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The Wiltshire Archaeological and Natural History Magazine



Volume 87 1994

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THE
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The Society was founded in 1853. Its activities include the promotion of the study of archaeology (including industrial archaeology), history, natural history and architecture within the county; the issue of a Magazine, and other publications, and the maintenance of a Museum, Library, and Art Gallery. There is a programme of lectures and excursions to places of archaeological, historical and scientific interest. The Society also maintains the Wiltshire Biological Records Centre at the Museum.

The Society's Museum contains important collections relating to the history of man in Wiltshire from earliest times to the present day as well as the geology and natural history of the county. It is particularly well known for its prehistoric collections. The Library houses a comprehensive collection of books, articles, pictures, prints, drawings and photographs relating to Wiltshire. The Society welcomes the gift of local objects, printed material, paintings and photographs to add to the collections.

The *Wiltshire Archaeological and Natural History Magazine* is the annual journal of the Society and is issued free to its members. For information about the availability of back numbers and other publications of the Society, enquiry should be made to the Secretary.

Contributions for the Magazine should be on subjects related to the archaeology, history or natural history of Wiltshire. There is no fixed length. Papers, notes and reviews should be typed on one side of a page only, with good margins and double spacing. The style for footnotes, references and so on should be that found in this issue. The author-date system is preferred for references and footnotes should be avoided unless essential. Contributions of article length should be accompanied by a summary of about 100 words. Two copies, one of which is a top copy, should be sent to the editor at the Museum, 41 Long Street, Devizes, Wiltshire, SN10 1NS. A further copy should also be retained by the author. The editor and subject editors will be pleased to advise and discuss with intending contributors at any stage during the preparation of their work. They will also supply notes, if requested, which may be helpful in explaining house style and in giving advice on the compilation of references and bibliographies, and the preparation of illustrations.

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Excavations at Millbarrow Neolithic Chambered Tomb, Winterbourne Monkton, North Wiltshire

by ALASDAIR WHITTLE

with contributions by

JANET AMBERS, DON BROTHWELL, JOHN EVANS, RUPERT HOUSLEY,
RICHARD MACPHAIL, BARBARA NODDLE, JOSHUA POLLARD, JENNIFER HARRIS
and LESLEY ZIENKIEWICZ

Research excavations at the ruined chambered tomb of Millbarrow, Winterbourne Monkton, were part of a project to investigate the Neolithic sequence and context in the Avebury area. Radiocarbon dates place the monument in the later fourth millennium BC. Molluscan and soil analyses show a cleared setting, which closed in before being opened again in the Late Neolithic/Early Bronze Age. The barrow had two pairs of flanking ditches, and the layout of the eastern end, which yielded human bone, may have been elaborate. The monument provides the first well documented information for the Neolithic period about the Lower Chalk plateau north of Windmill Hill, and can be related to other developments in the Neolithic of the area.

AIMS OF EXCAVATION

Millbarrow is a ruined Neolithic chambered tomb in the upper Kennet valley a little to the north of the Neolithic enclosure on Windmill Hill (Figure 1). Excavations there in 1989 were part of a still continuing research programme by the School of History and Archaeology, University of Wales, Cardiff (UWCC), designed to investigate the sequence and context of Neolithic monuments and settlement in the Avebury area by means of sampling a number of sites (Whittle 1993). Millbarrow was chosen in order to investigate Neolithic environmental impact and activity on the Lower Chalk north of Windmill Hill.

Previous environmental investigations have been made on the chalk downland in several locations in this area (e.g. Evans 1972; Ashbee *et al.* 1979; Evans and Smith 1983) including Windmill Hill itself, which lies on Middle Chalk above Millbarrow (Smith 1965; Evans 1972; Fishpool 1992; Whittle 1993). Although such research had included sites on the Lower Chalk south of Windmill Hill, as at the Horslip long barrow (Ashbee *et al.* 1979), nothing was known of the environmental history of the large tract of Lower Chalk on which Millbarrow lies. Was this area used in the Neolithic, and if so,

could its use be compared to that of other parts of the area?

The tract of Lower Chalk in question stretches north to the Vale of Swindon and west to the Vale of Melksham or Avon valley, a distance of over 10km. Although there are anecdotal accounts of finds of pottery and flint from this area, there is very little formal knowledge of a Neolithic or later prehistoric presence; the area is largely blank on the county Sites and Monuments Record. Neolithic tombs were known at Millbarrow and east of the Winterbourne at the Shelving Stone and at the foot of the Marlborough Downs at Monkton Down; another candidate to the north at Lambourne Ground must be rejected (Barker 1984; 1985, 23). Burials under sarsens had been found in the last century to the west of Millbarrow, at least one group of which had associated Beakers (Hillier 1854; Davies and Thurnam 1865; Annable and Simpson 1964, nos. 70–76). In 1927 Keiller paid several people for struck flints, principally scrapers but including knives and other implements, from West Field, to the west of the barns westward along the track from Millbarrow.

The supposition was that ditches flanking the monument would contain, as at the South Street long barrow (Ashbee *et al.* 1979), not only deposits

suitable for environmental reconstruction but also finds suitable for radiocarbon dating and finds indicative of other activity around the tomb.

LOCATION AND PREVIOUS HISTORY

Although the view north from Windmill Hill is of flat country, the Lower Chalk is in fact gently rolling, and intensive cultivation over the last centuries may have filled in many hollows. The soil is a clayey loam, thick enough to mask archaeological sites if they exist. Millbarrow is not known on any aerial photograph. It lies on a low local eminence, with ground falling to the Winterbourne to the east, and rolling to north, west and south (at SU 09437220).

Before excavation the monument was just visible as a very low rise north to south across the mound and east to west along its length. Its position was confirmed, by Chris Barker and John Evans in 1987, by augering the flanking ditches. Barker has already described the previous history of the monument (1984; 1985, 15–16; see also A.C. Smith 1885, 84–85). A final levelling in the 1960s, as part of agricultural improvement, of the remnants of the mound when it was no longer recognised as such by the farmer, was the end of a process of destruction largely complete already by the mid 19th century.

By then the substantial mound recorded by Aubrey and in later editions of Camden's *Britannia* and then by Stukeley had mostly gone. Stukeley, who visited the site in July 1723, paced the mound as 215 feet long, broader at the eastern end, and 55 feet wide. His sketch (Stukeley 1743, Tab. XXX) implies the existence of a silted-up north flanking ditch (Bodleian Gough Maps 231 f.237; information from Chris Barker). It shows stones surrounding much of the edge of the mound, as well as others projecting from it towards but not at the eastern end. There is also an unlabelled plan of an arrangement of stones suggestive of a kerb and chamber, which has been pasted below the sketch in the original folio (Bodleian Gough Maps 231 f.237; information from Chris Barker). This tallies with the schematic sketch made by Aubrey (Bodleian MS Top. Gen. c.25, f.57), which shows a surrounding kerb or peristalith of spaced standing stones and a terminal chamber at the broader end with six orthostats, three on either side, and a recumbent capstone between. The mound is described further only as 'a yard high, at least'. Stukeley himself

recorded the dispersal of stones from the mound; one or two survived on the site until the 20th century (Barker 1985).

The existence of a well built chamber and of possible secondary deposits within it was implied by a local informant of Merewether in 1849 (Merewether 1851, 93; Barker 1985, 15): 'I saw the man who was employed in the profanation of levelling it. It contained, he said, "a sort of room built up wi' big sarsens put together like, as well as a mason could set them; in the room was a sight of black stuff, and it did smell nation bad".' It may be that this was fanciful talk, as Colt Hoare earlier recorded the barrow as nearly levelled (1821, 94). Thurnam recorded finds including human teeth from diggings into the barrow (1868).

Colt Hoare used the phrase 'the name of Millbarrow, from a windmill placed on it' (1821, 94), but it is not clear whether this is a true record or inference.

The Excavations

The augering of 1987 located both a north and a south flanking ditch. Magnetometer survey by Michael Hamilton in 1989 suggested (though the results were not wholly clear) a broad flanking ditch to the north, some 60m long, which corresponded with the measurements of Stukeley. To the south, the fence along the farm track interfered with readings. Ditch cuttings were laid out and excavated on either side of the monument, approximately two thirds along its length to the west, following the magnetometer results and close to the 1987 augering points (Trench A to the south, and Trench B to the north) (Figure 2; Plate 1). Another cutting (Trench C) was laid out to the east of Trench B on the north side of the monument, but only overburden was stripped off. Following the supposed line of the north ditch, a large cutting was laid out to investigate the remains of the eastern end of the tomb (Trench D) (Figure 2; Plate 5).

THE DITCHES

Cuttings were laid out south and north of the presumed mound near where augering had located ditches in 1987. In Trench A south of the mound and Trench B north of the mound there were two ditches. These constitute an inner and an outer pair, since both pairs match in size and silting (Figure 2). Augering had located the Outer Ditch South and the Inner Ditch North.

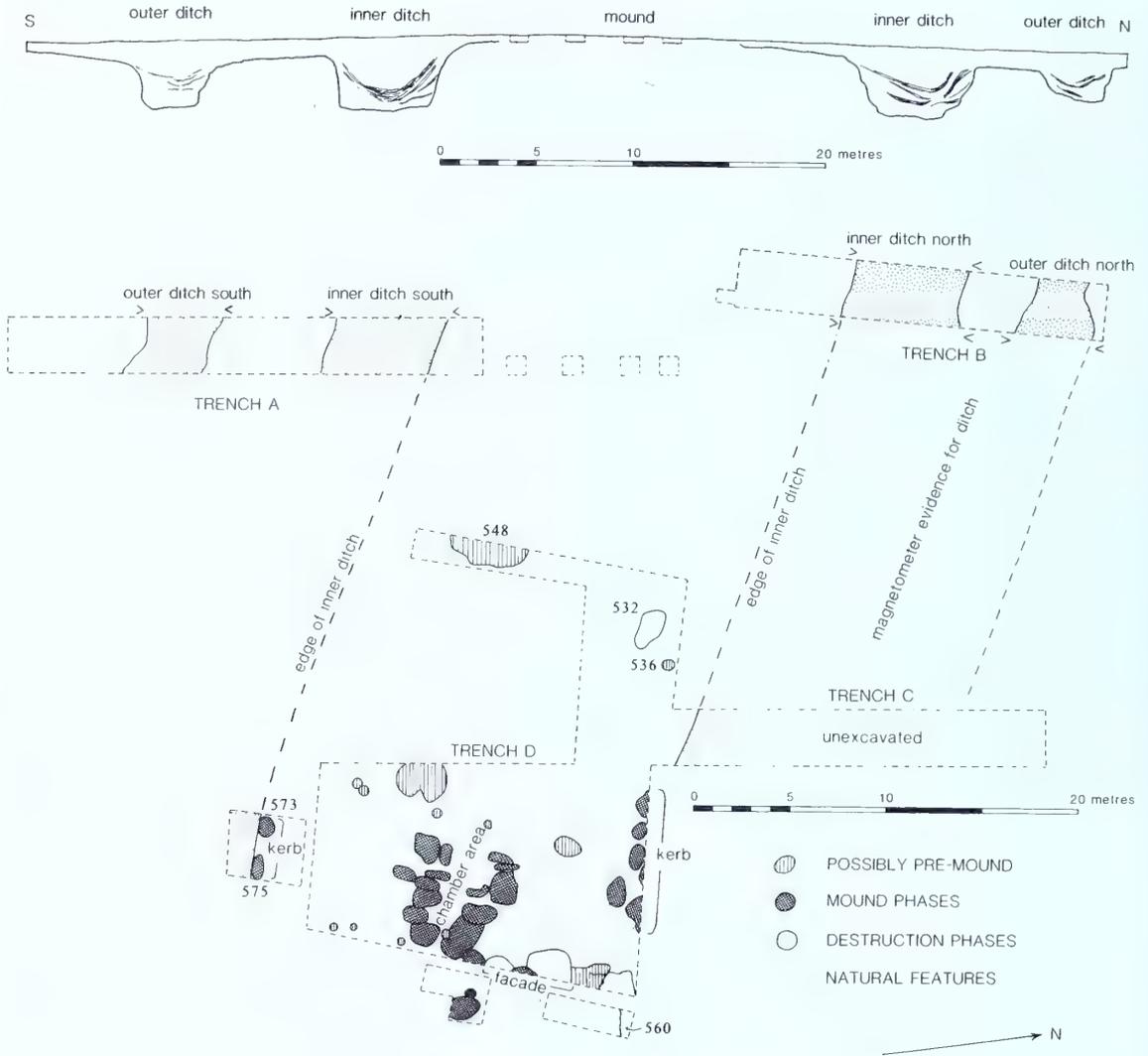


Figure 2. Site plan and summary ditch sections

The inner ditches

Both inner ditches were about 5m broad. Inner Ditch North (hereafter IDN) was about 2.7 to 2.8m deep below the level of the chalk, and Inner Ditch South (hereafter IDS) reached about 3.5m below the chalk (Figures 3–5; Plates 2–3). Both were steep-sided and flat-based.

Both ditches had silted up in a similar but not identical way. Fast primary silting was followed by stable turflines. This was followed by very chalky secondary fill, interrupted in IDN by a further turfline, possibly above a recut surface. A little humic material

had accumulated in IDN, but very little in IDS. There was further infill and then later overburden. The upper edges of both ditches were weathered.

Primary fill. Layers of chalk rubble and silt had accumulated at the bottom of the ditches (IDS: contexts 168, 174, 169, 167, 181, 189, 159, 157, 154, 184, 183, 172, and 177; IDN: 235, 234, 233, 232, 230, 227, 225, 223, 218, 212, 215, 207, 221). A portion of antler from 234 in the middle of IDN gave a date of 4560 ± 70 BP (BM-2730). (Details of radiocarbon dates are given below, p. 24.)



Plate 1. View of the ditch cuttings from the north (Trench B is in the foreground), with Windmill Hill in the distance behind

This silting was interrupted by thin, mostly discontinuous dark brown to black humic clayey lenses, largely chalk free (IDS: 180, 179, 178, 170, 176, 166 (soil sample F; east section), 188, 160, 185, 158, and 155; IDN: 236, 231, 228, 222, 237), which can be interpreted as the remains of turves fallen from the eroding ditch edges; but 228 on the outer side of the ditch was traced in plan across the cutting.

There were also brown humic layers with small chalk fragments between the layers of chalk rubble and silt and the thin turf lines (IDS: 159, 156, 171, 152, 165, 187; IDN: 224, 220, 214, 213, 211, 238). Of these 152/165 was prominent in the upper part of the primary silting of IDS and was visible in both sides of the cutting. An antler crown from 165 gave a date of 4450 ± 60 BP (BM-2729). In IDN, 214 and 213 with 211 above it were particularly noticeable on the inner side of the ditch, high up in the primary silting, and visible across the cutting, matched by 220 on the outer side of the ditch at a similar stage of the silting.

At the top of the primary silting in IDS were thicker dark brown to black humic, clayey, largely chalk-free layers (153 (soil sample E), 182, 173), which must be interpreted as established turf lines because they were continuous and chalk-free. Layer 153 was thick and lay down the sides at a pronounced angle; 182 and 173 represent less pronounced continuations at the centre of silting and on the inner side, interleaved again with small chalk rubble (184 and 183) and chalky silt (177). In IDN, in the eastern part of the cutting only, there was a layer of dark to black humic, clayey, largely chalk-free material, 217. This too can be seen as a well established turf line, but of variable thickness, and as discontinuous in plan. It lay at a steep angle, particularly on the outer side.

There were a few animal bones including a pig jaw. Other antler fragments came from IDN, from 232 in the inner angle of the ditch, and 234 in the angle between the ditch base and the lowest step of the outer side.

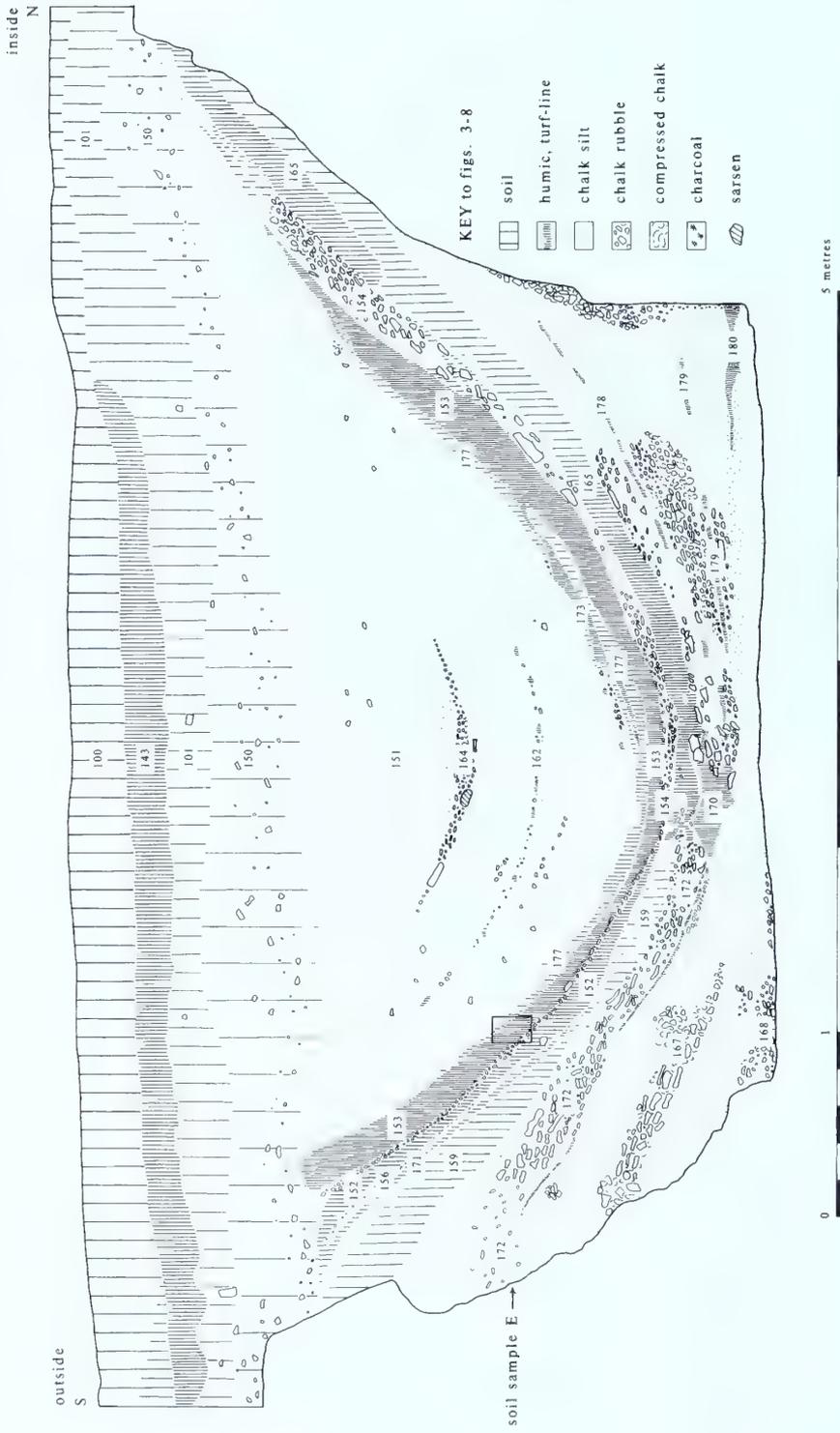


Figure 3. Section (west side) of Inner Ditch South, Trench A



Plate 2. The west side of Inner Ditch South in Trench A, from the south-east. Scales in m

Secondary fill. Fine chalky fill with some rounded small chalk fragments formed the next substantial deposits (IDS: 151, 186; IDN: 216, 208, 205).

In the west section of IDS the fine chalky fill 151 was uniform, interrupted only by the thin, laterally discontinuous lenses 162 and 164, the former consisting of a concentration of small chalk fragments and minute patches of dark humic clay, the latter with larger chalk rubble and some charcoal. In the east section of IDS, and at a different height, 163 (soil sample G) was a thin, slightly humic, very pale brown lens between 164 and the uppermost fill, 186. The outer part of 186 was slightly humic, and of a pale brown colour.

In IDN, 216 thinned to the west, being absent from the west section. Above it was 206, another well developed black turf line. This was seen in plan right across the cutting, though it did not appear in section on the inner side of the west section. On the outer side in the west section 206 overlay chalk rubble 221 and the humic layer 220. The surface of 206, following the upper surface of 216, was dished

with a rounded end towards the east, like the butt of a small ditch. The angle at which it lay was in parts steep. Above 206 came further fine chalky silt, 208 and 205, interrupted in the west side of the cutting by a pale brown slightly humic lens, 209 (soil sample C).

Soil

In IDN, above 205 was a shallow V-shaped layer, 204 (soil sample D), a light brown humic layer with some chalk fragments, including rounded ones up to 5cm. This can best be seen as a soil formed in a phase of ditch stabilisation (Evans 1990), though some slurring may have been involved in its formation.

Above the chalky secondary fill in the east section of IDS (not visible in the west section) there was a thin layer of small chalk rubble and chalky silt, 189, on the outer part of the ditch, overlain by a brown largely chalk-free humic layer, 188. This too may be a truncated soil. It might also be possible to see 150 in IDS as the vestiges of a soil above the secondary

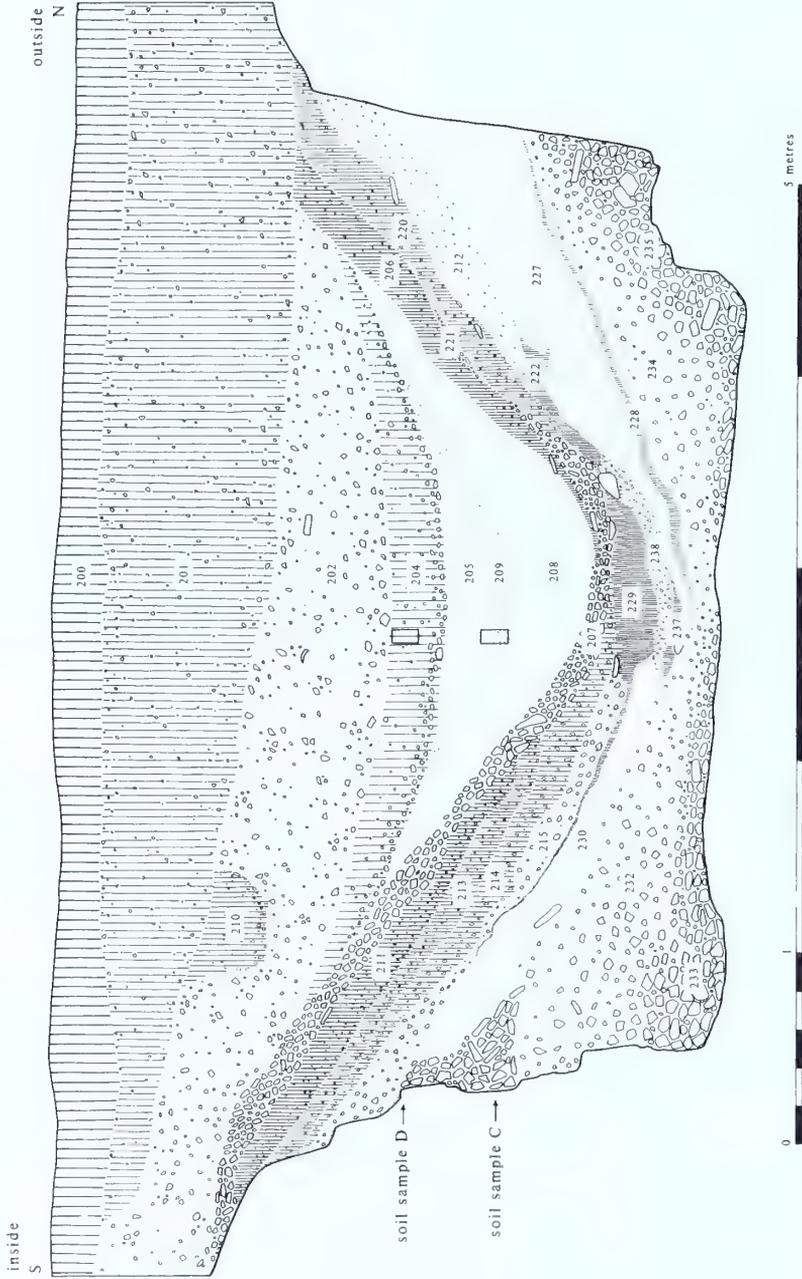


Figure 4. Section (west side) of Inner Ditch North, Trench B

fill, though it has been considered with the tertiary fill.

There were a small amount of animal bone from IDN 204 and 205, and antler fragments from 204, 205 and 206.

Tertiary fill. In IDS over the whole ditch there was a pale grey brown clayey layer with small rounded chalk fragments, 150. This was overlain by 101, a greyer, less chalky, clayey layer, in turn overlain by recent rotted wood, 143, and by clayey loam topsoil, 100. In IDN, 202 was a light grey to light brown silty clayey loam with frequent small flecks of chalk. This extended over the whole of the ditch. Context 210 was a pit with brown chalky fill cut into its upper part in the west section. Of the remaining overburden, 201 had a lower part of brown clayey loam with little chalk and an upper part of similar material but slightly greyer; 200 was the topsoil. There was a small amount of animal bone in 202. These layers can be seen as overburden brought over the ditches by cultivation, perhaps from the medieval period onwards, and accelerating with agricultural intensification which also led to the destruction of the barrow.

DISCUSSION

The overall sequence of filling presents another example of the succession from primary and secondary fill to soil formation, followed by tertiary fill caused by cultivation (Evans 1990), but there are several features of note, especially the upper surface of the primary fill and the nature of the secondary fill.

In the primary fill, the thin dark humic lenses can be seen as turf material, fallen in from the eroding ditch edges. Contexts 229 in the west section of IDN and 170 in the west section of IDS could represent turves tumbling down into the centre of silting. The overall process could have been rather rapid (*cf.* Bell 1990). By contrast, the turf lines 217 in IDN and 185 and 153/173 in IDS represent stabilisation of the upper surface of the primary silting. Some stabilisation at this stage has been noted at other sites, for example in the ditches of the South Street long barrow (Ashbee *et al.* 1979, fig. 24); it was reached at the experimental earthwork on Overton Down, Wiltshire, on Upper Chalk, some twelve years after construction (Martin Bell, pers. comm.). However, the pronounced turf line 153 in IDS is unusual for an archaeological

context. It lay above chalk rubble, seemingly indicating a very rapid change from erosional instability to stability, but its micromorphology is consistent with formation by slurring and then continued instability (sample E). The thickness of the layer, especially its continuing thickness up the sides of the fill, may have been enhanced by the unusual secondary silts above it. As these are likely to have formed rapidly, they may have preserved the turf line in clearer form than would otherwise have been the case in most other ditch situations, in which mixing and oxidation would have occurred as slow secondary deposits accumulated.

The character of the fill at this stage might also reflect local environmental conditions. If the inner ditches were dug in stable grassland, then local stability would not have encouraged the process of secondary fill. The contrast with the outer ditches is strong.

Why then did the secondary fill take place after stabilisation had been achieved? The mainly fine chalky secondary fill is unusual. In most ditches at this point in the silting, including here the outer ditches, there would be slowly forming humic material. In IDS 163 may represent a thin band of humic material, and in IDN the lens 209 is more obviously humic in nature; the micromorphology of samples G and C is consistent with slurry formation. Context 216 in the eastern part of IDN represents the start of secondary chalk filling as described. It was, however, then truncated and scooped out, and the turfline 206 formed over it. For the rest, the chalky fills were finely comminuted and compacted. They appeared well sorted. They included small rounded chalk clasts in the silt matrix. The impression from the uniformity and lack of humification of the deposits is that formation was rapid.

Various natural explanations are possible. The shape of the lenses 162 and 164 in IDS is suggestive of silting coming in at the expected sort of angle from both sides of the ditch. Material may have been washed in, or even blown in. Conditions of renewed erosional instability around the edges of the monument could have included extreme wetness, extreme dryness, cultivation (though the paucity of humic material is then puzzling), or extensive damage to or erosion of the mound, or some combination of these factors. The surface of the Overton Down mound, 32 years after construction, was finely comminuted (Martin Bell, pers. comm.).

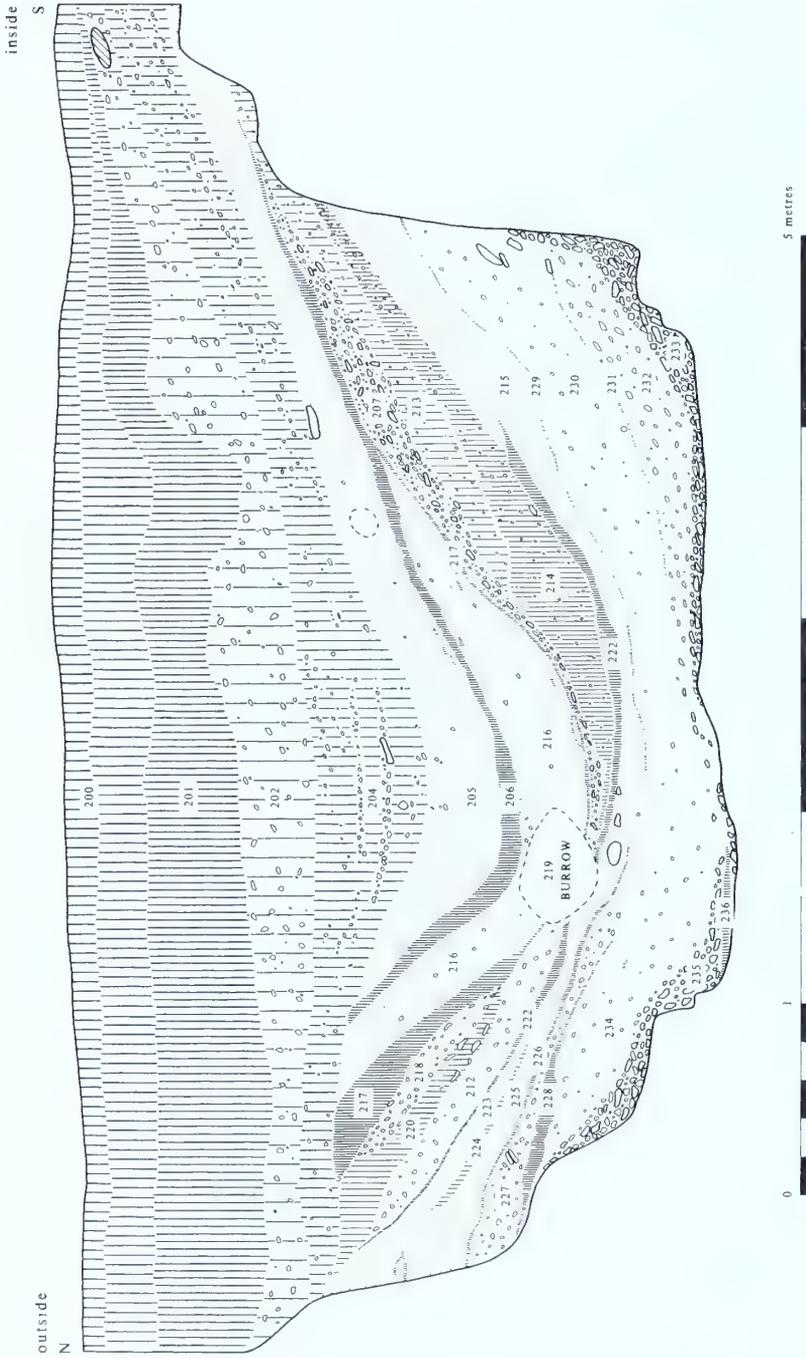


Figure 5. Section (east side) of Inner Ditch North, Trench B



Plate 3. The east side of Inner Ditch North in Trench B, from the west. Scale in m

A radical alternative needs to be considered: that the chalky fill could have been deposited by people. The depth, apparent uniformity, and lack of progressive upward humification of the layers are consistent with such an explanation, though the lenses 209, 162 and 164 are less so. Another difficulty is the finely comminuted nature of the material. The likely source would be the mound, but this might be expected to have contained substantial blocks and fragments of chalk dug from the ditches, for planes in the Lower Chalk would have allowed the extraction of considerable blocks. Even if natural processes were responsible for the formation of the secondary silting, unusual conditions around the monument must have developed. If people did not actually destroy or mask the monument in this phase, they might have created the conditions in which rapid degradation took place. One possible compromise would be to envisage material from the *outer* ditches being added to the mound to enhance it, and rapid erosion of the mound across a small or insignificant berm between

mound and inner ditches might then have produced the observed secondary fill in the inner ditches.

It was not possible to date the soil on top of the secondary fill. It may have formed slowly as the outer ditches filled in, and have been matched at a later stage by the soil above the secondary fill in the outer ditches, for which there is evidence of Later Neolithic date.

The outer ditches

Outer Ditch South (hereafter ODS) was some 3m wide as originally dug and up to 2.5m below the surface of the chalk; Outer Ditch North (hereafter ODN) was over 3m wide as dug on the east side of the cutting but only some 2m wide in the west section (Figure 2). There was a prominent weathering ramp on the outer edge of ODS. The sides of the ditches were steep but not very regular. The ditch base in ODS was more or less flat, but that in ODN had a step down in the north-eastern part of the cutting, and a small hollow in the centre of the ditch on the line of the west section.

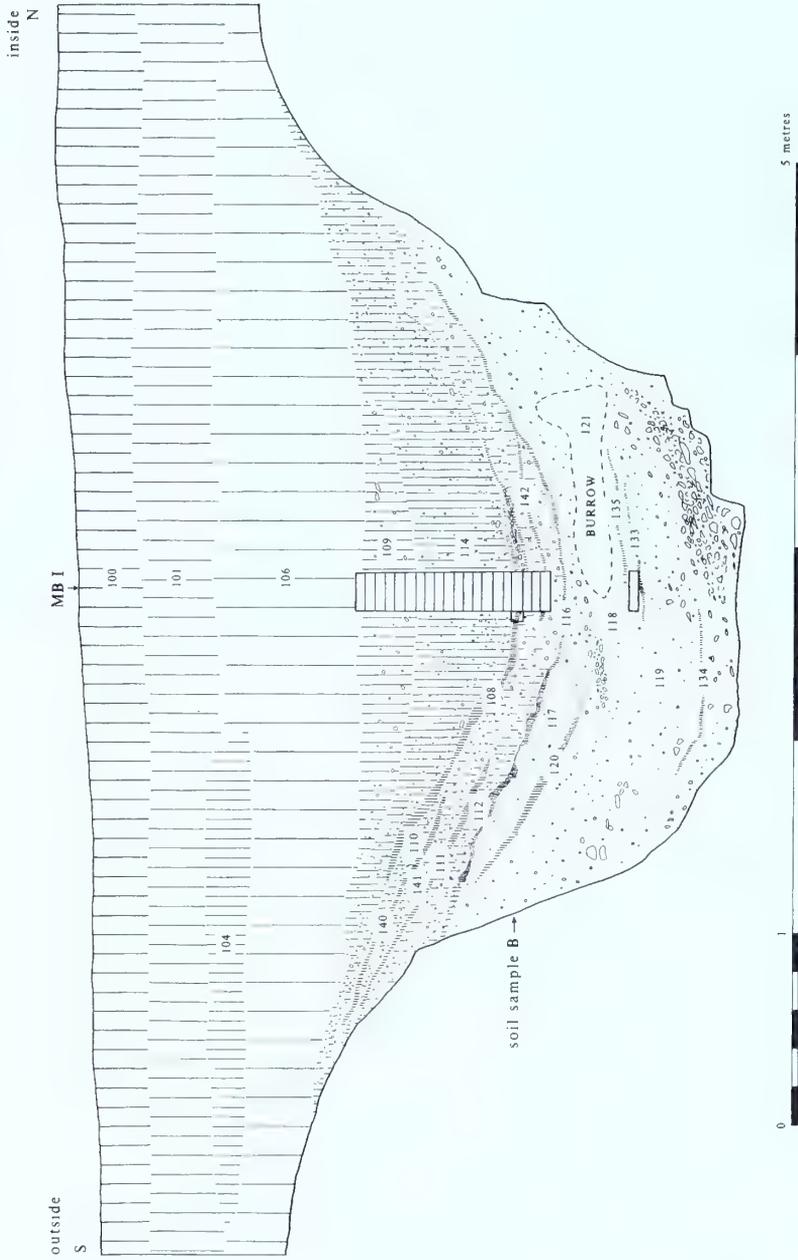


Figure 6. Section (west side) of Outer Ditch South, Trench A



Plate 4. The west side of Outer Ditch South in Trench A, from the east. Scale in m

The outer ditches silted up without direct interference by people. Primary chalk rubble, fine chalk fill and thin turf lines were succeeded by brown humic secondary fill and soil formation, and by later overburden (Figures 6–7; Plate 4).

Primary fill. There were layers of chalk rubble and fine fill (ODS: 119, 118, 117, 112, 141, 124 and 110; ODN: 253, 252, 250, 248, and 246). An antler crown from 119 at the bottom of ODS on the west side, at the angle with the ditch side, gave a date of 4560 ± 50 BP (BM-2731). Chalk layers were interspersed with thin, mostly localised and discontinuous brown humic lenses (ODS: 134, 135, 111, 140, 142, 127, 125, 130, and 136; ODN: 251, 249, and 254) and with thin, mostly discontinuous dark to black humic clayey lenses which can be interpreted as turf material (ODS: 133, 120, 116, 137, 108/113 (soil sample B), 128, 123, 131, 122, 115, 126; ODN: 256, 258, 255, 251 and 247). The distinction between humic lenses and thin turf lines was less clear. Contexts 113, 256 and 247 could be seen across their cuttings and were visible in both sections.

There was a *Bos* jaw in 118, and another antler fragment in 252.

Secondary fill. There were dark brown humic layers with small chalk fragments (ODS: 114, 109; ODN: 245, 242). On the east side of ODS there was a small darker lens 129 within 114, a further more humic or turf line. In ODN the chalky layer 259 overlay 242.

Soil

In ODS, 139, and in ODN, 243, dark brown rather clayey layers, can be seen as soil or turf lines at the top of the secondary silting. In ODS, this line is probably truncated, since 139 is restricted to the east part of the cutting and the overlying material is radically different from 109.

A finely flaked, partly polished flint plano-convex knife was found in two pieces, one actually in the east section in 109 at the level of 139 but just on the outer side of it, and the other in 114. There was some animal bone.

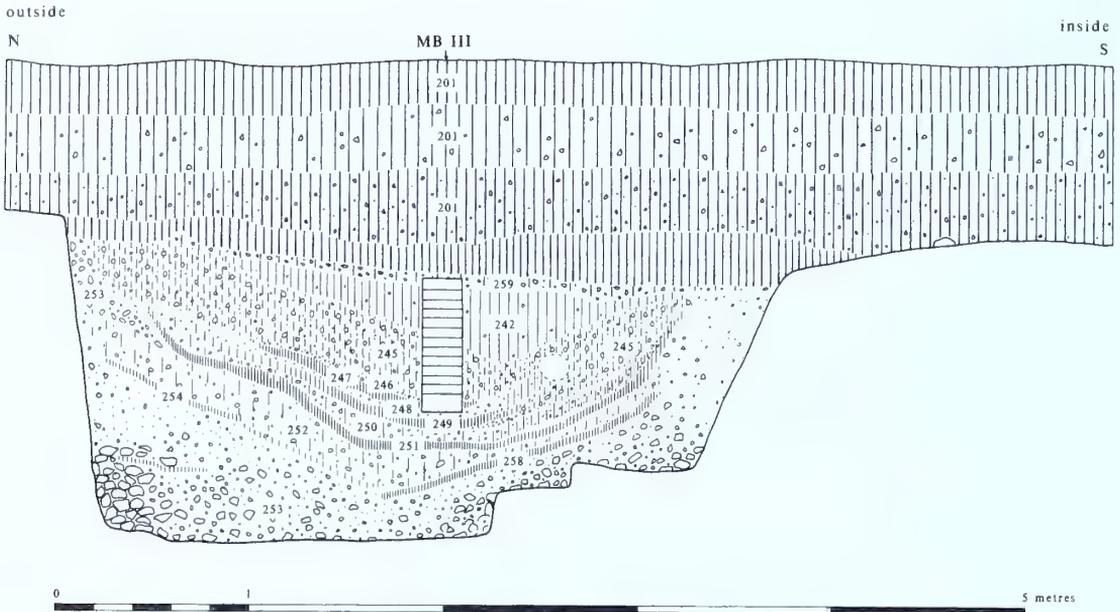


Figure 7. Section (east side) of Outer Ditch North, Trench B

Tertiary fill. In ODS, 109a/106, a dark brown very clayey loam, was overlain by grey-brown clayey loam 101, and topsoil 100. In ODN, 201 had a lower dark brown clayey part with a grey-brown clayey upper part, under topsoil, 200.

DISCUSSION

In contrast to the inner ditches, the outer ditches silted up in a normal way. The primary fill may have been rapid. The secondary fill follows the normal pattern of humic sediments which can be interpreted as having accumulated gradually *in situ* (cf. Evans 1990). There are traces of a turf line at the top of this sequence. The plano-convex flint knife fragments from Outer Ditch South at this level belong to a type with currency in the Later Neolithic (below, p. 44). It is not clear whether they can be used to date this level directly, but at the least they provide a *terminus post quem*. Other flints from the site, largely out of context, also suggest Later Neolithic or Bronze Age activity on or around the site (below, p. 44).

The area between the inner and outer ditches

The area between the inner and outer ditches was fully excavated in both Trenches A and B. The stratigraphy showed a continuation of the overburden seen above

the silted up ditches, as described above. There is no sign of any original surface either north or south of the monument. This is presumably due to the truncation at the top of the ditches noted above. In the inner ditches layers 202 and 150 were undated but could be the first horizon at which truncation took place. It is therefore not possible to observe any stratigraphic link between the inner and outer ditches, although they lay only 4–5m apart. Some struck flint was recorded from the base of the overburden just outside the outer edge of Inner Ditch North.

Trenches C and D/south extension

The top of the inner edge of Inner Ditch North was exposed in Trench C, which was stripped of its overburden but otherwise not excavated due to lack of time (Figure 2). In the south extension to Trench D, as noted above, the inner edge of Inner Ditch South was exposed but not excavated (Figure 2). Immediately next to it lay features 573 and 575, which were interpreted as stone holes for a flanking kerb on the south side.

THE EASTERN END OF THE MONUMENT

In Trench D, topsoil some 20–30cm thick was stripped off a broad area about 20 by 20m, within

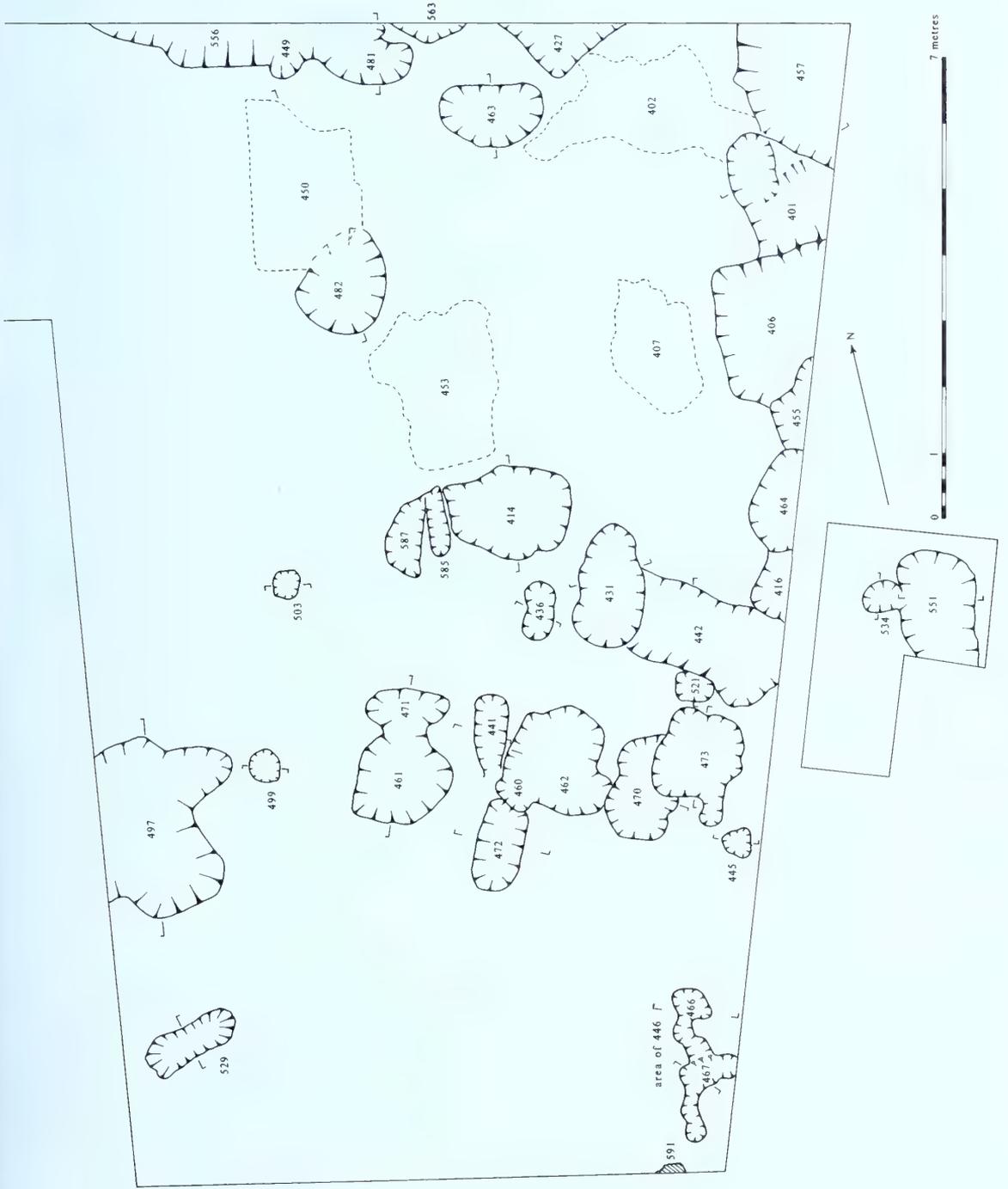


Figure 8. Plan of the main, eastern part of Trench D



Plate 5. View of Trench D from the east, over 534 and 551 in the extension cutting, with the main features of the presumed chamber area behind. Scale = 1m

which further excavation took place in a main area approximately 10 by 17m, with extensions to the south, east, and west (Figure 8; Plate 5). In the southern half of the trench, and visible as far west as Trench A, there were discontinuous patches of a dark clayey, largely chalk-free humic layer (429) up to 10cm thick, and thicker in hollows, which underlay the topsoil and overlay the natural surface of the chalk. It is probable that this represents an old pre-mound soil, partially preserved. Soil micromorphology samples A and H, from Trench D and the inner (i.e. northern) edge of Trench A, are detailed below.

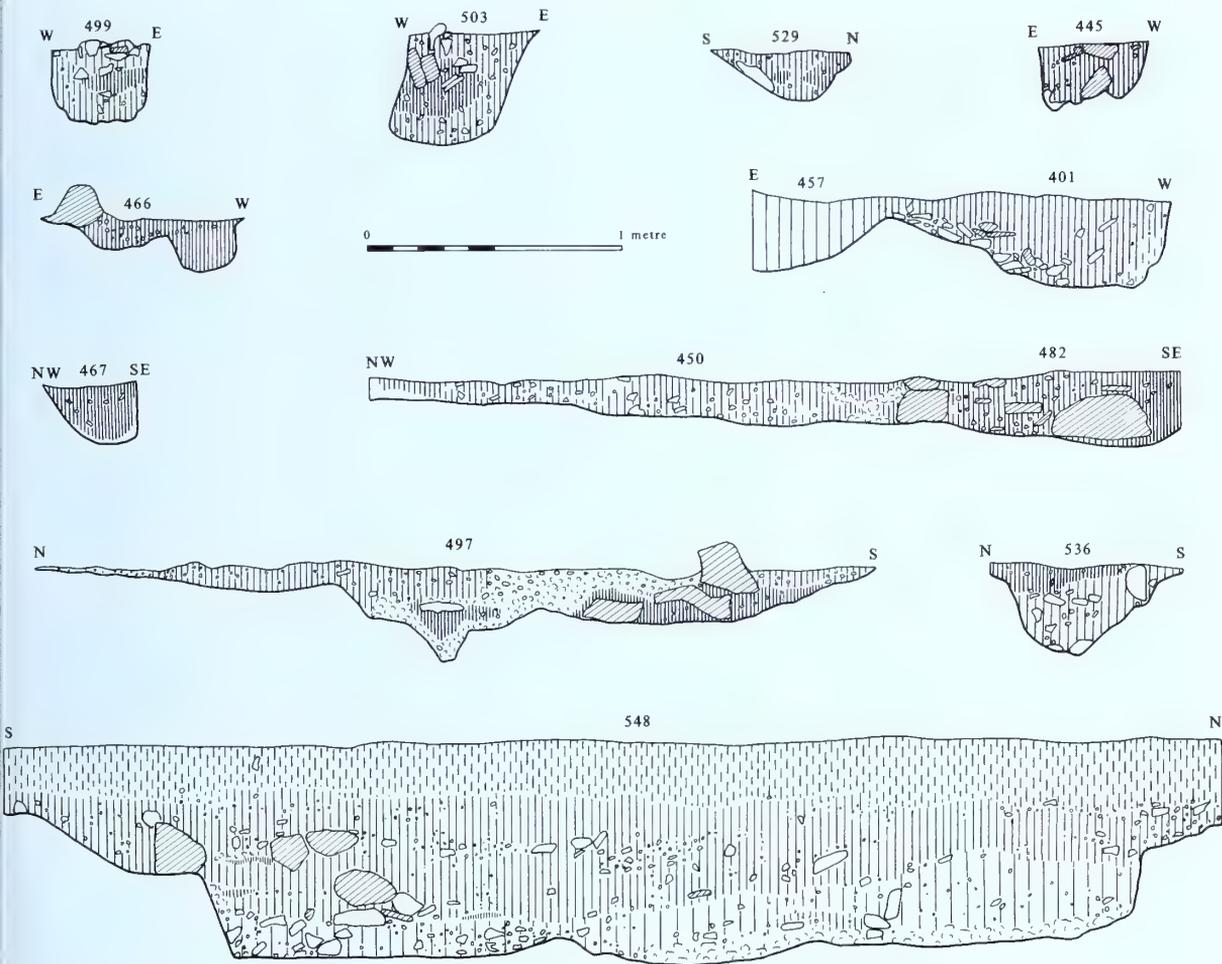
Over the rest of the area topsoil rested on the varied natural surface of the chalk, with rotted fragmented chalk in some places, much fissured and impregnated with brown clayey loam, and with a fine compact chalky silt in others. This was disturbed by both recent plough marks and burrows, especially in the southern part of the trench; burrows had been recorded in the 1950s by Isobel Smith (Barker 1985, 15).

Despite these intrusions a substantial number of features cut into the chalk were recorded, and can be seen, despite the obvious difficulties of interpretation, as connected with the original structure of the monument. These largely comprise stone holes (or destruction holes) of a terminal chamber, a facade and flanking kerbs. Other features may belong to a pre-mound phase.

Possible pre-mound features

To a pre-mound phase may be assigned several post holes and shallow pits, two of which, 401 and 548, contained fragmentary human remains (Figure 9).

The post holes 499, 503, 529, 521, 445, 466 and 467 (and possibly 483 in the base of feature 473) can be seen as defining a more or less square area some 6 by 6m. There is no proof that the post holes are in fact connected with a single structure, though the shape defined by them is consistent with other known Neolithic timber structures. Post hole 521 is truncated by the chamber area feature 442, and



KEY to figs. 9-13

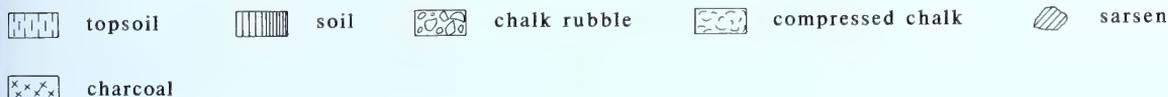


Figure 9. Sections of possible pre-mound features

467, although in an area disturbed by burrows, underlies the sarsen setting 446. These relationships, the non-axial position of the post holes relative to the mound defined by the ditches, and the fact that post holes would not easily belong to a stone phase of the monument, encourage one to see the post holes as pre-mound. There are possible remnants of post pipes in 499 and 503.

The pits 548, 497, 536, and perhaps 482 may also be pre-mound because of their position relative

to the mound defined by the ditches and because of their lack of resemblance to other features defined as stone holes; 548 is much larger than the others though it appears to have been much disturbed during or after the levelling of the mound. Pit 401, on the line of the north facade, is cut by 406, a stone destruction hole, and by 457, another later feature. This need not make it pre-mound, but the apparently undisturbed deposits of fragmentary human bone in it would not easily belong to the

phase of the supposed facade. Radiocarbon dates consistent with such a position in the sequence were obtained from both 401 and 548.

These post holes and pits cover an area of at least 19 by 20m. Because of the limits of excavation, there is no certainty that features of this kind do not extend further to the west; 548 was only half-sectioned against the west baulk of Trench D. The pit 534 in the east extension in front of the chamber area might also be considered as belonging to this phase, although it is presented below as part of the main phase of the monument.

Post holes (Figures 9 and 10)

499: dark brown soil 510, a possible post pipe remnant, was sealed by brown chalky soil and chalk blocks, and surrounded by more brown chalky fill.

503: brown clayey soil 513, a possible post pipe remnant, was surrounded by brown chalky fill with chalk and sandstone blocks at the top. Both 499 and 503 had well cut, smooth, rounded sides.

529: a short linear feature with bases of three possible post holes, though not individually distinguishable in the brown clayey fill with chalk fragments; there may have been some burrow disturbance.

521: dug as part of 442, with a brown clayey largely chalk-free fill; truncated by 442 (see Figure 10).

445: dark brown clayey fill with chalk fragments, with chalk, sandstone and sarsen blocks in the middle and upper fill in the centre of the feature; well cut and rounded.

466: circular, 60cm in diameter and 40cm deep; brown clayey fill with small chalk fragments.

467: brown clayey fill with small chalk fragments; well rounded sides; underlay 446; area to south and west disturbed by burrows.

483: possible post hole in the base of 473 (see Figure 10), but could also be disturbance feature or solution hole; fine clayey brown fill; cut by 473.

577 and 579: not excavated, only stripped to level of chalk in south extension of Trench D.

Pits (Figures 9 and 11)

401: dark brown clayey soil with a few chalk fragments, and broken sarsen pieces on the east side; also one piece of limestone, probably of local greensand derivation, and pieces of white quartzite, ultimately derived from the millstone grit (kindly identified by Dr T. Ramsay and Dr J. Cope, UWCC); three spreads of human bone fragments within the fill; cut by 406 and 457; cut into chalk

and above chalk to east into chalky silt. Date of 4750±120 BP (OxA-3171) from human mandible.

482: uncertain relationship with 450, a probably natural feature to its north, and 482 could merely be part of this; light brown chalky clayey fill with sarsen blocks; more like a stone hole than others of this supposed phase but position relative to ditches not plausible.

497: irregular in shape and shallow, with a fill of brown clayey soil and packed chalk rubble, also containing scattered sarsen stones; pig jaw in packed chalk; could be a working hollow or similar, and fill could belong in part to the mound.

536: homogeneous fill of brown clayey soil with dense chalk fragments; too steep and small for stone hole, may be backfilled pit.

548: incompletely excavated in west baulk of trench; disturbed and rather mixed fill of brown clayey soil with chalk fragments and some sarsen fragments; much fragmentary human bone and plain Neolithic sherds, but also glazed medieval or post-medieval sherds and iron fragments; the sides are steep; no clear indication of being a stone hole, and position wrong for this, but clearly disturbed, presumably during or after mound levelling. Date of 4900±110 BP (OxA-3172) from human mandible.

DISCUSSION

Scattered features of this kind are compatible with a short-lived occupation, activities which included the deposition of the partial remains of dead people.

There were few finds of artefacts which can be assigned to this phase. None of the few plain Neolithic body sherds from the topsoil and various features need be this early, though one or two occurred in 548. Some of the sparse flint assemblage could belong to this phase, including flakes and two or three retouched implements (see Table 6 on p. 41).

Possible chamber area

Midway between the ditches and at the eastern end of the monument as defined by the magnetometer survey of the north ditch, there was a cluster of features which may be interpreted as the remains of some kind of simple chamber originally formed by upright stones (Figures 8 and 10; Plate 6).

The features consisted of oval and sub-rectangular holes cut into the chalk to varying but generally shallow depths. These were arranged in two linear zones, north and south, with a clear space



Plate 6. Detail of features on the south side of the presumed chamber area (460, 462, 470, with 473 in the foreground), from the east. Scale in m

between (respectively 442, 431, 414, 436, 585, and 587; and 473, 470, 462, 460, 441, 472, 471 and 461). Those to the east were deeper than those to the west (442, 431, 473, 470, 462 and 460). There were numerous sarsen pieces and some sandstone fragments in the fills of the deeper features, material which could be considered as packing. Packing and fills must be seen as disturbed by the pulling out of upright stones (or by some other process if the supposition of upright stones is incorrect), and there were some medieval and post-medieval finds in the fills, as well as one fragment of Samian ware. There were numerous fragments of human bone in 442, 431, 414, 460, 441, and 461. Two samples of human mandible from 431 gave dates of 4620 ± 90 BP (OxA-3169) and 4480 ± 80 BP (OxA-3198). There were plain Neolithic sherds from 431, and Peterborough sherds from 431, 441 and 473.

The deeper and shallower features did not intersect, except where 460 appeared to cut 472. There were relationships between some of the

deeper features. Stone hole 442 was cut by 431, which contained burned soil in its lower fill; 431 could therefore be seen as some kind of destruction hole following the model of the Avebury destruction holes recorded by Keiller (Smith 1965). At Avebury, pits were dug alongside sarsen uprights to cause them to fall down, and some sarsen stones were then further destroyed by fire setting. In the south line of features, 473 appeared to cut 470, which cut 462, which in turn cut 460. None of these need be seen as other than stone holes, and the suite of relationships could reflect the order of construction. It is possible, but not demonstrable, that the shallower features belonged to an earlier phase than the deeper features.

If all features belonged to a unitary plan, the layout can be seen as simple. Either the whole can be interpreted as forming an elongated chamber or passage with chamber, or some division of space can be seen in the layout of 441, 472, 471 and 461 to the south, and of 436, 414, 585 and 587 to the

north. This could represent simple transepted chambers approached by a substantial passage. There was, however, no sign of a stone hole at the back or west end of the chamber area, whichever interpretation is preferred. Given the state of preservation, and the difficulties of interpreting relationships in fills which are disturbed, there is no point in insisting on exact reconstruction. The important observation is that there was an axial, terminal cluster of features which appeared to be part of, or part of the destruction of, a former chamber area. Collective human burials were made in this area, and their remains became incorporated in the disturbed fills of the features (stone holes and stone destruction holes) during the process of the destruction of the monument. The presence of Peterborough pottery may be presumed to be secondary by analogy with other chambered tombs including West Kennet (Piggott 1962). If so, some duration of interest in the contents of the tomb is indicated, which is consistent with the span represented by OxA-3169 and OxA-3198, but it is notable that there were no finds of Beaker pottery, by contrast with both the West Kennet long barrow and the South Street long barrow (Piggott 1962; Ashbee *et al.* 1979).

The chamber area may be presumed to belong

with the inner ditches, there being no sign of any other stone or timber structure which could take that primary role.

Features (Figure 10)

442: relatively steep-sided with flattish, slightly scalloped base; brown clayey loam fill with much chalk rubble and some sarsen fragments; cut 521, cut by 431; stone hole.

431: relatively steep-sided with flattish, slightly scalloped base; upper fill of dark brown clayey loam with some chalk fragments overlay dark soil with charcoal and burnt sarsen, presumably from the destruction phase; finds include Peterborough sherds; cut 442; either stone hole or stone destruction hole. OxA dates noted above.

414: shallow, with brown clayey loam fill with chalk fragments; many fragments of human bone, but also recent pottery; probable stone hole.

436: shallow, with brown clayey loam fill with small chalk fragments; probably hole for small stone.

585 and 587 (not in Figure 10): shallow, narrow slots, with fill of brown clayey loam with chalk fragments, chalk denser at base and sides; probable stone holes but juxtaposition is curious and there was no hole to the south at the putative back of the chamber area.

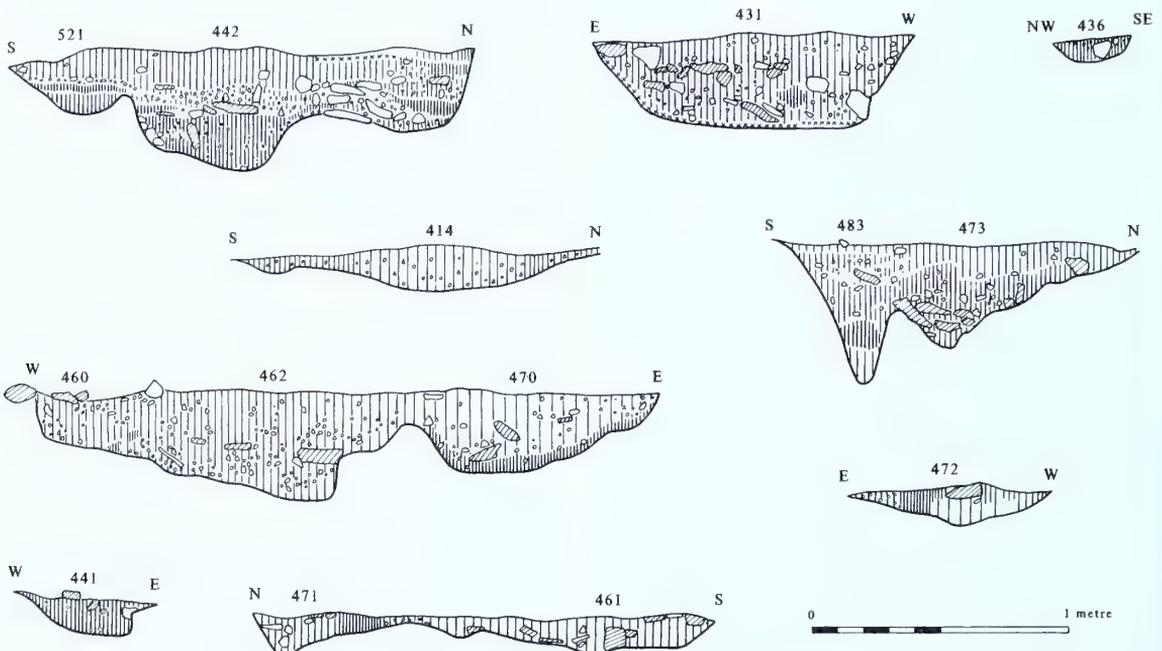


Figure 10. Sections of features from the presumed chamber area

473: relatively steep-sided with flattish base; brown clayey loam fill with some chalk fragments and lenses of darker soil; apparent animal disturbance in sides and base; also in south side is 483, with mostly chalk-free clayey fill, either the base of an earlier post hole or a narrow solution hole; 473 cut 470; stone hole.

470: sloping sides and relatively narrow base, with brown clayey loam fill with chalk fragments and a concentration of sarsen stones and fragments up to 30cm long; lowest fill was a dark brown clayey loam with very little chalk; cut by 473, cut 462; stone hole, with the sarsens presumably representing packing.

462: sloping sides with dark brown clayey loam fill with chalk fragments and some sarsen pieces; animal burrow in south side; cut by 470, cut 460; stone hole.

460: sloping sides with brown clayey loam fill with chalk fragments; cut by 462, cut 472, stone hole.

472: shallow, with animal disturbance in sides and base; usual brown fill with chalk fragments and one sarsen stone in centre; cut by 460; probable stone hole.

441: very shallow, with fill as in 472 and 460 and others; finds included fragments of human bone; probable stone hole, matching 436.

471: shallow hollow, with usual brown clayey loam fill with chalk fragments and some larger chalk pieces; included a concentration of fragmentary human bone; uncertain relationship with the adjacent feature 461; could be stone hole though small, may match 585 and 587.

461: shallow hollow, with brown clayey loam fill with small chalk fragments, some larger chalk pieces and sarsen fragments.

Possible facade

To the north of the chamber area was a short line of features which could be interpreted as the remains of a facade, though two of the features were destruction holes rather than original stone holes. To the south traces were much more nebulous, but the minor stone settings 446 and 591 could be remains of a south facade. It is possible that the line of the east end of Trench D prevented proper inspection of this area, especially if the putative facade were originally slightly concave (Figures 8 and 11).

416 and 455 were stone holes north of the chamber area. It might be supposed that there could have been more features further along this line but

the extension of Trench D at its north-east corner disproved this. 416 intersected the chamber area feature 442 at the surface but no relationship could be reliably established. Features 464 and 406 were substantial, the former notably steep-sided and deep, and included layers of burnt soil and charcoal. They can be interpreted as stone destruction holes. As such, they may have replaced original stone holes.

South of the chamber area 446 was a semi-circular setting of sarsen stones, which overlay the post hole 467. In the southern baulk was another small setting of substantial sarsen stones, 591. Both could be to do with the southern portion of the putative facade, but the evidence is weak, and this is an unsatisfactory gap in the possible plan of the monument.

The lack of relationships with either the chamber area or the kerb makes it impossible reliably to assign the facade to a particular phase of the monument, though it might belong with the first main phase of the built monument.

Features (Figure 11)

416: sloping sides, with fill of brown clayey loam with chalk fragments and an upper concentration of broken sarsen pieces and some charcoal; cut by 464; stone hole, the sarsen pieces representing either packing or destruction material.

455: sloping sides, with fill of brown clayey loam with chalk fragments; cut by 464, relationship with 406 unclear; stone hole.

464: steep, sharp sides, and notably deep; brown clayey loam fill with chalk fragments included some small sarsen fragments and a thin charcoal lens 491 spread over the feature 15cm from its base; cut 416 and 455; stone destruction hole.

406: shallow, sloping sides; upper fill 422 of brown clayey loam with chalk fragments included some sarsen fragments, and overlay 425, charcoal and shattered sarsen pieces; 479 and 480 below represent a similar succession of charcoal and shattered sarsen (480) overlain by usual brown fill (479); uncertain relationship with 455, cut 401; stone destruction hole.

446: semi-circular setting of eight sarsen stones above slight hollow with brown clayey loam with chalk fragments; may have cut deposit of dark clayey humic layer 429, to east; partly overlay post hole 467; possible stone hole with intact packing.

591: three sarsen stones in south baulk resting on dark clayey humic layer 429; possible stone setting connected with south facade?

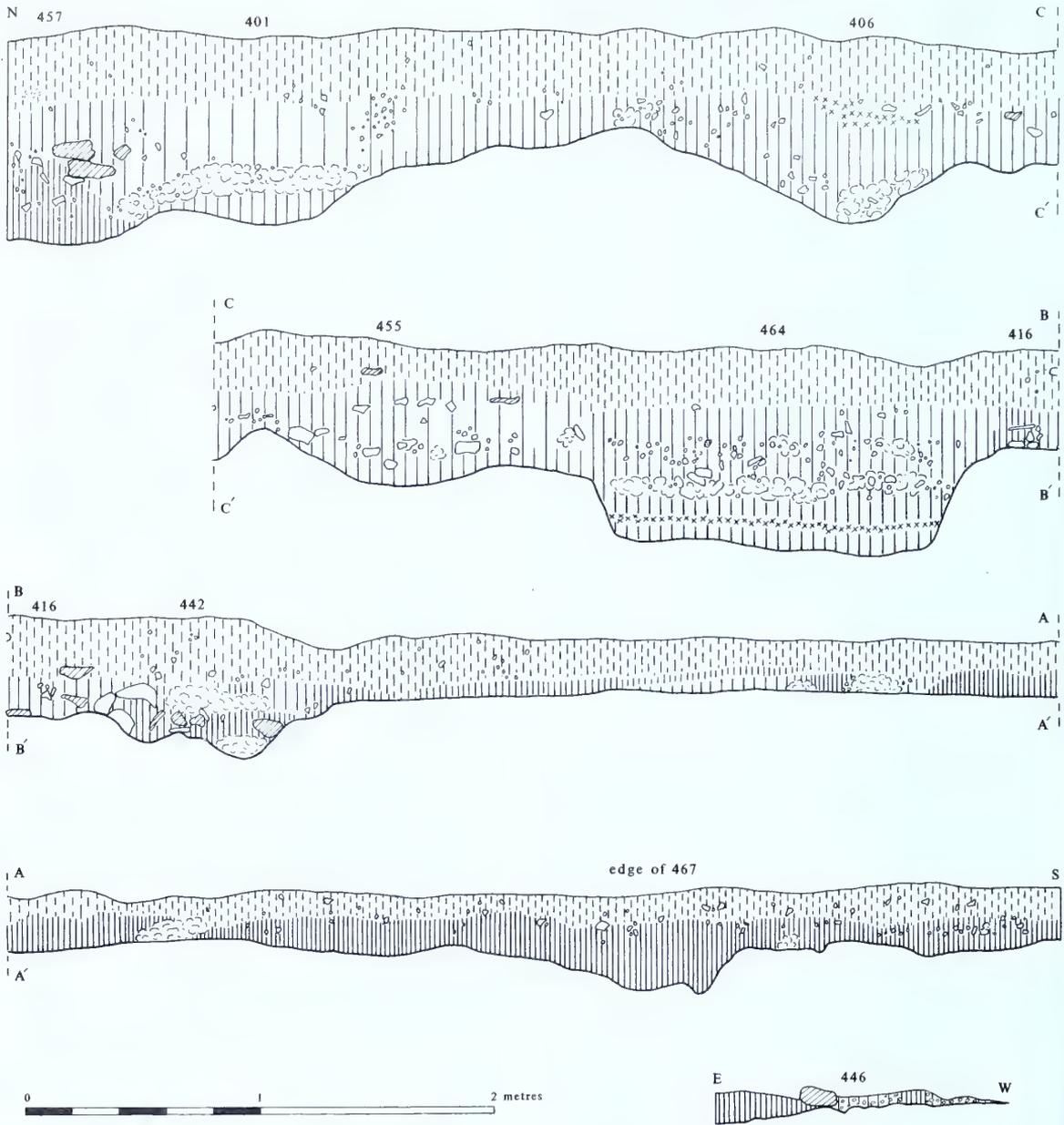


Figure 11. Sections of features from the presumed facade

Front of monument

A small extension to Trench D was dug to the east of the chamber area to demonstrate the absence of further stone holes and to investigate the putative front of the monument (Figure 8). Two pits, 534 and 551, were found (Figure 12). The larger pit 551 cut 534. The latter had packed stone in its fill

including pieces of flat sandstone and a portion of the beam of a red deer antler with some skull attached. The pits could belong either to a pre-tomb phase or to the duration of the tomb. The antler from 534 gave a date of 4630 ± 100 BP (OxA-3170), which is consistent, despite the imprecision of the method, with the latter possibility.

