Journal of Nordic Archaeological Science 14, pp. 45–60 (2004)

The Stonehenge Riverside project
Research design and initial results

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Stonehenge was in use throughout the third millennium BC, within a landscape of linked Neolithic and Early Bronze Age timber, chalk and earth monuments. Its stone phase began probably in the mid-third millennium BC and its famous sarsens were erected around the same time that the henge enclosure of Durrington Walls with its timber circles was constructed three miles upstream along the River Avon. The river may have been significant as a link between the living and the dead, represented in the use of perishable wood and permanent stone materials. This theory has been elaborated to develop expectations about the landscape which may be investigated on the ground. One of these is the expectation that Durrington Walls was connected to the river by an access in a similar way that Stonehenge is linked to the river by the Avenue. This paper sets out the research design for a new project "Stonehenge riverside" and reports on the findings of the 2003 field season.

Keywords: Stonehenge, Woodhenge, Neolithic, Bronze Age, landscape, monuments

> *"For what it's worth, I predict that one day this century there will be a hugely important archaeological discovery made near the banks of the Avon, within ten kilometres of Stonehenge."* (Francis Pryor 2003: 235–6).

Stonehenge and its immediate environs, a World Heritage Site, form one of the most significant archaeological landscapes of the third millennium BC (Fig. 1). There are many hundreds of books and academic articles on Stonehenge and its landscape and, as we write, there are proposals to re-route the main road across the area within an underground tunnel, to close the road which runs alongside Stonehenge and to reposition the visitors' centre more than a mile to the east of the famous stone circle. In the last decade or so, a considerable amount has been learned from non-invasive methods such as geophysical survey (David & Payne 1997), archive research (Cleal et al. 1995; Pollard 1995), viewshed analysis (Cleal et al. 1995; Exon et al. 2000), watching briefs (Richards 1990; 1991), finds research (Albarella & Serjeantson 2002; Muhkerjee et al. forthcoming) and experimental archaeology (Richards & Whitby 1997). However, apart from the archaeological works required by the road and visitor centre proposals, there have been virtually no plans for archaeological excavation since the Stonehenge Environs Project of the early 1980s (see Richards 1990), almost twenty years ago. Of course, the decision to excavate deposits which are otherwise unthreatened cannot be taken lightly and requires strong justification in terms of theoretical basis, methodological advance, research gain and public benefit.

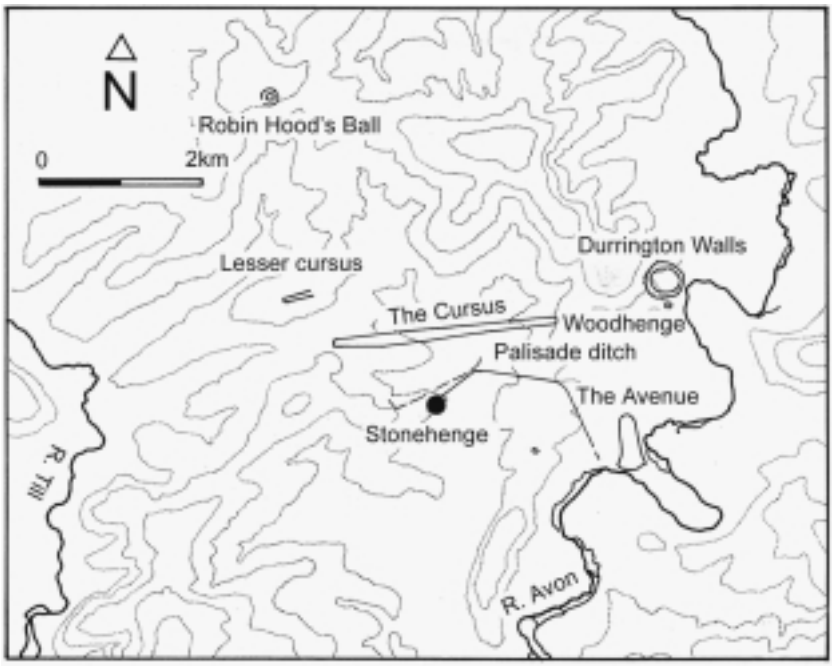

Figure 1. The Stonehenge landscape and its monuments.

Background: recent developments in methods and theories

In the last twenty years there have been considerable advances in archaeological method, not only in the improvement of excavation methods and recording techniques (computerised data recording, high-precision geographical positioning systems etc.; Roskams 2000) but also in interpretation (Hodder 1999; Lucas 2001). There have also been major developments in the range and effectiveness of the analytical techniques used (see Brothwell & Pollard 2001). The more widely adopted of these include soil micromorphology (French 2003), systematic flotation for carbonised plant remains and heavy residues integrated with phosphate and magnetic susceptibility measurement (Smith et al. 2001) and a whole host of environmental recovery techniques for molluscs, pollen, insects, human remains and animal bones (e.g. Allen 1997; Scaife 1995; Buckland & Sadler 1998; Chamberlain 1994; Mays 1998; Payne 1972; Hillam et al. 1987). Advances in absolute dating include greater precision in radiocarbon determination and optically stimulated luminescence, together with the use of Bayesian statistical approaches (Buck et al. 1996). There are also new methods, not yet widely applied, for identifying lipid and protein residues within ceramics (Dudd et al. 1999; Craig et al. 2000), for DNA extraction from plant, animal and human remains (Jones 2001), and for measuring stable isotopes from human and animal bones to infer diet and mobility (e.g. Lidén 1995; Budd et al. 2003). Increased expertise in experimental archaeology in modelling archaeological formation processes on chalk (e.g. Bell et al. 1996) has also been of value.

Within the last decade, the Stonehenge landscape has benefited from a concerted attempt to improve its management, and archaeological research forms a fundamental element of current and future management plans (Batchelor 1997). There have been three research frameworks for the monument and its landscape to date (Wainwright 1997; English Heritage 2003; Darvill, forthcoming), articulating a perceived need in the sense that the major works of synthesis in the 1990s have provided a platform for launching new theories, new research projects and new management initiatives. Among those recent theories are Darvill's (1997) conceptions of sacred geography, Ruggles' (1997) critical review of Stonehenge's astronomy, theories of the material meanings of the stones and their environs (Bender 1998; Whittle 1997) and the continuing debate about glacial or human transport of the bluestones from Wales (Green 1997; Scourse 1997; Williams-Thorpe et al. 1997; Burl 2000).

More broadly, the study of the British Neolithic has been through a transformation as a result of the flourishing of new theoretical approaches in the last decade or two (e.g. Barrett 1994; Bender 1998; Bradley 1993; 1998; 2002; Edmonds 1999; Edmonds & Richards 1998; Thomas 1999; Tilley 1994; Whittle 1988; 1996). Interpretations of the meaning of the great henge monuments[1] now focus on the beliefs, cosmology, agency and practices of their builders and users:

Figure 2. Durrington Walls (after Wainwright with Longworth 1971).

prehistorians are attempting to explore not only how the people of Neolithic Britain made sense of their world but how they experienced it and lived in it. Current interests include the understanding of monuments not as intended, finished items but as projects in the making, and the integration of practical activities and spiritual beliefs within the Stonehenge landscape. Many of these ideas are not restricted to circulation amongst a closed group of prehistorians but have been communicated to a wide public audience through television documentaries and popular books (Burl 2000; Pitts 2001; Pryor 2001; 2003). The main theory that has motivated our own project is that Stonehenge was built for the community's ancestors (Parker Pearson and Ramilisonina 1998a) but we have also drawn on a much wider range of approaches.

Durrington Walls

Durrington Walls is 3 km northeast of Stonehenge and 2 km north of the modern town of Amesbury. It lies within the eastern edge of the designated World Heritage Site, on the west bank of the River Avon (Fig. 2). Although close to Stonehenge and larger than Avebury, it is not well known in Britain except to prehistorians. Yet it is Britain's biggest henge monument (almost 19 ha in extent), a site of international significance. Although it seems never to have enclosed arrangements of standing stones, like Stonehenge and Avebury, it is famous for the concentric timber circles within its enclosure and also in the separate, small site of Woodhenge, 150 m to the south.

