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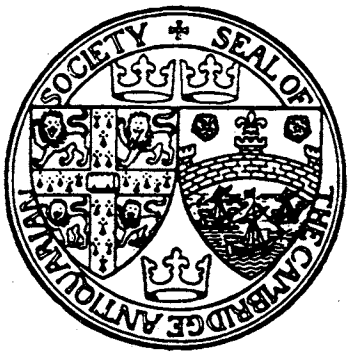
for 1996



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Contents

Editorial

This is the last *PCAS* I shall edit (having decided that I should concentrate on my own research until senility overtakes me). The new Editor will be Alison Taylor, Cambridgeshire County Archaeologist for more than twenty years, and probably the first local archaeologist I met on my return to the 'old country' after many years in Australia. Alison's kindness and friendship, and her organisational abilities, I value highly, and I am delighted to edit this volume in her honour, at a time when she is beginning a new career as a consultant.

Many of the articles in this volume have been written by Alison's colleagues at the County Council, others by friends who have been associated with her and Cambridgeshire archaeology over many years, and this volume therefore concentrates on areas which I hope she will find of interest: around the massive piece of work on the Cambridgeshire Dykes are several shorter (but not small or insignificant) papers, all concerned with sites investigated in Cambridgeshire since 1974, and since Alison's appointment as County Archaeologist.

With our good wishes for future blossoming.

Audrey Meaney

The Excavation of a Ring-Ditch Complex at Diddington, near Huntingdon, with a Discussion of Second-Millennium BC Pyre Burial and Regional Cremation Practices

Christopher Evans

with contributions by F. Lee & R. Palmer

Introduction

A limited excavation was undertaken in the Diddington Quarries, in conjunction with a watching brief conducted by the then Cambridgeshire County Archaeologist's Office, as a result of gravel extraction by ECC (Quarries) Ltd. Excavation was carried out on a voluntary basis during weekends in November and December 1986 by members of the Department of Archaeology, University of Cambridge and staff from the University's Haddenham Archaeological Project. In dire salvage circumstances, the fieldwork commenced long after the site had been machine-stripped by the gravel company, and it is estimated that up to 0.40–0.60 m of strata had by then been removed without archaeological control. This extreme truncation, and the fact that stripping occurred without regard to archaeological recovery (there were smeared and heavily crusted or compacted surfaces, and even localised levelling up), meant that features were extremely difficult to distinguish. At some points, this had evidently even resulted in the complete loss of minor features. This excavation report can, therefore, only be considered conclusive in terms of its positive results; that any possible feature-type was not found does not necessarily constitute negative evidence. Although of relatively complex bipartite plan, the over-machined ring-ditch proved 'simple', somewhat dauntingly so. Nevertheless, the recovery of an *in situ* cremation pyre raises issues concerning the wider occurrence of this rite within the region, and the broader implications of such practices are discussed below.

This work was undertaken to aid a colleague, and the author's responsibilities only pertain to this specific monument complex (*pace* French and Wait 1988: 78). Our involvement arose when, upon visiting the County Council's MSC-sponsored salvage excavation of a Romano-Celtic shrine, it was evident that it was without sufficient resources to investigate the early monuments in the same field. Since that time, the Birmingham Archaeological Unit has undertaken extensive developer-funded excavations in a southern extension to the quarry (Jones and Ferris 1993; Jones 1994; Jones, forthcoming), which will obviously provide a fuller understanding of the sequence of early land-use in the area (see Greenfield 1969 and Addyman 1969 concerning earlier investigations in the vicinity).

This is a ring-ditch complex of some renown inasmuch as it featured in Field's 1974 study (Fig. 3a, Plate VIIc; see also French and Wait: 78–9, Fig. 26; and Malim, forthcoming). Lying on the first and second terraces and former flood-plain of the River Great Ouse, 500 m west of the river (Fig. 1; TL 2084 6598), the site discussed here is the northernmost of an alignment of three ring-ditches (Plate I and Fig. 2; Sites I, II and IV; Field's ring-ditches 'f', 'b' and 'g', respectively) and another possible example (III), whose much fainter and dubious circuit appears on aerial photographs to conjoin with, or be a deflection of, the circle of monument IV. At either end of the alignment, the ring-ditches were significantly larger, and registered strongly as cropmarks.

The County Council team tested the two southern ring-ditches (I and II), from which sherds of Collared Urn were retrieved, and, to the west, a sub-rectangular Romano-Celtic shrine complex (V). When the latter was sum-

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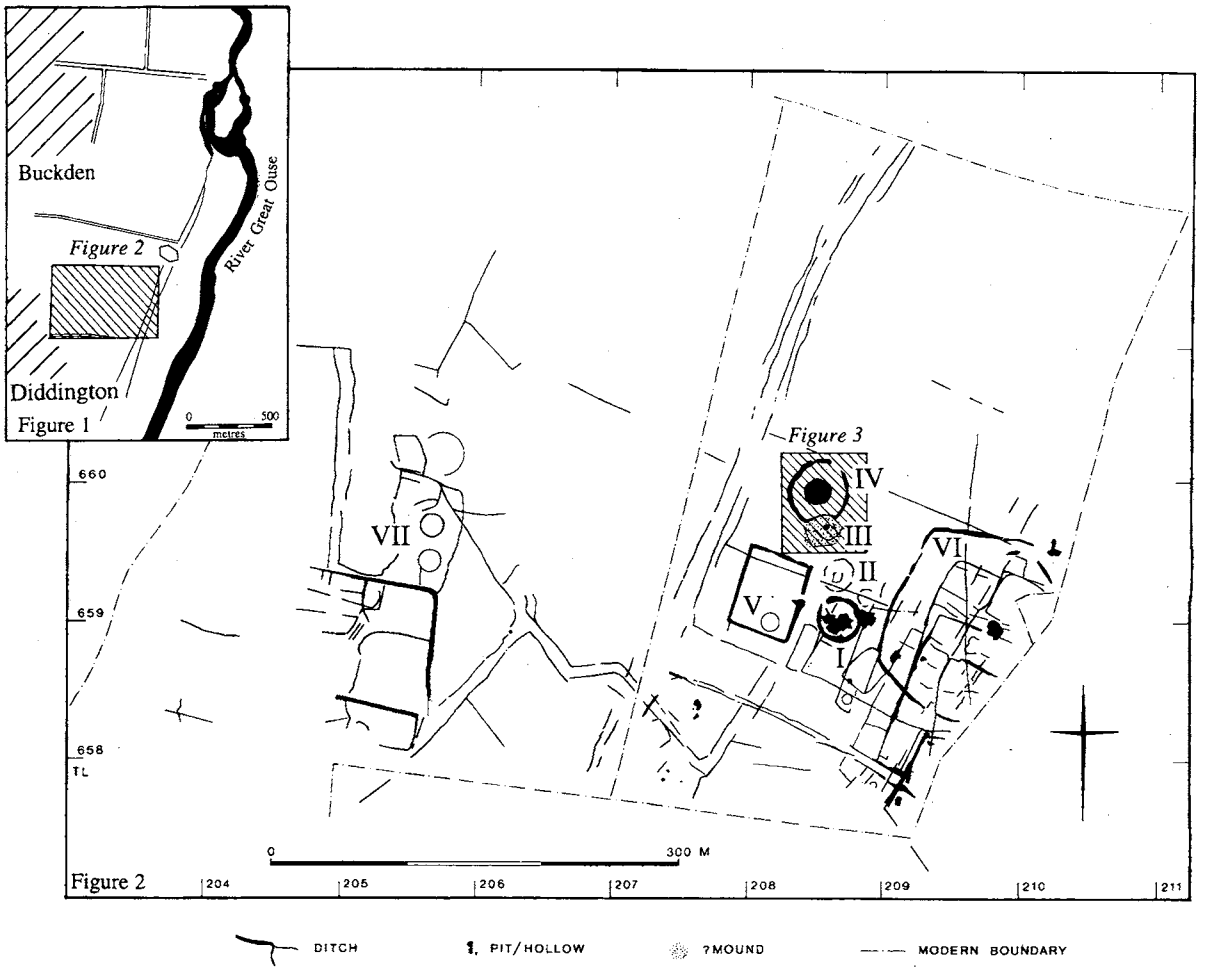

Figures 1 and 2. *Site location map and cropmark plan, Diddington, near Huntingdon.*

marily investigated, the shrine proper was found to be located in its southern end, and a quantity of fine metalwork was recovered in association with it. The field was crossed by droves, field systems, and a series of small sub-rectangular paddocks, all sharing the alignment of the shrine complex, and presumed also to be of Romano-British date. Across the eastern side of the field was a substantial enclosure of 'rounded' sub-square plan with symmetrical entrances on the northern and southern sides (VI; aerial photographs show a small rectangular paddock coming off its southwestern corner). The County's testing of this enclosure was necessarily limited, as most of it had already been lost to the quarry by the time of the team's arrival on site, but it was thought to be of Iron Age date; given its relationship to the Romano-British system, a later Iron Age attribution is probable. Within the field immediately to the west, an area of dense Iron Age occupation was exposed (paddocks, pits, roundhouses surrounded by eaves gullies, etc.), the excavation of which was much more intensive (VII; the archive of their work is now held by the Cambridgeshire County Council Archaeology Field Unit, Fulbourn).[1]

Since the University's investigations were only concerned with the northernmost ring-ditch (IV) and the feature complex on its southern side (III), it is appropriate to discuss here the cropmark registration of these specific features in relation to their survival prior to the topsoiling of the site.

