Excavation of a Bronze Age Barrow at the proposed Centre for Gene Function, South Parks Road, Oxford, 2002

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SUMMARY

Recent excavation undertaken by Oxford Archaeology in advance of the construction of the Centre for Gene Function, University Parks Science Area, University of Oxford, revealed part of a late Neolithic/early Bronze Age ring ditch enclosing the crouched inhumations of a child and three adult females. This example is the latest addition to the group of barrows known to have clustered along the gravel terraces beneath the modern city of Oxford, and on the adjacent floodplains of the Thames and the Cherwell rivers. Radiocarbon dating of the four skeletons indicates that the barrow was used as a place of burial over several centuries. The earliest and richest burial of an adult female (2460-2040 cal. BC) is unusual in having suffered a blow to the back of the head, probably from a bronze axe. This injury is one of the few documented examples of violence in the late Neolithic/early Bronze Age period in Britain.

Oxford Archaeology carried out an excavation in advance of the construction of a new university building with basement, the Centre for Gene Function, from January to April 2002. Approximately one half of a ring ditch and four associated burials of late Neolithic/early Bronze Age date were revealed. Two of the burials were accompanied by grave goods. Several possible pits and gullies were investigated outside the barrow, although these could not be firmly dated.

Archaeological work was undertaken in three phases. Phase 1 comprised the monitoring of service diversions. Phase 2, conducted during January 2002, involved the monitoring of the guide trenches (to a depth of approximately 1 m.) for installation of the piling walls. It was during this phase that the first grave (113) was revealed (see Fig. 3). In April 2002, Phase 3 consisted of the removal of soil to expose the upper surface of the natural gravel. Once deposits had been excavated to this level (approximately 1 m. below the present ground surface), the density and complexity of the archaeology was assessed, and all features were excavated and recorded.

LOCATION AND GEOLOGY

The site is located at NGR SP 51562 07068 between the River Cherwell and the River Thames (Fig. 1) and occupies an area of *c.*790 m^2. The local geology consists of second terrace river gravels over Oxford Clay. The site is almost level (between 50.02 m. OD to 49.94 m. OD). Land use on the site prior to building construction comprised a slightly overgrown area to the west with disused prefabricated huts to the south. The northern area was occupied by greenhouses.

The site lies at the northern extent of the University Parks Science Area, bounded to the north by the Genetic Garden and University Parks, to the south by South Parks Road and to

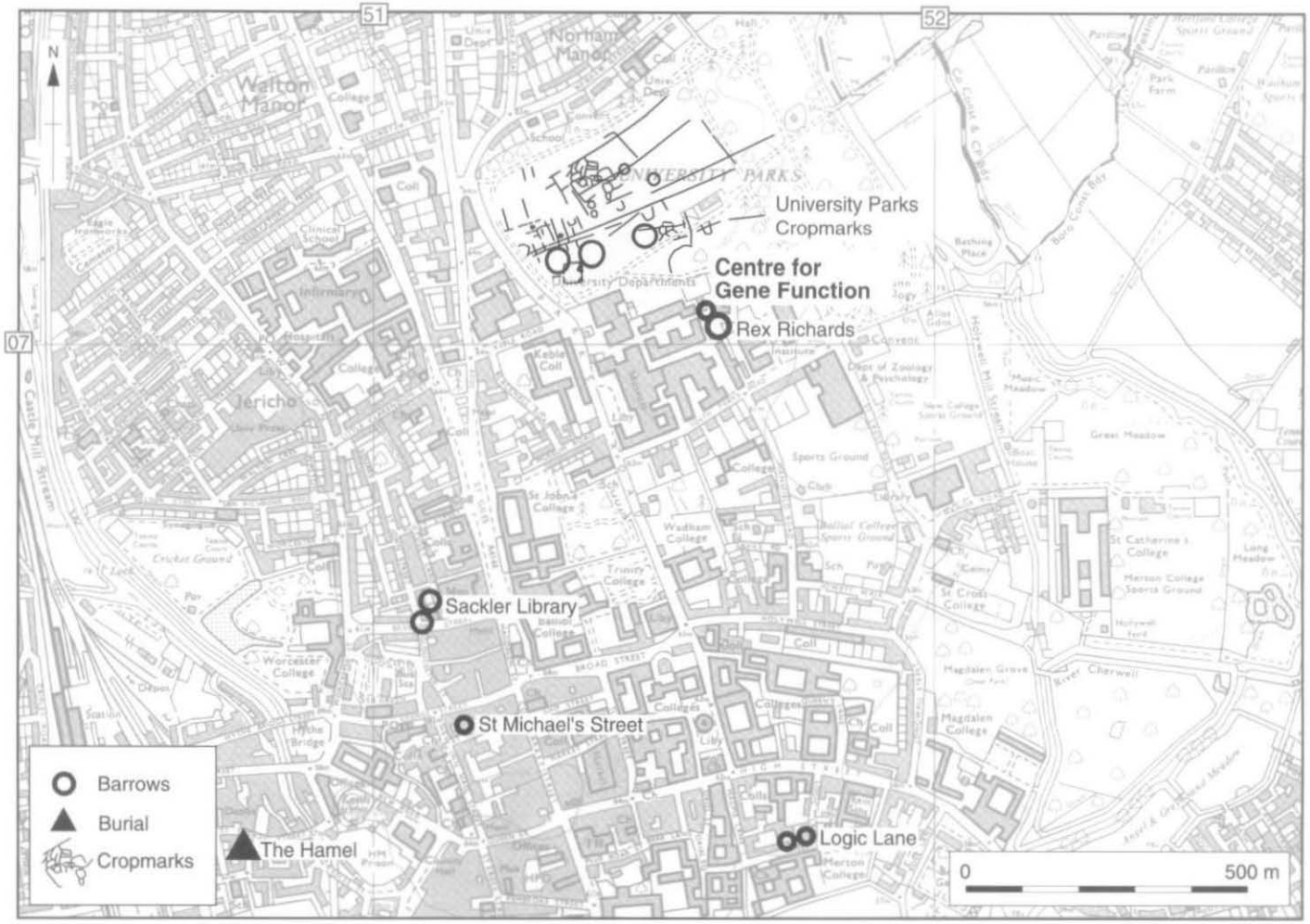

Fig. 1. General location of the Gene Function barrow and other known barrow sites mentioned in the text. Cropmarks taken from RCHME survey (copyright English Heritage).