As in most henges, the bank, at Durrington, is outside its ditch and it dates broadly to the mid-late third millennium BC, contemporary with the stone phase (Period 3) at Stonehenge. It encloses an oval area of 487 m × 472 m within which excavations have located two timber circles (the Northern and Southern Circles; Wainwright with Longworth 1971) and, in addition, geophysical survey has identified five ditched circles and another possible timber circle within it (David & Payne 1997). The Southern Circle has been dated

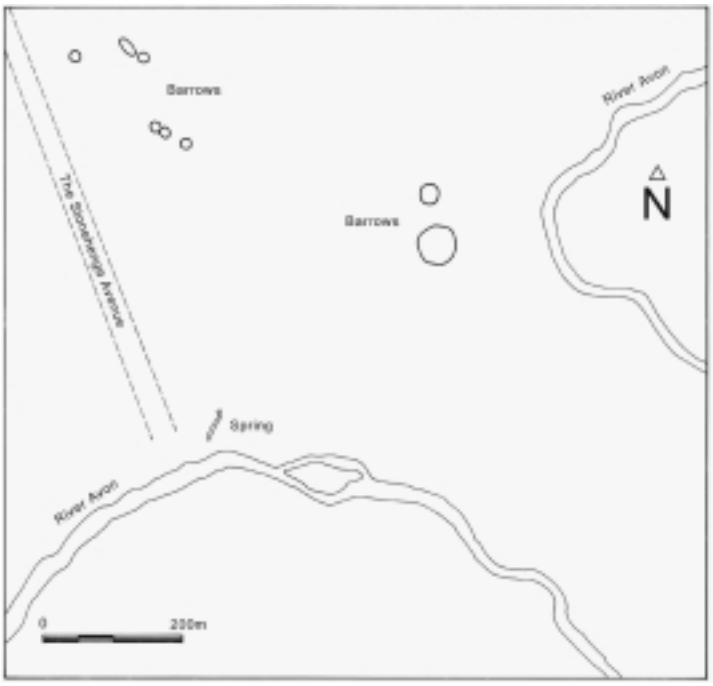

Figure 3. The riverside at the east end of the Stonehenge Avenue.

by four determinations on antler, charcoal and animal bone from various postholes, with a weighted mean of 2471–2201 cal BC at 2 sigma (3900±90 BP, BM-395; 3950±90 BP, BM-396; 3850±90 BP, BM-397; 3760±148 BP, NPL-239). The Northern Circle has been dated by antler material from the fill of posthole 42 to 2836–2038 cal BC at 2 sigma (3905±110 BP, NPL-240). Three dates on charcoal, bone and antler from the primary fill of the henge ditch have a weighted mean of 2617–2304 cal BC at 2 sigma (3927±90 BP, BM-398; 3965±90 BP, BM-399; 4000±90 BP, BM-400). The site was also heavily used in the Iron Age, with evidence of a field system and settlement, part of which was densely dug with pits.

Woodhenge is another mid-late third millennium BC timber circle within a henge ditch and bank. It was extensively excavated by Maude Cunnington in the 1920s (Cunnington 1929) and has recently been reinterpreted (Pollard 1995), although World War II bomb damage to the finds store has prevented reassessment of the child burial whose skull was supposedly cleft with an axe. A single radiocarbon determination dates the henge to 2480–2039 cal BC at 2 sigma (3817±74 BP, BM-677). Whilst this smaller monument sits on the level plain, Durrington Walls fills a small dry valley, perched above the floodplain of the River Avon. Forming a bowl or "amphitheatre", Durrington Walls has opposed entrances, one in the northwest and the other in the southeast.

The entrances have a curious arrangement of ditches, with the righthand ditch terminal (when exiting the monument) slightly curved outwards. The enclosure bank is broadly symmetrical, whereas the ditch is not. This may suggest that the bank was a more important feature than the ditch, i.e. that the act of digging was not so much to create a ditch as to build an impressive enclosing bank. The ditch's assymetry is most marked in the southern circuit, where there is a broad berm, up to 50 m wide, between bank and ditch. We suspect that the line of the former A345 road runs through a hitherto undetected third entrance on this south side and through a blocked entrance on the north side (see below).

In 1967 a wide swathe was excavated north-south through Durrington Walls, prior to the building of a new stretch of the A345 road. Geoffrey Wainwright's excavations not only found remains of the two timber circles but also recorded the banks, ground surface and 5.5 m-deep ditches of the monument. Within the southeast ditch terminal he found a heap of 57 antler picks, a small indication of the enormous task of digging out this huge ditch and building the exterior bank. Earlier excavations of the bank in 1952 had found that its exterior was lined with stakeholes (Stone et al. 1954). The Southern Circle was the better preserved of the two timber circles. Wainwright interpreted it as being constructed in two phases, the posts of the second phase being up to 1.06 m in diameter. It had a midden in close proximity, filled with broken pots, bones and charcoal, which provided a surpris-

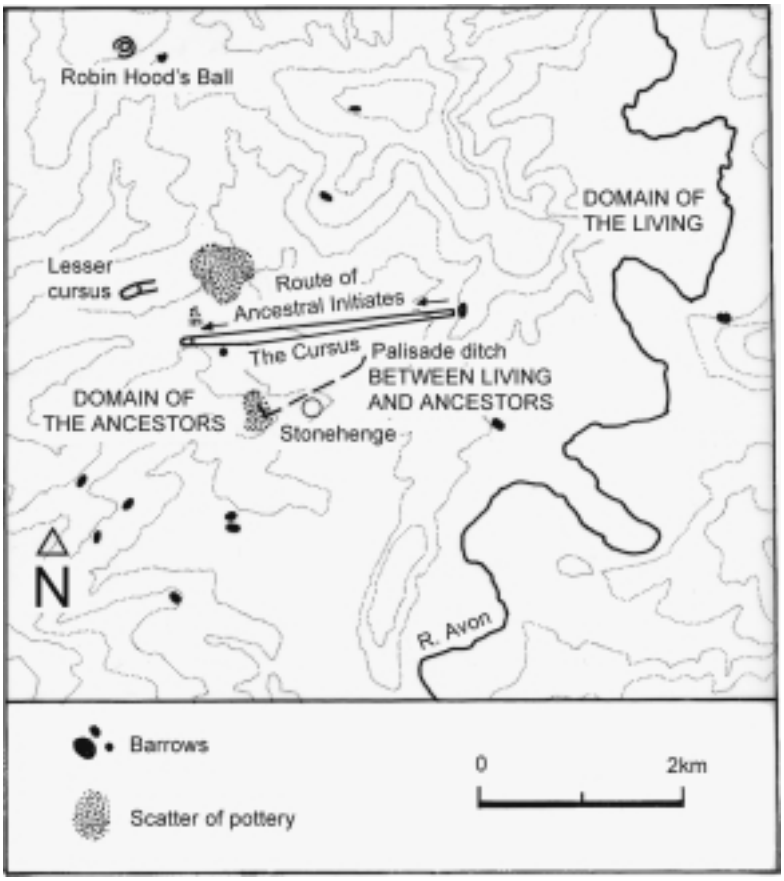

Figure 4. The hypothesised ancestral landscape of the later fourth and early third millennia BC (Parker Pearson 2000: fig. 17.2).

ingly early radiocarbon date of 3255–2611 cal BC at 2 sigma (4280±95 BP, NPL-192). Artefacts and animal bones were also found in the postholes, not in the packing but mostly within a thin layer directly at the top of the post pipe and beneath the weathering cone. For many years these were considered to be debris from artefacts placed against the posts which had subsequently fallen into the holes after the posts had rotted. Subsequent analysis of the spatial patterning of these remains, however, indicated complex and structured deposition of different classes of artefacts and animal bones (Richards & Thomas 1984), although a reassessment of the animal bones has cast doubt on the extent to which their deposition was structured (Albarella & Serjeantson 2002).