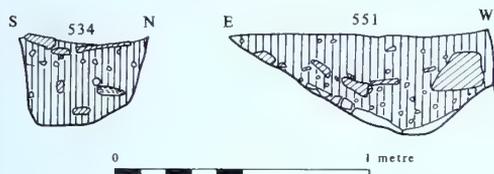


Figure 12. Sections of features from the presumed front of the barrow

534: well cut steep and rounded sides, with brown clayey loam fill with chalk fragments, sarsen pieces and flat, tabular sandstone pieces packed into the centre (sandstone identified by Dr T. Ramsay and Dr J. Cope, UWCC, as derived from the Drybrook series of the Forest of Dean); the antler was under such packing, well down in the feature; cut by 551; backfilled pit. OxA-3170.

551: steeply sloping sides, with brown clayey loam fill with chalk fragments and sarsen and sandstone pieces; finds include a few glazed and plain medieval sherds; probable backfilled pit.

Possible kerb

Five stone holes (427, 563, 481, 449, and 556) were excavated in a line on the north edge of Trench D and there was a sixth (463) inside this line, together with the confused area of a probable natural feature (402). All this could be interpreted as the remains of a north flanking kerb (Figures 8 and 13). In an extension on the south side of Trench D two oval features, 573 and 575, which were stripped but not further excavated (Figure 2), can from surface indications also be interpreted as stone holes, for a flanking south kerb. In both instances, such putative kerbs appear right on the inner edge of the inner ditches, and therefore presumably belong with the outer pair of ditches. The discovery of these features appears to confirm the recording of both Aubrey and Stukeley, though it may also be unduly influenced by them (*cf.* Ucko *et al.* 1991, 243). There was no sign of a continuation of the same kind of north kerb at the intersection of Trench D and Trench C, and further west there was also no sign of north or south kerb on the inner edges of the inner ditches in Trench B and Trench A, respectively.

To the west of Trench C, 532 was a large feature which could have been a stone destruction hole. It does not fit easily with the layout of the monument, either with the mound or with the north kerb.

Features (Figure 13)

427: sloping sides, brown clayey loam fill with chalk fragments and sarsen stones, presumably packing stones; cut 434, described above; stone hole.

563: sloping sides, fill of brown clayey loam with chalk fragments and sarsen pieces above dark brown clayey humic soil; uncertain relationship with 481, with which it intersected; stone hole.

481: sloping sides, with light brown clayey loam fill with dense chalk fragments; uncertain relationships with both 563 and 449; stone hole.

449: sloping sides, with brown clayey loam fill with dense chalk fragments; one piece of antler; uncertain relationships with 481 and 556; stone hole.

556: sloping sides, with brown clayey loam fill with dense chalk fragments, some large chalk pieces and one sarsen 30cm long at the base; uncertain relationship with 449; stone hole.

463: shallow, with probable burrows in base; brown clayey loam fill with chalk fragments; probable stone hole.

573 and 575: unexcavated, with dark brown fill at level of chalk, with some charcoal and shattered sarsen; probing suggested depth to features; probable stone holes.

532: steep, sharp edges; brown clayey loam fill with much small chalk and some larger chalk pieces; also lenses of dark brown clayey humic soil; possible stone destruction hole.

Other features

450, 453 and 407 were large, irregular, shallow features to the north of the chamber area. They had much more mottled fills of very evenly distributed chalk fragments in a matrix of brown to dark brown clayey loam. Their bases were irregular. Features 450 and 453 contained sarsen stones. All three features were interpreted as naturally formed, either solution holes or tree fall holes. Also to the north, 402 was a large, rather irregular area, with fill of brown clayey loam and chalk fragments with sarsen stones overlying a mottled mixture of lighter brown clayey loam and chalk; within this lower fill were features superficially like post holes in plan and section (434, 507, 508 and 486), with dark clayey fill, but these may be solution holes or burrows. A very confusing feature, 402, was probably a natural solution hollow, and some burrowing cannot be excluded. In the north-east of Trench D, 457/560 was an irregular, apparently linear, feature cutting 401; it contained medieval sherds and was presumed to be part of destruction or disturbance activity.

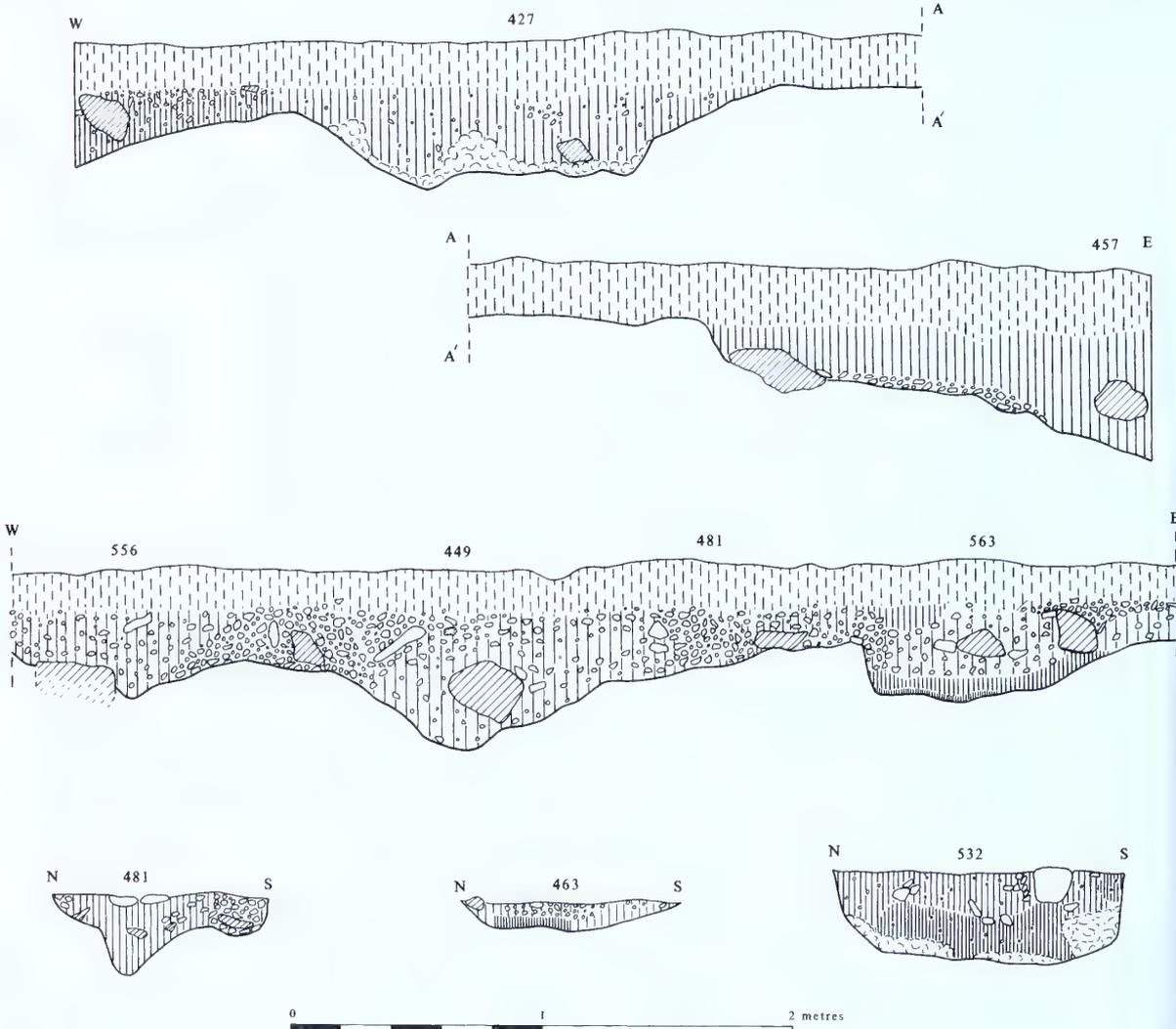


Figure 13. Sections of features from the possible kerb

Radiocarbon Dates

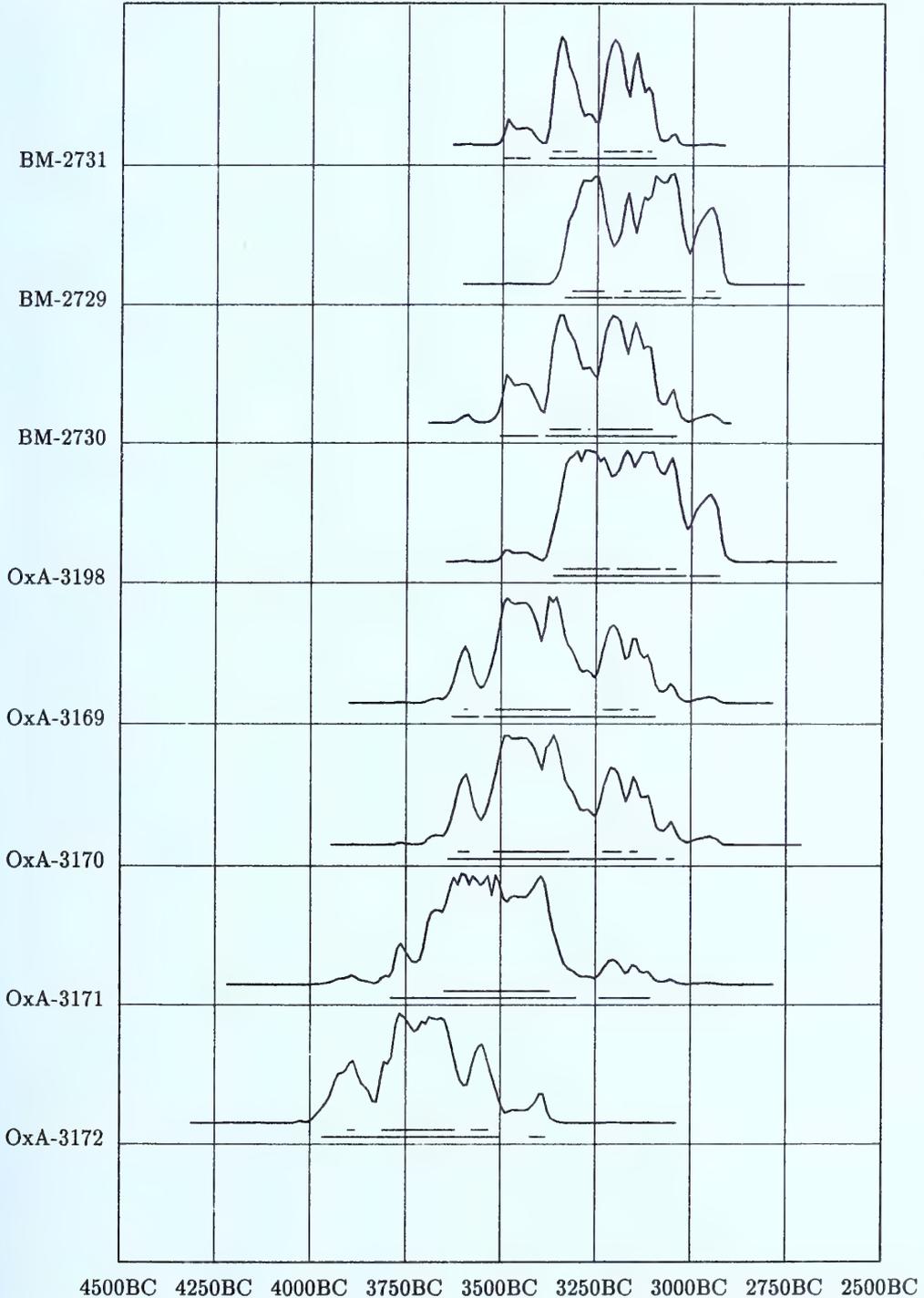
by J. AMBERS and R. HOUSLEY

Complementary series of samples were submitted to the British Museum laboratory and the Oxford Accelerator Unit. Technical details for the BM dates will be published in *Radiocarbon*; those for the OxA dates can be found in Hedges *et al.* 1992.

Results are set out in Table 1 (and see Figure 14). Calibrations have been made in Table 1 following the University of Washington 1987 programme,

which is based on Belfast data. Figure 14 was prepared by Rupert Housley, following a programme written by M. Leese of the British Museum.

It is clear that there is considerable overlap between the determinations, and the radiocarbon method cannot be expected to yield precise results. There is, however, coherence in the series, which can also be set beside the coherent series from the Windmill Hill enclosure a little to the south (Hedges *et al.* 1992; Whittle 1993).



4500BC 4250BC 4000BC 3750BC 3500BC 3250BC 3000BC 2750BC 2500BC

Figure 14. Presentation of radiocarbon dates, showing calibrated probability distributions (top curve), and the one and two sigma ranges (the upper and lower horizontal lines below each curve). Prepared by Rupert Housley

Table 1. Radiocarbon dates

<i>Context</i>	<i>Find no.</i>	<i>Material</i>	<i>Date no.</i>	<i>Date BP</i>	<i>Date range BC at 1σ</i>	<i>Date range BC at 2σ (Univ. Washington 1987 programme using Pearson et al. 1986)</i>
548, supposed pre-tomb pit	6005	human bone	OxA-3172	4900±110	3790–3543	3960–3383
401, supposed pre-tomb pit	4096	human bone	OxA-3171	4750±120	3690–3370	3780–3136
534, pit in front of E end of tomb	5716	red deer antler	OxA-3170	4630±100	3596–3147	3640–3041
431, stone hole on N side of supposed chamber area	4169	human bone	OxA-3169	4620±90	3508–3147	3631–3044
Ditto	5331	human bone	OxA-3198	4480±80	3345–2949	3370–2920
234, primary fill inner ditch, N side	2047	red deer antler	BM-2730	4560±70	3372–3106	3510–3040
165, primary fill inner ditch, S side	1344	red deer antler	BM-2729	4450±60	3323–2937	3350–2920
119, primary fill outer ditch, S side	1126	red deer antler	BM-2731	4560±50	3365–3137	3494–3100

Molluscan Analysis

by J. HARRIS and J.G. EVANS

Sampling strategy

The outer ditch sediments were selected for analysis because they reflected natural and gradual deposition in contrast to those of the inner ditch which had been filled rapidly and perhaps deliberately. The analysis was confined to the middle part of the sequences, from the top of the primary fills to the base of the tertiary fills (as defined by Evans 1990) because these represented the slow accumulations of the Neolithic and Bronze Age which are of most interest to the current research. Additionally, the primary fills were generally too coarse and the tertiary fills not sufficiently calcareous to contain significant numbers of snails. Also, the interpretation of these deposits was likely to be difficult in view of their rapid formation and, in the case of the tertiary fills, unknown age.

Sampling and analysis

Two series of contiguous samples, each sample weighing 1.0kg air-dry, were analysed, one from

each ditch section. Series MB I was from the Outer Ditch South and came from the west section (Figure 6), while series MB III was from Outer Ditch North and came from the east section (Figure 7). The samples were analysed as set out in Evans (1972). Details of procedures are held in the archive.

RESULTS

The results of the analyses (Tables 2 and 3) are presented as histograms of relative abundance (Figures 15–16). This method, rather than the presentation of raw counts, was used because it was considered that some of the fluctuations in the latter were due to taphonomic factors such as varying rates of sedimentation. It is true that some aspects such as population abundance fluctuations may be lost in the percentage diagrams (Thomas 1985), but the tables of data allow these to be retrieved and other, more sophisticated forms of numerical analysis (e.g. Evans and Williams 1991), to be applied.

(a) Molluscan groups

In ordering the molluscan taxa, their behaviour through the sequence was the prime consideration.

Table 2. Mollusca from Outer Ditch South (MB I)

Depth in cm	290-285	245-240	240-235	235-230	230-225	225-220	220-215	215-210	210-205	205-200	200-195	195-190	185-180	180-175	175-170	170-165	165-160	160-155	155-150	150-145	
<i>Garychium tridentatum</i>	-	-	-	2	-	7	2	3	3	14	18	8	5	2	3	2	4	17	27	31	9
<i>Cochlicopa lubrica</i>	-	-	-	3	-	-	1	-	27	2	2	2	-	-	1	4	6	8	8	3	3
<i>Cochlicopa lubricella</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-
<i>Cochlicopa</i> spp.	-	-	-	6	10	3	2	5	52	12	10	2	2	2	16	30	24	17	4	-	-
<i>Vérigo substriata</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Vérigo pygmaea</i>	1	-	-	7	7	2	3	3	14	18	8	5	2	3	2	4	17	27	31	9	9
<i>Pupilla muscorum</i>	-	-	-	-	-	-	-	-	15	29	9	5	3	1	1	7	4	17	30	8	8
<i>Vallonia costata</i>	-	5	7	44	62	33	16	28	565	297	110	67	32	25	33	86	142	257	302	85	85
<i>Vallonia excentrica</i>	1	-	2	80	30	9	-	4	13	25	18	6	12	11	10	16	31	60	37	2	2
<i>Acanthinula aculeata</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-	2	-	9	1	-	-	-
<i>Punctum pygmaeum</i>	-	2	2	32	14	-	5	4	75	24	15	6	6	4	5	7	14	4	16	6	6
<i>Discus rotundatus</i>	-	-	1	-	-	-	-	-	54	4	1	-	-	-	1	2	7	-	-	-	-
<i>Vitrina pellucida</i>	-	-	-	2	1	-	1	-	30	5	4	1	2	2	1	6	1	-	1	-	-
<i>Vitrina contracta</i>	-	-	-	-	-	-	2	1	39	12	7	2	2	2	1	3	7	-	-	-	-
<i>Nesovitrina hammonis</i>	-	-	-	1	-	-	-	-	25	9	4	1	1	-	2	3	2	3	-	-	-
<i>Aegopinella pura</i>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-
<i>Aegopinella nitidula</i>	-	-	-	1	-	-	-	-	3	73	16	10	6	1	3	1	6	2	1	-	-
<i>Oxychilus cellarius</i>	-	-	-	-	-	1	-	-	1	-	-	1	-	-	-	2	1	-	2	-	-
<i>Cecilioides acicula</i>	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1	2	3	4	7	7
<i>Clausilia bidentata</i>	-	-	-	1	-	-	-	-	2	1	-	-	1	1	3	9	25	1	3	-	-
<i>Helicella itala</i>	1	19	3	2	-	3	1	-	1	16	16	14	6	6	3	3	6	52	42	12	12
<i>Trichia hispida</i>	-	11	9	2	25	12	6	1	11	265	24	14	11	4	7	16	61	123	109	54	16
<i>Cepaea</i> spp.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	10	2	1	1	1
Limacidae	-	-	-	11	3	1	-	7	53	24	12	6	4	2	7	19	47	28	12	3	3

Table 3. Mollusca from Outer Ditch North (MB III)

Depth in cm	185- 175	175- 170	170- 165	165- 160	160- 155	155- 150	150- 145	145- 140	140- 135	135- 130	130- 125	125- 120	120- 115
<i>Carychium tridentatum</i>	-	-	103	308	101	6	1	1	2	8	15	4	1
<i>Cochlicopa lubrica</i>	-	-	6	31	8	5	1	1	1	2	-	4	2
<i>Cochlicopa</i> spp.	-	1	15	94	61	5	4	2	7	4	11	16	8
<i>Vertigo pygmaea</i>	-	1	4	20	18	3	4	-	2	2	5	23	9
<i>Pupilla muscorum</i>	-	-	-	-	11	7	5	4	4	3	1	11	5
<i>Vallonia costata</i>	13	1	115	297	226	57	41	32	32	56	96	221	114
<i>Vallonia excentrica</i>	-	2	14	7	13	7	7	7	6	4	23	45	47
<i>Acanthinula aculeata</i>	-	-	-	-	-	-	-	-	-	2	2	-	-
<i>Punctum pygmaeum</i>	-	-	18	103	50	8	1	5	4	1	3	11	10
<i>Discus rotundatus</i>	7	1	3	5	19	2	-	-	1	-	4	2	1
<i>Vitrina pellucida</i>	-	3	12	25	22	8	2	4	2	1	-	3	1
<i>Vitrea contracta</i>	-	1	28	44	10	2	3	3	3	-	1	-	-
<i>Nesovitrea hammonis</i>	-	-	2	1	2	2	-	-	-	1	-	-	1
<i>Aegopinella nitidula</i>	-	-	27	74	29	4	4	2	2	1	13	1	1
<i>Oxychilus cellarius</i>	-	-	-	2	3	-	-	-	-	4	1	-	-
<i>Cecilioides acicula</i>	-	-	-	-	-	-	-	-	-	-	2	2	2
<i>Clausilia bidentata</i>	-	-	-	1	1	-	-	-	-	2	9	14	2
<i>Helicella itala</i>	10	6	7	9	16	9	6	5	6	3	2	22	5
<i>Trichia hispida</i>	1	13	99	175	71	15	14	11	16	24	102	110	62
<i>Cepaea</i> spp.	-	-	-	1	-	-	1	-	-	-	8	1	2
Limacidae	-	5	33	33	27	5	2	2	7	5	38	37	11

This is not always a straightforward procedure because a species may behave differently in relation to other species at different levels (Thomas 1985; Evans 1991). In the case of the sequences at Millbarrow, however, the situation was fairly clear cut, and four groups of taxa are proposed, based on a consideration of both sequences as one.

Group 1. Taxa which are common throughout with the exception of a significant drop in some towards the top are placed in the first group. These are generally open-country taxa, and some of them are typically so, although a few are more wide-ranging.

Group 2. This group contains only one taxon, *Pupilla muscorum*. The behaviour of this typical xerophile is distinctive and the same in both sequences. It does not occur in the lowest levels at all, it virtually dies out towards the top in the same horizon that sees the decline in some of the group 1 taxa, and it finally recovers. It is to be noted that this behaviour is seen in the raw counts as well as the relative abundance figures. A restricted distribution is typical of *Pupilla muscorum*, both

through time and spatially. In the modern transect at Maiden Castle, for instance, it is the most tightly restricted of the common species (except for *Lauria cylindracea* which is absent from Millbarrow), occurring only on the crests of ramparts and south-facing slopes (Evans and Rouse 1991). Warmth is the key factor in its distribution.

Group 3. In terms of their behaviour through the histogram, taxa in this group are the most varied. Generally they occur in the lower part of the sequences, and then decline towards the top to very low abundances or absence. They include some that are conventionally 'shade-loving', such as *Aegopinella nitidula* and *Carychium tridentatum*, and others which are more catholic and often behave in unison with typical open-country taxa, such as *Nesovitrea*, *Vitrina* and *Vitrea*.

Group 4. This is the most tightly confined group, and although never abundant, is best represented in the horizon towards the top of the sequences where many of the group 1 taxa and the group 2 taxon decline. The taxa of group 4 are most typical of

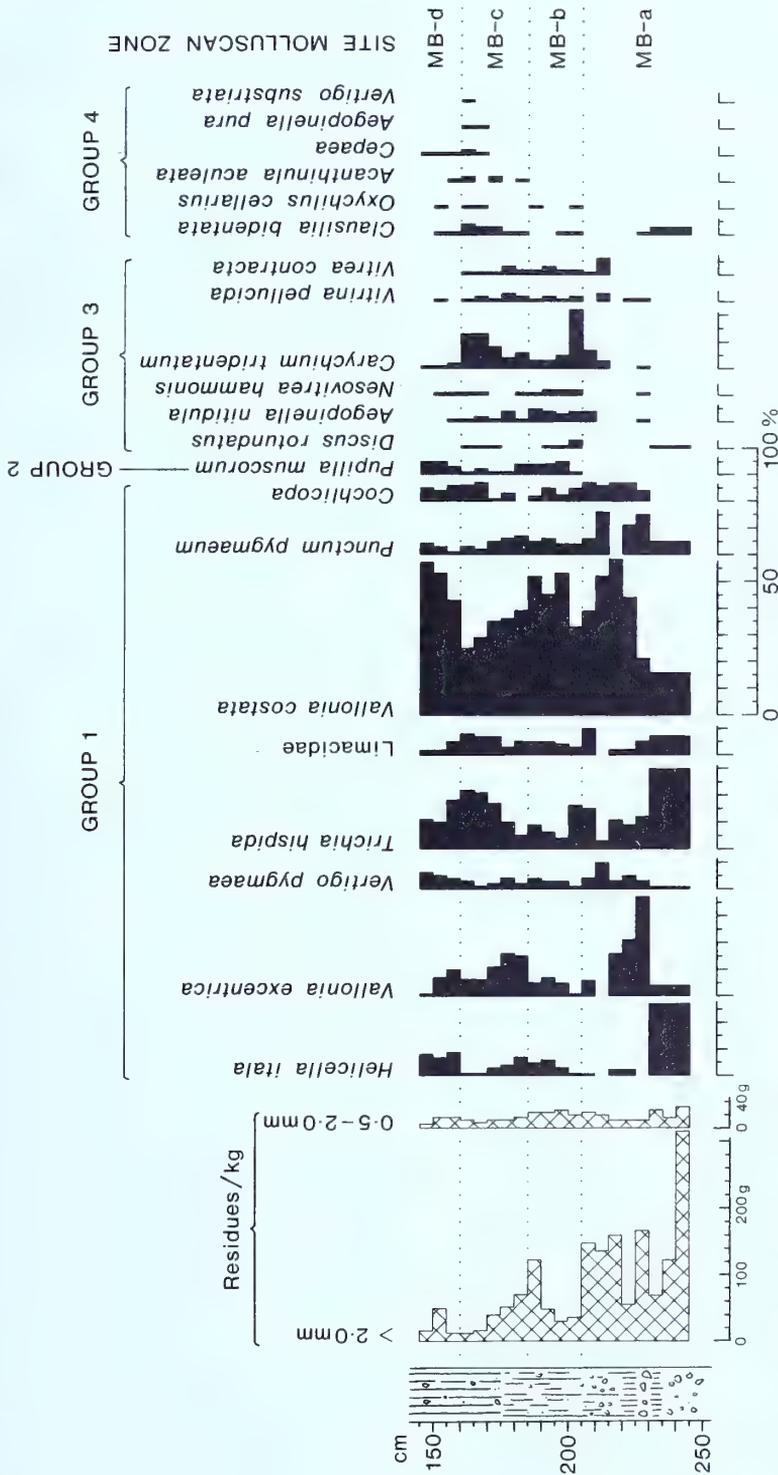


Figure 15. Molluscan diagram MB I, Outer Ditch South. Taxa expressed as percentages of total assemblages, excluding *Cecilioides acicula*. Nomenclature after Kerney (1976)

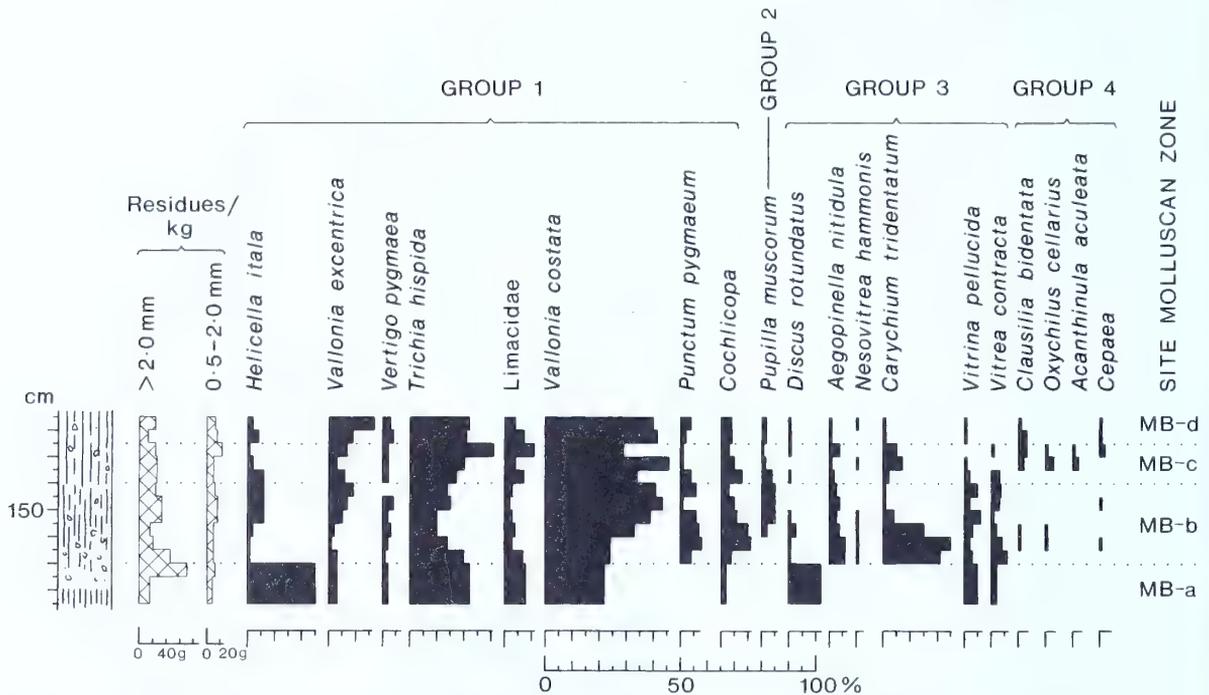


Figure 16. Molluscan diagram MB III, Outer Ditch North. Taxa expressed as percentages of total assemblages, excluding *Cecilioides acicula*. Nomenclature after Kerney (1976)

woodland, although none is exclusive to this habitat. Included is *Vertigo substriata*, an extremely unusual record for the Neolithic of the area.

(b) *The site molluscan zones*

On the basis of the distribution of these four groups, a series of four site molluscan zones has been established, MB-a to MB-d, and these are common to both sequences. There is an element of circularity here because the molluscan groups are established in the first place in terms of their behaviour through the sequences. But now other characteristics of the assemblages, such as modern ecology, taxon diversity and total abundance, are taken into account in the characterisation of the zones.

MB-a. This zone includes the uppermost part of the primary fill and the lower part of the secondary fill in which there is much coarse rubble (see residue histograms in Figures 15–16). Group 1, open-country taxa are the best represented and species diversity and total abundance are low. Some of this material is probably derived from pre-barrow turves which fell into the ditch as a part of the primary fill,

and some of it certainly represents the remains of animals living in the ditch as indicated by a small group of young, perfectly preserved shells of *Helicella iuala*. Open country, probably short-turved grassland, was the likely environment.

MB-b. This zone includes the lower part of the secondary fill which was more stable than that below, but still with some incorporation of coarse rubble. The fauna is characterised by group 2 (*Pupilla*) and group 3 taxa as well as the continuation of the group 1, open-country taxa. Species diversity is high. Total abundance is high early on but then declines markedly, probably as a reflection of increasing disturbance as seen in the increase of residues greater than 2.0mm. A locally diverse environment of open-country vegetation of tall herbs, grasses, broken areas and bare chalk, the last providing suitably warm habitats for *Pupilla*, is indicated. There may have been some scrub. The typical grass sward species, *Vallonia excentrica*, is poorly represented, especially by comparison with the more eclectic *Vallonia costata*.

MB-c. This zone includes the upper part of the secondary fill. Infilling has decreased in rate as shown especially in the MB I diagram by the residues greater than 2.0mm (Figure 15). There was probably a standstill phase. The Mollusca are characterised by a reduction in group 1 taxa, especially the open-country species, *Helicella itala*, *Vallonia excentrica* and *Vertigo pygmaea*, and in group 2, *Pupilla muscorum*. Group 3 taxa behave variously. Most distinctive is the increase in the small number of species which constitute group 4, suggesting shade from woody vegetation and surface stability; their acme in MB I at 160–165cm is precisely at the nadir of the coarse chalk rubble. This zone is also characterised by a progressive increase in diversity and numbers. There is no doubt that this horizon represents the establishment of woodland on the site.

MB-d. This zone includes the top of the secondary fill; in MB III the top sample overlaps with context 259. Groups 1 and 2 return to abundance, especially the more characteristic grassland and xerophile taxa. Groups 3 and 4, and the more mesic taxa of group 1, *Trichia hispida* and the Limacidae, decline. Some sort of very open-country environment is indicated, probably grassland rather than arable in view of the relatively high diversity of the fauna and the presence of *Vertigo pygmaea* which usually occurs in grass swards.

DISCUSSION

It was not possible to examine the pre-barrow environment by molluscan analysis directly because the pre-barrow soil was too patchily preserved to be sampled, and those fragments that were seen were generally clayey and lacking shells. However, the absence of one species, *Pomatias elegans*, which is common at Windmill Hill and Avebury in the middle Holocene and thus should be expected at Millbarrow, provides an indirect hint of the environment. *P. elegans* is strongly calciphile and its absence therefore suggests that the soil at Millbarrow, and perhaps more widely on Lower Chalk, was non-calcareous, in contrast to the soil on the Middle Chalk.

More information about the pre-barrow environment can be obtained from the fauna in zone MB-a. According to Bell (1990), ditch primary fills form in a few years, so the lower part of secondary fills is a good indicator of the environment immediately

prior to ditch digging. At Millbarrow, therefore, the totally open-country fauna in the upper part of the primary fill and lower part of the secondary fill (zone MB-a) indicates that the barrow was built in open country. The absence of *Pupilla muscorum*, a species which likes warmth close to the ground, indicates that the surface was cold, and therefore probably grassland rather than arable. The predominance of *Vallonia costata* and *V. excentrica* also suggests grassland. The situation at the time of barrow construction was thus closely similar to that beneath other long barrows in the area notably South Street, Horslip (Ashbee *et al.* 1979, 284) and Easton Down (Rouse and Evans in Whittle *et al.* 1993; with broader discussion of the region as a whole).

The development of an abundant and more diverse, but still open-country, fauna later on (zone MB-b) indicates environmental stability and a lack of human interference. The fact that the fauna is not one of closed woodland indicates that woodland was some distance from the barrow. The situation is again similar to that at South Street, but is in contrast to Windmill Hill, where woodland occurred from the lowest levels of the secondary fill (information from M. Fishpool and A. Whittle), and to Easton Down, where woodland occurred relatively earlier on in the ditch sequence.

Woodland ultimately became established on the site (zone MB-c). There are 11% open-country species (*sensu* Evans 1972), excluding *Vallonia costata*, at the maximum of woodland development (MB I, 160–165cm and MB II, 125–130cm). At South Street the value at the equivalent horizon is higher (16%). At Easton Down, the open-country component is virtually absent although there is a more or less continuous *c.*1% presence throughout the woodland phase, while at Windmill Hill there is no open-country component at all. So the length of time it took woodland to become established and its degree of closure (if that is what the open-country component is reflecting) are giving us comparative information about the scale of pre-site clearance, although we cannot compute absolute figures for the size of these clearances. Of the four sites for which there is detailed information, Windmill Hill was closest to woodland, Easton Down further away, then Millbarrow and finally South Street.

Clearance of woodland at Millbarrow led to the establishment of grassland, as it did at South Street and Windmill Hill. At the last two sites, the grassland phase is of Bronze Age date, although

clearance itself may have been a slightly earlier event associated with Beaker activity. Unfortunately the dating of this episode at Millbarrow is imprecise, though the plano-convex knife from Outer Ditch South may indicate the Later Neolithic or later. At different sites in the area, woodland persisted for varying lengths of time as measured by the thickness of the deposit, 5cm at Millbarrow, 20–40cm at South Street, 65cm at Easton Down and 56cm at Windmill Hill (in the Outer Ditch in Trench B, 1988). This is partly a measure of when it became established, as just discussed, but it may also relate to the timing of subsequent clearance, and to the possibility of truncation of some of the woodland deposit.

Acknowledgements. We thank Mark Fishpool for assistance with the molluscan analysis, Amanda Rouse for drawing the histograms, and both for information on their work on Windmill Hill and Easton Down, respectively.

Micromorphological Analysis of Soils and Sediments

by R.I. MACPHAIL

Samples were impregnated with resin and thin sections prepared (Murphy 1986). Thin sections were described following Bullock *et al.* (1985) and interpreted using the guidelines of Courty *et al.* (1989). Details of samples are given in Appendix 1.

Sample H: Trench A, truncated soil profile to N of Inner Ditch South. (For general stratigraphic situation see Figure 3.)

The sample suggests that the relict mound overlies a truncated Neolithic brown rendzina (*cf.* Andover Series: Avery 1990, 138–42)/brown earth (typical calcaric brown soil; *cf.* Soham Series: Avery 1990, 182–5) soil. The buried soil contains fragments of turf, but mainly comprises a totally decalcified prismatic structured B horizon which merges downprofile with a B/C horizon. The turf (Ah) and B horizon are formed of decalcified silt loam, which may have a loessic element to it.

The buried subsoil is very poorly sealed because of plough erosion and earthworm activity, but most of this disturbance is probably of recent date. The microfabric of the decalcified subsoil shows a number of features (mixing of soils from different horizons, silty intercalations and very dusty clay void coatings) suggestive of physical disturbance, which in a well sealed soil could indicate ancient

clearance and surface soil disturbance through cultivation (Courty *et al.* 1989). Here, however, it is best only to suggest from these undated features that Neolithic soils would have been made unstable (easily erodible) through clearance and agricultural activities (Macphail 1992).

Sample A: south-east corner of Trench D, context 429 above chalk subsoil.

Interpretation of this sample is similar to that of H, but the sample is probably a relic of a Neolithic shallow humic rendzina formed where the decalcified cover was thinner or where it had been eroded. It has been strongly affected by modern earthworm activity and ploughing.

Sample E: Trench A, Inner Ditch South, context 153 (Figure 3).

Context 153 was a thick turf line above primary silt. Microfabric analysis suggests that after primary chalk silting, mainly decalcified silt loam soil material accumulated down the side and in the bottom of the ditch, among other factors through soil creep. On-site decalcified soils contained fine charcoal from various Neolithic activities, and this charcoal was included into these decalcified ditch sediments. The sediment was totally homogenised by biological activity, rooting and earthworm burrowing, the last mixing-in chalky soil material from earlier fills. The soil that developed was not totally stable and soil water washing through it coated pores with thin dusty clay coatings. This process was coeval with the high biological activity that marked a stable episode in the ditchfill formation. Conditions were often wet in the ditch, and during the following massive chalky infilling, soil water carried fine chalky colloids into the pores of the decalcified soil (153). Even so, earthworms continued to be active for some time between the junctions of 153 and the chalky layer above.

Sample F: Trench A, Inner Ditch South, context 166.

Context 166 was a thin turf lens between primary chalky layers. The primary fill is a massive deposit of mainly weathered chalk head containing silt size quartz. The ditch was often wet and this chalky layer was affected by water draining through it and depositing chalky soil colloids in pores. The same thing occurred in the overlying chalk fill. Lens 166 is quite different, however. It is mainly made up of a heterogeneous mixture of decalcified silt and clay,

with inclusions of weathering chalky soil at its base. It is highly porous with closed vughs, many of which are subparallel to the surface. These, like many of the channels, are thickly coated with very dusty clay. This decalcified layer was not originally waterlain (*cf.* Macphail 1991, fig. 105d), nor had it formed by weathering and biological activity from the underlying chalky fill, the boundary being too sharp and not decalcified enough, as occurs in natural *rendzina* mull horizon formation (Avery 1990). The type of vughy porosity and associated coatings instead closely resemble purposely dumped soil that has been trampled (*cf.* Macphail 1990a, fig. 113, pl. 3; Courty *et al.* 1989), subparallel ('flattened') voids being typical of trampled ground (Macphail 1990b, pls. 5–6). It therefore seems possible that a layer of (weakly stable) turf soil that might have come in through soil creep (see sample E, 153) or was purposely laid or dumped, became trampled. Trampling under wet conditions at the bottom of the ditch caused the soil material to slake (fall apart and puddle), and original void spaces partially collapsed and were coated with dusty clay mobilised by the trampling/slaking process. Biological reworking was coeval, root channels also being coated with dusty clay, but activity by earthworms and other agents was not prolonged enough to rework the heterogeneous microfabric that had developed through slaking, before 166 was buried by chalky deposition.

Sample G: Trench A, Inner Ditch South, context 163.

Perhaps through depositional conditions the sediment developed into a water-saturated chalky slurry that may also have been affected by trampling. It carries a little more organic matter and charcoal, and includes slightly more humic chalk soil fragments compared with the rest of the sediment above and below, which is made up of chalky material with rare charcoal.

Samples C and D: Trench A, Inner Ditch North, contexts 209 and 204 (Figure 4).

Context 209 represents a chalky deposit that seems to have originated from a moderately weathered chalk soil surface where small quantities of charcoal and organic material had been incorporated. It was then penetrated by short-lived rooting.

Layer 204 also developed as a compacted and possibly trampled slurry. It was rather weathered soil but not very organic. After deposition, it was a

little reworked by earthworms and rooting. Later, more decalcified fine chalky material with fine charcoal was washed in from above.

Sample B: Trench A, Outer Ditch South, context 108/114 (Figure 6).

Decalcified silt loam seems to have concentrated near the bottom of the extant ditchfill, possibly through soil creep. Here it developed as a biologically homogenised mull horizon, during a stable period. Renewed chalky sedimentation, perhaps during activities that led to ditch-side erosion and trampling of the resulting (wet) sediment, buried the decalcified turfline. Earthworm activity mixed-in the overlying calcareous sediment, and mobile chalky colloids were washed into its pores.

DISCUSSION

At Millbarrow, the pre-occupation (mid-Holocene) typical calcareous brown soil would have had an Ah and Bw horizon over a chalky subsoil/parent material. On Neolithic clearance and through activities such as cultivation, this soil would have been transformed from a brown soil (with a Bw horizon) to an argillic (Luvic; Avery 1990) brown soil (with a Bt horizon), because disturbance produced subsoil clay coatings. In this way, soil transformation here would mirror the brown soil to argillic brown soil formation caused by Neolithic clearance at Maiden Castle, Dorset (Macphail 1991). Similarly, cultivation disturbance produced 'argillic' Bt horizon features (*Lehm* fabric, Cornwall in Evans 1972) at Kilham, North Yorkshire, in a similar shallow silty decalcified soil over chalk (Dimbleby and Evans 1974; Macphail *et al.* 1990, pls. 5–6).

Such soils would be unstable and prone to erosion. Soil creep may be envisaged as one mechanism to produce decalcified soils within the ditchfill. Sometimes these were purely natural mull Ah horizons produced by biological activity (sample E, context 153), but in other cases probable coeval trampling developed a much more heterogeneous soil surface (sample F, context 166). The chalky fills also do not seem to have been deposited in still water, or to have undergone long periods of biological working after deposition. Instead the sediment seems to have acted as a water-saturated slurry, with continual biological mixing and infilling by chalky colloids, the last probably related to

trampling activities on extant ditchfill surfaces. Although many ditchfills have been studied by soil micromorphology, for example from Neolithic through Iron Age contexts at Maiden Castle (Macphail 1991), these types of deposit are still difficult to understand fully. Further studies of experimental earthworks at Overton Down, Wiltshire, and Wareham, Dorset (in 1992 and 1994 respectively), will be important.

Animal Bone

with B. NODDLE

Animal bone was collected by hand and recorded by context. Identifications were made with the help of Barbara Noddle, with further assistance from Caroline Grigson. Measurements follow the system of von den Driesch (1976).

Of the 118 bones which came from primary and secondary fills of the ditches and from the major features of Trench D, only 53 were identifiable; most of the unidentifiable bones were small fragments from context 548. Some bones were also collected from the tertiary fills and overburden of the ditches, and from later features and topsoil in Trench D; these have been retained with the rest of the finds but are not analysed here. The bones from

the ditches are securely prehistoric; those from supposed pre-mound features should be Neolithic, though the fragments from context 548 could be later; many or most of those from the chamber and other features could be Neolithic, but without certainty. They are set out by context in Table 4 (and further details of context are held in the archive). The state of the bones was varied. Those from tertiary fills, overburden and topsoil were generally fresher than the rest; those from the chamber and other features were not markedly fresher than those from the ditches.

Cattle bones were the most numerous, followed by pig and sheep or goat. The cattle bones were from domesticated animals, with one possible exception. The pig bones include jaws which may have been from wild animals, although this is uncertain (see below); all the bones of possibly wild animals are from early or presumed early contexts. Apart from antlers, red deer are represented only by one tooth.

Bos (Table 5). The horncore was in fragmentary condition. A nearly complete left mandible from an adult (sex uncertain, perhaps 5–6 years old) had a lower third molar 41.5mm in length. This is a size where the ranges of domestic cattle and wild cattle overlap (*cf.* Grigson in Evans and Smith 1983, fig. 16). The width of the distal condyle of the humerus

Table 4. Animal bones by context and taxon

Context	Taxon											N. ID.
	<i>Bos</i>	<i>Sus</i>	<i>Ovis/Capra</i>	<i>Equus</i>	<i>Cervus</i>	LU	SU	Fox	Rodent	Amphibian	Bird	
IDS 1°	–	1	–	–	–	3	1	–	–	–	–	2
IDS 2°	3	–	–	–	–	3	–	–	–	–	–	4
IDN 1°	–	–	1?	–	–	–	–	–	–	–	–	–
IDN 2°	3	–	–	–	–	3	–	–	–	–	–	2
ODS 1°	1	–	–	–	–	–	–	–	–	–	–	–
ODS 2°	2	–	–	–	–	–	–	–	–	–	–	–
ODN 2°	4	–	–	–	1?	1	–	–	–	–	–	1
pre-mound	–	3	–	–	–	–	–	–	–	–	–	–
ditto, 548	–	1?	–	–	–	1	2	1	–	–	–	51
chambers	1	1	4	2	–	–	–	2	2	1	1	2
facade	1	1	1	1	–	–	–	–	–	–	–	–
kerb	1	–	–	–	–	–	–	–	–	–	–	–
front	–	–	–	–	–	–	–	1	–	–	–	2

LU = large ungulate, not identified to species; SU = small ungulate, not identified to species; N. ID. = not identified

Table 5. *Bos* and *Sus* bones by context and skeletal part

	Skeletal part												
	horn core	skull	mandible	tooth	thoracic vertebra	lumbar vertebra	humerus	metacarpal	phalanx	pelvis	femur	metatarsal	pubis
<i>Bos</i>													
IDS 2°	1	-	-	-	1	-	-	-	-	-	-	1	-
IDN 2°	-	-	-	-	-	-	1	-	-	1	-	-	1
ODS 1°	-	-	1	-	-	-	-	-	-	-	-	-	-
ODS 2°	-	-	-	-	1	1	-	-	-	-	-	-	-
ODN 2°	-	-	1	-	-	-	-	-	2	-	1	-	-
chambers	-	-	-	1	-	-	-	-	-	-	-	-	-
facade	-	-	-	1	-	-	-	-	-	-	-	-	-
kerb	-	-	-	-	-	-	-	1	-	-	-	-	-
<i>Sus</i>													
IDS 1°	-	-	1	-	-	-	-	-	-	-	-	-	-
pre-mound	-	1?	2	1	-	-	-	-	-	-	-	-	-
chambers	-	-	-	1	-	-	-	-	-	-	-	-	-
facade	-	-	-	1	-	-	-	-	-	-	-	-	-

from IDN 2° fill = 72mm; the length of the first phalanx from ODN 2° fill = 58mm, and the length of the lower third molar from 472 = 36mm.

Sus scrofa (Table 5). There were three remarkable pigs' mandibles in Neolithic contexts, two from possible pre-mound contexts, 497 and 499, and the other from the primary fill of IDS. The most complete is from 497; the lengths of its lower third molars are 46mm (left) and 47mm (right). The same measurement in the mandible from 499 is 44mm and in that from IDS 1° 39mm. The large size of the alveoli of the canines (tusks) indicates that all three mandibles are from males. The lower third molars of the first two mandibles mentioned differ from the third in the presence of very large talonids, though the measurements of the other teeth are nearly identical. All the cheektooth rows show intradental loss of tissue which seems to have been related to food packing. In view of these similarities it would seem that the three mandibles come from animals belonging to the same population. As their measurements fall in, or close to, the area of overlap between wild boar and

domestic pigs in Britain (*cf.* Grigson in Evans and Smith 1983, 65 and fig. 15), it is uncertain whether they are of wild or domestic animals, but, given that pigs' teeth are slightly sexually dimorphic, these measurements are rather small for wild males. Thus it is not possible to say whether the mandibles come from wild boar, well-grown domestic pigs, or possibly even captive wild boar. The tusks seem to have been removed from the jaws after death, presumably intentionally.

Ovis aries or *Capra hircus*. These species are represented by a rib from IDN 1° fill, and teeth (molars and a premolar) from Trench D. The length of the lower third molar from 442 = 22mm.

Equus sp. There are no bones from the ditches and those from Trench D are not certainly Neolithic. There are a molar (right M³) from 473 from a gracile, small animal; a first phalanx from 431 from a similar animal (length = 76mm, proximal width = 50mm, distal width = 39mm); and the mesial part of a very worn lower cheektooth (P₃, P₄, M₁ or M₂) from 406.

Cervus elaphus. There is an upper premolar, probably from red deer. (Antler fragments, from mature animals, are noted in feature descriptions above.)

Large ungulates, not identified to species are represented by fragments of skull, long bone, tibia, scapula, vertebrae and ribs.

Small ungulates are represented by a tibia from IDS, and fragments from Trench D.

Other. Fox was identified by limb bones and teeth/jaw fragments, and amphibian, rodents and bird by limb bones.

The Neolithic Human Remains

by D. BROTHWELL

with the assistance of P. REYNOLDS, P. BARAYBAR, N. BOYD, P. MITCHELL, C. VELING, J. YEADON, B. BALDWIN and T. GREGORY

All the bones were in a relatively good state of preservation, in terms of quality and hardness of bone, but the majority of bone samples were broken pieces.

All the fragments were carefully studied, and many could be tentatively identified, although not necessarily to the left or right side of the body. Similarly, sexing and ageing from such pieces was often impossible. Details of the anatomical identifications were listed against site numbers, and are held in the archive with other site data. Only a summary of the findings is necessary here. This does not include a series of over 100 pieces which could not be identified according to region of the skeleton.

THE PROBABLY INHUMATED REMAINS

Pre-mound (contexts 401 and 548): *adult*

Skull: there were at least 95 pieces of skull, of which 3 pieces were definitely frontal, 18 were parietal, 10 were occipital, 10 were temporal, 2 were zygomatic and one piece was maxilla. The external occipital protuberance of fragment 4084 strongly suggests maleness. Altogether, the skull remains confirm at least three individuals.

Clavicle: a mid-shaft fragment.

Scapula: the 5 pieces could be from one individual.

Humerus: 5 fragments; MNI (minimum number of individuals) = 1.

Ulna: 2 fragments; MNI = 1.

Radius: only 1 piece.

Hand: 6 pieces, including 3 phalanges, 2 metacarpals and a cuneiform.

Innominate: 21 pieces, being left and right sides of possibly 3 individuals.

Femur: of the 20 fragments, there are both shaft and articular ends, from both left and right sides.

MNI = 2.

Patella: only 1 present.

Tibia: 15 fragments; MNI = 2.

Foot: 15 pieces, including 4 phalanges, 5 metatarsals, a calcaneum, talus, cuboid and navicular.

Long bone fragments (unidentified): 9 pieces.

Conclusion. Possibly three individuals are represented in this batch.

Pre-mound: sub-adult

Skull: of the 7 pieces, there were no certain duplicated areas.

Ulna: only 1 fragment, a proximal epiphysis.

Hand: only a phalanx was identified.

Conclusion. There is no certain evidence for more than one child.

Northern part of the chamber area: A: possibly adult

Skull: total fragments 67. Frontal 5; parietal 12; occipital 2; temporal 5; sphenoid 2; zygomatic 1; nasals 1. MNI = 1.

Vertebrae: total fragments 20. Cervical 3; thoracic 6. MNI = 1.

Clavicle: the sternal end of one clavicle only.

Scapula: one fragment only identified.

Humerus: total of 5 fragments. Possibly one male.

Ulna: total fragments 3; all from the shaft. MNI = 1.

Radius: three fragments (a proximal end plus two pieces of shaft). MNI = 1.

Hand: a total of 15 fragments: at least nine are phalanges, parts of five metacarpals, a lunate and another carpal.

Ribs: 28 fragments in all, including two sternal ends.

Innominate: among 8 fragments, there is part of greater sciatic notch (possibly female). MNI = 1.

Femur: 8 fragments, mainly shaft.

Fibula: three pieces only. MNI = 1.

Tibia: 8 fragments (both shaft and proximal pieces) MNI = 1.

Foot: there are 15 fragments, which include phalanges, parts of 5 metatarsals, 2 calcanea and left cuboid. MNI = 1.

Unidentified long bones: there are 48 fragments in this category, not indicating more than one individual with any certainty.

Conclusion. Although there are numerous fragments, there may only be one individual represented (or, at most, a male and a female).

Northern part of the chamber area: B: sub-adult

Skull: of the 5 recognisable fragments, one could be from a newborn infant and the other from an older child (or children).

Vertebrae: there are four fragments, one being cervical. MNI = 1.

Innominate: two fragments, including sacroiliac joint. MNI = 1.

Clavicle: one piece.

Hand: one carpal only.

Rib: a shaft fragment.

Other: unidentified epiphysis of a child.

Conclusion. At least two immature individuals are represented by these bones, one being about newborn.

Southern part of chamber area: adult

Skull: there were 73 pieces, of which at least 4 were frontal, 21 were parietal, 6 were occipital, 5 were sphenoid, 1 was maxilla, 1 temporal and 1 mandible. Possibly three individuals are represented.

Vertebrae: of 45 pieces, 3 are from cervicals, 9 from thoracics, and 2 are lumbar. MNI = 1.

Clavicle: only 1 fragment identified.

Scapula: 6 pieces. MNI = 1.

Humerus: 1 fragment only.

Ulna: 2 pieces. MNI = 1.

Ribs: at least 33 fragments. MNI = 1.

Innominate: 4 pieces identified. MNI = 1.

Femur: 10 pieces, comprising both shaft and articular areas. MNI = 1.

Fibula: 2 fragments, MNI = 1.

Tibia: 13 fragments from both shaft and articular regions.

Foot: 13 pieces, including 3 phalanges, parts of 4 metatarsals, 2 cuneiforms, a cuboid, navicular and scaphoid. MNI = 1.

Radius: 3 pieces. MNI = 1.

Hand: 23 specimens, including possibly 9 phalanges, 7 metacarpals, a trapezium, scaphoid and hamate. MNI = 2.

Unidentified long bone: there were at least 26 pieces. MNI = 1?

Conclusion. The adult remains from the chamber suggest a minimum of three individuals.

Southern part of the chamber area: sub-adults

Skull: of the 19 pieces, there were fragments of mandible, orbit, parietal and occipital regions. Size, thickness, morphology and dentition of the pieces indicate that a neonate, an infant and a juvenile were present.

Vertebrae: although only four fragments, they probably represent two separate children.

Clavicle: again, 2 pieces from 2 children.

Humerus: the proximal end of an immature bone.

Ribs: only 4 fragments. MNI = 1.

Radius: an unfused distal left epiphysis.

Hand: only 2 phalanges.

Foot: one metatarsal.

Femur: 3 fragments, including proximal and distal ends.

Tibia: 2 shaft fragments.

Innominate: part of a pubic symphysis and right ischium.

Unidentified long bones: 3 pieces, articular and shaft.

Conclusion. Parts of at least three children are represented by these remains.

THE CREMATED REMAINS

There were about 20 fragments which, by colour, texture, fissuring or distortion, were judged to be heat modified. They may well be indicative of the intentional cremation of human remains, but there is also the alternative explanation to consider – that they were accidentally burnt. The pieces include long bones (?femur, tibia) and possibly skull and rib. Two fragments may be from children.

Seven of the pieces are from the northern part of the chamber features; eleven are from the southern chamber; and possibly one is from the pre-mound features.

EVIDENCE OF DISEASE

(a) *Pre-mound.* One piece of skull (4992) displays a 'button' osteoma (a benign bone tumour). A cuneiform bone (5924) displays eburnation, indicative of osteoarthritis in the wrist.

(b) *Northern part of chamber.* One fragment of skull (4217) may well be abnormally thick. Degenerative arthropathic changes, including marginal lipping of a facet, occur on the vertebral fragment 4352. A metacarpal (4208) displays a healed fracture with some osteoarthritic changes to the distal articular surface. A lunate (5540) may display minor con-

genital clefting of one articular surface. An unidentified long bone fragment (5583) displays some sub-periosteal proliferation of bone, probably indicative of an early inflammatory reaction.

(c) *Southern part of chamber.* One fragment of skull (5152) appears to be abnormally thick. There is mild external vault pitting on another piece (5150). A femur fragment (4775) displays an old trauma, with some irregularity following periostitis.

The neonate skull fragment (5149) displays surface pitting on both outer and inner tables. Another fragment of a child (4765) displays endocranial pathology, perhaps periostitis, in the form of a thin irregular plaque of new bone.

There is a possible double trephination (4717). Although trephination, as evidenced by various early Neolithic skulls, is well established on the Continent, the evidence from Britain remains poor. The much quoted Bisley skull is a dubious case, and other more certain cases are of Beaker date or later. There are certainly two possible examples from Fussell's Lodge long barrow, but both are incomplete due to fragmentation and bone loss (Brothwell in Ashbee 1966).

It is thus important, but doubly frustrating, that Millbarrow has provided further tantalising but incomplete evidence of this 'surgical' practice! In this case, an irregular piece of skull vault displays two zones of rapid thinning which is unlikely to be explainable as biparietal thinning (especially as the frontal seems to be the bone involved). Normal cranial thickness in this area of the vault was 8.0mm, but thinning was down to at least 2.0mm, though it could have originally been less. Thus, while this is not a certain case of trephination, with survival and complete healing, it certainly gives support to the Fussell's Lodge examples and further suggests that the surgical/ritual procedure had extended to at least southern Britain in Neolithic times.

GENERAL CONCLUSIONS

The human material from this site consists of a relatively small series of accidentally broken fragments. Many could be identified to skeletal element, but not to age or sex. Estimating the number of individuals from such samples is also problematic. If we assume that the uncremated pre-mound and chamber bones represent separate individuals, then at least 14 individuals are present,

of which 6 are children. The cremated bone could represent others. The total number of individuals, however, was probably far less than that found at Fussell's Lodge, for example. Of the evidence of bone pathology, a number of instances of joint disease suggest that some adults survived into at least middle-age. A number of instances of trauma and inflammation occur, which is surprising in view of the limited and incomplete nature of the material.

The most surprising find is a skull fragment with possible evidence of a well-healed double trephination, giving further support to the view that this was established as a technique in Britain during Neolithic times.

Pottery

by L. ZIENKIEWICZ

Fifty-seven small sherds (375g) were found in the layers overlying the ditches. There were one possible Iron Age rim and several crumbs of Samian ware but the majority of the material was medieval.

One hundred and eighty-three sherds (2.32kg) were found in Trench D, including Neolithic, Iron Age, Romano-British and medieval wares.

NEOLITHIC (Figure 17)

Fifteen sherds (175g), quite fresh to worn, included 2 rims, 1 shouldered sherd and plain body sherds comprising a minimum of 3 vessels.

5009 (from stone hole 431) (Figure 17: 1). T-shaped rim, deep concave neck, pronounced shoulder. Profuse twisted-cord impressions, in chevrons on rim and shoulder, and in lines on interior neck. Fingernail impressions in neck. Fine, micaceous clay with sparse small quartz grits. Dark grey to buff traces of sooting and some reddened quartz. Fairly weathered. A Mortlake pot.

5065 (from stone hole 441) (Figure 17: 2). Simple everted rim, with short oblique lines of twisted cord on rim and interior neck. Sandy fabric, moderate small flint and quartz temper. Dark grey-brown to orange-brown. Fairly weathered. An Ebbsfleet pot.

5637 (from stone hole 473) (Figure 17: 3). Shouldered sherd, perhaps from small bowl. Two lines of short lengths of whipped cord on either side of the carination; oblique short lengths below; trace

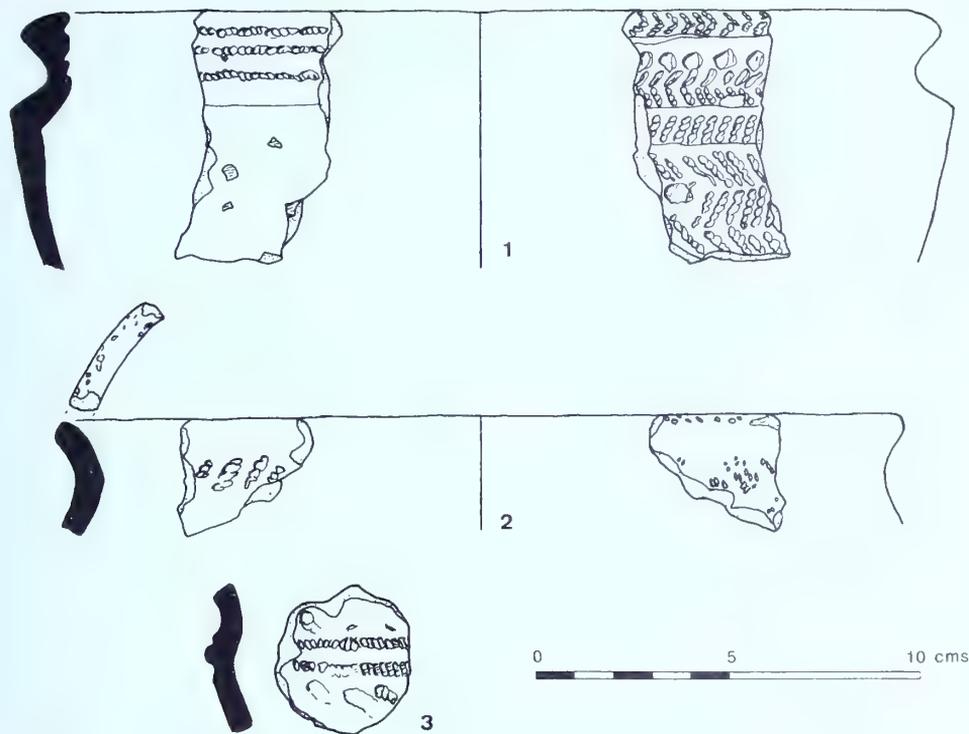


Figure 17. Ebbsfleet/Mortlake pottery from features in the presumed chamber area (for contexts, see text)

of other impressions above. Hard, sandy fabric, moderate flint and quartz temper. Unusual orange exterior (not a slip), rest dark grey. Weathered. An Ebbsfleet pot.

The other sherds, from various contexts, could be grouped by details of fabric; most were hard, sandy and slightly micaceous, with a mixture of flint and quartz temper. Early or Middle Neolithic.

1. Seven sherds (548: 4; 431; 516; topsoil). Abundant temper, mainly flint, some quartz, dark grey-brown.
2. Two sherds (431; surface of subsoil near chamber). As 1, but thicker, and buff exterior surfaces.
3. Two sherds (560). Granular fabric; orange/orange-brown exteriors, buff/dark grey-brown interiors.
4. One small but convex sherd (458). Smooth, soapy, micaceous fabric; large quartz temper; buff exterior, orange-brown interior.

Discussion

The decorated sherds can be assigned to the Ebbsfleet and Mortlake styles (Smith 1956). There are, however, few precise local parallels despite the presence in the area of other Ebbsfleet and Mortlake pottery. Two of the Ebbsfleet vessels from Windmill Hill have simple everted rims similar to 5065 (P242 and P243: Smith 1965), but the rest have inturned rims. The shoulder decoration of 5637 is not paralleled locally. Mortlake vessels similar to 5009 occur at Cherhill in the assemblage of tens of pots from the upper fill of ditch 1 (P27, P28 and P31: Evans and Smith 1983).

On the basis of their fabric the other sherds could belong to the Ebbsfleet and Mortlake styles, if not to earlier Neolithic styles. The fabrics present at Millbarrow are not paralleled at Windmill Hill, where flint- and shell-tempered wares were dominant. A few angular fragments of white quartz were noted, derived perhaps from quartz pebbles in clay-with-flints. Nor was quartz a constituent of Peterborough pottery, apart from a type of yellow quartz believed to be foreign to the area (Smith 1965, 74).

The radiocarbon dates from 431 fit comfortably with the few dates available from other sites with Mortlake pottery.

Most Ebbsfleet and Mortlake pottery from the area has come from residual or poorly stratified contexts, typically of these styles elsewhere in southern Britain. Contexts include the infill of the West Kennet chambers (mainly Mortlake pottery); the ditches of Windmill Hill; and secondary positions on later Neolithic monuments and Bronze Age round barrows.

IRON AGE AND ROMANO-BRITISH

Seventeen sherds (275g) include a storage jar (457) with scraps of similar fabric (560, 413, 460 and 405); 2 everted rims from bowls with high rounded shoulder, of probable Iron Age type, and sherds of similar fabric (560, 494, 457, 405, 407 and 423); and a scrap of south Gaulish Samian ware (431).

MEDIEVAL

Among 149 sherds (with 2 post-medieval) (1.87kg), there were a few rims, bases, handles and decorated sherds; many sherds were glazed. Diagnostic sherds include: 2 finger-impressed bases from glazed, hand-built jugs, dated to the 12th century onwards (McCarthy and Brooks 1988) (431 and 481); 2 bulbous rims from wheel-made cook-pots (406 and 548); a rod handle, yellow-green glaze, stabbed-impressed on spine, 12th–16th century (431); and 1 sherd with wavy-line comb decoration, ?mid 14th century.

Worked Flint

by J. POLLARD

Of 538 pieces of worked flint, around 75% came from demonstrably post-prehistoric contexts: topsoil and overburden, features associated with the destruction of the monument, and recent or natural pits. Smaller quantities of worked flint were recovered from the ditches, chamber stone holes and possible pre-mound features (Table 6).

RAW MATERIAL

The flint is of variable flaking quality, reflecting a wide range of sources. Both nodules collected from the surface of chalk areas and river or glacial gravel

pebbles were utilized. Flakes struck from pebble flint are distinguishable by their small size and the highly rolled and discoloured character of the cortex, the flint often being of a poor quality. The gravels at Whyr Farm, Winterbourne Bassett, 2.5km to the north-west of Millbarrow (Smith 1965, 85), are one potential source.

At least two flakes (from the overburden in Trench B) possess earlier, ochreous, removal scars on their dorsal surfaces. They appear to have been struck from Palaeolithic bifaces, which were probably incidentally collected along with unworked gravel pebbles. Sites producing hand-axes are known in the locality in Winterbourne Bassett (Smith 1965, 168), Hackpen Hill (Kendall 1916) and the foot of Winterbourne Monkton Down (WAM 1990).

A polished-edge knife from one of the ditches is made on a blade of high quality flint, probably from a mined source.

TECHNOLOGY

The assemblage is the product of a flake industry. Because of the relatively small size of the assemblage and the large proportion of material from derived contexts, metrical analysis has not been attempted. The classification of debitage follows that outlined by Brown (1991). Preparation flakes are defined as largely cortical pieces produced during the initial stages of core preparation; rejuvenation flakes result from attempts to prolong the use-life of a core by altering the angle and position of a striking platform or creating a new core face. Trimming flakes, struck to remove step fractured areas on the core face, are the most frequent form of rejuvenation flake in the assemblage.

Generally, core reduction appears to have been opportunistic rather than strategic. Most flakes show hard hammer characteristics, there is an absence of faceting on platforms, hinge terminations are frequent, and the intentional production of standardised flakes was clearly not desired.

Four of the five cores from the site possess features such as step fracturing and incipient cones of percussion on the striking platforms, which are consistent with poor flaking control. Such features suggest a Later Neolithic or Bronze Age date for a large percentage of the assemblage (Holgate 1988: 54–61). However, several narrow flakes and a carefully worked multi-platform core, from various contexts including the lower ditch fills, are more characteristically Earlier Neolithic.

Table 6. The flint assemblage by context

	Flakes		Preparation Flakes		Rejuvenation Flakes		Chips (<15mm)	Cores		Flaked Pieces	Shatter Fragments	Burnt	Scrapers	Knife	Polished-edge Knife	Percers	Microdentulate	Notched Flakes	Retouched Flakes	Utilized Flakes	Total
	C. B.	B.	C.	B.	C.	B.		C.	B.												
TRENCH A																					
Overburden	15	2	3		1		6			2	6							1	3		39
Overburden O.D.	4	3	2		3		1		2									1	1	1	17
Secondary silts O.D.															1(2)						1
Secondary silts I.D.													1								1
TRENCH B																					
Overburden	30	8	5	2	4		4		1	2			1								57
Secondary silts I.D.			1			1															2
Primary silts I.D.	1			1	2																4
TRENCH D																					
Topsoil	12	2	2		4		4		1	1	2							3	3	5	39
Poss. pre-mound features	18	3	9	2	5		5			3	2		1		1			3	3		52
Pits; front of monument	3		2	1	1		3											2	2		12
Chamber stone holes	13	5	9	2	12	4	3			2	3	5			1	1				1	61
Facade stone holes	2																				4
Stone destruction holes	6		2	1	5	1							1					1	1		19
Later and natural features	76	30	23	4	20	3	46		1	6	6	2	2	1				3	7	1	230
TOTAL	179	54	58	13	57	9	72		4	16	19	7	6	1	1	2	1	8	22	8	538

C. = complete; B. = broken; O.D. = Outer Ditch; I.D. = Inner Ditch

IMPLEMENTS (Figure 18)

Retouched and utilized flakes. This category incorporates a miscellaneous assemblage of edge modified pieces. Most conform to Saville's (1981, 126) class of edge-trimmed flakes, and vary from pieces with deliberate retouch to examples showing use-related damage. The character and position of retouch or use-wear are varied, though in most instances they can be defined as marginal and limited. In several instances apparently intentional secondary working may be post-depositional damage or spontaneous edge chipping produced during flaking (*cf.* Bergman *et al.* 1987, 27).

A blade from a derived context in the chamber area (context 400) possesses a distinct band of gloss along one edge. A patinated narrow flake (1133, from overburden above ODS) was modified at a later date by shallow invasive retouch along the proximal half of one side. At the distal end the flake was notched on both edges, perhaps to facilitate hafting (Figure 18: 2).

Notched flakes. Eight flakes show areas of abrupt concave retouch between 5–25mm in diameter. A small blade fragment (5847) from a late context (560) in Trench D was notched on one side at the distal end, and the opposing edge possesses a band of carefully executed marginal secondary working (Figure 18: 4). The character of the blade suggests a Mesolithic date. A thermal piece with an area of wide concave retouch would be classified as a hollow scraper.

Scrapers. Of the four scrapers from the chamber area, two are on thermally fractured pieces (one of which has a denticulated edge), and one is a short end variety (Richards 1990; class 4), the fourth example being broken. A side scraper on a tertiary flake (Richards' class 6) was recovered from the secondary fills of the inner ditch in Trench A. A particularly elaborate example (2003, from the overburden above IDN in Trench B) is of ovate form with regular invasive retouch around most of its edge. The platform and bulb of percussion were removed by limited retouch on the ventral face (Figure 18: 7).

Piercers. Both examples utilized the naturally pointed distal ends of flakes, which were accentuated by abrupt retouch. The one illustrated in Figure 18: 3 (4253) came from the lower fill of possible pre-mound feature 401 in Trench D.

Knife. An unstratified find (4035) from ?natural feature 402 in Trench D, was made on a non-cortical flake retouched on both edges and part of the distal end. One edge is extensively worn and polished through use (Figure 18: 5).