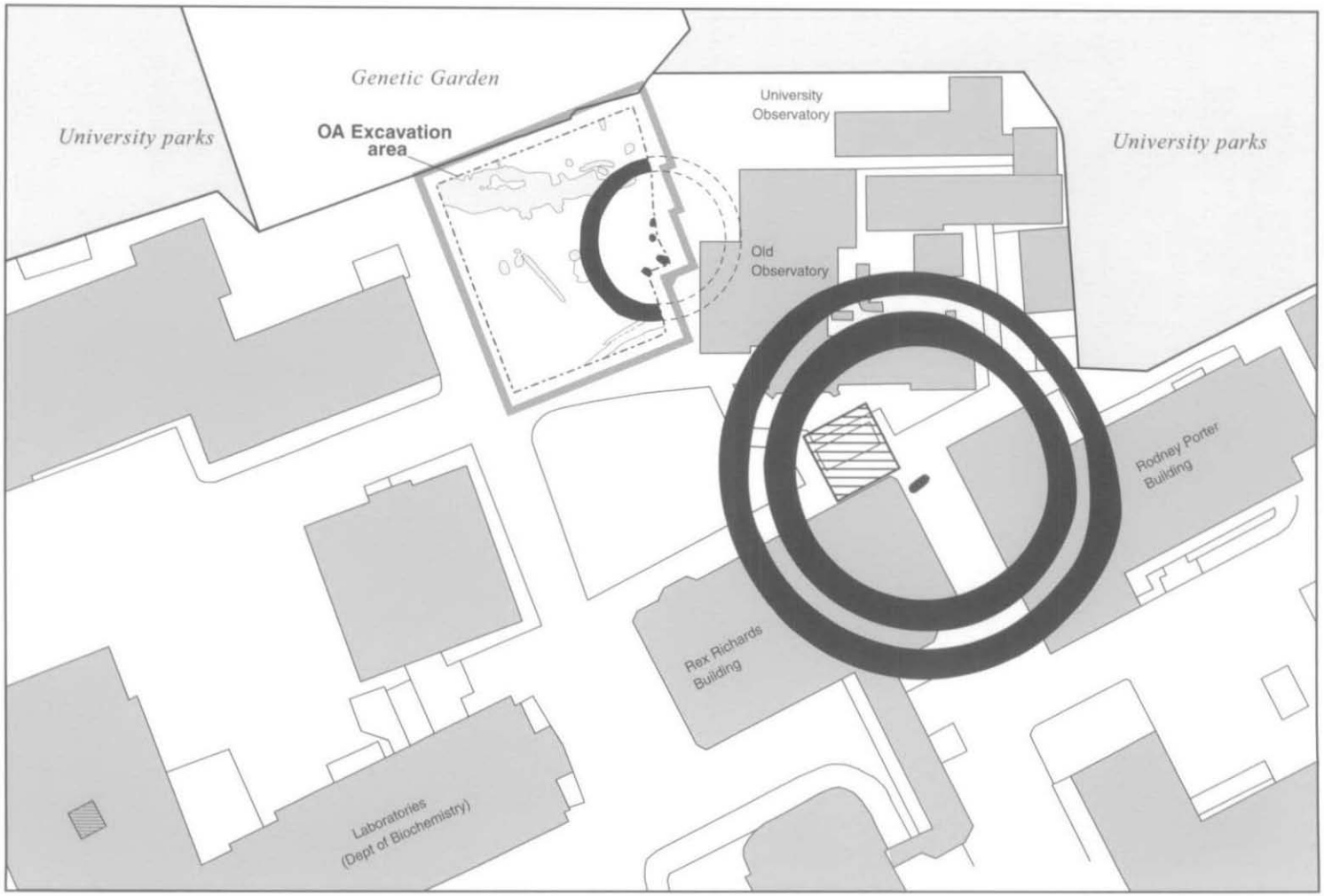

Fig. 2. Location of the Centre for Gene Function excavation and Rex Richards watching brief areas.

the west by Parks Road (Fig. 1). The area is flanked by the Electrical Laboratory, the Department of Biochemistry, the Old Observatory and the Rex Richards Building (Fig. 2).

The excavation is immediately NW. of the site of a previously excavated Bronze Age barrow at Rex Richards (Fig. 2).[1] This barrow was much larger, double-ditched and had a central cremation deposit. A further watching brief, undertaken after the Centre for Gene Function excavation, on the site of an extension to the Rex Richards building, coinciding with part of the barrow interior, only observed late 20th-century service runs. Just to the north of the excavation is the extensive cropmark site within the University Parks (Fig. 1) that appears to include at least five barrows and an Iron Age and Roman settlement complex.

THE EXCAVATIONS

The barrow ditch

Approximately one half of a ring ditch (211) was revealed in the eastern half of the excavation area (Fig. 2); the remainder extended beyond the eastern limit of excavation. It is almost certain that the ditch belongs to a round barrow. No evidence for extant earthworks survived, as ploughsoil was found directly above the natural gravel within the interior of the ring ditch.

The ring ditch had an estimated internal diameter of 14.7 m., and an external diameter of 18.8 m. Three sections (Fig. 3), each measuring 1 m. in width, were excavated through the ditch. A fourth box section was excavated at a point where the ditch was found to cut a periglacial feature (Fig. 3). The ditch was cut to a depth of 0.72-0.9 m. into the natural gravel (Fig. 4). In sections 111 (north) and 122 (south) it was found to have a V-shaped profile, while in section 123 it had a U-shaped profile. The maximum width of the ditch varied between 1.8-2.7 m. In general, the ditch was most narrow and shallow to the north, becoming broader and deeper toward the south. To the south, the ring ditch cut tree-throw hole 188 (seen in section 122, Fig. 4), and in turn was cut by a modern service trench and two E.-W. ditches or gullies (174, 195 - seen in section and Fig. 4) of uncertain date.

The ditch appears to have silted up naturally (Fig. 4). The primary fill (129, 153, 144, 165, 185, 202) consisted of small to medium sized gravel inclusions within a loose yellow sand matrix, and appears to have derived from initial erosion of the ditch sides, soon after it had been dug. In three of the excavated sections, a similar yellow-brown sandy fill (130, 154, 166), including a very high proportion of gravel, overlaid this fill and probably had a similar provenance. These primary fills were succeeded by six further fills of silt, sand and gravel. They alternated between yellow-grey sandy gravel rich fills, presumably originating from the sides of the feature or possibly from adjacent mound or bank material, and medium to dark brown deposits containing larger silt, clay and organic components. The latter deposits probably derived from the gradual in-washing of smaller particles from surrounding topsoil and subsoils. The secondary fill (155, 145, 184, 201) was a thin band of mid to dark brown silty sand containing occasional gravel inclusions. This was overlain by loose, light yellow-brown sand with a much higher gravel and pea-grit component (131, 167, 183, 200). In two sections (Fig. 4:111 and 123), this fill was succeeded by a yellow-orange sand and gravel fill (132, 168). A fairly compact orange-brown sandy loam containing occasional gravel inclusions (133, 148, 169, 182) overlay this fill. The uppermost two ditch fills both contained far higher organic and silt components than the earlier fills. The lower of the two (135, 156, 149, 170, 180, 199) was a mixed mid to dark brown soil with a moderate amount of gravel inclusions. The uppermost ditch fill (136, 157, 150, 171, 179, 198) was a thick, dark brown humic deposit containing little gravel. An immature pig scapula and a rib fragment, both with carnivore gnaw marks, were found in this fill. This uppermost fill appears to have derived from the levelling of the barrow mound by ploughing. The gravel streak observed in fill 171 may have been left by the action of a ploughshare.

