INTRODUCTION

Between July and November 2007 Oxford Archaeology carried out a programme of archaeological excavation in advance of redevelopment of the existing Tesco store and surrounding land at Bradley Stoke, South Gloucestershire, to create the Willow Brook Centre, a new, expanded store and town centre (Fig. 1). The investigation took the form of an augmented watching brief during the stripping of two areas of previously undisturbed open grassland to the west and south of the existing store, and a watching brief maintained during groundwork in the area of the car park on the north side of the existing store. The work was commissioned by CgMs Consulting on behalf of Tesco Stores Ltd, in accordance with a condition attached to the planning permission requested by South Gloucestershire Council.

Location, Geology and Topography

Bradley Stoke is located near the eastern edge of the Severn Valley on the northern outskirts of Bristol, in the angle formed to the south of the junction of the M4 and M5 motorways. The site was situated in the centre of the town, at NGR ST 620 822, and comprised an area of c. 8.5 hectares around the existing Tesco store, lying at c. 61 m above Ordnance Datum (OD) (Fig. 1). It was bounded to the north by a modern housing estate, to the west by Manor Farm Crescent, to the east by Bradley Stoke Way, and to the south by Savage’s Wood Road. The underlying geology is tabular Lias limestone and associated clays.

Archaeological Background

A significant number of archaeological sites and finds have been recorded in Bradley Stoke during the course of the modern development of the town (Fig. 1). A programme of archaeological work was carried out in advance of the construction of the existing Tesco store, comprising evaluation of the area around the store and full excavation of the footprint of the store building (Erskine 1994/5). The earliest evidence found for human activity comprised a few flint artefacts dating
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from the late Mesolithic to early Neolithic period, but the main period represented was the Bronze Age. A settlement of this period was uncovered, consisting of hut circles, ditches and pits, and a single cremation burial. The evaluation indicated that features believed to be associated with the settlement, mainly in the form of shallow ditches or gullies, also extended to the north, south and west of the area investigated during the excavation. The remains to the north of the store were preserved in situ beneath the current car park, and those to the south and west lay undisturbed under grassland until redevelopment of the store necessitated the current excavation. Evidence for a similar Bronze Age settlement, including an in situ occupation layer, has been found c. 1.5 km
to the south-east at Webb’s Farm (Parry 1992), and evidence for contemporary activity has been recorded at a number of other locations in the vicinity (Samuel 2003, 45 and Fig. 3).

The excavation on the site of the existing store also uncovered some small pits containing Roman pottery, and evidence for Roman settlement has been recorded c. 200 m west of the current site in the form of occupation debris and a stone building, with a pair of cist burials a short distance to the south (Samuel 2003, 45).

Cartographic evidence indicates that the site and the surrounding area were devoted to agricultural use throughout the post-medieval period, and it is likely that this continued a pattern established early in the historic period, when this area lay within the northern extremity of the parish of Stoke Gifford. A rectangular building excavated on the site of the existing Tesco store was interpreted as a possible World War Two decoy structure associated with the aircraft factory and airfield at Filton, c. 2 km to the south-west.

Fig. 2. Plan of all archaeological features (modern land drains excluded for clarity).
Excavation Methodology

Two areas were excavated, both located in areas of redundant open grassland (Figs. 1 and 2). Area 1 comprised a roughly triangular area situated to the west of the existing store, bisected by the curve of Manor Farm Crescent and encompassing some c. 2.2 hectares. Area 2 lay to the south of the store and was slightly larger, with an area of c. 2.5 hectares. The overburden, comprising the modern topsoil and subsoil with a total thickness of c. 0.50 m, was removed from these areas by a mechanical excavator fitted with a toothless bucket, working under close archaeological supervision. All archaeological features thus exposed were excavated by hand in accordance with standard OA practice (Wilkinson 1992). A watching brief was also maintained during groundwork in the area of the car park on the north side of the existing store, where features associated with the Bronze Age settlement had been preserved in situ, but disturbance in this area was limited to the made ground associated with the car park and did not penetrate deep enough to expose archaeological remains.

ARCHAEOLOGICAL DESCRIPTION

No above ground archaeology survived on the site, but plough-truncated features were identified, cut into the natural geology of limestone with patches of clay (Fig. 2). The archaeological remains were distributed across the entire site, but were generally quite sparse, and stratigraphic relationships between features were few and far between. Datable finds were also extremely rare, and the description of the archaeological phasing that follows is based on a combination of the few finds and relationships recorded, and the results of a programme of radiocarbon dating, augmented by spatial associations between features, particularly as regards the Roman field system. A large number of tree-throw holes were recorded across the site, and although 130 of these features were sampled by excavation only six yielded datable finds (five Roman and one medieval), far too few to allow the undated majority to be attributed to a specific period.

Bronze Age

Bronze Age activity was represented by an enclosure (1879) formed by an intermittent ring of gullies, pits and postholes that had been dug around the perimeter of a natural hollow in the limestone bedrock near the north-eastern corner of Area 2 (Fig. 3, Plate 1). The hollow measured c. 16 m × 12 m and 0.25 m deep, and may have been formed by weathering of a fault in the underlying bedrock. It was infilled with a homogenous light brown silty clay (1857) that made it stand out as quite distinct from the bedrock around it. This material, which broke cleanly in the hand in the manner of geologically deposited clay, is likely to be loessic in origin and to date from the late glacial or early Holocene period. The base of the hollow, although generally flat, undulated in places to outcrop through the fill.

The gully defining the enclosure was extremely shallow, measuring between 0.06 m and 0.16 m in depth, and nowhere penetrated into the limestone bedrock. Due to its shallowness it was not possible to be certain whether it represented the surviving parts of a formerly complete circuit of gully that had in places been completely destroyed by the effects of modern ploughing, or whether the segmented appearance derived from the feature having originally been dug as a series of discrete sections. It was, however, certain that it was not intended as a structural feature, such as a trench to hold the sill beam of a timber building, as the gully was too irregular for such a function. This was particularly clear on the north-western and eastern sides, where the longest
Fig. 3. Plan and sections of Bronze Age enclosure 1879.
lengths of gully survived, and where the sinuous alignment indicated that the intention had been to follow the line of the limestone forming the edge of the hollow rather than to create a regular shape.

