and stakeholes, in this area. The earliest of these was a large pit, almost a metre deep and over two metres wide, which had been dug into the surface of the hill and partially filled with sand, charcoal and burnt hazelnuts. The rest of the pit remained open for some time, allowing the top and sides to become weathered, and continued to act as a focus for activity on the site. On at least two occasions, small pits or postholes were cut into its

fills and subsequently sealed by later deposits; in addition, a short line of stake holes was cut through its northern edge. One of the smaller pits was also unusual in that it contained a very high proportion of charcoal and was partly covered with a layer of burnt stones. Immediately to the north of the pit was a sequence of three, much smaller, inter-cutting pits two of which contained small assemblages of lithics which, on site, appeared to refit. This entire sequence was then sealed beneath a layer of charcoal-rich sand, containing large quantities of Mesolithic flint, that

extended across a large area of the trench forming the uppermost layer of the main pit. A second group of features consisting of 17 small pits or postholes and a hearth made up of a scatter of burnt stones was recorded in the south of the trench. These formed a roughly linear arrangement and ran parallel to a slight bank in the Mesolithic land surface. The chronological relationship between these two groups of features could not be established stratigraphically but should be resolved through a programme of radiocarbon dating.



The distribution of Mesolithic features recorded during the 2009 excavations

The area was subsequently sealed by a thick deposit of sand, tentatively interpreted as a wind-blown sand, which formed a large bank or dune across the southern part of the trench burying the southerly group of features. Similar deposits have been recorded on the nearby site of Flixton Island where they were dated to the very late Mesolithic. It is hoped that analysis of samples taken in 2009 will establish both the character and date of these deposits. A mixed artefact assemblage including Mesolithic and later prehistoric flints were recovered from the sand and the overlying topsoil attesting to further phases of activity at the site. The character of the later prehistoric occupation requires further investigation and will be the focus of future fieldwork.



Section through the main pit. The northern edge (left of the photo) has been truncated by later pits

Elsewhere, much smaller assemblages of Mesolithic material, from single finds to discrete scatters of fifty or so lithics, were also recorded on the hilltop as well as within the wetland deposits at the former lake edge. These also yielded small quantities of animal bone, teeth and a fragment of worked antler. Activity also took place in the pond to the south of the site where the articulated vertebrae and ribs of an aurochs (*Bos primigenius*) were recorded during the 1999 excavations. Further excavations in this area were carried out in 2009 but these failed to recover any other faunal material and the finds appear to represent a single episode of activity.

Looking ahead, more fieldwork is planned in order to establish the spatial extents and temporal range of

occupation and, in particular, to identify further Mesolithic features. A geophysical survey of the hilltop has already been carried out and this has identified a number of circular anomalies of a similar size to the large pit. As well as investigating these, a programme of test pitting and open area excavation will be undertaken to sample the remaining areas of the hilltop. A further aim is to characterise the nature of the later prehistoric occupation activity and its relationship to the Mesolithic occupation of the site. Radiocarbon dates on samples taken from the environmental sequence and several of the features should be available in 2010. These will begin to establish the relationship between the human occupation of the area, the changing character of the environment at the site itself, and broader changes in the wetland landscape of the Vale of Pickering. A further programme of dating is also planned that will establish a firmer chronology for the occupation of the site and its relationship to the Mesolithic inhabitation in the surrounding landscape.

The discovery of features such as pits, post holes and stakeholes on Mesolithic sites is not a new occurrence and in recent years the range of recorded features, including possible structures, has grown rapidly. This has challenged some of the more traditional views of the period as being characterised by small, highly mobile 'bands' of hunter-gatherers and allows us to consider aspects of Mesolithic life such as architecture and the use and construction of space. It is hoped that future work at Flixton School House Farm will contribute to these debates and develop a richer understanding of Mesolithic society.

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Barry Taylor, University of Manchester