Although no positive features are extant, it may be possible to deduce the morphology of the original barrow from the fill of the ring ditch. In this case, there was no clear evidence for slumpage of material from positive features (such as banks or a mound). However, slightly more material had eroded from the exterior of the ditch, tentatively suggesting the existence of an outer bank. The lack of evidence for an internal mound could suggest that it never existed; that the mound material stabilised very early; or that it was located some distance from the encircling ditch. The above evidence suggests that, morphologically, this barrow may be

[1] A. Parkinson, A. Barclay and P. McKeague, 'The Excavation of two Bronze Age Barrows, Oxford', *Oxoniensia*, lxvii (1997), 41-64.

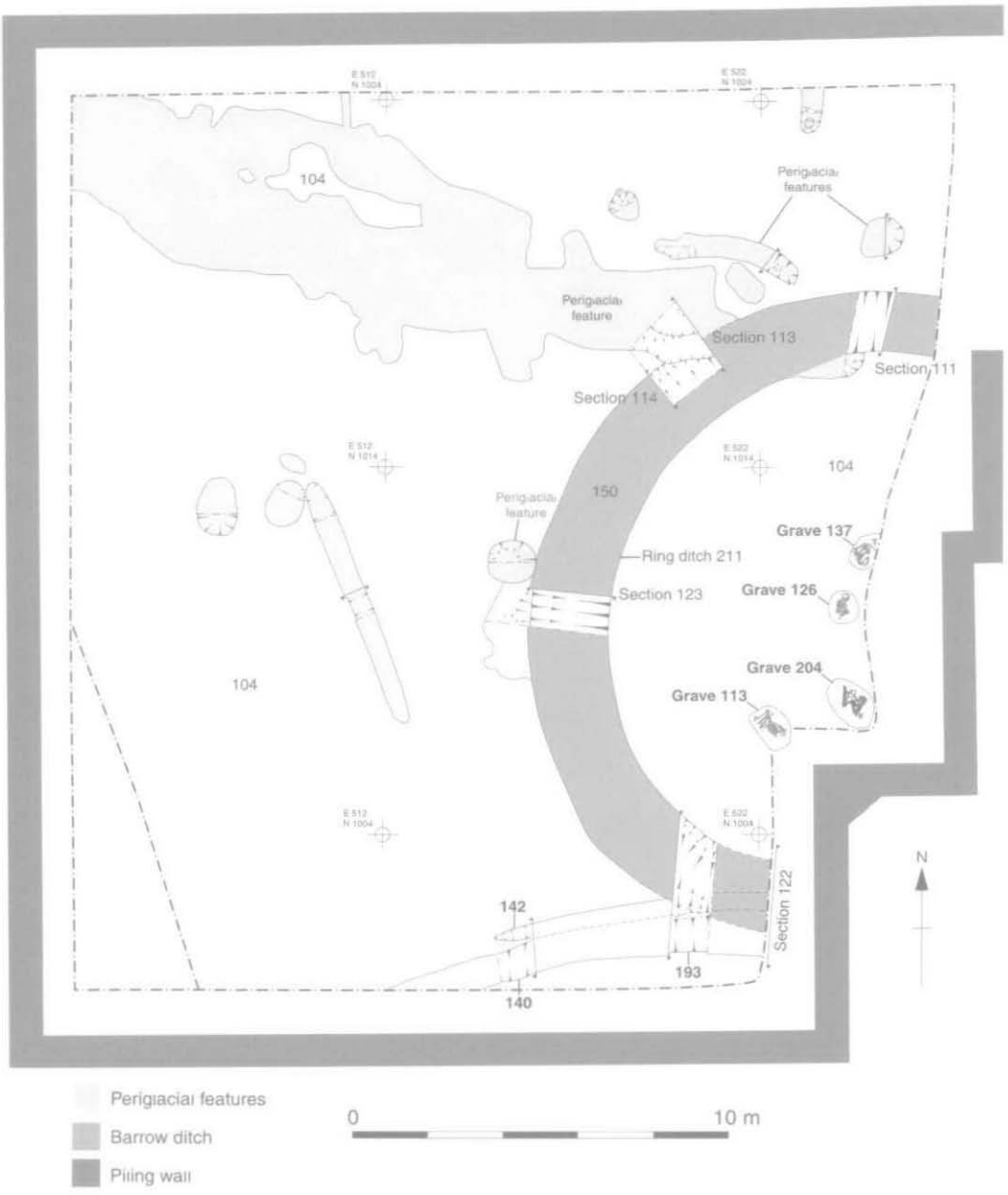

Fig. 3. Gene Function barrow: detailed plan of the excavation and watching brief trenches.

tentatively classified as a disc or pond barrow, consisting either of a ring ditch associated with a low outer bank, and a small centrally located mound (in the case of a disc barrow), or lacking a central mound altogether (as in the case of a pond barrow).

The absence of artefacts makes it impossible to date either the construction or the duration of sedimentation of the ditch. It also makes it impossible to clearly determine the temporal relationship between ditch construction and the burials enclosed within the interior.