Aerial Photography

R. Palmer

The area studied lies in two modern fields which, throughout their photographic history, have been sown with different crops. Thus, although CUCAP have recorded the area on 20 different dates since 1952, the two fields have never simultaneously been showing archaeological features at their best. The accompanying plan has been compiled from

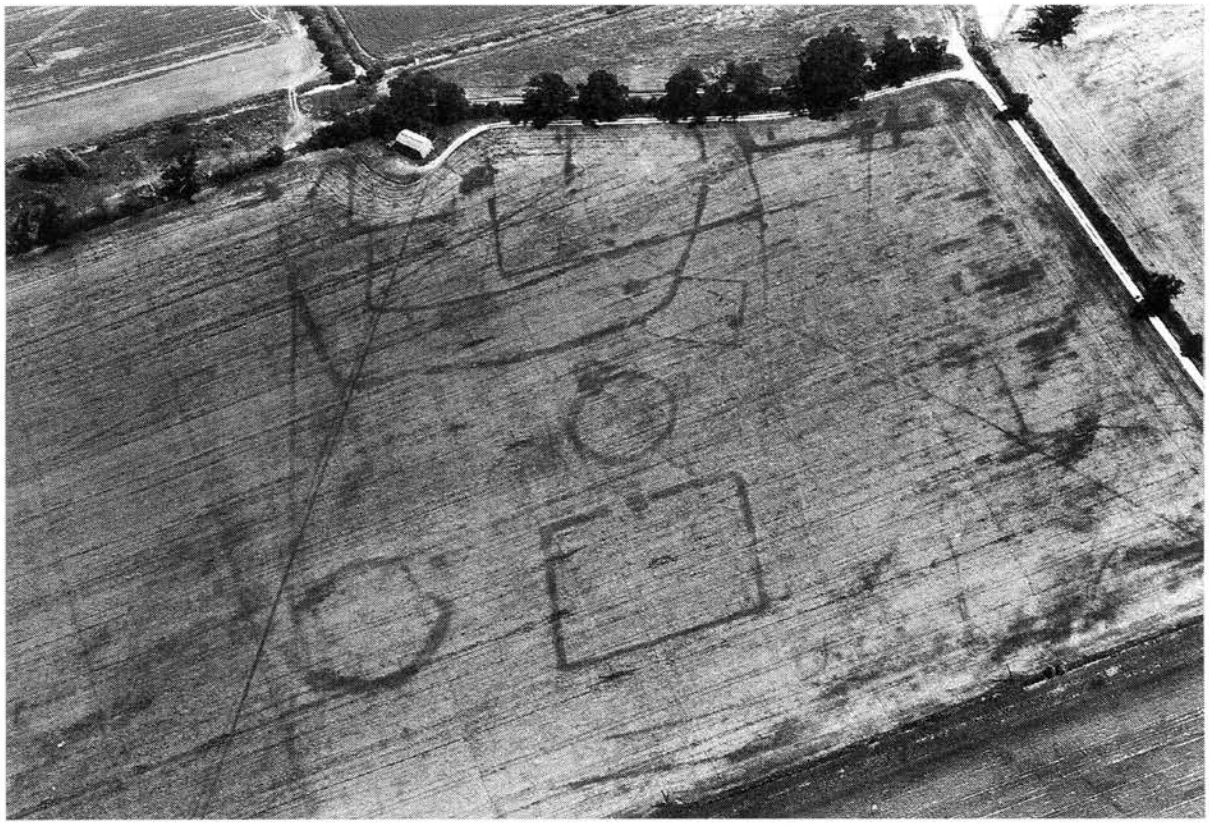

Plate I. *The site looking east: central foreground, the sub-rectangular shrine enclosure (V); immediately to the left, the northern ring-ditch (IV; aerial photograph BXZ-66, Cambridge University Collection of Air Photographs; copyright reserved).*

1:2500 rectified interpretations of five principal photographs (Fig. 2). It results from rapid work and is unlikely to show the degree of detail that would, perhaps, be produced by a more intensive study. The main components of the area, and their relationships, are quite apparent on the plan. Comment here will be restricted to the area of the ring-ditches (II–IV), which lie in the eastern field, and will specifically seek to focus on any relationship between the northernmost ring-ditch (IV) – that with a 'bite' out of its perimeter – and the pit which lies within that 'bite'.

It must be noted that all air photographs show the field under a full summer crop, and so any height differences visible will be crop height differences, rather than bare soil topography, and might give the opposite effect to that expected. Survival of any upstanding mound, however slight, would not be expected in a much ploughed field on river gravel. But, depending on plough depth, it is possible that a slightly packed, or protected, surface might survive below a now lost mound (this is a frequent occurrence on chalk soils; whether it applies to gravel locations is less certain) and it is this which may promote differential growth in crops. Over a mound this differential should show as weaker or shorter growth.

Most photographs of the ring-ditch group show suggestions of what appears to be a slightly lighter toned patch surrounding the pit (III; 1952, 1958, 1962, 1970, 1972, 1976), sometimes with the barest suggestion of a partial surrounding ring-ditch or hollow (enlargements of the 1962 and 1976 photographs). This patch could result from plough erosion of the local knoll on which the features were cut, but the eye tends to make it roughly circular, perhaps drawn by the curve of the 'bite'. Traces of a possible ditch surrounding the pit are even more indistinct (and appear to vary on different photographs). They do not appear to form a circle but, especially on the 1962 photograph, look more like the remnants of 'terminal' features attached to the ring-ditch either side of the 'bite'. Their alignment is dissimilar to any other local features but may relate to the other ring-ditches.

It is not possible, from the air photographs examined, to determine any priority of construction between the pit and 'bitten' ring-ditch.[2]

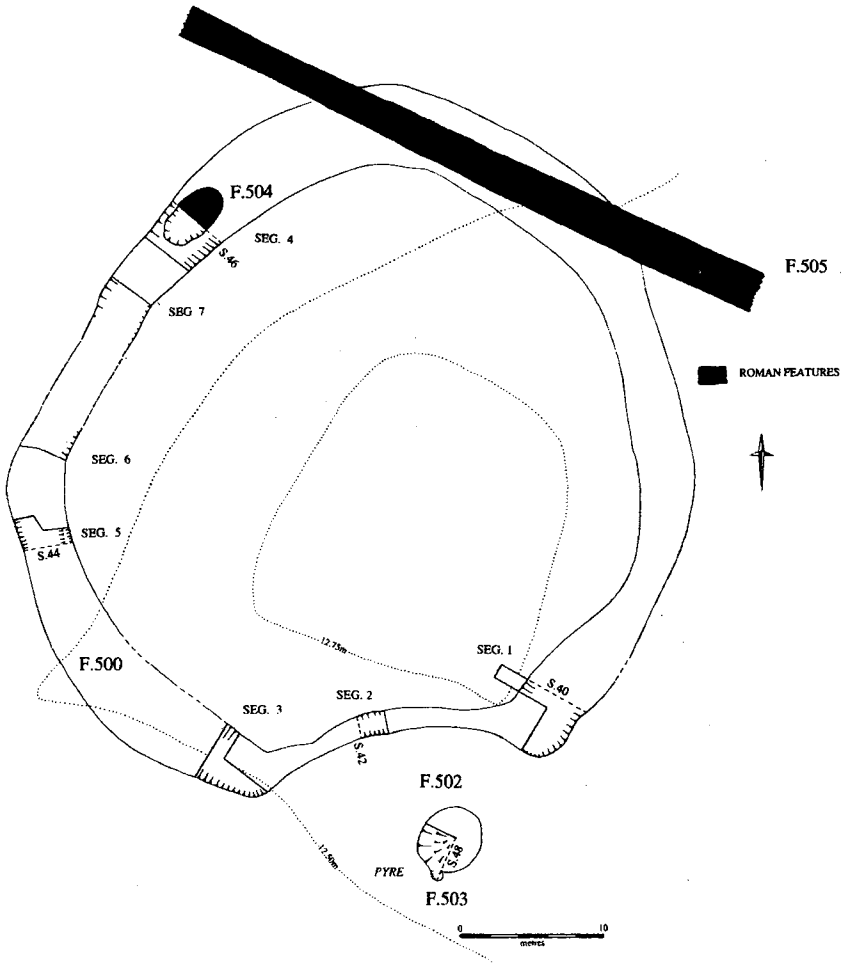

Figure 3.
Plan of ring-ditch IV and associated features.