The enclosure was somewhat irregular in shape, but may have been approximately sub-rectangular. The most substantial continuous part of the enclosure was an L-shaped gully that defined the north-western corner of the feature. Most of the rest of the northern side was missing, and the precise location of the north-eastern corner was uncertain. It may have been defined by possible posthole 1765, but it is also possible that the posthole was outside the enclosure and that the corner was represented by pit 1791/1793. The eastern side was defined by a sinuous gully (1798/1811), and two sausage-shaped pits or gully segments defined the south-eastern corner (1773/1775 and 1762/1764). A pair of shallow postholes at the south-western corner (1818, 1820), both measuring c. 0.10 m deep, may have marked an entrance c. 1.50 m wide. A further, more substantial posthole (1797) was located 1.50 m outside the gully on the northern side of the feature. It measured 0.60 m in diameter and 0.30 m deep and had a rather irregular profile, most likely due to the difficulty of digging into the limestone bedrock. Its lower fills (1798–1800) comprised orange, heat-effected soil and charcoal, overlain by a backfill of brown soil (1801).

The L-shaped segment of gully that defined the north-western corner of the feature contained a lower fill of dark grey, charcoal-flecked silty clay 0.06 m – 0.10 m thick, overlain by a layer of brownish grey clay that may derive either from deliberate backfilling or natural silting. Pit 1750/1752, located to the south of this gully, pit 1716, located on the northern side of the feature, and pit 1773/1775, which defined the south-eastern corner, contained a similar sequence of fills, but the other parts of the feature were filled only with clay, without the charcoal deposit. A small assemblage of pottery amounting to 108 g was recovered from the feature, the majority of which came from the lower fill of the north-western corner. The sherds were in a fragmentary condition and highly eroded, the average sherd weight being only 1 g. 19 of the 33 pieces of worked flint recovered from the site came from this feature, including two residual Mesolithic pieces, although the majority of this material comprised chips and other undiagnostic pieces. A radiocarbon
determination on charcoal from the lower fill (1742) of the L-shaped gully that defined the north-western corner of the enclosure produced a date range of 1527–1417 BC.

The burial of an articulated, un-butchered cow (1838) lay within a shallow pit (1839) located slightly off-centre within the enclosure. The cow lay on its right side, facing toward the south-east, and the remains of a late-term foetal calf (1848) were recovered from the hip region. Due to the shallowness of the pit, the animal had been exposed to the effects of modern ploughing, resulting in the loss of much of the left side of the body, including the left hind leg. Three joining sherds from the rim of a Bronze Age urn were recovered from the back-fill of the pit (1853). A sample from a metatarsal from the cow was submitted for radiocarbon dating, but could not be dated due to an insufficient collagen yield.

**Bronze Age/Iron Age period**

A pair of pit alignments (1877, 1878) extended across Area 2 on roughly parallel, slightly curving north-south alignments (Fig. 4). Pit alignment 1877 was the better preserved of the two and consisted of a total of fifteen surviving pits, extending for a length of at least 62 m. Each pit was oval in shape, measuring 1.30 – 2.64 m × 0.50 – 0.84 m, the larger examples being at the southern end. Twelve of these features were excavated, and were found to be between 0.1 m and 0.28 m deep with a flat base, and each filled by a single deposit of greyish brown silty clay most likely derived from natural silting.

The second alignment (1878) was located c. 25 m east of the first and was represented by at least six pits, although only three were investigated during the excavation as the rest were thought at the time to be tree-throw holes. The three pits from this alignment that were investigated by excavation were found to be similar to those of alignment 1877, comprising flat-based, oval features measuring 0.72 – 1.30 m × 0.36 – 0.72 m, and no more than 0.12 m deep. No datable finds were recovered from either alignment, but pit 1804 of alignment 1877 was cut by ditch 1876, which formed part of the Roman field system.

**Roman period**

A complex of field boundary ditches extended across both excavation areas (Figs. 4 and 7). This field system is likely to date from the Roman period, as a small quantity of pottery of this date, amounting to no more than 11 sherds weighing 44 g, was recovered from the fills of the ditches. The ditches were universally shallow, severely truncated features, with depths that rarely exceeded 0.20 m, and this shallowness had rendered them particularly vulnerable to truncation by later cultivation. None of these features had escaped destruction of some part of its length by ploughing, leaving gaps that gave the ditches a segmented appearance, although none of these breaks demonstrably represented an original terminal.

The field system appeared to have been laid out in two blocks on slightly different alignments. At the northern end of Area 1, ditch 1160 extended across the north-eastern corner of the site on a WNW–ESE orientation with ditch 1210 branching off it at a right angle and extending SSW for at least 72 m before petering out. Ditch 1853 lay on a parallel orientation to ditch 1210, c. 50 m to the west, and ditch 1873 branched off its western side and extended westward beyond the edge of the excavation.

The block in the southern half of the site was demarcated to the south by the curvilinear ditch 1874, which may have enclosed an area to the south of the site, and to the north by ditch 1689, which extended east–west across Area 1. The latter was the only ditch within the excavation that was of substantial size, comprising a V-shaped ditch up to 0.64 m deep (Fig. 7). It was filled
by a sequence of deposits characteristic of natural silting, comprising a primary fill of clean, redepotted natural clay and limestone (1471), a secondary fill of stoney clay soil (1472) and an upper, tertiary fill of virtually stone-free silty clay (1474). The ditch was broken within Area 1 by an entrance 4.2 m wide. Extending between the boundaries defined by ditches 1689 and 1874 on a N–S orientation were ditches 1556, 1624, 1875 and, on a slightly different alignment, ditch 1817, with ditch 1876 forming a sub-division between ditches 1624 and 1875.