Microdenticulate (4600, from chamber stone hole 460 in Trench D). One edge has been modified by a series of shallow denticulations (*c.* 11 per cm). The other side shows extensive micro-flaking and smoothing, produced through use (Figure 18: 6).

Polished-edge knife. The proximal (1136: Figure 18: 1b and 1d) and distal (1104: Figure 18: 1a and 1c) halves came from the secondary silts (109 and 114, respectively) of Outer Ditch South in Trench A. In its original form the implement was probably slightly in excess of 100mm in length, 23mm in maximum breadth and 5mm in maximum thickness. It is plano-convex in section, of parallel sided form, gently curved in both plan and profile, with carefully rounded proximal and distal ends. The break surface to the proximal half of the knife is patinated, indicating that the implement was broken in antiquity. The distal section of the knife was damaged during excavation resulting in the loss of the medial portion.

The knife has been produced on a large blade, the removal of which was carried down the entire length of the core, as evidenced by the presence of an area of opposed platform on the distal end. The main platform is carefully faceted, and was ground or abraded on its dorsal edge (diagonally hatched areas in Figure 18: 1c–d), probably after striking, in order to remove a slight lip. A number of features, such as the diffuse bulb of percussion and the absence of marked rippling on the ventral surface, suggest that the blade was soft-hammer struck. However, similar features can result when a flint hammerstone with a thick cortical surface is used (Bergman, in Roberts 1986, 236).

Regular shallow pressure-flaking extends over most of the dorsal surface, and is particularly extensive at the distal end where a greater degree of thinning was probably desired. Steeper, more marginal, retouch was employed in producing the rounded profiles to both ends. With the exception of a small area of minor (probably accidental) chipping at the dorsal extremity, the ventral surface was left unretouched. The edges of the implement were bifacially ground and polished along most of their lengths subsequent to retouching (black areas in

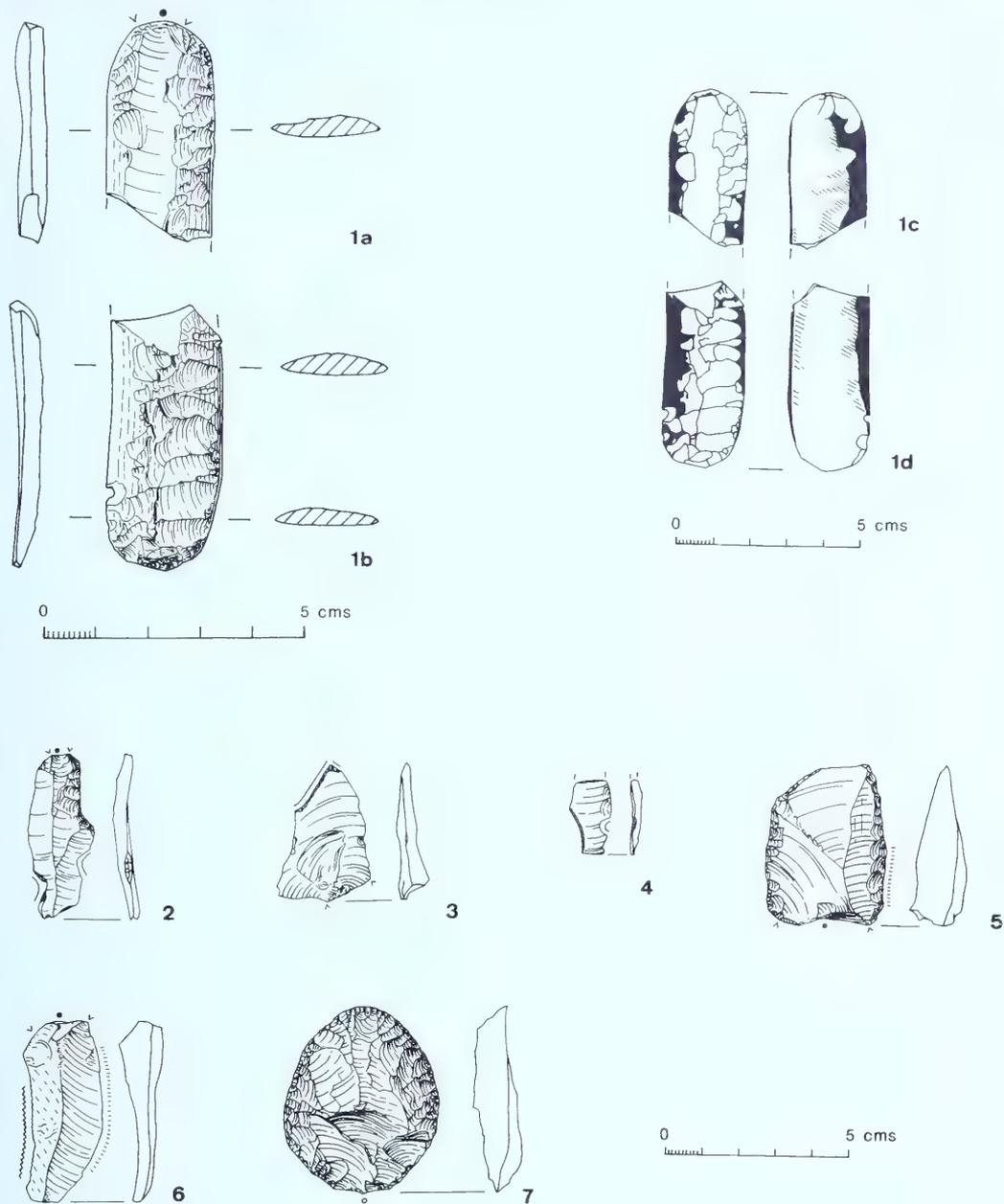


Figure 18. Worked flint. 1: plano-convex flint knife from Outer Ditch South (on 1c-d polished areas are shown black, and diagonal hatching indicates grinding); 2: retouched flake from overburden above Outer Ditch South; 3: piercer from lower fill of possible pre-mound feature 401, Trench D; 4: notched flake from later feature 560, Trench D; 5: unstratified knife from Trench D; 6: microdenticulate from stonehole 460, Trench D; 7: scraper from overburden above Inner Ditch North. (For full descriptions of contexts, see text.) * = Point of impact; vv marks extent of platform

Figure 18: 1c–1d). The grinding is most extensive on the left-hand side of the knife (as viewed from the dorsal side), suggesting this was intended as the principal cutting edge. There is also a pronounced bevelling to the left edge on the ventral surface.

Traces of the initial grinding are visible as a series of fine parallel striations (up to 3mm in length) on the ventral face. The initial coarse grinding, which was probably executed using a sarsen or sandstone block, and the final polishing of the edges, were carried out at an oblique angle to the longitudinal axis of the knife. There is no indication of use-related damage on the edges, and the knife may have been in mint condition when deposited.

There are no obvious local parallels for the knife. Later Neolithic polished-edge flake tools are not uncommon from the Avebury area, but of different form, for example from Windmill Hill, the West Kennet Avenue 'occupation' site (Smith 1965, 106, 238–41) and from the secondary deposits in the West Kennet long barrow (Piggott 1962, 48). The ceramic associations of these implements appear to be exclusively with Peterborough and Grooved wares (Piggott 1954; Wainwright and Longworth 1971, 255).

The closest analogies for the Millbarrow knife are to be found not with polished discoidal, sub-rectangular or triangular types (made on flake blanks), but amongst a range of knives produced on blades, which have specific associations with early individual burials (Kinnes 1979). Such knives were made from carefully struck blades up to 110mm in length, either left unretouched or pressure-flaked (generally on the dorsal face only), and ground and polished on their longitudinal edges or over the entire dorsal surface.

The distribution of this type is largely northern, with specific concentrations in eastern Yorkshire and the Derbyshire Peak District (Manby 1974, fig. 35). Examples are also known from western and north-eastern Scotland (Evans 1897, 338; Henshall 1963, 264, 285), Wales (Boyd Dawkins 1901) and southern England (Bradley 1992; Dunning and Wheeler 1931, 196; Evans 1897, 339; Grimes 1960, fig. 64), but the writer is unaware of other examples from Wiltshire. Polished-edge blade knives form one element in a range of elaborate artefacts of the 'Macehead Complex' (Manby 1974), indirectly related to late Peterborough wares (see Appendix 2).

DISCUSSION

Although the flint assemblage from Millbarrow is predominantly derived from secondary, post-

prehistoric contexts, three points can be stressed. First, a little material can be assigned to the Earlier Neolithic. It could belong to pre-tomb activity or to the first phases of the monument.

Secondly, however, the technological character of the assemblage and the relative absence of worked flint from demonstrably earlier contexts, such as the lower ditch fills, suggest that much of the material belongs to a phase of later Neolithic or Bronze Age activity on the site.

Other excavated long mounds in the Avebury region have also produced evidence for flint working in secondary contexts. A pit backfilled with debitage, cut into the proximal end of the mound at South Street (Ashbee *et al.* 1979, 272), and similar concentrations of lithics at the proximal ('business') ends of earthen barrows at Horslip and Beckhampton Road (Ashbee *et al.* 1979, 221, 250) might be compared with the formal, structured, deposits from the secondary chamber fills at West Kennet (Piggott 1962; Thomas and Whittle 1986). Over 60 pieces of worked flint, including a microdenticulate, came from the chamber stone holes at Millbarrow, and might have formed one element in a series of secondary deposits comparable in character.

In other instances the relationship between earlier mounds and flint working suggests less formality. Recent excavations at the Easton Down long barrow, Bishops Cannings (Whittle *et al.* 1993), have shown that the monument provided a focus for an intensive Bronze Age phase of knapping, presumably exploiting flint nodules eroded from the mound of the barrow (see also Hemp Knoll for similar activity: Robertson-Mackay 1980, 152–9).

Finally, the polished-edge blade knife from the outer ditch would seem, on the basis of its exceptional character and the pristine condition of its edges, to have been deliberately deposited rather than lost. Its position high in the secondary silts is perhaps at odds with the suggested dating, and the two pieces could well be in a derived position.

Millbarrow Excavations: Discussion

The main aim of the excavations at Millbarrow was to contribute information about the date and nature of Neolithic activity north of the Windmill Hill enclosure to a project concerned with the region as a whole. That aim has been met by the results. The regional project continues, and full discussion will be more appropriate in later reports. Some aspects

Table 7. Outline summary of phases in the Neolithic of the Avebury area

Phase	BP uncal range	CAL BC range at 1 σ	Environment and subsistence	Settlement	Monuments
A	5450–5150	4354/4245–3999/3826	Woodland. First clearances?	?	?
B	5150–4850	3999/3826–3698/3542	Scattered small clearances in woodland. Animal husbandry	Dispersed. Small pit groups	Simple barrows. Shrines?
C	4850–4550	3698/3542–3361/3109	More clearances, in mosaic pattern. Some plough cultivation and cereals. Animal husbandry; some herding beyond area?	Dispersed, with ? local nucleation. Small sites, pit groups, lithic scatters	More elaborate and larger barrows (? lineages). Sacred enclosures towards end of C
D	4550–4250	3361/3109–2916/2782	Trend to more scrub or woodland again	Uncertain. Density as in A and B?	? Simple circles ? Start of West Kennet Avenue
E	4250–3950	2916/2782–2564/2457	Renewed clearances	Small sites and pit groups. Larger lithic scatters	Development of Avebury. Sanctuary. Silbury at E/F border.
F	3950–3650	2564/2457–2133/1959	Trend to open country, though timber still available, Cultivation. Pigs.	More permanent or marked habitation areas?	Palisade enclosures. Beaker burials

will be emphasised here, and a wider view has been presented in Whittle (1993); other aspects of the local long barrow sequence are discussed in Whittle *et al.* (1993). A secondary aim of the excavations was to explore the evidence remaining for the barrow itself. Specific discussion is appropriate here; results were suggestive and important, but not conclusive.

Sequence and setting

Table 7 (from Whittle 1993) sets out the broader sequence of activity in the region. Activity at Millbarrow dates to local Phase C and into the beginning of Phase D, in the mid to later fourth millennium BC. It was roughly coeval with pre-enclosure and enclosure phases at Windmill Hill, and with other sites. Molluscan and soil-analyses presented above suggest both clearance and soil disturbance, and the features from Trench D allow the possibility of – but do not prove – a small pre-barrow occupation consisting of post holes, pits with animal bone and human bone, and small amounts of pottery and flint. There is no indication that such activity dates further back, into local Phase B. It should be noted that the molluscan analyses come from the outer ditches, which may have followed (if only by a little) the inner ditches.

The suggested occupation appears to have been small. It is not possible precisely to reconstruct the scale of clearance from the molluscan evidence, though the indications of open conditions were greater at Millbarrow than in the pre-bank soil and primary ditch fills at Windmill Hill (information from Mark Fishpool). The same contrast exists south of Windmill Hill in the evidence from the South Street long barrow (Ashbee *et al.* 1979). The Millbarrow evidence cannot be used to tell what was going on over the broader expanse of the Lower Chalk north of Windmill Hill, but it does establish the presence of activity similar to that documented elsewhere in the local area. Comparisons with other sites in the region can also be seen in the later stages of the Millbarrow sequence, in local Phases D and E–F, in which the molluscan evidence indicates first more closed conditions and then considerable re-opening. A similar sequence has been documented south of Windmill Hill at the South Street long barrow (Ashbee *et al.* 1979), and within this project at the Easton Down long barrow on downland south of the Kennet (Whittle *et al.* 1993). The environmental evidence from Millbarrow for Phases E–F, in the Late Neolithic–Early Bronze Age

period, is reinforced by the evidence a little to the west for burials under sarsens, one group at least definitely accompanied by Beakers (Hillier 1854; Davies and Thurnam 1865; Annable and Simpson 1964).

The Millbarrow evidence suggests a sequence similar to that seen elsewhere in the region. By Phase C, there was clearance on the Lower Chalk north of Windmill Hill. There was limited occupation, perhaps part of a pattern of dispersed (and possibly mobile), low-density settlement. Beyond the Avebury area to the north-east, similar evidence can be found at Wayland's Smithy (Whittle 1991) and Park Farm, Lambourn (Richards 1991). Immediately to the east on the Marlborough Downs a rather similar situation may also have existed (Clea 1992). One occupation at which burials – more strictly deposition of human remains – were made was subsequently selected for the site of an impressive built monument, which was refurbished at least once. The Millbarrow site may therefore have been special well before the monument existed. After a period of land-use in the middle of the Neolithic (local Phase D) which is poorly understood (Evans 1990), the monument was again in open conditions, and one may speculate that it was some kind of focus in the Late Neolithic–Early Bronze Age local landscape.

Ways must be found in the future to investigate the broader expanse of the Lower Chalk to the north. Small occupations would be very hard to find in the soils in question. A possible monument such as the stone circle at Winterbourne Bassett (Burl 1979, 237) could provide one means of approach, suggesting as it does a greater presence by the Late Neolithic. Former dewponds on the Lower Chalk might provide deposits going back into prehistory, and deserve to be investigated (information from John Evans). In these ways it may in due course prove possible further to investigate the northern part of the Avebury area in the Neolithic.

The monument sequence

An archaeological sequence for the monument can be suggested. To a pre-monument phase, *Phase 1*, belong post holes and pits. Post holes might be part of a structure. The pits included human remains. Pit 548 was large. Although much disturbed, it might bear comparison with other large Earlier Neolithic pits with distinctive fills, such as at Coneybury near Stonehenge (Richards 1990), Rowden on the south Dorset Ridgeway (Woodward

1991) and Roughridge, Bishops Cannings. The ensemble may represent part of a small occupation established before the construction of the monument. To the first phase of the monument, *Phase 2*, can be assigned the inner ditches, all or part of the terminal chamber area, and perhaps the facade. The monument was by local standards substantial, and human remains from the chamber area presumably reflect depositions made in this phase. After the primary fill had formed in the ditches, a turf line became established. The mound then decayed rapidly or was deliberately backfilled into the ditches. After an interval which the radiocarbon dates suggest was brief, the monument was redefined in *Phase 3*. The outer ditches were dug and the kerb was added to the mound, the stones being set on the edge of the former inner ditches. (A variation mooted above is to envisage the outer ditches being added sooner to enhance the monument, specifically being dug when the inner ditches had stabilised.) It is not clear whether new elements were added to the chamber area. Peterborough pottery from the chamber area may belong to this phase, though it is not clear whether any fresh burials were deposited. The outer ditches were virtually full by the end of the Neolithic period or the beginning of the Early Bronze Age; and the soil over the secondary fill of the inner ditches could belong here too.

Finally, to *Phase 4*, at an uncertain date, belong the cultivation layers over the inner ditches (150 and 202), which partially truncated the top of the silting. Further cultivation then produced the uppermost overburden over both pairs of ditches and the levelling of the monument.

The form of the monument

Millbarrow was a substantial monument, and had more than one phase. The likely size of the monument is consistent with the field measurements of Aubrey and Stukeley. The excavations suggested a terminal chamber of some kind, with a possible facade and kerb. A terminal chamber is consistent with the records of Aubrey, Stukeley and Thurnam, and facade and kerb with those of Aubrey and Stukeley. However, both the precise form of the chamber and the existence of kerb and facade are problematic. The holes dug to receive even quite substantial stone uprights could be modest, as seen in the West Kennet long barrow (Piggott 1962, figs. 4 and 6). The features at Millbarrow were at best disturbed, and some may be stone destruction holes

rather than stone holes. The validity of antiquarian evidence may be questioned (Ucko *et al.* 1991); observation, expectation and interpretation could become hopelessly entangled. In the case of long barrows, there appears to have been a set of features which the antiquaries expected the monuments to have had (see Piggott 1962, pl. 1, illustrating Aubrey's sketch of three very similar monuments). There is therefore no need to insist on the correctness of the detailed interpretations of the monument offered earlier. A terminal chamber could have been simple or transepted, and facade and kerb may or may not have existed. My conclusion is that facade and kerb did exist, and can in fact be fitted into the possible sequence of the monument.

The general nature of the monument

Despite the obvious uncertainties of sequence and form, there are several significant aspects of the monument. The barrow was substantial and it may have been architecturally elaborate. It has been dated comparatively late, to local Phase C overlapping with Phase D. This aligns it with other terminally chambered Cotswold monuments (Thomas 1988). The presence of Peterborough pottery is another, though indirect, indicator of a late date; that is to say, the monument was late enough still to have been of interest during the currency of that style. Imported stone and collective burials are further points of comparison with monuments like the West Kennet long barrow.

The human bones were both fragmentary and from largely disturbed contexts. Enough has survived, however, to suggest a full range of body parts, and the presence of both sexes and of adults and non-adults, features which indicate that there would perhaps have been rites at Millbarrow of the kind found at other barrows. In view of disturbance it is unwise to draw further conclusions.

There are few other barrows in southern Britain where a sequence of ditches can be shown. The list includes Wayland's Smithy and Radley, Oxfordshire (Whittle 1991; Bradley 1992), Amesbury 42 and Netheravon Brake, Wiltshire (Richards 1990; Julian Richards, pers. comm.), and Wor Barrow, Dorset (Barrett *et al.* 1991), and from further afield Skendleby 2, Lincolnshire (Evans and Simpson 1991), perhaps West Rudham, Norfolk (Kinnes 1992 and references), and Kilham and East Heselton, North Yorkshire (Kinnes 1992 and references). In the case of Wayland's Smithy, the

ditches of barrow I had already silted up substantially by natural processes before barrow II was built over its predecessor. At Millbarrow the circumstances of replacement may have been complex. The secondary fill of the inner ditches is unusual. Either the barrow was allowed to lapse very rapidly, or there may be an element of deliberate backfill. Is then replacement an act of destruction (*cf.* Whittle 1991, 97) or an enhancement?

At Millbarrow, the sequence suggests continuity of use. There is also circumstantial evidence for blocking (above, p. 3). The Peterborough pottery might come from continued use of the chambers, from a gradually accumulated blocking (*cf.* Thomas and Whittle 1986), or from blocking put in much later (*cf.* Piggott 1962). The evidence from Millbarrow is not sufficient to resolve these questions. The plano-convex knife suggests continued interest in the site, but its original circumstances of deposition are unclear. Nonetheless the evidence for both replacement and blocking suggests that the barrow was not just a large and elaborate construction, but a potent monument and an enduring focus through many generations.

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Appendix 1. Basic Soil Micromorphological Descriptions

by R.I. MACPHAIL

Each thin section studied under the petrological microscope is described according to Bullock *et al.* (1985); PPL (plane polarised light), XPL (crossed polarised light), OIL (oblique incident light). Coarse/fine (C:F) limit is set at 10 μ m.

Sample H

Sequence: upper ploughsoil; lower ploughsoil; narrow patchy earthworm worked chalk soil band; truncated A(h) with subsoil B horizon.

Structure: medium prisms of buried soil, with fine subangular blocky in ploughsoil affected mound.

Upper ploughsoil

Porosity: 40%, very dominant very coarse packing fissures; intrapedal, dominant fine channels and open vughs. *Mineral:* C:F, 55:45. *Coarse:* few stone size weathered chalk; dominant silt size (very few sand) quartz, common biogenic calcite; very few red burned (?) nodules. *Fine:* a) common (partially decalcified silt loam mixture) brown to greyish brown, dusty, low to moderately high birefringence (XPL), brown and greyish brown (OIL); b) common (calcareous soil) grey, dusty (PPL), high birefringence, brownish grey (OIL). *Organic Coarse:* occasional charcoal, and root fragments. *Fine:* a) abundant amorphous and charred material; b) rare to occasional organic matter. *Groundmass:* porphyric, speckled and patchily crystallitic (a), crystallitic (b). *Pedofeatures:* *Depletion:* general weak decalcification. *Patination of flint:* *Fabric:* heterogeneous, many passage features. *Excrements:* strong biological fabric, with many mammilated excrements.

Lower ploughsoil

Porosity: 20–30%, dominant fine to medium channels and vughs, some closed. *Mineral:* C:F, 60:40. *Coarse:* very dominant quartz silt. Very few glauconite and mica. *Fine:* a) dominant (turf Ah horizon) dark brown, very dusty (PPL), low birefringence (XPL), dark brown (OIL); b) common calcareous soil, as above; c) few fragments of subsoil (see below). *Organic Coarse:* a) occasional coarse charcoal. *Fine:* abundant charred and amorphous organic matter. *Groundmass:* close porphyric, speckled b-fabric. *Pedofeatures:* *Textural:* abundant very dusty thick coatings and infills, and intercalations (plasma separations). *Amorphous:* many fine diffuse iron and manganese nodules. *Fabric:* strong biological fabric mixing of decalcified humic turf (with contemporary (Neo?) biological mixing with non-humic subsoil) and calcareous soil. *Excrements:* strongly affected by mainly recent earthworm activity.

Chalk soil band

Mineral: *Fine:* very dominant (chalk subsoil) pale dusty grey (PPL), very high birefringence (XPL), grey (OIL); common mixed decalcified soil. *Organic Coarse:* occasional charcoal. *Fine:* rare to occasional organic matter. *Groundmass:* porphyric, crystallitic b-fabric. *Fabric:* strong biological mixing. *Excrements:* many mammilated excrements.

Truncated A(h) and subsoil B horizon

Porosity: 30%, common coarse moderately accommodated planes, common fine channels and sometimes closed vughs. *Mineral*: *Coarse*: very dominant silt size quartz, very few sand. *Fine*: a) very dominant (B horizon) pale yellowish brown, dusty (PPL), poorly birefringent (XPL), darkish brown (OIL); very few Ah and common to dominant (at base) calcareous soil. *Organic*: *Coarse*: rare to occasional charcoal. *Fine*: occasional to many, mainly amorphous with few charred organic matter. *Groundmass*: porphyric, speckled and weakly grano-striate b-fabric. *Pedofeatures*: *Textural*: many intercalations and dusty clay void coatings, sometimes coating biological fabrics. *Amorphous*: many fine iron and manganese nodules. *Fabric*: occasional passage feature in decalcified, but abundant passage features associated with chalk soil mixing from both above and below.

Sample A

Structure: coarse subangular blocky/prisms junction as at the boundary of the turf and chalk band of thin section G. *Mineral etc.*: a strong mixture of B/C horizon and probable relic decalcified turf soil. Turf has same organic and textural features as in H.

Sample E

(Heterogeneous and weathered junction with underlying primary chalky silt.)

Structure: massive with pseudoprisms, channel microstructure. *Porosity*: 25%, very dominant fine and medium channels and associated vughs; also present in top part of primary silt. *Mineral*: *Coarse*: as turf of F. *Fine*: darkish brown (PPL), low birefringence (XPL), darkish brown (OIL). Frequent calcareous soil areas included. *Organic*: *Coarse*: rare charcoal. *Fine*: abundant amorphous and charred organic matter. *Groundmass*: as F. *Pedofeatures*: *Textural*: very abundant thin very dusty void coatings, becoming calcitic towards top of turf. *Fabric*: strongly homogeneous except for weathering lower boundary, and inclusion of chalky soil fallen in from above in the upper part of the soil and possibly earthworm worked into the fabric; as seen in passage features.

(The overlying chalky silting also brought decalcified soil along.)

Sample F

Lower chalky layer

Structure: weakly massive. *Porosity*: 25–30%, very dominant closed vughs. *Mineral*: *Coarse*: dominant

silt size quartz, common silt size aragonite and calcite (fossils etc.). *Fine*: grey (PPL), high birefringence (XPL), whitish (OIL). (Frequent inclusion of silty brown soil from above.) *Organic*: rare to absent organic matter. *Groundmass*: porphyric, crystallitic b-fabric. *Pedofeatures*: *Textural*: a) many colloidal micritic chalky void coatings and infills; b) occasional dusty clay void coatings. *Crystalline*: abundant micritic cementation. *Fabric*: moderate heterogeneity. *Excrements*: rare to occasional possible fine organo-mineral Enchytraeid excrements in porosity and related to brown soil infills.

Thin turf lens

Structure: massive with underlying prismatic structure, spongy microstructure. *Porosity*: 30%, very dominant medium channels and partially and few closed medium smooth wall vughs. *Mineral*: C:F, 50:50. *Coarse*: a) very dominant silt size quartz (easily comes from the decalcification of the impure chalk substrate in the earlier Holocene), very few sand size flint. *Fine*: very dominant (decalcified silt loam) dark brownish, dusty (PPL), low birefringence (XPL), darkish brown (OIL). b) frequent (chalky) grey (PPL), high birefringence, whitish (OIL). *Organic*: *Coarse*: occasional charcoal. *Fine*: a) many to abundant amorphous (some charred) organic matter; b) occasional organic matter. *Groundmass*: a) close porphyric, speckled b-fabric; b) ditto, crystallitic b-fabric. *Pedofeatures*: *Textural*: very abundant dirty, very dusty clay, poorly birefringent void coatings. Possible very abundant intercalations. *Depletion*: possible abundant areas of moderate clay depletion (see textural). *Amorphous*: occasional sharp edge fine iron and manganese nodules. *Fabric*: heterogeneous; mixing of decalcified soil with chalky soil before inwash of dirty clay. *Excrements*: many possible relic mammilated fabrics.

Upper chalky layer

As lower chalky layer, but containing fragments of the thin turf lens.

Sample G

Structure: massive with mainly vughy microstructure. *Mineral*: C:F, 40:60. *Coarse*: frequent large to small stone size impure chalk fragments/chalky material; frequent mollusc fragments, rarely burned; very few arionid granules; common sand to silt size aragonite/calcite of mainly biogenic

origin; common silt size quartz; very few glauconite. *Fine*: a) very cloudy grey to darkish grey (micritic weakly humic lens) (PPL), very high birefringent (XPL), whitish grey (OIL); b) few pale greyish brown (PPL), high birefringence, greyish brown (OIL). *Organic*: *Coarse*: rare charcoal, becoming occasional to many in 'humic' lens. *Fine*: a) rare to slightly less rare organic matter in lens, with patches of occasional amorphous organic matter, with patches of fine charcoal; b) occasional to many fine to very fine amorphous organic matter fragments; rare void coatings of amorphous organic matter. *Groundmass*: porphyric, crystallitic b-fabric. *Pedofeatures*: *Textural*: very abundant colloidal chalk void coatings and infills, fractionally more humic in the 'humic' lens. *Fabric*: strongly homogeneous except slightly more organic matter in the 'humic' lens.

Sample C

Structure: massive with closed vughy microstructure. *Porosity*: 30%, very dominant medium closed vughs and frequent very coarse vertical channels. *Mineral*: C:F, 45:55. *Coarse*: very dominant silt size quartz; few glauconite; few mollusc fragments; frequent weathered small stone size chalk. *Fine*: darkish grey, weakly speckled (PPL), high birefringence (XPL), grey (OIL). *Organic*: *Coarse*: rare charcoal. *Fine*: occasional to many amorphous organic and charred organic matter. *Groundmass*: porphyric, crystallitic b-fabric. *Pedofeatures*: very abundant intercalations and colloidal chalk soil void coatings and infills, which may also be slightly more humic. *Depletion*: weak decalcification of chalk clasts. *Fabric*: strongly homogeneous.

Sample D

Structure: massive with closed vughy microstructure. *Porosity*: 30%, very dominant closed medium vughs, and frequent very coarse channels. *Mineral*: as C, with common small to large chalk clasts, and few mollusc fragments, and very few probable earthworm gut crystals and arionid granules. *Fine*: darkish grey (PPL), moderately high birefringence (XPL), darkish grey (OIL). *Organic*: *Coarse*: rare charcoal. *Fine*: occasional mainly amorphous organic matter (very fine charcoal in textural features). *Groundmass*: as C. *Pedofeatures*: *Textural*: abundant primary intercalations and 'clean' chalky coatings; abundant secondary light brownish grey dusty chalky void coatings. *Depletion*: whole fine

fabric weakly decalcified material. *Fabric*: homogeneous. *Excements*: many mammilated earthworm excrements, predating second textural features.

Sample B

Structure: massive with vughy and channel microstructure.

Context 108?

Lowest half cm of slide; as 'grey soil above', with mollusc fragments, and dusty clay coatings.

Context 114 (turf)

Porosity: 30–35%, fine to medium interconnected partially closed vughs and channels. *Mineral*: C:F, 60:40. *Coarse*: few weathered chalk clasts; very dominant quartz silt; very few weathered arionid granules and biogenic calcite. *Fine*: a) dominant (decalcified silt loam) brownish grey/greyish brown, dusty (PPL), low birefringence (XPL), greyish brown to brown (OIL); b) frequent (earthworm introduced chalky brown soil) light brownish grey, dusty (PPL), highly birefringent (XPL), brownish grey (OIL). *Organic*: *Coarse*: rare charcoal. *Fine*: many to abundant amorphous and charred organic matter. *Groundmass*: close porphyric, speckled b-fabric. *Pedofeatures*: *Textural*: many thin dusty clay void coatings and probably later colloidal dusty chalk coatings. *Crystalline*: very abundant calcitic hypocoatings. *Amorphous*: many fine iron and manganese impregnative nodules of decalcified fine fabric. *Fabric*: strongly heterogeneous soil through biological mixing.

(grey soil above)

Porosity: 35%. *Mineral*: C:F, 50:50. *Coarse*: common medium to small stone size rounded chalk clasts; few weathering biogenic calcite; dominant quartz silt. *Fine*: a) very dominant dark greyish, greyish brown, dusty (PPL), moderately high birefringence (XPL), grey, brownish grey (OIL); b) few inclusions of 114-like material. *Organic*: *Coarse*: rare charcoal. *Fine*: patchy, occasional to abundant. *Groundmass*: porphyric, crystallitic b-fabric. *Pedofeatures*: abundant dusty calcitic intercalations and void coatings and infills. *Depletion*: many weak decalcification of calcite fragments. *Crystalline*: occasional calcitic hypocoatings (on decalcified inclusions). *Amorphous*: many diffuse iron manganese impregnations. *Fabric*: strongly heterogeneous; many faunal passage features.

Appendix 2. Dating, Associations and Contexts of Flint Polished-edge Blade Knives.

by J. POLLARD

The polished-edge knives from Aldro 94 and the primary grave at Linch Hill Corner, Stanton Harcourt (Grimes 1960, 154-64) seem to offer the closest parallels for the Millbarrow example (setting aside surface finds illustrated by Manby (1974, figs. 36-7)). The Linch Hill burial was also accompanied by a jet slider. Radiocarbon determinations of 4520 ± 90 BP (HAR-5587), and 4120 ± 60 BP (BM-2707) and 3860 ± 50 BP (BM-2708) have been obtained from inhumations at Whitegrounds, Burythorpe (Brewster 1984), and Barrow Hills, Radley (Bradley 1992), respectively; both burials produced sliders and the latter a polished-edge knife in addition. There is some ambiguity over the Barrow Hills grave dates, which are consistently

several centuries later than those from primary contexts in the barrow ditch, leading the excavator to suggest that the grave dates are in fact too young (Bradley 1992, 138). A suggested central date for jet sliders and polished-edge blade knives of around 3000BC can be proposed. However, it should be noted that the Millbarrow knife is unique in its local context, and cross-regional dating may obscure independent currencies of use for particular artefact forms.

With the exception of the example from Aldro 94 (Mortimer 1905, 82), all the knives listed in Table 8 can be assigned to stage D, as outlined by Kinnes (1979), and have direct associations with specialized items such as Seamer/Duggleby type axes and adzes, lozenge arrowheads, boar-tusk blades, antler maceheads and jet sliders. Sherds from a Mortlake bowl were found at Gop Cave, Prestatyn, though it is difficult to ascertain if these formed a contemporary deposit with the knife and sliders (Boyd Dawkins 1901). A miniature vessel of

Table 8. Contexts and associations of polished-edge blade knives

Site/Context	Manby Classification	Kinnes Stage	Seamer/Duggleby axes and adzes	Lozenge arrowheads	Boar-tusk blades	Antler mace-heads	Jet sliders	Other knives	Misc. flint	Pottery	Principal Ref.
Burials											
Aldro 94	4	C	-	-	-	-	-	-	-	Towthorpe	Kinnes 1979
Aldro C75	5	D	-	-	-	-	-	*	*	-	Kinnes 1979
Five Knolls	5	D	-	-	-	-	-	-	-	-	Kinnes 1979
Liff's Low	5	D	2	2	2	1	-	-	*	?Mortlake	Kinnes 1979
Linch Hill	4	D	-	-	-	-	1	-	-	-	Kinnes 1979
Barrow Hills	5	D	-	1	-	-	1	-	-	-	Bradley 1992
Funerary: not directly associated with burials											
Ayton E. Field	3	D	4	5	2	1	-	*	*	-	Kinnes 1979
Camster	4	-	-	-	-	-	-	-	*	-	Henshall 1963
Gop Cave	3	D	-	-	-	-	2	-	-	Mortlake	Boyd Dawkins 1901
Millbarrow	4	-	-	-	-	-	-	-	-	-	This report
Ormiegall	4	-	-	-	-	-	-	-	*	-	Henshall 1963
Settlements											
Bolby Moor	3	-	-	-	-	-	1	*	*	Peterborough	Manby 1974
Normanby Park	4	-	-	-	-	-	-	-	*	Peterborough	Manby 1974

Mortlake affinities accompanied the burial from Liff's Low, and a Towthorpe bowl was directly associated with the burial deposit at Aldro 94. Manby (1974, 95) refers to unpublished polished-edge blade knives from Peterborough ware occupation sites at Boltby Moor, North Yorkshire, and Normanby Park, Lincolnshire.

Polished-edge blade knives from funerary contexts appear to occur exclusively with adult inhumations (Kinnes 1979). Sexing is available for only a small percentage of these burials, but the inhumations from Linch Hill, Barrow Hills and Five Knolls (Dunning and Wheeler 1931) were all female. However, it should be noted that at the two former sites jet sliders had both male and female associations, which could indicate that the choice of grave-goods was not always gender-related.

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Investigation of Tree-damaged Barrows on King Barrow Ridge and Luxenborough Plantation, Amesbury

by ROSAMUND M.J. CLEAL and MICHAEL J. ALLEN

with contributions by

JANET EGERTON, CHRISTINE FITZGERALD, PHILIP HARDING, FRANCES HEALY,
R.G. SCAIFE and S.F. WYLES

Following the uprooting of large numbers of trees during the storms of October 1987 and January 1990, considerable damage was sustained to the barrow cemetery on King Barrow Ridge, near Stonehenge, and barrows in nearby Luxenborough Plantation. Recording of exposed archaeological deposits by Wessex Archaeology revealed that the barrows were constructed of stacks of turf and soil. Struck flints comparable with the known composition of the surrounding topsoil scatter and pottery of Peterborough Ware, Grooved Ware and Beaker affinity were recovered. These assemblages are compared with those from previous work on the Ridge. The protected nature of well preserved barrows has meant that many potential buried soils have not been accessible for detailed environmental analysis. Further, what limited molluscan analyses do exist are often confined to spot samples from various contexts and single samples of buried soils. The opportunity to examine the impressive barrows on King Barrow Ridge was therefore unprecedented and detailed analysis of the molluscan assemblages has demonstrated both environmental change and spatial variation in land use during the early Bronze Age.

INTRODUCTION

King Barrow Ridge is a low plateau lying approximately 2km west of Amesbury and less than 1km east of Stonehenge (Figure 1). The most striking aspect of the Ridge itself is undoubtedly its western boundary which overlooks Stonehenge Bottom. Luxenborough Plantation is situated on the western flank of the Ridge, the land falling away sharply.

The Old and New King Barrows were noted by Hoare, who illustrated them as two groups of seven barrows and commented that 'In the eye of the antiquary, they are much disfigured by the clumps of Scotch firs planted on them, though at the same time secured from the researches of his spade' (Hoare 1812/1975, 157). By the 1980s the barrows were not only crowned with trees, but also surrounded by King Barrow Wood, largely beech; the Old King Barrows lie partly within a yew wood. Barrows Amesbury G26-G32 (inclusive) comprise the New King Barrows (Figure 1), and Amesbury G33, G34, G35, G36 and G37, the surviving Old King Barrows. That the barrow cemetery was formerly more extensive is demonstrated by the recognition, by the Royal

Commission on the Historical Monuments of England (RCHME), of levelled barrows and ring-ditches in the fields immediately to the east and west.

In the storms of October 1987 and January 1990 damage was caused by the uprooting of trees. Following the October 1987 storm Wessex Archaeology was commissioned by the National Trust to record the archaeological deposits and recover any finds exposed in one tree-throw hole in Amesbury barrow G30. The much more extensive damage caused by the storm of 25 January 1990 which uprooted over 100 trees, led to a similar arrangement, in which Wessex Archaeology conducted a three week operation, funded by the National Trust, to record exposed archaeological deposits, recover artefacts encountered during the cleaning of the exposures, and take environmental samples. No excavation of *in situ* deposits was undertaken, although archaeological layers in tree root-balls were excavated. This applied not only to the King Barrows, but also to tree-throw holes and around barrows G18 and G19 in Luxenborough Plantation (Figure 1). All tree-throw holes were examined, both on and around the barrow

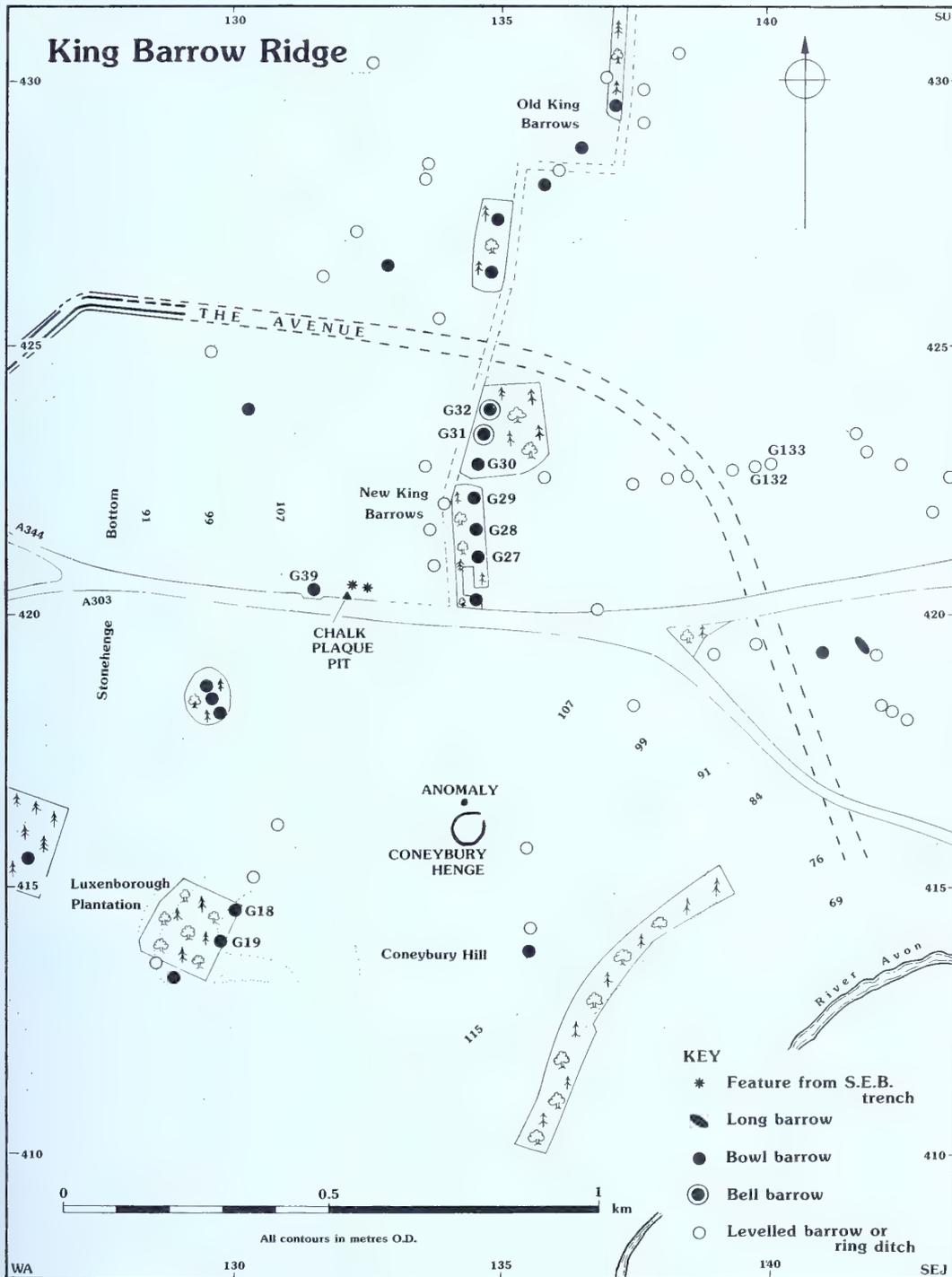


Figure 1. King Barrow Ridge, Amesbury: location plan

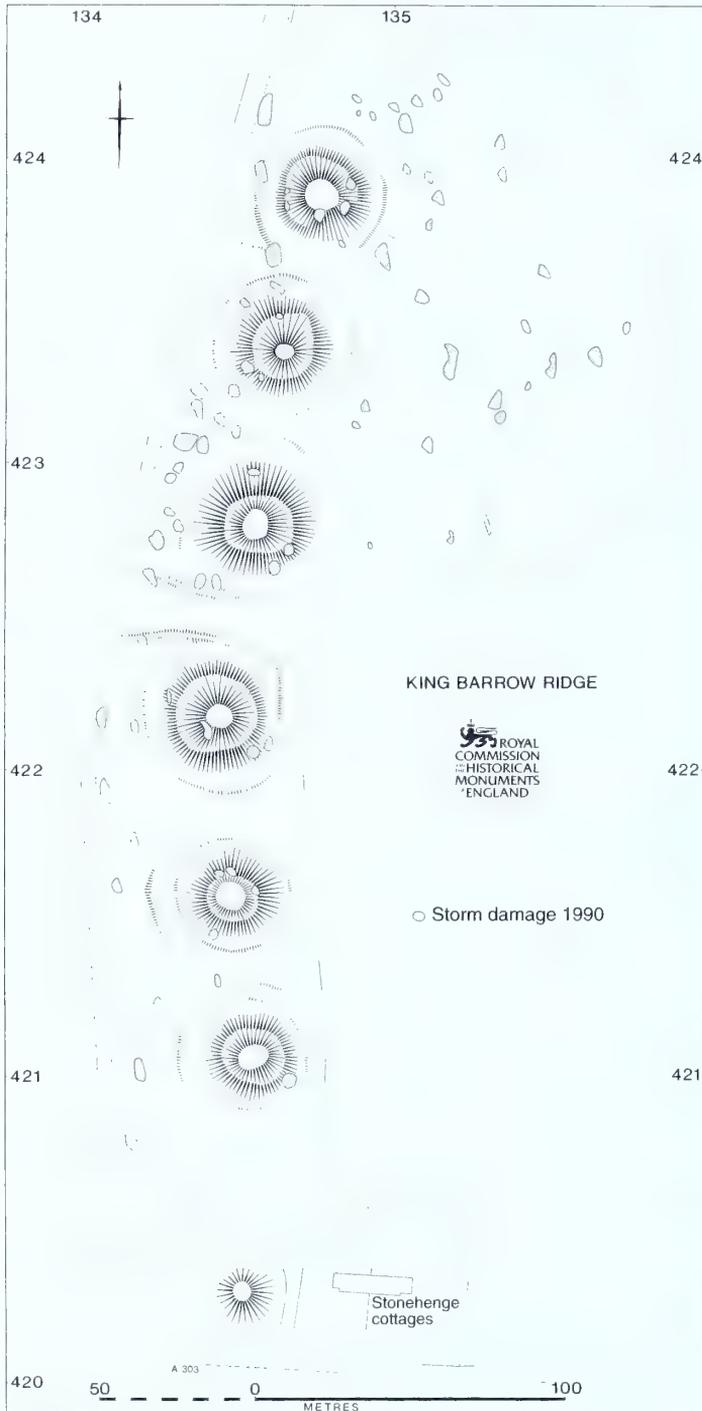


Figure 2. King Barrow Ridge: Royal Commission plan of tree-throw holes (Crown copyright, reproduced by kind permission of the Secretary and Commissioners of RCHME)

but archaeological deposits were only revealed in a minority. The National Trust also requested a survey of the tree-throw holes around the barrows from RCHME (Figure 2).

Although only a limited number of artefacts were recovered they proved to be of considerable interest. The opportunity was taken to re-examine pottery and flintwork from Ashbee's excavation of barrow G39 in 1960 (Ashbee 1981) and from work conducted by Major and Mrs H.L. Vatcher (1969) in 1968 for comparative purposes. The material, both artefactual and environmental, is also considered below against the wider background of information collected during the Stonehenge Environs Project (SEP: Richards 1990).

Evidence from the Tree-throw Holes

A total of thirty-nine tree-throw holes directly affecting nine of the barrows (including two in Luxenborough Plantation) were examined. Although the individual holes, by virtue of the accidental nature of their location and size, could only provide limited information, between them they were able to offer considerable insight into both the construction of the barrows and the environment as well as land-use existing before and during their use.

Six of the barrows produced evidence for definite or possible buried soil horizons which, in turn, provided valuable molluscan samples. The buried soils consisted of 'clayey loam' with variable, but generally sparse (under 5%), fragments of chalk and flint. That preserved under barrow G27 had a slightly silty texture. The buried soil under barrow G19 was preserved to a depth of 90mm; that under barrow G32 reached a maximum thickness of c.250mm. Few finds were recorded – a few undiagnostic flint flakes, some pieces of burnt flint and a small, undiagnostic sherd of pottery. The only datable artefact was a small sherd of Peterborough Ware from beneath barrow G31.

One possible pre-barrow feature was observed under barrow G32. A layer of chalk in a chalky wash was exposed in the base of Hole 3, probably indicating the fill of a subsoil hollow, though no edges were observed and there were no finds.

The positions of the tree-throw hollows precluded examination of ditch fills in some cases. Those that were observed had flat bottoms and steep sides. Depths varied from 0.5m (G19) to 0.8m (G31) with basal widths of 0.95m (G18) to 2.0m (G32). There

was no evidence for deliberate backfilling and little evidence for recutting, apart from a U-shaped hollow dug to within 0.2m of the base of the ditch of barrow G19 (Figure 3). This was filled with a dense concentration of flint nodules and struck flint and may represent a localised recut.

Primary fills consisted of generally clean, angular chalk rubble with fragments up to 100mm in length, overlain by finer chalk rubble in a loamy or chalky matrix. The tops of the ditches were filled with silty clay loam, though in the case of barrow G19 (Figure 3) this was overlain by a thick layer of coarser chalk rubble which extended beyond the inner lip of the ditch and probably represents erosion of the barrow's chalk cap (see below). In the central part of the ditch of barrow G32, just above the primary fill, was a narrow band of large chalk lumps and broken flint in a loamy matrix (context 421; Figure 4) which incorporated some fragments of animal bone and struck flints. It is suggested that this layer may be derived from an episode of clearance of the area surrounding the barrow.

Finds from the ditch fills were not numerous, consisting mostly of small quantities of burnt and struck flint with some animal bone and occasional sherds of pottery from the non-primary levels.

No evidence for a ditch was recovered from barrow G30, despite the occurrence of six tree-throw holes, nor is there any visible sign of one on the ground surface.

The construction of the barrows themselves seems to have been of two types. The majority were composed of a mound of light greyish brown loamy soil containing small amounts of small chalk pieces and occasional flint fragments. Patches of lighter soil were occasionally noted and all the mounds are interpreted as being built of a stack of turves and soil. The mounds were then capped with a thick layer of homogeneous chalk rubble, presumably derived from the ditches. The chalk cap of barrow G29 rested directly on bedrock in one hole (55), though the presence of a turf mound was indicated by a loamy deposit observed in the bottom of another (51). A mixed loam and chalk layer near the base of the mound of barrow G31 may represent the addition to the mound of soil collected from the disturbed area after the initial phase of construction.

Barrow 32 provided the most complete detail in six tree-throw holes (Figure 4). This survives as a large mound with an uneven flat top. The ditch is clearly visible on the ground surface as a distinct hollow. The primary mound consisted of a stepped

Amesbury Barrow G19

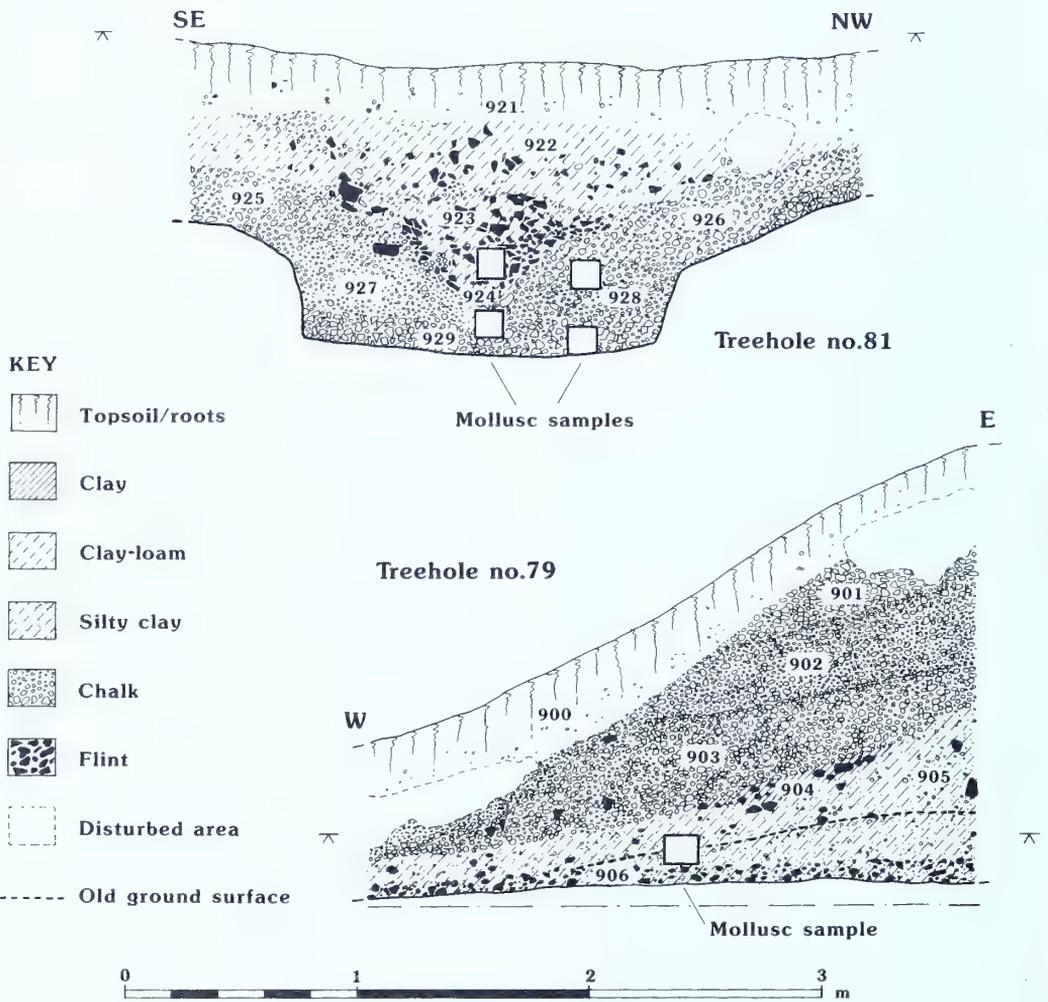
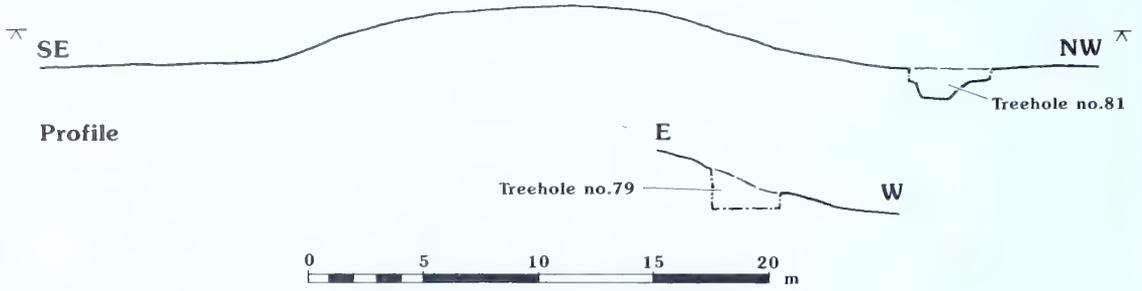


Figure 3. King Barrow Ridge: barrow G19 plan and sections

Amesbury Barrow G32

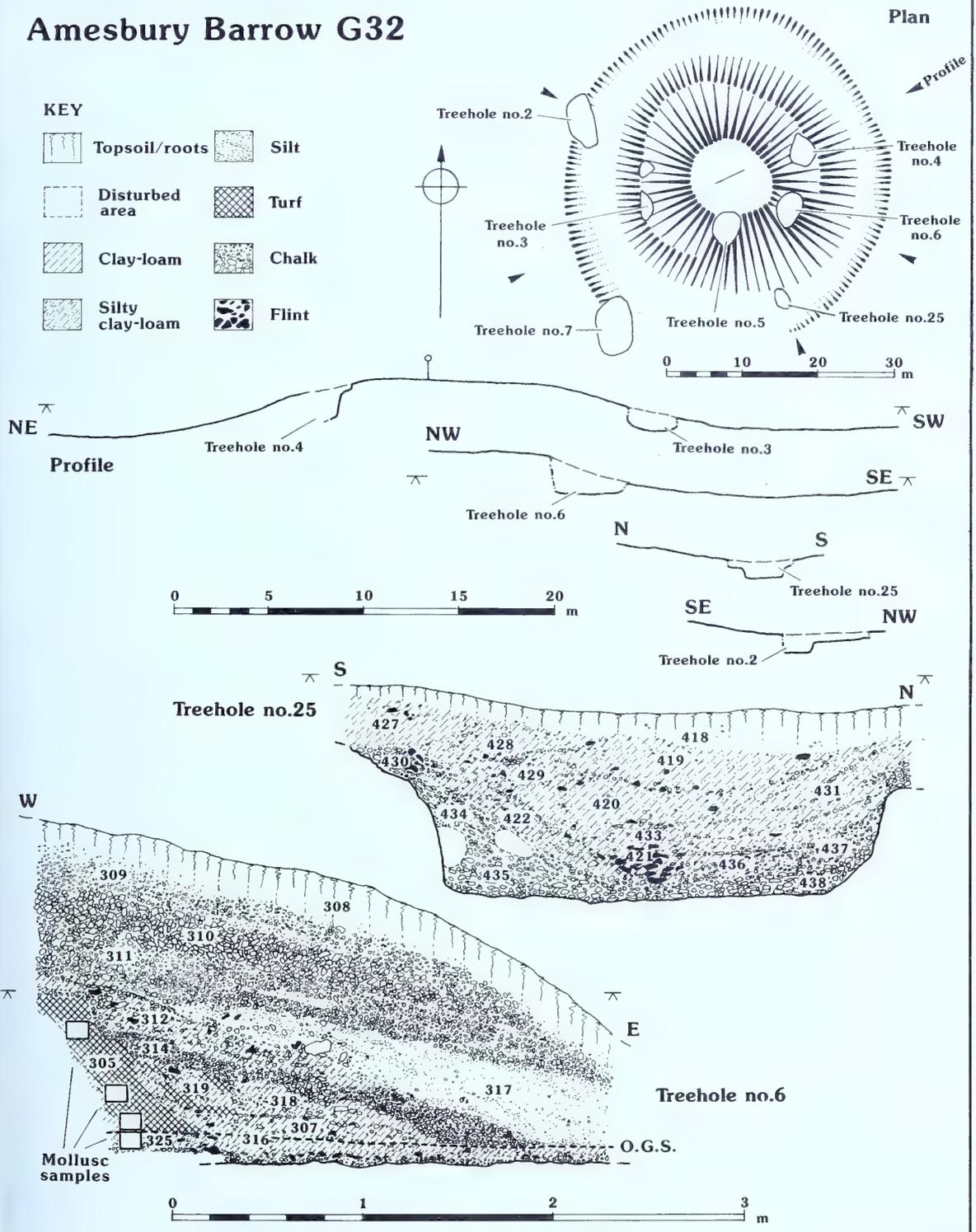


Figure 4. King Barrow Ridge: barrow G32 plan and sections

deposit of loamy soil with a very little (c.1%) chalk and flint, attaining a maximum height of c.0.7m within the section and dark yellowish brown in colour (10YR 4/4), with reddish lenses within it. This deposit was again interpreted as a stack of turf. Individual turves could not be distinguished, but thin lines of chalk and flint fragments were observed, which may indicate the bottom of turves which had been cut so that they clipped the top of the chalky subsoil or the top of a sorted horizon. Patches of clay loam approximately 0.25m by 0.10m observed during excavation of Hole 4 were also seen, after drying out, in the root ball of the tree which produced it and may indicate individual turves.

The primary turf mound was surrounded at the base by layers of clay loam with chalk and flint up to 40mm thick. Contexts 318 and 319 also included patches of turf-like loam (Figure 4). This deposit may be in part a by-product of the construction of the turf mound, with soil and dropped turves becoming trampled in around the base, but is perhaps more likely to be due to the addition, after the construction of the turf stack, of the soil from the stripped area. The primary turf mound was subsequently capped with a thick layer of chalk rubble which seems to show an inversion of the stratigraphy which would be expected from digging a feature into chalk, and is a strong indication that the chalk cappings were directly derived from the barrow ditch.

Two of the barrows (G30, G34) also consisted of turf mounds but apparently without chalk cappings. In Hole 37 in barrow G34 a band of chalk rubble was observed overlying the primary mound but was much thinner than in any other case (0.10m) and does not seem to represent a true capping; it was completely absent in G30.

Finds consisted again of struck flint, burnt flint, animal bone and occasional pot sherds including Peterborough Ware, Grooved Ware and Beaker. The distribution of pottery and flint is discussed below.

Fuller descriptions of the barrows and finds are provided in the unpublished site archive report (Wessex Archaeology 1991) and in the site archive to be deposited in the Salisbury and South Wiltshire Museum.

Previous Work on King Barrow Ridge

Some previous archaeological work on that part of the Ridge which forms part of the National Trust

Stonehenge Estate has not been fully published. It has proved possible to remedy that deficiency here.

FEATURES EXCAVATED BY F. DE M. AND H.L. VATCHER

During the cutting of a cable trench across King Barrow Ridge by the Southern Electricity Board (SEB) in 1968, Major and Mrs H.L. Vatcher, for the Ministry of Public Buildings and Works, excavated a number of features in the length of trench between King Barrow Wood and Stonehenge (Vatcher and Vatcher 1969). The excavations are not published, but plans and sections survive, as do at least some of the finds (held at present by Wessex Archaeology). Two Neolithic features were recorded, to the east of barrow G39, as well as the Chalk Plaque Pit (Figure 1).

Feature A (Figures 1 and 5)

This was the easternmost of the two features, and consisted of a small pit (interpreted by the excavators as a post hole) 1.07m wide with a maximum depth of 0.81m from the top of the weathered chalk. It was sealed by ploughsoil. The primary fill was of chalk and soil, with some finds, and the upper fill of 'red/brown' soil. 'Potboilers' and charcoal are noted on the section drawing, and decayed wood, pottery, and bone on the plan; the bone is described as 'bone on base', 'ox fragments'. The only finds surviving with the excavation archive are three sherds of Grooved Ware, possibly all belonging to a single vessel (Figure 8, P41), noted as 0.63m from the turfline 'in post replacement'.

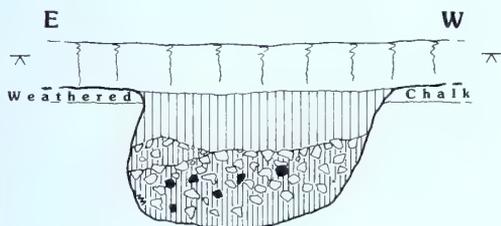
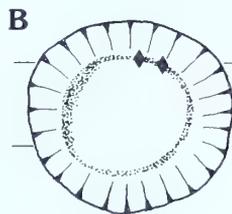
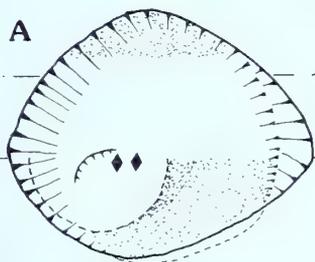
Feature B (Figure 5)

This feature lay approximately 30m west of feature A, and approximately 86m from the centre of barrow Amesbury G39. No section of the feature survives, but a plan shows it to have been 0.56m in diameter and 0.69m deep. The sides appear to have been near-vertical. Pottery was noted from the edge of the feature 0.3m deep from the chalk surface. Sherds of a single vessel survive (Figure 8, P42) representing a small bowl or cup of Early to Middle Neolithic date.

Plan and section of the Chalk Plaque Pit (Figure 5)

Although this feature has been published by Harding (1988) the location of the site plans was not known at that time. A plan and section of this pit, originally incorrectly labelled, have recently

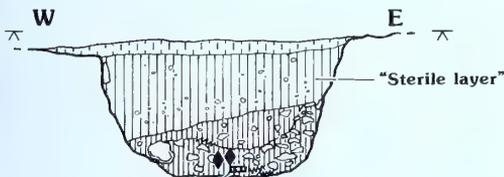
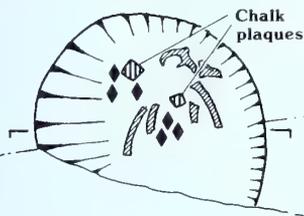
Features in S.E.B. trench



KEY

-  Topsoil
-  Compacted "old road subsoil"
-  Red/brown soil
-  Grey/brown soil
-  Chalk
-  Burnt flint: "Pot boilers"
-  Flint
-  Charcoal
-  Decayed wood
-  "Black organic stain"
-  Pottery
-  Bone

Chalk Plaque Pit



WA

SEJ

Figure 5. King Barrow Ridge: SEB trench 1968, features A and B and Chalk Plaque Pit

come to light in the Stonehenge archive. As this pit clearly formed part of the use of King Barrow Ridge in the later Neolithic, and may well be contemporary with the occupation represented by the artefacts recovered from the tree-throw holes, the plan and section are included here.

Layer descriptions as noted on the section:

Upper filling: 'sterile layer, compact red-brown soil, chalk nodules (fine)'.

Middle filling: 'Less chalk nodules, more soil than layer below: this layer slopes up towards N side of hole and ?antler pick lay on it. Layer contains sherds etc; sherds and charcoal on it.'

Lower filling: 'Many chalk nodules and grey-brown soil, dried peas'.

There is some ambiguity in the description of the middle fill in that 'this layer slopes up towards N side of hole . . .' might be taken to refer to the middle filling. It seems clear, however, from the fact that the only finds shown projected onto the section are shown in the lower layer, that it is that layer which sloped, and that most finds were found in it, with some on its surface (i.e. within the middle filling).

The Pottery

by ROSAMUND M.J. CLEAL

THE POTTERY FROM THE TREE-THROW HOLES

Sixty-two sherds, weighing 373g, were recovered from the excavations following the two episodes of storm damage. Most were recovered from the 1987 tree-throw hole in barrow G30. Full counts and weights are given by fabric and by barrow in Table 1.

The collection was analysed using the standard Wessex Archaeology descriptive procedures for establishing fabrics (Morris 1991). Fabric descriptions are provided in the archive.

Peterborough Ware (Figure 6). Fourteen sherds may be assigned to this tradition, representing at least three vessels. All the sherds are in flint-tempered fabrics (F1, F2, and F3) with varying frequencies of flint. Flint-tempered fabrics are typical of the Ebbsfleet and Mortlake sub-styles of Peterborough Ware (e.g. at Windmill Hill: Smith 1965, 74). At least two of the vessels may be assigned to the Mortlake sub-style on the basis of rim form (P1 and P19).

Grooved Ware (Figure 6). Sixteen sherds are identifiable as Grooved Ware representing probably seven vessels. The range of fabrics is much greater

than that of the Peterborough Ware. No single inclusion type is dominant, and grog, flint, shell, sand and possibly chalk all occur. With the exception of the grog, all may be naturally-occurring inclusions in the clay. Two of the vessels represented (P7 and P9/10) clearly belong within the Durrington Walls sub-style of the tradition (Wainwright and Longworth 1971, 240–2) and one other sherd (P4) must also be assigned to this sub-style on the grounds of the twisted cord impression on the internal rim bevel.

Beaker (Figure 6). Eight sherds of Beaker were recovered, representing three vessels at most (P11, P12, P13). All the sherds are from barrow G30 and occur in only two fabrics, both of which are grog-tempered. Six sherds belong to a single Beaker which is decorated with impressions made with a comb possessing irregular teeth (P11), likely to belong to Case's Middle Style (Case 1977).

Indeterminate. A small number of undiagnostic sherds, mainly fingernail-decorated, have not been assigned to any of the three major traditions.

THE POTTERY FROM BARROW AMESBURY G39

Amesbury G39, which was situated on National Trust property, was excavated by Paul Ashbee in 1960, under the auspices of the then Ministry of Works. The pottery from the excavation (Ashbee 1981) is not fully illustrated, and this, combined with the appearance since Ashbee's work of considerably more pottery from the Ridge, was felt to justify a reassessment of the ceramic collection from this barrow. In particular it was felt necessary to illustrate some of the sherds not illustrated in the excavation report which include earlier Neolithic pottery and Peterborough Ware. No attempt has been made to deal with the sherds by context. It is quite clear from the excavation report that the Neolithic pottery became incorporated in the barrow with the turf and topsoil used to construct the loam core, and that it was therefore not in its original location when excavated. Some sherds noted by Ashbee are missing and a box of plain fragments was not examined.

Sherds were assigned to broad fabric groups, designated by lower case codes (f1, f2, f3), rather than to closely defined fabrics, and quantification was by sherd count alone. Sherds were classified by decorative technique, and were assigned to ceramic

Table 1. King Barrow Ridge, counts and weights of pottery by fabric, by barrow
(see archive for fabric descriptions)

Barrow	G27		G30		G31		G32		(Luxenborough)	
Fabric										
F1/Pet	1	4g	1	16g	3	23g	4	12g	-	-
F2/Pet	-	-	4	12g	-	-	-	-	-	-
F3/Pet	-	-	1	4g	-	-	-	-	-	-
Peterborough totals	1	4g	6	32g	3	23g	4	12g	-	-
C1/GW	-	-	1	31g	-	-	1	5g	-	-
G1/GW	-	-	2	14g	-	-	-	-	-	-
G5/GW	-	-	1	5g	-	-	-	-	-	-
Q1/GW	-	-	1	6g	-	-	-	-	-	-
S1/GW	-	-	2	33g	-	-	-	-	-	-
S2/GW	-	-	4	24g	-	-	1	2g	-	-
S4/GW	-	-	2	6g	-	-	1	7g	-	-
GW totals			13	119g			3	14g		
G2/Bkr	-	-	2	4g	-	-	-	-	-	-
G3/Bkr	-	-	6	19g	-	-	-	-	-	-
Beaker totals			8	23g						
F5/LNEBA	-	-	5	24g	-	-	-	-	1	4g
Q4/LNEBA	-	-	1	14g	-	-	-	-	-	-
LNEBA totals			6	38g					1	4g
F4/Indet	-	-	2	13g	-	-	2	6g	-	-
F6/Indet	1	3g	2	7g	-	-	-	-	-	-
F7/Indet	-	-	1	1g	-	-	-	-	-	-
G4/Indet	-	-	-	-	-	-	-	-	1	18g
G6/Indet	-	-	1	3g	-	-	-	-	-	-
Q2/Indet	-	-	1	9g	-	-	1	2g	-	-
Q3/Indet	-	-	-	-	-	-	1	9g	-	-
Q5/Indet	-	-	1	5g	-	-	-	-	-	-
S3/Indet	-	-	1	11g	-	-	2	17g	-	-
Indet. totals	1	3g	9	49g			6	34g	1	18g
Totals	2	7g	42	261g	3	23g	13	60g	2	22g

Total (all sherds): 62 373g

Total Peterborough	Total Grooved Ware	Total Beaker	Total LNEBA	Other
14/71g	16/133g	8/23g	7/42g	17/104g

styles where this seemed appropriate. Three hundred and twenty-five sherds were examined and recorded. Most of the material from the barrow may be classified as belonging to three major traditions: earlier Neolithic, Peterborough Ware, and Grooved Ware.

Earlier Neolithic bowls (Figure 7, P21–P27). Although decoration occurs on at least two of the rims, the collection is predominantly plain. Seven rim sherds in flint-tempered fabrics (f1, f2, f4, f5) may be confidently identified as earlier Neolithic bowls, but it is likely that other vessels are represented among the 116 plain body sherds in these fabric groups. Fabric f1 is particularly variable in terms of temper size and frequency and there is considerable overlap with the Peterborough Ware. Simple rims are ubiquitous on earlier Neolithic bowls but heavy rims such as P21, P22 and P23 are a characteristic feature of the Windmill Hill or Decorated Style of central southern England (Whittle 1977).