The Excavations

The circuit of the large ring-ditch (IV) at the north of the alignment was found to enclose a minor knoll, which according to local sources stood proud of the flood levels in 1947, when it served as a refuge for local wildlife. The machine-stripped ground surface generally lay between 12.20 and 12.90 m OD, the level of the terrace sands and gravels. By comparison with the soil profile along the western side of the field, it was evident that approximately 1 m of overburden had been removed and that within the area of excavation the natural gravels had been machine-truncated. The 'mineral' was overlain by a 0.35 m thick horizon of 'hoggin' (gravels in dark brown silty clay). This was sealed by a layer of mid brown-grey silty loam (0.16 m thick), evidently a buried soil/B-horizon, above which was dark brown–black alluvium presumably laid down by freshwater flooding (0.40 m thick; the upper 0.10 to 0.15 m constituted the modern ploughzone).

The diameter of the ring-ditch (F. 500) varied between 41 and 45 m (averaging 42–43 m) and was slightly elongated on its north–south axis. In the southern sector, its line abruptly turned inwards by 3 m over a length of 17.50 m, to form a convex arc in relationship to the main circle. Across this in-turned sector the ditch was generally of minor proportions. This apparently does not represent a secondary blocking of an entranceway, but rather a deflection determined by earlier features.

Site III

The deflection of the circuit of the ring-ditch clearly occurred in relation to features lying 5.50 m to the south, just off the estimated centre of its in-turned arc (Fig. 3). The larger, F. 502, was a massive pit (4.2 m in diameter), clearly visible on aerial photographs. Its profile was stepped and shelved (1.50 m deep); the primary fills consisted of bands of yellow–brown sandy gravels and sandy clay with gravel. These relatively clean deposits filled the lower third of the cut and extended well up the sides, and may represent an intentional backfilling. The

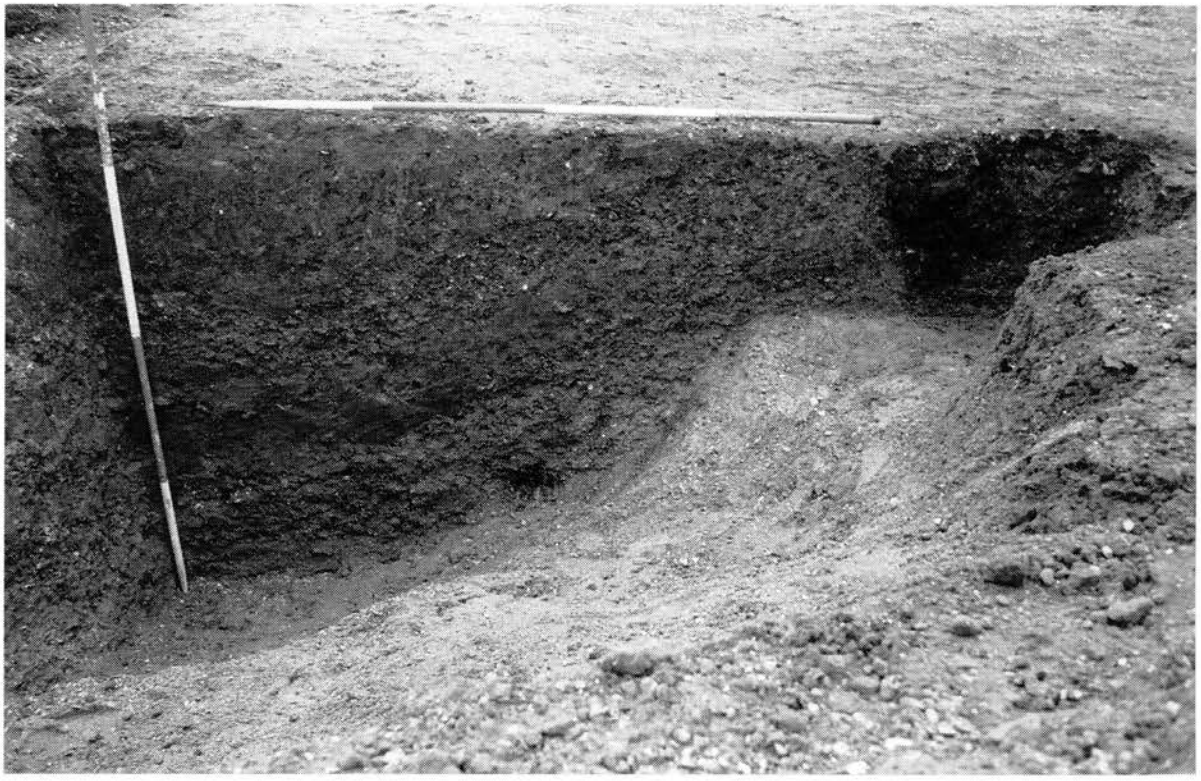

Plate II. *The Site III complex with the cremation Pit F. 503 (right) cut into Pit F. 502.*

uppermost metre of this cut, filled with heavy dark grey and brown clays, with only lenses of sandy gravel, had presumably been deposited in wet or damp conditions (Plate II and Fig. 4).

There was only time to excavate a quadrant of F. 502; the fact that no artefacts were recovered prevents secure interpretation. While it may have functioned as a well or shaft, subsequently backfilled, an alternative interpretation is possible. Its lower central fills were extremely soft, consisting of brown humic clays with coarse gravel cobbles and also frequent voids. It is just possible that these loose deposits represent a large post-pipe, estimated to have been 0.50–0.60 m in diameter. If this was the case, then the pipe could have been packed with clean gravel deposits which may themselves have been disturbed when the upright was removed. Certainly, the lack of finds from its fills would accord with the interpretation of this pit as a 'closed context' (not open to gradual infill).

A flat-based 'tongue' or shelf (0.55–0.60 m deep), extending for 1.10 m from the southern side of F. 502, was filled with the same primary gravels as the main cut. Into these had been dug F. 503, a steep-sided pit containing a cremation pyre (0.70 m in diameter; 0.55 m deep). That the firing had occurred *in situ* was demonstrated by the red scorching of surrounding deposits to a thickness of 5 cm and by the nature of the fills: predominantly charcoal fragments in black sticky 'clays' (i.e. largely reduced or 'structureless' charcoal). Bedded across the base and along its sides, and more occasionally throughout its fills, were fragments of white burnt bone. Although most were only 1–2 cm in size, some survived up to 0.15 m long. Bedded down into the upper middle of the profile were substantial charred timbers up to 0.30 m in length and 8–10 cm thick and wide. Their size would suggest that the enclosed or contained firing of the cremation had been inefficient, and this is corroborated by the state of the burnt bone. Apart from the size of the pieces, the bedding or stacking of the bone and timber also indicates that the cremation had not been extensively disturbed (stirred or raked) during or after firing. The upper third to half of this feature was filled with sandy gravels which bedded down into the centre to a maximum depth of 0.25 m, evidently representing an upcast sealing of the pyre. It can, of course, be argued from the fact that this cremation truncated the fills of the adjacent pit (F. 502) that it was a secondary activity, following the primary infilling of the larger feature. However, the fact that this pyre was cut directly into the 'shelf' of the main pit suggests a closer association (that