Where the two blocks met, ditch 1597 extended across Area 1 on an alignment that was oblique to them both. At its eastern end it turned sharply south-east before petering out. Ditch 1608 extended on a parallel orientation about 1 m from ditch 1597, the two perhaps lying either side of a bank formed from their upcast, or forming a narrow sheep run or other passageway between
Fig. 5. Plan of Anglo-Saxon and medieval features in Area 1.
Fig. 6. Plan of Anglo-Saxon and modern features in Area 2.
the areas to the north and south. Ditch 1609 branched off the south side of ditch 1608 and was presumably contemporary. The north-western end of ditch 1608 appears to have been extended at some point a further 5.20 m by the addition of ditch 1607.

Anglo-Saxon period

Activity dating from the Anglo-Saxon period was represented by a total of 21 pits, which were widely scattered across the whole site (Figs. 5, 6 and 7). These were consistently shallow, concave features, typically 0.80 m – 1.30 m in diameter and no more than 0.26 m deep. They contained identical fills of black, charcoal-rich material, which in five examples were overlain by a deposit of brown silty clay, most likely a deliberate back-fill comprising the material excavated in the original digging of the pit. No datable finds were recovered from these features, save three small fragments of presumably residual Roman pottery from pit 1244, but pit 1468 cut ditch 1689, which formed part of the Roman field system (Fig. 7). The only other material recovered were small quantities of slag recovered from sieving of soil samples taken from four of the seven pits thus sampled, the largest of which amounted to only 3 g. Radiocarbon determinations on charcoal from fill 1247 of pit 1248 and fill 1307 of pit 1306 produced date ranges of AD 898–1033 and AD 1022–1155 respectively.

Medieval period

The only feature demonstrably of medieval date was a ditch (1461) located in the western part of Area 1 that extended on a NW–SE orientation for c. 25 m (Fig. 5). It was more substantial than most of the ditches of the Roman field system, with a depth of 0.30 – 0.54 m, and had been dug in four distinct segments varying in length from 3.20 m to 9.15 m, the segment at the north-western end curving towards the north. Although residual prehistoric and Roman pottery was also present, the date of this feature was established by a handful of sherds of medieval pottery recovered from the earliest of three fills in the southern segment (1336).
Undated features

A small group of ditches were exposed in the northern part of Area 2 that did not obviously form part of the Roman field system. One of these (1881) was a shallow, L-shaped gully with a sharply right-angled corner, perhaps suggesting that it was part of the beam slot of a rectangular timber building (Fig. 6). However, this feature cut through the subsoil that overlay the archaeological features and is therefore likely to be relatively recent in date, perhaps part of a World War Two decoy structure similar to those recorded in advance of construction of the existing Tesco store.

THE FINDS

The Worked Flint by David Mullin

A total of 33 flints were recovered from 16 stratified contexts (Table 1). The majority (60%) of the material consists of waste flakes from the latter stages of the reduction sequence, which is not chronologically diagnostic and may date from any date from the Mesolithic to the Bronze Age. There is, however, a relatively high number of core maintenance pieces, many of which have narrow blade scars on their ventral surfaces, suggesting a Mesolithic date. Likewise the blade shatter, bladelet and microdenticulated blades are all of Mesolithic date, as may be the end scraper.

Much of the flint was recovered as individual, residual items from features that are likely to be of later date. The largest groups came from the Bronze Age enclosure 1879, which produced a total of 23 flints, although this includes material which is typologically Mesolithic and thus clearly residual. One of the two microdenticulated blades (Fig. 8.1) was recovered from this monument, the other (Fig. 8.2) coming from fill 1383 of Roman field boundary ditch 1597. The end scraper (Fig. 8.3) was recovered from the fill (1290) of tree-throw hole 1289.

Worked flint of Mesolithic to early Bronze Age date, including scrapers and utilised blades, had previously been recovered from excavations in advance of construction of the existing Tesco store (Erskine 1994/5), but these also appear to have been residual within later features.

Table 1: Worked flint identification and quantification

<table>
<thead>
<tr>
<th>Description</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary waste</td>
<td>0</td>
</tr>
<tr>
<td>Secondary waste</td>
<td>3</td>
</tr>
<tr>
<td>Tertiary waste</td>
<td>6</td>
</tr>
<tr>
<td>Chips</td>
<td>11</td>
</tr>
<tr>
<td>Cores</td>
<td>1</td>
</tr>
<tr>
<td>Core rejuvenation tablets</td>
<td>1</td>
</tr>
<tr>
<td>Core trimming flakes</td>
<td>3</td>
</tr>
<tr>
<td>Bladelet</td>
<td>1</td>
</tr>
<tr>
<td>Blade-like flakes and blade shatter</td>
<td>3</td>
</tr>
<tr>
<td>Microdenticulates</td>
<td>2</td>
</tr>
<tr>
<td>Scrapers (Mesolithic)</td>
<td>1</td>
</tr>
<tr>
<td>Misc. retouched flakes</td>
<td>1</td>
</tr>
<tr>
<td>Burnt flint</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>36</td>
</tr>
</tbody>
</table>
The Pottery by Lisa Brown, Edward Biddulph and Paul Blinkhorn

Prehistoric Pottery by Lisa Brown

A total of 212 sherds (207 g) of prehistoric pottery was recovered. The condition of this small assemblage is generally very abraded and fragmentary, with an overall mean sherd weight of only 1 g. Many fragments are little more than rolled, friable crumbs, making fabric identification difficult, and only one fragment was classifiable by form. Nonetheless, a broad chronology and characterisation of the assemblage can be proposed.