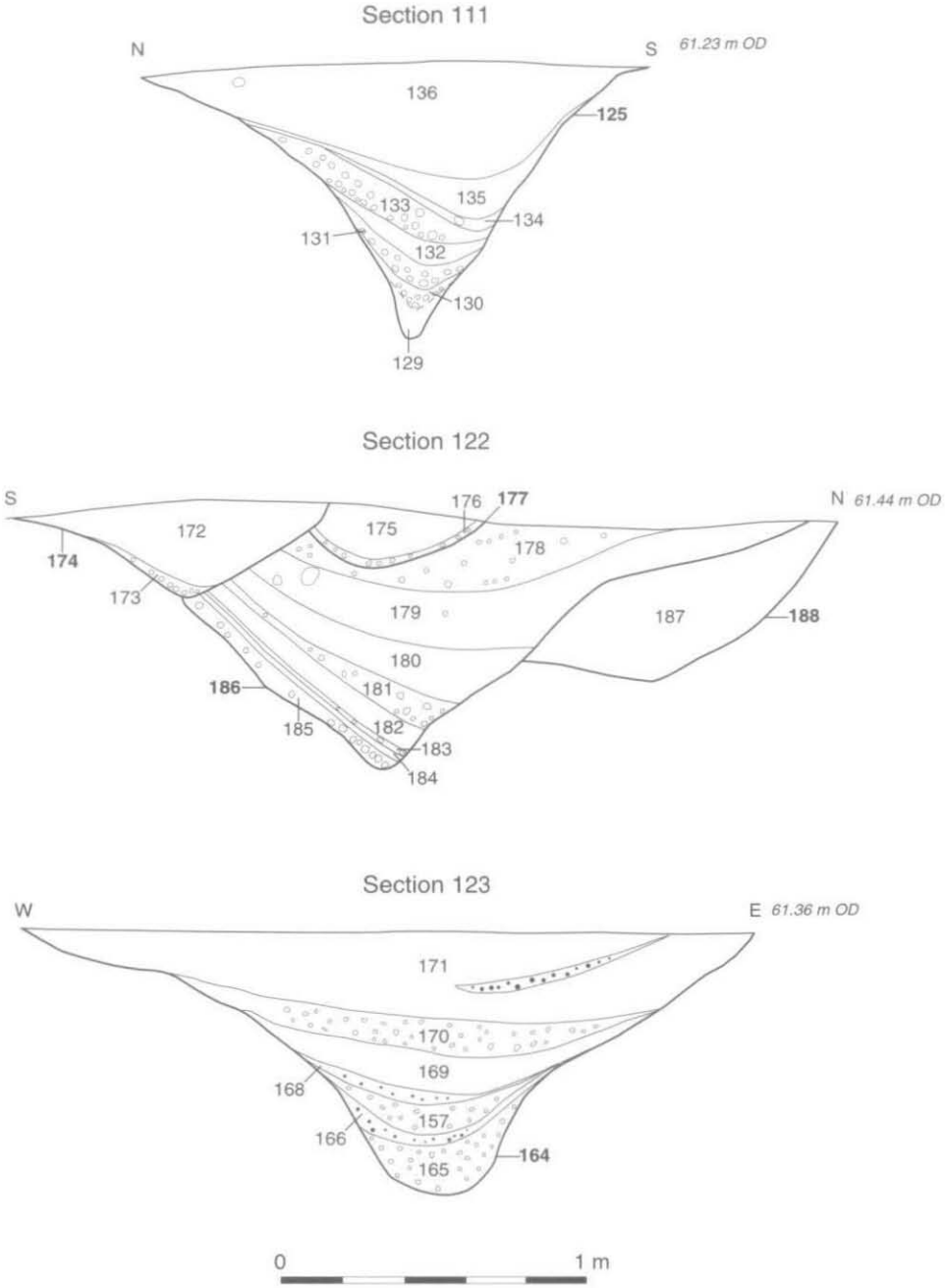

Fig. 4. Sections through the barrow ditch.

The burials

Four graves were located toward the centre of the monument (Fig. 3). All were cut into the natural gravel. They were all completely excavated by hand. Grave cuts were characterised and the position of the skeletons and grave goods recorded. A single environmental sample was taken from each of the grave fills in an attempt to recover charred or mineralised plant remains. Samples from the abdominal region of the skeletons were taken. The Beaker vessel (207) associated with skeleton 206 was extremely fragmented and was lifted in a soil block, which was later excavated in the laboratory.

'Flat' grave 204

Grave 204 was the largest and richest of the four graves (Fig. 5). It was also the earliest of the four, and was radiocarbon dated to 2460-2040 cal. BC (NZA-16624; 95% confidence interval) (Table 1 and Fig. 8).

The grave was oval in shape, measuring 1.5 m. in length, 1.11 m. in width and 0.30 m. in depth with vertical sides and a flat base. The grave fill (203) was a firm, light brown-red silty sand with 40% gravel inclusions and a small quantity of charcoal.

The body of an adult female (skeleton 206) had originally been laid out centrally within the grave. The skeleton was orientated SE.-NW. in a crouched position, lying on the left side, facing SW., with the legs tightly flexed and the upper back arched forward. Both arms were flexed at the elbow, with the right hand in front of the face, and the left hand by the knees.

The size of this grave allowed for considerably more space around the skeleton which would have created a greater opportunity for the visual display of the deceased and her grave goods to mourners at the grave side, and probably constituted an important stage in the funerary ritual preceding interment.[2] It is likely that the original grave assemblage probably included articles of perishable materials, such as wood, textiles, leather and grasses. Surviving grave goods included a very fragmented but complete 'late' style Beaker (Fig. 5), which was placed upright behind the shoulders. A group of eight worked flints perhaps originally in a bag or container had been placed at the back of the head. The flints, all of which showed signs of use, are interpreted as a general purpose toolkit comprising cutting, scraping, boring and whittling implements (see Lamdin-Whymark below).

Given the early date for this grave and its non-central position within the barrow interior, it is possible that this was a flat grave covered by a low, ditchless mound, which pre-dated the construction of the barrow. Alternatively, given that the precise centre of the barrow was beyond the eastern limits of the excavation, it could have been the earliest of a group of secondary burials.

TABLE 1. RADIOCARBON RESULTS AND CALIBRATED DATE RANGES

Laboratory number	*Grave number*	*Skeleton number*	*Sample description*	*Radiocarbon age*	$\delta^{13}C$ $^{0}/_{100}$	*Calibrated date range*	
						95%	*68%*
NZA-16621	113	SK 115	right femur	3561 ± 55 BP	-20.8	2120-1750 BC	2030-1780 BC
NZA-16622	126	SK 128	right and left femora and tibia	3555 ± 55 BP	-21	2110-1740 BC	2030-1780 BC
NZA-16623	137	SK 139	right humerus and radius	3623 ± 60 BP	-21	2200-1820 BC	2130-1920 BC
NZA-16624	204	SK 206	left femur and tibia	3792 ± 60 BP	-21	2460-2040 BC	2340-2140 BC

[2] J. Thomas, 'Reading the Body: Beaker Funerary Practice in Britain', in P. Garwood, D. Jennings, R. Skeates and J. Toms (eds.), *Sacred and Profane: Proceedings of a Conference on Archaeology, Ritual and Religion. Oxford, 1989* (Oxf. Univ. Committee for Archaeol. Monograph 32, 1991), 33-42.