Peterborough Ware (Figure 7, P28–P34). At least 31 sherds were recovered. Most of the Peterborough Ware is in fabrics f1 and f2, but two sherds with grog inclusions were identified, and one sherd contained quartzitic fragments, probably sandstone. A Mortlake Ware sherd from Windmill Hill contained sandstone inclusions (Smith 1965, 74), as did an Ebbsfleet Ware vessel from Maiden Castle, Dorset (Cleal 1991, 181). The two sherds in fabric d1, which almost certainly belong to a single vessel, contain voids which probably represent calcareous inclusions which have leached out since firing. Twisted and whipped cord were taken as positive indications that sherds belonged to this tradition, except in the case of P40, in which the form and fabric are not characteristic of either Grooved Ware or Peterborough Ware. P28 represents the lower part of a thickened rim of the Mortlake sub-style. P31, even though weathered, does not appear to have originally been extended and may therefore be Ebbsfleet Ware.

Grooved Ware (Figure 7, P35–P38). Fifty-two sherds of Grooved Ware were identified. The majority occurred in the grog-tempered fabric g1 in which the grog fragments were difficult to distinguish from the matrix. The seventeen sherds in fabric g2 almost certainly belong to a single vessel, and contain, in addition to grog, some flint and some angular

quartz fragments. Quartz fragments, sub-rounded rather than angular, also occur in fabric q4. Calcareous inclusions are probably represented in the voids present in fabric g5, and by the shell in fabric s1. The presence of vessels with cordons and incised or grooved decoration indicates that some Durrington Walls style vessels are present. A few sherds may be of the Clacton sub-style (e.g. Ashbee 1981, fig. 7, 4). P38 may be a worn rim, or a body sherd with a groove along one edge (*cf.* Wainwright and Longworth 1971, P595 and P596 for a similar occurrence at Durrington Walls, in that case a possible Beaker).

Indeterminate later Neolithic/Early Bronze Age. Two very anomalous sherds, and a much greater number of small sherds with only fingernail or indeterminate impressions were not considered sufficiently diagnostic to assign to a specific tradition and have therefore been termed LNEBA (Late Neolithic/Early Bronze Age).

P39, a rim sherd in a slightly sandy fabric, is harder than the majority of sherds in the collection. The rim profile varies, and the sherd is decorated with fingernail and crescentic impressions. It is not easily classifiable, bearing some resemblance to both Peterborough Ware, in terms of fabric in that it included poorly sorted flint, and Grooved Ware, in general appearance. The vessel represented by the rim sherd P40 is even more difficult to classify. It is small (diam. 120–140mm), and must have been shallow, unless the profile was unusually complex. The fabric is sandy and hard, and unlike any of the fabrics represented among the classifiable sherds. On the basis of form a place within the Grooved Ware tradition is most likely, as shallow bowls, sometimes cord impressed, are known, e.g. Longworth *et al.* 1988, fig. 5.

POTTERY FROM THE SOUTHERN ELECTRICITY BOARD TRENCH

Only two vessels are represented from features A and B: a Grooved Ware vessel, represented by only two sherds (Figure 8, P41), from feature A, and between one quarter and one third of a small earlier Neolithic bowl (Figure 8, P42) from feature B. The Grooved Ware vessel is in a shelly fabric, and the bowl is flint-gritted.

The small bowl P42 is not of a common form, but is closely matched in form and decoration by a small group of decorated carinated bowls from

Windmill Hill, 30km to the north, which are of closed form and decorated on the upper body (Smith 1965, fig. 26, P176–P178, and fig. 27, P179 with pin-prick decoration). There is also a moderately close parallel in the assemblage from the Fussell's Lodge long barrow, less than 10km to the south-east (Smith 1966, 18, 20–21, fig. 6, W7). P41 cannot be assigned to a sub-style as so little of the vessel survives, but the slightly inturned rim form suggests the sometimes barrel-shaped forms of the Durrington Walls sub-style. The rim is form 18 or 19 in Longworth's classification (Longworth 1971, fig. 20).

CATALOGUE OF ILLUSTRATED POTTERY

An asterisk indicates that the sherd has been counted as representing a separate vessel for the estimate of minimum number of vessels.

Barrow 30

- P1* Peterborough Ware. Single sherd from just below rim; Fabric F2; ext: pale orange brown, core: black, int: pale orange–pale brown. Twisted cord beneath ext. rim; edges of other unidentifiable impressions along edge of rim; oblique ?twisted cord impressed lines on int.
- P2* Peterborough Ware. Single rim sherd; Fabric F3; black throughout. Twisted cord on int. and int. rim bevel; ext. also clearly carried twisted cord impression, most abraded. Condition fair (int.) to very worn (ext.).
- P3* Peterborough Ware. Single neck sherd; Fabric F1; ext; mid-brown, core: obscured, int: orange. Bird bone impressions on int., ?twisted cord impressions on ext. Condition fair to worn.
- P4* Grooved Ware. Single sherd; oblique rim; Fabric Q1; ext. and core: black, int: black, traces of brown surface. Short twisted cord impression on int., irregular impressions (?fingernail), on ext. Condition fair to worn.
- P5* Grooved Ware. Single body sherd; Fabric G1; ext. and core: black, int: dark grey-brown. Grooves made when clay still plastic. Condition fair.
- P6* Grooved Ware. Single body sherd; Fabric G5. Grooved lines. Condition fair.
- P7* Grooved Ware. Single body sherd; Fabric S1; ext: pale orange, core: bi-coloured, orange/black, int: pale brown. Applied converging cordons, grooves, and remains of either hole

drilled after firing or deep fingernail/other impression, edge only survives. Condition fair to worn.

- P8 Grooved Ware. Single body sherd; Fabric S1; ext: brown, core and int: black. Slightly plastic, random, fingernail impressions. Condition worn.
- P9 Grooved Ware. Single body sherd; Fabric S2; Ext: brown, core: black, int: dark brown. Cordon and incised decoration. Condition fair to worn.
- P10 Grooved Ware. Single body sherd; Fabric S2; ext: brown, core: black, int: dark brown. Incised lines, remains of slight cordon.
- P11* Beaker. Five body sherds, single vessel, none conjoin; Fabric G3; ext: dark grey, brown, pale brown, core: black, int: pale brown, grey-brown. Rows of small curved impressions, executed with comb with small irregular teeth. Condition fair.
- P12* Beaker. Single body sherd; Fabric G2; ext: pale orange, core bi-coloured orange/grey-brown, int: grey-brown. Rectangular-toothed comb impressions. Condition fair.
- P13* Beaker. Single body sherd; Fabric G2. Orange throughout. Single non-plastic fingernail impressions. Condition fair.
- P14* LNEBA. Single body sherd; Fabric F5, ext: orange-brown, core: obscured, int: orange. Paired, non-plastic fingernail impressions. Condition worn.
- P15* Indeterminate. Single body sherd with slack shoulder angle; Fabric F6; ext: pale brown, core: dark grey-brown, int: mid-brown. Condition worn.
- P16 Indeterminate. Single plain rim sherd; Fabric F4; ext: brown, core and int: black. Condition fair.

Barrow G31

- P17* Peterborough Ware. Single sherd; Fabric F1; ext: pale orange, pale brown, core: bi-coloured as surface colours, int: dark grey. Rows of slightly curved (?fingernail) impressions. Condition fair.
- P18 Peterborough Ware. Single sherd; possibly the same vessel as P17.

Barrow G32

- P19 Peterborough Ware. Single sherd; Fabric F1; black throughout. Fine twisted cord along rim top. Condition worn.

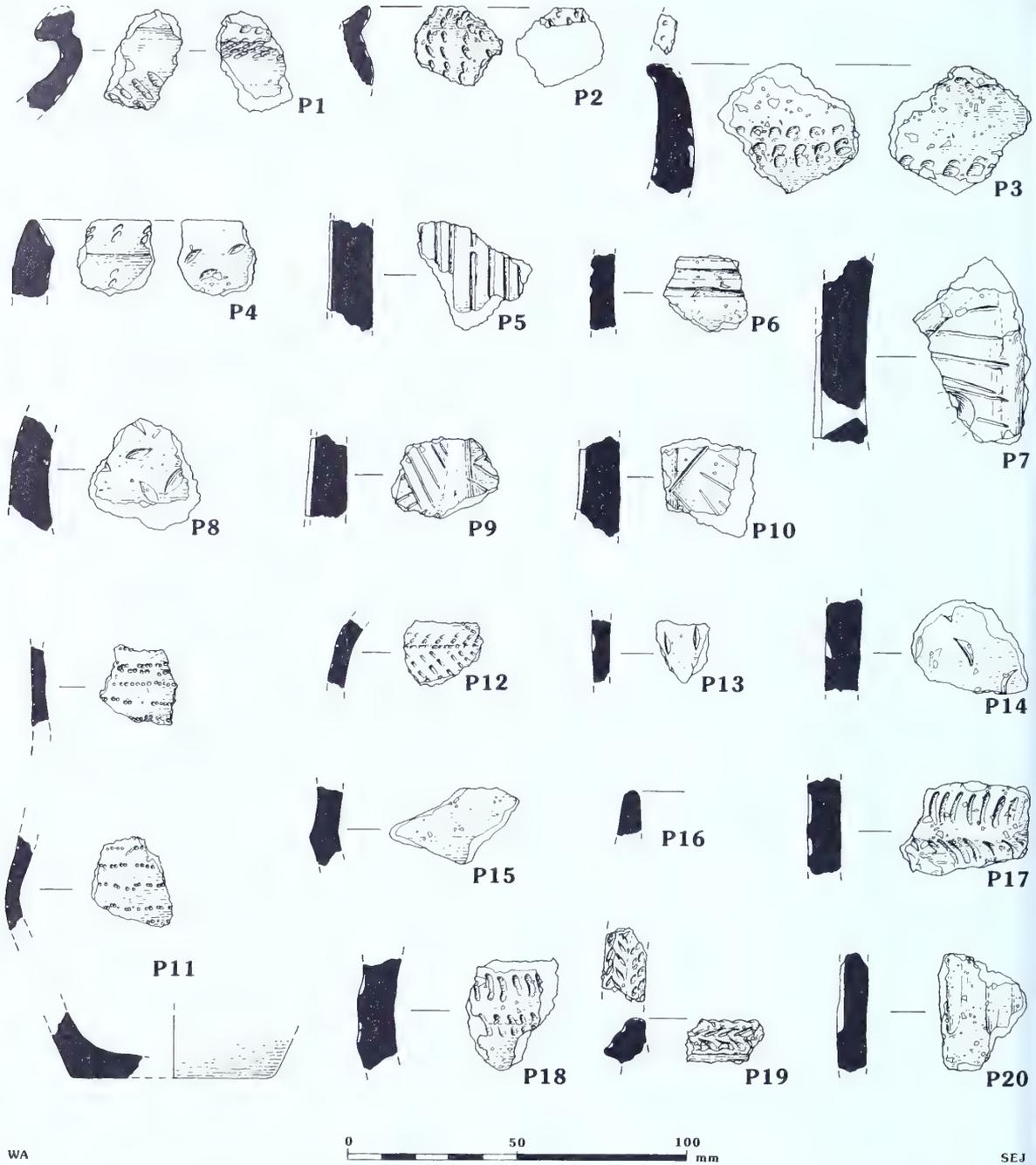


Figure 6. King Barrow Ridge: pottery from barrows G30 (P1-16), G31 (P17, P18) and G32 (P19, P20)

P20* Grooved Ware. Single body sherd; Fabric S4; ext: pale brown, core: grey, int: pale brown. Shallow flat cordons. Condition worn.

Barrow G39

P21* Neolithic Bowl. Rim sherd; Fabric f1; ext: orange-brown, int: dark grey-brown to orange-brown. Condition fair.

P22* Neolithic Bowl. Externally thickened rim; Fabric f1; dark grey-brown throughout. Condition worn.

P23* Neolithic Bowl. Plain enlarged rim; Fabric f1; black throughout.

P24* Neolithic Bowl. Rim sherd; Fabric f2; ext: pale brown to pale orange, core: dark grey, int: pale brown. Condition worn.

P25* Neolithic Bowl. Rim sherd; Fabric f2. Indeterminate impressions on rim top. Condition worn.

P26* Neolithic Bowl. Rim sherd; Fabric f4; surfaces: orange-brown, core: black. Slashes (?fingernail), along outer rim edge. Condition fair.

P27* Neolithic Bowl. Rim sherd; Fabric f5; dark grey throughout. Condition fair.

P28* Peterborough Ware, sherd from just below rim of Mortlake Ware bowl; Fabric f1; surfaces, pale brown, some sooting on ext. lower part. Twisted cord impressions. Condition worn.

P29 Peterborough Ware. Shoulder sherd; Fabric f1; ext: red-brown, int: brown. Twisted cord impressions above and below rim. Condition fair.

P30 Peterborough Ware. Body sherd; Fabric f1; ext: orange-brown, int: brown. Twisted cord impressions. Condition fair.

P31* Peterborough Ware. Very abraded rim sherd; Fabric f1; surfaces: pale orange. Traces of ?whipped cord impression below ext. and int. rim. Condition very worn.

P32 Peterborough Ware. Body sherd; Fabric f2; dark grey throughout. Deep fingernail or fingertip pit and fingernail impression. Condition fair.

P33* Peterborough Ware. Body sherd; Fabric d1; sooting on ext. Fingernail or fingertip pit and fingernail impressions. Condition good.

P34 Peterborough Ware. Neck sherd almost certainly from same vessel as P33. Fingernail or fingertip pit. Condition fair.

P35* Grooved Ware. Two conjoining body sherds; Fabric g2; ext: pale grey, core: black, int: pale orange to pale brown; no carbonised residue. ?Vertical cordon. Condition fair to worn.

P36 Two base and lower body sherds, almost certainly from same vessel as P35. Thirteen other sherds almost certainly also belong to same vessel. Most have carbonised residue adhering on the interior.

P37* Grooved Ware. Body sherd; Fabric q6; ext: traces of brown surface, core: black, int: grey-brown. Finely incised and impressed (?fingernail) decoration on ext. Condition worn.

P38* Grooved Ware. Body sherd; Fabric d2; surfaces: pale orange. Incision and grooves; groove running along one edge, not quite parallel to surfaces, very abraded, but edge does not suggest this to be a very worn rim with groove along the top. Condition worn.

P39* LNEBA indeterminate. Rim sherd; Fabric f6; ext. and top of rim: black, int: reddish-brown. Variable rim, fingernail impressions on rim top and crescentic impressions (?fingernail) on ext. Condition fair.

P40* LNEBA. Rim sherd of small bowl (diam. 120-140mm); Fabric q1; ext: pale yellow-brown, core and int: dark grey. Twisted cord impression on ext. and int., fine slashes across rim top. Condition worn.

Southern Electricity Board Trench 1968

P41* Grooved Ware. Single small rim sherd. Fabric: sparse shell fragments and some fine dark grains; ext: pale brown, core and int: dark grey. Thin-walled, internally bevelled rim with oblique slashes, on the ext. narrow zone of oblique slashes or impressions, bounded by horizontal grooves. Condition: ext: worn to very worn, int: fair. One fragment and one body sherd with very worn decoration also recovered from this feature may belong to same vessel.

P42* Earlier Neolithic Bowl or cup. Three sherds, two conjoining along ancient break. Fabric: hard, slightly laminated, sparse, ill-sorted, angular flint and sparse sand. Deeply-impressed round pits on upper body, shallow oblique incisions on int. rim.

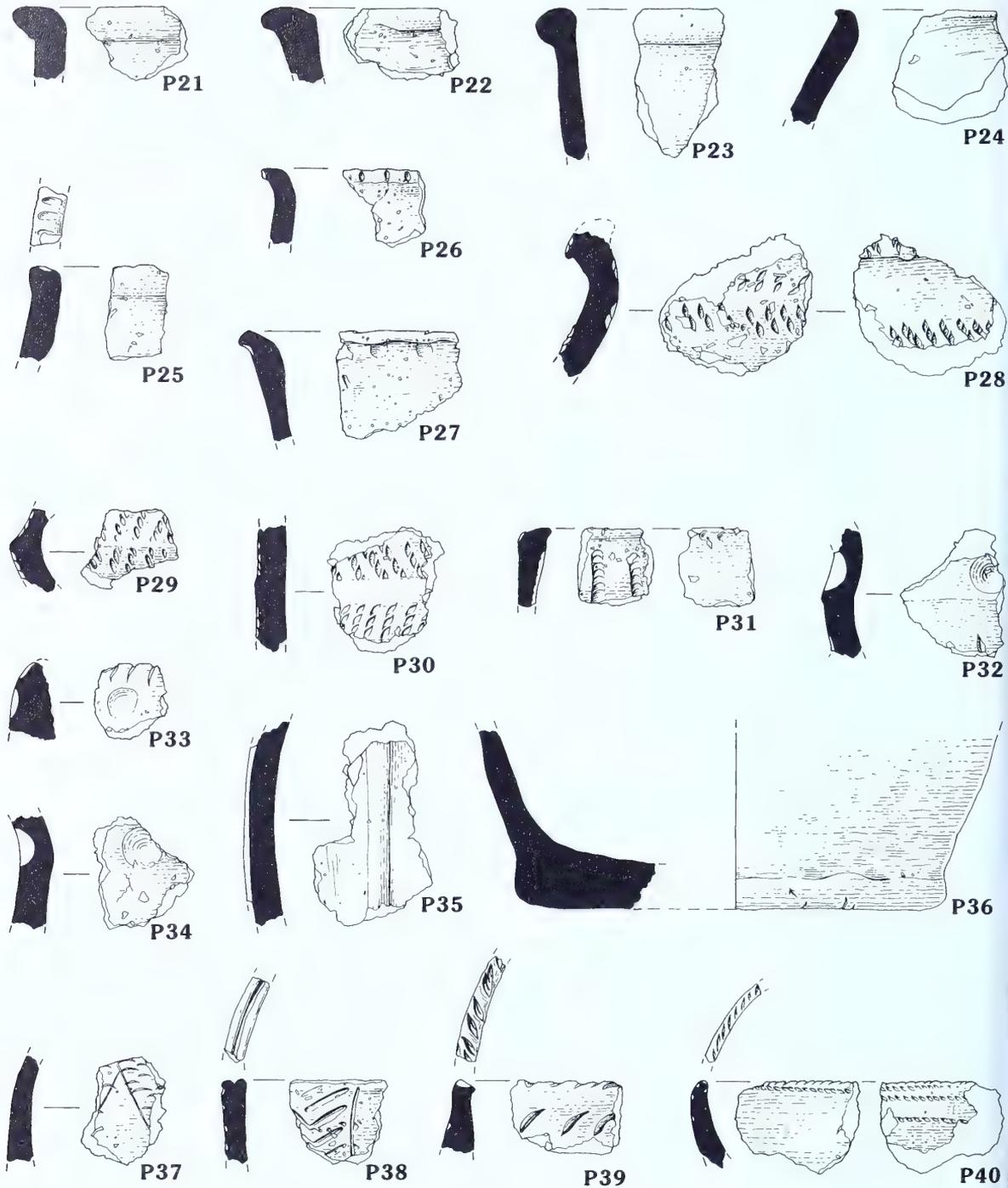


Figure 7. King Barrow Ridge: pottery from barrow G39

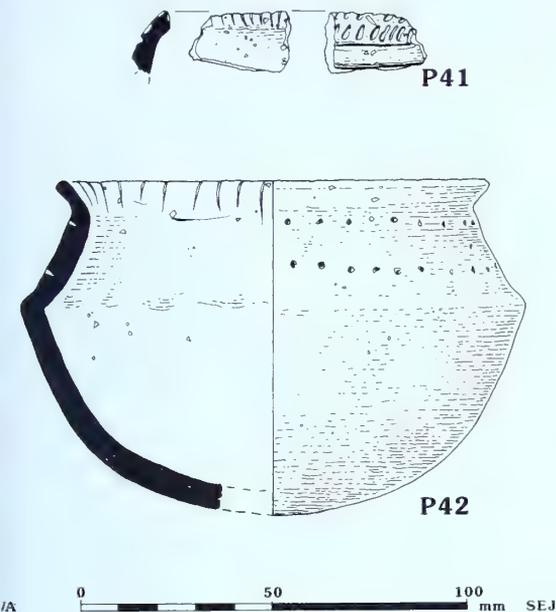


Figure 8. King Barrow Ridge: pottery from SEB trench feature A (P41) and feature B (P42)

NEOLITHIC-EARLY BRONZE AGE POTTERY FROM THE KING BARROW RIDGE: DISCUSSION

Table 2 summarises the occurrence of ceramic styles at sites along the Ridge, including the material from Coneybury.

Earlier Neolithic. Only the assemblage from Coneybury Anomaly has an associated radiocarbon date (5050 BP; 4040 ± 3640 cal BC (OxA 1402; Richards 1990, 259)), and it is therefore not possible to calculate the likely timespan over which the earlier Neolithic pottery from King Barrow Ridge was deposited. The pottery from the anomaly is almost entirely plain, and appears to date within the South-Western tradition, as does that from the King Barrow Ridge pit excavated by Major and Mrs H.L. Vatcher (Cleal 1990a, 51, 5-6; Cleal with Raymond 1990, 233-4). The small bowl or cup from the SEB trench (Figure 8, P42), however, can be assigned to the Decorated Style (Whittle 1977).

The earlier Neolithic pottery from G39 does not include any forms diagnostic of either the Decorated Style or the South-Western Style with the exception of the single heavy rim P23 (Figure 7), which is likely to belong to the former. Vessels with markedly heavy rims are rare in the area, although there are

some thickened rims from the pre-bank occupation at Durrington Walls (Wainwright and Longworth 1971, fig. 30).

Peterborough Ware and Grooved Ware. One feature which has emerged from study of both the pottery recovered by the various episodes of excavation and collection on the King Barrow Ridge, and that from the Stonehenge Environs project, is that there is no consistent pattern of avoidance between these two traditions, nor, conversely, a consistent pattern of association between them. In the area around Wilsford Down both Grooved Ware and Peterborough Ware occur, as do ?early Beakers but, in contrast, the complex of sites around Durrington Walls and Woodhenge appears to be completely devoid of Peterborough Ware (Cleal 1990b, 244). In the concentrations of material from King Barrow Ridge the evidence suggests association, although this must remain uncertain because of the paucity of dated contexts, and the nature of the sites themselves: the artefacts occur mainly in deposits which represent spreads within topsoil for which the evidence of any spatial patterning was destroyed with the construction of the barrows.

Apart from the obvious stylistic differences, an examination of fabric may assist in determining whether the pottery is also likely to represent essentially different potting traditions, with different potting 'recipes'. If the same preferences were expressed by the makers of both Peterborough Ware and Grooved Ware the supposition that the two were in contemporary use, in spite of the differences of form and decoration, might be supported. Table 3 illustrates the preference for inclusion type in all the fabrics assignable to ceramic styles in both the 1987 and 1990 tree-throw material. This demonstrates that fabrics dominated by flint are commonly represented in both the earlier Neolithic Bowl and Peterborough traditions, while shelly fabrics are exclusive to Grooved Ware, as are fabrics in which there are no inclusions visible, and those with only fine black grains (interpreted as iron oxides, but possibly also including glauconite). Some at least of the shell in the Grooved Ware from the Chalk Plaque Pit is non-fossil marine oyster (J. Cooper, Natural History Museum, pers. comm.). Sandy fabrics occur in both Peterborough and Grooved Ware, as do fabrics with quartz other than sand (i.e. angular lumps, and large rounded grains). Grog-tempered fabrics occur in both Grooved Ware and Beakers, although it should be stressed that the Beaker presence is small.

Table 2. King Barrow Ridge: summary of ceramic styles by site¹

Site	Ceramic style					
	Neo. Bowl	Pet.	GW	Bkr	LNEBA	EBA (CU/FV/Indet.)
Coneybury henge ¹	X	-	X	X	-	X (CU, FV)
Coneybury Anomaly ¹	X	-	-	X	-	-
King Barrow Ridge (Vatcher) pit ¹	X	-	-	-	-	-
Chalk Plaque Pit ²	-	-	X	-	-	-
G39 ³	X	X	X	-	-	-
SEB trench, feature A ⁴	-	-	X	-	-	-
SEB trench, feature B ⁴	X	-	-	-	-	-
G30 ⁴	-	X	X	X	-	-
G31 ⁴	-	X	-	-	-	-
G32 ⁴	-	X	-	-	-	-
W59 ¹	?	X	?	-	-	-
G132 ⁵	X	-	-	-	-	-
G133 ⁵	X	-	X	X	-	-
G34 ¹	-	-	X	-	-	-

¹Richards 1990 ²Harding 1988 ³Ashbee 1981 and this report ⁴This report ⁵Gingell 1988
 Post-Early Bronze Age material omitted. X indicates presence. Featured sherds only. Late Neolithic/Early Bronze Age (LNEBA) only used where there is no material assignable to style. Sites are arranged approximately south to north along the King Barrow Ridge.

On this evidence alone it is possible to suggest that the earlier Neolithic bowls and Peterborough Ware are part of a continuing tradition of potting, in which the same choices of materials continued largely unchanged, while Grooved Ware represents an innovation, which may or may not have continued with the introduction of Beakers. Not only do the choices of material appear to have changed radically with the appearance of Grooved Ware, but the source of the material, in the case of the shelly fabrics, cannot be entirely local – in contrast with the flint-tempered fabrics,

materials for which could have been obtained locally.

Two possible interpretations present themselves. On the one hand the evidence might be interpreted as representing long-continued use of the area, from a time in which earlier Neolithic bowl forms were present, to a point following the introduction of Grooved Ware, in which broadly the same area were returned to over many years, so that as the ceramic traditions changed through time the area where activities were focussed remained roughly the same. Alternatively, the Neolithic Bowl and

Peterborough Ware, and even perhaps some of the Grooved Ware (considering the very early radiocarbon date from W59 (Richards 1990, 259)) may have been in contemporary use, and the concentrations of material formed over a much shorter time. In this case the different potting preferences might be seen as indicating different groups, drawn together perhaps at particular times of year, or even for a single prolonged period of activity.

The major difficulty in supporting the hypothesis of long-continued use is that the time over which continued returns to the area might be supposed to have occurred is extremely long (nearly two millennia). However, long-continued intermittent use does seem the most plausible explanation for the sites, and may yet become more plausible if, in the future, a date range can be established for Peterborough Ware which spans the period between Neolithic bowls and Grooved Ware. Conversely, if Grooved Ware in the immediate area could be shown to be very early, thus confirming the early date from W59, the argument for continued use would be weakened. Indeed, there is no strong case for the Grooved Ware on King Barrow Ridge being contemporary with that at Durrington Walls and Woodhenge, except for general similarity of style, and there is in any case the dating of the primary ditch fill at Coneybury (to the first half of the third millennium cal BC) to suggest that an early use of Grooved Ware did occur in the area (Cleal 1990b, 244), although even this is not as early as the date from King Barrow Ridge W59.

Beakers. It seems reasonable to suppose, on the grounds of analogy with other cemeteries, that the construction of the barrow cemetery took place during the Early Bronze Age, but there is very little firm evidence for this. Beaker sherds occur only in the mound of barrow G30, and are not closely datable, and elsewhere on the Ridge the Beaker presence is extremely slight (Table 2) (Cleal 1990b, fig. 154).

Struck Flint

by FRANCES HEALY and PHILIP HARDING

STRUCK FLINT FROM THE TREE-THROW
HOLLOWS

Distribution. The composition and incidence of struck flint are summarised in Table 4. There are in addition two small fragments of sarsen, weighing 15g, and another fragment of sandstone, weighing 122g, from the mound of barrow G30.

The largest quantities of flint were recovered from barrows G30 and G32, especially from the 1987 tree-throw hole in the former. Context varied as well as quantity, most of the material from barrows G30 and G32 coming from the turf cores of the mounds, while all of that from barrows G18 and G19 in Luxenborough Plantation came from ditch fills or from superficial contexts. Burnt flint, generally in the form of near-white, crazed 'pot-boilers', was concentrated at these barrows and in barrow G32, where it occurred in the old land surface and mound.

Raw Material. The flint is generally similar to that of site W59 to the north and east (Harding 1990, 117-8), consisting of irregular nodules with up to 12mm of cortex. Internally it is black with grey cherty inclusions and latent thermal fractures.

Condition. Almost all the flint is patinated, and some is encrusted with calcareous deposit. The material from the barrow mounds is relatively fresh, and seems little moved or abraded, an impression confirmed by the presence of two pairs of refitting flakes among the material from the 1987 tree-throw hole in barrow G30. There is macroscopically visible gloss on the teeth of two serrated pieces, while a blade from barrow G30 is regularly bevelled like examples from Windmill Hill and the West Kennet Avenue occupation site (Smith 1965, 92-3, 237). The worn edges of some blades and blade-like flakes may originally have been serrated. A 'fabricator' from barrow G19 is smoothed and rounded by wear at its narrower end.

Flint-working. Blades and the debris of their production form a small part of the collection comprising a small blade core weighing only 30g, several blades, some with linear or punctiform butts and a few bladelets. The technology of the bulk of the collection is best represented by the material found with sherds of Peterborough and Grooved Ware in the 1987 tree-throw hole in barrow G30. Here much larger cores were flaked, often alternately or from more than one platform, with little evidence of platform preparation or rejuvenation. Several were rejected after only a few removals had been made, apparently because of failed core preparation or flawed raw material. Breadth:length ratios peak at 4.5:5. A distinctive element of thicker, squatter and less regular flakes is apparent in some of the material from ditch fills and superficial contexts at barrows G19 and G31.

Table 4. King Barrow Ridge: composition and incidence of struck flint

Barrow	Context type	1	2	3	4	5	6	Totals	Burnt	Broken	Unworked (grammes) burnt flint
G18	Ditch	0	0	0	10	0	0	10	0	1	81
	Topsoil etc.	0	1	0	18	1	3	23	0	6	13
G19	Ditch	1	0	1	28	2	6(a)	38	1	18	393
	Topsoil etc.	1	0	1	33	4	5(b)	44	2	14	218
G27	Turf/Loam Mound	0	0	0	0	0	1(c)	1	0	1	—
	Topsoil etc.	0	0	0	0	1	1(d)	2	0	0	48
G29	Turf/Loam Mound	0	0	0	4	1	0	5	0	3	—
	Topsoil etc.	0	0	0	5	2	1	8	1	4	3
G30	Turf/Loam Mound	9	19	4	241	27	20(e)	320	30	132	—
	Topsoil etc.	1	1	0	46	2	1	51	4	16	94
G31	Turf/Loam Mound	1	0	0	3	0	0	4	0	1	16
	Ditch	0	0	0	13	0	0	13	0	6	—
	Topsoil etc.	3	4	0	40	1	4	52	0	16	—
G32	OLS	0	0	0	4	0	0	4	0	1	—
	Turf/Loam Mound	0	1	1	52	8	3	65	4	32	119
	Chalk Capping	0	0	0	1	0	0	1	0	0	—
	Ditch	0	0	0	20	1	1	22	1	7	—
	Topsoil etc.	0	0	0	10	1	1	12	0	4	—
G34	Turf/Loam Mound	0	0	0	3	0	1	4	0	4	—
Unlocated		0	0	0	2	0	0	2	0	0	—
TOTALS		16	26	7	533	51	48	681	43	266	989
		2.3%	3.8%	1.0%	78.3%	7.6%	7.0%		6.3%	39.1%	
G39	Loam Core	0	0	1	10	0	3(f)	14	1	4	71
	Chalk Rubble	1	0	0	1	2	0	4	0	1	—
	Loam fill of ditch	0	0	1	25	6	2(g)	34	0	2	—
	Ploughsoil	0	2	5	240	29	17(h)	293	8	126	50
TOTALS		1	2	7	276	37	22	345	9	133	121
		0.3%	0.6%	2.0%	80.0%	10.7%	6.4%	2.6%	38.6%		

1 = Irreg. waste; 2 = Cores; 3 = Core rejuvenation flakes; 4 = Flakes; 5 = Blades; 6 = Retouched (scrapers and miscellaneous except as listed below)

(a) = includes 1 oblique arrowhead, 1 borer

(b) = " 1 kite-shaped arrowhead, 1 serrated flake, 1 notched flake, 1 'fabricator'

(c) = " 1 flaked axe

(d) = " 1 serrated flake

(e) = " 1 borer, 1 serrated flake

(f) = " 1 oblique arrowhead

(g) = " 4 serrated flakes

(h) = " 1 oblique and 1 barbed and tanged arrowhead, 2 borers

Retouched Forms. Blades or blade-like flakes served as blanks for serrated pieces and for one minimally-retouched end scraper. Most implements were made on flakes. Two pieces from the mound of barrow G30 and a third from barrow G29, all listed as miscellaneous retouched, may be rough or fragmentary chisel arrowheads. More confidently identified arrowheads were confined to barrow G19, comprising single kite-shaped and oblique examples.

Most scrapers are extensively retouched and made on flakes from the larger end of the size range available in the collection. Three examples from superficial contexts in barrow G31 and a fourth from the ditch of barrow G19 correspond to classes 8 and 9 of the classification employed by Riley (1990, table 125, fig. 15), having particularly steep and thick edges formed by the removal of relatively few large flakes. A fragmentary flaked flint axe from the mound of barrow G27 is so unevenly finished as to suggest that it broke during manufacture.

STRUCK FLINT FROM BARROW AMESBURY G39

The composition and incidence of the struck flint recovered in the course of Ashbee's 1960 excavation are summarised in Table 4. The fact that the barrow had been virtually flattened by cultivation is reflected in the ploughsoil provenance and the often plough-damaged state of most of the material. Some blades and blade-like flakes nonetheless retain undamaged, patinated, worn edges which suggest that they may once have been serrated. The two collections are comparable in their high proportions of retouched pieces, although the G39 material is distinguished by its lower proportion of cores and higher proportions of core rejuvenation flakes and blades. Most blades have plain, fairly thick butts. There are a few bladelets and a few flake and blade butts are faceted.

There are two oblique arrowheads, approximating to Clark's (1934) forms E and G, both of them rough and thick. The remaining arrowhead is a fragmentary barbed and tanged example (Ashbee 1981, fig. 8,5) of Green's Conygar Hill type (1980, fig. 46). Scrapers include one example on the end of a blade. The remainder are made on some of the larger flakes in the collection and are often extensively retouched, either elongated or more squat (like Ashbee 1981, fig. 8,7).

FLINT ASSEMBLAGES FROM KING BARROW RIDGE: DISCUSSION

The material from the barrows is closely comparable with the flint scatter long known to extend over the plateau of which King Barrow Ridge forms a part. Extensive collection in the 1930s (Laidler and Young 1939) and 1980s (Richards 1990, 109–12) showed the scatter to include the flake tools and the heavier implements of the later Neolithic, and to contain a rather high proportion of implements (Richards 1990, 24). Intensive investigation of site W59 between barrows G32 and G33 (Richards 1990, 112–16) recorded concentrations within the scatter, not only of struck flint but of sarsen and burnt flint (Richards 1990, 112).

Detailed analysis of the struck flint excavated from site W59 showed that it resulted from a technology very similar to that of the bulk of the material from the barrow mounds. The range and balance of retouched forms are also closely comparable (see Harding 1990, table 123). The manufacture of core tools, suggested by possible thinning flakes in the W59 collection (Harding 1990, 119), is confirmed by further possible thinning flakes and an unfinished axe. This comparability serves to confirm the impression that the tree-throw material was dug up together with turf and topsoil when the barrows were built. Material from the barrow mounds also reflects other aspects of the surrounding scatter: concentration of burnt flint in the mound of barrow G32 (Table 4) suggests that the turves from which it was built came from one of the burnt flint concentrations recorded in fieldwalking. Sarsen fragments from barrow G30 may similarly derive from one of the sarsen concentrations. Two pairs of refitting flakes from the mound of barrow G30 and the fresh condition of most of the pieces combine with the preservation of the pottery to suggest that the material lay little-disturbed until turves were cut for barrow construction. The high proportion of retouched pieces, and the visible wear on some of them, correspond to other indications of settlement, notably the presence of pottery and animal bone.

It is noteworthy that thick, irregular flakes and thick, roughly-worked scrapers were confined to the ditch fills and superficial contexts at barrow G31. This suggests that such material may post-date the barrow and be of Bronze Age date. Flint nodules contained in the chalk capping of the barrow would have provided an accessible supply of raw material.

A small amount of probably Bronze Age material from the ditch and superficial contexts at barrow G19 in Luxenborough Plantation may be similarly interpreted. Burnt flint from the same contexts (Table 4) is likely to be contemporary. Some of the material from barrow G19 indicates a Neolithic presence, notably a kite-shaped and an oblique arrowhead and a serrated blade.

Barrow G39, 300m to the west of the New King Barrows was also built of turves incorporating artefacts and animal bone (Ashbee 1981, 9, figs. 4-5). Artefacts from the core, and probably most of those from the ploughsoil, may thus be seen as having been present in the turf and topsoil of the surrounding area before the mound was built. Higher proportions of blades, bladelets and core rejuvenation flakes than in the collection from the King Barrows correspond to the presence of a small amount of Neolithic Bowl pottery (Table 2). The majority of the material, however, is closely comparable.

The extent of the scatter. If the turf for each barrow was cut from the area immediately surrounding it, then the material recovered from the barrow mounds should give some indication of the extent of the occupied area from which it derived. The principal limitations are (1) the incomplete picture of barrow make-up provided by the tree-throw holes and (2) the possibility that absence or near-absence of artefacts from a mound, may reflect not the edge of the scatter but a gap within it, such as were recorded during fieldwalking (Richards 1990, figs. 6, 73). Taken together, the finds from King Barrow Ridge, from the tree-throw holes and fieldwalking and from barrow G39, suggest a minimum area of at least 70 ha. Farther to the south, barrows G18 and G19 in Luxenborough Plantation lie within another dense and extensive scatter, which is likely to have been the source of the Neolithic material from them (Richards 1990, 19, fig. 2).

Extensive scatters punctuated, like this one, by denser concentrations, characterise the later Neolithic occupation of many areas (Bradley 1987, 182-283) and have been interpreted as the result of the frequent relocation of living sites within a relatively restricted area (Edmonds 1987, 174). Localised pockets of Earlier Neolithic material, as in barrow G39, barrow G132 (Gingell 1988) and in the King Barrow Ridge Neolithic pit (Richards 1990, 65-6), contrast with the widespread debris of later occupation.

The Animal Bones

by CHRISTINE FITZGERALD and JANET EGERTON

Table 5. King Barrow Ridge animal bones, numbers of bone fragments and Minimum Number of Individuals (MNI)

a) from the 1987 tree-throw hole in barrow Amesbury G30

Species	Fragments	Fragments %	MNI
Cow	63	30.1	3
Sheep/Goat	11	5.2	4
Pig	8	3.8	1
Hare	1	0.4	-
Fowl	1	0.4	-
TOTAL IDENT	84	40.2%	

UNIDENTIFIED ANIMALS

Large animals	1		
Medium animals	1		
Small animals	3		
Indeterminate	120		
TOTAL	125	59.8%	
UNIDENT			

TOTAL	209	100%	
SPECIMENS			

b) from the 1990 tree-throw holes

Species	Fragments	Fragments (%)	MNI
Cattle	26	24.2	3
Sheep/Goat	4	3.7	1
Pig	5	4.6	1
Horse	1	0.9	1
Dog	14	13	1
Red deer	4	3.7	-
Roe deer	1	0.9	-
Hare	1	0.9	-
TOTAL	56	51.9%	

UNIDENTIFIED ANIMALS

Large animals	24	22.4%	
Small animals	12	11.2%	
Indeterminate	15	14%	
TOTAL	51	47.6%	
UNIDENT			

TOTAL	107	99.5%	
SPECIMENS			

The 1987 tree-throw hole in G30 produced a small, highly fragmented, collection with relatively poor preservation. Four small fragments were burnt but almost no butchery marks were noted. The predominance of cattle (30.1%; Table 5) may be due to differential preservation, and an absence of sheep/goat teeth was also noted. No pathology was present.

The 1990 tree-throw holes included a small collection from a number of contexts, only one of which (context 920; barrow G19) contained more than a few bones. Although preservation was better than from the 1987 tree-throw hole, there was a high degree of fragmentation and weathering. Very little butchery was visible, and no pathology was present. The hare, horse and dog bones are likely to be modern intrusions.

The Contemporary Land-use and Landscape of the King Barrows as Evidenced by the Buried Soils, Pollen and Molluscs

by MICHAEL J. ALLEN and S.F. WYLES

Introduction

The tree-throw hollows on the King Barrows provided a window into prehistoric buried soil contexts not seen elsewhere in the Stonehenge environs (Richards 1990; Evans 1984). In fact it was precisely the lack of such contexts within Richards' regional study that was lamented when attempting a land-use history and environmental appraisal (Allen *et al.* 1990, 254). The recording of the storm damage on both King Barrow Ridge and the Luxenborough Plantation provided an opportunity to examine and analyse buried soils and turf mounds, and compare them with ditch fill sequences; only the latter context types were available for analysis in the Stonehenge Environs Project.

Molluscan data from buried soils suffer from taphonomic problems and shells have a limited residence time in active soils (Carter 1990), but in this study they do facilitate broad characterisation of the Early Bronze Age landscape on the Ridge and of Stonehenge itself. Further, the combination of relict ancient tree-throw hollows, subsoils, old ground surfaces, turf mounds and ditch sequences will enable some chronological dimension to be incorporated and facilitate the examination of contemporary spatial variation within palaeo-molluscan faunas.

Methodology

The methods of mollusc analyses were standard and followed those outlined by Evans (1972) and detailed elsewhere (Allen 1989; 1990a). Many samples from the turf mound and old ground surface produced a large number of soil aggregates that resisted breaking down with H₂O₂. These were thought to be earthworm faecal concretions and, in accordance with Carter's research (1987), were decanted and broken down separately to examine the potential for producing temporally separate assemblages. Unfortunately in the five samples examined only one apical fragment and six non-apical fragments of *Pupilla muscorum* were recovered.

In order to characterise and differentiate the structure of the preponderant specialised open country assemblages rank order curves (*cf.* Kenward 1978; Williams and Milles 1987; Evans and Williams 1991) were constructed. Assemblage composition is shown in standard histograms of relative abundance (Figures 9 and 10). The results are presented in Table 6 and nomenclature follows Waldén (1976).

Sampling

A suite of seriate samples was taken from the tree-throw holes on both King Barrow Ridge (G30, G31 and G32) and Luxenborough Plantation (G18 and G19). In both cases samples from the compressed humic rendzinas and subsoils, turf mound and ditch fills were sampled where possible in an attempt to provide some chronological interpretations of land-use within the vicinity. A subsoil hollow in G32 was also sampled.

Sampling was always perpendicular to the old ground surface even if as a result of tree-throw action the actual sample column was almost horizontal and care was taken to avoid obvious root disturbances. Due to the uniformity of the buried soil horizons (bAh), as a result of extensive earthworm working, and the highly compacted nature of the soils after long-term burial beneath an extensive turf and chalk mound, close sampling was not appropriate. Many old ground surfaces were recognised in the field as only 50–180mm thick and consequently were sampled contiguously, where appropriate, at 50mm intervals.

Soils and magnetic susceptibility

The buried soils were dark compacted silty humo-organic rendzinas of the Icknield Series, all of which

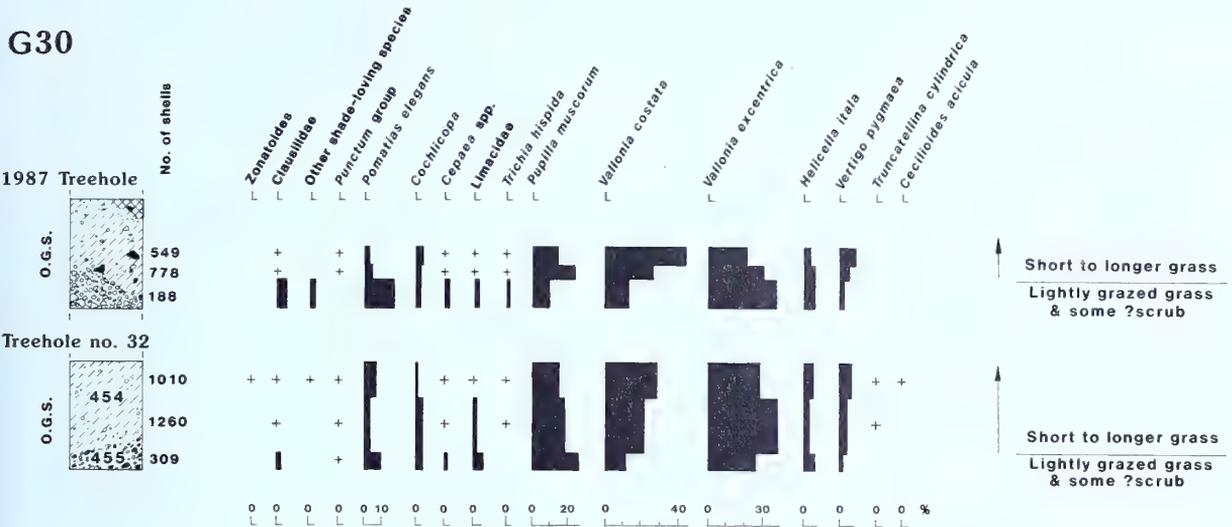


Figure 9. King Barrow Ridge: molluscs from barrow G30

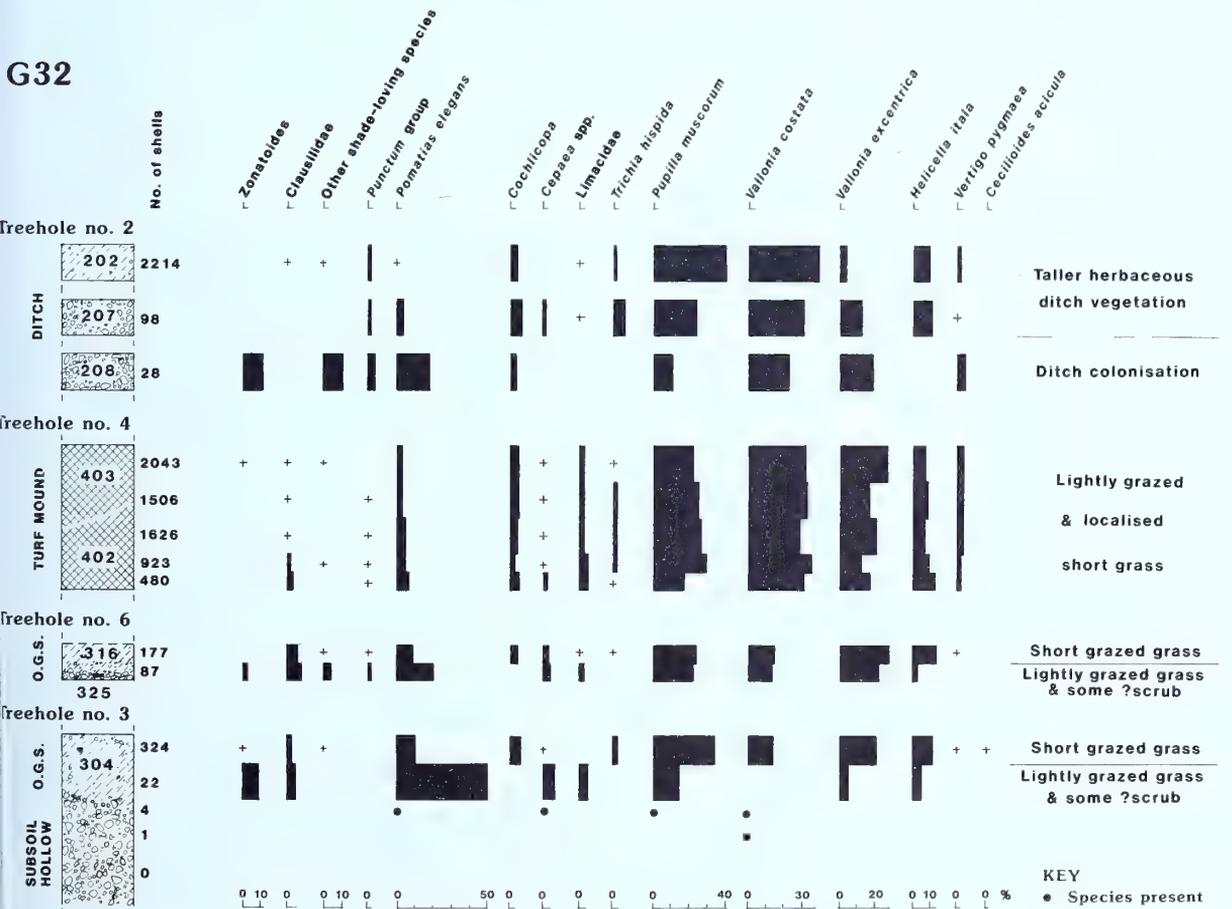


Figure 10. King Barrow Ridge: molluscs from barrow G32

were largely stone-free and displayed a minimal A/C horizon. The uniformity of the buried Ah horizon and the number of soil aggregates (faecal pellets) observed both in the field and during sample processing testify to its extensive biotic mixing; probably predominantly by earthworms. Evidence for truncation (?deturfing) of the buried old ground surfaces was difficult to determine from field observation, though in some cases deturfing beneath the barrow is unlikely (see mollusc assemblages below).

No discrete turves were certainly identified within the mounds, indicating that all were constructed with the humic, stone-free rendzina turf of the type sealed by the barrow.

Magnetic susceptibility was recorded on most of the mollusc samples (Allen 1986; Allen and Macphail 1987). The results are presented below in SI units $\times 10^{-8}$ SI/Kg. Typical topsoil enhancement was seen in all the buried soils but distinct variation in enhancement between them was recorded. The basal portions of the buried soils (B/C) were all consistently relatively low (7–18) whereas those from the Ah horizons from the King Barrows were consistently enhanced (G30 = 36–42 and G32 = 23–28). The turves from the G32 barrow were relatively high (35–39) but equate well with those from the buried old ground surface. Although distinct variation between the magnetic susceptibility readings of upper and lower soil profiles was recorded, this difference was not obvious during physical observation of the *in situ* soils. The ditch fills recorded low magnetic susceptibility measurements in the basal fills (4–7) due to the high chalk content, but those of the upper, tertiary fills (32 and 35) were comparable with the buried soil. The interpretation of magnetic susceptibility enhancement is discussed below.

Pollen

by R.G. SCAIFE with MICHAEL J. ALLEN

The extensive exposures of humic weakly calcareous buried soils and turves represent some of the finest chalk palaeoland surfaces and thus present an unprecedented opportunity to examine the potential preserved pollen spectra in view of the paucity of such data from the chalklands (Scaife 1982). Extensive sampling was undertaken by the writers to enable comparison between the pollen spectra and molluscan assemblages. It provided an opportunity to examine both sets of palaeo-environmental material and potentially question the interpretative

status of the two analytical techniques (Dimbleby and Evans 1974).

A series of four samples was prepared to assess pollen preservation using standard techniques (Moore and Webb 1978). Unfortunately, most samples were devoid of pollen and where a few grains occurred the pollen was poorly preserved and therefore no statistically or ecologically valid analysis could be conducted. The pollen recorded from the top of the old ground surface beneath G32 Hole 6 did produce 1–2 *Liguliflorae* and 32 *Polypodium* and the presence of *Plantago lanceolata* and Cereal type was recorded. Poor pollen preservation is undoubtedly due to the heavily worm-worked nature of the humic rendzinas (see Allen and Wyles this report).

Mollusc assemblages

Mixing and intrusion of mollusc faunas must be considered, but as can be seen from the results (Figures 9 and 10), stratification was recognised within the assemblages indicating that recent biotic mixing here was not a major problem. The assemblages were predominantly highly specialised with steep rank order curves. Although significant variation in the numbers of shells preserved was recorded, it was reassuring that assemblage composition remained similar. Differences between samples from the same buried soils indicate spatial variations in the abundances of the palaeo-mollusc faunas or possibly variation in the populations of earthworm and other soil mixing (and mollusc destroying (*cf.* Carter 1987)) biota.

All the assemblages were essentially open country and no evidence of a former woodland environment was encountered, despite the fact that both subsoil and subsoil hollows were sampled and analysed.

KING BARROW RIDGE

Periglacial feature. The single sample of the silty periglacial stripe beneath G31 produced few shells. Two species, *Helicella itala* and *Pupilla muscorum*, were recovered; the latter contained the distinctly larger, late glacial form (Evans 1972) and thus is concomitant with Kerney's (1963) typical late glacial assemblages of arid tundra environments.

Subsoil hollow. Three samples totalling *c.* 6kg were processed and produced only seven shells representing four taxa (Table 6). Because of the low

numbers of shells it is impossible to interpret the palaeo-environment fully. All the species are, however, present in the overlying horizons and are generally species of open dry downland conditions rather than of mesic environments. Therefore the assemblage does not suggest a woodland environment.

Buried soils. Two sequences were analysed through the buried soils beneath G32 and G30 (Figures 9 and 10) and a single spot sample beneath G31. Although minor variation was recognised between the duplicate sequences, more demonstrable variation was noticed between the two barrows. Further variation was recorded within each sequence between the buried soil horizons (i.e. between B/C and Ah horizons).

B/C horizons: all the basal buried soil surface assemblages (B/C horizon) contained a relatively high proportion of *Pomatias elegans*, which enjoys loose and broken earth, together with typical open country species (up to 57%) mainly *Pupilla muscorum*, *Helicella itala* and the Vallonias. The specimens of *P. elegans* are probably over-represented being robust shells (Carter 1990) but are indicative of some limited soil disturbance. The presence of shade-loving elements including rupestral species might represent former more mesic long grassland (Cameron and Morgan-Huws 1975) or even relict open scrub environments (i.e. *Corylus* and *Crataegus*). This probably represents a rich, largely ungrazed, grassland with some scrub and loose soil in places.

G32: the majority of both assemblages were open country species (up to 78%) with very steep rank order curves due to the domination of a single species: *Pupilla muscorum*. *Vallonia excentrica* is present above its congener *V. costata* and both *H. itala* and *V. pygmaea* are well represented. The shade-loving species are poorly represented. These assemblages are more indicative of close sward, low diversity grassland (cf. Evans and Williams group 4 (1991)) which is heavily grazed. There is no evidence for more mesic or loose soil environments of shrubs indicated in the basal soil.

G31: the single spot sample (Table 6) produced an assemblage comparable to those from G32 and again indicates a closely grazed grassland.

G30: sequences from the main rendzina soil (buried Ah) show progressive changes in the assemblage composition. Although again the open country species are in the majority (representing up

to 90%), here there is a change in dominant species from *V. excentrica* to *V. costata*. Nowhere in these sequences does *Pupilla* attain the dominance seen in G32, but the occurrence of the rare obligatory xerophile *Truncatellina cylindrica* is of interest, if not puzzlement, as it might be expected to prefer the more heliophilic environments discussed above. Both shade-loving and catholic species (except *P. elegans* and *Cochlicopa*) are very poorly represented. The increase in *V. costata* might be concomitant with a reduction in grazing of large mammals but the assemblages are still indicative of open grassland, perhaps with some taller herbaceous vegetation and patches of short turf sward.

Turf mound. The turf mound analysed in detail (G32) produced consistent mollusc assemblages dominated by the Vallonias and *Pupilla*. These assemblages are similar to those seen from the buried soil in G30 and thus indicate turves stripped from a lightly grazed downland. It may also indicate that G32 was constructed of turves akin to those sealed by G30 and therefore suggests some spatial if not temporal variation, especially as the residence time of shells in worm-sorted soils might span only 20–30 years (Carter 1990, 505).

Ditch fills. A series of spot samples from the shallow ditch around G32 produced very few shells in its primary fill. The secondary and tertiary fills were dominated by *P. elegans* and shade-loving species, including the *Punctum* Group (Evans 1972, 331), along with the Vallonias and *Pupilla* (Figure 9). This is a typical ditch fill assemblage indicating an adjacent open grassland (Vallonias and *Pupilla*), loose ditch fills (*Pomatias*) and localised tall herbaceous vegetation colonising the ditch (*Punctum* Group and other shade-loving species). The upper ditch fills contain predominantly open country species of which *Pupilla* and *Vallonia costata* are predominant. *Pupilla* may exist in the bare earth habitats provided by the ditch but may also live in the grassland swards indicated by *V. costata*. The decline in *V. excentrica* and increase in *V. costata* testify to an ungrazed, or only lightly grazed, tall herbaceous community, probably confined to the ditch.

LUXENBOROUGH PLANTATION

The assemblages from barrows G18 and G19 produced few shells; a maximum of 20 individuals were recovered despite 2kg of soil being processed.

Palaeo-environmental interpretation is limited except for the suggestion that open grassland is indicated by buried soil beneath G18 and throughout the infilling of the ditch of G19.

DISCUSSION

Although Carter has demonstrated that biotically active soils (such as those buried beneath the King Barrows) may cause severe mixing of shell material (1990, 498), here some faunal stratification is suggested, particularly beneath G30. Certainly it is likely that the assemblages from the old ground surfaces represent only a limited period of time (Carter 1987; 1990) and thus the variations recorded between the G30 and G32 buried soils probably indicate temporal rather than spatial variation. However, the fact that the turf sealing the G32 old ground surface was from a subtly different grassland (albeit still a *rendzina* of the Icknield Series) suggests some spatial variation within the landscape. This is not perhaps surprising in view of the large area of downland that may have been stripped to produce the mound. One would obviously expect the turves within the mound to be biased towards grassland environments; after all it is precisely these locations, rather than woodland or scrub, from which turf can be cut. It is surprising, however, that there is no significant variation within the turves throughout the barrow as this suggests that they all originated from a similar ungrazed grassland environment.

The buried soils and turves all produced specialised grassland mollusc faunas indicating that an established, long term grassland existed when the barrows were constructed. Further, variations in the grassland environments detected via molluscan analysis were also reflected in magnetic susceptibility enhancement. The short turfed, grazed, low diversity grassland produced lower readings comparable to those recorded from the North Kite buried soil (Allen unpub. data; 1990b). These fall comfortably within the ranges recorded by Allen (1988) for comparable modern chalkland grasslands. Longer, ungrazed herbaceous vegetation and possibly scrub as indicated by the mollusca from G30 and the turf mound of G32 all produced high susceptibility readings which extend beyond the mean range of chalk grasslands recorded by Allen (1988).

The longer herbaceous vegetation and possible open shrub environment indicated by the

assemblages from the base of the buried soil can probably be attributed to the later Neolithic at least. During the early Bronze Age both close grazed downland and taller ungrazed or lightly grazed grassland existed in the vicinity. Molluscan assemblages from the buried soils at the North Kite (Allen 1990b) and Durrington Walls (Evans 1971) both indicate grazed grassland environs. This mosaic of land-use may indicate some crudely formalised regime of animal husbandry and pasture use within this landscape (*cf.* Maltby 1990), but undoubtedly refines our previous information about the precise nature of some of the 'grassland' present in the later Neolithic and earlier Bronze Age (Allen *et al.* 1990). Further, it reinforces Evans' conclusion (1984) that the immediate environs of Stonehenge itself during the later Neolithic was one of long established open grassland.

Summary discussion

by ROSAMUND M.J. CLEAL and MICHAEL J. ALLEN

The pre-barrow setting

From at least as early as the publication of the collections of Laidler and Young (1939) it has been clear that the Ridge was a focus of considerable prehistoric activity, at least some of which was likely to pre-date the barrow cemetery. The work on the tree-throw hollows, together with that of Major and Mrs H.L. Vatcher (Gingell 1988; Richards 1990; Harding 1988), the excavation of Amesbury G39 (Ashbee 1981), and the results of the Stonehenge Environs Project (Richards 1990) have greatly enhanced our understanding of the nature of prehistoric activity here. The bulk of the material is clearly of Neolithic date but both the flint and ceramic assemblages also demonstrate a more long-term use on a lesser scale, stretching back to the early part of the Neolithic. The area appears to have constituted a focus for varied activities, albeit discontinuous, over perhaps as much as two millennia. The concentration associated with Peterborough and Grooved Ware pottery must be viewed as being broadly contemporary with at least the earliest stages of Stonehenge, only 1km to the east.

Perhaps the most important aspect of this campaign of work was the rare opportunity for sampling well-preserved buried soils sealed beneath the barrow mounds. Molluscan assemblages from

the base of the buried soils represent land-use of at least the later part of the Neolithic and indicate an open landscape, perhaps with some shrubs, which is likely to have been lightly grazed or browsed. The area could not have been disused for prolonged periods as there is no evidence for regeneration. Although the samples examined here were not in the main areas of activity within the Ridge, and they do not represent significant time-depths, this interpretation is not at variance with that suggested for the artefacts, in which either long-term use of the area or repeated returns, perhaps on a yearly cycle or on a cycle of a few years' duration, are envisaged.

There remains the contradiction suggested by the pottery that a major difference in potting practice, attested by the pottery fabrics, does not appear to be reflected either by changes in the choice of areas used, or by a noticeable change in the environment. The makers and users of Grooved Ware, although favouring quite radically different choices of potting material, appear to have utilised the same parts of the Ridge and followed the same land-use patterns as the makers of the Peterborough Ware.

In the local area regeneration is only attested during the later Neolithic at Coneybury henge, towards the southern end of the Ridge, and at Stonehenge (Bell and Jones 1990, 158; Allen, Entwistle and Richards 1990, 256) though the date of this relative to the pottery sequence is unknown.

The barrow cemetery

The change which seems to have occurred in land-use of the Ridge just prior to or during the Early Bronze Age was essentially one of degree. Molluscs from the remaining soil profile and from the turves used in the construction of the barrows suggest a managed grazing regime combining intensively and more lightly grazed areas with more control of stock than previously. This regime is likely to have been current for at least the last thirty years before burial of the soil. Combined with the extreme paucity of occupation debris from the area, this suggests both that the contemporary occupation areas were no longer on the Ridge itself, and that there was an organised system of land management in operation.

The use of the area for grazing seems to have continued during the construction of the cemetery. A degree of chronological depth to that construction has tentatively been suggested by the molluscan evidence but the sequence and ceramic associations of the burials within the barrows remain unknown.

The barrows investigated all show substantial turf and soil cores, and one at least (G30) lacks the chalk capping found on the others. Ashbee noted that, although in many cases the loam cores of barrows consist of nothing more than the turf and soil stripped from the area of the ditch, that of Amesbury G39 was larger than would have been produced from the ditch (1981, 9). This is also certainly true of most, and perhaps all, of the barrows investigated here.

For one barrow, Amesbury G32, for which a good profile of the core was obtained, a calculation of the area of turf and soil needed to form the mound was attempted. The surviving height and radius of the turf and soil core were taken as 1m and 10m and the resulting cone divided into ten conic frustra 0.1m deep. The upper surface area of each truncated cone was then calculated giving a total surface area of 1.2 ha. This is likely to be well below the real figure, as an unknown degree of compression has taken place within the core, and the depth of soil and turf taken is also unknown, although 0.1m would not be impractical on the grounds of ease of handling turves, nor unlikely in terms of the probable depth of soil available. If 1 ha is taken as a minimum for each barrow, the six barrows G27–G32, which form the nucleus of the New King Barrows, would have required a minimum of 6 ha of topsoil and turf. Given that this is likely to be a gross underestimate, and that it does not take into account the construction of the now ploughed-out barrows (e.g. the ploughed out barrows G120–G123 to the west of King Barrow Wood G39 which certainly did have a turf and soil core; and the Old King Barrows), it may be seen that very large areas of land surface would have been stripped, albeit over perhaps several generations.

The effects of the 1987 and 1990 storms, although devastating to King Barrow Wood, have allowed a glimpse into both the pre-barrow landscape of the King Barrow Ridge and into the structural details of the barrows themselves. Prior to this virtually nothing was known of the barrows, as they escaped the attentions of Sir Richard Colt Hoare and William Cunnington due to the presence of the plantation on them (Hoare 1812/1975, 157). Although limited in extent, the investigations made possible by the damage have proved illuminating and it is perhaps worth noting that as well-preserved barrows are now well-protected by law it is only on rare occasions that such monuments are available for study. It is to the credit of the National Trust that the most was made of this opportunity.

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The archive is at present the property of the National Trust, but it is hoped that it will be deposited at the Salisbury and South Wiltshire Museum, Salisbury. The archives for both the 1987 and 1990 fieldwork have been treated as one, although recorded under two site codes: W233 (1987) and W358 (1990).

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Stonehenge: Slaughter, Sacrifice and Sunshine

by AUBREY BURL

The name of Stonehenge's Slaughter Stone is an 18th-century invention. The sarsen was one of the latest stones in the enclosure. It is probable that it stood upright well into the 17th century AD. Although at the north-east entrance it was not a portal stone. Arguably, its purpose was astronomical.

'In all matters of archaeology it is constantly found that certain questions are better left in abeyance, or bequeathed to a coming generation for solution. The "Slaughtering Stone" appears to be an admirable example of this class'.
F. Stevens 1919, 31

INTRODUCTION

The coarse pillar of the Heel Stone, numbered Stone 96 (Petrie 1880, 9–12), leans some 77m from the centre of Stonehenge. About 31m to its south-west, by the entrance, lies the wrinkled, pock-marked slab of the Slaughter Stone, Stone 95, half-buried alongside the apparent end of the bank. Large and heavy, 6.6m long, 2.1m wide, 0.8m thick, and 28 tons of elephantine sarsen, its position is anomalous, neither in the middle of the causeway, nor at either of its edges. It is not on the Neolithic axis of the monument nor on its Bronze Age realignment. Unfortunately, an optical illusion misled several commentators who did not realise how eccentrically the stone was placed.

Its very name is pseudo-romantic. Its prostrate condition is confusing. Its location is deceptive. Even the constructional phase to which it belonged is disputable.

THE NAME

The stone was not regarded as a sacrificial altar until the late 18th century. William Camden (1610) and Inigo Jones did not give it a name, the latter (1655, 57) merely referring to 'the [four] great stones which made the entrances', locating two of them outside the causeway. From notes Jones made about them after his visit in 1620 the dimensions, seven foot broad, three foot thick and twenty foot high' (2.1 x 0.9 x 6.1m) correspond so closely to those of the Slaughter Stone that it is likely that the architect had measured it. Strong misgivings have

been expressed about his tall portals at the four corners of the entrance to the henge. 'There can be little doubt that he had made a mistake' (Cunnington 1935, 24). This may be too harsh a judgement. As well as the internal Slaughter Stone two stones may have survived outside Stonehenge for some decades after Jones' observations.

John Aubrey (1665–93, 76) did identify the pillar and the Heel Stone but only as 'the two great stones marked \bar{a} [the Slaughter Stone, a title not yet given to it], \bar{w} [the Heel], one whereof (sc, \bar{w}) lieth a good way off, north-eastward from the circularish bank'.

Sixty years later the Slaughter Stone was still anonymous, 'One at the entrance' wrote Stukeley (1723, 55) is 'a very large stone, at present flat on the ground' (1740, 33), perhaps collapsed because of treasure-hunters digging near it or by the 'unfortunate colony of rabbits lately transplanted thither' (*ibid.*, 12). John Wood, prosaically terming it 'Stone G', believed it was intentionally prone, 'laid flat with a Design that it's Surface should be Level with the Surface of the natural Earth' (1747, 53) unlike the upright Heel Stone, his Stone R.

Almost a quarter of a century later John Smith contradicted Wood. Plagiarising Stukeley as usual (Burl 1991, 2) he observed, 'Rabbits burrow under it, which may have caused it to sink under the surface of the earth; this stone formerly stood erect and was square at top' (1771, 51). But it remained nameless.

Towards the end of the 18th century, however, the proto-Christian, mild-mannered druids of antiquity favoured by the Age of Reason were



Figure 1. The Slaughter Stone, Stonehenge, looking NE towards the Heel Stone

ousted by a belief in a more savage past (Owen 1962, 118). In a reaction against the sedate neo-classicism of the Augustans the Age of Romantic Credulity preferred fantasies to philosophy, the macabre to meditation and torture to contemplation. In the decades of Lewis's *The Monk* (1796) and Mary Shelley's *Frankenstein* (1818) stone circles became thronged with bloodstained priests engaged in ceremonies of disembowelling and augury.

In his *Spanish Tragedy* (1588) the Elizabethan playwright Thomas Kyd had written 'Blood is a beggar'. Two centuries later gothic imagination also demanded gore and Stone 95 provided it. In 1776 the author of *A Description of Stonehenge* enthused about 'a large stone lying within the entrance of the area, which in all likelihood served by way of a table, upon which the victims were dissected and prepared' (Anon. 1776, 7). In 1799 Edward King called Stone 95 'the slaughtering-

stone' (Harrison 1901, 78), a slab 'on which the victims were immolated' (Brown 1898, 27). The was worse. 'It is not without reason suspected that they proceeded to even more criminal lengths, and finished their horrid sacrifice with a still more horrid banquet' (Maurice 1796, 128).

It is the sacrificial altar, fed
With living men – how deep the groans!

Wordsworth, *The Prelude*, XIII, 331–2 (1800)

It might be wondered why it was Stone 95 rather than the Altar Stone, Stone 80, at the heart of Stonehenge that was selected as the stone for sacrifice but the Altar Stone was unsuitable. Being a dressed, polished block of pale-green sandstone, long and smooth-sided, it was quite unlike the Slaughter Stone whose rough pits and hollows and crevices offered the impressionable mind gr-

omely evocative receptacles for the gushings of blood before eviscerated corpses were borne to the altar for the final rites.

WOULD THE STONE EVER STAND?

William Cunnington was convinced that the pillar had fallen or been pushed over. In 1802 he wrote to his colleague, the Revd James Douglas, Kentish antiquarian and author of *Nenia Britannica* (1796), describing his excavation of the sarsen in May. 'I made the men dig under the prostrate stone so as to examine it thoroughly . . . and can attest the fact that the aforesaid stone was placed in an erect position. That part of the stone which stood in the ground was rough, but those parts which were exposed were stippled like the others' (Cunnington, H., 1975, 151). He estimated that the stone was 5m long and that with a hole over a metre deep it could have stood 5.4m above ground.

The following year on 12 April 1803 in a letter to his friend, John Britton, he elaborated. 'I will pledge myself to prove that Mr King's "slaughtering stone" stood erect. . . . I dug round it, and also into the excavation where it originally stood when erect . . . by digging I found the excavation in which the end [the NE base] was placed . . . on the east side you may see similar irregularities as you must have noticed, on the butt ends of the upright stones of the fallen trilithons' (Long 1876, 56-7, sketch, 93). The stone had fallen inwards. The investigation, however, had given no clue as to when or why the stone had been displaced.

Over a hundred years later, in 1920, when Hawley re-excavated the stone, very little more was learned about its history. All around the sarsen was a trench about a metre wide filled with Cunnington's spoil and rubbish but there was also evidence of even earlier interference. The slab had been toppled into a hastily-dug and inadequate pit so short that it left the ends of the stone propped on the sloping edges. In the unintended cavity beneath the 25cm deep, 'we found a bottle of port left under the stone, presumably by him [Cunnington] out of consideration for future excavators. The seal was intact, but the cork had decayed and let out nearly all of the contents' (Hawley 1921, 34), an upset endured by the excavators with unfortified stoicism. None of this explained why the stone should have been levelled but it is feasible that it had stood conveniently in the way of carters and waggoners coming to Stonehenge to plunder the smaller

stones. This was a practice that may have dated from medieval times. Hawley discovered that just to the north-west of the Slaughter Stone the causeway had been churned up to a depth of 20cm by Tudor and Stuart treasure-seekers, perhaps even Inigo Jones and his companions who dug there in 1620 (Webb 1725, 11), leaving broken glazed platters and glass bottles behind them.