The majority of the assemblage (84% by count, 90% by weight) is composed of grog-tempered wares (Table 2). Most of this material was represented by the 148 sherds recovered from the fills of enclosure 1879. Cattle burial 1839, which was located within the enclosure, produced three joining fragments in this fabric, belonging to the only identifiable vessel, a flat-rimmed Bronze Age urn (Fig. 9.1). The remainder of the grog-tempered sherds came from residual contexts in Roman ditch 1210 (contexts 1023, 1226) and medieval ditch 1461 (contexts 1331, 1668). Grog-tempered fabrics are often associated with Deverel-Rimbury forms of the middle Bronze Age, and the single small rim from the current site could tentatively correspond to an urn-type vessel of that period (Gibson 2002; Morris 1994/5, fig. 4, no. 15). A radiocarbon date of 1527–1417 cal BC obtained on material from the fill of enclosure 1879 would be consistent with such an identification.
Evaluation in advance of construction of the existing Tesco store produced an apparently somewhat better preserved pottery assemblage, identified by Dr. Ann Woodward as early to middle Bronze Age (Erskine 1991), and additional material from the subsequent excavation included Trevisker-type wares and distinctive later Bronze Age fabrics with calcareous inclusions (Morris, 1994/5, 22), which were entirely absent at the current site. Other fabric types from the excavation were not described in the published report, so that direct comparison was not possible.

A total of 21 sherds contained inclusions of fine fossil shell, of which 19 came from the upper fills of medieval ditch 1461 (contexts 1625 and 1681) and two, together weighing only 1 g, from the fill of the cattle burial. Excavations at ‘Matford’, located a short distance to the south, yielded a pottery assemblage of mainly sand-tempered Iron Age type, but included a grog-tempered sherd (Brown 2003, 81) as well as shelly and calcareous wares. Although some of the smaller shell-tempered body sherds from ‘Matford’ may be earlier prehistoric, diagnostic forms of clearly Iron Age date were also identified. It would therefore appear that shell-tempered pottery was produced locally from the Lias geology on which the site is located throughout both earlier and later prehistory. In such circumstances, the small, abraded sherds recovered from the Willow Bank Centre cannot be precisely dated on the basis of fabric alone.

The eight sherds in a coarse, dark grey quartz sand-tempered ware from ditch 1461 (context 1336) and four sherds in a fine micaceous sandy ware from ditch 1880 (contexts 1521 and 1578) may be either Iron Age or Roman.

Roman Pottery by Edward Biddulph

A total of 42 sherds of Roman-period pottery, weighing 187 g, was recovered from the excavation (Table 3). Pottery dating to the mid to late 1st century AD was recovered from tree-throws 1071 and 1684 and pit 1240. The material was grog-tempered and included a bowl or tankard from the Severn Valley region (Fig. 9.2) and a jar tentatively identified as Savernake ware from Wiltshire (Fig. 9.3). Mid or late Roman pottery was better represented, but was broadly dated across those periods. Pieces such as south-west micaceous grey ware from Gloucestershire, from the subsoil (Fig. 9.5), and Dorset black-burnished ware, from ditch 1880 and tree-throw hole 1303, spanned the mid 2nd to late 4th centuries. That said, a sherd from ditch 1873 in south-west oxidised ware that arrived from Cirencester had a narrower 2nd or 3rd century date range. A fragment from an Oxford mortarium found in tree-throw hole 1262 was better dated still, belonging to the later 3rd or 4th centuries. Sand-tempered Severn Valley oxidised wares and miscellaneous sandy wares that lack diagnostic rims were dated broadly to the Roman period.

Overall, the assemblage was in poor condition. Few rims were present and context groups rarely amounted to more than a handful of sherds. The average sherd weight of 4.5 g gives a good indication that fragments were small and abraded. The material is likely to have undergone significant disturbance and re-deposition, probably away from the area of original use and discard.
The assemblage is too small to offer a reliable view of settlement status, but the range of fabrics recorded here points to largely local pottery supply. It is interesting that Burchill (2003, 83) noted little samian among the 239 sherds of the ‘Matford’ assemblage, suggesting that few wares traded more widely were reaching the Bradley Stoke area.

### Table 3: Summary of late Iron Age and Roman pottery

<table>
<thead>
<tr>
<th>Fabric</th>
<th>Count</th>
<th>Weight (g)</th>
<th>Forms present</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black-burnished ware</td>
<td>6</td>
<td>44</td>
<td></td>
</tr>
<tr>
<td>Coarse-tempered oxidised ware</td>
<td>1</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Grog-tempered ware</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Oxford white or red-slipped mortarium</td>
<td>1</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Sandy grey ware</td>
<td>15</td>
<td>61</td>
<td>Cooking pot</td>
</tr>
<tr>
<td>Sandy white ware</td>
<td>3</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Savernake ware</td>
<td>1</td>
<td>12</td>
<td>Storage jar</td>
</tr>
<tr>
<td>Severn Valley oxidised ware</td>
<td>12</td>
<td>28</td>
<td>Bowl, tankard</td>
</tr>
<tr>
<td>SW (?white-slipped) oxidised ware</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42</strong></td>
<td><strong>187</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Medieval Pottery** by Paul Blinkhorn

A few scraps of undiagnostic medieval pottery amounting to a total of 14 g were recovered from the earliest fill (1336) of ditch 1461 and from the fill (1066) of a feature interpreted as a tree-throw hole (1065).
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Catalogue of illustrated pottery (Fig. 9)
1. Rim sherd of small urn, grog-tempered ware. Ctx1853, cattle burial 1839.

The Fired Clay by Cynthia Poole
A small assemblage of 32 g of fired clay was recovered from the fills of the gully defining Bronze Age enclosure 1879, and 46 g from ditch 1597, which formed part of the Roman field system, as well as 36 g from undated contexts. A number of the fragments recovered from the enclosure showed evidence of burning and could be from a hearth or oven.