The entrance of the Southern Circle faces southeast on the alignment of the midwinter solstice sunrise and looks directly through the southeast entrance of the henge towards the riverside 100 m away. Excavation of a pipe-trench through the south terminal of the bank here revealed large quantities of sherds, flints and bone fragments within the ground surface beneath the bank (Wainwright with Longworth 1971:17–18). On the slope about 60 m to the south of this there was a curious sub-rectangular arrangement of pits (Structure A), which may have been a Neolithic timber construction.

The Stonehenge Avenue

The Stonehenge Avenue leads in a straight line northwest from the River Avon and then turns westwards, before a sharp turn leads it southwest – on the alignment of the midwinter solstice sunset – to the entrance of the circular ditch surrounding Stonehenge (Fig. 1). The Avenue is formed by a parallel pair of banks and exterior ditches (about 30 m apart). Unlike the Kennet and Beckhampton avenues at Avebury, it seems not to have been lined by standing stones but the issue has not yet been conclusively resolved (David & Payne 1997: 82).

Reassessment of the Avenue's date of construction indicates that its whole length is most probably contemporary with the period of stone construction at Stonehenge, known as Phase 3, beginning after 2600 BC (Cleal et al. 1995). Of the four dates from antler and bone, the earliest is 2580–2300 cal BC at 2 sigma (3935±50 BP, OxA-4884) and the latest is 2290–1890 cal BC at 2 sigma (3678±68 BP, BM-1164). Limited

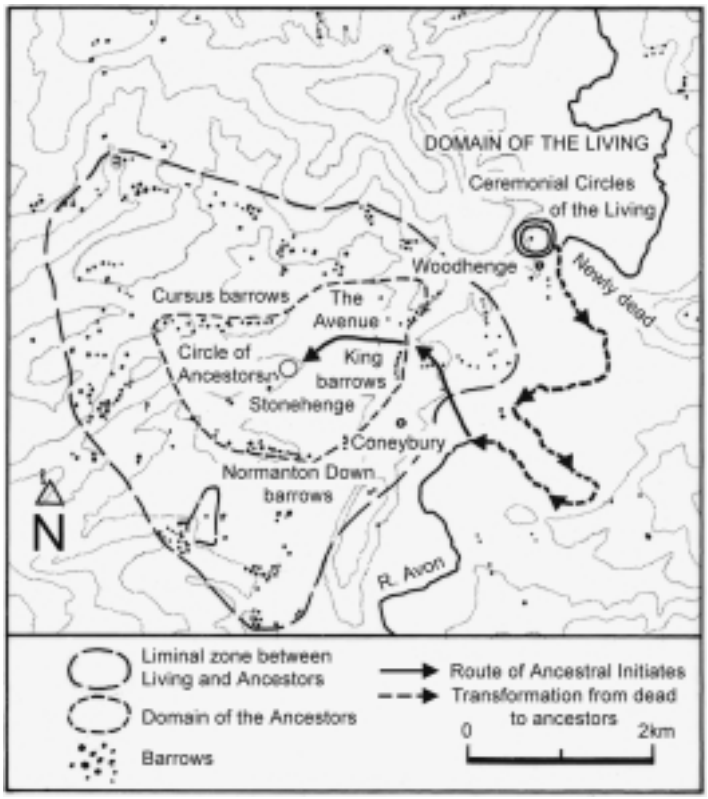

Figure 5. The hypothesised ancestral landscape of the later third and early second millennia BC (Parker Pearson 2000: fig. 17.3).

excavation was carried out near the river by George Smith (Zone A; Cleal et al. 1995: 295–96; plan 3) and the riverside itself has been subject only to an earthwork survey by the Royal Commission on the Historical Monuments of England (now incorporated into English Heritage). This riverside area remains otherwise uninvestigated (Fig. 3).

The wood-stone transition theory

In 1998 a Malagasy archaeological colleague, Ramilisonina, visited Stonehenge and Avebury and observed, on the basis of his knowledge and experience, that the purpose of these stone circles was the creation of monuments for the community's ancestors, embodying their eternal presence in permanent materials. Out of this developed a simple theory that such stone monuments were the end stage of a process of hardening, associated with the ancestral dead, preceded by earlier stages in the process which were represented by wooden structures (Parker Pearson & Ramilisonina 1998a; 1998b; Parker Pearson 2000; 2002). Thus progress from life into death was a process of metaphorical transformation from wood to stone in the same way that the fleshed body ultimately turns to bone. This transformation worked through time and space, manifested within individual site sequences (Stonehenge, for example, having a timber phase before its stones) or in contemporary spatial and topographical relationships between sites, notably between the stones at Stonehenge and the nearby timber circles of Woodhenge and Durrington Walls. The theory has been further elaborated to explain the organisation of the Earlier Neolithic landscape of the fourth millennium (Fig. 4) as well as of the Later Neolithic third millennium (Fig. 5).

The theory has generated a good deal of discussion and criticism, both negative and positive, as well as being widely disseminated (Renfrew & Bahn 2000: 199; Pitts 2001; Pryor 2003), the 1998 paper being twice republished in *Antiquity* retrospects (Stoddart 2000; Darvill & Malone 2003). Whilst initial reactions were critical on several points (Barrett & Fewster 1998; Whittle 1998; Whitley 2002), more recent evaluations have emphasised its use for explaining not only the evolution of the Stonehenge landscape but also other third millennium monument complexes in Britain (Pitts 2001; 2003; Bradley 2002:89–92; Pryor 2003). "[T]hey have provided a genuinely fresh way of looking at Britain's most famous ancient sites. It's a view that doesn't present them as dead monuments in a vanished landscape, to be categorised by archaeologists whose experience of life in the past is essentially Western and second-hand... it does give us an interpreta-

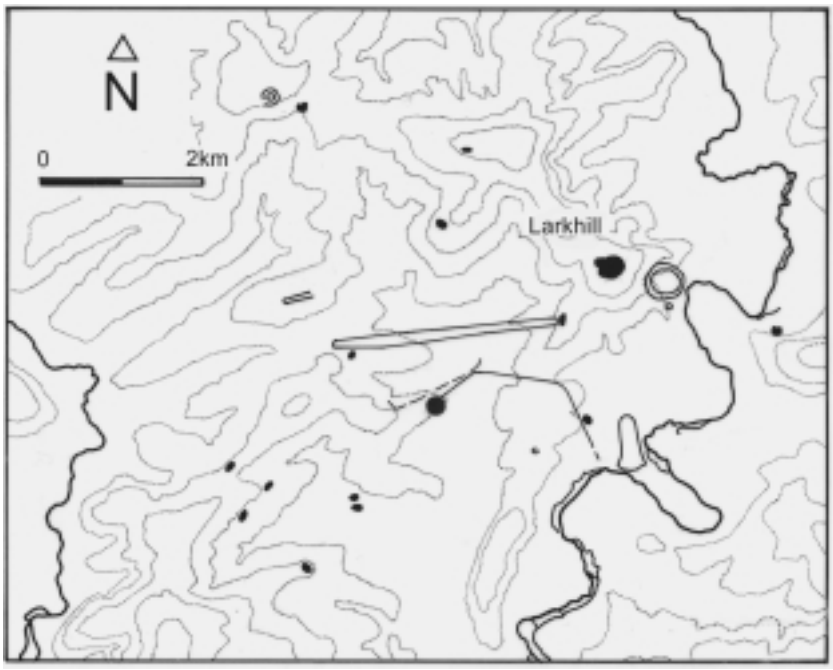

Figure 6. Siting of the Larkhill "panopticon" within the ancestral landscape of Stonehenge.

tion that makes sense of the different sites within their ritual landscapes – something that has never been satisfactorily explained before..." (Pryor 2003: 230–31). Perhaps most importantly, it offers new leads in terms of aspects hitherto unresearched or currently ignored; the power of the theory may lie not so much in whether it is true as in the fact that it can generate new and useful research directions. As Francis Pryor also writes: "Whether or not one agrees with [the theory's] life/death scheme – and I still find it very attractive – it does point us in directions which are likely to yield exciting new results." (Pryor 2003: 235). In Parker Pearson and Ramilisonina's second paper in 1998, two areas of the Stonehenge landscape were identified as being of particular promise in this respect. The first of these is the area around a small henge in Fargo Plantation, a possible Middle Neolithic site of standing bluestones in existence prior to the construction of the bluestone monument at Stonehenge. The second area of great interest is the River Avon between Durrington Walls and the Stonehenge Avenue, the embanked earthwork which leads from the river up to Stonehenge.