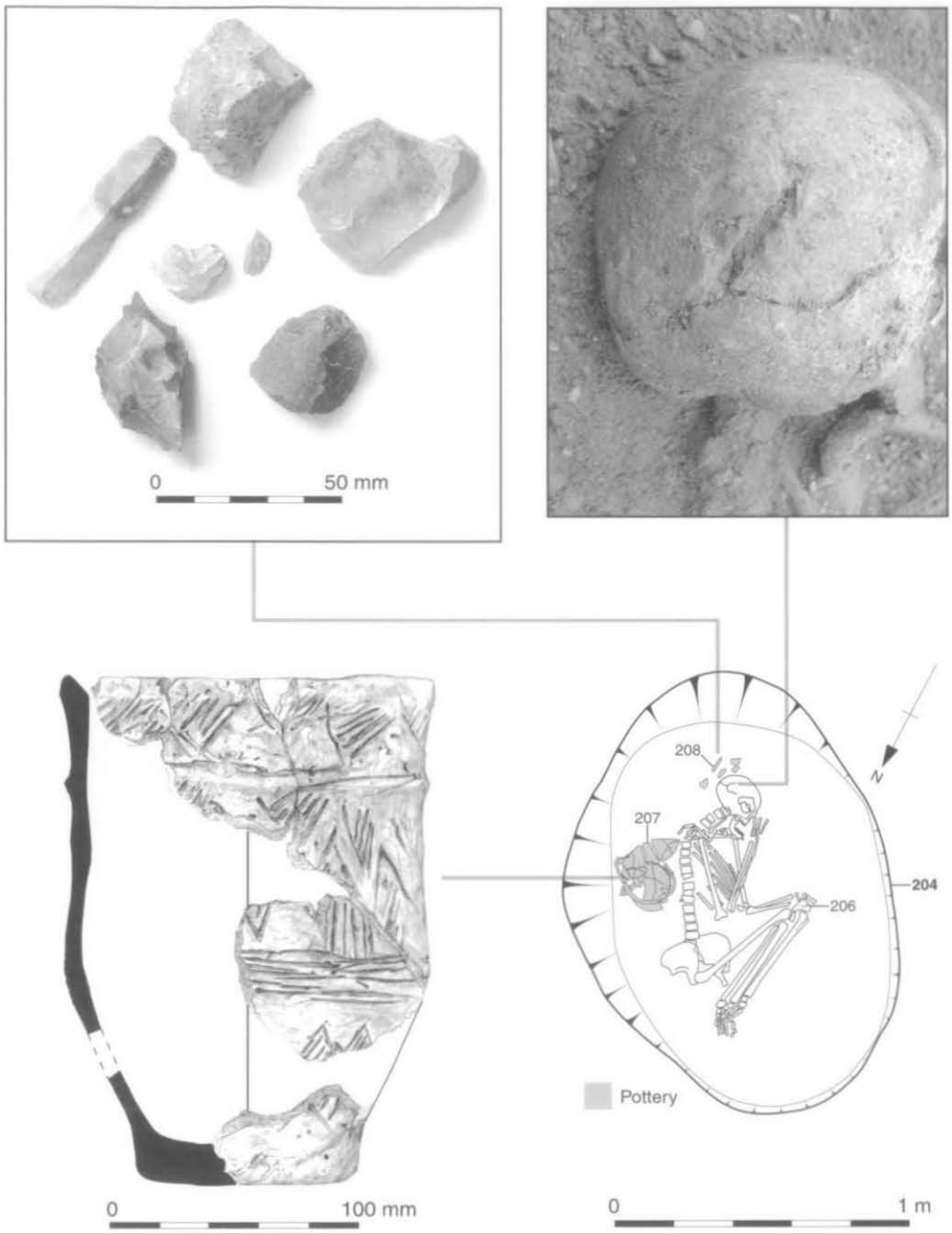

Fig. 5. Grave 204: plan of grave, lesion on skull of skeleton 206; Beaker vessel; flint toolkit: clockwise from the top are a broken denticulated flake, a utilised hinged flake, a burnt and broken flake, a spurred piece on a small flake core and a fine utilised blade. The two flints in the centre of the image are flakes.

Grave 126

This burial was the most centrally positioned of the four graves (Fig. 3). It was oval in shape, with the long axis orientated N.-S., measuring 0.94 m. in length, 0.81 m. in width and 0.17 m. in depth with a flat base and near-vertical sides (Fig. 6). The grave fill (127) was a firm, mid red-brown silty sand with 40% gravel and small charcoal flecks (1%). Two worked flints (Fig. 7) were found in the grave fill (127), one a possible broken chisel arrowhead, of late Neolithic to early Bronze Age date. Although neither appeared to be positioned at the base of the grave, or immediately adjacent to the skeleton, they were interpreted as deliberately placed (see The Worked Flint below).

The body of a child (skeleton 128) had been positioned centrally within the grave and orientated N.-S. It had been placed on its left side, facing ESE. The legs were tightly flexed, and the right arm was flexed at the elbow and placed over the abdomen. The left arm was extended with the hand resting on the right femur. A radiocarbon date of 2110-1740 cal. BC (NZA-16622; 95% confidence) was obtained on a sample from this skeleton (Table 1 and Fig. 8).

Grave 137

This grave was the most northerly (Fig. 3) and the shallowest of the four. It was ovoid in shape (Fig. 6) and had a maximum length of 0.9 m., width of 0.55 m. and depth of 0.1 m. The grave was heavily truncated by ploughing. Fill 138 was a firm, light brown-red silty sand with 40% gravel inclusions and a small proportion of charcoal (1%). The body of an adult female (skeleton 139) was fitted tightly into the grave cut. The skull, cervical vertebrae, left shoulder and humerus, major long bones of the right leg, and much of the left leg were missing due to plough damage. Surviving skeletal elements had numerous post-mortem breaks. Nevertheless, sufficient bone remained for body position and orientation to be determined. The skeleton was orientated SW. to NE., on the right side, with the hand touching the right shoulder. A radiocarbon date of 2200-1820 cal. BC (NZA-16623; 95% confidence) was obtained from a sample of bone from this skeleton (Table 1 and Fig. 8).

Grave 113

This is the most southerly and peripheral of the four graves (Fig. 3). The grave cut (113) was D-shaped, with the straight side to the SW., and the other sides curving gently (Fig. 6). The sides were vertical, and the base was flat. It measured 1.33 m. in length, 0.90 m. in width and 0.50 m. in depth. The grave fill was a light red-brown silty sand, with 40% gravel inclusions and a small proportion (1%) of charcoal. Skeleton 115 was tightly contracted within the grave. The individual was orientated SE. to NW. on the right side, facing NE. The individual's legs were tightly flexed, and the arms were bent loosely at the elbows, so that the right hand rested on the right tibia, and the left hand lay across the abdomen. A radiocarbon date of 2120-1750 cal. BC (NZA-16621; 95% confidence) was obtained on a sample of bone from the skeleton (Table 1 and Fig. 8).