THE ENVIRONMENTAL EVIDENCE

Animal Bones by Lena Strid
The animal bone assemblage consisted of a total of 2125 re-fitted fragments, including 78 fragments from a cattle burial. The majority of the faunal remains derive from medieval contexts, but Bronze Age, Roman and post-medieval remains are also represented. Most bones are in a fairly poor condition and heavily fragmented, 72.2% scoring grade 3 and 19.0% scoring grade 4 on Lyman's (1996) scale, where 0 represents very well preserved bone and grade 5 indicates that the bone had suffered such structural and attritional damage as to make it unrecognisable. This is probably the main reason neither gnaw marks, butchery marks nor pathological conditions were observed. A total of 118 bones were burnt.

Cattle and indeterminate large mammal bones dominated the assemblage, as is usually the case with prehistoric and Roman assemblages (Table 4). Due to the heavily fragmented nature of the assemblage, little can be said regarding animal husbandry, although where visible the surface structure of the bone suggested that the bones derived from animals ranging in age from sub-adult to adult.

Of particular note was a cattle burial of probable Bronze Age date, comprising an adult cow (1838) with the remains of a late-term foetal calf (1848) lying in the hip region. All the bones of the

Table 4: Quantification of the bone assemblage by phase, excluding cattle burial 1838/1848

<table>
<thead>
<tr>
<th></th>
<th>Bronze Age</th>
<th>Roman</th>
<th>Medieval</th>
<th>Undated</th>
<th>Cattle burial 1838/1848</th>
</tr>
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<tbody>
<tr>
<td>Cattle</td>
<td>16</td>
<td>1</td>
<td>106</td>
<td>1</td>
<td>66/12</td>
</tr>
<tr>
<td>Sheep/goat</td>
<td>2</td>
<td></td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pig</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium mammmal</td>
<td>4</td>
<td></td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large mammmal</td>
<td>85</td>
<td></td>
<td></td>
<td>22</td>
<td></td>
</tr>
<tr>
<td>Indeterminate</td>
<td>170</td>
<td>17</td>
<td>1591</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>192</td>
<td>18</td>
<td>1799</td>
<td>38</td>
<td>66/12</td>
</tr>
<tr>
<td>Weight (g)</td>
<td>134</td>
<td>0</td>
<td>1561</td>
<td>56</td>
<td>1733/36</td>
</tr>
</tbody>
</table>
cow were fused, and the mandibles displayed a Mandible Wear Stage of 41, equating to Halstead’s (1985) stage G, which he defined as ‘adult’. The right metacarpal of the cow was measured in situ and indicated a withers’ height of 1.102 m, which is similar in size to two early Bronze Age cattle from Crab Farm, Dorset (ABMAP 2008). Cattle burials dating from the Iron Age onward are not uncommon, but examples dating from earlier periods are more unusual (Bradley and Armitage 2002, 362).

The Charred Plant Remains by Wendy Smith

Twenty-three samples were collected for the recovery of charred plant remains, but remains were only present in four samples, and even then only in extremely small quantities (Table 5). A single onion couch grass tuber (Arrhenatherum elatius var bulbosum (Willd.) St.-Amans) was observed in sample 21, from the lower fill (1776) of Bronze Age enclosure 1879. Barley (Hordeum sp.) grain and indeterminate oat/brome grass (Avena sp./Bromus sp.) caryopses were noted in samples from Anglo-Saxon charcoal clamps 1154 and 1418, as well as a few unidentified buds in the former, and a possible sloe (Prunus spinosa L.) stone fragment was recorded in charcoal clamp 1442.

The Charcoal by Dana Challinor

Introduction and methodology

The principal aim of the charcoal analysis was to examine a selection of the late Saxon charcoal-filled pits. Samples from the middle Bronze Age enclosure were also analysed to provide some insight into fuel use in the earlier period and for comparison with the later features. One sample from each of the sampled charcoal pits was analysed, and the remaining samples were scanned to confirm the dominance of oak. The condition of the charcoal varied between the two phases represented; the Bronze Age material was very fragmented and the samples themselves dominated
by modern roots, while the later material often contained a considerable quantity of large fragments.

Table 6: Results of the analysis of charcoal from middle Bronze Age enclosure 1879.

<table>
<thead>
<tr>
<th>Context number</th>
<th>1717</th>
<th>1753</th>
<th>1776</th>
<th>1742</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cut number</td>
<td>1716</td>
<td>1752</td>
<td>1775</td>
<td>1741</td>
</tr>
<tr>
<td>Sample number</td>
<td>13</td>
<td>19</td>
<td>21</td>
<td>24</td>
</tr>
</tbody>
</table>

Fagus sylvatica L.  beech
Quercus sp.        oak  x (r)  X(rhs)  X (rs)  x
Prunus sp.         cherry type  x  x  x  x
Maloideae          hawthorn, pear, apple  x (r)  x  x  x
Acer campestre L.  field maple  x
Fraxinus excelsior L.  ash  x

A range of taxa was identified from the samples recovered from the Bronze Age enclosure (Table 6). This indicated that while oak was generally dominant, being present in greater fragment count than the other taxa, the assemblages were actually quite diverse. Hawthorn group and cherry type were also present in all the samples examined. Given the small size of the samples, it is possible that the higher quantity of oak was due to differential rates of fragmentation, rather than a genuine preference in fuelwood selection. The presence of mixed groups of oak with hedgerow type taxa such as hawthorn and blackthorn is typical of domestic and agricultural fuel assemblages of this date.

Table 7: Results of the analysis of charcoal from the late Anglo-Saxon pits.