Years after his investigations Jones himself lamented that the stones were 'not only exposed to the fury of all devouring Age, but to the rage of men likewise, [and] have been more subject to ruine. For, being of no extraordinary proportions, they might easily be beaten down, or digged up, and at pleasure, made use of for other occasions. Which, I am the rather enduced to believe, because since my first mesuring the work, not one fragment of some then standing, are now to be found' (Jones 1655, 63). A decade later, in 1666, John Aubrey on his plan of Stonehenge noted several 'paths worn by Carts' across the bank and ditch (Aubrey 1665-93, 76).

The depredations continued well into the 18th century and the continued passage of wheeled vehicles laden with stones weighing four tons or more had caused considerable damage as Hawley realised. He had been unable to find the holes in which Jones' four portal stones had stood. Uncharacteristically, he speculated about what had happened.

The soil in the depression at the entrance, already mentioned, would be very soft, especially when water collected in the cavity. Wheels of heavy vehicles would sink into it and become bogged, and possibly the vehicle would be upset. The deep ruts on the north-west of the causeway show that the road was much used and that it was deflected from the soft cavity and even mounted the edge of the rampart to avoid it. To ensure a safe road four fallen stones might have been taken from the monument and placed here to mark the firm ground, but not being placed in holes they gradually disappeared. Aubrey mentions only three, and in Smith's plan, dating about 1770, none is shown; so it may be inferred that all had gone by that time. (Hawley 1924, 36-7)

The Slaughter Stone may have been thrown over because it was an obstruction, surviving only because of its bulk and weight. A line of drill-holes

across one corner shows that an attempt had been made to break it up but by 1750 it was safe. Stone-robbing ceased around the mid-18th century perhaps from a Romantic dread of spectral reprisals. Petrie remarked that although some sarsens and bluestones had fallen or been shifted 'no stones are missing since Wood's plan of 1747' (Petrie 1880, 16).

Cunnington's and Hawley's excavations by themselves were not enough to demonstrate with certainty that the Slaughter Stone had stood. They were suggestive but not conclusive. Luckily, literature and art combine to prove that Stone 95 had originally been upright.

The written words are unequivocal. The dimensions given by Inigo Jones for the four stones he said stood at the entrance are so similar to those of the Slaughter Stone that it must be probable that he actually saw it standing. If it had been almost buried in the earth he would not have known, without digging, that it was 'three foot thick'. He also wrote that the stone was 'twenty foot *high*' rather than 'long', an obvious indication that the stone was standing.

This is confirmed by that fine fieldworker, John Aubrey. His meticulous plan of Stonehenge, drawn in 1666, reveals what harm had been done since 1620 with one of Jones' four entrance stones missing. In 1663 he had been shocked to realise that diagrams 'donne by memorie only' were unreliable (Burl 1992, 171). His subsequent draughts were more trustworthy and it is likely that his plan of Stonehenge was faithful to what actually existed 'as it remains in the present yeare 1666' (Aubrey 1665-93, 80).

He clearly referred to the Slaughter and Heel Stones as 'the two great stones'. By going on to describe two Station Stones, nos. 91 and 93, as 'but about six foot high' (*ibid.*, 97) the implication must be that his 'great one, fig. 6', the Slaughter Stone, was even taller and, therefore, erect.

If there were no more than Jones' and Aubrey's records the matter might still be considered not entirely resolved. Recently the two men have been condemned as 'proto-archaeologues' – surely the most preposterous solecism ever inflicted upon archaeology – who 'seem to have drawn Stonehenge restored, or as they imagined it to have looked when originally built' (Hawkins 1966, 54-5). History is against this.

Some fifty years before Jones, around 1568-9, Joris Hoefnagel, a topographical artist who special-

ised in perspective drawings of monuments, a rare technique for his time, seems to have visited Stonehenge, perhaps in the company of his friend and Flemish compatriot, Lucas de Heere. Four Elizabethan half-aerial illustrations of Stonehenge from the north-west have survived to commemorate the occasion: not Hoefnagel's which has been lost, but de Heere's, and a derivative watercolour by William Smith as well as an engraving dated 1575 by 'R.F.' and 'an incompetent re-engraving for the 1600 edition of Camden's *Britannia*' (Chippindale 1983, 36).

Of these, de Heere's and Smith's show only the sarsen circle but both the 'R.F.' and the Camden engravings include extra features. There are obvious absurdities in the Camden: a walled castle in a mountainous background instead of an Iron Age hillfort in the gentle Wiltshire plains, presumably a misunderstanding of the Latin 'castrum'; trilithons linked together like a mediaeval mass gallows; and stones missing or misplaced. Despite these blunders by an indifferent copyist, the engraving does have merits: it shows Station Stone 93 in the foreground; it shows the bank and ditch, albeit as a wall; and it includes two stones standing just outside the ring at the north-east, 'two stones at the entrance to the Avenue', the Slaughter Stone and a companion (Bakker 1979, 109). As they are close to the circle and inside the ditch and bank they must be the Slaughter Stone and an adjacent pillar rather than the Slaughter Stone and a misplaced sketch of the Heel Stone.

In the 'R.F.' engraving the two sarsens are lump boulders but in Camden (Figure 2), twenty years before Inigo Jones, they are upstanding pillars just as Jones was to describe them. His nephew, John Webb using Jones' posthumous notes, corroborated this. Camden's words, quoted Webb, are '*within the Circle of a Ditch &cet. . .* And he hath described in his Draught two Stones . . . these were the two parallel stones that stood upon the inside of the Trench, at the Entrance from the *North-East*' (Webb 1725, 16).

The stonehole found by Cunnington, the record of Jones and Aubrey, the drawings by R.F. and Camden, all concur that as late as AD 1666 the Slaughter Stone was a high, upright pillar. The opinion that 'this stone had been tipped out of its hole . . . a very long time ago, during the first centuries after the construction, perhaps because interrupted the heel stone view' (Hawkins 1966, 5) appears to be both chronologically and archaeologically mistaken.



Figure 2. Engraving of Stonehenge from Camden's *Britannia*, 1600. The Slaughter Stone can be seen on the extreme left

WHICH PHASE OF STONEHENGE?

In the absence of direct dating evidence it must remain questionable to which of Stonehenge's three major phases the Slaughter Stone belongs: Phase I, the henge *c.*3200 BC; II, the bluestones, *c.*2200 BC; or III, the sarsen circle and its reconstructions, *c.*2000–1600 BC. But being a sarsen whose sides had been dressed with stone mauls, a fact noted by William Cunnington in 1802 (Cunnington, R.H., 1975, 151), it is probable that it was part of the great lintelled circle project, one of scores of boulders dragged from the Marlborough Downs for the building of the gigantic ring in the Early Bronze Age.

Although a few sarsens had been incorporated in earlier phases of the henge they had not been shaped. The Heel Stone of Phase I was untouched. So were the Station Stones, four rugged sandstones at the corners of a large rectangle enclosing the bluestone rings of Phase II (Burl 1987, 142–7). What small patches of tooling they do possess 'could have been done after their original erection; and apart from this tooling they are much more like the Heel Stone, in that they are substantially natural boulders' (Atkinson 1979, 78).

Conversely, in Phase III every one of the circle-stones, their lintels, the five trilithons, the returned bluestones, the Altar Stone, all of them were hammered, ground with scraping mauls, polished to a smooth finish, particularly on their inner faces. The Slaughter Stone was similarly treated.

The part of the stone which had been below ground was rough. The part which had been above ground had evidently been dressed in the same manner as the large stones of the main structure. The marks of 'tooling' are however almost worn away on the face now uppermost [originally the outer] which has suffered much from weathering. (Stone 1924, 119)

With nothing to contradict this correlation the Slaughter Stone may tentatively be attributed to Phase III.

A COMPANION TO THE SLAUGHTER STONE

'It is almost certain that the Slaughter Stone is the survivor of a pair of upright pillars which formed a gateway to the monument' (Atkinson 1979, 31).

In two of the late Tudor sketches of Stonehenge a tall, thin pillar is shown standing close to the Slaughter Stone. This was not artistic licence. A

stonehole was found there by Hawley in 1920. 'We came upon a very large hole roughly 10 ft. in diameter by 6½ ft. deep' [3 x 2m]. A large packing-stone rested at the bottom (Hawley 1921, 36). It was estimated that its stone had stood about 5.3m above ground, similar in height to the Slaughter Stone (Newall 1929, 84).

Since the 1950s when stoneholes were allocated letters to distinguish them from the numbers given to surviving stones by Petrie (1880) the pit has been known as Stonehole E. Logically, the system demanded that the hole found near the Heel Stone in 1979, but predicted by Newall (1929, 86) fifty years earlier, should have become Stonehole J in sequence to the holes located by Hawley. Instead, it was numbered 97 to tally with the Heel Stone's 96 (Pitts 1982, 78). British archaeology can never be accused of Teutonic inflexibility.

There has been speculation that both Stonehole E and 97 were pits from which the Slaughter Stone and Heel Stone had been withdrawn to be re-erected in their present positions (Burl 1987, 77). It is a hypothesis rendered untenable by the knowledge that Stonehole E was occupied by a separate stone as late as AD 1666. Marks in the holes, moreover, made by the missing pillars were different from the shapes of their partners (Hawley 1924, 36; Pitts 1982, 82).

The amazingly perceptive Stukeley anticipated the results of Hawley's excavation by two hundred years. 'There can be no room to doubt but that there was another fellow to it [the Slaughter Stone] . . . and these two made a grand portal' (Stukeley 1723, 57). He also deduced that they had straddled the axis of Stonehenge 'from the altar down thro' the middle of the Avenue', an insight confirmed by modern excavations and surveys 'that the Slaughter Stone and stone-hole E lie symmetrically on either side of the [second] axis of Stonehenge' (Atkinson 1979, 31).

A small cavity just west of Stonehole E, Stonehole D, was discovered in 1922. Hawley thought probable that its stone once had a south-easterly counterpart whose hole had been destroyed. This would have created a setting of four stones across the causeway, the two tall centre stones, 95 and 96, being flanked by two lower ones 'in a line at the entrance' (Hawley 1924, 36). A suggestion that Stone D had been aligned on the major northern moonrise (Hawkins 1966, 139) was in error 'more than 2°' (Atkinson 1966, 215).

On the reasonable assumption that there h

been a pair of high adjacent stones inside the entrance, separated by about 2.6m (Stone 1924, 121), the gap between them would have been of the same width as that of the Heel Stone pair which also stood athwart the axis (Pitts 1982, 79, 82). This surely was deliberate. But the certainty brings with it further uncertainties. With an entrance widened from a Neolithic 10.7m to a Bronze Age 18.3m (Burl 1987, 140) it is puzzling that the pillars should be so close together. Even more bewildering, when one considers the admirable balance and architectural harmony contained everywhere else at Stonehenge, the Slaughter Stone was set up less than 5m from the end of the bank to its south-east whereas its partner was more than 7m from the bank to its north-west. Such spatial imbalance need not have been carelessness.

PURPOSE

A solar alignment may be the solution. For years it has been a canon of popular astronomical – and archaeological – belief that the Heel Stone was positioned to be in line with the midsummer sunrise. It was not. Despite the persistence of wishful thinking this has been known since the beginning of this century when Lockyer pointed out that the ‘Friar’s Heel’ was not on the axis of Stonehenge so that ‘the Sun must have completely risen before it was vertically over the summit of the stone’ (Lockyer 1901, 143).

Famous photographs such as that by Gerster for the front cover of the 1979 edition of Atkinson’s *Stonehenge* showing the sun above the top of the Heel Stone are deceptive. As Chippindale has pointed out (1983, 137), they are adjustments. ‘As the sun begins to come up, the photographer moves to one side – a foot or two is ample – to align the sun over the Heel Stone’. Reality can be disappointing. For an observer at the middle of Stonehenge the sun at its first glimmer on the skyline would appear to the left of the Heel Stone and would have to be fully risen before it reached the sarsen. Any ray cast then would pass to the left of the circle centre. If the outlier had any astronomical function it was lunar, not solar (Wood, J.E., 1978, 163).

Around 3200 BC the ditch and internal bank of a simple henge were constructed on Salisbury Plain. There was an entrance at the south and a wider causeway, about 11m across, at the north-east. The axis of the henge through the midpoint of this

entrance had a bearing of $46^{\circ} 33'$ from True North. The Heel Stone did not stand on this axis but was erected in line with the righthand, south-east, side of the entrance. At Stonehenge’s latitude of $51^{\circ} 10' 42''$ the midsummer sun would have appeared above the low horizon at $49^{\circ} 54''$. This was well to the north of the Heel Stone at $51^{\circ} 18'$, an ‘error’ of over a degree if the stone had been a solar foresight. Instead, the pillar stood midway between the minor and major risings of the moon as it moved back and forth from ENE to NNE to ENE over the 18.61 years of the lunar cycle.

A thousand years later with the emergence of what appears to be a solar cult there was change. Around 2200 BC people deliberately widened the entrance south-eastwards by throwing 7.6m of the bank back into the ditch. With a refashioned causeway over 18m wide the axis of Stonehenge was transformed, veering from $46^{\circ} 33'$ to $49^{\circ} 54'$, an alignment presumably wanted by the workers because it was the orientation of midsummer sunrise. The change also caused the Heel Stone to stand quite close to the new axis (Burl 1987, 140). This creation of a broader entrance is revealed most clearly by the six lines of postholes that had filled the space between the terminals of the Neolithic henge. The south-eastern edge of their grid stops about 8m short of the remodelled Bronze Age ditch and bank to its east.

In 1979 the discovery of Stonehole 97 at $48^{\circ} 21'$ alongside the Heel Stone created astronomical excitement. It was conjectured that the pair of megaliths had been designed as a solar ‘gunsight’ some 2.4m wide to frame the midsummer sunrise. ‘The midsummer sun would then rise on an alignment, accidentally or deliberately contrived *between* the two stones’ (Pitts 1981, 17), always assuming that the pair actually stood together, something that the excavation was unable to determine (Pitts 1982, 82).

If they were contemporaries then, more remarkably still, the sun would have shone between them and then between the Slaughter Stone and its partner, then between stones 1 and 30 of the sarsen circle and 31 and 49 of the inner bluestone ring, pouring down a thin tunnel of stone like the passage of a chambered tomb up to the Altar Stone at the heart of Stonehenge. Astronomically this did happen. If it was designed to do so it is a revelation of considerable astronomical sophistication. But as Stonehenge itself is a model of considerable architectural sophistication the intentional planning

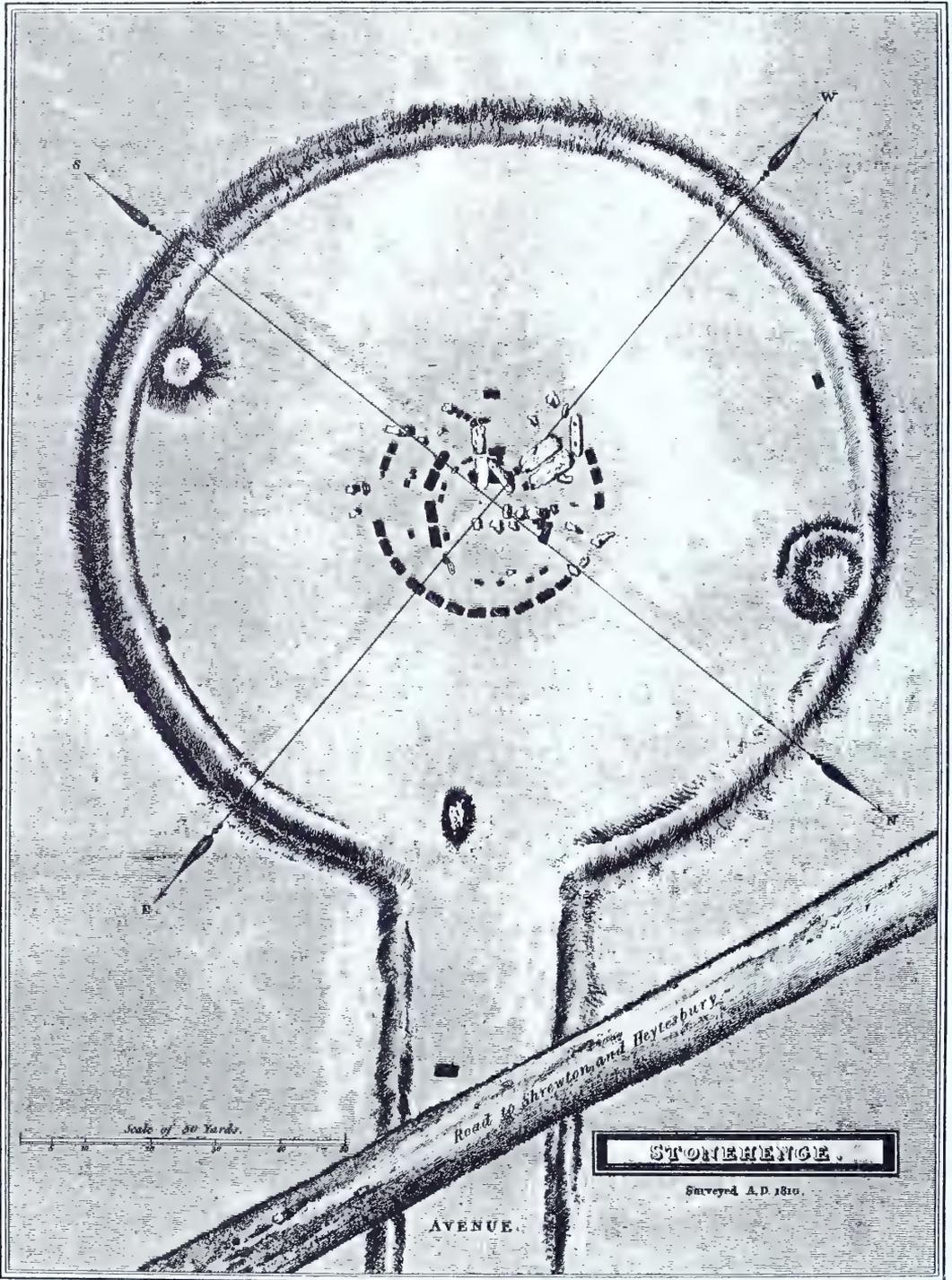


Figure 3. Philip Crocker's plan of Stonehenge, 1810. The Slaughter Stone is prostrate near the entrance to the henge

of such a solar mechanism would not have been beyond the abilities, or interests, of the builders. To the prehistoric mind the megalithic channel may even have been envisaged as a method that would guide the sun's light into the core of the circle.

If, on the other hand, the link between the sun and the stones was fortuitous it is difficult to explain the position of the Slaughter Stone. At present, lying where it does against the 'bank', it seems to be a fallen portal stone but this is the optical illusion mentioned earlier. It was never close to the genuine end of the entrance. After Hawley finished excavating the infilled ditch he did not replace the rubble but left it inside the henge piled up like a bank that extended to the Slaughter Stone. Possibly he wanted to reproduce the original appearance of the entrance. But visitors to the ring should visualise Stone 95 as it once was, standing free of the upcast and asymmetrically situated as an entrance stone.

There is documentary proof of this. In 1810, long before Hawley and when the widened entrance remained intact, a plan was made of Stonehenge 'by the assistance of an able surveyor' and with 'a strict attention to accuracy' (Hoare 1812, 143). The draught, one of many excellent maps and plans by Philip Crocker, a former Ordnance surveyor (Marsden 1984, 16), for Sir Richard Colt Hoare (Figure 3) shows the 18m broad space between the banks with the Slaughter Stone lying at least 5m clear of the south-eastern terminal, well away from where any portal would have stood.

The stone does not seem to fulfil any other function. Rising high and wide it would have blocked any shadow from the Heel Stone entering the circle. William Cunnington III, grandson of the stone's excavator, perceived this. 'If this stone stood erect, it must have entirely concealed the "gnomon" [the Heel Stone] from persons standing in front of the "altar". It would have been impossible to see the sun rise over the gnomon' (Long 1876, 57). Others agreed. 'Had the "slaughtering stone" ever stood erect, it would . . . have been impossible for a person standing on the "altar stone" to have seen the sun rise over the "gnomon"' (Stevens, E.T., 1882, 87).

Considered solely as portals the Slaughter Stone and Stone E are not convincing. Standing off-centre on the causeway and less than 3m apart they would have been strangely cramped as an imposing entrance for processions approaching Stonehenge along the avenue. If, however, they were put up to be in line with the Heel Stone and Stone 97 the thin

rectangle formed by the four stones would have lined the axis, a long and narrow passage down which the rising sun would have shone (Figure 4). If that was the builders' intention then there is a logic to the locations of Stone 95 and the Slaughter Stone as components of a nicely-designed astronomical 'corridor'.

Archaeoastronomy is a controversial discipline. In spite of the well-known solar 'window-boxes' in Newgrange and Maes Howe there is not one accredited high-precision alignment in the prehistory of western Europe. There are crude orientations on the sun or moon in groups of chambered tombs (Burl 1983, 21-9). There are slightly more refined bearings in stone rows of the Early and Middle Bronze Age (Burl 1993, 169). The accumulated data from such rows by Ann Lynch (1982) in south-west Ireland and by Clive Ruggles (1984) in western Scotland are strongly in favour of approximate solar and lunar sightlines accurate to within half a degree or so, the majority laid out between 1600 and 1200 BC. If the Slaughter Stone did belong to the remodelling of Stonehenge IIIC late in the Early Bronze Age its 'solar rectangle' would fall within the same chronological framework as the rows although its precision would greatly have exceeded theirs.

A megalithic and mathematical grace-note can be added. In 1923, digging in the avenue, Hawley (1925, 23-4) came upon two more holes for stones, B and C, in a line between E and the pit of Stone 97. Both stones are missing although C, the southernmost, may have been shown on John Aubrey's plan of 1666 (Atkinson 1979, 76).

The distances between the centres of the ragged holes, although impossible to pinpoint with exactness, are intriguing. From C to B is about 8.4m, B to 97 8.2m. The 16.5m separating E from C is twice the length of the spaces between the others which suggests that there may once have been an intervening stone. Its hole, lying in the disturbed causeway and in the area of the six lines of postholes, might easily have been overlooked.

One might imagine a row of five standing stones from E to 97 in a line 33.1m long. This is almost exactly 40 of Alexander Thom's Megalithic Yards of 0.829m (Thom 1967, 34-55), a length of 33.16m, with the stones spaced 10 M.Y. apart. If the gap between them was 2.5m this would be 3 M.Y. Laterally, the stonehole centres of the Slaughter Stone and E are about 4.1m apart or 5 M.Y. The apparent counting bases of 3 and 5 in these

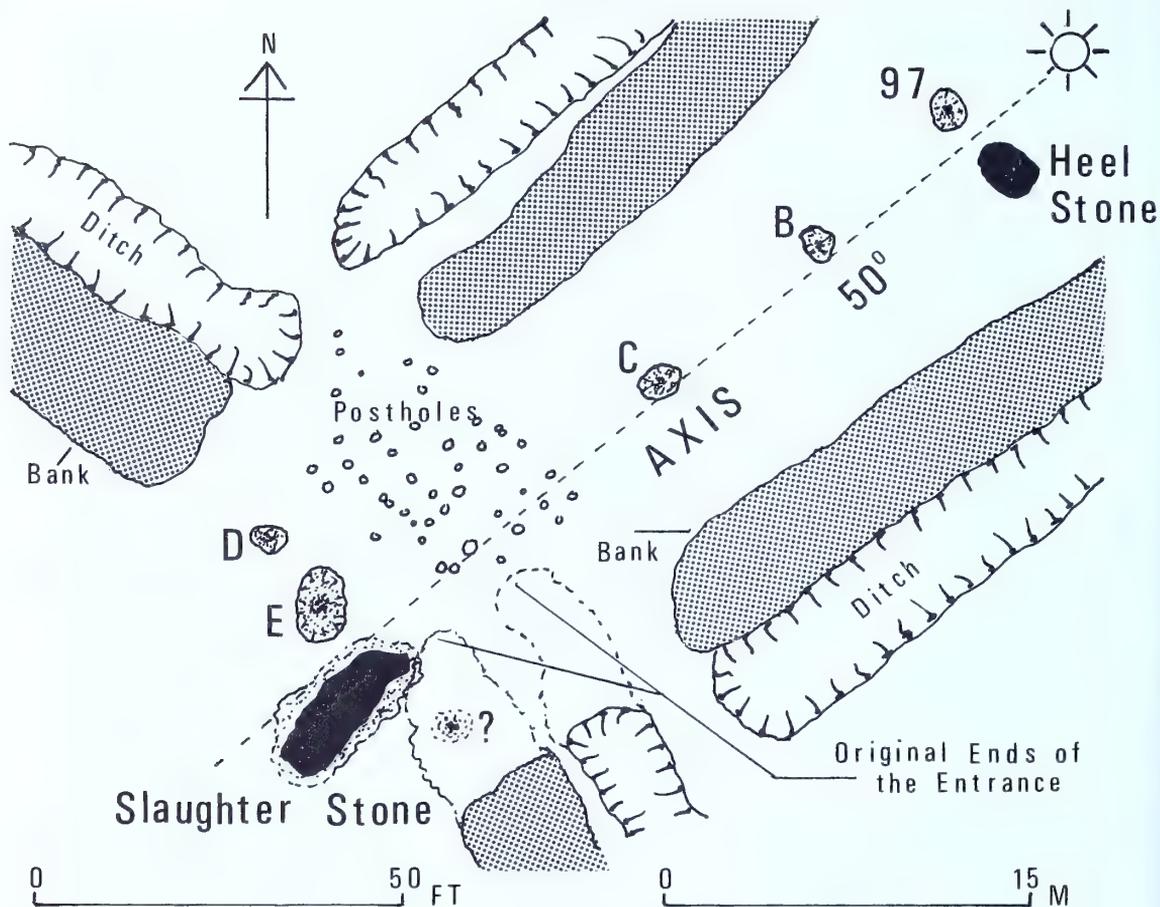


Figure 4. Plan of the north-east entrance of Stonehenge

measurements accord well with the thirty stones of the sarsen circle and the five trilithons inside the ring. As the writer remains a resolute disbeliever in any national unit of measurement in prehistoric Britain these observations are offered in a commendable spirit of academic impartiality.

There is physical evidence for the megalithic rectangle but no irrefutable proof that it was astronomically designed. However interesting it is, the argument cannot be elevated to the status of a testable hypothesis. But if we cannot certainly link the Slaughter Stone with the sun we can at least cleanse it of its blood.

The orientation of ancient monuments is not popular with some archaeologists, but, if it be a fact that two stones or one stone and a space

between two other adjoining stones are in line with a certain sunrise or sunset, the student may justifiably consider theories based on such facts.

R.S. Newall, *Stonehenge, Wilts.*, 1955, 14

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Earthworks at Compton Bassett, with a Note on Wiltshire Fishponds

by CHRISTOPHER K. CURRIE

Two large linear earthworks discovered in woodland bordering the Abberd Brook in Compton Bassett are shown to be the site of two mills mentioned in Domesday Book. From the 13th century, there is documentary evidence for at least one fishpond in association with this site. A description of the fishpond and mill earthworks is followed by a brief discussion of fishponds in Wiltshire, and a call for further fieldwork on this subject in the county.

INTRODUCTION

In September 1986, Mr Reis, the owner of Manor Farm, asked the author to look at two linear earthworks in woodland between his land and Freeth Farm. He produced a document dated c.1757 which referred to two fulling mills in the vicinity, and commented that fields adjacent to the earthworks were known locally as 'The Fisheries' (see Figures 1 and 2).

The earthworks were in thick undergrowth lying in the wooded valley of a small stream known as Abberd Brook. The lower, at NGR SU 028724, was the larger, being a dam approximately 100m in length, and up to 3m in height. About 340m north-east of this, at SU 029727, a smaller dam, about 60m in length and 2m high, was located.

HISTORICAL BACKGROUND

There were two mills at Compton Bassett at the time of Domesday. The manor was then divided into three estates of 5½, 6 and 6 hides. Each held a share of 'a third part of 2 mills which pay 10s'.¹

Fishponds are first mentioned at Compton Bassett in a document, probably dated between 1233 and 1241, in which Philip of Cumberwell granted Gilbert Bassett land beside a stream called

'Penbrok', to enlarge his fishpond there.² In 1342, a lease from Roger de Berleigh to Richard Townsend includes a 'hamme' of meadow lying at the head of five acres of land at the lord's fishpond.³ In 1349 a lease for the same land at the 'south' head of the five acres 'at the lord's fishpond' was issued to John le Brode.⁴

Mills do not recur in the documentary record until the early 17th century. In a particular of 1662, it is recorded that Robert Forman held the copyhold of the water mill 'called Cowmill for 2 lives' by an agreement dated 1606-07.⁵ A survey of 1706 links this mill with the fishpond of the 1340s and refers to a lease of 1703 stating that Richard Burgis held the mill called Kewmill, and that in this mill there were '2 Fulling Stocks, and a Ragg Mill, also Stones and other Materials for a Corne Mill'. Held in conjunction with this were 'a Dwelling House and Stable, also 2 parcels of Pasture Ground called the Mill Hams'.⁶ This 'ham' of land seems to relate to the 'hamme' of the 1340s.

The Tithe Award of 1838 links the present earthworks with these recorded 'hams'. First, there is a large field called 'Hams' on the Tithe Map to the south-west of the earthworks.⁷ The lease of 1349 records the 'hamme' to the south of the fishpond. Secondly, there is a field called 'Middle Cow Leaze' on the Tithe Map, and the earlier documents refer

1. C. and F. Thorne, *Domesday Book: Wiltshire* (Chichester, 1979), pp. 27.2, 32.3 and 67.63.
2. *Ancient Deeds*, vol. III (1990), A4866.
3. Somerset Record Office (SRO), DD/WHb Button Walker Heneage Muniments 1025, lease from Roger de Berleigh, 1342.

4. *Ibid.*, DD/WHb 1034, lease from Roger de Berleigh, 1349.
5. *Ibid.*, DD/WHb 1061, particular of Compton Manor, 1662.
6. *Ibid.*, DD/WHb 3103, survey of Compton, 1706, f. 1.
7. Wiltshire Record Office (WRO), Tithe Map and Award for Compton Bassett, 1838.

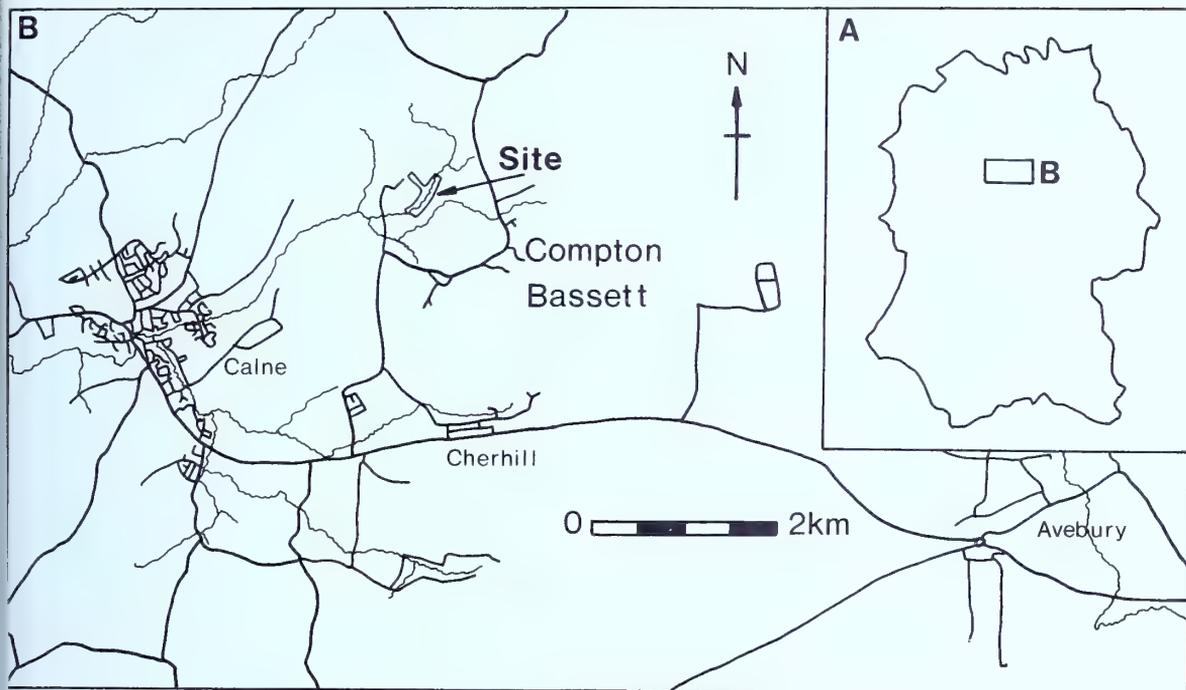


Figure 1. Location of Mill Pound Wood, Compton Bassett



Figure 2. Part of Compton Bassett Tithe Map, showing Mill Pound Wood and surrounding area in 1838. Relevant field names, marked by Tithe Map numbers, are: 219 and 250, Fisher; 222, The Fisher; 223, Pen Field; 230, Sandy Field; 231, The Ash Bed; 232, Little Pen; 233, Large's Pen; 234 and 249, Withy Bed; 248, Long Oatlands; 252, Hill (*sic*) Pound Wood; 254, Middle Cow Leaze; 258, Hams; and 259, Bridefield. Dam 1 lies on the north side of Mill Pound Wood (252) and Dam 2 close to the southern boundary of The Fisher (222).

to the mill as 'Cowmill'. Thirdly, the wood in which the largest earthwork stands was called 'Hill (*sic*) Pound Wood' in 1838. Finally, the meadow which is now the bed of the pond behind this earthwork is called 'Fisher', indicating that its use as a fishpond was remembered from earlier times. Although there are other historic fishponds in the park associated with Compton House, the evidence links the recorded medieval fishpond and mills with the earthworks under discussion.

Compton Bassett has no stream of note within its boundaries other than the Abberd Brook. That this is the 'Penbrok' mentioned above is indicated by the fact that it runs by a number of Tithe Map fields with 'pen' names (Great Pen, Little Pen etc.). The area north of the present earthworks was a large tract of former common pasture called 'La Penne' in the medieval period,⁸ and Cowpen in 1655 when it was finally enclosed by agreement.⁹ This further links the earthworks with the documented fishpond. In the absence of other sites where a mill could have existed within the manor, it would seem very likely that these earthworks were associated with the Domesday mill sites.

SITE DESCRIPTION

The larger earthwork dam is contained in a wood, still known today as Mill Pound Wood, which was cut through by the stream near its west end. The top of the dam is approximately 2m wide although the width at the base is considerably more, often in excess of 20m. This earthwork is of a greater height when viewed from the south-west, than from the north-east, or pond, side, owing to silting within the pond. The dam traverses the stream valley approximately at right angles to the general flow of water. Where the dam meets the east side of the valley, it spills out slightly. This would have been a weak spot and the 'splaying' would have acted as an additional reinforcement.

On initial impression, the water seems to have broken through the dam where it meets the west side of the valley, another weak point. Closer examination, however, reveals that this is not the case, for there are traces of the dam continuing to the west of the stream. At a point close to the dam's meeting with the valley side, a large leat, crossing

the top of the dam, is visible. This is considered to be an overflow channel. No traces of any mill buildings were found.

The pond area behind the dam (Dam 1 in Figure 3) is bounded by a steep incline, on the south-east side of the valley, which seems to have been at least partly natural. On the north-west side a narrow spinney runs along the pond edge with a stream along its eastern edge which enters the valley from the north-west and turns sharply south about 200 metres north of the dam here discussed. It appears that the ditch containing this stream is a later feature. Levels taken in the valley would seem to indicate that the sharp rise beyond this stream, on the north-west edge of the spinney, represents the former edge of the pond.

Both sides of the pond have 'hanger'-like woods on them bounded by streams. Between them is a long strip of meadow with a remarkably flat bottom, suggesting that the bottom of the pond may have been deliberately levelled.

The second, smaller, dam stands about 340 metres behind the first, and it is possible that the first pond may have extended northwards almost up to it. This earthwork lies at right angles across the valley but unlike the earthwork in Mill Pound Wood, it does not extend the full width. On the south-east side it stops short about 40m from the valley edge, where there are signs that a channel or leat may have passed by it. The end of the dam appears to be deliberately rounded although it is impossible to see how it functioned without once extending right across the valley. The stream currently cuts this dam on the north-west side close to the valley edge. It has already been noted that these junctions were weak points, and the 'join' where the dam would have met the valley side is almost completely eroded. Only slight traces of the dam remain on the north-west side of the valley.

A ditch exists along the edge of the wood on the north-west side of the valley. This empties south of the dam, and may have acted as a flood channel to divert water around it in heavy rain. The ditch has been filled in at a point north of the dam, so it is not possible to trace its origin. Had it remained intact, it might have been possible to determine whether it could have diverted the main stream from a point higher up the valley to below the dam. Such

8. *Ancient Deeds*, III, A4816; SRO DD/WHb 1008, grant of Philip of Cumberwell, temp. Henry III.

9. SRO, DD/WHb 1077, detail of enclosure of common lands in Compton, 1655.

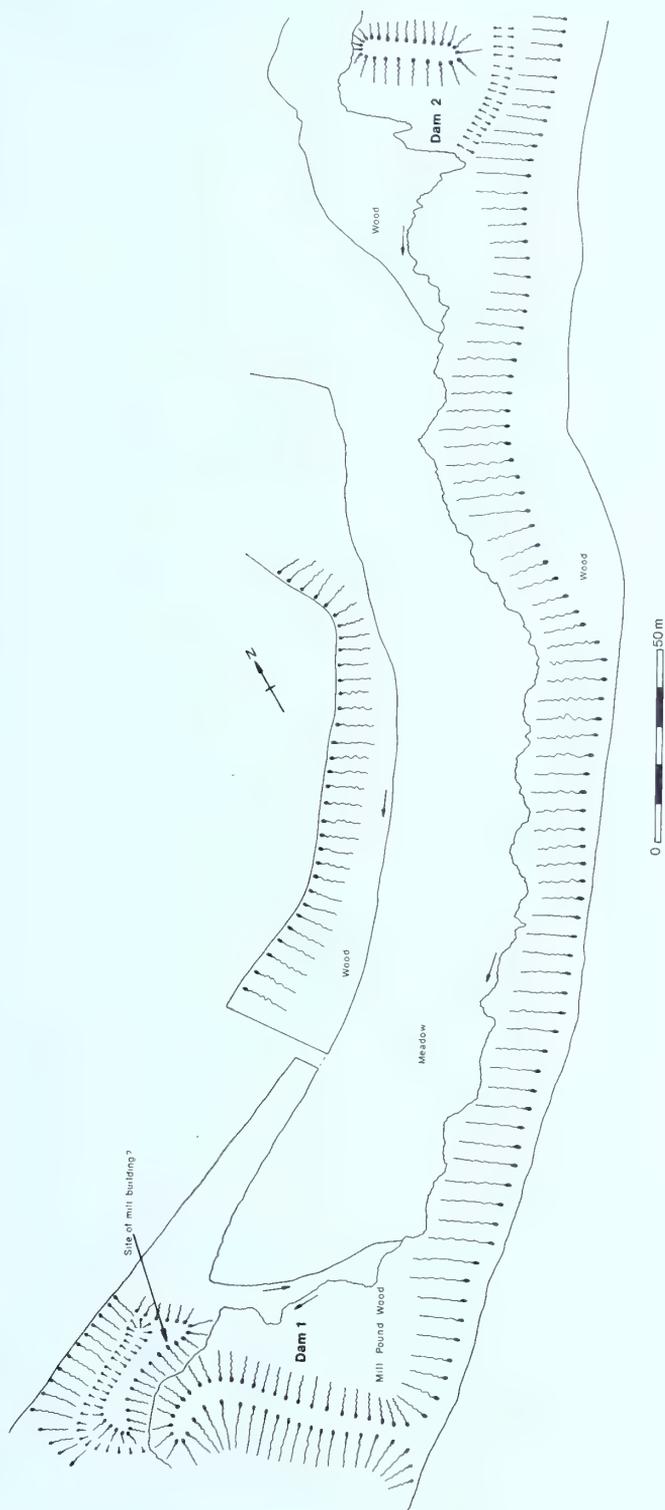


Figure 3. Earthworks in Mill Pound Wood, Compton Bassett; centred on SU 029725

diversion channels were an important asset to fishponds, enabling them to be drained and making them easier to manage. Drainage would have facilitated repairs, the removal of silt brought down by the stream, and controlled access to fish stock.¹⁰

A discussion of fishponds in Wiltshire

Documentary evidence indicates that two mills existed at Compton Bassett in 1086. These may then have been corn mills, but they had been converted to fulling mills by c.1700 at the latest. It appears that the earthworks also served as fishponds.

It was not uncommon for fishponds and mills to co-exist in the medieval period. There appears to have been a relationship between millers and fishing at the time of Domesday, as a large majority of the mills mentioned pay renders in eels. On a small stream like the Abberd Brook, there could have been difficulty in building up the head of water necessary to power a mill without damming the stream to make a substantial pond.

Purpose-built fishponds associated with mills are well known in medieval England; serving a dual purpose, they gained maximum benefit from the initial outlay in building. Documents show this to have been a common occurrence on royal manors. Many royal fishpond sites known in the 12th and 13th centuries were associated with mills. For example, at Clipstone, Northamptonshire, repairs were ordered in 1247 for the pond of the stew and mill.¹¹ At Feckenham, Worcestershire, repairs were ordered in 1259 to the fishpond, mill and 'bays',¹² the timber frameworks around which both mill and fishpond dams were constructed.¹³

Research on fishponds on non-royal sites in neighbouring Hampshire has shown a number of

direct links between these features and mills. The Bishop of Winchester had a mill associated with fishponds at his palace at Bishop's Waltham, which was still in operation into the present century. The fishery management of these ponds was of the highest standard and included regular drainage.¹⁴ Likewise, the Abbot of Titchfield had a mill and a fishery at the Fleet End where a large dam still stands. This fishpond was the subject of a well-documented dispute in 1393.¹⁵

The construction of dams like those at Compton Bassett has been discussed in detail elsewhere and need not be repeated in detail here.¹⁶ Archaeological excavation has shown that fishpond dams were constructed in a systematic manner that would have rendered them leak-proof. At Titchfield and Southwick, in Hampshire, successive layers of clay were rammed one on top of the other, and there was evidence at both for timber revetments.¹⁷

Medieval fisheries and fishponds in Wiltshire are poorly documented. Despite early notice of a freshwater fishery at the confluence of the Avon and Wylde in AD 688,¹⁸ they are otherwise conspicuous by their absence. The failure of Domesday to mention fisheries, or the ubiquitous eel renders at mills, is considered a deliberate omission by Darby and Finn.¹⁹ Much of this absence of knowledge may be due to a lack of fieldwork. This is highlighted by a recent survey of earthworks in southern Wiltshire where it is noted that at Stoford 'for the first time in south-east Wiltshire, fishponds have been identified'.²⁰

The best recorded medieval fishpond in Wiltshire was the royal pond at Marlborough, the earthwork of which stand where the River Og meets the Kennet. A linear dam extends at right angles across the Og at SU 193698. About a kilometre upstream at SU 187709, the A345 crosses the stream at a place known as 'Bay Bridge'. Known locally as 'Ba

10. C.K. Currie, 'Hampshire Medieval Fishponds', pp. 267-89 in M. Aston (ed.), *Medieval Fish, Fisheries and Fishponds*, British Archaeological Report, British series 182 (Oxford, 1988), pp. 270-3.
 11. *Cal[endar off] Lib[er]at[us] R[egis] 1245-1251*, 142.
 12. *Cal. Lib. R. 1251-1260*, 451.
 13. M.L. Faull and S.A. Moorhouse, *West Yorkshire: an Archaeological Survey to 1500* (Wakefield, 1981), p. 744.
 14. Currie, *op. cit.*, p. 276.
 15. C.K. Currie, 'The Division of Titchfield Common', *Hampshire Field Club and Archaeological Society Newsletter*, new series 6 (1986), 6-8, pp. 6-7.
 16. C.K. Currie, 'Medieval fishponds in England: aspects of their origin, function, management and development'

(M.Phil. thesis, University College, London, 1988), p. 54-63; C.K. Currie, 'Southwick Priory Fishpond Excavations 1987', *Proc. Hampshire Field Club and Archaeol. Soc.* 46 (1990), 53-72, pp. 65-68.
 17. C.K. Currie, 'Titchfield Fishponds Project 1985; Interim Report', *Hampshire Field Club and Archaeological Society Newsletter*, new series 6 (1986), 19-20, p. 19; see also Currie, 'Southwick Priory Fishponds . . .', p. 63.
 18. H. Finberg, *The Early Charters of Wessex* (Leicester, 1964), p. 69.
 19. H.C. Darby and R. Welldon Finn, *The Domesday Geography of South-West England* (Cambridge, 1967), p. 45.
 20. *CBA Newsletter Group 12: Wessex* (1986), p. 8.

Lake', it was over 6 hectares (15 acres) in extent, and survived into the 19th century.

Marlborough Pond is first recorded in the Pipe Rolls for 1179–80 when '28s.1d.' was spent on stocking it with fish ('*et inemendis piscibus ad instauranda vivaria Marlborough*').²¹ This pond seems to have served as a 'store' for fish to feed the itinerant royal court, and to have acted as a stock pond for the distribution of live fish to other ponds. Freshwater fish were considered a status food, and the monarchy made frequent use of its ponds to supply royal feasts.²² In 1253, Henry III ordered 60 bream from Marlborough Pond, 40 for Christmas at Winchester, and 20 more for after Christmas.²³ In 1255, bream and pike were ordered from the same source for Christmas at Winchester; 17 bream were to be sent to Clarendon, near Salisbury, for the feast of St Thomas, and 5 bream for a subsequent meal.²⁴ In September 1257, a further 20 pike and 40 bream were ordered from Marlborough for St Edward's feast at Westminster.²⁵

The movement of live fish in medieval times seems not to have been a problem. Marlborough supplied live fish as stock for ponds as far away as 'Wickham' in Suffolk.²⁶ The largest transfers were consignments of 50 live bream for the stew at Windsor,²⁷ 30 bream for Henry of Almain's pond at Burnham, Buckinghamshire,²⁸ and two lots of 20 bream for Richard of Cornwall's pond at Corsham, Wiltshire.²⁹ Steane has recorded how the bream

mentioned above were taken to Windsor in 'two tuns with canvas and nails to line them in repairing them to carry the bream . . .'.³⁰

The records also identify three further pond sites in Wiltshire, at Longford, Elcombe and Lavington, that were supplied with live fish, though it is not known if traces of these sites survive.

Medieval fish pond sites seldom took up good land. They were often found in small, steep-sided valleys. The build-up of silt on the pond beds makes them ideal for thick undergrowth, should the dam be breached in later centuries. Such sites often develop into woodland, and it is in wooded, small stream valleys that many new sites have been discovered in Hampshire. There are numerous such places in Wiltshire that could contain similar earthworks.

It is hoped that this essay will encourage fieldwork in Wiltshire to seek out further pond sites. Once a corpus of sites has been found, some form of typology may emerge. Certainly, Hampshire sites showed a high incidence of diversion channels indicating sophisticated management.³¹ The large tracts of chalkland in Wiltshire might be thought to make the county unsuitable for fishponds. This could also be said of neighbouring Hampshire, but fieldwork here has identified nearly one hundred sites. The research outlined here shows that there is more potential in Wiltshire than has been previously recognised.

21. *The Great Roll of the Pipe for the 5th–34th year Henry II 1158–1188* (1884–1925), Pipe Roll Society (30 volumes), 26 Hen. II, 25.

22. Currie, Thesis, pp. 50–88. Research has shown that freshwater fish were generally eaten fresh, and were reserved for special occasions such as feasts and the visits of important guests. This, and the granting of live pond fish as gifts, were an expression of landed wealth and status, dating back to Roman times and reintroduced into England by the Norman aristocracy. Freshwater fish were seldom salted like sea fish, nor were they produced specifically for Lent and fast days, the latter idea being an unsubstantiated antiquarian myth. Lent was a time of penance when salted sea fish were generally eaten, fresh freshwater fish being reserved as a prized delicacy. The present general dislike of freshwater fish in the United Kingdom stems from improper treatment of the fish before they are killed: they need to be kept without

food for a few days in containers filled with clean water before eating so that they can void their otherwise 'muddy' taste. For a review of the evidence see Currie, *op. cit.*, or C.K. Currie, 'The Role of Fishponds in the Monastic Economy', in R. Gilchrist and H. Mytum (eds.), *The Archaeology of the Rural Monastery*, British Archaeological Reports, British series no. 203 (1989), pp. 147–72.

23. *Close R[olls] 1251–1253*, pp. 434–5.

24. *Close R. 1254–1256*, p. 249.

25. *Cal. Lib. R. 1251–1260*, p. 393.

26. *Close R. 1264–1268*, p. 319.

27. *Cal. Lib. R. 1240–1245*, p. 282.

28. *Close R. 1256–1259*, p. 375.

29. *Close R. 1251–1253*, pp. 299, 301.

30. J. Steane, 'The Medieval Fishponds of Northamptonshire', *Northants Past and Present* 5.5 (1970), p. 302.

31. Currie, 'Hampshire Medieval Fishponds', pp. 267–70.

St Michael's Church, Aldbourne

by ANDREW SEWELL

St Michael's, Aldbourne, is a substantial medieval downland church which has been described in several WAM articles and guide books covering Wiltshire churches. These descriptions, however, are based on an art historical approach. Examination of the structure and recent opportunities to investigate concealed features in the course of repairs and alterations have underlined the value of a study based on constructional techniques and building materials.

INTRODUCTION

Aldbourn, although far from the main centres of the county, has attracted a remarkable amount of attention judging from the number of cards in the WAM Index in the Society's library, starting with a note on 'Intrenchments' in Volume 2 (1855). A view of St Michael's Church is included in the Society's collection of Buckler drawings (Figure 1), as well as some details of the interior decoration.¹ In 1989 the Society acquired an 1890s painting of the church, 'Evensong: Aldbourne' by Frank Batson of Ramsbury, to record the work of R.G. Hurn who had recently retired as Treasurer, a print of which fronted the 1990 Christmas card. St Michael's was described by E. Doran Webb, in WAM Volume 28 (1896)² and in Volume 42 (1924)³ C.E. Ponting, the Diocesan Architect, included the Church in his regular series. It is also, inevitably, the first building described by Pevsner in his Wiltshire guide.⁴

In line with general practice these authors see the building primarily in art historical terms, although Pevsner allowed himself some question marks on the constructional history. Like many other churches, St Michael's was restored under the influence of the Tractarians in 1867, fortunately without the substantial rebuilding or complete demolition which

overtook some ancient churches. This work was supervised by the eminent church architect, William Butterfield, and the County Record Office holds both the faculty and specification.⁵ In 1988, as part of an extensive programme of maintenance and redecoration, the central section of the nave floor was replaced, providing an opportunity to examine some of the foundations in so far as the 1867 restoration had not completed their destruction. Warwick Rodwell's *The Archaeology of the English Church*⁶ has suggested that an examination of the construction sequence, rather than an art history approach, is an essential complement to the earlier reports and this is the purpose of this paper.

Today, St Michael's, positioned on a slope at the top of the Green, dominates the village, and is in Pevsner's words, 'a large interesting church, which must be presented chronologically'. The surviving Norman features are the south door and a number of reset details in the arcades. From the south the church is dominated by the western tower, reported to be 99ft high, and certainly larger than any of the contemporary 15th-century towers in this part of the county. The tower is joined to the nave by a high Perpendicular arch framing a slightly smaller arch over the west door now blocked by an ill-positioned organ loft. At first sight, the nave arcades appear to match, but the north

1. Buckler Drawings: vol. 4, plate 1, general view from south; vol. 8, plate 35, box tomb of John Stone in chancel. Vol. 8, plate 47, interior of south arcade, makes no attempt to reproduce the actual position and simply shows two of the earlier arch voussoirs either side of a blank arch to distinguish the billet and zigzag styles.
2. E. Doran Webb, 'Notes on Aldbourne Church', WAM 28 (1896), pp. 156-60.
3. C.E. Ponting, 'The Churches of Aldbourne . . .', WAM 42

(1924), pp. 561-75.

4. N. Pevsner, *The Buildings of England - Wiltshire* (Harmondsworth, 1963), pp. 73-74. Architectural terms as defined in the glossary.
5. Wilts. County Record Office D1/61/18/3, Faculty of 20 May 1866.
6. Warwick Rodwell, *The Archaeology of the English Church* (London, 1981).



Figure 1. St Michael's Church, Aldbourne. Reproduction of a watercolour by John Buckler, 1806. (Photograph by Derek Parke)

arcade has only four arches compared with the south with five and the piers do not in fact march in step. Their general style is Early English double chamfered, but the re-use of capitals and voussoirs from earlier work, as well as reconstruction, suggests a mixture of architectural intention and constructional expedient. The chancel was largely reconstructed and reroofed in the 1860s, but the Lady Chapel on the north side retains its Perpendicular features and detailing. The exterior of the church, except for the tower, is a mixture of in-fill and patching to accommodate new features with re-faced rubble walling and, at the eastern end, new windows reflecting the views of the Tractarian restorers rather than a 15th-century leviathan stranded in a downland village. Nevertheless it remains the largest building in the community, still able to seat several hundred people.

THE SITE⁷ (Figure 2)

The church is situated on the spur between the two dry valleys feeding the perennial Ald stream flowing

south to join the Kennet below Ramsbury. The spur overlooks to the west the earliest, presumably, pagan occupation site round the manor farm, now no more than some mounds in the pasture on the Swindon road. The centre of the present village was at this period a substantial pond or 'mini-lake' formed by a natural dam of sarsen debris washed down the tributary valleys in Pleistocene times to pile up in the 'choke' formed at the southern exit, now the Hungerford road. Both church and early settlement were sited above the level of winter flooding. The original north-south road linking the Kennet valley settlement at Littlecote to Ermine Street at the Wanborough Plain station, where the M4 now intersects the Roman Road, crossed the top of the lake and followed the surviving path round the site of the church. The route branched north of the present village and the direct line over the Downs provided the missionary route for the Ramsbury monks to the Vale of the White Horse. While this part of the Vale is now in Berkshire, it was once part of the original diocese and there is an

7. The early features of the settlement are based on unpublished monographs by the author deposited in the Society's library at Devizes and the Local Studies Library at Trowbridge: a) 'Development of Aldbourne Village and St

Michael's Church' (1986); b) 'The Prehistory of the Aldbourne Basin' (1988); and c) 'Report on Trial Excavations at Aldbourne Manor Farm in 1987 and 1988' (1989).

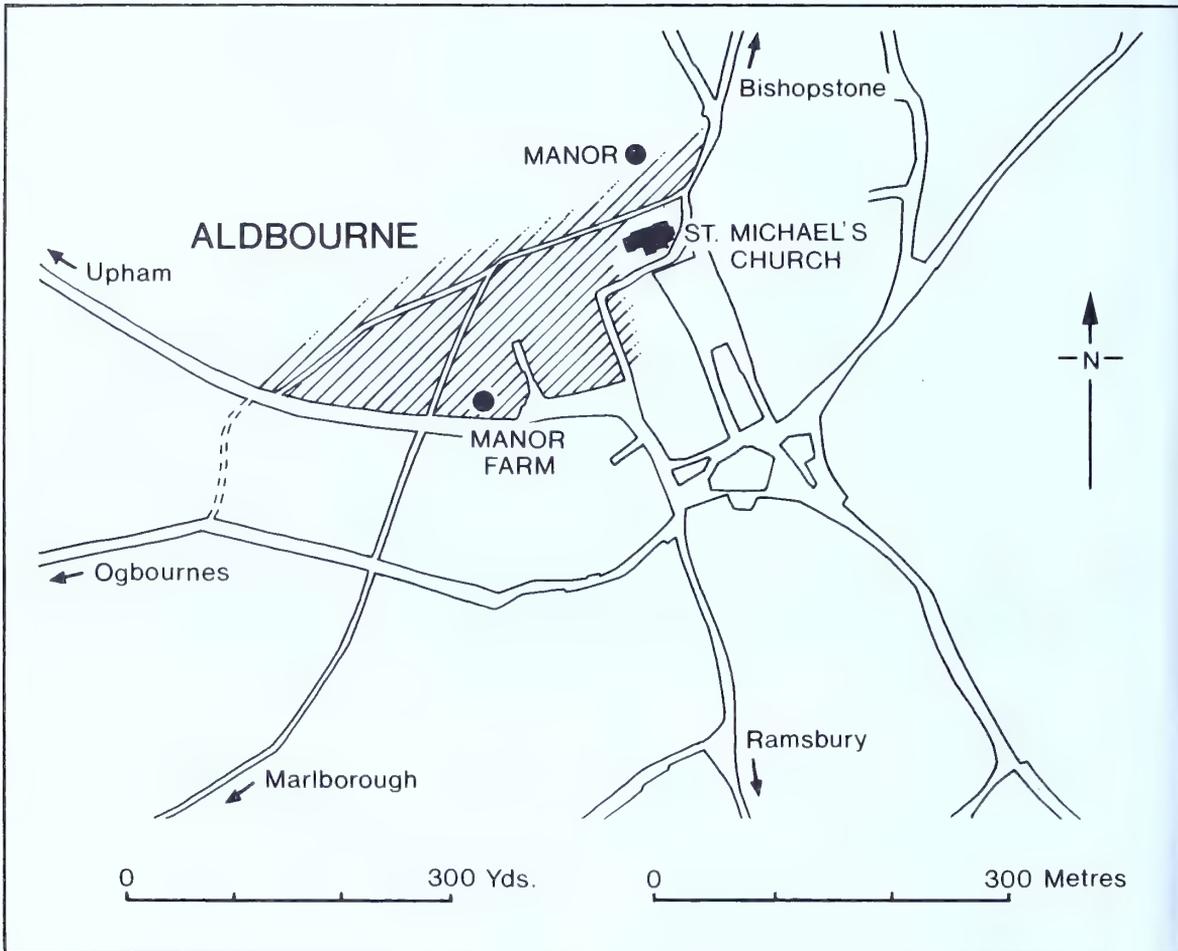


Figure 2. Sketch map showing the extent of Saxon and Norman Aldbourne. (Drawing by Nick Griffiths)

evident relationship between Aldbourne and, for example, Bishopstone and Shrivenham. Standing as they do on the north side of Holy Cross at Ramsbury, the new churches were dedicated alternately to St Mary Magdalene and the Virgin Mary. Intriguingly both Shrivenham and Aldbourne continued to share the 'feast' of the former, although both were rededicated to male saints in the late Middle Ages. Scarrots still exercise the rights established by the original fair men from Wootton Bassett, the contemporary administrative centre.

The original roads to Marlborough and to the Ogbournes join at the site of the manor settlement

and pass along the north side of the church to link with the Ramsbury–Bishopstone route, at what is now the east end of the church. This may have suggested the site, which could also have been the pagan holy place and burial ground. Later, when the lake was drained leaving only a pond at the bottom of the 12th-century Green, the roads were reorganised and two medieval lynchets developed immediately above the church to increase the arable when the population peaked at the end of the 13th century.

The Domesday record⁸ indicates that in the Saxon period Upham and the fertile valley lands c

8. C. and F. Thorn (eds.), *Domesday Book: Wiltshire* (Chichester, 1979), 'Notes on Place Name Identifications',

pp. 3–5; Charnage, p. 66a.

Shipley passed into the hands of the Crown from the Bishop, in exchange for Charnage. The King acquired the hunting in the Chase, and probably encouraged the village settlement as the agricultural centre. The focus of the manor remained at Upham until, at least, the departure of the Goddards in the 16th century and this may account for a village which throughout its history seems to be artisan, rather than manorial, in its traditions and buildings.

BUILDING MATERIALS

The first church would have been no more than a wooden hut, probably elaborated in due course into a 'hall-nave' with rubble walling. Today the church, in spite of several reconstructions to improve the building or make good the damage, includes many features from the earliest times. With the exception of the tower, a great deal of the stone comes from local resources. Little was discarded when earlier work had to be rebuilt and masonry from the early building was often reused in the rubble walling, or in secular buildings.

Three building stones are available in the village area – flint, sarsen and chalk. Both nodular and tabular flint can be found quite close to the village, although there is no sign that the latter was used. Knapped flint was used to face some of the exterior walling reconstructed, or at least refaced, in 1867 after the plaster had been removed. There is a small section of flint and chalk chequer board work forming the wall of the Goddard Chapel between the south door and south transept. Sarsen, a hard cemented sandstone, was available in quantity, mostly as small boulders deposited at the southern exit of the village. Broken sarsen and flints were used in the rubble walling. Larger sarsen boulders provided a foundation layer, particularly for chalk walling, and these often survived the destruction of the wall itself. Small sarsens, sometimes knapped, were also used for paving, particularly in the new roads and paths associated with the enclosure and development of the Green as a market in the 12th century. A band of hard Chalk Rock is used by geologists to define the junction between Middle and Upper Chalks. This is a high quality limestone with a very good weight/strength ratio, which can be easily worked, particularly when freshly cut from the quarry. A very similar limestone is used to define

the boundary between Middle and Lower Chalks, which has a much wider distribution through the chalk areas of the country. A number of churches below the escarpment have survived with most of the Saxo-Norman chalk masonry intact. There are also a number of secular buildings in the village which belie the common view that chalk is unsuitable for external masonry. In the Middle Ages it was much used, for example, in the internal vaulting of Chichester Cathedral and the cloisters at Windsor Castle,⁹ although it was largely replaced in the post-Norman period by Jurassic limestones for structural work. The Chalk Rock more or less encircles the village and defines many of the immediate landscape features. There are several abandoned quarry pits close to the village; the largest, on the spur where the old Ramsbury road drops down to the crossing at the bottom of the village, is now occupied by a row of thatched cottages known as the Butts. Recent drainage work has confirmed that there was a substantial face of good hard limestone, which produced the masonry used in the earliest development of the church, much of which, even if rebuilt, still survives.

Some stone was also brought in from outside the Aldbourne Basin. There is no sign that masonry work other than that connected with the actual construction was done on site. Individual stones, or voussoirs, required for arches and windows had to be cut and fitted to the full scale pattern laid out on a horizontal surface at, or very close to, the quarry. This took advantage of the facts that most stone is easier to work when freshly quarried and that the local masons acquire the skills essential to select and match the stone. Further, if the building site is a long way from the quarry, only the stone required has to be moved. Using ox carts carrying, at the most, about 4 tons over a mile has been estimated to double the quarry price. In essence, therefore, the imported stonework was prefabricated at the quarry and this provides the key to the source and period when particular features were incorporated.

Aldbourn masons, however, would have cut and assembled the Chalk Rock used in the first stone building and their successors may have been able to assemble pre-fabricated arches from elsewhere. They may also have carried out recutting and reconstruction work when required. When stone was brought in from the Vale the work would have

9. F.J. North, *Limestones: Their Origins, Distribution and Uses* (London, 1930).

been, at the least, supervised by masons from the quarry area. It is probable that the well established Aldbourne family name of Liddiard records the masons, who came to the village from the Lydiards in the Purton area to build the tower.

A wide range of Jurassic limestones has been exploited in the valley land below the Liddington escarpment. Transportation problems ensured that until the advent of the railways, stone was sought from the nearest quarry, although exceptionally, small quantities were brought from a distance, such as the Nottingham alabaster slab of John Stone's tomb in the chancel (Vicar 1478–1510). The run of the valleys made the Aldbourne builders look to the Vale, while the Kennet valley settlements looked west towards Calne for similar stone.

While the general geological background of the stone is relatively easy to determine, the exact variety and location of the quarry area is difficult. Even if a quarry is suspected, it is most unlikely to be in use today and in most cases can only be identified from casual depressions or spoil. In any case the zone from which the stone was quarried has by definition been destroyed in the process. It is, therefore, not surprising that Ponting, in spite of his experience as Diocesan Architect, wrote in 1924 identifying the Chalk Rock in the piers as 'Chilmark' stone. The geology is different and the cartage from one end of the county to the other makes its use highly improbable. Fortunately, Dr W.J. Arkell, whose family came from the area, made a lifetime study of the Corallian limestones in the Vale and published several articles in *WAM*, as well as books in the 1930s and 1940s, which have elucidated both the geology and the various building stones employed in the church.¹⁰

These stones included various oolitic and other limestones, Bath Stone and other materials. The reconstructed Norman arches in the south arcade and many individual stones in both the piers and other structures show a marked colouration ranging from brown to near red oolitic limestone. This seems to have been the source of Ponting's statement that the 'nave was evidently more or less destroyed by fire'. There is no other evidence of this. In fact, occasional damage to these stones shows that the colour runs through the body of the

stone. The Corallian series, recorded in the Red Down boring near Highworth,¹¹ includes similar stone and many of the churches in this part of the Vale include similar material, noticeably in the construction of Norman features, as in doorways at Ashbury and Bishopstone. There are also odd samples in buildings in the village, probably rejects from the church. The colour is probably the result of surface seepage from iron rich overburden; the stone could be quarried without too much difficulty at the nearest convenient site and was, therefore, the obvious choice when the original chalk stone building was extended. It probably comes from quarries between Shrivenham and Highworth, some 11 miles away on the old road over the Downs.

Some cream/white varieties of oolitic limestone were implicitly quarried from rather deeper levels. They were probably of rather better quality and easier to match for colour. There are three distinct types in St Michael's. Some relatively light coloured Corallian stone was used in the Norman period, more particularly for the south door and the western arch of the south arcade, both of which are probably rather later than the billet and dog tooth arches referred to above. No doubt this came from the same area as the coloured stone. The tower, a quite separate structure, is built of a particularly good quality Corallian, Wheatley Limestone,¹² from the Purton/Lydiards area. The Purton masons seem to have made a business in the 15th century of producing towers and there is a definite similarity in the designs at Purton and Wanborough, as well as several other churches in the Vale. Clearly the Goddards, who had expanded their estates into the Vale, after deciding Upham was an indifferent farming area, chose the largest tower attempted by the masons for their 'family' church at Aldbourne. As will be seen their ambitions exceeded their resources. Much improved transport by canal and rail allowed Butterfield to specify stone from the Great Oolite for the 1867 restoration: 'All new stone dressed work to be Bath Stone from Messrs Rundell & Saunders quarries. Box ground stone is to be used for all plinths, corbels, strings, coping, gable cross, tablings, weather moulds and Corsham Stone for the remaining parts'.¹³ Unfortunately, although an excellent stone, the rebuilt pier in the south

10. W.J. Arkell, *The Jurassic System in Great Britain* (Oxford, 1933) and R.S. Barron, *The Geology of Wiltshire: a Field Guide* (Bradford-on-Avon, 1976).

11. W.J. Arkell, 'The Red Down Boring, Highworth', *WAM* 44

(1927), p. 43.

12. W.J. Arkell, 'Map of the Corallian Beds Around Purton', *WAM* 49 (1940) p. 274.

13. WRO D1/61/18/3, Faculty of 20 May 1866.

arcade, for example, with its lead levelling sheets, is all too obviously a recent restoration. Although both Portland and Purbeck stone from the top of Swindon hill were apparently used in Roman times, these were only exploited seriously in the 18th century for buildings in both Swindon and London. However, the Portland series sandstones from Bourton appear to have been used quite widely in the church with similar Corallian stone from the Highworth area in the Vale. No doubt some stone came from the Greensands as well. Sandstone was used at Aldbourne rather casually to course some of the rubble walling and also as quoins forming the angles in the north wall of the transept. Substantial pieces were used in the south porch walling with discarded material from earlier work concealed until the 19th century under plaster. The use of this stone seems to be a 15th-century feature as does the use of oyster shell shims in the Corallian masonry of the same period.¹⁴ A broken Minety type 12th-/13th-century ridge tile, recovered recently in the course of repairs, was probably associated with Corallian stone slates from the Highworth area. Swindon Flags from the Purbeck series have been used for many of the 18th- and 19th-century tomb stones in front of the church. The same stone is used for both exterior and interior door steps, although the use of old tomb stones for the same purpose seems to have been entirely acceptable until quite recent years.

CONSTRUCTION HISTORY

The outline plan of the church in Figure 3 indicates the main features. The arches, either extant or assumed, are lettered and other features numbered. The restoration of the church in 1867 by William Butterfield included removal of galleries and a clutter of box pews and sundry other woodwork. In particular the interior limewash was removed from the arcade piers. A small area of early painting in the south aisle was discovered near the south doorway in the course of replastering, but there is no record of the underlying construction. The plaster on the exterior walls was removed and the surface made good, revealing details of the construction, particularly on the south front. The transepts and east end walls appear to have been in

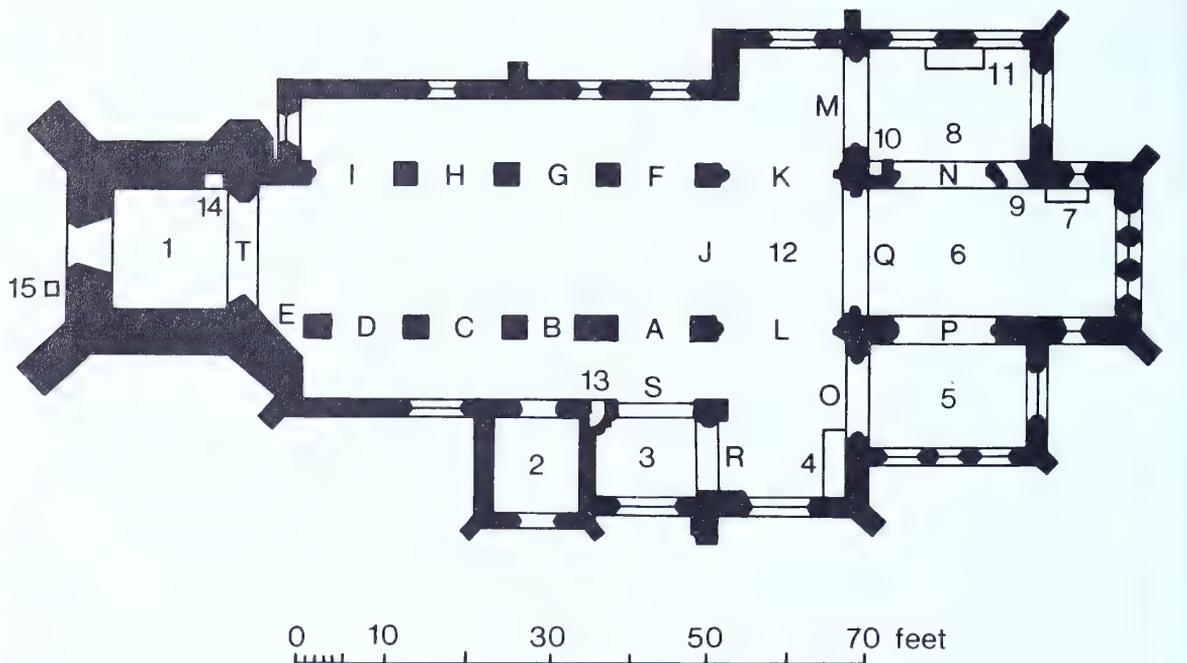
poor shape and knapped flints have been used to give a superficial finish.