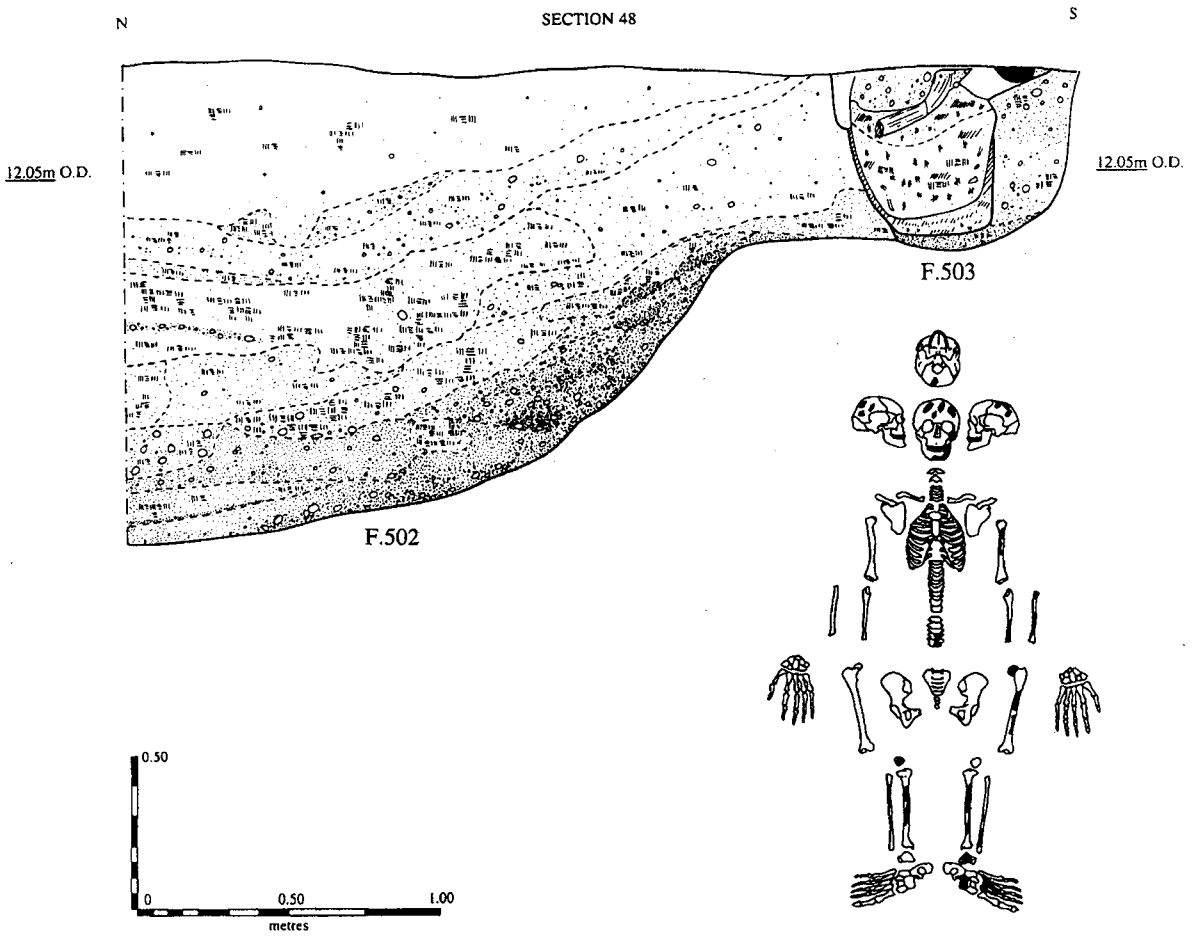

Figure 4. *Section through Pits F. 502 and 503; inset skeleton shows body parts represented.*

is, the larger pit was 'modelled' as if anticipating the cremation).

The cremated remains were those of an adult aged over 30 years (Fig. 4). The colour and size of the fragments suggest that the body was burnt at a low temperature with little circulation of air; such conditions are often found in simple pit-cremations. The pattern of cracking follows that which Baby (1954) described as occurring in fleshed cremations, notably transverse and longitudinal fractures, irregular lines, and some curving and warping of the bone as it burnt (see Appendix I).

From the local deflection of the main ring-ditch (IV) at this point, it could be inferred that the two exterior features (F. 502 and 503) were originally capped by a turf mound, or encircled by a bank, which determined the change in the line of the ring-ditch (a gravel barrow being unlikely, on the grounds that no substantial ditch can ever have enclosed these features). No trace of a subsided barrow core was, however, present within the upper fills of the large pit. It may, therefore, be more reasonable to propose that these features were instead enclosed by a (turf-stack?) ring-bank, or even a post-setting encircling cleared ground, in relationship to which the main ring-ditch was deflected. Given the degree of surface truncation, it is even feasible that they were enclosed by a minor ring-ditch (less than 0.30–0.40 m deep) that had been eradicated by the stripping (see Palmer's discussion of aerial photographic evidence, above; Evans & Knight, forthcoming, discuss the differential survival and recovery of ring-ditches and barrows).

The Northern Ring-ditch (IV)

The excavation schedule allowed for only seven segments around the circuit of the ring-ditch (F. 500) to be hand-dug: three across the inturned sector and its points of deflection (Segments 1–3), and four along its western side (4–7; Fig. 3). The latter concentration was due to an interruption of c. 5.00 m that was thought possibly to represent an entranceway. However,

no break in the circuit is apparent on aerial photographs, nor were terminals distinguished in excavation. Instead, comparison of the absolute levels of the base of the ring-ditch around the circuit suggest that this gap is the result of locally even more extreme machine-truncation.

The ditch was found to be 1.00–4.50 m wide, approximately 4 m on average. As a result of differential machining, its depth varied considerably, from 0.20–0.75 m. It is estimated that the ditch was originally 0.80–1.25 m deep, and that between a third and three quarters of its profile had been variously removed (Fig. 5: Sections 40, 44 and 46). Within its deflected arc, the proportions of the ditch were relatively minor: 1–2 m wide (average 1.50 m) and 0.30–0.35 m deep (Fig. 5: Section 42). The more massive proportions (especially the width) of the main circle were clearly the product of off-centre re-cutting. Generally, the profile was broadly 'U'-shaped with a flat or very slightly concave base. However, in a few instances a distinction was apparent between the angle of slope of the inner and outer sides, the outer edge sloping steeply, whereas the inner was broader or gentler. In some segments, the inner edge was slightly stepped, suggesting re-cutting, and elsewhere the basal or primary fills only survived within the inner half of the ditch, having been truncated on their exterior edge. A general pattern of re-cutting around the circuit (but not the in-turned arc) was, therefore, distinguished, which eventually resulted in an exterior widening of the ditch by a third to a half of its original profile.

A relatively uniform fill sequence was found in all the excavated segments (except for Segment 4 – see below), including that in the deflected arc: a primary fill of slipped sands and fine gravels, clearly derived from the lower C-horizon (5–8 cm thick), was sealed by a more substantial deposit of compacted dark brown sandy or gritty clay with fine and medium pebbles (0.10–0.30 m deep), which reflects the longer weathering of the upper soil or hoggin profile. This was capped by stiff dark brown-grey clays with moderate to frequent pebbles; the gravels were predominantly bedded in the base of this alluvial-derived horizon. Throughout, there was a higher proportion of sand and gravel inclusions in the fill matrix along the sides of the ditch. The general distribution of the gravels on both sides of its profile would not, however, necessarily indicate the location of major up-cast banks, and may instead simply reflect weathering of adjacent ground surfaces and the edges of the cut.

The knoll, 0.30–0.40 m high (12.85–12.90 m OD), which the ring-ditch encircled, extended over approximately 25 by 30 m. The gravels of its crown were blackened over an area of 10 by 10 m. This was base-planned and investigated to determine whether it might relate to either domestic usage or cremation-related activity. Apart from a chicken bone (obviously a recent introduction), no finds were present, and the discoloration was found to be the result of periglacial manganese staining and burning of tree-boles.

Later Features

Distinct re-cutting of the ring-ditch was apparent in Segment 4. Although, again, certainty is not possible, this seems to represent disturbance by two considerably later pits (both given the designation F. 504: they were 0.75 and 0.85 m deep respectively, and both 1.30 m wide; see Fig. 5: Section 46). Their primary fills consisted of reduced black organic remains ('black clay loam'), including preserved twigs and one possibly crudely worked or split fragment of wood. Sand lenses were found within the base of these deposits and fine to medium pebbles were present throughout the matrix; the natural gravels in the base had been stained a dark orange–red by iron oxide percolation. This discoloration and the character of these fills indicate that water lay in the lower portion of these re-cuts, at least seasonally (basal *c.* 0.20 m). A higher clay content was present in the upper portion of this organic horizon, and blended somewhat with the mixed secondary fills of interbedded lenses of grey clay and orange sand. Generally the fills included frequent pebbles, with the highest proportion of gravel inclusions found along the base and interior edge. These were sealed by dark grey–brown alluvial clay, somewhat 'softer' than the tertiary fills elsewhere along the circuit of the ring-ditch.