<table>
<thead>
<tr>
<th>Context number</th>
<th>1156</th>
<th>1247</th>
<th>1250</th>
<th>1307</th>
<th>1386</th>
<th>1439</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feature number</td>
<td>1154</td>
<td>1248</td>
<td>1249</td>
<td>1306</td>
<td>1388</td>
<td>1442</td>
</tr>
<tr>
<td>Sample number</td>
<td>1</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>12</td>
</tr>
</tbody>
</table>

Quercus sp.        oak  X (brhs)  X (rhs)  X (brh)  X (brhs)  X (brhs)  X (hs)
Corylus avellana L.  hazel  x
Prunus sp.         cherry type  x (r)  x
Maloideae          hawthorn, pear, apple  x  x (r)  x
Fraxinus excelsior L.  ash  x

Oak was dominant in the assemblages from the Saxon pits, with occasional fragments of other species (Table 7). The oakwood exhibited a range of maturity, from 7 year old branchwood to heartwood, and burr wood. Some bark and rootwood was also noted. The presence of the burr wood is of particular interest as it suggests that mature timber trees had been utilised, since burrs are only produced in oak if the tree has been pollarded or is very old (Mark Robinson, pers. comm.). The examination of comparable pits at Parnwell Way, Peterborough, also filled with oak charcoal including heartwood, sapwood and burr wood, led to the interpretation that they were charcoal-making pits (Challinor 2007).

Traditionally, charcoal was made locally in the woodland. The pit method for making charcoal consists of digging a pit, filling it with wood and using the excavated earth to insulate and mound
the surface (Emrich 1985, 21). At Bradley Stoke, all the pits contained similar assemblages, a consistency that suggests that the wood was sourced from managed woodland, where the trimmings from large trees, perhaps originally cut for timber, were utilised for making charcoal. No evidence was uncovered to indicate what the charcoal produced here was being used for, but it is possible that it was used for important industries such as iron-working, since both smelting and smithing require the use of charcoal as fuel (Cleere and Crossley 1985). Given that there was no direct evidence for iron working or other industrial activities at the site, the charcoal may have been transported for use elsewhere, potentially provisioning the nearby nascent town of Bristol.

**RADIOCARBON DATING**

A total of four samples were submitted for radiocarbon dating at the Oxford Radiocarbon Accelerator Unit, Oxford University. One of the samples, taken from the metatarsal of cattle burial 1838, could not be dated due to the poor preservation of the collagen in the bone. The dates of the successful samples are shown in Table 8.

<table>
<thead>
<tr>
<th>Lab ID</th>
<th>Sample ID</th>
<th>Context</th>
<th>Material</th>
<th>Radiocarbon Age (BP)</th>
<th>Calibrated date (95% confidence)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OxA-19900</td>
<td>BRSMG2007.53 sample 3</td>
<td>1307</td>
<td>Charcoal (Quercus sp. Immature roundwood)</td>
<td>1039±29</td>
<td>AD 1022–1155</td>
</tr>
<tr>
<td>OxA-19901</td>
<td>BRSMG2007.53 sample 5</td>
<td>1247</td>
<td>Charcoal (Quercus sp. Immature roundwood)</td>
<td>955±29</td>
<td>AD 898–1033</td>
</tr>
<tr>
<td>OxA-19902</td>
<td>BRSMG2007.53 sample 24</td>
<td>1742</td>
<td>Charcoal (Prunus sp.)</td>
<td>3206±31</td>
<td>1527–1417 BC</td>
</tr>
</tbody>
</table>

**DISCUSSION**

**Mesolithic occupation**

The assemblage of mesolithic flintwork was small, and was recovered exclusively from later features, but it nevertheless provides evidence for activity of that period on the site. Similar material was found during excavation in advance of construction of the existing Tesco store, and it is likely that a camp of this date was located in the area, although the small size of the assemblages from both excavations would indicate that any such occupation was very much temporary. Typologically the material dates from the later part of the Mesolithic period, that is the 6th or 5th millennium BC, when the number of camps in this part of the Severn Valley appears to have increased in comparison with the earlier part of the period (Darvill 2006, 16). Although this is likely to represent an increased use of this landscape, the small size of these sites, including that at Bradley Stoke, suggests that they are the camps of small groups who visited the area on a short-term basis, perhaps to exploit specific resources, rather than permanently occupied base-camps. Some indication of the area over which these groups ranged, or at least the extent of their contacts, is provided by the distance to the nearest flint source, which lies some 35 km away on the chalk of Wiltshire, while the nearest more substantial sites of this period are located on the Cotswold uplands to the east (ibid.).
The Bronze Age Enclosure

No evidence was found to indicate that the Bronze Age settlement previously recorded on the site of the existing Tesco store extended into the area investigated by the current project, but activity of a non-domestic nature was uncovered in Area 2, in the form of enclosure 1879. The enclosure is a somewhat enigmatic feature, largely on account of its unusual form. It appears to have comprised an irregular, sub-rectangular area enclosed by a shallow gully, with a possible entrance on the south-western side defined by a pair of postholes. The gully is clearly too irregular to have been the foundation of a building, and no evidence was observed for a structural function in the form of post pipes within its fill. Where more than one fill was present they were deposited horizontally, which would be consistent with an interpretation as an open gully. The precision with which the gully encircles the perimeter of hollow 1854 indicates that this was surely deliberate. The hollow appears to have been entirely natural in origin, most likely developing through the weathering of a fault in the limestone bedrock, and was subsequently in-filled by loessic clay during the late glacial or early Holocene period. Although the hollow is likely to have in-filled long before the gully was dug, it must have still been possible to discern it on the ground surface when the enclosure was constructed. It is possible that its clay fill retained rainwater more effectively than the surrounding areas, which, being situated largely on limestone bedrock, would have been relatively well-drained, and that this resulted in the development of a small pool, an area of noticeably wetter ground, or at least a difference in the overlying vegetation.