The interior was reordered in 1988–89. The replacement of the remaining wooden flooring of 1867 in the eastern section of the nave with concrete and quarry tiles confirmed that the 1867 restoration had, as expected, destroyed most of the underlying features to provide a substantial space for ventilation. However the foundation blocks of the western piers (J) of the crossing and the adjoining two piers of the north and south arcades (F, G and A, B) still survive with fragments of the sarsen footings of the west wall of the north transept. The substantial dimensions of the crossing blocks justify the presumption that they were constructed to support the central tower, rather than the present transept arches. The alignment of the blocks suggests that the nave was laid out on an axis a few degrees north of the nominal east–west alignment of the present structure. The earliest building would have been aligned directly across the face of the spur. However, when the church was extended to incorporate the tower crossing and a chancel, the same alignment would have required the east end to be built out on made up ground, because of the increasing sharpness of the slope on that flank. This was in part avoided by the realignment, although the subsequent collapse of the tower and later problems with the chancel were probably due to poor foundations. Various minor variations in the setting of the arcade arches and the overall axis seem to confirm this assessment.

Much of the rubble removed in 1989 from the west end of the north aisle wall to accommodate a new heating plant was reused masonry, mostly chalk stone with some oolitic Corallian, including broken mouldings from the Norman structure and the later 13th-century reconstruction. In one case the moulding, possibly at the base of a window, had been cut from a reused stone which had the remains of painted plaster on the blind side. Interestingly, the colour appears to be a brownish red, not too remote from that adopted for the most recent redecoration (1990). These chance discoveries confirm the well established practice of reusing as much of the waste from successive reconstructions as possible, either in the church or local buildings. For example, the interior of the tower is largely

14. C.E. Ponting, 'Notes on the Church of St Mary, Bishops Cannings', *WAM* 23 (1887): Bishops Cannings, p. 3; and

'The Churches of Purton and Wanborough', *WAM* 23: Purton, p. 234 (use of oyster shims).



- | | | |
|------------------------|-------------------|--------------------------|
| 1. Tower | 6. Chancel | 11. Walrond monument |
| 2. South door | 7. Stone monument | 12. Crossing |
| 3. Goddard Chapel | 8. Lady Chapel | 13. Stairs to porch room |
| 4. Goddard monument | 9. Squint | 14. Stairs to bells |
| 5. Vestry/south chapel | 10. Rood stairs | 15. Clock stone |

Letters refer to arches

Figure 3. Plan of St Michael's Church, Aldbourne. (Drawing by Nick Griffiths)

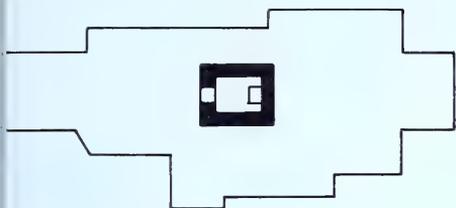
lined with chalk stone blocks recovered from the earliest stone building. One stone bears a graffito, probably the scribble of an early master mason indicating the kind of double cable roundel required. In its original position the stone would have been laid with this on the hidden side, but when it was reused the protected surface became the face. The main part of the small house in front of the church at the top of the Green, probably used originally for church purposes, is also built of chalk blocks from the same source.

DEVELOPMENT SEQUENCE (Figures 3 and 4)

The history of the earlier period can only be speculation based on the assumption that a post-

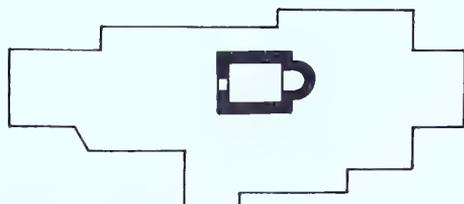
Roman pagan settlement had been established in the valley by the 5th or 6th centuries. The progressive conversion of the country to Christianity following St Augustine's mission to Kent in 597 probably reached Aldbourne, from Ramsbury, in the mid 7th century. The first church was presumably built about the same time by a priest who settled in the community.

Little is known about the next four or five centuries. Ramsbury became a bishopric at the beginning of the 10th century, with Æthelstan c.909, and Aldbourne gets a first mention half a century later. No doubt the settlement and its church had their ups and downs during the unrecorded first quarter of their life of some 1300 years. The records of the last quarter from Charles I



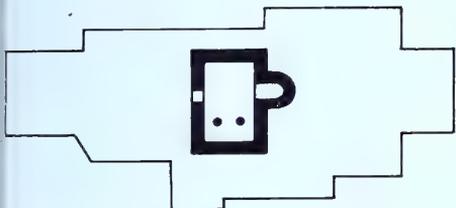
1

7th/8th century:
Wooden hall.



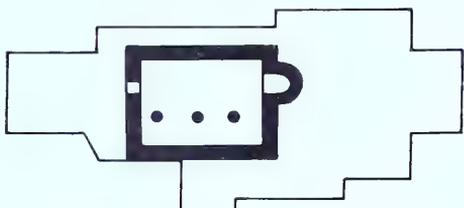
2

10th century:
Stone nave with apse.



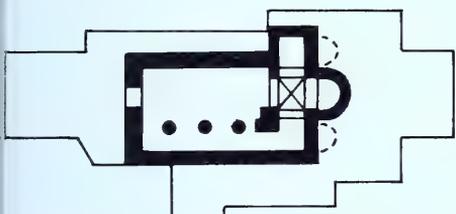
3

11th century: 3-bay south aisle.
Romanesque.



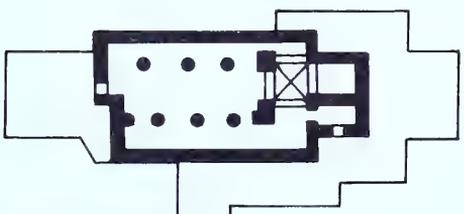
4

11th century: extended to 4-bay.



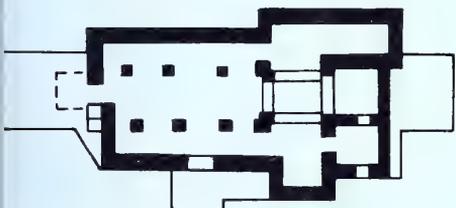
5

Early 12th century: Crossing with tower/
spire, transept and side chapels added.
Romanesque.



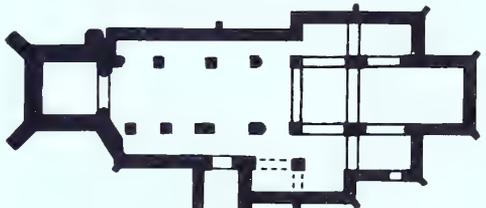
6

Late 12th century:
4-bay north arcade added.



7

Late 13th century:
Reconstruction follows collapse of tower.
Lady Chapel extended. Possible west
porch. Arcades Early English.



8

Mid-15th century:
West tower added. Crossing reconstructed
with clerestory. Crossing arches moved
to east end and chancel extended.
Porch and Goddard Chapel added.

Figure 4. St Michael's Church, Aldbourne: development phases. (Drawing by Nick Griffiths)

to Elizabeth II are only marginally better. In the 11th century, however, central government finally established control over both local society and church order. The present building, although much altered in the following centuries, includes remains of the church of that time served by the priest referred to in Domesday Book.

Sometime in the second half of the 7th century the first monk-priest to settle in the community had built a simple hut on the site of the present church. This was probably no more than a thatched hut in which he lived and said Mass.

Aldbourne was always something of a boundary area between peoples north and south of the Thames, and between those pushing west up the Thames and Kennet and those looking westwards for their backing. The downs, rather poor in both climate and resources, were a natural barrier and several Dark Age battles took place on the Ridgeway line to dispute the occupation of the upper Thames valley. Wansdyke running east-west south of the Kennet may have been another product of this conflict intended to keep the disorder of the boundary area at arms length. The name 'Socera Weg' or 'Thieves Way', which forms the northern parish boundary, records the Saxon view of what is now south Thamesdown.

The community probably suffered from one side or the other and settled times may have come late to the area. The simple wooden church may well have been burnt down, possibly on several occasions, encouraging the use of local stone in reconstruction. By the middle of the 10th century, if not earlier, the wooden building had probably been replaced by a simple hall-nave with rubble walls of chalk, flint and sarsen and a thatched roof, not unlike some of the older existing village buildings.

In the late 10th century the first sanctuary was probably a simple enclosure at the east end of the hall-nave. This must have been the focus for improvement and embellishment achieved by opening up the east wall into a semi-circular apse framed by a simple square section round chalk arch. The apse was probably constructed of chalk ashlar with simple piers and could have been vaulted in chalk. The roof would have been thatch, although limestone 'slates' may have been brought in from the Vale before freestone was in general use. There is, incidentally, no sign that Roman materials such as tiles and bricks, which must have been available on Southward Down, were used at Aldbourne. The church was now a building of some distinction when

no more than one or two houses in the community were anything better than huts. Moreover, it now formed part of the Saxon manor referred to in Domesday Book, as well as part of a well established church hierarchy within the Diocese of Ramsbury.

Over the next century or so the church developed both in accommodation and style. No longer a simple house for worship, it became a place intended to impress people with the substance and majesty of the Church and the proper relationship between the people, the priest and the lord. Throughout the post-Norman period the population was growing under the influence of a firm centralised administration, blessed by a climatic optimum. For the church this was a period of expansion and the south wall was replaced by an arcade of three bays and the roof extended to a low outer wall forming an aisle. It could be argued that a north aisle was the first phase of expansion, but the highway still ran along that side and it was probably easier in any case to build on the downward slope. Good quality chalk limestone was available at the Butts to provide the masonry of the original arcades, much of which still survives. It is possible that the piers were originally square with square section arches, and were recut when the arcades were rebuilt with double chamfer arches which incorporate a good deal of the earlier Chalk Stone. No doubt the general appearance was much as can still be seen, for example, at Baydon, Mildenhall and Little Hinton elsewhere in the county. The main entrance for the people was the west door, although the king's steward from the manor and the priest would have had access at the east end. No door survives on the north-east wall, but it is probable that the Walrond monument (11) is positioned where a door very similar to those at Bishopstone and Ashbury provided access to the later sanctuary. The arcade and nave were extended later to four bays with a roll moulding in the western arch, providing a pattern for the north arcade in due course.

In a royal manor, improvement to the church would have had a high priority and the general development of churches in the country made specialist skills available to expand the simple nave and apse to a basically cruciform layout. The limestone industry established to build Malmesbury Abbey may have provided the Norman arches and skills to convert the chancel/apse into a crossing supporting a central tower, as the decoration does not seem to be local. The brownish/pink Corallian

limestone mouldings now incorporated in the interior faces of the first three arches (K, L and Q) of the south arcade are apparently the reset elements of the chancel – billet – and the two transept arches – zigzag. The earlier chalk arch (J) provided the fourth, nave, arch now destroyed. The crossing may also have been vaulted with chalk supported on limestone ribs. The voussoirs cut for the semi-circular arches have been reset to match the Gothic form of the existing arcade with a considerable amount of 'bodging' and mismatching presumably by local craftsmen. A detailed examination of a reset Norman arch in the transept wall of Gloucester Cathedral has shown the relatively small adjustment in the fit of each voussoir that is required.¹⁵ However, calculation shows that in their original form they were some 5ft smaller in span than the present nave crossing. The central space was, therefore, significantly smaller, broadly in line with the original foundations recently revealed. The transepts and chancel were also narrower and the new chancel or apse was probably no more than half the length of the present chancel.

The main entrance from the village, still focussed on the manor area to the west of the church, was probably embellished by a limestone doorway with zigzag moulding, matching the new crossing arches. It seems probable that this was moved to form the south doorway (2) when the present tower replaced the west end. The transepts provided two side chapels, coupled on the south to the aisle. The north chapel would have been dedicated to the Virgin Mary. Apses may have been built as the sanctuaries of the chapels to match the new chancel/apse east of the crossing. The crossing supported a low tower, possibly no more than that needed to hang a sanctuary bell surmounted by a wooden steeple in the style of both Purton and Wanborough in the Swindon vale. The only real evidence, however, is the foundations already referred to and the first few steps of the rood stairs (10) which seem to be the remains of a circular stairway which led to the top of the tower.

In the late 12th century, as the population increased the nave was widened to its present size by adding a north aisle. The new chalk arcade, which still largely survives, has pointed Gothic arches in late Norman/Early English style with a wider span

and higher arches than on the south. The double-chamfer moulding typical of Early English and the Norman 'dog head' hood mould stop (G/F) and scalloped capital (I/H) emphasise the Transitional style. The roof on the north would have been lifted over the aisle to give better lighting in the nave. Opening both aisles into the transepts, however, left only short sections of the original east wall as the core of the western piers, and limestone flying buttresses were added to take the thrust of the central tower. These still survive, although now raised to clerestory height. The reconstruction of the west wall to accommodate the extended aisle would have matched the change of emphasis in the layout of the community. With the newly established market on the Green, the south door became the most important and the Norman doorway was moved from the west door to its present position. However, some kind of west entrance may have been retained; probably in chalk masonry and possibly incorporating a vestry, it would have been taken down in the 15th century.

In the late 13th century there is little doubt that the masons were over ambitious in taking the crossing span of the original nave arch as the crossing module. This arch was very lightly loaded when used to frame the original chancel and, in any case, round arches are weak in compression compared with pointed arches of the same span. Although the foundation blocks were probably reinforced, the additional buttress braced on the south wall, if not the pier, must have rested on made up land. Signs of failure would soon have required action. It is possible that the tower collapsed but the preservation of the Norman arch mouldings suggests that it was taken down to avoid a disaster. Although the considerable repairs to the south arcade piers in limestone suggest that this side was badly weakened, it could be argued that the damage was due to the tower's collapse, which would certainly have occurred on a south-westerly line.

This was followed by a major reconstruction of the arcades and crossing in which limestone was used to replace damaged chalk sections and for new work, although as much of the stone as possible was recovered from the debris of the tower. Both arcades now matched in style, although the old pier spacing remained so that the west wall still had to

15. B.J. Ashwell, 'Gloucester Cathedral – The South Transept: A Fourteenth-Century Conservation Project', *Antiquaries Journal*, Part 1 (1985), p. 112.

accommodate a difference of some 30 inches in the alignment of the responds. The Norman mouldings from the crossing arches were 'forced' into the pointed style of the first three arches of the south arcade (A, B and C), mainly as decoration. The fourth arch (D) also seems to incorporate a limestone roll moulding recovered from the collapse. New double chamfer limestone arches (J, K, L and Q) were put up in the place of the fallen crossing arches supporting a wooden roof. These arches were relocated in the 15th century to provide the arches linking the chancel to the side chapels and the transepts (M, N, O and P). The sharpness and fit of the new masonry demonstrate the skill of contemporary masons and at the same time their lack of feel for the old style Norman work. The use of limestone for new work also indicates the use of expert masons from the Vale rather than the local men working mainly in chalk who had done the work in earlier times.

A turret for the sanctuary bell was essential now that the tower had come down. It may have been possible to convert the original tower stair turret for this purpose. Alternatively, a new sanctuary bell turret was built at the north-east corner of the crossing beside the Lady Chapel apse (10). In the next century when the new tower was put up at the west end this turret was converted to form one pier of the enlarged crossing and the stair partly demolished and altered to give access to the rood screen across the new chancel arch.¹⁶

The post-Norman population peak and pressure on the available arable led to the ploughing of the marginal slopes, marked by the lynchets above the church, particularly as the villagers were forced off the manor lands as they were converted to warrens at the end of the 13th century. A climatic reverse produced a dramatic drop in population. Bad harvests and, quite probably famine, tie in with the signs of plough wash on the lynchets and although there is no local evidence, the Black Death (1348–9) sealed the break up of the traditional feudal system and a cut back in local resources. The church was now too big for the reduced population and must have suffered from a lack of maintenance and new development. There are no architectural features in 14th-century Decorated style and there is a gap between Early English and Perpendicular features.

There was, however, a relative improvement in the standard of living in spite of a continuing drop in population over the next two centuries or so. Capital became more widely distributed with the partial collapse of the manors. People in the latter part of the century, alarmed by the horrors of continuing plague epidemics, became increasingly concerned for their souls. The Lady Chapel was built in the Perpendicular style as the Guild Chapel of the Fraternity of the Virgin Mary with its house across the Green, on the site of Hightown House. The Chapel is basically an extension of the north transept chapel in step with an extension of the chancel. The earlier lancets, except in the side walls of the chancel, were replaced with three-light windows in the Perpendicular style. Chapel, chancel and transept windows must have greatly increased the light at the east end. The windows on the north side have higher sills than those on the south side to clear the lynchet bank which, as cultivation ceased with the drop in population, slumped across the old east-west road against the north wall. The Goddards, as lords of the manor, established a chapel in the south transept and it seems likely that the south chapel was converted to a vestry at the same time, if not before.

By the beginning of the 15th century there was a resurgence in the economy and a very definite return to the view that support of the church was necessary to salvation. The Goddards, still based at Upham, prospered by land acquisition and agricultural development in the Vale, and were able, like the wool merchants of other areas, to finance the reconstruction and embellishment of the church. The low crossing was raised on high Perpendicular transept and chancel arches (K, L and Q) and the arcades were topped by a new clerestory.

At the west end a splendid new tower was constructed. This has close affinities with Purton both in style and stone, and since the Goddards owned land there both the masons and the stone probably came from that area. The crossing arches, the south porch and the west tower all show the use of oyster shell as shims, as at Purton and many other churches in this part of Wiltshire, which seems to be a feature of this period and probably the local limestone industry. The tower no doubt seemed at the time both out of scale and intrusive,

16. F.A. Carrington, 'Church Goods', *WAM* 1 (1854), p. 92 refers to sanctus bell, seized by Commission of 3 March 1553.

demonstrating the 'developer ethos' of the Goddards, much as a multi-storey concrete block can threaten the small scale of older dwellings in a town improvement scheme today. However, the medieval builders still economised in the use of materials as far as possible, reusing the crossing arches, as well as chalk stone for the interior of the tower.

The 'prefabricated' Wheatley Limestone sections must have been carried in ox carts up the Liddington escarpment.¹⁷ No doubt the Goddard interest ensured that the Purton masons did a good job on the design and detailing, but unfortunately a mistake appears to have been made in setting out the tower. The stair turret at the north-east corner is set out within inches of the west wall of the north aisle without any allowance for the massive buttresses at the other corners. Thus when the builders came to the opposite corner the south-east buttress could only be accommodated by taking down the back wall of the south aisle, which is now the flank of the buttress. This must have been a tricky exercise as it seems to have led to a partial collapse of the western arch and a new arch (E) matching the new crossing arches had to be inserted to transfer the thrust direct to the tower buttress, leaving the original respond standing as an isolated and rather unconvincing pier. The outside wall of the south aisle between the south porch and the tower must also have required substantial repairs and may well have been affected by the weight of the new tower on ground which must already have been largely the remains of burials, rather than the chalk bedrock. It would be interesting to know if the later use of substantial sarsens to underpin the tower and some wall buttresses at Clyffe Pypard, another Goddard church to the north-east of Calne, was adopted as a result of the Aldbourne problems.

The south porch was built at the same time. Above the entrance there was a priest's room linked to the nave by an outside stair turret leading up to the roof. The bottom part has been converted to a cupboard and the top, visible in Buckler's drawing, was removed in 1867. The lower section came inside the back of the extended Goddard Chapel, when the area (3) between the porch and the south transept was roofed in. The chancel and side

chapels were integrated into a well proportioned east end by reusing the Early English style arches removed from the crossing. The half buttresses over the aisles were moved up to support the new clerestory. The work probably extended over a considerable period from the middle of the century. In an effort to integrate the original nave, new tower and chapel, the roof line was provided with embattlements in the same stone as the tower. Building the tower was the main cost and it seems probable that funds ran out and some of the exterior detailing and the interior vault for the bell chamber were not completed. The memorial brass, now set in the paving of the south aisle, should have had Richard Goddard's date of death added to those of his wives, but it remains blank. It is also probable that the slab on which it is mounted was intended to top a box tomb in the new chapel. From this period the Goddards seem to have concentrated their attention on the superior agricultural resources of the Vale rather than the downland.

In the 15th and 16th centuries the lancet windows in the nave were replaced with large rectangular Tudor style windows which, with the new clerestory windows, greatly increased the light compared with the gloom of earlier churches. The windows were made down in the Vale by specialist masons using selected stone. Examination of churches in the Purton-Highworth area shows that many details, such as label stops, are the same as those at Aldbourne. There are variations presumably representing different workshops and dates within the same general style. The escutcheon labels on the hood moulds of the Lady Chapel windows, for example, support the conjecture that the windows were changed later. The Goddard Chapel (3) was extended and the arches panelled presumably to set off the box tomb mounting the Goddard brass.

The Reformation had its effects on the services of the church and no doubt Puritan and Commonwealth tastes preferred lime wash to the many painted features typical of the high medieval period of which only the faintest traces remain. There are no signs of substantial reconstruction, improvement, or even repairs, and the only changes seem to have

17. D. Knoop and G.P. Jones, *The Medieval Mason* (Manchester, 1933) provides a range of detail on the costs etc. of employing masons and transport from quarry to site. An approximate estimate of the stone required for the tower is 2,000 tons with an approximate contemporary cost of

£3,000-£4,000 for the quarrying, transportation and erection. Conversion to present day costs is difficult. A figure of £1 million over 3 years might suggest the burden on Thomas Goddard's resources, particularly in view of other works in hand during the same period.

been in furnishings of which the surviving signs are wall mounted monuments, noticeably the 17th-century Walrond and Goddard tombs with their chalk figures probably carved to more or less set patterns in London. Both these tombs have been moved or rearranged judging by the stonework of the bases. The decoration of both is distinctly sub-Christian in spite of the fact that the Goddards replaced an earlier altar, of which the piscina still survives. The figures evidently suffered in the process from careless handling, rather than the traditional 'scandal' of Cromwellian billeting! The Walrond tomb was probably set with one edge against the east wall, as there is no carving on that side. It is now positioned to block up a side door to the Lady Chapel, which gave access from the Court House.

The advent of the Tractarian movement in the 19th century encouraged a return to the liturgical styles of the high medieval period with greater emphasis on the sacrament, rather than preaching. In 1867 on the initiative of the Vicar, Canon Cleather, the church was cleared of much clutter, including galleries at the west end and in the south transept, probably used by the band and singers, as well as a jumble of box pews. The chancel, which had fallen into serious disorder, was reconstructed and re-roofed under the direction of William Butterfield to focus attention on the altar and new reredos. Parts of the medieval rood screen, which had probably been taken down and replaced by a 'three decker' brought from Colerne, to the north-east of Bath, in the 18th century, were incorporated in a barrier at the chancel steps, recently removed, and the vestry screen. Panels from old box pews were reused in the chancel as screening between the sections and a number of doors survive in local houses. Incidentally, the tracery on top of the vestry screen is in fact cast iron, in spite of the close visual match with the original woodwork above the door. No doubt the effect of woodworm made it simplest to use the remains as a pattern at the Lottage foundry. Some of the woodwork of the roof now supports the first floor in one of the surviving cruck-built cottages in the village. The earlier Perpendicular east window was replaced by three lancets to match Butterfield's discovery of the roots of similar windows in the wall. Unfortunately, to

accommodate a substantial reredos the new windows were raised well above the earlier sill level and now look somewhat 'high and dry' without either altar or backing. An interesting anecdote, recorded in the Ingpen Papers, claims that the Bishop had to intervene to prevent Butterfield removing the 15th-century box tomb of John Stone.¹⁸

Comparison of the present exterior with Buckler's picture indicates some of the external changes, in particular the reconstruction of the vestry wall and substitution of reproduction 'Y' windows and the removal of the plaster. Inside, the plaster and limewash on the piers and other stonework were removed, revealing the need for repairs, clearly indicated by the use of creamy Corsham limestone, particularly at the east end of the north arcade. This work is relatively well documented, and the results have worn well without the total destruction of the ancient building and its multi-layered palimpsest, as in many churches. Speen church, which was the source of the present Jacobean pulpit, was demolished in the 1860s and rebuilt in Victorian style, possibly to the satisfaction of the incumbent, but hardly admired today. Among many other commissions in the area, Butterfield had previously designed the old school just below the vicarage, and went on to restore St Mary's, Purton, continuing what seems an ancient link between the church buildings going back to the Goddards, if not earlier.

In the early part of this century the more exotic features of the Pre-Raphaelite style were removed, including the reredos and wall decorations at the east end, and the floor was retiled with plain rather than 'encaustic' tiles. It would probably astonish our predecessors to hear that the last 40 years have been spent in deciding how to re-order the chancel and redecorate the church in a style to accommodate new liturgical ideas. Surprisingly Butterworth's pews, despite woodworm and decay, have survived the suggestion that chairs complete the return to the freedom provided by the medieval hall-nave.

CONCLUSION

Much more remains to be discovered about the construction history of the church, particularly if there is another opportunity to examine the unde-

18. WANHS Library Devizes, Ingpen Papers, Box 3 'Information from The Revd R.G. Bartelor'.

floor area and the interior walls, but judging from the long gestation period required to determine major changes, this will have to wait. It is to be hoped that on the next occasion that the interior plaster requires stripping, the floor remaking or other major works are needed, the planning will include adequate provision for professional examination, as it appears that too often exper-

enced commentators have been confused by appearances. As it stands St Michael's is a monument to many benefactors, great and small, the work of a long line of craftsmen, who have done their best to conserve and reuse the work of their predecessors, either in the building or, if the old was no longer needed, to enhance or sustain the dwellings of the laity.

The Willoughbys of Brook Hall, Westbury, and Wardour Castle

by RAYMOND J. SKINNER

This account of the Willoughby family from the late 15th until the mid 16th centuries was stimulated by the writer's chance discovery that Brook Hall, Westbury, is undergoing restoration after years of neglect. The oldest wing of the building, the 15th-century two-storeyed hall, has associations with Robert Willoughby, first Lord Broke, one of Henry VII's commanders at Bosworth Field. His sons, born during the time of Edward IV, lived during three subsequent reigns, and the younger, Sir Anthony Willoughby, was intimately involved in the short life of Henry VII's eldest son, Arthur, Katherine of Aragon's first husband. Anthony Willoughby lived through the tumultuous events when Henry VIII's divorce dominated court life and factional intrigue. The article makes use of some hitherto unpublished sources.

Almost within longbow shot of the western edge of the West Wiltshire Trading Estate, near Westbury, is a remarkable medieval survival: Brook Hall, or House, lately a farm, but much more anciently the seat of the once-powerful Paveley and Cheyney families. The house can be approached by a footpath across fields from Hawkridge, but from this direction is partially hidden from view; by road, however, the house can only be reached via a narrow lane which turns off the Dilton Marsh-Brokerswood road to North Bradley, and is a full five miles distant from Westbury.

In the late 15th century the estate descended from Anne, or Agnes, Sir Edmund Cheyney's daughter, to her son Sir Robert Willoughby, created Lord Willoughby de Broke early in Henry VII's reign in recognition of his services to that monarch.¹ Willoughby's title was taken from the Biss Brook² which runs through the valley west of Brook Hall and past the entrance to the house which was his principal residence for some years after 1485. A native of Devon, Willoughby was to become closely associated with Wiltshire; and both the Willoughby family and their adopted county were connected with many of the important events during the reigns of the first two Tudor kings.

A supporter of Edward IV during the 1469-71 fluctuations of fortune, Willoughby subsequently

abandoned his allegiance to the Yorkist monarchy as a consequence of Richard III's usurpation in 1483. The questionable nature of Richard's accession was also to alienate many other erstwhile Yorkist sympathisers, and the widespread distrust of Richard III was epitomised by the infamous rhyme of William Colyngbourne, himself a Wiltshire gentleman and past sheriff of the county, and once in the Duchess of York's service:

The Cat, the Rat, and Lovell our dog
Rule all England under an Hog.

Colyngbourne paid for his scurrilous allusions to Richard and his henchmen with a particularly painful death, but additional evidence that such sedition was quite widespread can be gauged by the following extract from unpublished notes on the parish of Berwick St John, collected during the 1920s. Writing of Berwick Farm, the Revd W.M. Goodchild observed:

An interesting relic left by a 15th-century tenant was found in the Manor garden a few years ago. What appeared to be a tarnished silver coin, about as large as a sixpence, was dug up. On being cleaned it was found to be of latten plated with silver leaf. It was sent to the

1. G.E. Cokayne (ed.), *Complete Peerage*, vol. 12 part 2 (London, 1959), pp. 684-5, n.(1).

2. J. Aubrey, *Topographical Collections*, ed. Canon J.E. Jackson (Devizes, 1862), p. 399, n.1.



Figure 1. Brook Hall, from the east, May 1991

British Museum for verification, and the verdict was that the object was not a medieval coin but a jeton or teston, that is a counter used in calculating accounts, or as a marker for games of cards. The reverse was copied from a floral design borne on many of the groats of Edward II and III, the obverse bore an abbreviated legend of 'Henry VII, King of England, France and Ireland'. But instead of the usual design on groats, a large boar appeared with the superscription engaged in trampling a royal crown.

From below the boar's paunch a little crowned King was emerging and lifting the boar off the large crown. Significance: Henry VII was wresting the crown from Richard III, whose badge was the White Boar. . . . the owner of Berwick Manor under the Abbess of Wilton was a strong Lancastrian, and an intimate friend of Robert, Lord Willoughby de Broke. Did the jeton come from one or the other?³

Colyngbourne's verse was not the only or even principal reason for his resulting execution – his real crime was that he, with another West-Countryman, John Turbyvyle, had sought to incite Henry Tudor to invade England.

It was as 'Robert Wyloughby late of Byerferrys, Knyght', that, with others, Willoughby was described as having 'on 18 October 1483, at Exeter, compassed the death of the King' (Richard III), and 'caused to be assembled great nombre of people harneshed in manner of Werre, and levied Werr'.⁴ This indictment related to the Duke of Buckingham's rebellion and after its failure Willoughby, a relative of the Duke, and others escaped to Brittany to join the exiled Henry Tudor. Consequently, Willoughby was attainted and forfeited his lands until his reinstatement after the Tudor victory at Bosworth.

In the list of those attainted by Parliament in January 1484, after Buckingham's rebellion, no less than thirty-three of the aristocracy and gentry of Wiltshire were named; other centres of the rebellion

3. Unpublished notes on Berwick St John, collected by the Revd W.M. Goodchild, Rector, 1899–1929: WANHS

Library, Box 17.

4. Cokayne, *op. cit.*, p. 683, n.1.

included Kent, Berkshire and Devon, but easily the greatest number of those indicted held land or appointments in Wiltshire.⁵ These included Sir Roger Tocotes of Bromham, Richard Beauchamp, Lord St Amand, Walter Hungerford of Heytesbury, John Cheyney of Falstone and his two brothers, and Edward Bampton, a neighbour of the Cheyneys. Most escaped physical retribution in hiding or exile, but Buckingham, in whose name the abortive coup was instigated, was taken prisoner and brought to Salisbury where, in spite of his desperate pleas to speak with the King, he was summarily beheaded in the Market Place.

It has often been suggested that much of the reason for the anti-Richard III feeling in the southern counties at the outset of his reign was that he was a largely-unknown Northerner, who gave to his followers posts previously held by the local gentry. More recent research, however, suggests strongly that it was only *after* the October 1483 insurrection that Richard III was forced to fill local positions with Northern men whom he considered trustworthy, for the widespread nature of the rebellion had outlawed or eliminated many who had previously held such posts of responsibility in county administration.⁶ This naturally exacerbated the ill-feeling and explains the bitterness voiced in Colyngbourne's rhyme. There is some irony in that Richard III, apparently so loved and respected in the North, was not allowed the time to establish such trust in the southern counties. This was undoubtedly due, in part, to rumours rife at the time, which had even started to circulate within days of his accession, regarding the assumed murder of the true heirs to the throne – Edward IV's sons.⁷

It was soon after the battle of Bosworth in 1485 that Willoughby settled at Brook Hall, commencing some of the building work still to be seen today. He had been one of Henry Tudor's commanders during the battle and was a member of the small but select band of Henry VII's administrators who were to establish the new Tudor dynasty. Immediately after the battle, Willoughby was sent by Henry VII to Richard III's castle at Sheriff Hutton in North Yorkshire, where were held the late king's most

significant heirs – Edward, Earl of Warwick, son of Clarence, and Elizabeth of York, Edward IV's eldest daughter.⁸ Both were now valuable dynastic pawns; Henry Tudor, with a weak personal claim to the throne, was anxious to secure Warwick's person against any possibility of his being used as a rallying-point. In Elizabeth's case, Tudor had marital plans for her himself – a stratagem calculated at last to reconcile the houses of York and Lancaster. These two most valuable assets were entrusted to Willoughby, who was to oversee their journey to London – the one to imprisonment in the Tower, the other eventually to become Henry VII's Queen. This mission safely carried out, Willoughby was rewarded with the Receivership of the Duchy of Cornwall and Stewardship of the King's silver and goldmines in Devon and Cornwall.⁹

In October 1485 Willoughby was appointed Steward by Cecily, Duchess of York, of her possessions in Wiltshire. At the same time he also became Keeper of Vasterne Park and Lieutenant of Bradon Forest.¹⁰ It was also then that Willoughby became generally known as 'of Broke', an indication that he had chosen to live in Wiltshire so as to be near his developing interests in the county. Cecily Neville, the once-beautiful 'Rose of Raby', formidable mother of the two previous Yorkist kings, declined in political influence, having withdrawn from the hurly-burly of dynastic squabbles into the peace and seclusion of a Benedictine nunnery. It is interesting to speculate on the reasons for her choice of de Broke to be the guardian of her considerable possessions in Wiltshire for she, as the Neville-Yorkist matriarch had spent many fraught years in giving wifely and maternal succour to the leaders of the Yorkist cause against whom Willoughby had fought at Bosworth.

Perhaps this action is a useful clue to Willoughby's own character which, seemingly, was fair and just one, since Cecily entrusted her possessions to a former Lancastrian supporter. Knowing how high Willoughby's standing was with Henry VII, however, she may have hoped that he would exert his influence with the King to help her retain

5. *Rolls of Parliament: Rotuli parliamentorum*, vol. 6, c.3, pp. 244–9; S.B. Chrimes, *Henry VII* (London, 1972), appendix C, p. 328.

6. R. Horrox, *Richard III, A Study in Service* (Cambridge, 1989), p. 147, pp. 170–1 and 181. See also D.R. Cook, *The Wars of the Roses* (London, 1984), pp. 48–49.

7. J. Gillingham, *The Wars of the Roses* (London, 1981), p. 22. Horrox, *op. cit.*, p. 149.

8. Cokayne, *op. cit.*, p. 683; *Dictionary of National Biography* vol. 21, p. 513.

9. Cokayne, *op. cit.*, p. 684.

10. *Ibid.*, *loc. cit.*

such estates in an uncertain future for the remnants of her party.¹¹ It should also be mentioned that Cecily, by marriage destined to be a Yorkist protagonist, was by kinship a Lancastrian. Such were the intricate relationships which pervaded the 15th-century dynastic wars. Fate and family relationships had selected both Willoughby and the Duchess of York to have a foot in both camps.

The month of October 1485 was for Willoughby de Broke a busy time. Apart from the commissions mentioned, he was also made partly responsible by Henry Tudor for the forthcoming coronation in the matter of 'Empcions [buying] and provisions of stuff . . . agenist the coronacion',¹² and later that month:

de Broke was Joint Steward of the Household, and long before 19th October must have put in hand the ordering of vast purchases of sumptuous cloth and clothing of every hue; silks and satins, furs, skins, leather, trappings, ribbons, shoes and boots, spurs, harness and banners; and had hired tailors and workmen, and the total bill for his efforts alone was to come to £1,506 18s. 10½d. Additional large sums were spent by the Keeper of the Wardrobe, Henry being obliged to provide a new household from scratch. There are, in fact, twenty-eight pages in the official rolls devoted to these ceremonial necessities, among them 13/4d. paid by Willoughby 'for the king's gilt spurs; 8/-d. for a sword with a point; 6d. for small nails; whilst the wages paid to tailors employed in the Royal Wardrobe were 6d. per day.¹³

During this period of heady excitement for the new regime, it is difficult to imagine that Willoughby could have spent much time at Brook Hall.

In 1489 he returned to Brittany, commanding an expedition with Sir John Cheyney, which turned out to be a somewhat fruitless resumption of the previous century's wars. Willoughby was also a Joint Ambassador to treat with the Duchess of Brittany. He was then made Admiral of the Fleet against France,¹⁴ perhaps a more likely origin of the rudder badges once so prevalent in the windows of Brook

Hall. Later, Willoughby was a Commissioner to muster 2,000 men from Wiltshire and Hampshire for an expedition against the Scottish supporters of the pretender, Perkin Warbeck.¹⁵ He was also a Commissioner for the trial of the wretched Edward, Earl of Warwick, when Henry VII finally lost patience with the attempted insurrections.¹⁶ Both he and Perkin Warbeck were executed in 1499, the year in which Willoughby purchased Wardour Castle from Thomas Butler, 7th Earl of Ormond, for £500.¹⁷ One of the last recorded Royal appointments was for the trusted Willoughby to meet Katherine of Aragon, after she arrived at Plymouth in October 1501. He escorted her from Exeter to London for marriage with Prince Arthur, the King's elder son.¹⁸ This alliance was a splendid coup for the House of Tudor. Sadly, however, Arthur was to die soon afterwards. Robert Willoughby, first Lord Broke, died in the same year, 1502. He was buried, as his will desired, at Callington, Cornwall, under an alabaster altar-tomb, his effigy in complete armour – except the head, with long flowing hair. Over his breast a tasselled cord secures the mantle of the Garter.¹⁹

Willoughby's son, also Robert, then aged about 30, succeeded to the barony on the death of his father. He was summoned to Parliament from November 1511 by writs directed 'Roberto Willoughby de Brooke', but sat as Lord Broke, by which style he was generally known.²⁰ This period, at the outset of Henry VIII's reign, was marked by a less cautious attitude towards military adventures. Where Henry VII had committed himself to foreign wars only as a last resort, his son was ambitious for glory, full of vigour, and viewed war as the natural extension of the hunting, gambling and jousting which were his besetting passions.

It was not long, therefore, before Henry VIII, persuaded by his father-in-law Ferdinand of Spain, joined the Holy League against France, England's traditional enemy. The 2nd Lord Broke was soon involved in these wars, serving under Thomas Grey, Marquess of Dorset, in 1512, and landing at Calais with the King in June 1513.²¹ Willoughby served in the middle ward of the King's army in that year's campaigns culminating in the defeat of a French

11. *D.N.B.*, vol. 21, p. 513.
 12. Cokayne, *op. cit.*, pp. 683–4, n.(k).
 13. S.B. Chrimes, *op. cit.*, p. 58.
 14. Cokayne, *op. cit.*, p. 684.
 15. *Ibid.*, p. 685.
 16. *Ibid.*, p. 686.

17. L. Keen, 'Excavation and History of Old Wardour Castle', *WAM* 62 (1967), pp. 67, 68.
 18. Cokayne, *op. cit.*, p. 686.
 19. *Ibid.*, p. 686, n.(h).
 20. *Ibid.*, pp. 686–7.
 21. *Ibid.*, p. 687.

cavalry force at the so-called Battle of the Spurs in August.²²

After this period of hectic military activity, Lord Broke seems to have returned to more mundane domestic matters at Brook Hall, for in May 1515 he was granted a weekly market, four fairs, and a court of pie-powder at Westbury.²³ He returned to France in June 1520, to attend Francis I's meeting with Henry VIII.²⁴ This 16th-century 'summit meeting', the brainchild of Cardinal Wolsey, manifested 'all that was fulsome and insincere' in Anglo-French relations of the period.²⁵ Each king sought to outdo the other in magnificence, hence the description of their meeting as the Field of Cloth of Gold.

This event proved to be the last recorded major activity of the 2nd Lord Broke's career for, within little over a year, he succumbed to the dreaded 'sweating sickness', which also carried off his two legitimate sons, Henry and William.²⁶ There were several outbreaks of this virulent plague during the first half of the 16th century.²⁷ As it had first occurred in 1485, some people saw it as God's judgment upon the usurping dynasty. In their panic many forsook the larger towns, seeking safety in the countryside, but the sickness struck there, too:

... in the small Devonshire parish of Uffculme, where there were thirty-eight burials in the whole year, twenty-seven of them took place in the first fortnight of August and all those interred were listed in the register as having died of 'the hock-sickness or stop-gallant'. It was known by this name ... because it 'posted through England and spared none. There were some dancing in the court at nine o'clock that were dead at eleven'.²⁸

Robert Willoughby, 2nd Lord Broke, died aged 49 years in November 1521 and was buried at Bere Ferrers. His will demonstrated the fidelity and allegiance offered by such men to their king, as

exemplified in the bequest to his son, Henry, then still apparently alive, but fated to die quite soon afterwards:

... bequeth to my son Henry my harness, armour bowes, arrowes, and other weapon defensives to the entent that he shalbe there at all tymes redy to serve the Kyng his prince in tyme of nede. I bequeth the outside of my Russel velvet gown to the Churche where I shalbe buried to make a Cope thereof.²⁹

About twenty years later, towards the end of the reign of Henry VIII, the antiquary, John Leland, visited Brook Hall, describing it as follows:

there was of very auncient tyme an old Manor Place where Brooke Haule now is, and part of it yet apperith. But the new building ... is of the creating of the Lord Steward in King Henry 7 (1st Lord Willoughby de Broke, I believe). The windows be full of rudders. Peradventure it was his badge or token of the Admiral. There is a fayr Park, but no great thing. In it be a great number of very fair grand okes apt to sele houses.³⁰

John Aubrey, a century or so later, also saw Brook Hall and described it as

very large and stately. ... very old windows with coats of arms of the Paveleys. Other shields of arms were then to be seen in windows in the 'canopie chamber', the dining room, the parlour, and the chapel, 'the rudders everywhere'.³¹

According to Pevsner,

alongside the house is a stone range of the early sixteenth-century, with buttresses, windows of

22. *Ibid.*, *loc. cit.*

23. *Ibid.*, p. 687, n.(e).

24. *Ibid.*, p. 687.

25. J.A.F. Thompson, *The Transformation of Medieval England* (London, 1983), p. 248.

26. Cokayne, *op. cit.*, p. 687, n.(j).

27. C. Hibbert, *The English: A Social History* (London, 1987), p. 162: one epidemic in Shrewsbury carried off almost a thousand people within a few days: 'Apart from profuse sweating and "grete stynging", the disease was characterized by a sense of deep foreboding, high fever, a violent headache, dizziness, abdominal pains and, in some sufferers, a vesicular

rash, "grete pricking in their bodies", and black spots. Death came with frightening suddenness'.

28. Hibbert, *op. cit.*, p. 162.

29. Public Record Office, Prob. 11/20, will of Robert, 2nd Lord Broke, dated 21 October 1521.

30. Revd Canon J.E. Jackson, 'Westbury under the Plain', *WAM* 25 (1891), p. 43. It seems to be generally accepted, however that the rudder badge was that of the Paveley family; such badge also occurs on the Cheyney chantry tomb in Edington Church. See also Canon Jackson's article 'Southwick Court Cutteridge and Brook House', *WAM* 4, (1874), p. 37.

31. J. Aubrey, *op. cit.*, pp. 399-402.



Figure 2. Brook Hall, 15th-century range from the courtyard, May 1991

two uncusped lights, arranged without symmetry, and a fine roof with tie-beams, collar beams on arched braces and three tiers of wind-braces. The range has always been two-storeyed. On the upper floor a blocked fireplace.³²

This part of Brook Hall is still to be seen today in a remarkable state of originality, although much work is needed to weatherproof the structure. The 15th-³³ or 16th-century range forms the left side of a courtyard. The opposite side now consists of semi-derelict farm buildings and sheds, including perhaps the only cowshed to be graced by a pair of gothic windows – one of which still retains remnants of its stained glass, perhaps a survival of the old stone and tiled chapel which once stood in the corner of the courtyard.

Beyond the courtyard is the house, dating from a slightly later period:

a farm house was built in the 17th-century, probably soon after Aubrey's visit. It is built of stone-rubble with mullioned and transomed windows, and has a steeply pitched roof covered with stone slates. Early nineteenth-century Gothic windows have been inserted in its east front. The medieval hall, part of which Leland saw, was probably demolished at the time of the building of the farmhouse, but at the junction of the house with the late 15th-century wing, a short length of steeply pitched roof may have formed part of this earlier hall. A fire at this point in 1958 destroyed the old roof timbers.³⁴

32. N. Pevsner, *The Buildings of England, Wiltshire*, (Harmondsworth, 1975).

33. *The Victoria History of the Counties of England: Wiltshire [V.C.H.]*, vol. 8, p. 152. See also *Buildings of Special Architectural or Historical Interest (District of West Wilts)* (Dept.

of the Environment, 1987), pp. 117–8.

34. *V.C.H.*, vol. 8, p. 152. It is pleasing to note that at the time of visiting Brook Hall (May 1991), the house and adjoining older range were undergoing a complete restoration after having stood empty for some years.

When the 2nd Lord Broke died in 1521, having been predeceased by his son Edward, the bulk of his estates, including the manor of Brook, were settled on his two daughters.³⁵ The barony, however, fell into abeyance between his three grand-daughters. Elizabeth, on the death without issue of her two sisters, succeeded as Baroness Willoughby de Broke.³⁶ These settlements were to occasion much chagrin and not a little litigation from Sir Anthony Willoughby, a younger brother of de Broke who, perhaps understandably, felt aggrieved that his brother had settled the bulk of the family estates in Wiltshire, Dorset and Devon upon his daughters and that, consequently, there was nothing very tangible for him as the eldest surviving male Willoughby. He had expected, at the least, that he would inherit Wardour Castle, where he seems to have been living at the time, and there appears to have been a strong suggestion on the part of his father, the 1st Lord, that Anthony should have the castle as his home. Unfortunately, however, his elder brother seemed to have other plans.

Anthony Willoughby had first served in the Bishop of Durham's household, and subsequently in Prince Arthur's for about five years, until the Prince's death in 1502.³⁷ Willoughby was deputed by his father to be present on the marriage night of Arthur and Katherine of Aragon in 1501. The next morning the Prince, in the presence of others of his household, said to him, 'Willoughby, bring me a cup of ale, for I have been this night in the midst of Spain'.³⁸ This remark was later recalled and given by Willoughby as evidence when he and others, including William, 4th Lord Mountjoy and the Marquess of Dorset, made deposition to the Legatine Court at Blackfriars which was considering evidence in connection with Henry VIII's plea for an annulment of *his* marriage with Katherine.³⁹ One of the objects of these depositions was to prove that Henry's brother, Arthur, had fully consummated his marriage with Katherine.

Two years later, in February 1531, Sir Anthony appeared in Star Chamber as plaintiff in an apparently abortive attempt to secure for himself part of the Broke inheritance.⁴⁰ He had earlier also

petitioned the King on the same matter.⁴¹ It seems, from evidence given in the case, that the 1st Lord Broke had intended Anthony to have Wardour Castle as his future home for, in a reported conversation with Sir Walter Hungerford in Wardour Park, Broke was alleged to have said,

'Cosyn Hungerford shal not my son Antony have a pretty howse here to cover his head? I have certen[?] lands for hym, but he had no howse unto nowe', (and other good wordes).⁴²

This statement, if true, must refer to an incident which took place between 1499 when Broke purchased Wardour, and his death in 1502. In further evidence given by John Daveys of Tisbury, husbandman and servant to Sir Antony's steward, Walter Turner, he stated that he had heard his master say that:

The said Sir Antony Willoughby has as grete wrong as any gentleman in England for that the last Lord Broke kept hym owte of Warder, and he sayth that aboute ii or iii yeres before the dysse of Walter Turner he beying in Warder Parke heard Lord Broke say to Walter Turner 'my son Henry shall have yt'. Turner did not agree and the Lord Broke departed angry.⁴³

In the following year came the first of several letters to Cardinal Wolsey's successor as Chancellor, Thomas Cromwell, written from Wardour as follows:

1 December 1532 – Sir Anthony Wylughby to Cromwell

I would have come to speak with you but for the gout. Therefore, I have sent my wife to you, desiring you to solicit my matter to the King, that some end may be taken, or else I am utterly undone. I will gladly fulfill the promises I have made to you.⁴⁴

There seems little doubt what Willoughby's 'matter' was, but it would be interesting to know more about

35. Cokayne, *op. cit.*, p. 687–8, n.(1).

36. *Ibid.*, p. 689.

37. *L[etters and] P[apers, Foreign and Domestic, Henry VIII]*, vol. 4, pt. 3., p. 2577, no. 5774.

38. *Ibid.*, *loc. cit.*

39. *Ibid.*, *loc. cit.*

40. Public Record Office, STAC 2/6.

41. *L. & P.*, vol. 3, no. 5064.

42. P.R.O. STAC 2/6, f. 310, Evidence of Thomas Groves Dunhead St Andrew.

43. *Ibid.*, f. 312, Evidence of John Daveys of Tisbury.

44. *L. & P.*, vol. 5, no. 1599.

his 'promises'.⁴⁵ A further letter to Cromwell was dated 30 January 1533, and written on this occasion from 'Brodmerston' (Marston Magna, near Ilchester, Somerset). Willoughby wrote:

I have received your letter of the 25th January. I shall follow your counsel, desiring that you will not be displeased that I did not write to you when I last sent my servant. I was in such pain with the gout that I could not. I am now better, and trust to be in London on Wednesday after the Purification. All such promises as I have made you I will truly perform and keep with the largest.⁴⁶

In the following year there was yet more correspondence with Cromwell, through whom all approaches to the King were now filtered, regarding 'The title of Sir Anthony Willoughby to certain manors late his father's'.⁴⁷

Approximately contemporary with the above events and letters is a further reference to Sir Anthony which is contained in an unpublished early 17th-century family history and genealogy of the Ley family, whose place of origin was, like the Wiltshire Willoughbys that peninsula of Devon between the rivers Tavy and Tamar.⁴⁸ In 1545, Henry Ley sold much of his land in Devon and Cornwall and bought the Wiltshire estate of Teffont Evias from the King. Before attaining his majority Henry, then only a child of ten years, became a ward of the 2nd Lord Broke. On the latter's death wardship passed to Walter Seymor, a lawyer and servant of Broke. As the Ley history says,

Henrie Ley, shortlie after the xviiiith or sixth yere [1527–8] of King Henry the 8 . . . died, being not above xxxtie yeres old, and was buried at Plymouth, haveinge yssue one onlie childe, Henrie Ley, who was then an infant of tenn yeres; . . . Sir Robert Willoughby, knight and last Lord Brooke . . . , beinge dead and havinge conveied the greatest part of his landes unto his two daughters . . . And haveinge made Walter Seymor of Berwick St. John, Wiltes. and

others his executors, by meanes whereof greate controversie grew betwene them and Sir Anthoine Willoughby, brother and heir male to the Lord Brooke, and Sir Frances Daughtry and Fowlk Grevil and their wyves, who were heires-generall to the same Lord Brooke, by meanes whereof Walter Seymor seised upon the bodie of Henrie Ley as ward, and brought him unto Berwick St. John for a season, from whence he was stollen awaie by Sir Anthoine Willoughby, and kept closelie and secretlie by him in Wardor Castle by the space of vij yeres.

After which Henrie Ley, atteinynge to yeres of discrecion, escaped from thence, and returned to Walter Seymour [sic], who married him to his younger daughter called Dyoniz. . . .⁴⁹

Kidnapping was a term unknown to Bishop Latimer when he preached a sermon on this widespread problem of the 16th century. He had the following to say regarding the stealing of wards:

I hear tell of the stealing of wards to marry the children to. This is a strange kind of stealing; but it is not the wards, it is the lands that they steal . . . to get friendship, and make them strong in the realm, to increase their possessions, and to join land to land. (From a sermon preached in 1549.)⁵⁰

It appears that Sir Anthony's desperation regarding his lost inheritance had led him into such straits – and even deeper – for, depending upon the interpretation placed on the following extract, this abduction had been followed by a threat of armed action against Charles, Lord Mountjoy. It is possible, however, that Sir Anthony's 'matter' may have served merely as an excuse by Henry Courtenay, Marquess of Exeter, for an illegal use of liveried retainers in his own plot against the King. This was to lead to Courtenay's execution for treason shortly afterwards:

William Kendal, servant to the Marquess, said the Marquess did put men in readiness at an

45. It is intriguing, if perhaps coincidental, that Willoughby's 'promises' – the price for Cromwell's intercession on his behalf? – and his letters, should have occurred during much the same period as when Anne Boleyn was created Marquess of Pembroke in September, 1532, as a final step to her secret marriage with Henry VIII in January 1533.

46. *L. & P.*, vol. 6, no. 98.

47. *Ibid.*, vol. 7, no. 923.

48. Wiltshire County Record Office, 366/1, 'The Declaration of Ley, or Ley: his pedigree' (unpublished MS.), p. 9.

49. *Ibid.*, p. 14.

50. *English Historical Documents*, vol. v, ed. C.H. Williams (London, 1967), pp. 274–5.

hour's warning. Kendal said it was for the matter between Lord Mountjoy and Sir Anthony. Peter Bowden heard one of Kendal's servants say 'We care not and the King taketh Sir Anthony Willoughby's part, for our master shall wear the garland at the last'.⁵¹

Any ambiguity in this extract may perhaps best be seen as an indication of the ever-present court intrigue of the time.

A number of deeds dating from this period are referred to by the 12th Lord Arundell.⁵² These involve Sir Anthony, the Marquess of Exeter, Fulke Greville and others; the last in date summarise and conclude Willoughby's fruitless quest for his inheritance:

(a) 1542. The dispute was brought to a head by a fine, 'sur recognisans du droit', between Thomas Greville (presumably the younger brother of Fulke) and Antony Willoughby, of the Castle and Manor of Wardour, and of five hundred acres of land, six acres of meadow, twenty-one acres of pasture, and twelve acres of wood in Dunhead Andrew; inter alia by which fine the said Thomas did grant and render the premises to the same Antony for one month. Remainder to Fulke Greville and Elizabeth his wife and heirs of their two bodies. Remainder to the right heirs of the said Fulke.

and

(b) To avoid further trouble, Sir Fulke's advisors induced Walter Willoughby, Esq., [Sir Antony's son?] to release unto Sir Fulke Greville and his heirs all his right, estate and demand in the Castle, Park, and Manor of Wardour; this he accordingly did on the twenty-seventh of November 1544, and so the matter ended.

The castle which was the subject of these protracted negotiations stands in a romantic lakeside setting and dates from the end of the 14th century when John, 5th Lord Lovel, the owner of the manor since 1393, was granted licence to crenellate his house. At

this time self-protection was no longer a priority in castle building and there was a trend towards greater luxury and ostentation, rather than building for a purely military structure.

Old Wardour Castle, as distinct from the later Wardour House about 2 miles to the north-west, stands on a spur of high ground with a valley opening out towards the west, and about a mile north of the road from Salisbury to Shaftesbury near the village of Donhead St Andrew. A description of the Castle is given as follows:

There is no other castle in England like Old Wardour. For a parallel one must go to central France to the Chateau de Concessault in the Department of Cher. This, though on a somewhat larger scale, is also hexagonal in plan with a courtyard of the same shape within. . . . The inspiration for Old Wardour clearly came from France, perhaps as a result of Lord Lovel's campaigning there during the Hundred Years War.⁵³

Wardour Castle was, in later years, badly damaged as a result of a Civil War siege and was never restored; but it was preserved in the 18th century as an interesting feature of the landscape of the adjacent estate.

Apart from the inherent disadvantages of being a younger son, there were also several other compelling reasons for Sir Anthony's failure to inherit either Wardour Castle or any appreciable part of the Willoughby family lands, which included the manor of Brook. In the first place, the 2nd Lord Broke's will, which does not mention any disposition of land or property, names the executors as his wife, Dorothy, his sons Henry and William, and Walter Seymour and Nicholas Glyn, lawyers.⁵⁴ During the case in Star Chamber, however, there were allegations regarding the existence of an earlier will, and also statements as to Lord Broke's wishes with regard to the positive exclusion of any descent of property in the female line.

In the first of the depositions laid before the Court, Sir Richard Loky, vicar of Tintagel, Cornwall, and steward of Broke's household, alleged that three or four days before he died Broke

51. *L. & P.*, vol. 13, part 2, no. 961.

52. *Notes by the 12th Lord Arundell on the Family History*, ed. E.D. Webb (privately published, London, 1916), pp. 86-89.

53. A.D. Saunders and R.B. Pugh, *Old Wardour Castle* (London, 1968), p. 3.

54. See note 29.



Figure 3. Wardour Castle from the south-east. Engraving by G. Hollis, after P. Crocker, 1829. (Photograph by Derek Parker)

had reiterated to him the substance of his wishes regarding his will. His son, Henry, should inherit and failing him, his other younger sons, William and George in turn. Broke, it was stated, then continued,

for there shall never any of my daughters or other woman in herytt my lands while any heire male of my blood and name shalbe found lyyng.⁵⁵

Broke was then said to have given the vicar a paper containing the settlements (mainly monetary) made on his wife, daughters and grand-daughter saying:

take this paper wherein I have appoynted what lands my lady shall have . . . duryng her wydowhood and not maryed. And what lands my sons shall have and what my daughters shall have.⁵⁶

This paper, partly mutilated, was produced in evidence, but there seems to have been some doubt as to its authenticity.

The next deposition was that of Richard Cosyn, curate of Bere Ferrers, but unfortunately for Sir Anthony's case this seemed to be largely based upon hearsay. It did, however, make serious allegations against the legal servants of Lord Broke and, by implication, about his widow, Dorothy. Cosyn deposed as follows, quoting a dying William Stoteryge, a late servant of Broke's who was present when Richard Loky was given the above statement:

[According to Cosyn, Stoteryge said], as soon as the said Sir Robert, last Lord Broke, was dede ther was a false wyll made and forged by Nicholas Wyllughby, and Richard Luky was put out of the executorship.⁵⁷

55. P.R.O. STAC 2/6, f. 302, Evidence of Rd. Loky.

56. *Ibid.*, *loc. cit.*

57. *Ibid.*, f. 306, Evidence of Richd. Cosyn.

As well as the apparently dubious quality of some of this evidence, there were also further reasons why Sir Anthony found such difficulty in establishing his claims. These were bound up with the intricate family relationships which had been established during the ten years or so between his brother's death in 1521 and the Star Chamber case of 1531/2. After his eldest son Edward's death in 1517 Broke had, as noted, settled part of his lands on his two daughters, Elizabeth, who married John Paulet, 2nd Marquess of Winchester, and Anne, who married Charles Blount, 5th Lord Mountjoy.⁵⁸ His grand-daughter had earlier married Sir Fulke Greville,⁵⁹ whilst even earlier, Broke's widow Dorothy had married William Blount, 4th Lord Mountjoy, Charles' father.⁶⁰

William Blount, the celebrated humanist, was Chamberlain to Katherine of Aragon during the fraught period of her ostracism from King Henry's court, and both the Blounts and the Willoughbys were sympathetic to Katherine's cause, and to her stubborn refusal to acquiesce in the King's efforts to have his marriage set aside. Blount's second wife had been Agnes de Vasegas,⁶¹ a Spanish lady in attendance on Katherine when Princess of Wales; whilst William, Lord Willoughby d'Eresby, a first cousin of de Broke, had also made a Spanish marriage to Queen Katherine's most intimate friend and counsellor, Maria de Salinas, who was to be present at Katherine's death bed.⁶² There seems,

therefore, more than a likelihood that both the Willoughby and Blount families would have viewed Sir Anthony and his claims with some suspicion or distaste in view of his positive statements on the King's behalf to the Legatine Court in 1529.

Wardour Castle, inherited in right of his wife, was, rather ironically for Sir Anthony, sold by Sir Fulke Greville within a mere three years of the 1544 settlement, passing first to the Arundell family, then to William Herbert, Earl of Pembroke, but was bought back in 1570 by Sir Matthew Arundell. Finally, in 1599, parts of the manor of Brook were conveyed by the then Lord Mountjoy to Sir James Ley, youngest son of the Henry Ley mentioned earlier. James Ley was created Earl of Marlborough by James I in 1626, and eventually became possessed of the whole manor of Westbury.⁶³

Long before these events, however, Sir Anthony Willoughby had died. The date of his death has not been discovered but, like his father, the 1st Lord Willoughby de Broke, who had fought against the last English king to die in battle, and his brother, the 2nd Lord, Sir Anthony had played his part in various episodes which helped in founding the new Tudor dynasty. Such men lived in a period witnessing the transition from medieval patterns of thought and behaviour to the new ideas and ideals which pointed the way forward to the modern English State.

58. Cokayne, *op. cit.*, pp. 687-8, n. (1).

59. *Ibid.*, p. 689.

60. *Ibid.*, vol. 9, p. 341.

61. *Ibid.*, vol. 9, p. 340.

62. *Ibid.*, vol. 12, pt. 2, p. 671.

63. *V.C.H.* vol. 8, p. 150.

Pioneer Geologists of the Salisbury Area

by J.B. DELAIR

Many of the earliest known geological investigations occurred in 18th-century Britain. Significant aspects of these involved Wiltshire men having close associations with Salisbury or its environs. This paper outlines the physical, social and theo-scientific backgrounds against which the activities of these pioneers and their early 19th-century successors were set. Short accounts are given of: the venture resulting in the first known map to record correctly the true sequence of geological strata; Henry Shorto, pioneer student of flints; various notable collectors of Wiltshire minerals and fossils – including the county's foremost lady 'fossilist'; the founders of Salisbury's first geological museum; and the early career of Charles Lyell, whose widely acclaimed Theory of Uniformity (a cornerstone of modern geology) was apparently partially formulated during his 'Salisbury' years.

INTRODUCTION

In view of the degree to which the media currently bombard society with geological facts and theories, the apparently unending popularity of scale models, animated life-sized replicas, soft toys, and jigsaw puzzles of extinct animals, and the space devoted in countless museums to 'geology' in general, it is perhaps difficult to appreciate that there was a time when men and women did not know about these aspects of Earth history. Yet such a time did exist. Indeed, it endured for millennia and only came to an end some two centuries ago. Before that date, of course, scholars had occasionally pondered the real nature of fossils and why rocks were different at various localities. Their conclusions, though sometimes published, really amounted to little more than a curious amalgam of conjecture, bias, delusion, and ignorance, and seldom contained ideas of lasting worth. Nevertheless, a stumbling progress of sorts is discernible even in these early speculations.

In the wake of the British colonisation of Canada, India, and Australia during the 18th century, and the development by contemporary naturalists of the binominal system of naming plants and animals, the first clear outlines of what was later to become geological science slowly emerged. Moreover, some of these important new perspectives were formulated by naturalists who lived in or near Salisbury. This paper traces some of the more significant contributions made in that formative era by these Wiltshire pioneers.

The 'Salisbury area', in the present context, is that within a general 20-mile radius of Salisbury city centre. The region covered extends to include Mere in the west, Warminster and Devizes in the north-west, Pewsey in the north, Andover in the north-east, Winchester in the east, Southampton in the south-east, Ringwood and Wimborne Minster in the south, and Blandford Forum in the south-west. Several smaller towns of local importance – Shaftesbury, Amesbury, Stockbridge, Romsey, and Fordingbridge – also lie within this 'area'.

The 'Pioneer period' can be taken as that prior to 1830, when the first clear outlines of geology and the fossil record were finally established. This period, of course, applied not simply to Salisbury, or even to Britain as a whole, but encompassed academic enquiries internationally. In order to obtain a truer picture of the times and individuals considered more fully below, it will be sensible here to outline the environmental background and broadly sketch-in the social factors which influenced the scale and nature of the discoveries achieved.

The presence of Salisbury's magnificent cathedral ensured the city's status as a leading ecclesiastical centre while the convergence of many main highways automatically made it the seat of local government and administration. Accordingly, Assize courts were held regularly in the city, Salisbury being on the Western Circuit. City society was chiefly divided into the 'haves' and the 'have nots'. Almost all land outside the city limits was owned by gentry. That within Salisbury's confines was either church property or owned by tradesmen

or the proprietors of numerous busy inns and hostleries. From the late 1700s an infirmary of note existed on the west side of the city, and the sick and infirm from a very wide area were brought to Salisbury for medical treatment. By 1850 the railway had reached Salisbury, to increase significantly the number of visitors.

Salisbury was thus a thriving, colourful centre, ideally suited for meeting like-minded fellow men and for the exchange and development of ideas which, though now often taken for granted, were once novel and decidedly fashionable among the more advantaged segments of society. Some of these ideas involved the true significance of fossils and rock sequences, and were developed and debated by individuals who had never heard of plate tectonics, dinosaurs, or the Ice Age.

THE PIONEERS THEMSELVES

The pioneer geologists were mostly individuals from the professional middle-class. Apart from one or two notable exceptions, most received a good education, sometimes to university level, and possessed more than a superficial knowledge of the classics, which was to prove of considerable advantage to them. As country vicars, doctors, or lawyers, some of these pioneers are perhaps better known for their achievements in their chosen professions. During the period in question, all pursued 'geology' as a spare time leisure interest, and evidently as just one of many branches of natural history.¹ Most belonged to that breed known as 'all-rounders', for several were as interested in antiquities, botany, and modern sea shells as they were in fossils and rock strata. In due course, several wrote on antiquarian or botanical themes. As a result, the orderly presentation of diverse or complex data, attended by well reasoned argument and comment, was far from alien to them. To assess their contributions to embryonic geology and to palaeontology during its formative years, it will be

helpful to review earlier ideas about such natural phenomena which in at least some measure inevitably governed their own perspectives of those topics.

Beginnings

Archaeologists have discovered isolated fossils, and necklaces composed of small fossils, in human graves dating from Neolithic² or even earlier times.³ Pre-literate man may not have appreciated the true nature of the fossils he found, but any thoughts he had on them were doubtless steeped in awe and superstition and he evidently regarded them as curiosities or amulets.⁴ Egyptologists have unearthed fossils inscribed with small hieroglyphics recording who found them and, sometimes, where. Such specimens may once have formed a part of some temple or priestly collection.⁵ In Babylonia, clay tablets bearing cuneiform inscriptions explain that King Nabonidas had a collection of miscellaneous antiquities:⁶ these included 'stony creatures' – surely fossils.

The classical Greeks, including Xenophanes, Pythagoras, Xanthus of Sardis, and Herodotus, were also intrigued by fossils, and pondered their significance;⁷ Hippocrates, the 'Father of Medicine', actually described some so carefully that, although the specimens are lost, it is clear he was dealing with sea-urchins and the teeth of ancient elephants (probably mammoths). The celebrated Roman writer, Pliny, referred to fossils as 'made in manner of a shell', or 'like unto a sponge',⁸ and it seems to have been generally understood in his day that fossils were 'ancient animals'. Thus fossils were not only recognised by many Roman scholars as having once been living creatures but were also thought of as being genuinely 'old'. Precisely what 'ancient' meant to Pliny and his contemporaries is uncertain, although it is clear that the Roman conception of the Earth's age differed markedly from that of modern science.⁹

Few accounts of fossils and fewer observations of

1. L. Barber, *The Heyday of Natural History: 1820–1870* (New York, 1980). See especially chap. 12.
2. K.P. Oakley, 'Folklore of Fossils', *Antiquity* 39 (1965), pp. 9–16, 117–25; see also B.M. Marsden, *The Early Barrow Diggers* (Shire Publications, 1974).
3. D.T. Donovan, 'The Ammonites and other fossils from Aveline's Hole (Burrington Combe, Somerset)', *Proc. Univ. Bristol Spelaeol. Soc.* 11 (1968), pp. 237–42.
4. W.N. Edwards, *The Early History of Palaeontology*, British Museum (Natural History) Special Guide no. 8 (1967), p. 1.
5. H.S. Torrens, 'Early Collecting in the Field of Geology' in

- O. Impey and A. Macgregor (eds.), *The Origins of Museums. The Cabinet of Curiosities in Sixteenth- and Seventeenth-century Europe* (Oxford, 1985), pp. 204–13.
6. R. King, 'The Oldest Profession?', *Geol. Curator* 4, no. 6 (1986), p. 356.
7. W.N. Edwards, *op. cit.*, p. 1.
8. P. Holland (transl.), *The Historie of the World: commonly called The Naturall Historie of C. Plinius Secundus*, 2nd edn. (London, 1634).
9. D. Dean, 'The Age of the Earth Controversy: Beginnings to Hutton', *Ann. Sci.* 38 (1981), pp. 435–56.

geological phenomena have come down from medieval times. It is known, however, that a fossil fish, complete with scales, was brought to France from Palestine during the seventh crusade of 1248.¹⁰ Unfortunately, its fate is unknown and the specimen is lost. It is doubtful if contemporary ideas about it were any more realistic than those which may have been entertained by the Iron Age and Romano-British collectors of sea-urchins in Dorset,¹¹ since all but a few could read the Greek and Roman classics, and the earlier and relatively advanced ideas about fossils and geology generally developed by those older civilisations were lost. Thus, if they were not ignored, fossils were usually regarded as strange stony creatures which lived naturally within rocks, or as devices of the devil devised to deceive and lead men astray. As the Christian church then frowned upon the study of fossils the result was that, for hundreds of years, hardly anyone cultivated it, and ignorance about such 'devilish stony creatures' reigned supreme.

Matters improved somewhat during and after the Renaissance when European and Middle Eastern scholars began again to take an interest in geological subjects. Nicholas Steno (1638–1687), a Danish professor teaching at Padua made a special study of fossil sharks' teeth from Malta and, quite correctly, announced that they represented once real sharks which had long perished.¹² Contrary to oft cited assertion, however, Steno was not the first to reach such conclusions. Both Giovanni Boccaccio (1313–1375) and the genius Leonardo da Vinci (1452–1519), who collected numerous shells revealed in canal diggings in central Italy, preceded him in interpreting fossils as the remains of former living creatures. They had actually gone further in concluding that, because many of the fossils were found on the tops and slopes of high hills, the relative disposition of land and sea in the localities concerned had once differed markedly from that now extant there.¹³ A dim awareness that movements of the Earth's surface (crust) had once affected central Italy was reflected in these conclusions.

Another important figure in the annals of early

'geology' was Conrad von Gesner (1516–1565) of Zurich. Arguing that fossils were the remains of creatures drowned in Noah's Flood, he published a large tome containing the first printed illustrations of a wide variety of them.¹⁴ His explanation of the nature and origin of fossils, which has persisted in one form or another to the present century, attracted immediate attention from historians and ecclesiastics. It seemed to offer physical proof of the correctness of the scriptural record. Nor was the additional advantage of being able to compare one's own fossils with Gesner's, and thus also with others found elsewhere, overlooked. Within a few decades, fossils were avidly collected throughout the greater part of Europe and the Near East – often personally to acquire physical proof of the validity of the Deluge of Genesis – and all sorts of names were given to the various forms discovered.