The River Avon as a link between Durrington and Stonehenge

The theory developed the possibility that there might have been a direct relationship between Stonehenge and the timber circle complex at Durrington during the third millennium BC, a relationship articulated primarily along the River Avon (Fig. 5). The Avon flows south past the henge at Durrington, meandering for 2.5 km to the end of the Avenue. One can then follow the Avenue earthwork westwards from the riverbank to Stonehenge 2 km away. This stretch of river was interpreted, according to the theory, as a processional route along which the dead entered the spirit world, reaching Stonehenge only after they had shed their mortal shells. In other words, the course of the river and the routes to and from it formed a stage for the enactment and performance of the most important concern in people's lives: the journey through death and into the afterworld.

Nearly all of Britain's henges exhibit a close relationship with water, particularly through their proximity to rivers (Richards 1996). This relationship is very pronounced for Durrington Walls, where there is a short valley leading from the southeastern entrance to the riverside. Excavations at Durrington Walls have produced very few human remains (Powers 1971) and the site does not seem to have been a place where the dead were buried. However, they may have begun their journey into death from here. One possibility is that the timber circles were sites for funerary feasting, whence the dead were sent on their journey to the afterworld by being taken to the riverside to be cremated, excarnated, dipped in the water (to then be removed elsewhere) or simply left to float away.

Most of the inhabitants of Wessex in the third mil-

lennium were not buried in barrows and it has long been suspected that the bodies of many of the dead in southern Britain were disposed of in rivers such as the Thames (Bradley & Gordon 1988). Finds from the Trent (Garton et al. 1997) and the Ribble (Turner et al. 2002) also indicate that human bones from this period may be recovered from river channels. In addition, a riverside structure of the period is known from the West Cotton (Northants) monument complex (Parker Pearson 1993: fig. 71), although no human remains were recovered there. For the Avon, there has been no investigation into the presence of human remains, with the exception of Roy Entwhistle's find of a burial, dated to the Middle Bronze Age, eroding from the west bank of the river (R. Entwhistle pers. comm.).

The riverine relationship between the timber circles at Durrington Walls (which have produced overwhelming evidence of feasting and ceremonies) and the stone circle of Stonehenge (with its lack of any significant activity within the henge) may thus concern the treatment of the dead and the process by which they were transformed into ancestors. Thus this stretch of the River Avon was interpreted as providing the setting for rites of passage by which the dead left the physical world, entering the river at Durrington Walls to begin a physical and incorporeal journey down the river to the circle of the ancestors at Stonehenge (Parker Pearson 2000; 2002; Parker Pearson & Ramilisonina 1998a; 1998b). By the end of the third millennium, Durrington was becoming the centre of a dense concentration of round barrows (Early Bronze Age burial mounds), one of the densest in Britain, of which the most concentrated cluster formed a ring around Stonehenge (Woodward & Woodward 1996).

Archaeological finds from the valley and channel of the Avon between Durrington Walls and the Avenue are sparse at present. There are none from dredging, and a handful of SMR[2] findspots relate to items or sites which are not from the third millennium BC. However, recent finds from the floodplain include an Arreton-type Early Bronze Age spearhead (S. Needham pers. comm.), a buried Late Neolithic alluvial layer (R. Scaife pers. comm.) and a large group of Late Neolithic pottery (P. Tubb pers. comm.).

The Larkhill "panopticon"

We have introduced a small revision of the wood-stone hypothesis as it applies to the Durrington-Stonehenge link. Rather than starting at Durrington Walls, we suggest that ceremonials actually began 400 m to the west of it, on a large, flat hilltop (Fig. 6). This is the southeast end of Larkhill, one of the two highest points of the Stonehenge landscape (the other being 2 km to the northwest at the northwest end of Larkhill). From this southeast point of Larkhill almost all the Neolithic monuments (cursuses, long barrows, henges and a causewayed enclosure) can be seen[3] – probably the only point where this is so – with Stonehenge positioned in the direction of the midwinter solstice sunset and Woodhenge towards the midwinter solstice sunrise. This location also provides a dominating view of most of the round barrow cemeteries on either side of the Avon. This site is currently an open space between the two zones of married quarters at Larkhill and has not yet received any archaeological investigation, although rescue excavations were conducted nearby (Wainwright et al. 1971).

Aims of the project

There are three main aims relating to research, management and training:

Research

Why build Stonehenge and its surrounding monuments? This is the key research question addressed by the project. The wood-stone transition theory identifies the river, and particularly the riverbank access points for Durrington Walls and the Stonehenge Avenue, as a potentially important zone of ceremonial activity. Durrington Walls at the commencement of this ceremonial route – and the construction and feasting activities associated with it – will be particularly significant, especially if waterlogged deposits survive at its riverside. Although the main features identified here so far date to the third millennium, it may well have had a long sequence of activities dating back into the fourth millennium and possibly forwards into the second millennium.

Management

The project will not only contribute to archaeological research, specifically on the understanding of the Stonehenge landscape and the nature of ritual, environment and society in the third millennium BC, but will also enhance the monument records for Durrington Walls and the Stonehenge Avenue. The information gained will be of value for public enjoyment of the wider Stonehenge landscape and for improved management of the monuments investigated.

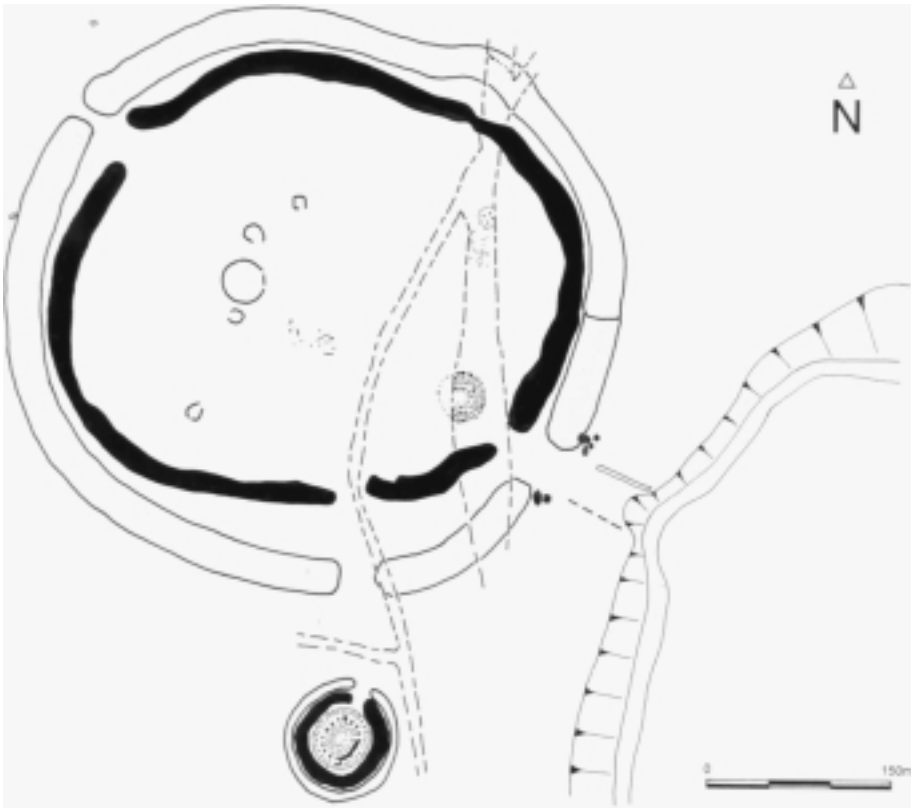

Figure 7. A conjectural reinterpretation of the plan of Durrington Walls, based on geophysical and topographic survey results (cf. Fig. 2).