The deliberate construction of an enclosure around this feature would appear to represent a conscious attempt to monumentalise it, and indicates that it was considered to have some special significance. A number of authors have considered the significance that prehistoric societies may have placed on features of the natural landscape (e.g. Thomas 2001; Tilley 1994), and how such sites may have been incorporated into their mythology and cosmology, and Bradley (1991; 2000) in particular has drawn attention to the practice of modifying such natural locations, or incorporating them into the creation of monuments. Possible examples of this dating from the Bronze Age have been observed at Raunds, where three barrows may have been deliberately constructed around the locations of existing or recently felled trees (Healy and Harding 2007, 60), and this may also have been the case for ring ditch B at Roxton, Bedfordshire (Taylor and Woodward 1985, 80, 96–7, 102–3). Similarly, the monument known as Caerloggas I, near St Austell, Cornwall, comprised a ring ditch constructed around a natural tor that may have already been the focus for the deposition of artefacts for a considerable period of time (Bradley 1991, 137). It is notable that an important feature of all these examples, including the site at Bradley Stoke, is the enclosing of the chosen location by means of a ditch or gully. The use of such boundaries to define an area as special, and distinct from the world beyond, is common on ceremonial sites dating from the Neolithic and Bronze Age, and is illustrated by such monuments as causewayed enclosures, henges and the ditches surrounding barrows. It is possible that the shallow gully surrounding the hollow at Bradley Stoke represents a similar concern with physically and symbolically defining a feature considered to be of some special, perhaps sacred, significance.

The specific nature of the practices that took place in and around the enclosure are uncertain. It is unfortunate in this respect that the attempt to establish the date of cattle burial 1848 by radiocarbon dating was unsuccessful, as it is consequently not possible to be certain whether it was indeed associated with the use of the enclosure. It is possible that the burial of the cow dates from the recent use of the area as farmland, and is no more than the burial of a cow that died while giving birth. However, its location within the enclosure is suggestive of an association, and cattle remains are not uncommon finds at Neolithic and Bronze Age monuments. Usually these are represented by partial skeletons rather than complete animals, although a possible example of a
burial of a complete cow of middle Bronze Age date has been recorded at Wallingford, Oxfordshire (Bradley and Armitage 2002). The animal in this instance was radiocarbon dated to 1600–1310 BC, but no burial pit could be defined and consequently it is uncertain whether this represents a deliberate burial. Deliberate burial of parts of cattle, most frequently the skull, is more common, and appears to have been current throughout the Neolithic and Bronze Age, often occurring in funerary contexts. Such deposits sometimes accompany the burial, as at Fussell’s Lodge long barrow, Wiltshire (Grigson 1966, 65), while at Beckhampton Road long barrow, Wiltshire, three cattle skulls were placed along the central axis of a mound that does not appear to have contained any human remains (Ashbee et al. 1979, 247 and Fig. 14). A particularly clear example, which was more closely contemporary with the enclosure at Bradley Stoke, was excavated at Raunds, Northamptonshire, where a deposit of at least 185 cattle skulls had been placed over the primary burial beneath a round barrow located within a complex of monuments including a henge, long and round barrows, and other ring ditches (Davis and Payne 1993). In addition to such funerary sites, deliberate deposits of cattle remains have also been recorded at other classes of ceremonial monument: cattle skulls were placed within the ditches of several causewayed enclosures (Thomas 1999, 28), and a cattle mandible was placed on the base of the ditch terminal on either side of the southern entrance at Stonehenge, where a cattle skull was also placed in the terminal of a possible blocked entrance on the south-western side of the monument (Cleal et al. 1995, 71). So frequent, in fact, is the association between cattle remains and funerary or other ceremonial monuments that it has led to the suggestion that cattle may have had a symbolic importance to Neolithic and Bronze Age communities that was greater than their economic significance (Thomas 1999, 26–8).

If the cattle burial was associated with the enclosure, it was not necessarily the main focus of the practices carried out there, as its off-centre location within the enclosure left a central space where some other activity may have occurred. This may have been the location of a burial that has been lost to more recent truncation, but if so no evidence has survived. The lighting of fires or hearths also seems to have played a part in the use of the enclosure. No evidence for hearths was found in situ, having presumably been destroyed by modern truncation, but the charcoal from the fills of the gully comprised a mixed assemblage of oak with hedgerow type species such as hawthorn and blackthorn, typical of fuelwood assemblages of this period.

The small size of the monument is in contrast to larger contemporary monuments such as henges, and circles at Stanton Drew and Priddy. While those and other similar sites played host to large gatherings at public ceremonies, smaller sites such as that at Bradley Stoke may provide evidence for a layer of religious activity at a more local level. Indeed, it is possible that the monument was constructed by the inhabitants of the settlement previously excavated immediately to the north for ceremonies that were specific to that community. Certainly the ceramic evidence from the enclosure and the settlement would not be inconsistent with their being in contemporary use. The small size of the enclosing gully has a further implication regarding the use of the monument – due to its shallow character it is likely to have silted up quite rapidly, and as there was no evidence for any attempt to prolong its existence by re-cutting the gully it must be assumed that it was only in use for a short period of time.

The late Bronze Age/Iron Age pit alignments

The two pit alignments may represent the earliest attempt at dividing up the landscape, and so it is particularly unfortunate that they could not be closely dated, containing neither datable artefacts nor material suitable for radiocarbon dating. Although field systems dating from the middle Bronze Age have been recorded in other parts of the Severn Valley and its tributaries, there is no evidence for such enclosure in the vicinity of Bradley Stoke, the nearest examples currently...
known being located in the Avon Valley and c. 27 km to the north at Frocester (Yates 2007, 72 and 102–3 and Figs. 8.6 and 11.1). Pit alignments generally are not well dated, but the few that have produced evidence as to their date are attributable to the late Bronze Age or early Iron Age (Thomas 2003, 79; Rylatt and Bevan 2007, 220–1).