A relatively substantial quantity of animal bones (red deer and cattle?) was recovered from these pit re-cuts. This is in marked contrast with the rest of the main circuit, for (apart from a few scraps of burnt bone in Segment 3) the ring-ditch was devoid of artefactual remains. The waterlogging in the base of these features attests to wetter local conditions than in the other features excavated; their later date was confirmed by radiocarbon dating (see below). Before their dating was fully appreciated, a pollen sample was analysed from these re-cut pits. Dominated by Gramineae and other herbaceous taxa, the assemblage indicates open grassland, with cereal pollen and species associated with disturbed ground attesting to arable farming nearby. *Salix* probably grew close to the site,

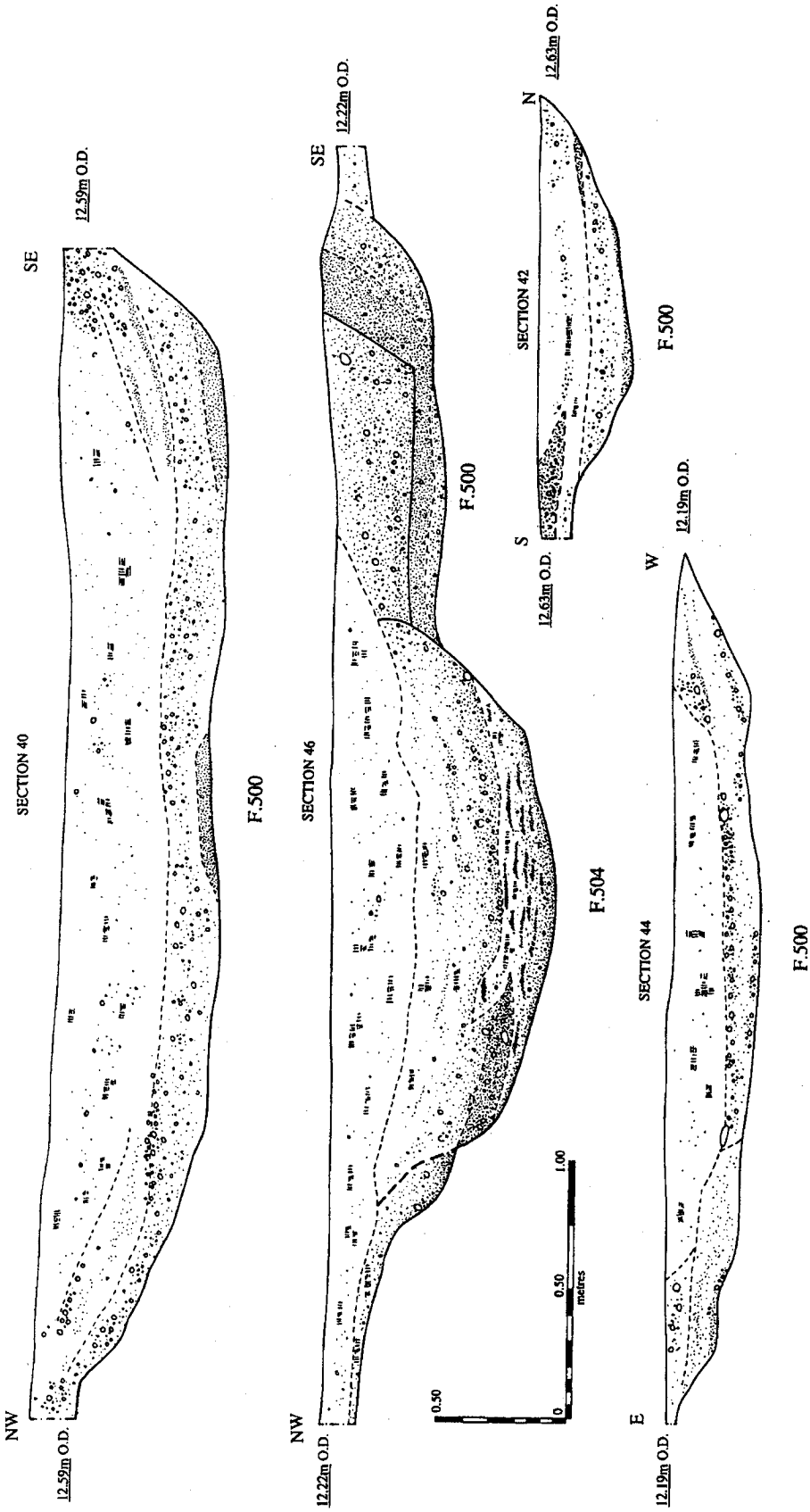

Figure 5. *Sections through ring-ditch IV.*

while a low proportion of other arboreal species suggests woodland only at a distance (*Tilia*, *Quercus* and *Alnus*; S. Boreham and S. Pegler, personal communication).

Unfortunately, there was insufficient time to investigate much of the area adjacent to the F. 500 ring-ditch thoroughly. A cluster of apparently later pits was, however, observed on the north-west side, and an east–west oriented ditch found to be cut along the north sector of the ring-ditch (F. 505). This latter feature was only most informally investigated – its line was traced to the quarry face, where it was found to be 0.20–0.30 m deep. Its fills were quite mixed but generally appeared to be composed of grey clay silt and weathered hoggin; obviously only the basal and primary fills had survived machine-truncation. Because of its alignment parallel with the shrine complex to the south, this ditch is interpreted as part of the Romano-British field system, and on aerial photographs it appears to run west to join with a major north–south oriented droveway.

Discussion

Dating Evidence

The complex was almost entirely without artefacts. Only two worked flints were, for example, recovered from excavation of the northern ring-ditch (F. 500). One is a broken tertiary flake with evidence of heavy utilisation along one edge; the other, a crude and heavily worn endscraper with a steep working angle and large irregular flake scars, is probably of later Neolithic or Early Bronze Age date (M. Edmonds, personal communication).

Given the remarkable paucity of finds, dating is obviously problematic and must largely rely upon radiocarbon determination. Three samples were submitted for dating; two initially to the British Museum. The first, from pit F. 504, re-cutting the main ring-ditch, produced a result of 1910 ± 50 BP (20–135 cal. AD at 68% probability; BM-2624) and relates to the site's Romano-British usage; the second, from the F. 503 cremation proved 'modern' and had evidently been contaminated (BM-2623). Subsequently, another sample from the latter feature was submitted, this time to the Godwin Laboratory, Cambridge, and a date of 3575 ± 40 BP was forthcoming (1625 ± 40 BC). Calibrated, it has a 68% probability of falling between 2020 and 1885 BC. However, the calibration curve at this point is such that there is a 95% probability that it actually falls into one of three much tighter date ranges (Switsur, personal communication):

1) 2035–1880 cal. BC
2) 1840–1820 cal. BC
3) 1800–1780 cal. BC

Given regional precedent (see below), the two latter seem the more likely, and a date range of 1840–1780 cal. BC is considered acceptable. Whilst it is not necessarily related, this would accord well with the recovery of a Collared Urn from the smaller ring-ditch located 60 m to the south (Site I; Fig. 2).

Ring Forms, Cremation Practices and their Affinities

The Diddington ring-ditches essentially seem to have been just that – 'ring-monuments' – and not poorly surviving barrows. The evidence indicates that they were without substantial mounds and they therefore seem to constitute a distinct category of monument, one whose frequency and importance has been underestimated (see Evans and Knight, forthcoming). With a diameter greater than 40 m, ring-ditch IV is much larger than most contemporary ring-ditches or barrows, and its status is all the more intriguing in the light of its presumed construction between 1800 and 1600 BC. Whilst the paucity of finds associated with it points to a non-domestic function, its size could provide a link with later Bronze Age circular enclosures such as Springfield Lyons and Mucking Rings (Fig. 6; Buckley *et al.* 1987: 50–1), suggesting that behind the many rectangular field systems and settlements of the time lay a tradition of circular construction. Others have argued for a relationship between henge or hengiform monuments and ring-ditches (e.g. Burgess 1980: 116; see also Evans and Knight, forthcoming). Nevertheless, to judge by the regularity of its plan, the affinities of the Diddington ring-ditch clearly lie within the second millennium; rather than with the 'fragmented' character of later Neolithic ceremonial enclosures (see e.g. Kinnes 1979).