Training

The project will provide an opportunity for training university students, local volunteers and school-leavers. One of the major problems in Britain is that there is insufficient opportunity for school-leavers to gain archaeological experience without having to pay high fees for training on field courses. We hope to encourage a system of bursaries and low-cost training to widen this aspect of public access. There is considerable local interest in the area, particularly as co-ordinated through the Wiltshire Archaeological Society, and the project will aim to develop local interest and involvement.

Research objectives

The objectives can be divided into three for the Durrington riverside, Durrington Walls itself and the Avenue riverside. There are also objectives which relate to the environmental archaeological study of the river valley more broadly.

Durrington riverside

We aim to characterise, date and determine the extent of the archaeological depositional sequence on the west bank of the Avon adjacent to the entrance to Durrington Walls. This may provide evidence of whether and to what extent the henge earthwork was constructed within an area and zone of movement already in use (Thomas 1999: 178).

We intend to establish whether there are any riverside structures, features or deposits which relate to the use of Durrington Walls in the third millennium BC. Were depositions of human remains (burnt or unburnt) or artefacts made here? Was there a staging or platform from which they were made?

We intend to establish what archaeological features lie between the entrance of Durrington Walls and the riverside. Was the "hollow way" a processional route down to the water's edge or merely a crossing point over the river? Was it lined with parallel ditches or with palisades, for example?

Durrington Walls

It has always been assumed that this henge enclosure had no more than two entrances. Anomalies in the course of the bank and ditch include a semicircular extension on the north side, covering a line of large postholes, and a curious wiggle on the southeast side interpreted as either bad planning by the ditch diggers

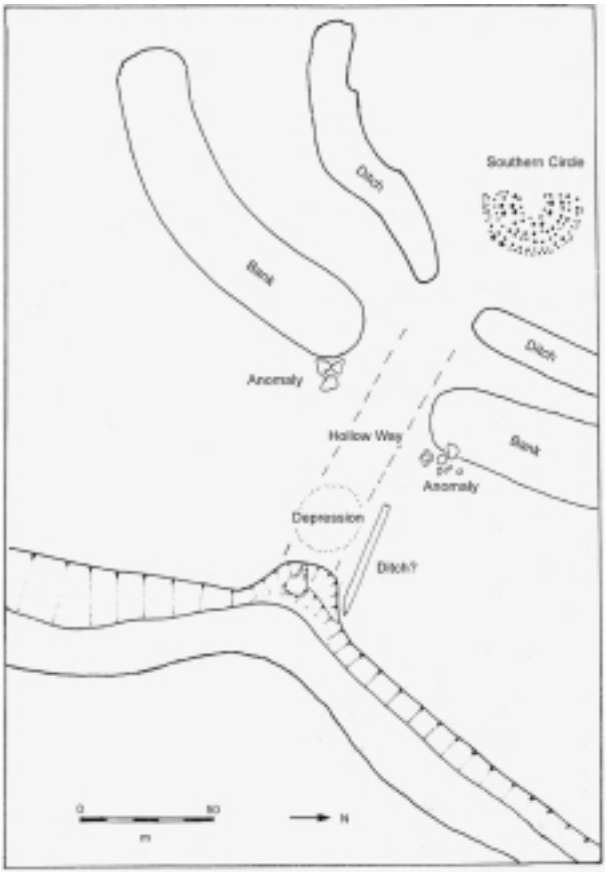

Figure 8. The riverside at Durrington Walls, combining results of field survey and features located through magnetometry survey.

or avoidance of pre-existing features (Wainwright with Longworth 1971:19). There is the possibility that both of these anomalies may have been parts of entrances, the more northerly one later cut through and blocked off (Fig. 7). This would explain the late date of two charcoal samples from a lower fill of this north ditch whose weighted mean is 2196–1697 cal BC at 2 sigma (3560±120 BP, BM-285; 3630±110 BP, BM-286) and the fact that the line of postholes outside the entrance had been covered by the bank formed by digging this blocking ditch.

Whilst the northern anomaly may not be easily accessible (under or immediately adjacent to the old and new roads), the southern one can be further investigated by geophysical survey techniques. If there was indeed an entranceway here, then it would have allowed access from Woodhenge into the main henge. The wide berm in this part of the monument is highly unusual and would benefit from a geophysical survey.

The deposition of sherds, bones and artefacts within the base of the "weathering cones" of the Southern Circle's postholes raises unresolved questions about the association of this debris with the rotting of the posts. It is likely that the artefacts were not residual, left against the sides of rotting posts exposed to the elements for decades, but were deposited much later. Closer examination of the profiles of the "weathering cones" indicates that they were in fact pits cut into the posthole once the post had rotted, an observation with which the excavator is in agreement (G. Wainwright pers. comm.). The deposition of artefacts in the basal fill of such a pit thus occurred more than a century after the post had been erected. These may also have been specially selected and placed deposits, as Richards and Thomas (1984) have suggested.

The digging of pits into rotted postholes (and deposition of artefacts) occurred not only in the Southern Circle but also in the Northern Circle, and in the case of the Woodhenge posts and the posts outside the henge bank. This activity is also noted in the palisade west of Stonehenge and in at least one of the Phase 2 postholes within Stonehenge, but these pits seem not to have had artefacts placed in them. Our interpretation is that the rotting of the posts, metaphorical of the rotting of human flesh and the decay of memory, was the culmination of acts of commemoration of the dead and that the pits of offerings provided closure so that these individuals might now be forgotten. Another interpretation is that the pits were dug in order to remove the rotted posts so that they could be used elsewhere (G. Wainwright pers. comm.).

Larkhill

The southeast end of this hill is a pivotal location within the Stonehenge landscape, probably being the only place from which all the major monuments are visible. The large, flat summit – which we name the Larkhill panopticon – has dramatic viewsheds of round barrow cemeteries as well as the major monuments, including a midwinter sunset solstice vista along the Avenue and into Stonehenge. We hypothesise that this is the point at which ceremonials began, before moving downhill into Durrington Walls and thence to the river. Viewshed analysis from this point will provide a valuable insight into the arrangement of monuments and landscape. It is also a high priority for geophysical survey. We suspect that, like the dry valley in which Durrington Walls sits, this hilltop location had significance in the fourth as well as the third millennium BC.

The Avenue riverside

We aim to characterise, date and determine the extent of any archaeological depositional sequences on the west bank of the Avon at the junction with the Stonehenge Avenue.

We intend to clarify the character of the Avenue's terminal and its relationship to the riverbank in the third millennium BC. Was there a staging or platform here? Were items deposited at this point? Do any features or deposits survive here from the third millennium BC?

Environmental study of the valley floor

This will be carried out at a variety of locations, to find and sample ancient peat sequences, to characterise and date the traces of geomorphological processes of deposition and erosion within the valley, and to provide a geomorphological and environmental context for archaeological activity within the valley bottom (for an overview of the Stonehenge environs, see Allen 1997). An area of particular interest is the floodplain below Ratfyn Barrow, about 1.5 km south of Durrington Walls, where the river turns sharply west. This is a likely sediment trap where human remains would be expected if corpses were despatched from the riverside at Durrington.

Fargo Plantation

A small henge in Fargo Plantation, excavated by J.F.S. Stone (1938), contained a bluestone chip, one of ten in this locality (Castleden 1993: fig. 69). Although these chips have been regarded as debris from a stone-dressing area or from a later monument secondary to Stonehenge (Castleden 1993:172), they could originate from a bluestone monument constructed in Fargo Plantation as early as the late fourth millennium BC (Parker Pearson & Ramilisonina 1998b). Geophysical surveys and archaeological excavations are required in this area around the henge to establish whether the bluestones were first erected here prior to being placed in the Q and R holes at Stonehenge.