There is little doubt that such pit alignments were intended to define boundaries of some sort, but their unusual form has prompted much discussion regarding their precise significance (Rylatt and Bevan 2007, Thomas 2003). In common with similar features elsewhere (Rylatt and Bevan 2007, 220; Thomas 2003, 80), the pits at Bradley Stoke contained no postpipes or other evidence that they may have supported posts or been planting pits for trees or bushes, and it is likely that they were simply an alignment of open pits, and not settings for above-ground structures. In choosing to define boundaries by means of a series of pits rather than continuous ditches, their creators presumably intended to create permeable boundaries, which were visibly demarcated on the ground but did not form a physical impediment to movement. The absence from the pit fills of any artefacts, or even of the wind-blown flecks of charcoal that are generally associated with areas of domestic occupation, indicates that the pit alignments were located away from contemporary settlements, and it is possible that they were associated with land used as pasture, since examples elsewhere are often located on floodplains (Rylatt and Bevan 2007, 223; Thomas 2003, 83), which would have been suitable for such a usage, and analysis of pollen from the fills of a pit alignment at Kilvington, Nottinghamshire has indicated that it was set within a cleared environment of grassland (Rylatt and Bevan 2007, 223–5). Pit alignments often appear to have a direct relationship with rivers, sometimes cutting off bends in the river (Thomas 2003, 83), and it is possible that the examples at Bradley Stoke represent a similar situation; although both alignments petered out within the area of the excavation, this may be a function of modern truncation and the shallowness of the pits, and it is possible that originally they continued much further, perhaps extending between the Patchway Brook and Stoke Brook. If so, they would have defined the western side of a triangular area formed by the confluence of the two watercourses.

Boundaries initially defined by pit alignments could be very long-lived, retaining their importance and being respected by the boundaries of later periods (Thomas 2003, 84). At Shornscote/Cotswold Community, for example, a boundary initially defined by a pit alignment believed to date from the early Iron Age was preserved by successive boundaries and ultimately formed part of the modern county boundary between Gloucestershire and Wiltshire (Hey 1999, 4). At Bradley Stoke, however, the pit alignments had apparently passed out of use and been forgotten by the Roman period, when the boundaries of the field system were laid out cutting obliquely across them, oblivious of their former existence.

The Roman field system

The Roman period saw the development in the Bradley Stoke area of a complex agricultural landscape of settlements, pasture, fields and woodland. A considerable area of this landscape has been investigated in advance of modern development prompted by the expansion of the Bristol conurbation since the 1980s, but much of this work comprised salvage recording rather than full excavation and, sadly, little of it has been adequately published.

The ditches recorded in the excavation clearly defined the boundaries of part of a field system that was established de novo during the Roman period. The presence of Roman pottery within the fills of five tree-throw holes may indicate that these features derive from clearance associated with the establishment of the field system, suggesting that there may have been some regeneration of woodland since the creation of the pit alignments, if the latter were indeed associated with open pasture. The field boundaries appeared to form two distinct blocks on slightly differing
orientations, meeting at ditch 1597. This may be evidence that an original field system was expanded by the addition of a new set of boundary ditches on a differing alignment, or may simply mean that boundaries forming parts of a single complex were oriented according to different pre-existing features of the landscape. The pottery suggests only a broad date for the silting of the ditches within the period AD 100–410, although the presence of a sherd of SW oxidised mortarium may narrow this down to AD 100–300.

No evidence for settlement was identified within the area of the excavation. Indeed, the small size of the artefactual assemblage and the abraded condition of the pottery would argue that the settlement from which they derived was located some distance from the site. The nearest evidence for settlement is located c. 200 m west of the site, where a stone building and a pair of cist burials have been recorded (Samuel 2003, 45), and other settlements in the vicinity are known at ‘Matford’ (Samuel 2003), the Baileys Court Farm/Webb’s Farm area (Russell 1989), Stoke Gifford (Parker 1978; Grew 1980, 385; Rankov 1982, 381), and Cattybrook (Bennett 1980). The proximity of the settlement to the west suggests that this was the farm with which the field system was associated, and some support for this is provided by the ceramic evidence, which indicates a similar period of occupation (Samuel 2003, 45).

Evidence for Anglo-Saxon charcoal burning

The 21 charcoal-filled pits scattered across the two excavation areas were sufficiently similar in character to suggest that they derived from a common activity. Analysis of nine soil samples from seven of these pits has demonstrated that the material filling them is comprised almost exclusively of oak charcoal, with some hawthorn in pit 1442. Oak was historically the favoured wood for making charcoal, particularly for use in smelting (Harris et al. 2003, 71), and in the absence of domestic artefacts or evidence for any other industrial or craft function the most plausible interpretation is that they are the truncated bases of charcoal clamps, where oak was burnt to create charcoal for use as fuel.

The radiocarbon determinations of AD 898–1033 and AD 1022–1155 obtained for two of these pits, and the stratigraphic relationship of a third that places it later than one of the ditches of the Roman field system, indicate that they date from the late Anglo-Saxon period. At this time the area that is now Bradley Stoke lay within the forest of Kingswood, which extended across an area of some 200 square miles between the River Avon to the south and the Little Avon River to the north (Aston and Iles 1987, 91), and this evidence for charcoal burning would clearly fit with the exploitation of woodland resources. It is apparent from the absence of artefacts that there was no permanent settlement in the vicinity, and the scattered distribution of the pits suggests that they represent sporadic, perhaps seasonal activity rather than industrial exploitation organised on a large scale. The recovery of barley grains from two of the pits, one of which also contained possible oat chaff, may indicate the presence nearby of fields, or at least open areas. That such breaks in the forest were a common feature of the landscape is indicated by the evidence of place names, particularly those including the elements ‘field’ and ‘leah’, the latter meaning ‘woodland clearing’ (Aston and Iles 1987, 92).

Similar groups of charcoal-filled pits have been excavated at a number of sites in southern England, as far apart as Bestwall Quarry, Dorset (http://www.bestwall.co.uk, accessed 26/2/2009) and Buxton with Lammas, Norfolk (Gurney and Penn 2005, 752). The pits at Bestwall, which numbered almost 1000 scattered over a large area, were associated with ironworking features, and the pits at both sites yielded radiocarbon dates within the Anglo-Saxon period. The discovery of evidence for charcoal manufacture at Bradley Stoke therefore forms part of a growing body of evidence for this industry during the period.
Acknowledgements

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LOCATION OF THE ARCHIVE

The finds, paper record and digital archive will be deposited with Bristol Museum and Art Gallery, Queen’s Road, Bristol under accession code BRS MG 2007/53.

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