Other features

Several possible pits and gullies outside the barrow were investigated (Fig. 3). Numerous pit-like features proved to be of natural periglacial origin or areas of tree root disturbance. Three ditches were identified. Two E.-W. orientated ditches (174, 193) and (177, 195) cut the ring ditch to the south, as did the modern service trench (142, 197) (Fig. 3). Curvilinear ditch 174/193 was the most southerly of the ditches. It was visible for 10 m. within the excavated area and extended beyond the southern and eastern limits of the excavation trench. The ditch was 0.9 m. wide and 0.3 m. deep with a V-shaped profile and moderately steep sides. The ditch contained two deposits: the primary deposit (173, 192) in the base of the feature consisting of loose dark grey-brown sand containing a high proportion of pea grit and gravel (70%); this was overlain by a secondary deposit of firm orange-brown sand containing very occasional stones and tree roots (172, 191).

Gully 195/142 was orientated roughly parallel and immediately to the north of the above ditch. The gully was very shallow (0.08 - 0.16 m. deep), and had been heavily truncated by ploughing. It extended beyond the eastern limit of the excavation area, and to the west appeared to terminate 7 m. from the western baulk. The sole fill (194, 141) of the gully was a friable red-brown sandy loam containing pea grit (25%).

Due to the absence of artefacts, these ditches could not be precisely dated. They post-dated the ring ditch, and may have formed components of the extensive rectangular field systems long recognised from cropmarks in the University Parks immediately to the north that are thought to be late prehistoric or Roman in date. Ditches and a pit of Iron Age date were recorded on the adjacent site of the Rex Richards Building.[3]

[3] Parkinson et al., op. cit. note 1.

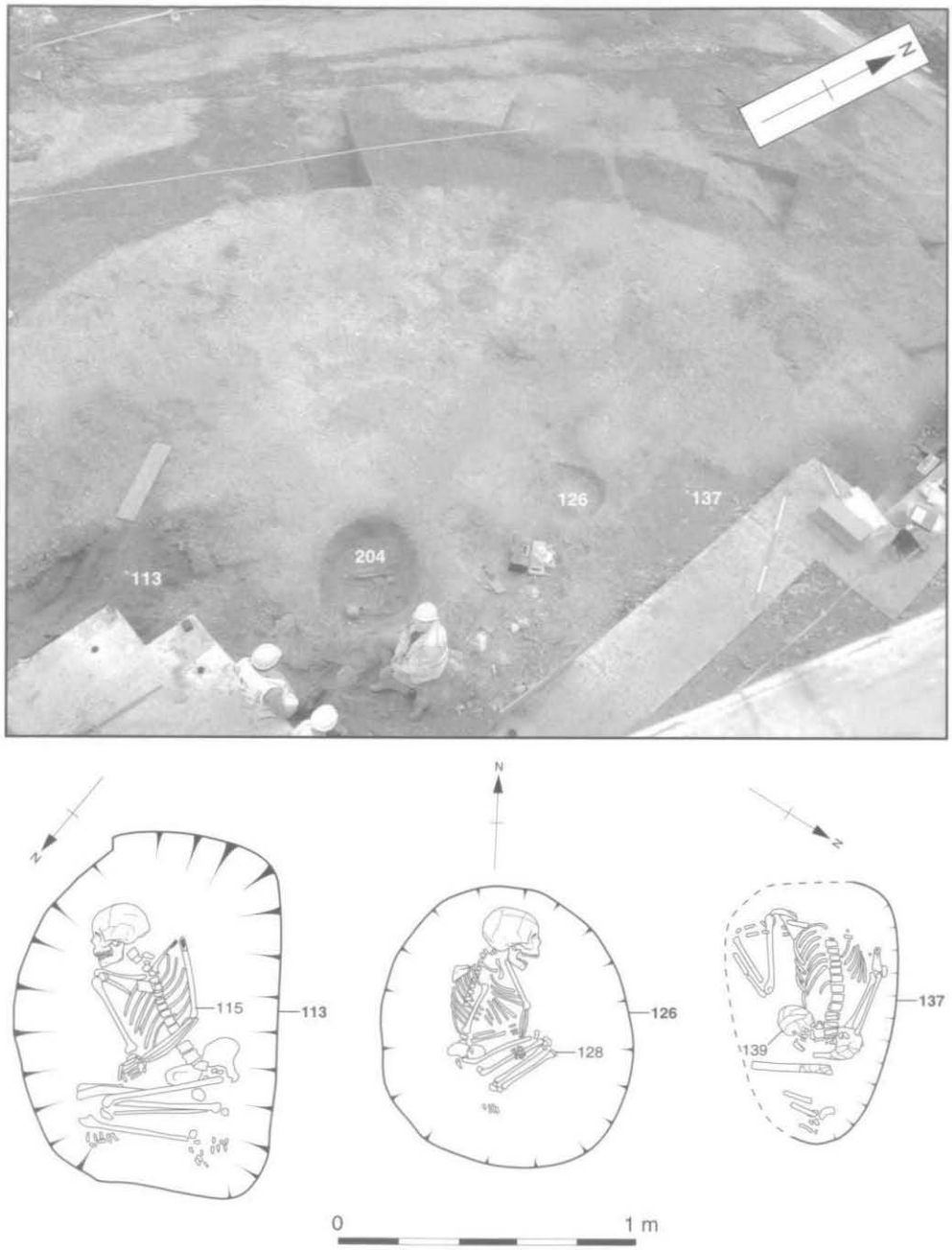

Fig. 6. View of the barrow during excavation. Detailed plans of graves 113, 126 and 137.

ARTEFACTUAL EVIDENCE

THE BEAKER FROM GRAVE 204 by EMILY EDWARDS

A Beaker vessel was found behind the shoulders of skeleton 206 (Fig. 5) and had originally been placed upright. Although complete when buried, the vessel had been compressed and broken whilst *in situ*. Of the 138 sherds (1048 g.) present, it was possible to refit new breaks and to reconstruct the profile. The skeleton associated with the Beaker was radiocarbon dated to 2460-2040 cal. BC (NZA-16624; 95% confidence interval) (Table 1 and Fig. 8).

Methodology

The Beaker was recorded using the standard Oxford Archaeology system for earlier prehistoric pottery, details of which may be found in the site archive.

Fabric

GS2. Soft fabric with common angular pieces of grog (mostly between 1-3 mm. but occasionally up to 5 mm.) and rare shell in a fine clay matrix.

Manufacture and surface treatment

The Beaker is of typical handmade construction and has an internal clay slip. The external surface was smoothed and partially burnished. Wipe marks were observed on the internal face of the base sherds, these were either caused by the application of a slip or may be marks left during the shaping of the vessel. The internal face of the base was not smoothed after shaping.

The vessel was open-fired, the external face was fired to a reddish-brown with a black core and internal surface. The yellowish-brown colour on the internal surface, especially noticeable on the base, was the result of the application of a thick slip.