Preliminary results

The research programme began in 2003 with a magnetometry survey conducted by Andrew Payne at Durrington across the eastern part of the henge and its riverside, to mesh with that carried out on the western half in spring 1996 (David & Payne 1997: 91–4). A preliminary surface survey of the riverside had previously been conducted in autumn 2002 by Mike Parker Pearson and Colin Richards, and in autumn 2003 Kate Welham carried out a high-resolution GPS topographic survey of this eastern area, whilst Mike Allen augered twenty cores in the area between the riverside and the henge's southeast entrance. Interim reports on this preliminary work are published elsewhere (Parker Pearson & Richards 2004; Parker Pearson et al. 2004).

The riverside feature at Durrington Walls – coring and contour survey

A site inspection of Durrington Riverside in October 2002 revealed a hitherto undiscovered earthwork of massive proportions at the junction of the river and the "hollow way" from the southeast entrance of Durrington Walls (Fig. 8). This is a large, artificial cutting which is visible on the surface as a feature 20m long and up to 40 m wide. It has been hidden beneath scrub for decades. The entranceway for the henge is aligned on this feature.

Twenty cores were augured using a 2½ cm gouge auger with a 1m chamber designed for the recovery of dry sediments (a Vanwalt N-sampling kit) driven by a Piko handheld petrol-driven percussion hammer. They were arranged into two north-south transects, one at the henge entrance and the other halfway between this entrance and the river, and an east-west transect from the riverside to the mid point of the eastern north-south transect.

The coring established that there was indeed a 40 m-wide, flat-bottomed, steep-sided, sunken feature gradually deepening from the henge entrance towards the river over a distance of 80 m. The colluvium within this feature is over 2 m deep at the point just west of where the slope drops steeply to the river. At that steep drop the bedrock does not slope uniformly but has a single, large step of more than a metre. This is likely to have precluded use of this feature as a hollow way in the Bronze Age and Iron Age and should mean that Neolithic deposits and surfaces have not been seriously eroded on the floor of the sunken feature. The presence of a step also raises the possibility of preserved stratified deposits against its base. There was no trace of waterlogged deposits or of buried soil in this lower section of the feature, but buried soil does survive beneath the banks of the henge, and probably between them at the southeast entrance.

We now have evidence to suggest that the cutting observable on the surface as an earthwork at the riverside is indeed the end of a Neolithic hollow way, 80 m

Figure 9. Results of the magnetometry surveys of 1996 and 2003.

long and 40 m wide, which led out of the henge and down to the river via a step or small river cliff. Most of its length has been entirely filled with colluvium from cultivation over the last two or three millennia. With its straight sides, this feature appears to have been a human modification and enhancement of the natural profile of the perched valley within which Durrington Walls is situated and which terminated in a river cliff. Future excavation should confirm the date, dimensions and character of this hollow way.

Geophysical survey

The new survey was carried out by English Heritage's Centre for Archaeology, using Bartington Grad01 dual 1m sensor fluxgate gradiometers (Fig. 9). Readings were collected on a 30 m grid at 0.25 m intervals along traverses spaced 1.0 m apart. The massive henge ditch was clearly detected as a weak but well defined broad positive curvilinear magnetic anomaly, which shows interesting irregularities in form (a "scalloping effect") and alignment. These variations are particularly evident at points A and B in the southern and eastern sections of the ditch circuit. The magnitude of the anomaly from the ditch also shows distinct variation around the circuit, suggesting increased concentrations of occupation or burnt material in particular sections of the ditch fill. The southern terminal of the ditch on the north side of the southeast entrance is just about visible in the plot.

The eastern bank of the henge, although not directly visible in the magnetic data, appears to correspond to an area of slightly increased magnetic disturbance (noisier response). There is a short curvilinear anomaly which arcs through this area (at D), and it is also worth noting that there is a clear deviation in the line of the henge ditch at this point. The magnetic response to the henge ditch is also heightened in this part of the site.

Within the eastern interior of the henge, a series of linear positive anomalies are visible (E–G). These are aligned along the axis of the henge towards the southeast entrance, but are unlikely to be features of Neolithic date because the survey has failed to respond to the large postholes of the Southern Circle, which are known to lie buried beneath 1.4 m of colluvium here. They are thus features of more recent date than the timber circle, cut into the colluvium rather than into the chalk bedrock.

Outside the henge, between the southeast entrance and the river, there are two discrete clusters of localised positive magnetic anomalies (H and I) on either side of the bank terminals. Immediately east of the northern cluster of anomalies there is a 45 m-long linear positive anomaly (J) approaching the river and aligned with the northern side of the southeast entrance.

The lack of features showing within the eastern interior and east of the southeast entrance is probably due to the depth of colluvium here. The most interesting of the three anomalies outside this southeast entrance, however, is the linear feature running between the henge and the river, from the north side of the entrance, which coring confirms as being the steep north edge of an avenue-like hollow way. The two sets of irregular-shaped anomalies outside the entrance, on either side of the terminals, are now known from coring to be areas of burning beneath the colluvium and on top of the bank.

The enclosure ditch exhibits a number of aspects of interest which need further investigation. The "scalloping" effect on the east side can be interpreted as deriving from gang-dug sections. This suggests that it was dug in separate sections 40 m – 50 m long by up to 17.6 m wide – the 57 antler picks recovered from the southeast terminal may possibly indicate the size of such a section team of pick workers, to which should be added the shovellers and carriers. Thus each section might have required as many as two hundred people having to move 3400–5000 cubic metres of chalk. With more than twenty such sections around the ditch circuit, this work could potentially have involved 4000 workers if it was performed in a single summer, conceivably at the same time as the sarsens were being erected at Stonehenge, around 2400 BC. One of these scalloped ditch sections on the east side is more pronounced than the others, and the southern end of its bank section appears to have a rounded edge whose shape suggests that it is not a pre-bank feature but an initial bank terminal. This could have been the first section of bank to be built or the residue of an earlier phase of the entrance, which would have been 140 m across.

On the south side, the old road passes through an area where the ditches are not aligned and where the surface contours indicate a likely entrance. This small area either side of the road remains to be surveyed geophysically. Immediately to its east, the ditch appears to have been dug in two stages, the west section apparently intersecting the eastern one. This would appear to confirm Wainwright's idea that there was a mistake in the ditch digger's planning (Wainwright with Longworth 1971:19). Use of resistivity and ground-penetrating radar may be the most suitable means of resolving these interesting problems.

The curious anomaly on the north side, where the old and new roads cross the ditch and bank, is not defined any more clearly by the recent magnetometer survey. There may be opportunities for further geophysical surveys here to establish whether the post row found in 1967 was placed across an entrance subsequently blocked by a semicircular section of ditch and bank.

Finally, the plan of the bank at Durrington Walls is considerably more symmetrical than the plan of the ditch. This suggests that the bank's construction may have been more important to the builders than the digging of the ditch. On the southern side, where the likely entrance towards Woodhenge lies, the distance between bank and ditch is as much as 30 m. What the significance was of this wide berm is not known, although it may have accentuated the action of passing from the main henge to Woodhenge.

International links and exchanges

The project is closely linked to three initiatives which give it European and international significance. These are the cultural diversity project, the Madagascar link, and the research on stable isotopes.

Living in Cultural Diversity: northern Europe 3000–2000 BC

This is part of an international project researching cultural diversity and social change in Britain and eastern Scandinavia in the third millennium BC. The Swedish arm of the project includes fieldwork on the island of Öland in southern Sweden. It is intended that Swedish archaeology students will join British students and volunteers on this project.

Madagascar: expanding non-Western perspectives on Stonehenge

This project would not be happening were it not for the Malagasy archaeologist Ramilisonina's perceptive observations concerning British prehistoric monuments (published in Parker Pearson & Ramilsonina 1998a; 1998b). We hope to continue to develop non-Western appreciations of the Stonehenge landscape through his further involvement. Ramilisonina will be joined by a colleague, Retsihisatse, whose different cultural background within Madagascar will provide yet another perspective.