Due no doubt to extreme over-machining, the simplicity of the immediate group of features makes interpretation difficult. Essentially, any appreciation of the complex's sequence must hinge upon one feature – the F. 503 cremation pyre. It is one of three such cremations excavated over the last 15 years along the lower and middle reaches of the Ouse. The excavation in 1983 of a round barrow (upon which a Romano-Celtic shrine had been sited) on the Upper Delphs terrace at the fen-edge in

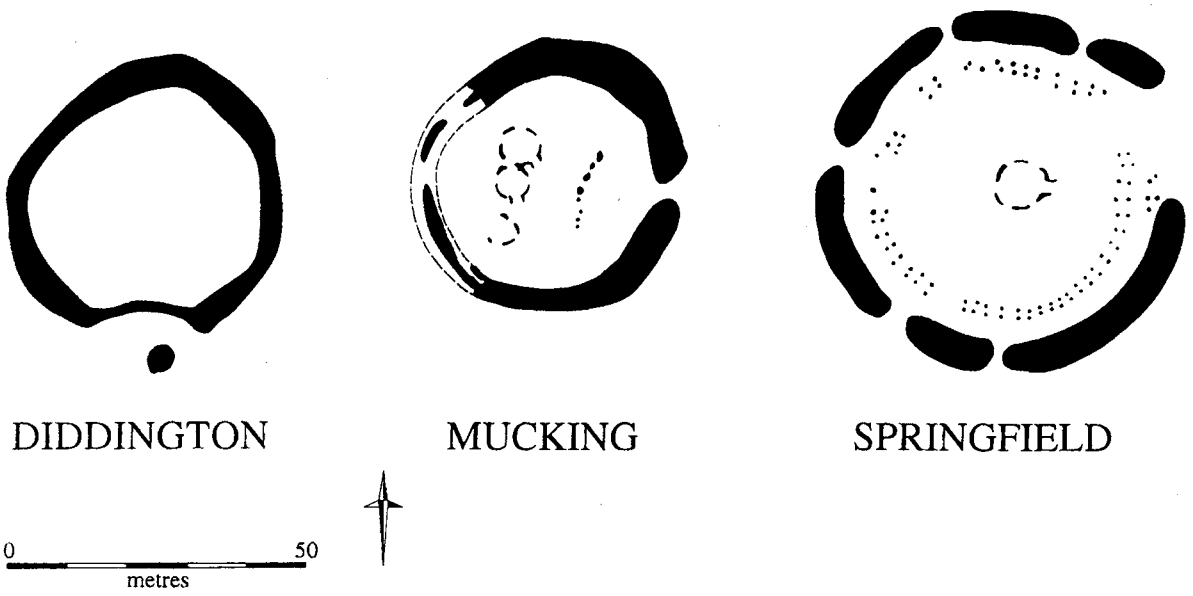

Figure 6. *Comparison with circular enclosures at Mucking and Springfield Lyons.*

Haddenham found as the primary interment a pit-pyre (0.90 to 1.05 m diameter and 0.60 m deep) cut into the northern arc of an upcast bank, which revetted the barrow mound (Fig. 7). The cremation was again that of a mature adult more than 30 years of age, this time certainly male. Burning and some cremated bone were recovered from elsewhere on top of the bank, and later a series of small urned and 'bagged' cremations had been inserted into the weathered slip of the barrow's southern flank. Similarly, 35 interments were also found within the southern sector of a double-circuit ring-ditch excavated on the western bank of the Ouse nearby at Barleycroft Farm in 1996 (fig. 7). Preceded by a more hengiform-type construction, associated with Collared Urn remains, and including an inhumation, the later cremation sequence was initiated by a ring-central pyre-burial of ovoid plan (0.40 by 0.80 m and 0.25 m deep); amongst the 'secondaries' was another pyre-pit of similar scale (0.37 by 0.50 m and 0.23 m deep). In both instances the (*in situ*) 'primary' cremated individuals were adults. The Haddenham pyre is dated to 1240 BC (HAR 6177: 1630–1310 ± 70 cal. BC with a 95% probability); results are not yet available for the central Barleycroft cremation, but will probably fall within the 1900–1500 cal. BC range. At both Haddenham and Barleycroft, pyre-interment preceded 'simple' interment of cremations carried out elsewhere.[3]

Given the absolute dating of the Diddington complex, if ring-ditch IV was a mortuary enclosure, then in all likelihood it would also have been cremation-related (an interpretation supported by the recovery of scraps of burnt bone in ring-ditch Segment 3). Probably of *ex situ* 'bag' or urned type, these would have had a maximum insertion depth of *c.* 0.20–0.40 m and would not have survived the site's drastic machine-stripping. If such was the case, then the fact that a natural hill-top was enclosed is significant, in as much as it may have substituted for a barrow; parallels are known for such 'false-mound' siting of secondary cemeteries (see e.g. Lawson *et al.* 1981: 23).

While not common, other examples of 'bitten' (to use Palmer's terminology) or deflected ring-ditches or barrows are known.[4] Their plans attest to accommodation – fitting around an earlier component – and therefore imply either intentional association with an earlier monument or forced proximity due to broader constraints upon monument siting (such as demarcation of the ritual landscape). In the case of ring-ditch IV, both factors could apply. Since it fell at the end of a ring-ditch alignment, broader landscape or extra-site restraints could have determined its relationship with the southern group of features (III). Yet there were no apparent constraints upon its layout, and it may have been a matter of intentional association – the F. 503 individual being selected as an 'ancestor' for the putative main ring-ditch cremation cemetery.

In all three of the Ouse pyres (Diddington, Haddenham and Barleycroft) the absence of substantial deposits of ash, and the occurrence of pure charcoal, large bone pieces and charred timbers, attest to slow burning in an oxygen-reduced environment. This implies sealing of

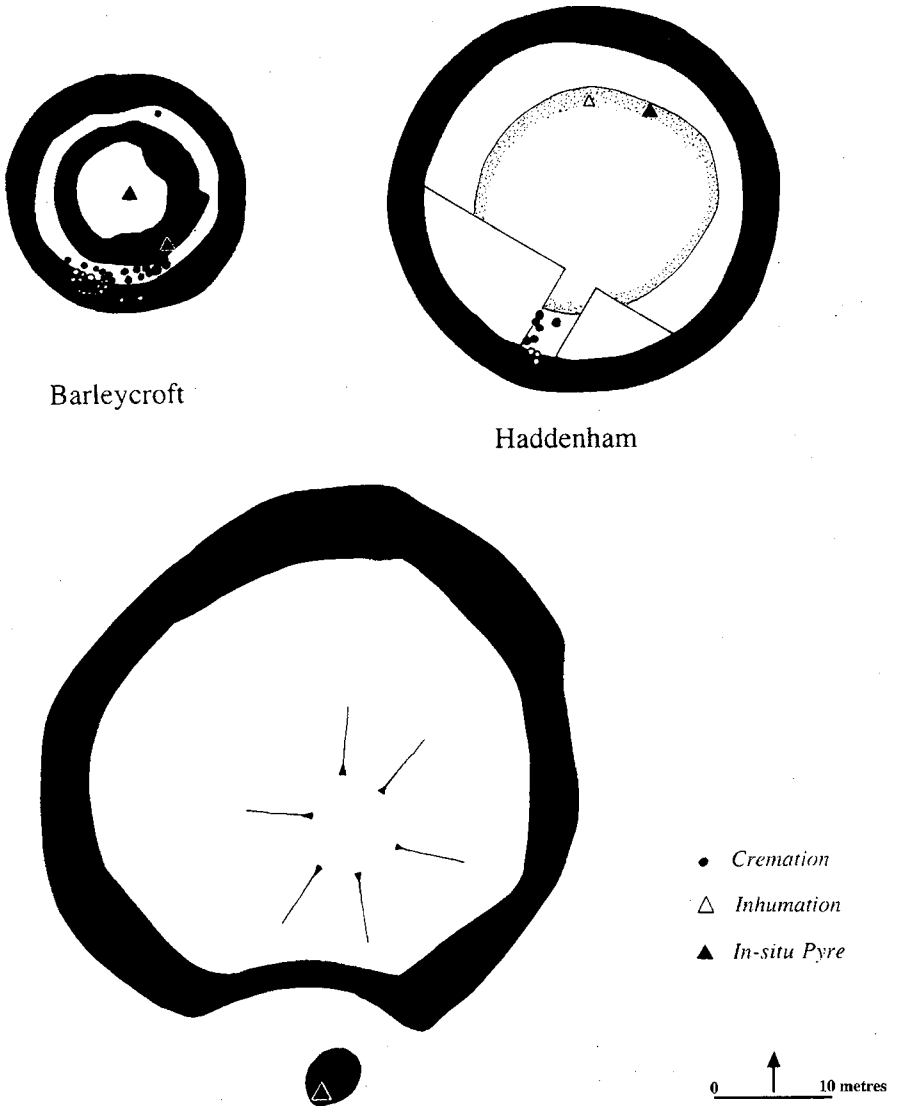

Figure 7. *Comparison with mortuary sites in the region.*

the pit, probably by stacked turves or upcast gravel. As a cremation method such closed pit-firings would have been inefficient; these procedures must be dependent on contemporary attitudes towards the body. Given the dimensions of the pits, aside from the Upper Delphs example, the corpse would somehow have had to been 'stuffed' in, either through de-fleshing, extreme crouched binding or dismemberment (cutting or excarnation after temporary interment).[5] Conditions at Barleycroft allowed for the much more careful excavation of the pyre there, and some degree of articulation was identified. Overall, the state of the bone indicates that the bodies were fleshed when burnt (see e.g. Appendix I), which leaves only two possibilities – dismemberment or binding. Although absolute confirmation will only be possible by electron-microscope scanning of the bone for cut-marks (planned for the Barleycroft 'primaries'), dismemberment seems the probable means of making the body fit the space available, since in no instance did the bone seem densely bundled and there is no evidence of pyre raking.