Forms and decoration

The Beaker can be classified according to the typologies of Clark's,[4] Lanting and van der Waals'[5] and Case's[6] schemes, as belonging to the late style S4 (Final Southern Beaker Group) of Step 7, according to certain diagnostic features such as the almost biconical shape, the floating lozenge decoration, and the careless use of a pointed tool in creating the incised design.[7] The Beaker has a cordon set low below the rim, which is a feature sometimes found on vessels of this type. The rim has an uneven profile around its circumference. It is slightly everted with an internal bevel and is almost collared in profile. The upper part or neck of the vessel was cylindrical with a slight concave profile. The vessel has a low waist set at approximately the mid point between the moulded bevel and the base.

Decoration was incised using an organic, fibrous tool, possibly a point, which left striations in some of the marks. The zones between the rim and the cordon, and below the cordon, are decorated with a row of hanging filled triangles. The cordon is decorated with long oblique lines and the neck is decorated with a row of floating filled lozenges. The waist is marked by a band made up of horizontal rows of discontinuous incised lines. The zone between the waist and the base is marked with a further row of filled lozenges. The base is plain.

Use and function

It remains uncertain whether the Beaker had a domestic use before burial or whether it was made especially for the burial. The vessel showed no indications of use-wear or residues, indeed the surface slip in most places had an unmarred, unworn appearance. The vessel appeared to be complete when buried with no obvious signs of damage.

[4] D.L. Clarke, *Beaker Pottery of Great Britain and Ireland* (1970).

[5] J.N. Lanting and J.D. van der Waals, 'British Beakers as seen from the Continent: a review article', *Helinium*, xii (1972), 20-46.

[6] H. Case, 'The Beaker Culture in Britain and Ireland', in R. Mercer (ed.), *Beakers in Britain and Europe* (Brit. Archaeol. Rep. Internat. Ser. S26, 1977), 71-101.

[7] Ibid.

Catalogue (Fig. 6)

Context 207. Profile reconstructed. Final Southern Beaker Group (S4). Biconical shape with a cordon below the rim. Dec. Incised with organic, fibrous tool; hanging filled triangles below the rim and the cordon, oblique lines across the cordon, and five to six more such bands on the belly. Above (and also possibly below) the bands on the belly are a row of filled lozenges. The base is plain. Firing: ext.: reddish-brown; core: black; int. yellowish-brown. Surface treatment: external smoothing and internal slip. Possible smoothing on surfaces, especially inside the rim and. Height: 217 mm. Width as waist 146 mm. Rim diameter: 148 mm.

Discussion

The Upper Thames Valley is well known for its concentration of 'late' style Beakers from funerary and domestic contexts.[8] Beakers with similar traits have been recovered from graves and pits in the Eynsham/Cassington area.[9]

Within the context of the Upper Thames Valley, it would be unusual to find this type of vessel with a primary barrow burial, more typically burials are accompanied by fine Beakers with complex decoration. This observation may lend support to the hypothesis that grave 206 was not the primary grave or that it was an earlier flat grave.

The chronological development of Beaker pottery based on the schemes of Case and Lanting and van der Waals has been questioned by the results of the British Museum's Beaker dating programme.[10] Under these schemes the Beaker from 206 would be expected to fall within the range of 2050-1700 BC.[11] However, the expected date of the Beaker is contradicted by the radiocarbon date of the burial. The radiocarbon dating provides a much earlier range of 2460-2040 cal. BC for the burial, which would approximate to Needham's *formative* (period 1: 2500-2300 cal BC) and *floruit* (2300-2050 cal BC) phases of activity.[12]

THE WORKED FLINT AND BURNT STONE by HUGO LAMDIN-WHYMARK

A total of 10 flints and 3 pieces of burnt stone (two flint, one limestone) weighing 59 g. were recovered. The worked flints were found in two graves and will be discussed by context below. One piece of burnt limestone (14 g.) was found in the backfill of grave 126 (context 127), a piece of burnt flint (3 g.) was found among the group of flints (208) located behind the skull in grave 204, and the third piece of burnt flint (42 g.) was found in fill 163 of natural feature 162.

Grave 204

The eight flints found in grave 204 were recovered from two contexts. A single flake was found amongst the bones of skeleton 206 and the remaining seven flints were found in a group behind the skull (group 208) (Fig. 5). This assemblage comprised four flakes, of which three were broken and one burnt, a fine blade 14 mm. wide and 57 mm. long, a denticulate and a spurred piece on a small flake core weighing 14 g.

The condition of the flints was fresh, although edge damage from use was apparent on all of the pieces with the exception of the burnt and broken flake. The raw material used was difficult to determine given the small size of the assemblage, however, cortex was present on five flints. The cortex on four of the flints was white and the thickness varied between 2-5 mm. indicating that the raw material was obtained from a chalk region such as the Chilterns or the Berkshire Downs. The abraded dark grey cortex on another probably indicates that it derived from the river gravels.

The technological traits of the flints are intriguing. The majority of the flakes are broad and relatively thick, typical of Bronze Age industries.[13] However, care was taken in the preparation and removal of flakes; all of the platform edges were abraded and four out of five bulbs appeared to have been struck using a soft

[8] H. Case, 'Beaker Pottery from the Oxford Region', *Oxoniensia*, xxi (1956), 1-21.

[9] Ibid. 15.

[10] I. Kinnes, A. Gibson, J. Ambers, S. Bowman, M. Leese and R. Boast, 'Radiocarbon Dating and British Beakers: the British Museum programme', *Scottish Archaeol. Review*, 8 (1991), 35-68.

[11] S. Needham, 'Chronology and Periodisation in the British Bronze Age', in *Absolute Chronology, Archaeological Europe 2500-500 BC* (1996).

[12] Ibid. 124.

[13] S. Ford, R. Bradley, J. Hawkes and P. Fisher, 'Flint-working in the Metal Age', *Oxf. Jnl. Archaeol.* iii (1984), 157-73.

hammer percussor, such as antler.[14] Furthermore, the blade in the assemblage was particularly fine and the product of a skilled knapper. The flints would, therefore, appear to have been a good example of a transitional industry where, as was typical of Bronze Age industries, flakes represented the main product, yet the traditional skills of flint knapping still endured. The 'transitional' character of this group would correspond with the early date of the grave (Table 1).

The group of flints (context 208) recovered from behind the skull represented a well-used toolkit. The group included tools for a variety of tasks, such as scraping using the denticulate, boring using the spurred piece and cutting and whittling on various flake edges of different angles.