The stable isotope project

One of the main strands of the Swedish project is a study of diet, residence and mobility through analysis of stable isotopes in human teeth. A complementary project is envisaged for later third millennium burials in Britain (England, Scotland and Wales), to investigate a sample of about 250 individuals from a known population of at least 500 burials. The analysis will include nitrogen, carbon, strontium, lead and oxygen stable isotope measurements as well as radiocarbon dating and dental studies. The principal aim of this project is to examine the origins and movements of the Beaker people of the late third/early second millennia BC.

Initial results of stable isotope measurements at Beaker burials in central Europe demonstrate some degree of mobility (Price et al. 1994; 1998). Only two analyses of strontium, lead and oxygen stable isotopes have been carried out on Beaker burials in Britain, from two new discoveries at Amesbury close to the west bank of the River Avon just 3 km from Durrington Walls, with whose use they were contemporary (Fitzpatrick 2002). One of these, already dubbed the "King of Stonehenge", is the richest Beaker burial ever found in Britain and the measurement of his stable oxygen isotope level indicates that he came from continental Europe (C. Chenery and J. Montgomery pers. comm.).

The British stable isotope project should not only settle the issue of whether the Beaker "package" was brought by migrants or adopted by indigenous inhabitants but will also determine what levels of mobility were common for the people of the Stonehenge area and beyond, thereby casting further light on who the users of Stonehenge and Durrington Walls actually were.

Conclusion

After a decade of published syntheses for the Stonehenge environs, new theoretical directions in British Neolithic studies and new management plans for the Stonehenge World Heritage Site, the Stonehenge Riverside project has emerged at a timely moment. It has particular potential for addressing the Stonehenge Management Plan's research themes of ritual and ceremony, environment and chronology (English Heritage 2003: section 4.7.6) and for following up Wainwright's recommendations for further work at Durrington Walls and the Avenue (Wainwright 1997: 340). The project has developed organically out of a theory which was developed in 1998, has since received wide attention and discussion, and has given rise to a strategy for research which is aimed at establishing the significance of the River Avon – the stretch between Durrington Walls and the Avenue – in providing an understanding of the development of this remarkable prehistoric landscape. Ultimately, it should help to re-focus public and academic interest not simply on Stonehenge itself but on its relationship to the wider environs.

Acknowledgements

Thanks go to the volunteers of the Wiltshire Archaeological Society and Salisbury College (co-ordinated by Gill Swanton and Paul Tubb) who helped with the initial fieldwork We thank Stan Rawlins for permission to work on his land, and the MoD, Wiltshire County Council and Tex Bawden for access to other parts of the site. Thanks to Louise Martin and Neil Linford of English Heritage for the field survey. Dave Batchelor and Rachel Foster of English Heritage, Allan Morton of the MoD, Mike Pitts and Andrew Reynolds provided advice and encouragement at various points. Other members of our team - Jacqui Mulville, Helen Smith and Chris Tilley – turned out to help start what we hope will be a long-running and successful project.

Notes

[1] Henges are Late Neolithic ditched enclosures with the ditch on the inside of the bank, the exception being Stonehenge (which has its ditch on the outside!). Numerous examples have timber circles or stone circles within them. Although many – like Durrington Walls – are associated with occupation debris, they are thought not to have been settlements but centres for feasting and ceremonial activity.

[2] Sites and Monuments Records are computerised databases of archaeological sites and findspots maintained and updated by each County Council (or provided for them as a contracted service), in this case by the archaeology section of Wiltshire County Council's Department for Children, Education and Libraries.

[3] The exceptions are the two Netheravon long barrows to the northwest of the Knighton barrow and northeast of Robin Hood's Ball.

References

Albarella, U. & Serjeantson, D. 2002. A passion for pork: meat consumption at the British Late Neolithic site of Durrington Walls. In P. Miracle and N. Milner (eds) *Consuming Passions and Patterns of Consumption*, pp. 33–49. Cambridge.

Allen, M.J. 1997. Environment and land-use: the economic development of the communities who built Stonehenge (an economy to support the stones). In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 115–44. Oxford.

Barrett, J. 1994. *Fragments from Antiquity: an archaeology of social life in Britain, 2900–1200* BC. Oxford.

Barrett, J.C. & Fewster, K. 1998. Stonehenge: *is* the medium the message? *Antiquity* 72: pp. 847–52.

Batchelor, D. 1997. Mapping the Stonehenge World Heritage Site. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 61–72. Oxford.

Bell, M., Fowler, P.J. & Hillson, S. 1996 *The Experimental Earthwork Project 1960–1992*. York: CBA Research Report 100.

Bender, B. 1998. *Stonehenge: making space*. London.

Bradley, R. 1993. *Altering the Earth: the origins of monuments in Britain and continental Europe*. Edinburgh: Society of Antiquaries of Scotland.

Bradley, R. 1998. *The Significance of Monuments*. London.

Bradley, R. 2002. *The Past in Prehistoric Societies*. London.

Bradley, R. & Gordon, K. 1988 Human skulls from the River Thames, their dating and significance. *Antiquity* 62: pp. 503–9.

Brothwell, D. & Pollard, M. (eds) 2001 *Handbook of Archaeological Sciences*. London.

Buck, C.E., Kavanagh, W.G. & Litton, C.D. 1996. *Bayesian Approach to Interpreting Archaeological Data*. London.

Buckland, P.C. & Sadler, J. 1998. *BUGS: an entomological and palaeoentomological database*. University of Sheffield.

Budd, P., Chenery, C., Montgomery, J. & Evans, J. 2003. You are what you ate: isotopic analysis in the reconstruction of prehistoric residency. In M. Parker Pearson (ed.) *Food, Culture and Identity in the Neolithic and Early Bronze Age*, pp. 69–78. Oxford: BAR (International Series) 1117.

Burl, A.W. 2000. *The Stone Circles of Britain, Ireland and Brittany.* Newhaven.

Castleden, R. 1993. *The Making of Stonehenge*. London.

Chamberlain, A.T. 1994. *Human Remains*. British Museum Press.

Cleal, R.M.J., Walker, K.E. & Montague, R. 1995. *Stonehenge in its Landscape: twentieth-century excavations*. London: English Heritage.

Craig, O, Mulville, J., Parker Pearson, M., Sokol, R., Gelsthorpe, K., Stacey, R. & Collins, M. 2000. Detecting milk proteins in ancient pots. *Nature* 408: p. 312.

Cunnington, M.E. 1929. *Woodhenge*. Devizes: Simpson.

Darvill, T.C. 1997 Ever increasing circles: the sacred geographies of Stonehenge and its landscape. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 167–202. Oxford.

Darvill, T.C. Forthcoming. *A Research Framework for the Stonehenge World Heritage Site*. London: English Heritage.

Darvill, T.C. & Malone, C. (eds) 2003 *Megaliths from Antiquity*. Cambridge: Antiquity.

David, A. & Payne, A. 1997. Geophysical surveys within the Stonehenge landscape: a review of past endeavour and future potential. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 73–113. Oxford.

Dudd, S.N., Evershed, R.P. & Gibson, A.M. 1999. Evidence for varying patterns of exploitation of animal products in different prehistoric pottery traditions based on lipids preserved in surface and absorbed residues. *Journal of Archaeological Science* 26, pp. 1473–82.

Edmonds, M. 1999. *Ancestral Geographies of the Neolithic: landscapes, monuments and memory*. London.

Edmonds, M. & Richards, C. (eds) 1998. *Understanding the Neolithic of North-Western Europe*. Glasgow.

English Heritage 2003. *Stonehenge World Heritage Site management plan*. London: English Heritage.

Exon, S., Gaffney, V., Woodward, A. & Yorston, R. 2000 *Stonehenge Landscapes: journeys through real-and-imagined worlds.* Oxford.

Fitzpatrick, A.P. 2002. 'The Amesbury archer': a well-furnished Early Bronze Age burial in southern England. *Antiquity* 76, pp. 629–30.

French, C.A.I. 2003. *Geoarchaeology in Action: studies in soil micromorphology and landscape evolution.* London.