Thus, not only were most fossils widely thought of as the remnants of sinful antediluvian creatures, but efforts were also made to identify large bones and teeth as the remains of the giants, gods, heroes, or monsters of classical mythology. In other quarters they were seen as the final relics of various saints, patriarchs, or legendary kings who, for obscure reasons, were imagined to have been exceedingly large, even gigantic, individuals.¹⁵ A typical instance of the latter approach, quoted in William Camden's *Britannia* (1586), concerned Ralph de Coggeshal who, in the 13th century, saw and 'handled with great admiration' two large teeth believed to represent 'a giant of such prodigious bigness that two hundred of such teeth as men ordinarily have now might be cut out of one of them'. These monster teeth probably belonged to fossil elephants. Camden's book referred to several other British fossils, and described ammonites from Keynsham near Bath as 'little sporting miracles of nature', and others from Yorkshire as 'stony serpents, wreathed up in circles, but generally without heads'.

Not all opinions expressed about fossils at this time, however, were worthless. The French potter Bernard Palissy (1510–1589) was one such, for in his *Discours Admirables* (1580) he observed:

10. W.N. Edwards, *op. cit.*, p. 8.

11. N.H. Field, 'Fossil Sea-urchins from a Romano-British Site', *Antiquity* 39 (1965), p. 298.

12. W.N. Edwards, *op. cit.*, pp. 25–26.

13. *Ibid.*, pp. 15–18.

14. C. von Gesner, *De reum fossilium, lapidum et gemmarum figuris* (Tiguri, 1565), 7pp., 169pls.

15. A.J. Sutcliffe, *On the Track of Ice Age Mammals* (British Museum (Natural History), 1985). See especially, chap. 3.

. . . I have found many species of shell-fish, petrified in the earth, which are not modern kinds living in the ocean . . . of a sort which is unknown to us and is not found at all, except lapidified.

Not only were the general identities of Palissy's fossils (shell fish) unambiguous, but he recognised several different species representative of defunct forms. His statement, unquestionably an important step forward, was not, unfortunately, pursued by many later authors during the next 150 years.

Less satisfactory than Palissy's book, but still of much interest here, was one of the earliest British tomes to illustrate fossils. Entitled *On the Isle of Albion*, and published in 1628 by Richard Rowlands, it contained a plate depicting a shark's tooth, two sea shells, some fossil vertebrae, and part of a bone of indeterminate identity. The bones and tooth were ascribed to 'fishes of a huge bigness'. The vertebrae are in fact those of a *plesiosaurus*, a large marine reptile of the Mesozoic era not scientifically described until the early 1820s. Rowlands' figures of them are the very earliest illustrations of such bones to appear in a British book. Very little is known about Rowlands' career, although it is evident that he was well educated, had travelled widely, and possessed an enquiring turn of mind. He is believed to have been living in Holland as late as 1634. His fossils are, apparently, now lost.

Cabinets and Collections

The Restoration, the founding shortly afterwards of the Royal Society in London, the subsequent expansion over the next century of Britain's overseas colonies, and the development across Britain of a network of canals, created hitherto undreamed of opportunities for examining numerous previously inaccessible geological exposures on a large scale. Simultaneously, there was a great awakening of interest in natural history generally and a steady increase in the dissemination of ideas about rocks and fossils through the publication of more comprehensive books on those subjects. Among these, two of the earliest were those of Robert Plot (1640–1696) and Edward Lhuyd (1660–1709), both of Oxford, whose tomes, the *Natural History of Oxfordshire* (1676) and *Lithophylacii Britannici Ichnographia* (1699), carried descriptions and

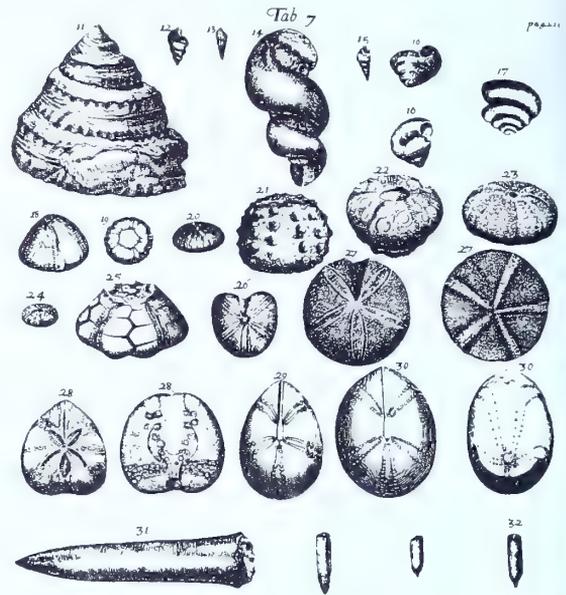


Figure 1. Reproduction of Plate 7 of Lister's *Historia Animalium Angliae* (1678), illustrating various Mesozoic fossils

figures of many different kinds of fossils, including some from Wiltshire, and discussed the formation of various types of strata. Martin Lister (1638?–1712), physician and F.R.S., studied fossils closely but reached some absurd conclusions respecting their origin and significance. His book about them, *Historia Animalium Angliae* (1678), partially redeemed matters, however, by the exceptional quality of its illustrations (Figure 1). But Lister was no fool and apparently as interested in the strata yielding fossils as in the fossils themselves. Within five years of publishing his book, he was seriously proposing methods for producing the first detailed geological map of Britain.¹⁶ Many decades were to pass before such a map became a reality. Then, in 1709, a Swiss professor, Johannes Scheucher (1672–1733), published one of the earliest volumes devoted specifically to the impressions of fossil plants. As indicated in the book's title, *Herbarium Diluvianum*, the plants were regarded as victims of the Deluge.

Thus, in the space of just a few decades, naturalists were provided with a wealth of figures depicting a wide range of fossils which could be

16. M. Lister, 'An ingenious proposal for a new sort of maps of countys', *Phil. Trans. Roy. Soc. Lond.* 14 (1684), pp. 739–46.

compared with their own finds or which stimulated them to make discoveries of their own. Very soon the acquisition of fossils and specimens of minerals became distinctly fashionable. The outcome was the accumulation of many notable collections.

These activities went hand-in-hand with an analogous surge of interest in antiquities and in what would now be termed archaeological material. New country houses were built to pseudo-classical designs, and their estates provided with artificial lakes, ornate bridges, temples to Diana, and a multitude of replicas of classical Greek and Roman statuary. Mock ruins and grottos were strategically located in the surrounding gardens, large fossils frequently being employed to decorate many of the latter.¹⁷ Indeed, the wealthy vied with each other to see who could construct the most arresting edifices and create the most memorable effects, filling their town and country houses with antiques, fine paintings, libraries, and 'cabinets' of curiosities and rarities in which fossil and mineral specimens were prominent, sometimes forming sizeable collections. Effectively they were small museums in their own right.¹⁸

As many 'cabinet' owners were Fellows of learned societies, and were widely travelled and informed individuals, discussions inevitably arose among them about fossils and minerals. Some even published accounts of the more unusual specimens or contemporary discoveries. Little progress, however, was made towards a proper understanding of fossils or of the natural sequence of the rocks which yielded them. Even in 1758, a paper concerning the recent discovery at Whitby of a fossil crocodile still referred to the find as that of a creature overwhelmed by Noah's Flood.¹⁹ Men were still tied to a scriptural chronology, even though the 'age of the Earth' was a topic earnestly debated in coffee houses and at society meetings.²⁰

Development and Confusion

The developing canal system of 18th-century Britain, and the founding and operation in the Midlands, South Wales, and parts of the West Country of many new mines, furnished so much novel geological and palaeontological information

that naturalists soon became as familiar with the different kinds of fossils and minerals as they were with varieties of birds, animals, plants, and trees. So fashionable an aspect of natural history did fossils become that several portraits of contemporary naturalists actually depict them holding, or poised alongside, recognisable fossils.

As the acquisition of this geological material continued briskly all across Europe, it was not long before identical fossils were given totally different names in different countries. The result was confusion on all sides. For instance, the 'horse' of the English language was called 'cheval' in French, 'caballo' in Spanish, and 'pferd' in German. For lesser known, exotic, or rare life forms, as so many fossils inevitably were, the range of different names was even more acute, even though the named material was biologically identical. By the 1750s, nomenclature had become so confused that the Swedish naturalist Carl von Linné (1707–1778), also known as Linnaeus, or simply as Linné, rectified matters by classifying all the plants and animals known in his day, including many fossil organisms, through a two-tier system of names, now called the binominal system. In order not to offend users of living languages, Linné utilised the dead language of Latin for his purpose. Thus the 'horse', 'cheval', and 'pferd', was referred to as *Equus caballus*, a name universally adopted for it in scientific circles ever since. Superior to rival systems, Linné's binominal system supplanted all others and is now in common use among naturalists internationally.²¹ It is invariably employed when naming fossils.

Although by Linné's time tens of thousands of fossils had been collected and installed in 'cabinets' all over Europe and in the American colonies, and a working knowledge of the principal groups had virtually become mandatory among all serious naturalists, scholars still did not possess a proper concept of geological time. Nor did they understand that time could be divided up into separate eras, or that many extinct creatures have no living descendants. Lacking the concept of successive former eras of Earth history, and ignorant of the fact that distinctive faunas and floras had characterised those

17. M.E. Barton and J.B. Delair, 'Oatlands Park Grotto and its Ammonite Fossils', *Geol. Curator* 3, no. 6 (1982), pp. 375–87.

18. O. Impey and A. Macgregor, *op. cit.*, *passim*.

19. W. Chapman and J. Wooler, 'Fossil Skeleton found near

Whitby', *Phil. Trans. Roy. Soc. Lond.* 30 (1758), pp. 688–91, 786–90.

20. D. Dean, *op. cit.*, pp. 435–56.

21. L. Barber, *op. cit.*, chap. 3.

eras, most 18th-century naturalists tried to fit all fossil life into the familiar narrow historical framework indicated by, or deduced from the *Old Testament*, as well as that occupied by the time since Christ's birth. It was still common for fossils to be described as the remnants of organisms destroyed by the Noachian Deluge.

Nor, despite extensive quarrying, mining, and canal digging throughout much of the 17th and 18th centuries, had much progress been made in placing the different rocks comprising the Earth's crust in any coherent order. Masons, miners, engineers, architects, farmers and naturalists all readily distinguished between hard rocks like granite, slate, and limestone, and softer deposits like chalk, clay, and sand, and even occasionally made observations about the extent of particular formations in specific parishes or counties.²² But no concerted attempt had been made to correlate separate exposures of the same rocks in different parts of the country, or to determine their sequence. Certainly no systematic general mapping of rocks, such as that suggested previously by Lister, had been undertaken.

Order at Last

Uncertainties persisted until 1797, when William Smith (1769–1839), an Oxfordshire land surveyor, then resident near Bath, worked out the broad framework of geological chronology on the basis of the fossil record. During his wide-ranging professional activities, Smith had noticed that particular suites of fossils were distinctive only of the rock stratum yielding them. Smith's discovery meant that specific kinds of fossils in, say, Nottinghamshire must, along with the strata enclosing them, be of the same antiquity as identical fossils found in Yorkshire or Dorset. By noting which rocks underlay and overlay one another, Smith thus succeeded in determining, via the fossil record, the actual sequence in which the rocks naturally lay. At a single stroke he had established the science of stratigraphical palaeontology, which is still one of the cornerstones of modern geology. Smith's observations were not officially published

until 1816, when they were set out in a slim volume aptly called *Strata Identified by Organised Fossils*, which led to him being nicknamed 'Strata Smith'.

As he later admitted, his conclusions respecting the natural position of the Chalk formation were based largely upon observations first made between Warminster and Salisbury. Wiltshire, therefore, features right at the dawn of scientific geology. It is highly probable that some of the typical Chalk fossils shown in plate III of Smith's little book were Wiltshire specimens. Smith's discovery revealed that the Earth was far older than hitherto suspected. Only the fossil organisms confined to the uppermost or latest deposits could possibly have been drowned in a great flood as historically recent as that mentioned in Genesis. Geological 'time' had been discovered.²³ Smith also compiled the first good geological maps, some of which included portions of Wiltshire.²⁴ On the basis of these, and his stratigraphical work, it soon became clear that Earth's history had been a long succession of separate periods and eras, each of great duration and characterised by climatic conditions generally dissimilar to one another and those of present times.

Although first crystallised as early as 1797, Smith's ideas about the value of fossils in establishing the actual order of the rocks were not committed to paper until 1799, and largely at the instigation of two 'geologising' clerics, Joseph Townsend (1739–1816) of Pewsey and Benjamin Richardson (d.1832) of Farleigh Hungerford, with whom Smith had recently become acquainted. The resultant manuscript, headed simply 'Table of Strata', was written down by Richardson from Smith's dictation in Townsend's house in Bath. Quickly perceiving the originality and significance of Smith's discovery, Townsend and Richardson lost no time in championing Smith's work and were later referred to by Smith as his 'first two pupils'. The three men formed a sort of triumvirate destined to underpin a great deal of subsequent geological endeavour throughout Great Britain.²⁵

It is unnecessary here to say much about Richardson,²⁶ although a few details concerning

22. J. Smeaton, *A Narrative of the Building and a Description of the Construction of the Eddystone Lighthouse* (London, 1791), p. 114.
 23. S.E. Toulmin and J. Goodfield, *The Discovery of Time* (Harmondsworth, 1967); see also: F.C. Haber, *The Age of the World: Moses to Darwin* (Baltimore, 1959).
 24. D.A. Bassett, 'William Smith, the Father of English Geology and Stratigraphy', *Geology* 1 (1969), pp. 38–51; and J.

Phillips, *Memoirs of William Smith, LL.D* (London, 1844).

25. A.G. Davies, 'The Triumvirate: A Chapter in the Heroic Age of Geology', *Proc. Croydon Nat. Hist. Soc.* 11 (1943), pp. 123–45.
 26. W.S. Mitchell, 'Early Geologists Connected with the Neighbourhood of Bath', *Proc. Bath Nat. Hist. and Antiq. Fld. Cl.* 2 (1870–1873), pp. 307–42.

Townsend²⁷ may prove helpful when other developments are assessed. A Londoner, Townsend was educated at Cambridge, where he took holy orders, and Edinburgh, where he studied medicine and botany. In 1765 he took up residence at Pewsey rectory where, playing the dual role of country vicar and local doctor for over 50 years, he remained until his death in 1816. For many years he was the commissioner responsible for the upkeep of turnpike roads in Wiltshire, a civic duty entailing frequent visits of inspection usually accomplished on foot, and one permitting easy collecting of such fossils as caught his eye during his travels. Exceptionally tall, Townsend was a conspicuous character on Wiltshire roads at that time, and earned thereby the amusing nickname of 'Colossus of Roads'. Extremely erudite, he was familiar with many earlier works on various aspects of natural history, including those on geology and fossils by Plot, Lhuys, and Lister. In the fullness of time he formed a sizeable collection of fossils and, c.1785, supplied fossils for the roof of the Hermit's Cave beside the lake at Bowood.²⁸

Three years before his death, Townsend published a remarkable two-volume work entitled *The Character of Moses established for Veracity as an Historian, recording events from the Creation to the Deluge*. Geology loomed large in this book and Smith's ideas about fossils appeared in print for the first time with proper acknowledgement, to Townsend's eternal credit. In its day, the book was regarded as one of the best of its kind and was widely read and cited.²⁹

The combination of Smith's infectious enthusiasm and the energy and social connections of Townsend and Richardson quickly led to large numbers of other leisured and monied contemporaries taking up what was rapidly becoming a fashionable hobby during the early 19th century. Among these were William Cunnington of Heytesbury (1754–1810) and the Revd George Crabbe (1754–1832), of Trowbridge. Through the

study of rocks and the collecting of fossils, Earth history was suddenly becoming more comprehensible and this was in no small measure due to Wiltshire individuals.

In the annals of Wiltshire's history, Cunnington needs no introduction. He has long been acclaimed for his pioneer investigations of barrows and as a cultivator of antiquarian and literary tastes. He also collected fossils, and at one time had many from the Greensand and Chalk formations around Heytesbury and Warminster. At the time these were kept in a summerhouse at the bottom of his garden at Heytesbury,³⁰ but following his demise towards the end of 1810 they became, like the collections of Richardson and Townsend, irretrievably dispersed.³¹ Some fortunately still survive in Devizes Museum, but others, such as *Nautilus* specimens from the Heytesbury Chalk acquired by the contemporary Bath physician Caleb Parry (1755–1822),³² are now lost.

A Suffolk man, the Revd George Crabbe, so well remembered for his literary compositions, was also a keen botanist and collector of fossils, the latter interest evidently developing after he moved to Trowbridge in 1813 and meetings he had about that time with some of William Smith's growing band of fossil-hunting enthusiasts.³³ Subsequent to Crabbe's demise in February 1832, his fossils, and his geological hammer, passed into the possession of Major Thomas Clarke (1820–1899), who later presented them to Devizes Museum. There they remained for many years before being transferred to Trowbridge;³⁴ they are now held by the Trowbridge Museum. Although not large, Crabbe's collection is one of the few amassed by the pioneers to have survived down to our own time. As well as Coal Measure plants and Palaeozoic corals (possibly from the nearby Mendips and Somerset coal-field), early Tertiary gastropods and the molar of a mammoth, the majority of Crabbe's fossils represent Jurassic and Cretaceous invertebrates and Jurassic fish and saurians. Regrettably no labels now accompany the

27. A.D. Morris, 'The Reverend Joseph Townsend, M.A., M.G.S. (1739–1816), Physician and Geologist – "Colossus of Roads"', *Proc. Roy. Soc. Medicine* 26 (1969), pp. 471–7.

28. Information kindly supplied by Dr K. Fielden.

29. E.G.H. Kempson, 'Wiltshire Authors: Joseph Townsend, 1739–1816', *Bi-Ann. Bull. Wilt. Arch. and Nat. Hist. Soc.* 21 (Autumn, 1976), pp. 5–7.

30. L.V. Grinsell, 'A Visit to William Cunnington's Museum at Heytesbury in 1807', *WAM* 64 (1969), pp. 118–20.

31. H.H. Woods, 'Notes on some Cornbrash Sections in

Dorset', *Proc. Dorset Nat. Hist. and Arch. Soc.* 1 (1877), pp. 22–27; see p. 26.

32. J. Sowerby, *Mineral Conchology* (2 vols., London, 1818), II, p. 33.

33. G. Crabbe (the younger), *The Life and Works of the Rev. George Crabbe* (London, 1836).

34. H.S. Torrens and J.B. Delair, 'Collectors and Collections of Note: 31. The Reverend George Crabbe (1754–1832)', *Geol. Curator* 2, no. 8 (1978–1980), pp. 461–3.

specimens, but all are of fossils which have since been found in Wiltshire or the adjacent counties, and it may be concluded that Crabbe's fossils were of generally similar provenance.

THE SALISBURY GROUP

While Smith was working out the natural sequence of rocks during the 1790s, another group of naturalists, who included 'geology' among their pursuits, was active in Salisbury and Blandford. The group comprised Richard Pulteney (1730–1801) of Blandford, the Revd Thomas Rackett (1757–1841) of Spetisbury, south-east of Blandford, and William Maton (1774–1835) of Salisbury itself. Of these, Rackett in particular was closely associated with London chemist Charles Hatchett (1766–1847), who had discovered the element *Niobium* and was an untiring student of minerals.

Pulteney, a prosperous country doctor said to have had a practice embracing four counties, was an able botanist and a leading authority on modern sea shells. He was familiar with Lister's work on fossils and shells, extinct and modern,³⁵ as well as with the works of Plot and Lhuys and John Woodward's influential *Fossils of All Kinds Digested into a Method* (London, 1728). Not unexpectedly he, too, formed a collection of fossils, but unfortunately died before completing his intended description of them for incorporation into his 'Catalogue of Birds, Shells, and Rare Plants of Dorsetshire' scheduled to appear in the second edition of Hutchins' celebrated *History of Dorset*. Pulteney's manuscript was in fact edited for publication in that work, and we know from the illustrations of the fossils that much of his material concerned Greensand invertebrates like those still found in northern Dorset and south-western Wiltshire.³⁶

It seems to have been Pulteney who instilled a love of botany and fossils in Rackett in neighbouring Spetisbury. Rackett was not only conversant with Linné's new binominal system but was also interested in chemistry which led him to make the acquaintance of Hatchett. Moreover, it was through Rackett that Maton came to know Pulteney and Hatchett. Maton was the son of a successful Salisbury wine merchant, and was educated at the



Figure 2. William Maton. Reproduction of a drawing by an unknown artist, courtesy of Salisbury and South Wiltshire Museum

city's Free Grammar School, where he first developed his passion for natural history, to the extent that it interfered for a while with his other studies. This inclination undoubtedly stood him in good stead by the time he was getting to know Pulteney and Hatchett, with whom he soon became firm friends. Upon leaving grammar school Maton went up to Oxford where he remained until 1794. Returning to Salisbury as an undergraduate, he again encountered Rackett and Hatchett, and the three men determined to undertake a natural history tour of the West Country which was to produce important geological results. As matters turned out, this venture took place in two phases, the first occurring in the summer of 1794 and the second in 1796.³⁷

Analysis of surviving records shows that while

35. M. Lister, 'Concerning Petrify'd Shells', *Phil. Trans. Roy. Soc. Lond.* 5 (1671), pp. 2281–4; and *idem*, *Historia sive synopsis methodica conchyliorum* (Oxford, 1688).

36. J. Hutchins, *History and Antiquities of the County of Dorset*,

2nd edn., vol. 3.

37. J.A. Paris, *A Biographical Sketch of the Late William George Maton, M.D.* (1838).

Rackett, Maton, and Hatchett shared common interests and experiences on the tour, and doubtless reached similar conclusions about the phenomena they saw and examined, Maton appears to have been the prime recorder of their purely geological observations, and Rackett the main driving force behind the tour as a whole. Hatchett's interests, though varied, lay more with mineralogy and quarrying techniques. All three left interesting accounts of what they saw, Maton in 1797³⁸ (immediately before commencing medical studies under Baillie and Cruickshank at Westminster Hospital, London, where he obtained his doctorate in 1801),³⁹ and Rackett separately the same year.⁴⁰ Hatchett did not publish a detail-packed diary he kept during the tour, although a judiciously edited version of its contents has appeared more recently.⁴¹ For present purposes, Maton's book, concerned as it so largely was with geological matters, is of the greatest interest. It records how the tour visited many Dorset localities already well known for their outstanding topographical profiles, geological exposures, and fossil harvests. Included were various exposures along the Dorset coast between Swanage and Charmouth, and much of the countryside between Salisbury and Shaftesbury, before the tour moved westwards through Devon and Cornwall. The book provided a most important mineralogical map showing the *correct* sequence of strata from the chalk, examined near Salisbury, all the way down to the granite, studied in Devon and Cornwall. It may be safely assumed that the map and sequence of strata published by Maton received the general approbation of both Rackett and Hatchett before being printed. Of special significance was the fact that the correct order of these rocks throughout the West Country had *not* been determined before the appearance of the book.

Maton does not, however, indicate at any point that the order of these rocks had been arrived at by reference to fossils noticed in particular strata. In a

sense, therefore, Maton's sequence did not preempt Smith's revolutionary *stratigraphical* observations which, though essentially complete by 1797, were not written down until 1799 and did not appear in print until Townsend summarised them in 1813.⁴² Maton's stratal sequence thus predated the first written record of Smith's discoveries by two years. Indeed, the publication of Maton's book was very probably the main reason why, in 1799, Richardson and Townsend urged Smith to commit his stratigraphical discoveries to paper and why the historic meeting between the three of them had been convened for that purpose at Townsend's Bath residence during the summer of 1799.

Good grounds thus exist for regarding Maton (with Rackett and Hatchett) as the co-discoverer with Smith that the rocks forming the Earth's crust exist in a definite sequence – a fact which has not escaped the notice of several previous historians of English geology.⁴³ Smith, however, was a professional surveyor whose work led him into regular communications with other geologists and engineers who could not only appreciate and utilise his discovery but whose own researches could confirm and amplify it. Maton, in contrast, entered the world of medicine shortly after completing his book and from then on either did not have the opportunity or inclination to indulge in further serious geological investigation or the time to liaise fruitfully with the geological fraternity. For many years, therefore, his important independent discovery concerning the correct order of strata (chalk to granite) was overlooked or forgotten.⁴⁴

While in Cornwall, Rackett, Maton, and Hatchett inspected the magnificent collection of minerals from Cornish mines then owned by Philip Rashleigh (1729–1811), an M.P. who lived at Menabilly.⁴⁵ His collection was later to form the core of the present still more magnificent mineral collection at the British Museum.⁴⁶ As well as their tenuous connection with Salisbury through Maton, Rackett, and

38. W.G. Maton, *Observations on the Western Counties of England, made in the years 1794 and 1796* (2 vols., Salisbury, 1797).

39. J.A. Paris, *op. cit.*, p. 17.

40. T. Rackett, *Observations relative chiefly to the Natural History, Picturesque Scenery, and Antiquities of the Western Counties of England* (2 vols., Salisbury, 1797).

41. A. Raistrick (ed.), *The Hatchett Diary: A Tour Through the Counties of England and Scotland in 1796, visiting their mines and manufactories* (Truro, 1967).

42. J. Townsend, *The Character of Moses established for Veracity as an Historian, recording events from the Creation to the Deluge* (2

vols., London and Bath, 1813).

43. A.G. Davies, *loc. cit.*, *passim*; J. Challinor, 'The Progress of British Geology – III. From Hutton to Playfair, 1788–1802', *Ann. Sci.* 10, no. 2 (1954), pp. 107–48, especially p. 129; and N.E. Butcher, 'W.G. Maton and the Geological Map of S.W. England', *Proc. Ussher Soc.* 2 (1968), p. 14.

44. J. Challinor, *The History of British Geology: A Bibliographical Study* (Newton Abbot, 1971), pp. 81–82.

45. W.G. Maton, *op. cit.*, vol. 1, p. 150.

46. R.J. Cleeveley, *World Palaeontological Collections* (British Museum (Natural History), 1983), p. 240.



Figure 3. The Revd Edward Duke. Photograph by David Cousins of a Lithograph by Martin & Hood, courtesy of Salisbury and South Wiltshire Museum

Hatchett, the Rashleighs had a stronger one through Jane Rashleigh, sister-in-law to the Revd Edward Duke (1779–1852) of Lake House near Amesbury. It is not surprising, therefore, to find Duke interested in minerals and fossils, even though his principal activities apparently centred on archaeological and antiquarian subjects.⁴⁷ His fossils are known to have included bones of Ice Age mammals from the local gravels, and in due course he is thought to have given some of these to the museum in Salisbury. The first museum in Salisbury opened on the site of the old Blue Boar Inn, during or shortly after 1820.⁴⁸ Formed by the Salisbury and South Wiltshire Library and Reading Society, it was merged in 1878 with the Blackmore Museum to become the present Salisbury and



Figure 4. Richard Fowler. Reproduction of a portrait by an unknown artist, courtesy Salisbury and South Wiltshire Museum

South Wiltshire Museum.⁴⁹ Duke's specimens can no longer be identified in the present Salisbury collection (initiated in 1861), and it is uncertain if they were ever transferred from the original 1820s museum to the present one. Nevertheless, they possibly exist among the now unlabelled early examples of Ice Age mammal bones of which the museum regrettably possesses too many, especially as Duke is specifically listed as an early donor to the museum.⁵⁰ Duke certainly knew William Maton, Thomas Rackett, and Joseph Townsend, and was a long-standing friend of another important pioneer Salisbury geologist, Dr Richard Fowler (1765–1863).

For many years physician at Salisbury Infirmary, Fowler was an F.R.S. and, in addition to cultivating antiquarian tastes, assembled a notable collection of local fossils. Indeed, in 1798 he acquired teeth of a mammoth discovered in clay beds near Fisherton,⁵¹ the first recorded instance of that extinct elephant from south Wiltshire. Fowler encouraged others, such as Duke, to make similar collections, and was

47. Obituary of Edward Duke, 1779–1852, *Gentleman's Magazine* 193 (1852), pp. 643–4.

48. H.S. Torrens, 'A Wiltshire Pioneer in Geology and his Legacy – Henry Shorto III (1778–1864), Cutler and Fossil Collector of Salisbury', *WAM* 83 (1990), pp. 178–89.

49. F. Stevens, 'The Salisbury Museum 1861–1947: A Record of Eighty-Six Years' Progress', in *Festival Book of Salisbury* (2nd

edn., Salisbury, 1954); and R.W.H. Willoughby, 'The Salisbury and South Wiltshire Museum', *WAM* 57 (1960), pp. 307–15.

50. E.T. Stevens, *Flint Chips: A Guide to Pre-Historic Archaeology* (London, 1870).

51. H.S. Torrens, *op. cit.*, p. 176.

much involved in the founding of the two Salisbury museums. He, too, is on record as having given some of his fossils, including it is believed the Fisherton mammoth teeth, to the Salisbury and South Wiltshire Museum shortly before his death, but these, like the Revd Edward Duke's fossils, can no longer be certainly identified in the museum's present collections.

It was, however, a local businessman who was to make the next significant contribution to English geology. Henry Shorto (1778–1864), a successful Salisbury cutler and silversmith, was born in April 1778 at Queen Street. He eventually followed his namesake father in the family business, and seems to have known William Maton and Richard Fowler quite well. About 1811, apparently after reading the three-volume *Organic Remains of a Former World* published that year by the London physician James Parkinson (1755–1824), Shorto suddenly took up the study of fossils. His collection of fossils, especially of sponges in flint, was amassed with such speed and zest that it quickly became the second largest and one of the most interesting in Wiltshire. The majority of the specimens were from local chalk pits and river gravels. Shorto's main interest, however, eventually centred on flint formation and significance, and, through diligent collecting, he ultimately had an unrivalled collection.

Shorto debated flints and their likely origin with anyone who was interested, including Richard Fowler and Joseph Townsend. He familiarised himself with many previous opinions on the subject, but discarded as unlikely all earlier explanations. In an extant letter Shorto, on the basis of material collected almost exclusively from the Salisbury district, set out his own ideas on the origin of flints.⁵² The letter is remarkable in representing a viable explanation noticeably similar to that now generally accepted but formulated elsewhere many decades after Shorto's passing. His arguments were read, as a 'received communication', by an unrecorded third party to the members of the Geological Society of London on 4 March 1814, but were not subsequently printed in either that Society's or any other contemporary scientific journal. A very brief summary of the letter's contents, entered in the Society's Minute Book

(where it was erroneously ascribed to a Mr Sports), constitutes the sole printed contemporary reference to Shorto's work. As Shorto failed to publish his researches on flint origins elsewhere, his ideas, so advanced for their time, were soon forgotten and all but passed into oblivion following his demise in 1864.⁵³ A similar fate seems to have befallen his once famous collection of local fossils.⁵⁴ Despite strenuous searches in recent years it can no longer be traced and must now be presumed dispersed or lost.

It should also be noted that Shorto, through his sister Eliza Sharpe Shorto, was related to the Blackmore family of Salisbury, of whom Humphrey Purnell Blackmore (1835–1929) was for many years surgeon and physician at Salisbury Infirmary (where he succeeded Richard Fowler upon the latter's death in 1863),⁵⁵ and one of the founders of the present Salisbury and South Wiltshire Museum.

EARLY LADY 'FOSSILISTS'

Emergent geology was not, however, to be an exclusive male preserve. A Mrs Gent of Devizes collected fossils and minerals locally early in the 19th century, and even had a fossil sea shell named in her honour – *Helix genti*.⁵⁶ She was not, as far as is known, directly connected with the pioneer geologists of Salisbury though she may, of course, have been aware of their activities. Unfortunately, very little is known about her.

Almost certainly more than merely 'aware' of those activities must have been Dorothea Fisher (d.1831), the wife of Dr John Fisher, Bishop of Salisbury from 1807–1825, who unquestionably knew Richard Fowler, Henry Shorto, and William Cunnington, and very probably William Maton and Thomas Rackett. Mrs Fisher's love of fossils had already flourished by 1802, when she was described by the Revd William Coxe (1747–1828), in a letter to Cunnington, as a great collector.⁵⁷ In 1820 she donated a choice selection of fossils to the new museum of the Salisbury and South Wiltshire Library and Reading Society. In view of that museum's presumed aim of highlighting Wiltshire's fossil riches, it may be supposed that many of the specimens were local ones chosen specifically to

52. *Ibid.*, p. 179.

53. *Ibid.*, pp. 180–1.

54. *Ibid.*, pp. 182–3 for lists of extensive early 19th-century references to Shorto's fossil collection.

55. Obituary of Richard Fowler, *Salisbury and Winchester Journal*, 13 April 1863.

56. J. Sowerby, *op. cit.*, vol. II, p. 101.

57. Coxe to Cunnington, 31 Aug. 1802: Torrens, *op. cit.*, p. 184.



Figure 5. Etheldred Benett. Reproduction of a silhouette, courtesy of the Castle Museum, Norwich

illustrate the palaeontology of the Salisbury area. Unfortunately, Mrs Fisher's fossils, like Henry Shorto's, are now untraceable.

Neither Mrs Gent nor Mrs Fisher, however, compare with Wiltshire's foremost lady geologist, Etheldred Benett (1776–1845), often referred to in early literature simply as Miss Benett, nor do their discoveries rival the scope and importance of hers. She was the second daughter of Thomas Benett of Pythouse, M.P. who was a cousin of Aylmer Bourke

Lambert (1761–1842) of Boyton. Lambert had been at Oxford when Maton had been an undergraduate there during the early 1790s, and, like him, was a keen botanist; indeed, he was the first to describe the Scots Pine scientifically in Linnean terms. Lambert's own geologising in Wiltshire, while not especially important, certainly dated from 1806 or earlier, for in that year he sent James Sowerby in London specimens of petrified wood and bivalve fossils from Fonthill and, slightly later, ammonites and a reptilian vertebra from the Portland Stone of Chicks Grove quarry near Tisbury.⁵⁸ These, and similar activities in Dorset at that time, probably prompted Etheldred Benett to begin her own serious fossil collecting in or about 1813, for quite soon afterwards she was corresponding on geological matters with Gideon Mantell (1790–1852), a young Sussex doctor then resident at Lewes, destined to discover the *Iguanodon*, the first herbivorous dinosaur ever described.⁵⁹ Mantell's and Benett's correspondence, preserved in the Alexander Turnbull Library, New Zealand, reveals that together they worked out the general sequence of fossils distinctive of the many beds comprising the Greensand and Chalk formations so characteristic of southern Wiltshire and large tracts of southern Sussex. This marked a significant step forward, and their joint work was subsequently recorded in several popular books written by Mantell from 1822 onwards,⁶⁰ in each of which Miss Benett's contributions were generously acknowledged.

Benett's collection of fossils, remarkable for its diversity of species, eventually became the largest in Wiltshire, and was kept at her home at Pythouse. It included mammoth teeth from Fisherton (finds not recorded by Delair and Shackley in 1978),⁶¹ Chalk fossils from all round Salisbury, and was particularly rich in Greensand and Chalk specimens from the environs of Warminster. Her collection was regularly visited by early foreign⁶² and British⁶³ geologists and

58. J. Sowerby, *British Mineralogy*, vol. II (1806), p. 121; vol. V (1813), p. 133; *idem*, *Mineral Conchology*, vol. II (1818), p. 157.

59. J.B. Delair and W.A.S. Sarjeant, 'The Earliest Discoveries of Dinosaurs', *Isis* 66, no. 231 (1975), pp. 5–25, especially pp. 12–19; and W. Edmonds, *The Iguanodon Mystery* (Harmondsworth, 1979), chap. 2.

60. G.A. Mantell, *Fossils of the South Downs* (1822); *The Fossils of Tilgate Forest; or Illustrations of the Geology of the South-East of England* (1827); and *Geological Excursions Round the Isle of Wight, and along the Adjacent Coast of Dorsetshire* (3rd edn., 1847).

61. J.B. Delair and M.L. Shackley, 'The Fisherton Brickpits: Their Stratigraphy and Fossil Contents', *WAM* 73 (1978), pp. 3–18; and Torrens, *op. cit.*, p. 176.

62. A.E.J.P.J.F.d'A. de Férussac, 'Catalogue des fossiles du Comté de Wilts par Etheldred Benett' (Abstract), *Bull. Zoologique* for 1835, pt. 2, pp. 55–56.

63. British Library Add. MS.22837, MSS collections subservient to the Natural History of the County of Wilts: Maton, W.G. (1793–1833).

naturalists, several of whom named new fossil species of molluscs and other organisms after her in recognition of her important contribution to Wiltshire geology. She was not merely a collector, but also a field geologist. In 1816, the earliest geological section of Wiltshire strata ever published resulted from her enterprise. It was a detailed bed-by-bed record of Chicks Grove quarry near Tisbury.⁶⁴ Later, in 1831, she published a valuable catalogue of her collection of fossils, which Sir Richard Colt Hoare reprinted the same year.⁶⁵

An amusing sidelight on Etheldred Benett's career concerns the fact that when a visiting geologist in St Petersburg happened to mention the excellence of her collection to the Czar, who was interested in fossils, the Russian monarch asked if he might have specimens from it to display in the Imperial collection. A selection of Benett fossils was accordingly sent as a gift to the Czar who promptly made her an honorary general in the Russian army under the mistaken impression that Etheldred was a masculine name!⁶⁶ As far as is known, Etheldred Benett became the only female general in the history of the Russian army. The fossils sent to Russia are still in St Petersburg, although the main bulk of the Benett collection is now dispersed among museums as far apart as Philadelphia,⁶⁷ London, Paris, and, possibly, Bristol. Her catalogue of 1831 is, therefore, singularly valuable as a record of the collection's original condition and scope.

The original correspondence between Gideon Mantell and Etheldred Benett is, as yet, largely unpublished, though preparation of an edited selection is in hand. The correspondence contains numerous glimpses of what these pioneers were doing and pondering and, to some extent, what some of their pioneering contemporaries were thinking. Certainly during the first two decades of the 19th century the Salisbury area played a very significant role during the formative phase not only of Wiltshire but also of English geology, and

Etheldred Benett was for several decades a leading player in that drama.⁶⁸ That phase also involved another Salisbury pioneer geologist, Charles Lyell (1797–1875).

SALISBURY: BIRTHPLACE OF UNIFORMITARIANISM?

Born at Kinnordy on Tayside, Lyell was educated at Dr Ratcliffe's School, Salisbury, where the curriculum included natural history. In later life Lyell used to recall his schoolboy days hunting for wild flowers and fossils on the chalky slopes of Old Sarum.⁶⁹ While still at Dr Ratcliffe's, the young Lyell fell seriously ill, and Richard Fowler, physician to the Salisbury Infirmary at the time, was called to the school to treat the patient. Fowler diagnosed pleurisy and, as Lyell convalesced, discussed fossils with him.⁷⁰ This episode certainly occurred before Smith's *Strata Identified by Organised Fossils* appeared in print, probably after Parkinson's *Organic Remains of a Former World* had been published, and perhaps after Townsend had produced his elaborate *Character of Moses*. As a Fellow of the Royal Society, Fowler would almost certainly have known all the most recent books on the subject, and doubtless imparted to young Lyell the latest news and views about fossils which, by that time, reflected an increasingly scientific treatment.

In 1815, Lyell went to Midhurst College,⁷¹ in Sussex, before entering Exeter College, Oxford, a year later. At Oxford, he attended the brilliant geological lectures of the Revd William Buckland (1784–1852), already a leading figure in British geology, shortly destined to publish the first scientific account of the great carnivorous dinosaur *Megalosaurus*, and ultimately to rise to become Dean of Westminster.⁷² Buckland's lectures served to increase Lyell's passion for geology, which he regarded as a hobby rather than as a profession. Lyell's principal objective at Oxford was the study of

64. J. Sowerby, *op. cit.*, vol. II, p. 58.

65. E. Benett, *Catalogue of the Fossil Organic Remains of the County of Wiltshire* (Warminster, 1831); and R.C. Hoare, *The Modern History of South Wiltshire*, vol. 3 (1831) includes Part 2, 'The Hundred of Warminster' by H. Wansey and R.C. Hoare: see pp. 119–26.

66. Revd Canon J.E. Jackson, 'The Eminent Ladies of Wiltshire History', *WAM* 20 (1882), p. 40.

67. E.A. Spamer, A.E. Bogan and H.S. Torrens, 'Recovery of the Etheldred Benett Collection of Fossils mostly from the Jurassic-Cretaceous strata of Wiltshire, England, Analysis of

the Taxonomic Nomenclature of Benett (1831), and Notes and Figures of Type Specimens contained in the Collection', *Proc. Acad. Sci. Philadelphia* 141 (1989), pp. 115–80.

68. H.S. Torrens, 'Women in Geology. 2 – Etheldred Benett', *Open Earth* 21 (1985), pp. 12–13.

69. E. Bailey, *Charles Lyell* (London, 1962), p. 63.

70. *Ibid.*, p. 68.

71. L.G. Wilson, *Charles Lyell, the Years to 1841: The Revolution in Geology* (New Haven, 1972), pp. 25–31.

72. J.B. Delair and W.A.S. Sarjeant, *op. cit.*, pp. 12 and 17.

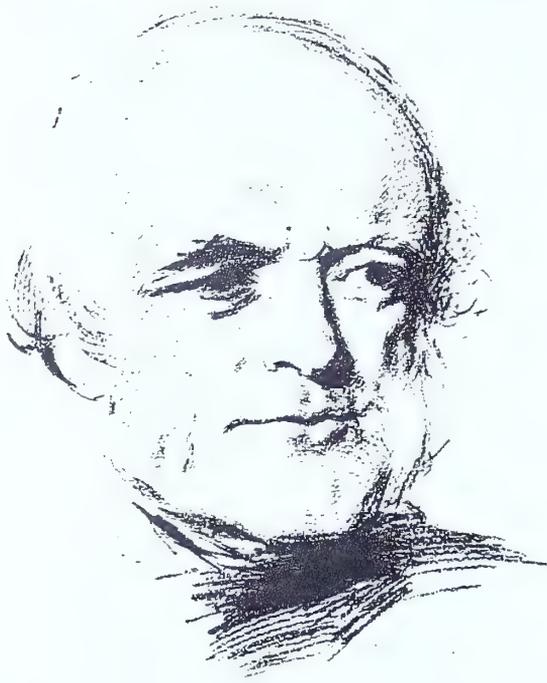


Figure 6. Charles Lyell. Reproduction of a drawing by George Richmond, c. 1853, courtesy of the National Portrait Gallery

law, and in due course he qualified as a lawyer.⁷³ Nevertheless, he kept up his private geological studies whenever circumstances permitted.

In between his court commitments as an Assize lawyer on the Western Circuit Lyell spent much of his leisure time examining geological collections such as Etheldred Benett's⁷⁴ or collecting fossils and studying geological phenomena of every kind. In 1819 he became a Fellow of the Geological Society of London, and avidly read everything concerning geology in its library. It was entirely appropriate, then, that his first published paper, in 1827, concerned fossil elephant remains from Fisherton, specimens of which were then in the collections of Richard Fowler, Etheldred Benett and, probably, Edward Duke. Lyell's paper⁷⁵ was the first printed record of the occurrence of fossil elephants in the Salisbury district.

Although slightly beyond the limits of the

'Pioneer Period', 1831 and 1833 saw the publication of Lyell's three-volume work *The Principles of Geology, Being an Attempt to Explain the Former Changes of the Earth's Surface, by Reference to Causes now in Operation* (London), in which the entirely new theory of 'Uniformity' was first proposed. Later in life Lyell admitted that he had completed the formulation of most of this theory by 1827, the year of his Fisherton elephants paper. Thus it may be safely deduced that even his discussions about fossils with Richard Fowler while still a pupil at Dr Ratcliffe's School formed part of the theory's development phase and that, despite its publication during the early 1830s, it was a product of the 'Pioneer Period'.

Lyell postulated that the Earth's past history, as exemplified by its rocks and fossils, was not continuously chaotic or interpretable in terms of cyclic catastrophes, as advocated by numerous earlier hypotheses. Rather, it was essentially a slow, unspectacular process generated by agencies operating in every way like those around us today. Owing to this slowness of operation, the time taken to deposit most of the different formations comprising the Earth's crust must have been enormously long. Consequently, the age of the Earth must be even greater than any previously suggested. This general process was distinguished by the title 'Uniformitarianism', and has ever since been a cornerstone of modern geology.

Lyell's theory was in fact diametrically opposed to 'Catastrophism', the heading under which most older hypotheses purporting to explain early Earth history naturally fell. Because local calamities, such as earthquakes, volcanic eruptions, great landslides, or huge floods, were explicable in terms of essentially uniformitarian actions, Lyell's persuasively logical deductions were quickly accepted. Although now somewhat modified, the 'Theory of Uniformity', as it came to be known, rapidly superseded all those older 'Catastrophist' theories which viewed fossils as victims of Noah's Deluge. In his *Character of Moses* (1813), Townsend interpreted most fossils from a 'catastrophist' point of view, while ten years later Buckland's *Reliquiae Diluvianae* championed the same approach with respect to Pleistocene mammal remains discovered

73. Mrs K.M. Lyell (ed.), *Life, Letters and Journals of Sir Charles Lyell, Bart.*, (2 vols., London 1881).

74. L.G. Wilson, *op. cit.*, pp. 153, 161 and 169.

75. C. Lyell, 'On some fossil bones of the Elephant and other animals found near Salisbury', *Proc. Geol. Soc. Lond.* 1, no. 3 (1827), pp. 25-26.

globally in limestone caves and rock fissures. Lyell's theory spelt the death knell of all such extravagant notions. That Lyell's first awakening to geological topics began in Salisbury, during the era designated the 'Pioneer Period', and that it ultimately led to the formulation of the epochal 'Theory of Uniformity', is a fact of which even present-day Salisbury can be justly proud.

CONCLUSION

Although now renowned more as a treasure-house of archaeological wonders, Wiltshire contributed very significantly to the development phase of modern geology, one of the centres where many of these contributions were made being Salisbury. Indeed, the very profusion of antiquities in and around Salisbury must have itself been a factor which led many cultured men of an enquiring turn of mind to focus attention on the city and its environs, their antiquarian proclivities simultaneously encompassing natural curiosities and

oddities like fossils. Today, much of this early geological endeavour, many of the individuals involved, and much of the material they collected and studied, have been largely forgotten or lost. It is hoped, therefore, that this paper in some measure remedies this unwarranted neglect, and indicates that the sum total of Salisbury's past achievements has perhaps been even greater than usually assumed.

Acknowledgements. The writer wishes to thank the following individuals and institutions for providing (over a period of several years) helpful information and access to various specimens and publications pertinent to the research embodied in this study: Dr Hugh Torrens (Keele); Mr Peter Saunders, Miss Clare Conybeare and Miss Janet Bell (Salisbury and South Wiltshire Museum); Mr K. Annable and Miss Sarah Nash (late of Devizes Museum); Mr Paul Ensom (late of the Dorset County Museum); the Curator of Local History (the Town Hall, Trowbridge); and the librarians at the British Museum (Natural History), Oxford University (Bodleian and Radcliffe Science Libraries), Salisbury and South Wiltshire Museum, Blandford Forum, the Dorset County Museum (Dorchester), and the Dorset County Record Office (Dorchester). Useful suggestions received from Mr Ronald Cleevely (London) and Professor Denis Dean (Wisconsin) are also gratefully acknowledged. Dr H.A. Sandford (Plymouth) and Dr J.H. Thomas (Portsmouth) kindly read the original MS.

Notes

Two Roman Figurines from Wilcot

by MARTIN HENIG

Two incomplete figurines were found recently, by Mr K. Moon at Wilcot, in association with other Iron Age and Romano-British finds including coins ranging in date from the 1st to the 4th centuries AD. There is as yet no information on the nature of the site with which they are associated, and neither bronze image can be closely dated.

Figure 1. Small, nude female figurine; length 59mm. She has a lithe body and long legs, the right leg slightly bent at the knee. Her left lower arm is held horizontal to the body; her upper arm is raised. The head and hands are missing and the figurine has suffered from surface corrosion; the low base on which she stands is crushed.

The most obvious parallel from the region is a much larger figure discovered in 1818 at Folly Farm near Marlborough (Hoare 1821, 72 and pl.) which represents the *Aphrodite Anadyomene* type. There are comparable representations of Venus from Colchester (Lindgren 1980, 73ff. and pl. 35) and Bonn (Menzel 1986, 46 no. 102, pl. 58, and 47 no. 105, pl. 59).

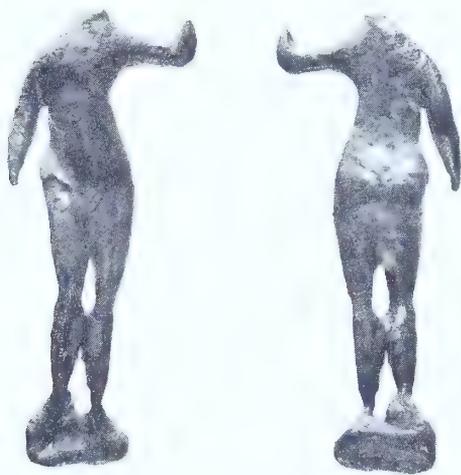
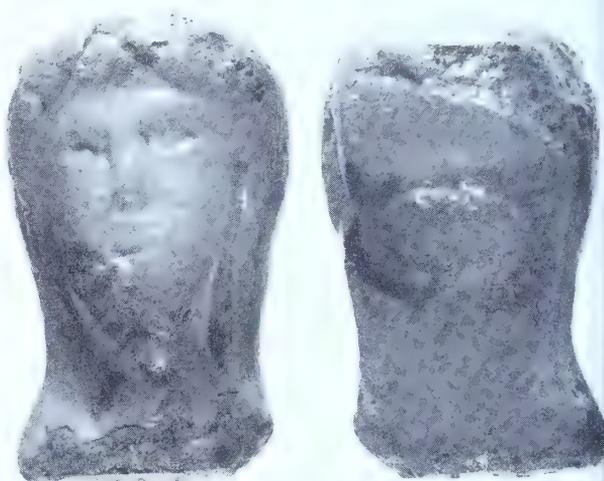


Figure 1. Bronze figurine of Venus from Wilcot; scale: 1:1



Figure 2. Bronze bust from Wilcot; scale: 2:1

Figure 2. This is an abraded head of Venus with long hair down the sides of the neck; the facial features are very worn. The head is broken off at the neck; the back is flattened and has some iron corrosion adhering to it. Length: 24mm.

The resemblance between this head and that of the Folly Farm Venus, which is of a similar size (Hoare, *op. cit.*), is uncanny. Comparison may also be made with a rather finer image of Venus from Kortrijk in Belgium (Faider-Feytmans 1979, 82–3 no. 76, pls. 46 and 47).

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A Group of Salisbury Poll Books

by JOHN MUSTY

In 1872, the Ballot Act introduced the secret ballot for voting at parliamentary elections. Previously, votes with the voters' names were recorded in manuscript poll books which were open to public inspection. More important in the present context, copies were frequently made by enterprising printers who published them in a printed form for private profit. Would the published poll books, which had no official status, have been of much interest to the public at large? Canvassers at subsequent elections would certainly have found them very useful, but once a poll book had served its purpose it would doubtless be cast aside and probably destroyed, and its physical makeup was such as to have made a short life likely.

Consequently, not very many poll books are to be found and only some 2,000 titles are said to survive for the whole of England and Wales for the period 1694–1872.¹ As for Wiltshire, one national register of poll books lists none for Salisbury during the period 1832–68.² This is misleading because as well as four Salisbury poll books in the writer's possession, several are located in Salisbury and Devizes Museums and in the Local History collection at Salisbury Public Library, all for that period. Details of these are given in the Appendix to this note, together with a list of poll books for the election of county members of Parliament which are also present in the above collections and again

appear to have escaped Drake's notice. There is even a printed poll book in the Salisbury Public Library collection for a municipal election for six vacancies on Salisbury Corporation (1 November 1836). Its survival is possibly due to the special circumstances of its having recorded the first municipal election subsequent to the 1835 Municipal Corporations Act which reorganised local government elections, and therefore possibly having been kept as a souvenir. Not included in the Appendix are the details of the poll books for county and Salisbury seats held in national collections as these are listed in the directory produced by the Federation of Family History Societies (latest edition 1990). Details of poll books for county seats held at the Wiltshire Record Office are also included in this directory.

It needs to be pointed out that not every parliamentary election would have produced a printed poll book because some elections were not contested, especially in the case of county seats. Moreover, a constituency such as Salisbury could not be expected to have any poll books before 1832 as, previous to the Reform Bill, only the Mayor and Corporation were involved in elections, unlike the 1,000 or more freeholders who took part in the elections for county seats. Thus there is a surviving poll book for as early as 1705 for a county seat with voting at Wilton (22 May). There were, however,

1. J.R. Vincent, *Poll Books: How Victorians Voted* (Cambridge, 1967).

2. M. Drake, *Introduction to Historical Psephology* (Open University, 1974) p. 128.

only two county seats prior to the Reform Bill of 1832 when Wiltshire was divided into a North and a South Division, each with two seats.

The purpose of the present note is to record in more detail the group of poll books in the writer's ownership covering the elections held at Salisbury in 1832, 1843, 1859 and 1865. Two of these (1859 and 1865) are not represented in the other collections and may be unique. That for 1832 is duplicated in all the other collections, but, interestingly, the Devizes Museum and Salisbury Museum copies were published by Clapperton, the others by Brodie. A major difference between the two is that the Clapperton edition includes details of the property qualification of each voter. Possibly, the novelty of witnessing the first post-Reform Bill election led to the anticipation of a large demand and encouraged competing publishers. It is also to be noted that the election was set over four days, as was often the practice when electing members to county seats, as if there were uncertainty as to how long it would take for the increased number of electors to come forward under the new franchise. Subsequently, one day was the general rule for the Salisbury City elections.

The 1843 poll book also comes from a period of high political activity: that immediately preceding the repeal of the Corn Laws which was distinguished by Cobden's visit to Salisbury. This was in the summer of 1843, with by-elections in May and November of that year occasioned by the death of Wadham Wyndham and the resignation of Ambrose Hussey who had briefly replaced him.

All poll books show the name of each voter and how he cast his votes (including abstentions). More rarely the voter's occupation is also shown, and this is so for the November 1843 poll book. When two members were to be elected, each elector had two votes. The outline details of each book, and the election it covered, can be summarised as follows.

1. *Election, Dec. 1832 for two members*

W.B. Brodie (L), 392; Wadham Wyndham (C), 268; Hon. D.P. Bouverie (L), 265.

Published by W.B. Brodie & Co., Canal, Salisbury. Price sixpence. Thick grey paper covers.

Notes: (a) on petition Wyndham was found 'unduly elected'; and

(b) Brodie & Co. published the *Salisbury Journal*, then a Whig newspaper, W.B. Brodie being both its owner and editor.

2. *Election, Nov. 1843 for one member*

J.H. Campbell (C), 317; Hon. D.P. Bouverie (L), 270; abstained, 65.

Published by K. Clapperton, General Printing Office, Salisbury. No price stated. Blue card covers.

Note: Campbell was a nephew of Wadham Wyndham.

3. *Election, April 1859 for two members*

Lieut. General Buckley (L), 370; M.H. Marsh (L), 327; J. Chapman (C), 261.

Published by Bennett, Printer, Journal Office, Salisbury. Price twopence. No separate cover.

Note: Buckley was the son-in-law of the 3rd Earl of Radnor.

4. *Election, July 1865 for two members*

M.H. Marsh (L), 367; E.W.T. Hamilton (L), 312; J. Chapman (C), 252; abstained, 115.

Published by Brown & Co., Canal, Salisbury. Price threepence. No separate cover.

Notes: (a) E.W.T. Hamilton was the brother of Walter Kerr Hamilton the Bishop of Salisbury; and

(b) there are two different dates on the cover page: 1863 and 1865. Thus the polling date shown as 13 July 1863 is incorrect and is a printer's error.

When poll books, such as that for 1843, include details of each voter's occupation it is possible to use the information in two ways. First, the voting list can be analysed with respect to the relationship of type of occupation to voting preference. Secondly, it provides an indication of the social mix of the electorate which, at Salisbury, represented only *c.*5 per cent of the city's population. Both aspects have been examined briefly in the analysis of the 1843 poll book described here.

Some professions and trades show preferences strongly favouring either the Tory or the Liberal candidate. Thus the majority of the attorneys (14 to 5), clergy (13 to 2), innkeepers (27 to 14), carpenters (11 to 3) and corn dealers (5 to 1) voted for the Tory candidate. By contrast, bakers (11 to 5), curriers (8 to 1), printers (7 to 0), shoemakers (18 to 7) and grocers (19 to 9) mainly espoused the Liberal cause. Of the well known city personalities of the time, Henry Hatcher, the Salisbury historian, voted for the Tory candidate, a choice also adopted by woollen draper William Blackmore and

gentleman William Benett Blackmore, whose surname was later to become associated with the founding of the Salisbury and Blackmore museums. The notable poet, the Revd W. Lisle Bowles, however, did not cast a vote, nor did the Dean of Salisbury. Of the 29 individuals listed as 'out of business', the majority (15 to 7) voted for the Tory candidate as did those identified as 'gentleman' (14 to 8). Groups which split either way (almost equally) included butchers, chemists and druggists, doctors, gardeners, hairdressers, ironmongers and tailors.

As Vincent points out, it is possible that external influences 'completely obliterated the will and intention of great sections of voters'.³ Nevertheless, he demonstrated from his analysis of numerous poll books that in many boroughs the shopkeepers and the craftsmen provided the backbone of the Liberal vote. There were of course some exceptions. Whereas grocers voted Liberal, for example, butchers tended to vote Tory. He also pointed out that there was a range of professions (such as lawyers, doctors, schoolmasters, clergy and architects, as well as wine merchants, coach builders and saddlers) who looked to the Tory landed class for their greatest rewards and voted accordingly.

Certainly, in Salisbury the grocers were strongly Liberal (19 to 9), but the butchers were almost equally divided between Tory and Liberal and were marginally (1 vote) in favour of the Liberal candidate. Of the occupations said to favour Tory candidates, lawyers (14 to 5), schoolmasters (3 to 1), clergy (13 to 2), coachmakers (2 to 1) and saddlers (3 to 2) closely correlate to Vincent's findings, though doctors and wine merchants did not. Architects could not be checked as there was none listed.

Of the different occupational groups, by far the largest was that of innkeepers (including beer sellers) who totalled 42. These were followed by grocers (31), shoemakers (25), butchers (24), tailors (23), attorneys (19), bakers (19), clerks (i.e. clergymen) (19), carpenters (18) and cabinet makers (12). These are all occupations of a type which would not be out of place in modern Salisbury. Others in the list, however, include a number which are now obsolete: coachmaker (4), cork cutter (1), fellmonger (2), hostler (1), horse-

hair manufacturer (3), hackneyman (2), mantua maker (1), straw bonnet maker (1), twine maker (2), tallow chandler (2) and writing master (1).

It would appear that some trades equally appropriate to 1843 as to 1993 were possibly in greater strength in 1843: thus there were four bookbinders, three cutlers, two chairmakers and twelve cabinet makers, in addition to the twenty-five shoemakers already noted. One occupation, that of Gas Works Superintendent, had only been in existence ten years as gas had first come to Salisbury in 1833. One profession which must have been hard pressed compared with nowadays was that of veterinary surgeon as only one is listed. At the other end of the social scale a solitary chimney sweep also seems inadequate but there may have been others without the right to vote.

Two artists were included: David Charles Reader, painter and etcher (1790–1851), who lived in the Close, and John Porter. Two tobacco pipe-makers were working around this time, William Morgan and James Skeines, but only Morgan is shown in the 1843 poll book and his address is given as Salt Lane. According to the *VCH Wilts.*, Morgan had disappeared from the trade directories by 1859,⁴ but both Morgan and Skeines are listed in the 1859 poll book, though not that for 1863. The name of Edward Vandenhoff, Dyer and Nurseryman, of Castle Road, is a reminder that the celebrated actor John Vandenhoff (1790–1861) of that family was born in Salisbury. He first appeared on the Salisbury stage in 1808 and gave his final performance there in 1856.

What is not known is why details of each elector's occupation were included in the 1843 poll book and not in the others, and how these were obtained – whether from the individual electors or from another list of some sort, such as directories or census materials. Certainly, electoral registers existed, and Salisbury Museum holds a copy published in 1842 but occupations are not included. In turn, this raises the question as to the accuracy of the occupational details and whether the nature of the work implied by a job title may differ from what would be expected today. 'Ironmonger' and 'Iron-founder' are cases in point. Thus John W. Edginton of Penny-farthing Street is listed as a gas fitter but had previously been described, in 1839, as an

3. J.R. Vincent *op. cit.*, p. 10.

4. W.E. Brown, 'Tobacco and Clay Pipes' in E. Crittall (ed.), *VCH Wilts.*, vol. 4, p. 244.

ironfounder. An ironmonger, Thomas Wolferston, of Winchester Street, was, in 1847, given the contract as an ironfounder, for building new wagons and trucks for the Salisbury and Bishopstoke (Eastleigh) Railway and had to erect new premises on Milford Hill to accommodate the order.⁵ These were certainly activities not expected to fall within the remit of a modern ironmonger. Another ironmonger listed – William Cusse Figes of ‘Blue Boar Row’ – also had a foundry because, in November 1830, it was the intended target of the rioters who had smashed a threshing machine at Bishopdown Farm but were stopped in the Green Croft.⁶

It has also to be recognised that the electors were restricted to those who held the appropriate qualification to vote – male £10 householders. Apparently these amounted to 625 out of a population of approximately 12,000. Consequently, the poll book provides no hint as to the size of the various enterprises to which the listed individuals belonged. For example, Robert Senecall is shown as ‘Foreman at the Silk Factory, Castle Street’. This was set up in 1825, in the vicinity of 51 Castle Street, as a relief operation consequent on the decline of the cloth trade and employed over 100 silkmakers,⁷ none of whom, nor additional supervisory staff, are listed. Presumably many of the staff were female. Strangely, Fulford in the *Festival Book of Salisbury* (1914) stated that ‘Senechal’s [silk factory] was closed in 1825 for lack of workmen’.⁸

John Chandler has already drawn attention to the status of Castle Street as the most important shopping street in 1855 with, amongst others, seven shoemakers, six butchers, four bakers, three tailors, two drapers, a white smith, a cutler, an ironmonger and a goldsmith.⁹ Analysis of the 1843 Poll Book presents the same picture for a decade or more before with some forty trades or professions represented in the street. This figure remained fairly constant for many years until the building of large garages and other multi-plot structures led to the amalgamation of a number of properties.

Appendix

SALISBURY CITY POLL BOOKS IN VARIOUS COLLECTIONS

Abbreviations: B = By-election; DM = Devizes Mus.; JM = John Musty; SM = Salisbury Mus.; SPL = Salisbury Pub. Lib.

1832 (14 Dec.)	SM (2 copies)	DM	SPL	JM
1833 (6 May)	–	–	–	–
1835 (7 Jan.)	–	–	–	–
1837 (24 July)	–	–	–	–
1841 (2 July)	SM	–	SPL	–
1843 (4 May) B	SM	–	–	–
1843 (23 Nov.) B	SM	–	–	JM
1847 (25 Jan.)	–	–	–	–
1847 (30 July) B	–	–	–	–
1852 (10 July)	–	–	–	–
1853 (15 Nov.) B	–	–	–	–
1857 (27 March)	–	–	–	–
1859 (30 April)	–	–	–	JM
1865 (13 July)	–	–	–	JM
1868 (19 Nov.)	First election after second Reform Act.			

POLL BOOKS FOR COUNTY SEATS IN CONTESTED ELECTIONS 1689–1832

1690	–	–	–
1705	–	–	SPL
1713	–	–	–
1715	Uncertainty as to whether this election was contested		
1722 B	–	–	SPL (3copies)
1772 B	–	DM	–
1818	–	DM	SPL (2 copies)
1819 B	–	DM	SPL (2 copies)

Thus the DM and SPL holdings account for all contested county elections between 1689–1832, as listed in *VCH Wilts.*,¹⁰ except for 1690, 1713 and possibly 1715. There is also a poll book in the SM group for the July 1865 election.

5. M.E. Ransome, ‘Economic History since 1612’ in E. Crittall (ed.), *VCH Wilts.*, vol. 6, p. 131.
6. H. de S. Shortt (ed.), *The City of Salisbury* (London, 1957), p. 109.
7. J. de L. Mann, ‘Textile Industries since 1550’ in E. Crittall (ed.), *VCH Wilts.*, vol. 4, p. 177.

8. G. Fulford, in F. Stevens (ed.), *The Festival Book of Salisbury* (Salisbury, 1914) p. 71.
9. J. Chandler, *Endless Street* (Salisbury, 1983), p. 111.
10. W.R. Ward, ‘County Government c.1660–1835’ in R.B. Pugh and E. Crittall (eds.), *VCH Wilts.* vol. 5, p. 198.

Salisbury Museum also holds electoral registers published in 1842 and 1846. These are presumably official publications as both carry the royal arms on the front cover although produced by local printers

W.H. Halpin & Co and F.H. Lee & Co, both shown as the Herald Office, one presumably succeeding the other in the business.

Surprises from an Ornithologist

by JUNE BADENI

George Montagu was well known as a naturalist in the latter years of the 18th century and the early years of the 19th. He was an early member of the Linnaean Society of London and some of his most important papers were published in its *Transactions*. His memory is fixed in the British bird list, however, by Montagu's Harrier which he identified, although it was not until after his death that the French naturalist, L.P. Vieillot, in his *New Dictionary of Natural History* (1819) gave the name to the bird formerly *Falco cineraceus*. He has an entry in the *Dictionary of National Biography* (1909), and, following his death, appreciations were written paying tribute to his scholarly dedication to the study of ornithology and marine biology. Nothing written about him at that stage mentioned a dramatic incident in his life – that as a Lieutenant Colonel commanding the Wiltshire Militia he was court-martialled and dismissed the service.

Montagu was born in 1755 at Lackham, in the parish of Lacock, Wiltshire. His ancestor, James Montagu, third son of the 1st Earl of Manchester, had married Mary, daughter and heir of Sir Robert Baynard, who brought the Lackham estate to the Montagus during the reign of Charles I. His mother was Eleanor, daughter of William Hedges of Alderton, a small estate a few miles from Lackham.¹

George Montagu was the second son, and at the age of sixteen he was commissioned into the 15th Regiment of Foot.² When he was not quite nineteen, he married Anne, eldest daughter of William and Jane Courtenay. As a result his mother-in-law was the daughter of the Earl of Bute, Prime Minister to George III. Two years after the marriage, Montagu's regiment was ordered to

America where the War of Independence was being fought.

Despite his being on active service, there seem to have been a good many opportunities for leisure pursuits, and during his time in America Montagu was able to indulge his favourite hobby of ornithology, shooting (alas!) a number of rare birds. He was promoted to Captain but did not remain long in America and soon after his return retired from the regular army and was commissioned in the Wiltshire Militia.

During his years of service with this unit in various parts of Britain, Montagu was able to continue his study of natural history with the advantage of seeing the wild life of different areas. He and his wife had six children – four sons and two daughters – the youngest of whom, Louisa, was born in 1788 at Easton Grey, near Malmesbury, where Montagu had rented a house for two years. He and his family also lived for some time at Alderton, some six miles from Malmesbury, which his maternal uncle had left to him.³

The first intimation that all was not well in Montagu's private life comes in the codicil which his older and unmarried brother, James, made to his will in February 1797.⁴ He left Lackham to George, but stated that 'My brother George shall not live in my mansion house at Lackham unless with his wife. If he does not do so then the Trustee to let the house to another suitable tenant.' The reason for this stipulation was that Montagu had left his wife. He was living with Mrs Elizabeth Dorville, who had borne him several children. She was a tolerably good artist and some of her paintings of birds were used as illustrations in the *Ornithological Dictionary* (1802).

1. W. Cunningham, 'Memoir of George Montagu', *WAM* 3 (1857), pp. 87–94.

2. *Ibid.*, p. 88.

3. *Ibid.*, p. 90.

4. PRO PROB 11/1297/653/141–52.

James Montagu died in 1798 and no doubt the question of whether George could or could not live at Lackham gave the scandal of his infidelity a wide public. It seems likely that Elizabeth Dorville had been living with him during his military duties, and that was probably the cause of the row that blew up in the Wiltshire Militia, of which he was by then commanding officer. It culminated in a court-martial, held at Plymouth Dock between 28 September and 15 October 1799.

None of the charges related to any failure in his actual military duties, but he was accused of conduct unbecoming to the character of a Commanding Officer by belonging to the Subalterns' Club, by exerting his power to obtain from different officers evidence of private conversations in their families, by trying to prejudice some officers against two captains of the regiment, and by spreading gossip about the wife of one of them. He was found guilty and dismissed.⁵ Since most of the officers in the Regiment were Wiltshire men, the neighbourhood must have buzzed with gossip over this trial, yet somehow all talk of it died down so quickly afterwards that his obituaries did not mention it.

Soon after this, Montagu was trying to persuade his wife to come to Lackham, but she refused. 'If it is your intention' she wrote, 'to reside with me at Lackham or elsewhere I will in that case meet you there . . . but should your intentions be the same I found them to be in December '97 I freely confess I never will let affection dupe my understanding so

far again . . .'⁶ Montagu also persuaded his eldest son, George, to sign a statement saying that his mother was living at Lackham although she was not. It is probable that at this time he tried to have the best of both worlds by installing Mrs Dorville at Alderton while begging his wife to come to Lackham. Long after his time, an old woman in Alderton remembered that a Montagu kept a mistress in the Manor House there; she said that there was a picture in the house of a man with a lock over his mouth and she thought it very appropriate.⁷

It was obviously an embarrassing situation for the Trustees, and it seems that Montagu did manage to some extent to gain possession of the estate. In 1800, George (junior) brought a case against the Trustees alleging that his father had been allowed to fell timber at Lackham, had pocketed rents and had removed books and furniture from the house.⁸

Father and son continued in enmity and there was much costly litigation. Montagu, senior, with Mrs Dorville and their children, finally went to live in Devonshire. His *Ornithological Dictionary* was published in 1802, and in the following year appeared his *Testacea Britannica or A Natural History of British Shells*. In June 1815 George Montagu injured his foot by treading on a rusty nail, developed tetanus, and died a few days later.⁹ Clearly, he was a man whose activities deserve further attention from local and military historians.

Acknowledgements. The author wishes to thank Mr David Allen, Mr R.J. Cleeveley and Professor Stuart Piggott for their kind assistance.

5. PRO WO 71/184.

6. PRO C13/2394.

7. Canon Jackson Collection, Society of Antiquaries of London.

8. PRO C13/2394.

9. W. Cunningham, *op. cit.*, p. 92.

Excavation and Fieldwork in Wiltshire 1992

Amesbury: Stonehenge Bottom (SU 127421 area); ?Prehistoric

Four test pits were excavated by AC *archaeology* in advance of the construction of new crash barriers on the A303 in Stonehenge Bottom to the east of Stonehenge. The majority of the excavated profiles consisted of redeposited soils overlying chalk bedrock. One test pit produced four pieces of worked flint.