It is relevant to question whether the 'primary' ring-ditch/barrow pit-pyre cremation was really less efficient than the typical 'secondary' cremation interment with its minute bone fragments. In one of the other round barrows tested at Haddenham (HAD 3), a complex cremation deposit was recovered intact within a large Collared Urn and excavated in laboratory conditions. Dated to 1850–1520 cal. BC (BM-2497),

the large burnt bone fragments of an adult male had been arranged by type: cranial fragments in a scooped hollow within a pure charcoal deposit in the base of the urn, ringed by vertebrae with ribs adhering, beneath stacked long bones (Evans & Hodder 1987; Hall 1996). The charcoal bed was so pure and uniformly reduced that it may have been 'floated' and probably sieve-collected (?in baskets). The urn had been inserted upright into the flank of a low inner barrow mound or platform, on top of which the cremation had evidently occurred; the smouldering remains of the pyre were swept into the upper portion of the urn, scorching its rim. Set within it were a smaller decorated urn and bag-type jar. This, the processing of the charcoal, and the placement of the bones, tell of ritual sorting of the cremation components. More importantly, in the immediate context, the size of the bone is comparable to that in the Diddington, Haddenham and Barleycroft pyre-burials. That substantial bone was recovered in a non-pyre context could suggest that this was the standard level of body 'reduction' in most second-millennium cremations. Rather than attesting to more efficient burning *per se*, the smaller fragmentation common to secondary urned or bagged burnt interment could reflect mechanical reduction (i.e. pounding). If this were the case, it would represent another manipulation of the body, albeit already consumed by fire. Such procedures would contrast markedly with pit-pyres, in which the firing of the body was a hidden act, the closure of the pit effectively marking the end of the burial ritual. The sequence of 'simple' cremation would seem more public and open: the firing was visible and the bones were sorted from the pyre remains and then possibly pounded before burial. Yet caution must be exercised when contrasting *in situ* pyre and 'secondary' cremation rites, for in many instances the latter are associated with pyre sweepings. This is especially relevant in the case of urned interment, where insertion pits were often backfilled with pyre material. It is unlikely that such sweepings would have been carried any distance from their source, so these deposits attest indirectly to burning adjacent to the place of interment, where the pyres themselves do not survive.

The treatment of the body attested by pyre-interments must have been culturally specific. It is not a functional choice to force a corpse by whatever means into a small pit. In contrast, beneath a recently excavated Danish barrow, a cremation trench was found with cranial fragments which would have conjoined with those in the separately gathered cremation deposit. What is relevant here is that the pyre-pit was of a size to take a flexed body; no manipulation of the flesh need have occurred prior to burning (Olsen & Bech 1994). Of the many second-millennium BC pyres that have been recorded in Britain, the vast majority are not of subterranean type. Since they were on the ground surface, there would have been no necessary constraint upon the size of the pyre. In, for example, Edmondsham Barrow G2 in Dorset, the remains of a pyre (*c.* 1 by 1.50 m) – from which not all bone fragments were recovered – was found beside the sub-rectangular grave pit which received the majority of the burnt bone. As attested by a much broader ring of scorching, the pyre had evidently been scraped up into a heap; whereas the grave cut, lacking pyre ash or charcoal within its fill, must have been dug after the firing (Proudfoot 1963; Barrett 1994: 119–20). Another variation on pyre and burial setting is provided from a ring-ditch at Harston, Cambridgeshire. There the bones of an adult and younger individual apparently lay 'arranged' within a pit dug into the pyre itself, which has been dated to 1890–1625 cal. BC (Malim 1993: 31, Figs 13 and 14).

Within the sequence of Bronze Age mortuary rites, cremation seems generally a later phenomenon, following a period of predominantly inhumation burial (see e.g. Bradley 1984: 84). A final consideration arising from the Diddington complex and its pyre affinities concerns the relationship of the 'primary' pyre burials to 'secondary' *ex situ* cremations. Was the original pyre-firing an act of general consecration, preparing the ground or monument for subsequent peripheral interment, or were the inserted cremations just that, a later rite involving proximity to significant ancestors, whether real or proxy? As regards the Diddington example, one interpretation of the evidence would point to a disrupted or extended sequence. The relationship of any postulated secondary cremation cemetery within the northern ring-ditch to the Site III pyre was one of accommodation, otherwise the primary pyre should have been included within the circuit of the larger monument. Any such speculation is, of course, compromised the stripping of the site. More shallowly dug 'primaries' could have been lost within the main circle, and there is no means of establishing the interval between the closure of the pyre and the construction of the main bipartite ring. Equally, the occurrence of another pyre-pit amongst the 'secondaries' in the Barleycroft ring-ditch indicates that *in situ* cremation was not necessarily a 'one-off' primary act. This raises the possibility of subsidiary new beginnings, and of individual status or lineage re-definition determining the type

of cremation. In this regard, it is surely relevant that in all three instances of primary pyre interment the dead were mature adults.

Wider questions arise from a consideration of prehistoric cremation practices: what was the relationship of the 'transformation' of the body and soul to the general lack of accompanying grave goods (apart from pots)?[6] What might this tell us about perceptions of the afterlife? Did temporary inhumation precede cremation and, if so, did this relate to decision-making concerning which individuals warranted ring-ditch or barrow commemoration, or to the time needed to organise the necessary labour? These, however, must await fuller review and are beyond the scope of this study, whose aim has been more modest: to provide notice of the recent recovery and apparent frequency of cremation pit-pyres along the middle and lower Ouse valley.

Appendix I: Human Bone

F. Lee

Although much of the cremated bone within Feature 503 was unidentifiable, a sizeable proportion could be placed in broad bone types: long bones, flat bones, cranial fragments and vertebrae; and in some cases a more precise identification proved possible. The identification of bone from a significant proportion of the skeleton, including the lower legs, skull, upper limbs, trunk and vertebrae, would lead one to suppose that most of the skeleton was present. However, the total weight of the sample would suggest otherwise (see below). None of the body parts were duplicated, and it was considered that only a single individual was present. Some cremated bone was also found 0.50 m from the cremation pit, but, considering the poor preservation of the site and the method of discovery, it is probable that this material was originally from the cremation pit itself, and consequently does not add to the number of individuals present.

The age at death was established from the presence of fused epiphyseal plates on the identifiable long bones and phalanges of the hand, as well as the presence of fully erupted third maxillary and mandibular molars. Moreover, fragments of the cranium exhibited sutures which were totally obliterated endocranially, but were still visible on the external surface, suggesting the individual was an adult aged over 30 years.

Attribution of sex proved impossible as the diagnostic parts used in sexing skeletal remains were either absent or too fragmentary for an estimation. Nor were any observations on the presence of abnormalities or pathological lesions possible, with the exception of a single wormian bone, most probably from the lamboid suture. Wormian bones are extra (sutural) bones of the skull, centres of ossification that have been suggested to represent inherited dominant traits (Torgersen 1954; Brothwell 1981: 95).

The overall weight of the cremation collected was 0.7564 kg. Binford (1972: 385) estimates that 1.75 kg is the average weight of a single cremation, whilst Krogman (1962: 232) records the average weight of a dry fat-free skeleton as between 2 and 4 kg. This suggests that the cremation was incomplete. The most probable reason for this is that some of the cremated bone from the top of the feature was removed during machining. The archaeological evidence suggests that the body was cremated *in situ*, which eliminates the possibility of loss between the places of burning and burial. It is also unlikely that loss occurred during excavation, as the entire contents of the pit were lifted and later floated and sieved. The identification of bones from the skeleton (Fig. 4) shows that a substantial proportion of the whole was represented, albeit in a fragmentary state.