Garton, D., Howard, A. & Pearce, M. 1997. Archaeological investigations at Langford Quarry, Nottinghamshire, 1995–6. *Tarmac Papers* 1, pp. 29–40.

Green, C.P. 1997. The provenance of rocks used in the construction of Stonehenge. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 257–70. Oxford.

Hillam, J., Morgan, R. & Tyers, I. 1987. Sapwood estimates and the dating of short ring sequences. In R.G.W. Ward (ed.) *Applications of Tree-Ring Studies: current research in dendrochronology and related areas*. BAR (International Series) 333, pp. 165–85.

Hodder, I. 1999. *The Archaeological Process: an introduction*. London.

Jones, M.K. 2001. *The Molecule Hunt: how archaeologists are bringing the past back to life.* London.

Lidén, K. 1995. Megaliths, agriculture, and social complexity: a diet study of two Swedish megalith populations. *Journal of Anthropological Archaeology* 14, pp. 404–17.

Lucas, G. 2001. *Critical Approaches to Fieldwork*. London.

Mays, S. 1998. *The Archaeology of Human Bones*. London.

Muhkerjee, A., Evershed, R.P. & Gibson, A.M. Forthcoming. The significance of the Grooved Ware pottery tradition in Neolithic Britain in relation to human diet, animal husbandry and ritual practices. In A.M. Gibson (ed.) *Prehistoric Pottery: people, pattern and purpose*. Oxford: BAR (International Series).

Parker Pearson, M. 1993. *Bronze Age Britain*. London.

Parker Pearson, M. 2000. Ancestors, bones and stones in in Neolithic and Early Bronze Age Britain and Ireland. In A. Ritchie (ed.) *Neolithic Orkney in its European Context*, pp. 203–14. Cambridge: McDonald Institute.

Parker Pearson, M. 2002. Placing the physical and incorporeal dead: Stonehenge and changing concepts of ancestral space in Neolithic Britain. In H. Silverman & D.B. Small (eds) *The Place and Space of Death*. Arlington: American Anthropological Association AP3A No.11, pp.145–60.

Parker Pearson, M. & Ramilisonina. 1998a. Stonehenge for the ancestors: the stones pass on the message. *Antiquity* 72, pp. 308–26.

Parker Pearson, M. & Ramilisonina. 1998b. Stonehenge for the ancestors: part two. *Antiquity* 72, pp. 855–6.

Parker Pearson, M. & Richards, C. 2004. A river runs by... *Current Archaeology* 189, pp. 378–9.

Parker Pearson, M., Richards, C., Allen, M., Payne, A. & Welham, K. 2004. The Stonehenge Riverside project: new approaches to Durrington Walls. *Past* 45, pp. 6–8.

Payne, S. 1972. Partial recovery and sample bias: the results of some sieving experiments. In E.S. Higgs (ed.) *Papers in Economic Prehistory*, pp. 49–64.Cambridge.

Pitts, M. 2001. *Hengeworld*. London: Arrow Books.

Pitts, M. 2003. Don't knock the ancestors. *Antiquity* 77, pp. 172–78.

Pollard, J. 1995. Inscribing space: formal deposition at the later Neolithic monument of Woodhenge, Wiltshire. *Proceedings of the Prehistoric Society* 61, pp. 137–56.

Powers, R. 1971. Report on the human bones. In G.J. Wainwright with I.H. Longworth, *Durrington Walls: excavations 1966-1968*, p. 351. London: Society of Antiquaries.

Price, T.D., Grupe, G. & Schröter, P. 1994. Reconstruction of migration patterns in the Bell Beaker period by stable strontium isotope analysis. *Applied Geochemistry* 9, pp. 413–17.

Price, T.D., Grupe, G. & Schröter, P. 1998. Migration and mobility in the Bell Beaker period in Central Europe. *Antiquity* 72, pp. 405–11.

Pryor, F. 2001. *Seahenge: new discoveries in Prehistoric Britain*. London.

Pryor, F. 2003. *Britain* BC*: life in Britain and Ireland before the Romans*. London.
Renfrew, C. & Bahn, P. 2000. *Archaeology: methods, theories, practice*. Third edition. London.
Richards, C. 1996. Henges and water: towards an elemental understanding of monumentality and landscape in Late Neolithic Britain. *Journal of Material Culture Studies* 1, pp. 313–36.
Richards, C. & Thomas, J. 1984 Ritual activity and structured deposition in later Neolithic Wessex. In R. Bradley & J. Gardiner (eds) *Neolithic Studies: a review of some current research*. Oxford: BAR (British series) 133, pp. 189–218.
Richards, J.C. 1990 .*The Stonehenge Environs Project*. London.
Richards, J.C. 1991. *Stonehenge*. London: English Heritage/ Batsford.
Richards, J.C. & Whitby, M. 1997. The engineering of Stonehenge. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 231–56. Oxford.
Roskams, S. 2000. *Excavation*. Cambridge.
Ruggles, C. 1997. Astronomy and Stonehenge. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 203–29. Oxford.
Scaife, R. 1995. Boreal and Sub-Boreal chalk landscape: pollen evidence. In R. Cleal, K. Walker & R. Montague, *Stonehenge in its Landscape: twentieth-century excavations*, pp. 51–55. London.
Scourse, J.D. 1997. Transport of the Stonehenge bluestones: testing the glacial hypothesis. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 271–314. Oxford.
Smith, H., Marshall, P. & Parker Pearson, M. 2001. Reconstructing house activity areas. In U. Albarella (ed.) *Environmental Archaeology: meaning and purpose*, pp. 249–70. Kluwer.
Stoddart, S. (ed.) 2000. *Landscapes from Antiquity*. Cambridge.
Stone, J.F.S. 1938 An Early Bronze Age grave in Fargo Plantation near Stonehenge. *Wiltshire Archaeological Magazine* 48, pp. 357–70.
Stone, J.F.S., Piggott, S. & Booth, A.St.J. 1954. Durrington Walls, Wiltshire: recent excavations at a ceremonial site of the early second millennium BC. *Antiquaries Journal* 34, pp. 155–77.
Thomas, J. 1999. *Understanding the Neolithic*. London.
Tilley, C. 1994. *A Phenomenology of Landscape: places, paths and monuments*. London.
Turner, A., Gonzalez, S. & Ohman, J.C. 2002. Prehistoric human and ungulate remains from Preston Docks, Lancashire, UK: problems of river finds. *Journal of Archaeological Science* 29, pp. 423–33.
Wainwright, G.J. 1997. Future directions for the study of Stonehenge and its landscape. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 335–41. Oxford.
Wainwright, G.J. with Longworth, I.H. 1971. *Durrington Walls: excavations 1966–1968*. London: Society of Antiquaries.
Wainwright, G.J. with Donaldson, P., Lingworth, I.H. & Swan, V. 1971 The excavation of prehistoric and Romano-British settlements near Durrington Walls, Wiltshire, 1970. *Wiltshire Archaeological Magazine* 66, pp. 76–128.
Whitley, J. 2002. Too many ancestors. *Antiquity* 76, pp. 119–26.
Whittle, A.W.R. 1988. *Problems in Neolithic Archaeology*. Cambridge.
Whittle, A.W.R. 1996. *Europe in the Neolithic: the creation of new worlds*. Cambridge.
Whittle, A.W.R. 1997. Remembered and imagined belongings: Stonehenge in its traditions and structures of meaning. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 145–66. Oxford.
Whittle, A.W.R. 1998. People and the diverse past: two comments on 'Stonehenge for the Ancestors'. *Antiquity* 72, pp. 852–54.
Williams-Thorpe, O., Green, C.P. & Scourse, J.D. 1997. In C. Renfrew & B. Cunliffe (eds) *Science and Stonehenge*. Proceedings of the British Academy 92, pp. 315–8. Oxford.
Woodward, A.B. & Woodward, P.J. 1996. The topography of some barrow cemeteries in Bronze Age Wessex. *Proceedings of the Prehistoric Society* 62, pp. 275–91.

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