Amesbury and Wilsford cum Lake: Stonehenge Bottom–Longbarrow Roundabout telephone cable (SU 12844204–10214150)

A watching brief was undertaken during the excavation of a trench for a telephone cable alongside the A303. Although the route passed within 200m of Stonehenge and close to several barrows, no archaeological features were observed and no artefacts recovered. The watching brief was commissioned and financed by British Telecom. The project was managed by Ian Barnes and undertaken by Vince Jenkins for Wessex Archaeology.

Amesbury: Stonehenge Down to West Amesbury: A303 improvement (SU 065417–136419); Neolithic, Bronze Age, Roman and Anglo-Saxon

Fieldwalking and an auger survey were carried out by Wessex Archaeology in association with geophysical surveys in a number of areas adjacent to and in the vicinity of the existing A303, in advance of proposed road improvements. The areas fieldwalked lie between Parsonage Down, to the west of Winterbourne Stoke, and West Amesbury. The project concentrated on areas which had not been fieldwalked previously, much of the area between Longbarrow Roundabout (the junction of the A360 and A303) and West Amesbury having been fieldwalked as part of the Stonehenge Environs Project.

Small concentrations of worked flint were recorded in fields near Longbarrow Roundabout and south-east of Stonehenge. The flint was predominantly Bronze Age in character, although some Neolithic material was also present, particularly from the area south-east of Stonehenge.

A concentration of late Roman pottery was recorded from a field west of Winterbourne Stoke and much burnt flint was also noted in this area. Five sherds of late Bronze Age pottery, three from the same vessel, were found in the same field. Elsewhere pottery was scarce, although a scatter of material of late Roman date was found in fields south of Longbarrow Roundabout.

An auger transect and two test-pits at Manor Farm, Winterbourne Stoke, disclosed a shallow colluvial sequence at the eastern side of the valley of the River Till, from which a single sherd of Anglo-Saxon pottery and animal bone were recovered. No other evidence of significant archaeological or palaeo-environmental deposits was found.

The fieldwalking and auger survey were commissioned and funded by Sir William Halcrow and Partners Ltd through their archaeological consultant, John Samuels. The project was managed by Andrew J. Lawson and Carrie M. Hearne and directed in the field by C.A. Butterworth and Sarah Wyles.

Ashton Keynes: Rixon Gate (evaluation: SU 063949, 058943 and 057937; excavation: SU 065940); ?Bronze Age, Iron Age, Romano-British and ?Post-Medieval

An evaluation was undertaken by Wessex Archaeology of three areas of proposed gravel extraction to the west and north of existing extraction sites. The evaluation areas covered *c.*99 ha of low-lying ground east of the village of Ashton Keynes, on the alluvium and first gravel terrace at the headwaters of the River Thames. The earliest known archaeological activity lies partly within the proposed extraction area north of Rixon Farm (Area 2) and is described as ‘a [cropmark] complex . . . of possible Bronze Age date including a broad linear ditch and settlement enclosure.’ The cropmarks lie within an area designated as a Scheduled Monument and a Protected Area of Identified Archaeology.

The northernmost evaluation area (Area 1) contained cropmarks which appeared to be continuations of features from the Cleveland Farm site to the south. In the north-west corner of this

area was a spread of undated low earthworks covering c.1 ha. Previous excavations at Cleveland Farm, which lies immediately east of the northern evaluation area, have revealed extensive evidence of continuous occupation from the middle Iron Age to the 5th century AD. Ditch systems, enclosures, round-houses, and a wide range of associated artefacts were revealed in a remarkably good state of preservation. The artefacts recovered included not only pottery and quernstones, but also many coins and brooches, and some less common items such as fragments of glass phials, a very small pair of scales, and an oculist's stamp.

The evidence of possible archaeological activity in the southern area (Area 3) was limited to a set of branching, irregular cropmarks of unknown date. These were thought to be mainly, if not wholly, natural in origin. Evidence for the area in the post-medieval period is found on a map of Ashton Keynes and its environs dating from 1773: two or three dwellings are shown on the north side of a stream which flows through the southern part of the site, and a windmill is marked just beyond the proposed quarry area to the west.

The first stages of the evaluation comprised fieldwalking in Area 2, the only area not under pasture, and a pre-excavation survey of the northern earthworks (Area 1). Machine trenching was carried out across all three areas. The earliest activity on the site is thought to be represented by the ditched enclosure in Area 2, although unfortunately no dating evidence for this feature was recovered. Pits were recorded nearby, but the other linear cropmark feature in this area appeared to be natural in origin, as did the cropmarks in Area 3. Elsewhere, infilled ditches were encountered; these were usually undated but it is probable that some at least are associated with the settlement at Cleveland Farm. The earthworks appear to represent a large Romano-British building of the 3rd–4th centuries AD. Disturbance of the remains was kept to a minimum and only the upper destruction deposits were examined during the evaluation, but the building appears, on the available evidence, to have been more substantial though shorter-lived than any found at Cleveland Farm. Waterlogged deposits, encountered in several trenches, offer the potential for palaeo-environmental studies.

Excavations were carried out in Area 3 at Rixon Gate in June 1992 by Wessex Archaeology with the help of the Wiltshire Archaeological and Natural History Society and other volunteers. Discoveries

included at least two round-houses dated to the late Iron Age, surrounded by a curvilinear enclosure ditch. This, in turn, was incorporated into the layout of a Romano-British settlement, with several phases culminating in a square area, bisected into four separate 'paddocks' or fields. The whole probably represents a single farmstead, originating in the late Iron Age and continuing into the Romano-British period. Evidence was also discovered for the presence of at least one Roman-style building in the vicinity, in the form of both roof and floor tiles. A pair of inhumation burials, aligned north–south, was uncovered in the north-west corner of the settlement, the graves probably having originally been cut into the enclosure bank. The systematic controlled scan of the site using a metal-detector, prior to the complete removal of the topsoil, resulted in the discovery of a wealth of metal objects, including rings, brooches, and coins.

The project was financed by English China Clays Ltd, managed by Caron Newman and directed in the field by Andrew Crockett.

Avebury: Avebury Study Centre (SU 10057005); Neolithic and Medieval

Excavation and subsequent observation and recording were carried out by AC *archaeology* in advance of and during construction of new visitor facilities adjacent to the Avebury Study Centre. The work defined the extent of the external tail of the henge bank, slighted by the end of the 18th century to accommodate the Great Barn and its associated buildings. Residual bank material and the pre-henge land surface survive over a wide area, although there is heavy localised disturbance. None of the excavations or observations produced any artefacts associated with the Neolithic monument.

To the west of the henge bank an undated ditch and a series of plough marks on the same alignment were recorded. A single, substantial post hole of probable medieval date was also located. Further west still, an undated north–south chalk bank was noted in the contractors' trench sections.

Avebury: Beckhampton barrow reinstatement (SU 09156907); Bronze Age

In April 1992 Graham Soffe of the Aerial Photograph Unit, RCHM(E) noted recent damage to an extant Bronze Age barrow (Scheduled Monument No. 678) during a survey of the Beckhampton area (see *WAM* 86 (1993), pp. 142–57). The barrow is part of the Beckhampton barrow cemetery

comprising up to 15 barrows, although Monument No. 678 is the only one in the group which survives as an earthwork, the rest having been levelled by ploughing.

The illegal excavation of the barrow mound, presumed to be as a result of digging for badger baiting, had resulted in substantial disturbance to the archaeological deposits of this important monument, and there remained a continued threat to *in situ* deposits from weathering. Wessex Archaeology undertook remedial action involving the removal of disturbed material, the recording of *in situ* deposits, and the reinstatement of the barrow mound. This was authorised by a licence from English Nature to interfere with a badger sett for the purpose of preservation of a Scheduled Monument, issued under the *Protection of Badgers Act 1992*.

The human disturbance to the barrow consisted of a subrectangular hollow, 2.1m long, 0.96m wide and 0.58m deep, cut into the upper south-west facing slope of the barrow mound. Two entrances to the badger sett were encountered, together with evidence for human disturbance around them. In order to ensure full compliance with the licence issued by English Nature, which allowed only the 'removal of all displaced soil caused by human disturbance' and 'no disturbance at the entrance to or the holes of the sett', loose material within the hollow and all the other displaced material caused by human disturbance were bagged and removed from the site.

After cleaning, the exposed section of the hollow revealed a sequence of deposits representing *in situ* barrow mound material. The sequence consisted of interleaved layers of silt loam with varying quantities of chalk rubble inclusions below a humic, near chalk-free topsoil. The section was recorded and photographed before being backfilled with imported, clean, washed gravel. The upper 0.1m of the hollow was backfilled with topsoil, over which was spread some grass seed. The other small 'pockets' of human disturbance recorded on the barrow mound were also reinstated with topsoil and reseeded. None was of sufficient diameter or depth to warrant archaeological cleaning and recording prior to reinstatement. None of the material displaced from the 'live' badger entrance was removed from the site.

Sherds of flint-gritted Bronze Age pottery, struck flint, and cremated bone have been recovered from the sieved residues but analysis has not yet been completed.

The project was financed by English Heritage and took place with the kind permission of the land-owners Wadworth and Company Ltd. It was managed by Roland J.C. Smith and undertaken by Rod Brook and Becky Montague.

Avebury and East Kennett: West Kennett (SU 108682); Late Neolithic

The third season of excavations at the Late Neolithic complex at West Kennett was carried out by Dr Alasdair Whittle (School of History and Archaeology, University of Wales, Cardiff). Grooved Ware sherds and radiocarbon dates from the previous seasons (now published in *Oxford J. Archaeol.* 12, 29–53) had established both palisade enclosures in the Late Neolithic. Work in 1992 was principally on palisade enclosure 2 (the westerly of the two). Following geophysical survey by Kate Roberts of Cambridge University and a search of the air photograph archive by RCHME in Swindon, the single circuit of the enclosure was seen to extend to the west as an oval, not as a circle as previously inferred, with a long axis of over 300m. Two cuttings confirmed the surveys, and showed that the palisade circuit had an identical character on the west side to the previously explored east side (in the 1990 season). Further geophysical survey by Kate Roberts showed the enclosure circuit returning along the terrace above the Kennet. Palisade enclosure 2 is probably confined to the south side of the present Kennet.

Following the lead again of both geophysical and air photographic records, three double concentric features (Structures 1–3) were examined within palisade enclosure 2, within its south-eastern part. These were 30–40m in outer diameter, and consisted for the most part of small backfilled ditches holding post lines, in the style of the main palisade enclosures. The outer circuit of Structure 1, however, was an irregular ditch, and the 9m-diameter inner circuit of Structure 2 consisted of closely spaced post-pits. Grooved Ware sherds and associated flintwork put these structures also in the Late Neolithic. Dating is not precise enough to show (nor are further radiocarbon dates likely to have more precision) whether the structures are directly contemporary with palisade enclosure 2, though this is likely. These concentric structures can tentatively be regarded as sacred precincts in the style of other comparable Late Neolithic sites. There was a substantial animal bone deposit just outside Structure 2, and Saxon finds in the uppermost fill of the outer circuit of Structure 1.

A trench was dug in the general area of the north-west quadrant of palisade enclosure 1, north of the Kennet, south of the A4 and west of Gunsite Road, to look for the continuation of the circuit or circuits. No Neolithic features were seen. It is possible that the trench was just outside the line of the enclosure.

A report is now in preparation on all seasons' work which includes the 1989 evaluation by the then Trust for Wessex Archaeology.

Avebury: Kennet Valley Foul Sewer Improvement Scheme (SU 091689-092691; 098699-111684; 115678-123678 and 133683-138680); Prehistoric; Romano-British

The proposed routes of a foul sewer improvement scheme in the Kennet valley pass through a landscape of great archaeological importance, some sections being within the Avebury World Heritage Site. A desktop study to locate archaeologically sensitive areas within defined corridors encompassing these routes and a subsequent watching brief were undertaken by Wessex Archaeology.

For most of their lengths the sewer routes run adjacent to the River Kennet and through or close to a significant number of recorded archaeological sites. The Winterbourne flowing southwards, west of the village of Avebury, passes east of Silbury Hill and then turns eastward, south of the A4, to join the Kennet which flows through West Kennett, East Kennett and West Overton. In a number of places the proposed routes leave the valley floor: at West Kennett a section traverses the lower slopes at the southern end of Waden Hill, and at West Overton another section climbs the foot of White Hill to the south of the river. At Beckhampton the route crosses the southern slope of a low hill to the east of the village.

The study was based on the Wiltshire County Council Sites and Monuments Record, supplemented by a survey of all published sources and museum catalogues produced since its updating. Unpublished sources were located by contacting archaeologists known to have carried out fieldwork recently in the Avebury area. Aerial photographs of the relevant areas were examined by the RCHME Aerial Photographic Unit, and recent RCHME earthwork surveys were also studied. A geophysical survey was conducted by Geophysical Surveys of Bradford. The results of the desk-based study were compiled as a gazetteer listing all known archaeological sites and find-spots, and all sites of palaeo-environmental research. A total of 84 sites was recorded.

An ongoing watching brief on the 3.7km of pipeline has identified and recorded a number of archaeological features indicated on aerial photographs and by geophysical survey. These include the ring-ditch of a previously unknown plough-levelled Bronze Age barrow at West Overton; the ditch of a round barrow within the Beckhampton barrow cemetery; and the ditch of a third round barrow at the southern end of Waden Hill above West Kennett, unrecorded since it was included by William Stukeley in one of his illustrations of the Avebury area.

Evidence of extensive Romano-British occupation has been revealed along the east side of the River Kennet, to the east of Silbury Hill, consisting of pits and ditches, some containing large quantities of pottery and animal bone. A number of robbed wall trenches have also been recorded, some with surviving remnants of stonework and others containing large quantities of charcoal and dumped building material.

Environmental sampling is being undertaken for molluscan and plant macrofossil analysis from a range of archaeological features, and a series of samples taken through the alluvial and other deposits which make up the valley floor.

The project was commissioned and financed by Thames Water Utilities, managed by Ian Barnes and undertaken by Andrew Powell.

Avebury: fields to east of West Kennet Avenue (around SU 113686); ?Late Neolithic

It was hoped that fieldwalking by the Chippenham College Practical Archaeology Group (CCPAG) in fields east of West Kennet Avenue would produce evidence of settlement and remains of Avenue stones. No pottery and only a few flints, possibly of Late Neolithic date, were found (now at Chippenham College). Stones which might have belonged to the Avenue were seen in the hedgerow and in a large pile behind the grain dryer close to the A4. A full report on the stone is being prepared by Joyce Griffith.

Bromham/Calne Without/Heddington/Lacock Calne area pipelines (various grid refs.); Prehistoric Roman and Medieval

Observation and recording carried out by *Archaeology* on the line of a series of Wessex Water pipelines in the vicinity of Calne revealed a number of discrete scatters of artefacts of prehistoric Roman and medieval date. Two specific excavations were undertaken, both within Spye Park.

At ST 96256770 a section through the Roman road (SAM Wiltshire 633) was excavated in advance of pipeline construction and revealed three phases of metalling, mostly utilising locally obtainable sandstone. No evidence for side ditches was recovered and the final Roman road surface was covered by c.0.70 m of recent build-up for use as a farm track.

Within Spye Park at ST 95706810 topsoil stripping disturbed the structure of a medieval pottery kiln. As preservation of the surviving structure could not be guaranteed full excavation was carried out. This demonstrated that the kiln was originally constructed with two opposing flues and no other internal structure (Musty type 2a) after which a raised central platform was introduced (Musty type 2c). One flue was subsequently blocked with clay and a near-complete pot, transforming the structure in Musty's type 1b, after which it was abandoned.

The kiln appears to have produced jugs; the suggested dating of late 13th–early 14th century confirmed by an archaeomagnetic date of c.1300 demonstrates the contemporaneity of the kiln with those at nearby Nash Hill.

Chiseldon: Woolwich Data Centre (SU 163805)
Observation and recording carried out by AC *archaeology* during redevelopment of the site of the former Burderop Hospital demonstrated that the previous buildings had caused considerable disturbance. No further indications of the Iron Age and Roman settlement remains previously recorded in the vicinity were observed.

Compton Bassett: Compton Hill (SU 046717);
Medieval and Post-Medieval
Field survey directed by Andrew Reynolds on behalf of the Compton Bassett Area Research Project (CBARP) revealed ridge and furrow preserved within the width of green tracks. Documentary research by C.K. Currie has indicated that the open field system at Compton Bassett was enclosed by 1655 when much of the landscape was reorganised. The traces recognised constitute a rare survival of ridge and furrow in the immediate area.

Compton Bassett: Freeth Farm (SU 023726);
Prehistoric to Modern
The first phase of a programme of fieldwalking designed to cover all ploughed land within the CBARP study area was directed by Matthew

Reynolds. Three fields were investigated and evidence of activity ranging from the Mesolithic to the present was recovered. Finds included flint tools of Mesolithic, Neolithic and probable Bronze Age date. A small number of sherds of Roman and medieval pottery were recovered.

Compton Bassett: Roach Wood (SU 041782);
?Prehistoric, Medieval and Post-Medieval
Excavations on a flight of six scarp-face strip-lynchets were directed by Andrew Reynolds on behalf of CBARP following the initial assessment in 1991 (Reynolds 1993, 160). Four phases of activity were identified. The earliest feature appears to be the uppermost lynchet which is much denuded and lacks the sharp profile of the lynchets below. The condition of the feature may indicate a prehistoric date. The second phase is represented by the more substantial lynchets further downslope which probably date to the later medieval period. The proportions and area of the lynchets raise questions about their workability by plough teams. The available turning area at either end of any of the lynchets is not great and the way in which they drop sharply at their northern termini, to meet the unmodified ground surface, suggests that access would have been difficult. A horticultural function, therefore, is proposed. A terminus *a quo* for the cultivation of the lynchets was provided by finds of Roman pottery in the lower levels of the positive accumulation. Sections suggested deliberate construction, as opposed to formation over a long period. A terminal date for cultivation was provided by a token of late 16th-century date which came from a stratified context in material which formed the bank of an enclosure, phase three, whose ditch cut through the cultivation soil of the lynchets at their eastern limit. This feature suggests a change in land use, probably to a pastoral function. The latest phase is represented by a shallow ditch which runs above, and parallel to, the uppermost lynchet. An interim report will appear in the *Bulletin of the Institute of Archaeology*.

REFERENCE

REYNOLDS, A.J., 1993 'Compton Bassett: Roach Wood', *WAM* 86, 160

Dilton: Penleigh Mill (ST 85785050) and Penleigh Farm (ST 86055090); Post-Medieval
A complex arrangement of rectangular bays, ponds and drainage channels together with a water

meadow system, were surveyed by RCHME for Wiltshire County Council in advance of proposed land improvement. It seems likely that these features were connected with the flax industry and in particular the retting process in which the resinous material was removed from flax stems. Flax was grown commonly in south Wiltshire during the Middle Ages and documentary evidence suggests that Penleigh Mill played an important role in the local cloth trade during the 15th and 16th centuries.

Ground survey was also carried out on the nearby moated site at Penleigh Farm where the remains of a well preserved moat enclosing an area of 0.25 ha can be seen to lie eccentrically within another embanked enclosure. No documentary evidence relating to the site survives; by analogy with other similar sites, however, a date range of between the late 12th century and the 16th century seems plausible for this homestead moat.

Durrington: Durrington Down Farm (SU 125435); mostly Modern

An archaeological evaluation was undertaken by Wessex Archaeology in advance of proposed modifications to the layout of Durrington Down Farm.

Examination of soil sequences in test-pits and machine trenches showed that the overburden across the whole site had been contaminated by intrusive modern material, and that the underlying chalk had been disturbed and truncated in places. The present roads and concrete standings are considerably wider than they now appear on the surface. These, and large deposits of building rubble, are sealed by established soil horizons, implying considerable mass movement of soil across at least part of the assessment area. Despite this, the underlying natural chalk remains relatively undisturbed over large areas of the site, particularly the interior.

No archaeological features were observed. The site is crossed by a network of deep, rubble-filled soakaway drains of modern origin, and other utility installations. Considerable quantities of dressed stonework fill the drains and, although obviously not *in situ*, constitute a curious deposit of some architectural interest. Other recorded features comprise a cinder and brick path and a chalk rubble surface, both probably modern in origin. Apart from modern material, artefacts of archaeological significance were few.

The project was financed by English Heritage. It

was managed by Susan M. Davies and directed in the field by Michael J. Heaton.

Durrington: Larkhill, proposed site of Artillery Museum (SU 132443)

An archaeological evaluation was carried out by AC *archaeology* of an area of 2.1 ha immediately north of the Packway through Larkhill Camp. The site, which straddled a shallow combe, was being considered for the location of an artillery museum. Although no records of archaeological data exist which refer specifically to the site, the past land-use (grassland) and its proximity to the complex of monuments associated with Stonehenge to the south suggested high archaeological potential.

Geophysical survey indicated very high levels of disturbance confirmed by machine excavated trenches across the combe which showed that its base had been used for refuse dumping. A single ditch was located on the western slope of the combe which, although essentially undated, did not appear to be of recent date and may be a cross-slope field boundary. Levels of both worked and burnt flint recovered from scanning spoil heaps were extremely low.

Enford: Coombe Down (SU 192521); Iron Age, Romano-British and Anglo-Saxon

Following earthwork survey by RCHME of the presumed Romano-British settlement and field systems, a geophysical survey was undertaken by Reading University Department of Archaeology, which revealed a partly bivallate ditched enclosure of 3.5 ha with an east-facing entrance. Clusters of probable pits lie north and south of a presumed trackway running west into the enclosure. The survey also revealed traces of two other enclosures. Limited excavation of these ditches and an area of Romano-British house platforms revealed evidence of occupation from the early Iron Age with the earliest phase of enclosure dating from the middle Iron Age. This was succeeded by the bivallate enclosure, of mid to late Iron Age date. The latest trapezoidal enclosure of 1st–2nd century AD date was followed by the development of the late Roman settlement. Occupation, with one probable grubenhaus, continued into the early Anglo-Saxon period.

Grittleton: Strict Baptist Chapel (ST 862800) Post-Medieval

AC *archaeology* carried out observations during interior repairs to the early 18th-century Baptist

chapel. Traces of the scar left by the removal of the pulpit were recorded.

Lacock: Lackham College of Agriculture (ST 925701); Post-Medieval

The site of an Elizabethan manor house was identified by CCPAG and preliminary work on producing a plan was undertaken.

Latton: (SU 079965); Neolithic, Bronze Age, ?Roman and Medieval

A field evaluation comprising fieldwalking, test-pitting, geophysical and topographical survey was conducted by Cotswold Archaeological Trust (CAT) on behalf of the Co-operative Wholesale Society.

A small assemblage of Late Neolithic/Early Bronze Age flint was recovered during fieldwalking, suggesting on-site processing of materials rather than focussed occupation. Test-pitting across an area of extant ridge and furrow adjacent to Westfield Farm produced small quantities of abraded medieval pottery from the homogeneous subsoil. The test-pitting also detected one edge of a putative Roman roadside quarry-pit and located a deposit of humic peaty-clay sealed between alluvial gravel and alluvium. Environmental analysis revealed a range of plant and insect remains.

Geophysical survey sought to clarify a number of potential archaeological features, whilst topographical survey by RCHME recorded the ridge and furrow.

Latton: Westfield Farm (SU 08319628); Medieval Earthworks were surveyed by RCHME in response to a request by Cotswold Archaeological Trust Ltd. An area of 5 ha was recorded which included the remains of a medieval ridge and furrow field system aligned on a linear series of shallow scoops, which themselves may represent the robbing of road metalling from the Roman road, Ermine Street, which traverses the area of survey.

Laverstock: Bishopdown Farm/Pond Field (SU 150323 area); Prehistoric and Roman

A staged archaeological evaluation was carried out by AC *archaeology* initially over an area of c.70 ha (centred on SU 150323) in advance of a proposed golf course development. The site is bounded on its northern side by the Roman road from Winchester to Old Sarum and includes findspots of prehistoric and Roman date. Examination of aerial photographs

revealed fragmentary remains of trackways and field systems while documentary research suggested that the area had been pasture throughout the Middle Ages. Surface artefact scanning demonstrated a contrast between the archaeological record of the gravelly soils of the higher ridge top (essentially the ridge running towards Old Sarum) and the lighter chalky soils of the lower ground. Two dense and nucleated scatters of burnt flint were located within the former and were demonstrated, by a combination of geophysical survey and sample excavation (stage 2), to represent areas of late Iron Age/Romano-British settlement activity. Features revealed by excavation included storage pits, ditches, including one substantial 'V' profiled example and trackways. On the lighter chalk soils surface scanning indicated an overall scatter of worked flint within which two small focal areas were investigated by means of geophysical survey and, in one case, small-scale excavation. No firm evidence for underlying cut features was recovered.

Subsequent evaluation (Pond Field – centred on SU 152322) of a proposed housing development employed a similar methodology and revealed an extensive scatter of prehistoric worked flint. This was further sampled by means of hand-excavated test pits and machine-excavated trenches which demonstrated the survival of a more nucleated area of prehistoric (probably earlier Bronze Age) activity protected by shallow colluvial soils. A single undated crouched inhumation was also located.

Laverstock: Salisbury Eastern Bypass (SU 160290–SU 167325); ?Prehistoric

An archaeological evaluation was undertaken by Wessex Archaeology, on behalf of the Planning and Highways Department of Wiltshire County Council, along the route of the proposed Salisbury Eastern Bypass, to the east of the village of Laverstock. The route is situated on the side of the Bourne valley, on the edge of the valley gravels; it runs below Cockey Down and Laverstock Down, both areas of known archaeological sensitivity, and over Burrough's Hill across recorded cropmarks of former field systems and close to medieval pillow mounds. At the southern end, the route passes between the medieval kilns at Laverstock and the Anglo-Saxon cemetery at Petersfinger.

The evaluation consisted of a combination of fieldwalking, test-pitting and geophysical survey. In the northern part of the route, some areas of worked and burnt flint concentrations were identified, but

the geophysical survey did not reveal evidence of other archaeological activity. The main area of interest was on the top of Burrough's Hill, where concentrations of burnt and worked flint were identified, along with a number of geophysical anomalies which appear to represent pits and gullies.

The project was managed by Caron Newman and directed in the field by Dave Farwell.

Sandy Lane: *Verlucio* (ST 973671); Roman
Fieldwalking by members of CCPAG produced Roman pottery (now at Chippenham College). The site is suffering annual degradation by ploughing.

Sandy Lane: Whetham Park Wood (ST 981683); period uncertain

A surface examination by CCPAG of features in overgrown woodland indicated the presence of a possible stone wall and associated earthworks. A further survey will take place in late 1993.

South Newton: Camphill Transmitter (SU 3475011130); Iron Age and Roman

An archaeological excavation was carried out by AC *archaeology* prior to the construction of a radio transmitter mast. The excavation produced evidence of late Iron Age/Romano-British activity, of a similar nature to that recorded during the observation of pipelines from 1933 onwards. A ditch, the fill of which contained considerable quantities of pottery, animal bone, burnt flint and daub, appears to have been recut and may also cut and therefore post-date a small feature. The quantity of artefacts suggests that the ditch lies within, or close to an area of intensive activity spanning the period from the 1st century BC to the 1st century AD.

Stratton St Margaret: Church Street (SU 178871); Medieval

Field evaluation by CAT of a site close to the centre of the medieval village revealed that visible earthworks were attributable to variations in the underlying geology and to recent landscaping. Archaeological remains comprised one possible enclosure ditch, three smaller boundary or drainage ditches and a low clay bank, associated with 12th–15th century pottery. The site therefore appears to lie on the periphery of the medieval settlement.

Warminster: Aucombe Wood (SU 844424); Post-Medieval

An archaeological assessment was undertaken by

Wessex Archaeology of the site of a proposed holiday village. Most of the development area, covering c.161 ha, occupies a plateau which has been cut into by two steep-sided dry valleys; gradients across the site vary between 1:15 and 1:3. The site is almost wholly occupied by a conifer plantation, intersected by a network of metalled roads and grass tracks. Study of Ordnance Survey maps shows that the woodland has been in existence since at least 1887. No archaeological features or deposits were identified. Five small sherds of post-medieval pottery were recovered. The evaluation was commissioned by Center Parcs, managed by Caron Newman and directed in the field by Neil Adam.

Westbury: A350 Biss Bottom realignment (ST 869487); Prehistoric/Roman

AC *archaeology* carried out surface collection and excavation in an area defined as being of high potential by the Wiltshire County Archaeological Officer. Surface artefact collection indicated low levels of both worked flint and pottery (the latter primarily of Roman date) although some concentrations could be recognised. Subsequent excavation revealed, on the lower flatter ground at the northern end of the area investigated, ditches and a single pit which appear to date to the later Bronze Age. Excavation of two sample areas further upslope revealed the remains of yards and farm buildings set within a field system. Associated pottery suggests that this activity, the location of which correlates closely with the results from surface collection, began in the 2nd century and continued into the 4th century AD. A single inhumation which appeared to have been buried in a coffin, had hobnails around the feet and was accompanied by a miniature pottery vessel. A 3rd or 4th century AD date for this burial is suggested.

Westbury: Bitham Park School (ST 87725175); Roman

Earthmoving operations during construction work at the new Bitham Park School disturbed human remains of at least two individuals. Following reports from the contractors an inspection by staff of the Wiltshire County Council Library and Museum Service recovered disarticulated human bone from spoil and established the existence of a second, *in situ*, burial some 30m to the east. A salvage excavation carried out by AC *archaeology* showed that the burial, tentatively identified as that

of an adult male, was supine and extended, with its head to the west. Fragmentary iron objects suggest the presence of a coffin while a mass of corroded iron around the feet may indicate a burial of 'hob nail' type. Pottery from the grave fill suggests a later Roman date.

Wilton: Landmark House, King Street (SU 100316); Medieval

An archaeological assessment of the grounds of Landmark House, King Street, Wilton was carried out by AC *archaeology*. The site lies within the area of possible early medieval settlement defined by Haslam in *Wiltshire Towns*, possibly within the suburb of Burdens Ball, the earliest reference to which occurs in the mid 14th century.

Two trenches intended to sample the King Street frontage and an area running back from the street frontage were excavated. These demonstrated that 20th-century landscaping (associated with the construction of Landmark House in the 1930s) had caused considerable disturbance to the King Street frontage where no traces of either medieval or post-medieval structures or deposits were recorded. In contrast the trench which examined the area running back from the street frontage revealed three pits which may be interpreted as representing an area of medieval (13th century) domestic activity.

Whiteparish: Whelpley Farm (SU 226247); Prehistoric, Medieval and Post-Medieval

A desk-based study and a fieldwalking assessment were carried out by Wessex Archaeology as part of an Environmental Impact Assessment before consideration of a planning application for the creation of a landfill site and access road. The site, which extends across a dry valley, covers c.39 ha; although it is now a single field, former boundaries survive at the northern and southern ends.

Evidence of archaeological activity in the area is represented by three barrows to the north of the site and a probable field system to the west of the proposed access road. Immediately to the west of Whelpley Farm are the remains of the deserted medieval village of Whelpley: a series of irregular terraces on which are a number of sub-rectangular platforms. East of the platforms are the remains of St Leonard's Chapel. The settlement at Whelpley existed in the 11th century, being recorded in the Domesday Book as Frustfield, but it appears to have become deserted by the latter half of the 16th century.

Fieldwalking showed minor concentrations of burnt flint and worked flint; seven sherds of medieval and post-medieval pottery were also recovered.

The assessment was commissioned and funded by Cleansing Services Ltd through their consultants, Robert Long Consultancy Ltd. The project was managed by Caron Newman and undertaken by Duncan Coe and Andrew Powell.

Winterbourne Gunner: Saxon Cemetery; Saxon

Excavation was carried out by AC *archaeology* in advance of the construction of a bungalow c.70m to the south-east of the burials recorded by Musty and Stratton in 1960. Prior to the formal excavation in 1992, observation and recording carried out by the staff of the Wiltshire Library and Museum Service had already demonstrated that far from being a small cemetery the original group of 10 graves represented a small part of a more extensive and regularly-ordered cemetery. This phase of observation provided evidence of a further 22 graves, although the nature of the work meant that few grave goods were recovered.

The excavation carried out by AC *archaeology* together with the subsequent observation of service trenches, has provided evidence of a further 24 graves (making a total of 56) consistently showing a broadly east-west alignment and an arrangement in parallel rows. Some graves show evidence of lining with planks and with stone, examples of moulded ashlar perhaps indicating the presence of a nearby substantial Roman building.

Grave goods include applied saucer and penannular brooches, belt plates and beads of both glass and amber.

Yatesbury: Manor Farm (SU 065716); Roman to Post-Medieval

Excavations at Manor Farm were directed by Andrew Reynolds and Alexander Deacon on behalf of CBARP. Survey work identified upstanding settlement earthworks, bounded by a semi-circular bank and ditch and excavation was carried out to evaluate the archaeological potential of the site. Two areas were examined. A trench was located across a shallow rectangular terrace and revealed evidence of a building, although only through three-dimensional plotting of artefacts. Provisional analysis of the pottery indicates a 12th-14th century date range. A further cutting was made through the bank and ditch enclosure and a sequence of eight ditch cuts,

dating to between the 4th and 17th centuries, was found. Immediately above, and cutting, the 4th-century feature was a ditch which contained three sherds of probable Early to Middle Anglo-Saxon pottery.

Fieldwork to date has indicated the existence of Roman occupation deposits. The present plan of the village appears to be largely post-medieval. A more dispersed plan is suggested during the medieval period with the church and settlement as distinct elements situated approximately 250m apart, each within earthwork enclosures. Excavation and survey is to be continued in 1993. An interim report will appear in the *Bulletin of the Institute of Archaeology*.

Yatesbury: All Saints Church (SU 063715); Medieval-Modern

Detailed survey work was directed by Andrew Reynolds and Paul Charlton on behalf of CBARP. Seven major phases of structural activity were recognised dating to between the 12th and 19th centuries. Stone by stone elevations of the north aisle were recorded, revealing a complex sequence of alterations. Moulding profiles of capitals and bases were taken as part of an on-going regional survey and *ex situ* fragments of medieval painted glass were recorded.

A variety of building stone types was observed including Oolitic Limestone, Lower Chalk, flint and sarsen.

The first phase appears to have consisted of a nave and chancel. In the late 12th or early 13th century a south aisle was added and a north aisle followed, probably in the middle of the 13th century. In the later 14th century or 15th century the south aisle either collapsed or was demolished leaving two piers visible inside the nave. Further alterations and additions were carried out in rapid but distinct succession throughout the 15th century. A tower was added at the west end followed by a clerestory. Subsequent to the refenestration of the south wall of the nave, a stair turret serving a rood loft was butted against the south wall and both aisles were embattled. The chancel was replaced in the 19th century. An interim report will appear in the *Bulletin of the Institute of Archaeology*.

The Archaeology of Salisbury Plain Training Area; Prehistoric and Romano-British

Salisbury Plain at 92,000 acres is the largest expanse of surviving natural chalk downland in western Europe and within its boundaries are the remains of

an intact landscape which is potentially the most important archaeological resource in the country. Investigation by RCHME here is part of a research project to record and interpret the archaeological landscape of the twelve pre-defined areas within the training area, known as Archaeological Site Groups (ASGs). Working closely at all times with Roy Canham, County Archaeologist, and the Defence Land Agent at Durrington, the first phase of investigation is now complete.

Earthwork survival on Salisbury Plain is exceptionally good and has afforded us an opportunity to disentangle and analyse complex landscapes and their developmental sequence. Much RCHME attention has focussed upon the remains of the Romano-British period within the ASGs. Ten extant settlements of the period are currently known to the Commission. The recently completed ground survey on Charlton Down (SU 085523), for example, indicates that the Romano-British village occupies an area in excess of 22 ha, and contains some 200 structural hollows, many of which are set within regular compounds or small enclosures, interconnected by holloways and minor streets. The village is clearly set within and surrounded by its contemporary field system. Pottery recovered from small bomb craters on the site suggests that the village was occupied between the 1st and the 4th centuries AD, but rapidly declined thereafter. Within a distance of 2km to the east of Charlton Down, there are two other Romano-British villages: Upavon Down (SU 101524) and Compton Down (SU 110517). The former is similar in morphology to Charlton Down in that it comprises a number of contiguous settlement compounds covering an area of 12 ha and is similarly set within the bounds of a contemporary field system. Compton Down is the smallest of the three settlements in the Larkhill impact zone covering an area of 6 ha. In this instance, the settled area, which consists of up to a dozen sub rectangular recessed building platforms, is bounded to the west by an enclosing bank.

It is clear that this landscape dating to the Roman period and consisting of settlements, fields, tracks and roadways is potentially the most important of its type in lowland England, and it has survived as a result of its inclusion within the impact zone.

To complement the results of ground survey, each ASG has been transcribed photogrammetrically by the RCHME Air Photo Unit based in Swindon. These highly accurate plots of archaeological detail

are given ground verification by field staff and provide an essential overview and landscape context for many of the sites recorded.

Other recent discoveries include the rare survival of what appears to be a middle Bronze Age landscape on Wilsford Down (SU 077536). Here, a small square enclosure, which has produced Bronze Age pottery, is flanked to the west by the slight traces of an unenclosed settlement. At least six building platforms, now surviving as semi circular terraces up to 5m in diameter, can be seen and point to the potential of Salisbury Plain for the survival of the slightest archaeological remains.

Geophysical prospection was also undertaken on the Romano-British village sites of Chisenbury Warren; Knook Down East and Coombe Down (SU

192521). Results from this work have added further detail to existing plans, particularly at the latter site where a hitherto unsuspected double ditched enclosure, 3.5 ha in area and of hillfort proportions, was discovered.

The results of RCHME investigation will form the basis for future management plans on the Salisbury Plain Training Area.

South Wiltshire Earthwork Project

Field survey is complete and is now in the process of being prepared for the forthcoming RCHME publication, 'A Wessex Landscape', which will include the prehistoric, Roman and medieval remains of South Wiltshire.

Reviews

Mark Bowden. Pitt Rivers. The Life and Archaeological Work of Lieutenant-General Augustus Henry Lane Fox Pitt Rivers, DCL, FRS, FSA. Cambridge University Press, 1991; 182 pages; 60 plates; 5 maps; 2 genealogical tables. £24.95, hardback. ISBN 0 521 400775.

Fourteen years have elapsed since the publication of Michael Thompson's biographical essay *General Pitt-Rivers, Evolution and Archaeology in the Nineteenth Century* (Moonraker Press, 1977). Mark Bowden's *Pitt Rivers* is a far broader, more reflective biography and the wait for it has been worthwhile for here we have a scholarly work of real value to the academic and at the same time a readable account of interest to the layman. Mark Bowden's former experience as an archaeologist practising in Cranborne Chase and as a research assistant at Salisbury Museum working on the Pitt Rivers Gallery undoubtedly gives the author greater authority in dealing with his uneasy subject. The volume itself is attractively produced by Cambridge University Press who have allowed a generous selection of illustrations. These are well chosen and the inclusion of new and hitherto unpublished material (e.g. the watercolour sketch of a barrow on Merrow Down, Guildford, on page 84 and the illustration of W.S. Tomkin on page 100) adds to both the appeal and scholarly value of the book.

Sensibly in this reviewer's opinion, the author adopts a thematic rather than chronological approach in dealing with the General's parallel careers in the army, anthropology, archaeology and public education. After an introductory chapter which emphasises Pitt Rivers' incredible energy and creativity and his dominant personality he assesses the General's military career – not distinguished but 'an efficient staff officer and administrator'. Chapter 3, 'Married Life', provides some insight into Pitt Rivers' personal life, where affection and good temper seemed to have been scarce commodities. Bertrand Russell recalled how the General's wife would put back into the dish for the next comer any bacon and eggs uneaten by visitors at breakfast and how, on one occasion when she attempted to hold some function in the house, none of the guests arrived. Her husband, considering purely social

activities to be frivolous, had, unknown to her, ordered that all the park gates should be locked that day!

The main thrust of the book is, however, concentrated upon Pitt Rivers' achievements in the fields of anthropology and archaeology. His linking together of the two subjects is summed up by his statement: 'As an old sportsman I commend flint hunting to all anthropologists who have not practised it'. His early scientific collecting and the development of his theories of cultural evolution and typology are explored, and then is traced in splendid detail his early archaeological fieldwork, the themes of which are shown to be dependent upon his military postings and visits to the country houses of relatives and friends. Bowden praises his mastery of field survey and excavation and his pioneering work in surface artefact collection, experimental archaeology and meticulous recording but shows how his physical digging methods let him down. Bowden's work thus reassesses long cherished views about the General, drawing attention to his failings as well as to his exceptional talents. Earlier statements by Thompson for example are corrected (*viz* the idea that Fox used visits to Brittany as 'practice trips' preparing for the role of Inspector of Ancient Monuments, pages 86–7, and the claim that Pitt Rivers invented the archaeological stratigraphic section, page 155).

The General's inheritance of the Rivers estate in Cranborne Chase in 1880 allowed him to indulge his passion for archaeology and he was the ideal choice to become in 1883 the first Inspector of Ancient Monuments. His work and his methods are triumphantly described by Bowden who must be congratulated on presenting his excavations in chronological sequence and tracing the evolution of his techniques, highlighting his achievement in the curation of finds, his advanced interpretation of features and his original and innovative ideas. The chapters on 'Early Archaeological Fieldwork' and 'Excavations in Cranborne Chase' are not just repetitions of familiar accounts of the General's excavations. References to the Pitt Rivers papers in Salisbury Museum provide fresh insights into his work (e.g. the unpublished account of his excavation at Coolowen, Ireland, on pages 61–64). Recent

work is drawn upon as at Barrow Pleck in 1981–1983 which revealed the General's unique attempt to display excavation results *in situ* by leaving Barrows 2 and 3 open with features left marked in cement rafts.

A further chapter on 'Public Education', the ultimate purpose of Pitt Rivers' efforts, shows how he created museums at Farnham and King John's House as educational tools aimed at maintaining social stability, and also the Larmer Tree pleasure grounds on the premise, not perhaps without relevance today, that museums 'must be supplemented by other inducements to make them attractive'.

The bibliography is up-to-date and a useful reference tool in its own right though the author's decision to omit a complete bibliography of Pitt Rivers on the basis that this is available in H. St. G. Gray's listings of 1905 seems slightly perverse, given that of his 95 works 48 are already cited in the bibliography.

For those looking for more biographical detail this book may disappoint. The author notes that 'the primary sources available for a life of Pitt Rivers are not extensive. He never kept a diary or journal and rarely retained copies of his own letters.' Bowden's real achievement is in making imaginative use of what little source material there is and in producing what surely will be for very many years the definitive statement upon Pitt Rivers' impact as excavator, field archaeologist, theoretician and Inspector of Ancient Monuments on the development of British archaeology. That this man lived and worked in Wiltshire for twenty years and that his Wessex collection remains in Wiltshire should be some source of pride and relevance to present-day Wiltshire people who are encouraged to read this book.

PETER SAUNDERS

Alan H. Graham and Susan M. Davies. Excavations in Trowbridge, Wiltshire, 1977 and 1986–1988. Wessex Archaeology Report No. 2, 1993; 161 pages; 42 figures; 48 black and white plates; 2 microfiche. £18.00. ISBN 1 874350 02 7.

The historic core of the town of Trowbridge lay derelict in the post-war years, apparently overlooked by the plethora of redevelopment companies anxious to invest their money in town centre schemes. In the end it was a family business, Hunter

Tor Securities, which acquired some seven acres in the centre of the town and with the help of the District Council put together a comprehensive redevelopment scheme.

Such an event had been anticipated to a small degree by the Wiltshire Library & Museum Service which organised exploratory excavations in Court Street in 1977. The principal action, however, was large scale exploration by Wessex Archaeology between 1986 and 1988 to ensure that the vestiges of ancient Trowbridge were recorded prior to redevelopment. Mr Glen Simmons of Hunter Tor flung down the gauntlet by offering to fund 50% of archaeological excavation costs. The County and District Councils between them produced 12.5% and the late Bob Smith, then employed as an Inspector of Ancient Monuments, persuaded his somewhat reluctant employer to come up with the balance. This report therefore has been eagerly awaited by a wide range of individuals and they will not be disappointed at the result. A useful introduction on the county town of Trowbridge and the circumstances leading to development is followed by six chapters, each with a summary, on the chronological sequence observed during the course of the excavations.

A summary of indications of prehistoric and Romano-British activity – confined to agriculture rather than settlement – is followed by an account of the evidence of occupation in Trowbridge between the 7th and 11th centuries AD. Considering that the first historical reference to the town is simply that of Domesday in 1086, this is a rare insight into the beginnings of urban life in Wiltshire. The evidence is admittedly difficult to construe, a palimpsest of pits and postholes with one or two distinct features such as the sunken floored hut of the mid-Saxon period. The important issue is that a valuable start has been made in revealing and recording such a phase of activity in our towns.

The archaeological record becomes richer for the period AD 950–1139 labelled in the report as the Saxo-Norman manorial settlement. This reveals to us a small enclosure on the high ground overlooking the river Biss flanked by the early church of Trowbridge and its burial ground. Widespread elements of the settlement stretch away to the north of Court Street and the authors hint that this may have been a separate area of settlement altogether.

We turn in Chapter 5 to the principal objective of the work, the rediscovery and exploration of the anarchy period castle dated to c.AD 1139–1200.

Figure 20 in the report illustrates the discovery of the inner and outer baileys and the related moat banks and ditches, but figure 3 actually shows more clearly the location of these defensive features in relation to Castle Street, Court Street and Fore Street, and this single illustration brings to an end speculation which has abounded for years on the relationship between the inherited town plan and its military origin.

Very little came to light during the excavations of the period which followed the abandonment of the castle (c.1200 to 1600). It is of interest that the early church continued in use, probably as a secular structure, and was finally demolished in the 16th century. On the north of the site an area to the rear of Fore Street appears to have been kept as open ground.

A valuable series of specialist reports on the finds follows the chronological count. Coins, jetons and tokens are described in detail by Dr Paul Robinson and J.M. Mills provides a detailed report on the metalwork. The pottery has been investigated in detail by L.M. Mepham although the illustrations of pottery types are somewhat limited in number. The report on some 293 human skeletons will be of interest to many but the general conclusions arising from this part of the study are surprisingly somewhat limited, although we are told that the evidence depicts a group 'who were healthy and long lived but who did not look after their teeth!' There are also valuable reports on animal bone remains (largely from the Saxo-Norman period) and on the plant remains represented in the filling of a cesspit of the Saxo-Norman settlement. The report is well written and well produced; the plans illustrating the phasing of occupation are particularly useful. The photographs have not reproduced well but this does not diminish the value of the account.

ROY CANHAM

George Miller and Hugoe Matthews. Richard Jefferies: A Bibliographical Study. Scholar Press, 1993; 767 pages, illustrations. £75.00, hardback. ISBN 0 85967 918 7.

The whole work of a writer is a precious gift to readers, admirers, scholars and collectors. Each separate book, pamphlet, article or letter, may in itself be a source of entertainment, information and

satisfaction. But in order to enter the world that the writer has created with his pen, a bibliography of his works provides unique, professional guidance.

In the case of Richard Jefferies, we now have this long-awaited substantial volume, the product of twenty years of patiently sifting through the extensive and varied output of the nature-writer, country chronicler, novelist and mystic, who was born at Coate, near Swindon, in 1848 and ended his short life in Sussex in 1887.

The compilation of a bibliography, however, does not begin and end with the subject's books. George Miller and Hugoe Matthews, distinguished members of The Richard Jefferies Society, have consulted the studies of leading Jefferies scholars, such as Besant, Dartnell, Thomas, Looker, Williamson, Keith and Rossabi; and with equal assiduity, the numerous books, notes, and articles by other admirers and critics published in the hundred years following Jefferies' death. In the course of this research, the compilers have brought to light much little-known and hitherto unpublished material, some of which is already appearing in the Society's *Journal*, the second number of which is now in circulation.

Jefferies was a natural, tireless, and compulsive author, publishing in a short lifetime a fairly compact body of work, making him an ideal writer for both reader and collector. First editions are of course the pride of any bookshelf, and the earnest collector looks for the fine variations in these and subsequent editions. On the other hand, later and less expensive editions in hard cover or, more recently, in paperback bring Jefferies' writings within easier reach of the general reader.

From his brief early publications, the 'unsuccessful' yet nowadays rare and much-sought-after novels, the articles and essays contributed to periodicals and later gathered into major books, to the final novel *Amaryllis at the Fair* (portrayed in Pre-Raphaelite style on the dust-jacket), and then on to the posthumous publications, Miller and Matthews prefix the bibliographical details with introductions, background material, references to correspondence with publishers and others, information about print-orders, and agreements and royalties. All this tells a great deal about Jefferies himself and his standing in the world of journalism and letters.

A simple method of coding and cross-referencing, using a good general index, makes it easy to find your way in this comprehensive work. Five main

sections cover not only the main writings, but the ancillary material – letters, anthologies, collections, manuscripts, notebooks, and the works about Jefferies in books and periodicals. An important and attractive feature is the many illustrations, reproducing title-pages and covers of the books and pamphlets. Crowning all is the frontispiece of a previously unpublished studio photograph by Elliot & Fry, London, of the young Richard Jefferies – bearded and with the far-seeing eyes of an observer and visionary.

This superb reference book fulfils the needs of all Jefferies enthusiasts. It brings into focus the dedication and experience of a Wiltshireman who believed in himself and in his destiny. For the two authors to have produced such a book about such a writer is a tribute not only to Jefferies but also to them. It greatly enhances the standing of Richard Jefferies in English literature.

CYRIL WRIGHT

Adrian Randall. Before the Luddites: Custom, Community and Machinery in the English Woollen Industry, 1776–1809. Cambridge University Press, 1991; xviii + 318 pages; illustrations. £37.50, hardback. ISBN 0 521 39042 7.

To a non-specialist economic historian the opening chapter of this book, 'Industrial Organization and Culture' might seem forbidding. Discussion centres on the distinction between the West of England organization, in which a capitalist clothier owned the materials from the raw wool to the finished cloth and employed wage-earners to work on them, and that in Yorkshire, where numerous small clothiers combined weaving with subsistence agriculture, employing only their families and perhaps a few journeymen, and sold on the unfinished cloth to the merchants. The former, we learn, is an example of a *Verlagsystem*, the latter of a *Kaufsystem*, and Adrian Randall's task is to determine how the systems differed in their reaction to the introduction of machinery and the consequent appearance of factories.

It would, however, be a pity if any reader interested in our county's great historical industry were deterred by the technicalities of economic debate. Stripped of these (and they become unobtrusive for most of the book), the subject is a gripping one. Here, for the first time, we have a

fully-researched account of the disturbances caused by the introduction of machinery because the information from newspapers, largely known to us from earlier books, has been filled out, indeed almost become subordinate to, material from the public records, especially the Home Office papers. Moreover, the West of England has, unusually for a book on the textile industry, its full share of attention, for Adrian Randall is a Wiltshire man. Particularly interesting additions to our knowledge concern what was apparently an abortive attempt to provide Thomas Hilliker, the Trowbridge man executed in 1803, with an alibi, and a deposition of a workman present at Littleton Mill, which was not used at the trial, and which was at some variance with the evidence of Ralph Heath, the principal witness for the prosecution.

Inevitably, points do arise where emphasis may be questioned. Although many of the western clothiers were undoubtedly large-scale capitalists, there were certainly others who worked on a much smaller scale, often having risen from the ranks of clothworkers or weavers. It remained possible for these small clothiers to survive even in factory conditions by buying yarn, having work done on commission, and renting machinery. And it is hardly true to say (p. 26) that few gentlemen clothiers showed much inclination to involve themselves in the factory system or (p. 42) to single out Staverton Factory as wildly untypical in size. It was the largest in the area, but by 1800 there were well over 30 factories of 4, 5 or 6 storeys, specially built for the trade and driven by water, in Wiltshire and Somerset, and probably at least an equal number in Gloucestershire.

It is also an over-simplification to say that the jenny caused widespread distress when it came into general use. It certainly did in those areas outside the clothing area where spinning had been organized from spinning houses. But in the main clothing area itself it must have led to a higher level of activity, as is clear even from such a partial source as Sadler's poem of 1791, *The Discarded Spinster*. Nor is it really relevant to say that the billy produced no opposition because slubbing was a new trade (p. 50); the billy was only an intermediate between carding machine and jenny, so is unlikely to have had opposition focussed on it separately from that accorded to yarn-making machinery in general.

These, however, are only discussion points, and it is more relevant for a reviewer to end by

recommending a well-written and well-researched book to as wide a readership as possible. I wish now that Mr Randall would focus again on the difference in organization between the West and Yorkshire, and see if it would in any way explain how Yorkshire encroached on the West by capturing the lower end of the trade from it during the 18th century, thus cornering the latter in the high-grade product which was to be both its pride and its downfall.

K.H. ROGERS

Alec Robbins. *The Workhouses of Purton and the Cricklade and Wootton Bassett Union.* The Purton Historical Society, 1992; 152 pages; illustrations. £9.00, paperback. ISBN 0 9517142 1 X.

The study of public buildings and their history has been largely neglected until recent years. Now that so many of these buildings are losing their original purpose, local historians and others are questioning who designed them, what similarities of plan they have and what fixtures and fittings they contain. They are also looking at the documentary records of their use. The Royal Commission on Historical Monuments, for example, has in recent years been recording hospitals, town halls, almshouses, workhouses, lunatic asylums and prisons. When they arrived to record the former Union workhouse at Purton, they found they were just too late and all but the front range of the building had been demolished.

In his fascinating book Alec Robbins has managed to recreate the closed community of the workhouse and the pathos of the paupers' sufferings. The book begins by going back to the medieval period to explain how provision for the poor developed until the Elizabethan Poor Laws were enacted, settling paupers to receive relief in a particular parish. The move towards giving the poor 'employ' in special workhouses began in the late seventeenth and early eighteenth centuries. This section of the book is useful but very generalised and would have benefited from some local examples using the wills of benefactors, manorial records and other sources. In the sixteenth century at Wootton Bassett, for example, the lord of the manor seized 1,900 acres of common land leaving the townsmen only 100 acres. His successor took even more, involving tenants in law suits which ruined and

impoverished them. At Cricklade the Quarter Sessions records reveal that in 1646 the inhabitants complained that for at least seven months due to war and plague they had had to maintain 'hundred' of poor and sick people, destitute of bread, money and employment.

The part of the book dealing with the small-scale parish workhouses and outdoor relief of the eighteenth century covers Purton, Cricklade (St Mary and St Sampson), Lydiard Millicent, Ashton Keynes, Clyffe Pypard, Tockenham and Wootton Bassett. It is well illustrated, especially with photocopies of original documents. Correspondence between Devizes and the Cricklade Overseers in 1788 is quoted which shows the clothier John Anstie in a good light. Anstie had been employing a labourer who originated from Cricklade. The man had broken his shoulder blade during work and had a sick wife and four children. The doctor Robert Clare had been instructed to attend the man and Mr Anstie was likely to take the eldest son as an apprentice. Cricklade were asked what allowance they would pay weekly to the family. George Slope who wrote one of the letters is perhaps a misreading for Sloper.

The Poor Law Amendment Act of 1834 largely discontinued outdoor relief paid to people in their homes and set up large prison-like workhouses for groups of parishes. The workhouse at Purton accommodated the poor from fourteen parishes, those mentioned above plus Leigh, Lyneham, Lydiard Tregoze, Latton, Eysey and Braydon. It was slower to open than some, receiving its first inmates in April 1839. The cruelty of the system lay in the strict separation of families by sex and age, the meagreness of the food and accommodation and the rigidity of the rules and regime. The author states that once there it was difficult to get out but some of the cases cited suggest that many could find work and survive outside in the summer but were forced inside by starvation in the winter.

Occasionally at Purton there were complaints against the staff (master and matron, porter, schoolmistress) regarding cruelty, neglect of duty or profiting themselves from food supplies and there were examples of poor conduct by visiting medical officers and clergy. Those who spoke out often suffered. One chaplain remonstrated with the schoolmistress for her excessive punishment of a five- or six-year-old boy and eventually had to resign himself.

Conditions improved towards the end of the century but many aspects of the workhouse clun-

on well into the twentieth century despite new laws and a change of name to North View Hospital. Tramps were still accommodated until around 1938 and unmarried mothers were received until they were sent to Malmesbury from 1932. Orphans and children over five were from 1929 sent to the local Children's Home. Those who stayed on were the old and infirm and the mentally handicapped. When the hospital finally closed in January 1989, nineteen of the residents were transferred to a new purpose-built building. Allowances should perhaps be made for the fact that the book is not professionally published but the number of typographical errors of all sorts and the vagaries of the layout are disconcerting to the reader. The amount of illustration is excellent and most photographs are of acceptable quality, though a few are rather pale. The book, however, is a very valuable addition to printed sources on the institutional buildings of Wiltshire. Workhouses touched on many lives which were otherwise poorly documented and their records are a rich source of social history.

PAMELA SLOCOMBE

Kenneth H. Rogers (editor) and John H. Chandler (indexer). *Early Trade Directories of Wiltshire*. Wiltshire Record Society, 1992; 215 pages. £15.00, hardback. ISBN 0 901333 24 7.

It would be a very unimaginative person who does not take delight in browsing through the pages of old directories; it is also a strong willed person who is not diverted from the search for a particular piece of information by some strange trade or name. The well known *Kelly's Directories* began in 1848 and it is relatively easy to see the originals or purchase microfiche copies. It is the earlier publications that, for Wiltshire, are difficult to find and it is six of these which form the content of this book.

Printed directories might be considered a banal topic for the Record Society whose previous publications are mainly devoted to transcriptions and explanations of early manuscripts. If this is your view remember the precedent of Vol. VIII, *Andrews and Dury's Map of Wiltshire*, published in 1952. A printed item, difficult to obtain in the original, it is arguably the most used of all Wiltshire Record Society publications. *Early Trade Directories of Wiltshire* will probably be as popular as this

predecessor and, if it had an attractive dust jacket, it would sell steadily in bookshops.

The directories included are *Bailey's Western and Midland Directory* (1783), *Barfoot and Wilkes' Universal British Directory* (1793–1798), *Holden's Triennial Directory* (1805), and *Pigot's Commercial Directories* (1822, 1830 and 1842). The first three directories cover most of the towns but it is those of Pigot that appear surprisingly modern with subject divisions and street names which give one confidence that they are comprehensive for the geographical areas covered.

The information reprinted from the originals is the lists of names; the other information about each place has been omitted. This has allowed space for two substantial indexes by John Chandler of persons and occupations. From this we find, as was to be expected, that dancing masters and fencing teachers were to be found only in Salisbury as were a shorthand teacher and a shorthand writer in 1842. Other less usual trades included an artificial flower maker at Salisbury (1830 and 1842), barometer makers at Devizes (1822) and Wootton Bassett (1842), a fisherman at Melksham (1793), a gingerbread baker at Westbury (1830) and a lady map maker at Salisbury (1830). Certain new trades appear at a particular date. From 1830 there are several slaters and by 1842 two slate merchants, indicative of the use made of the Kennet and Avon Canal to bring Welsh slates into Wiltshire.

This book will make a worthy addition to a local historian's library and the Record Society is to be commended for bringing these directories together in one place.

MICHAEL MARSHMAN

Teresa Webber. *Scribes and Scholars at Salisbury Cathedral*. Clarendon Press, 1992; xii + 220 pages; illustrated. £30.00, hardback. ISBN 0 19 820308 X.

'Every aspect of a manuscript book,' writes Dr Webber in her introduction, 'from the parchment of which it is composed to the text it carries, constitutes a form of evidence.' Salisbury Cathedral Library boasts the largest group of manuscripts of the period 1075–1125 from any English centre, and it is this collection, and the evidence it provides about the circumstances of its creation, with which Dr Webber's monograph (based on her doctoral

thesis) is concerned. To anyone unfamiliar with minute palaeographical and textual study this book will come as a revelation. At one level it is an able demonstration of the wide range of academic expertise – embracing palaeography, diplomatic, patristics, Latin, ecclesiastical history, theology, and medieval culture – which such discipline requires, not to mention the meticulous standard of concentration and dedication demanded of the researcher, faced with the prospect (and dare one say tedium) of examining and comparing hundreds of manuscripts for scribal and textual variations. At another level it is a remarkable essay in reconstructing the attitudes and aspirations, scholarship and beliefs, of a group of churchmen who were the architects of a religious culture based on Salisbury (i.e. Old Sarum), which came to influence the whole medieval world.

Dr Webber begins with a palaeographical study of the manuscripts. Having established that the collection is a discrete group, and its provenance is Old Sarum, she identifies the work of 36 principal scribes, in two groups, representing earlier and later phases of book production. The impression given is that the canons themselves were copying desired manuscripts as and when they could obtain them, often in great haste, and in relays – several scribes working in shifts to complete a single text. Unlike monastic scriptoria they were not concerned to produce showpieces, but to create from scratch a working library of accurate texts which their community needed for study, devotion and pastoral activity.

On this palaeographical foundation Dr Webber is able to examine the mechanics of manuscript transmission, suggesting that Bishops Osmund and Roger were using their influence to obtain exemplars of works for copying, from English and continental sources. Osmund, as William of Malmesbury reported, may actually have undertaken a share in the copying, and one of the most assiduous of the correctors and annotators is here tentatively identified as Archdeacon Hubald. So accustomed are we to the printed word that we are apt to forget the difficulties faced by the medieval scholar, and Dr Webber supplies an interesting chapter on the place of the Salisbury community in the transmission of Latin literature.

The canons, for instance, appear to have been able to acquire for copying from continental sources (involving of course a hazardous voyage for a precious manuscript) quite obscure works otherwise unrepresented in English collections, whereas the lack of surviving copies made from Salisbury manuscripts points to a certain reluctance on the canons' part then to allow their copies to be lent as exemplars elsewhere.

The largest portion of the book is concerned with the choice of texts for copying, and the consequent evidence it provides about the intellectual interests and religious life of the community by and for which this library was created. Salisbury, it emerges, was an idiosyncratic and uncharacteristic collector of books, with a strong interest in patristic byways (such as *opuscula* of Augustine), as well as classical texts. Viewed as a whole, the library is eloquent of the practical and pastoral nature of the canons' needs, and their lively interest in the latest scholarly advances in, for example, the exegesis of Biblical and patristic texts. They were not concerned with history, because, as a Norman creation, they had none of their own, and no ancient rights to defend. But what they were doing in the 11th and 12th centuries was providing a sound bedrock for the 13th-century flowering of intellectual life at Salisbury, as well as the constitutional and liturgical reforms which came to be imitated throughout medieval England, and eventually brought canonization to their leader, Osmund.

Complementing its author's impeccable scholarship this Oxford monograph is handsomely produced, with sixteen pages of plates of manuscript excerpts. Dr Webber provides a full apparatus, which includes comprehensive details of all the manuscripts, texts and scribes, a bibliography, notes to the plates, indexes of manuscripts and a general index. She also supplies as an appendix an edition of a unique Salisbury manuscript, an ascetic *florilegium* entitled the 'Ladder of Virtues' (*Scala Virtutum*). It is an anthology of texts relating to the practical observance of Christianity in daily life, and was probably compiled at Salisbury; it is certainly a fitting ambassador of the remarkable milieu in which it circulated.

JOHN CHANDLER

Obituaries

Commander John Douglas Rosdew Davies, MBE (1899–1991). Born in Sussex, reared largely in Gloucestershire and much travelled during his working life, 'Jan' Davies came to Wiltshire in 1959, residing with his daughter and son-in-law in Aldbourne. In 1967 he bought and renovated a cottage in Clatford, near Marlborough, where he lived for the rest of his life.

His almost boundless range of interests included a predilection for 'firsts' and 'one-offs'. His own repertoire of achievements included his August 1934 record (believed still to be held) for climbing the highest peaks of Ireland, England, Wales and Scotland on four consecutive days, travelling between them on a motorbike. In 1976, at the height of the drought, he and two friends walked the dry bed of the River Kennet from Swallowhead Springs into Marlborough. Another likely record (certainly among the excavation team!) was made at Silbury Hill in 1969 when he ascended the Hill thirteen times in one day in his capacity as Information Officer. It was his sense of occasion which led him to hire a television so that the team could watch the first moon landing, an event which coincided with the tunnel reaching the centre of the Hill.

Commander Davies served in the Royal Navy from 1917–1922. One of his proudest memories was of being on duty on H.M.S. Verdun when she carried the body of the Unknown Warrior across the Channel. On the 70th anniversary of the occasion at a ceremony in Westminster Abbey he presented to the church one of the ship's bells which he had acquired when she was scrapped.

Among a variety of occupations after leaving the Navy, he was a Conservative Party agent, a Royal Navy Reservist, and Director of the National Trust's Enterprise Neptune campaign. He indulged his enthusiasms for veteran cars and bikes and at some time became keenly interested in archaeology and its practitioners, amongst whom he built up a wide acquaintance. His long friendship with Professors Stuart Piggott and Richard Atkinson gave rise to a memorable tale of the trio during the Stonehenge excavations, watching the celebration of the solstice with a case of a claret to keep them company. More recently, during the excavation of the South Street

long barrow at Avebury the Commander assisted John Evans with the reconstruction of the hurdle framework which the monument had once possessed.

Jan Davies' long life encompassed many interests and bred a fund of tales which he was always eager to relate, and it was rare to hear him repeat himself. He was a faithful supporter of the Society, in recent years being its oldest current member. His great love of music and singing, story-telling, good company and momentous occasions will be long remembered.

GILLIAN SWANTON

Air Commodore Henry Eeles, CB, CBE (1910–1992), will be remembered by all who knew him as a man of very considerable appeal and character. In discussions with him at the outset of his Presidency in 1974, I recall with enjoyment his feeling for the Society and the enthusiasm with which he was looking forward to his three years in office. His forced resignation, as the result of a serious stroke, must have caused him the keenest disappointment.

In spite of his disability, he continued, in company with Mrs Eeles, regularly to attend Society meetings and to support its activities. It can only be regretted that the experience gained during his distinguished career in the R.A.F. could not eventually have been used in the service of the Society.

KEN ANNABLE

Richard Hattatt, who died on 30 October 1992, had been a member of the Society for many years. He was born in 1910 and although it was intended that he should study science, instead he took over the family business in Romsey, the Hampshire Preserving Company Ltd, which produced jams, marmalade and canned goods. After the war the company closed down. Richard, however, held directorships in other companies and jointly formed an advertising company based in Southampton, of which he was chairman until his retirement in the

1970s. Another professional interest was timber and an early gift to the Society's museum was a reference collection of wood samples.

In 1973 he began to form an important collection of Greek and Roman pottery and bronzes, a selection from which was at one time exhibited in the Ashmolean Museum. The centrepiece was a black-figure Attic vase dating from the 6th century BC by a previously unrecognised Greek master-painter, who was subsequently named after him as the Hattatt painter. The Hattatt vase was later presented to the Ashmolean. After the sale of his classical antiquities he developed an interest in early brooches, building up the finest private collection in Britain, if not western Europe. It consisted of over 1600 provenanced examples, ranging in date from the Bronze Age to the Middle Ages, most of which had been found in Britain.

Richard Hattatt was a tenacious and hardworking student of antiquities. He was self-taught but worked closely with the curatorial staff of the British Museum and the Ashmolean. His enthusiasm and natural abilities soon made him a leading expert on early brooches in Britain and led to the publication of four standard books on the subject – *Ancient and Romano-British Brooches* (1982), *Iron Age and Roman Brooches* (1985), *Brooches in Antiquity* (1987) and *Ancient Brooches and other Artefacts* (1989). He also published papers on individual brooches or classes of brooches in journals including *the Antiquaries Journal* and *WAM*.

He was always a generous benefactor to the Society, giving, for example, copies of his books on early brooches to be sold in the museum shop. When he eventually decided to give up collecting, he deposited the Wiltshire-found brooches in Devizes Museum, bequeathing them to the Society on his death. The 70 brooches are outstanding examples, principally of Roman date and in excellent condition. He also left a generous bequest from his estate to the Society.

I was introduced to Richard in 1983 by a mutual friend, Audrey Davies of the Astarte Gallery. He was a charming man, gentle but firm, perspicacious and knowledgeable and always very willing to share his knowledge with others. His first wife Winifred died in 1937; his second wife, Robbie in 1976. He is survived by a younger brother, David.

PAUL ROBINSON

John Piper, CH (1903–1992). As Chairman of the Society at the time (1980), I had the good fortune with Stuart Piggott to obtain John Piper's agreement to design a stained glass window for the museum. John's reaction to our proposal was characteristically enthusiastic, generous and courteous and without any of the side which, probably wrongly, I had assumed to be a trait of many great artists.

Our preliminary discussion included a suggestion that natural history should be represented: John immediately sketched in a group of woolly-headed thistles. Then, rather tentatively, I suggested a white horse against the downland, or would this be too 'kitsch'? 'Not at all' said John, who promptly cut out a paper white horse and asked us to help to place it on his sketch.

John Piper had a special regard for Devizes and for the Society, of which he had been a member for many years. When, after the completion of his window, he heard that a 'Museum of the Year' award had been won by Devizes Museum, he expressed his delight, saying that the museum had always been a favourite of his.

Devizes and the museum were indeed among 'Piper's Places': in the book of this name by him and Richard Ingrams, he gave as reasons for the appeal of Devizes that 'it had been allowed to grow and live a reasonable, unhurried life without being maimed or killed by major disasters or unwanted developments'; he added that Devizes retained its characteristics because it had not fallen a prey to planning, that it could not possibly 'remain Devizes' unless the whole could sort itself out into 'an arbitrary, informal jumble . . . less good taste and less cooperation, that is the secret . . . committees of all kinds should be rendered powerless in architectural matters . . . it is our only hope'.

It was indeed a privilege to have got to know John and his wife Myfanwy both in Wiltshire and at his home of six decades, Fawley Bottom Farmhouse near Henley, a house of enormous charm where his own work was nourished in the garden and countryside he loved (and by memorable food and wine).

The Piper window in our museum will serve as a memorial to a good friend who some years ago (as quoted in *Piper's Places*) paid tribute to the museum and to the tradition of the Wiltshire archaeologists that it maintained: 'the fading tradition of the

specialist who is also a man of wide learning and culture, the man who can treat his subject scientifically without losing hold of the main romantic threads that connect it with life'.

BONAR SYKES

Leonard Tombs, who died in February 1992, developed his two major lifelong interests, archaeology and music, while still at school in Ealing. After National Service and employment with an engineering firm he became a mature student at Trent Park Training College in the mid 1950s, and went on to take a degree in the Humanities and British Archaeology. He became Head of Music at Heston School and, until his retirement through ill

health, did much to develop the artistic and orchestral life of the school. In his spare time, he became closely associated with the Wiltshire Archaeological and Natural History Society, of which he became a life member, and took part in weekend field archaeology activities all over the country, as well as lecturing on Prehistory. Following a heart bypass operation in 1979, his health improved sufficiently for him to be able to enjoy his third great interest, gardening, at Ashford in Middlesex, and to enlarge his fine collection of books and artefacts, which he later bequeathed, together with a substantial sum of money, to the Society.

LORNA HAYCOCK

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