The efficiency, or otherwise, of the cremation can be discerned from the colour and degree of fragmentation of the bone assemblage. When burnt, bone follows a progressive colour change with white representing the most calcined bones, burnt at the highest temperatures; while blackening of the bone reflects charring at lower temperatures. The colour of the cremated bone fragments from Diddington ranged from cream to light grey through to black, with the mid–dark grey and blacks predominating. Whilst the material from Diddington was certainly subjected to heat, it is unlikely that this heat was intense. This is supported by the evidence from the dentition; the enamel covering the teeth shatters at relatively low temperatures. Where the teeth were identified, there is no enamel present, but the overall shape and structure is unaffected, again suggesting low temperatures. The evidence therefore suggests that the heat of the cremation fire was at the lower end of the range described by Baby (1954) and Ubelaker (1974).

The colour of the bone fragments may also provide information on the method of burning. Parker (1985: 18) suggests that the colour of calcined bone may not simply be determined by temperature, but that the amount of oxygen supplied to the fire is a crucial factor. Where there is free circulation of air, such as in a pyre,

the bone would be expected to have a uniform colour. At Diddington, where the colour ranged from white to black, the evidence suggests that there was a lack of free air circulation, resulting in both lower temperature and higher temperature colours occurring together. This suggests a simple pit-cremation, supporting the archaeological evidence. The second point of interest is that the colour of the bone may reflect whether cremation took place when the body was fleshed or defleshed. Where there was variation in colour, most notable at Diddington on the thicker cortical bone (for example the long bones), there was a progression from grey–white on the exterior to a band of grey and a layer of black on the inner surface. These, Parker (1985: 16, 19) suggests, occur in fleshed cremations, where the combined colours always have an ordered appearance, with high temperature colour on the outside, progressing inward to lower temperature colours.

On cremation, bone not only splits, but cracks and warps. The greater the heat, the greater the degree of fragmentation, distortion and splitting. Fifty-eight per cent of the sample was over 10 mm in size (26% of the total number of fragments), with a maximum range up to 86 mm in length. To some extent, the degree of fragmentation depends on the size of the unburnt bones. Indeed the larger pieces tend to be fragments of long bones of the lower limb, whilst the smaller fragments are from the ribs, vertebrae and flat bones. The type of fracture varies between fleshed and defleshed cremations. Curved transverse lines, irregular splitting, and warping and splintering are all indicative of fleshed cremations (Baby 1954); but there is no warping in defleshed skeletons. Again, this relationship may not be quite so simple and it is probable that the types of cracking also reflect the inherent properties and morphological structure of the bone. For example, long bones or round bones have predominantly longitudinal splits and curved cross hatches, while flat bones such as the pelvis and cranium have more random cracks.

Certain types of bone were not identified. They may well have fallen into the unidentifiable category, but another possibility is that they did not survive burning or were not retrieved. However, the latter suggestion is unlikely as the cremation appears to have occurred *in situ*.

Acknowledgements

Thanks are long overdue to those members of the Department of Archaeology, University of Cambridge, and the Cambridgeshire Field Club who spent many cold Sundays on this windswept site, and I am especially grateful to Robin Boast, John Ette and Dave Saxby for their labours; Fiona Wilmot, supervisor of the County Council's Diddington team, is to be acknowledged for her co-operation throughout.

Illustrations in this report are the work of Crane Begg (Figure 2 modified after R. Palmer). I am grateful for the participation of the contributing specialists, in addition to those formally credited, Roy Switsur (Godwin Laboratory), Steve Boreham and Sylvia Pegler (pollen), and Mark Edmonds (lithics); Stuart Needham kindly organised the British Museum radiocarbon dates, with Janet Ambers providing specialist comment.

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Endnotes

[1] To judge by the results from the Diddington quarry, Field's 1974 analysis of ring-ditches (based essentially on aerial photographic evidence) included a number of building eaves gullies within this category (e.g. Sites V and VII). This and recent discoveries elsewhere (see e.g. Evans and Knight, forthcoming), call for reappraisal of his distributions.

[2] *CUCAP photographs examined*:

JC 52-53, 56-61	29-06-52	BBY 59-62	16-06-70
VR 15-17	13-07-57	BCS 76-79	30-06-70
WH 4-8, 15-16, 20-22	03-06-58	BGD 13-17, 19-24	12-07-71
XK 86-91	19-07-58	BIP 49-51	09-06-72
XL 38-40	23-07-58	BIX 31-35	22-06-72
YW 61	23-06-59	BJF 83-86	05-07-72
ZA 73-74	26-06-59	BJM 81	11-07-72
V-D 13-17	15-06-60	K17-AA 89-90	11-07-72
V-E 7-8	15-06-60	BNK 82	18-06-73
AFW 95-97	07-07-62	BXX 38-42	22-06-76
BBX 101	15-06-70	BXZ 65-67	24-06-76

[3] Leeds reported the recovery of a pyre within his Tumulus 'C' at Eyebury, near Peterborough (1914–15: 121–5). Within a red-scorched spread was found a 'cremation hole' three feet in diameter and the same depth. Charred timbers lay within it, as well as reduced charcoal and the burnt leg bones and other smaller pieces of an individual; the pelvis, half-covered by the burnt layer, lay on the ground surface immediately beside the pit.

'It seems clear that the process of cremation had been effected by constructing a wigwam of timber, probably not unlike a charcoal-burner's pile, covered by earth or turfs, over the body, which was placed in a squatting position on a heap of wood or brushwood, a flue being left at one side to carry the draught. This construction had eventually

collapsed, carrying down with it the major part of the remains on to the fire-heap below, which completed the work of destruction.' (1914–15: 123, Fig. 4)

No grave goods were recovered from either the interment or barrow. Full re-appraisal is impossible given the recording; whilst Leeds's 'hole' may have been comparable to the Ouse valley pit-pyres (it could not have functioned as a flue), closed firing would not explain the much larger area of scorching and the bone found beyond the pit's limits.

[4] In reference to Amesbury Barrow G72, Ashbee calls such plan configurations 'confluent' (1960: 27, Fig. 4). For other examples of similarly compounded ring-ditches see those within Group 3 at Stanton Harcourt (Case and Whittle 1982: Fig. 63).

[5] At the later Bronze Age double-ring 'saucer-type' barrow (B) at Chippenham, apart from an inhumation and five 'secondary' cremations, Leaf recovered a central cremation with a Collared Urn inverted over burnt bone. Athough no scorching is mentioned, he reported this as an *in situ* pyre surrounded by a spread of charcoal and ash on the ground surface. A large pit nearby was thought to have provided earth for a small upcast mound over the pyre (1936: 142–44, Fig. 6). A similar feature was found adjacent to a secondary cremation (II). While speculating that this could have been the quarry for another minor mound, the excavator also questioned whether this pit and that adjacent to the central cremation were actually temporary graves for individuals awaiting cremation (1936: 145–6). Discussing the results of his Snailwell excavations, Lethbridge raised the possibility of smoke-mummified corpses awaiting barrow construction (1950: 31, 36) However, given his recourse to extreme models of long-distance migration, and over-reliance on direct, if diverse, ethnographic parallels, Lethbridge's 'dramatic' interpretations ('pastoral-mania') can no longer be considered valid (see Evans 1987).

[6] Lethbridge reported bone pins, 'tubes', an awl and perforated antler piece, and three flint knives within a grave pit with a Collared Urn inverted over a cremation (II) in Snailwell Barrow A (1950). The cremation lay centrally within the barrow, having apparently occurred on site, and was presumed to have been 'primary'. (Note that, in his Fig. 2, Lethbridge's numbering of the cremations seems erroneous.)

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Theses: Mark Campbell, 'The changing residential patterns in Toronto, 1880–1910' (unpubl. M.A. thesis, University of Toronto 1971).
Articles: K.R. Dark, 'Archaeological survey at Sidney Sussex College, Cambridge, 1984', *Proceedings of the Cambridge Antiquarian Society* 74 (1985) pp.81–4.
Chapters in books: John Patten, 'Changing occupational structures in the East Anglian countryside, 1500–1700', in H.S.A. Fox & R.A. Butlin (ed.), *Change in the Countryside: Essays on Rural England, 1500–1900* (London 1979) pp.103–21.

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