Grave 126

The two flints found in this grave comprised a broken flake and a broken rejuvenation tablet. Both were heavily utilised, although it is possible that some of the edge damage was accidental. The broken flake bears a close resemblance to a chisel arrowhead, but lacked the edge retouch to formally classify it as such; the interpretation is, therefore, tentative. It is possible that the flint was used in this manner or symbolically representative of an arrowhead, such as pieces found in Grooved Ware pits at Down Farm.[15] Chisel arrowheads occur in the later Neolithic and continue in use during the early Bronze Age.[16] The association of a possible chisel arrowhead with an inhumation associated with a barrow is not unknown, the closest parallel being at Barrow Hills, Radley, only some 10 km. to the south, where a child inhumation dated to 2040-1610 cal. BC (95% confidence) was associated with a selection of artefacts including a chisel arrowhead.[17]

Although the two flints were neither found at the base of the grave cut, nor particularly closely associated with the skeleton, it is possible that they were grave goods or items deposited during the funerary ritual. Although they could be simply redeposited, the former interpretation seems more plausible, given that worked flint was almost absent from the site.

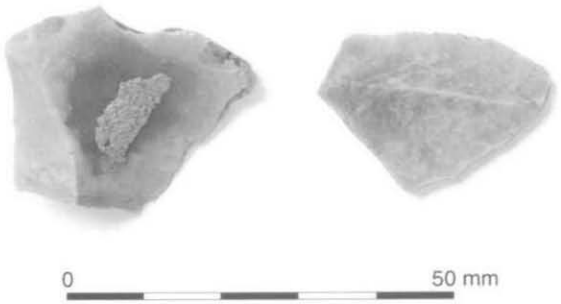

Fig. 7. Two flints from grave 126, fill 127: the left flint is a rejuvenation tablet and the flint to the right is a flake; both flints are broken.

Discussion

The group of flint deposited behind the skull in grave 204 could represent the personal tool kit of the female buried in this grave, or perhaps a composite group symbolically made to be taken to the grave. The fact that all of the flints were well-used indicates that they were not made specifically for deposition. This, however, is not uncommon. A study of late Neolithic and early Bronze Age flint grave goods revealed that used artefacts

[14] K. Onhuma and C. Bergman, 'Experimental Studies in the Determination of Flake Mode', *Bull. of Inst. of Archaeol., Univ. of London*, xix (1982), 161-71.

[15] A.G. Brown, 'Structured Deposition and Technological Change among Flaked Stone Artefacts from Cranborne Chase', in J. Barrett, R. Bradley and M. Hall, *Papers on the Prehistoric Archaeology of Cranborne Chase* (Oxbow Monograph 11, 1991), 101-33.

[16] P. Bradley, 'The Worked Flint', in A. Barclay and C. Halpin, *Excavations at Barrow Hills, Radley, Oxfordshire, vol. 1: The Neolithic and Bronze Age Monument Complex* (Thames Valley Landscapes 11, 1999), 220.

[17] Barclay and Halpin, op. cit. note 16, p. 119.

were more commonly buried than unused artefacts, and that male burials were more likely to contain unused artefacts than female burials.[18] However, the quantity of flints associated with this burial is uncommon. Female burials analysed by Gibbs contained on average one flint; the maximum number found being seven.[19] Therefore, in terms of number of flints this burial is significant.

The two flints in grave 126 were not closely associated with the body. One possibility is that they simply represent redeposited flint, although the general absence of flint on the site indicates that their occurrence may not have been accidental. It is not uncommon to find grave items within the grave fill and a distinction can be made between those placed around the body from others that were perhaps dropped into the grave during funerary rites. The form of one flake, resembling a chisel arrowhead, may also represent more than a mere co-incidence, and the artefact may be interpreted as a symbolic grave good.

ECOFACTUAL EVIDENCE

THE HUMAN SKELETAL ASSEMBLAGE by ANNSOFIE WITKIN

Methodology

The assemblage comprised three adult females (115, 139 and 206) and a child skeleton (128). Preservation was recorded by the observation of the cortical integrity of the bones. Their condition was scored on a sliding scale from excellent to poor depending on the degree of surface erosion, root impressions, bubbling and flaking of the outer surface of the bones. Completeness was scored on a sliding scale of poor to excellent. The skeletal inventory of the skeleton was recorded by shading in the elements present and recording them in tabular form as present or absent. The dental inventory was recorded following the Zsigmondy system. Dental notations were recorded by using the universally accepted recording standards and terminology.[20]

Six cranial features and a maximum of five pelvic features were used for sexing the adults. In keeping with standard practice, no attempt was made to sex the subadult. The features used were chosen from Standards[21] and Workshop.[22] The measurements taken for the assignment of sex were the maximum diameters of the femoral and radial heads as well as the maximum length of the clavicles.[23] Each feature on the pelvis and cranium was scored on a five point scale (probable female, female, probable male, male and unknown). The overall score from the observed features and to a lesser degree, the metric measurements, provided the basis for the assigned sex.

In order to increase the accuracy of the assessment of age for all individuals, multiple methods were used. For the subadult, age was obtained by using dental development[24] and measurements of the long bones.[25] For the assessment of age of the adults, the degenerative changes of the auricular surfaces,[26] dental attrition[27] and cranial suture closure[28] were used. Stature was estimated by using the measurements of long bones. The regression formulae developed by Trotter[29] was then used for the calculation of height.

[18] A.L. Gibbs, 'Sex, Gender and Material Culture Patterning in late Neolithic and early Bronze Age England' (Univ. of Cambridge unpubl. D.Phil thesis, 1989), 109.

[19] Ibid. 109.

[20] D. Brothwell, *Digging Up Bones* (1981).

[21] J.E. Buikstra and D.H. Ubelaker, *Standards for Data Collection from Human Skeletal Remains* (1994).

[22] Workshop of European Anthropologists, 'Recommendations for Age and Sex Diagnoses of Skeletons', *Jnl. of Human Evolution*, ix (1980), 517-49.

[23] A. Chamberlain, *Human Remains* (1994).

[24] C.F.A. Moorrees, E.A. Fanning and E.E. Hunt, 'Age Variation of Formation Stages for Ten Permanent Teeth', *Jnl. of Dental Research*, xxxxii (1963), 1490-1502.

[25] R.D. Hoppa, 'Evaluating Human Growth: An Anglo-Saxon Example', *Internat. Jnl. Osteoarch.* ii (1992), 275-88.

[26] C.O. Lovejoy, R.S. Meindl, T.R. Pryzbeck and R.P. Mensforth, 'Chronological metamorphosis of the auricular surface of the ilium: a new method for determination of adult skeletal age-at-death', *Amer. Jnl. of Physical Anthropology*, lxviii (1985), 15-28.

[27] A. Miles, 'Assessment of age of a population of Anglo-Saxons from their dentition', *Proc. of Roy. Soc. of Medicine*, lv (1962), 881-6.

[28] R.S. Meindl and C.O. Lovejoy, 'Ectocranial suture closure: A revised method for the determination of skeletal age at death based on the lateral-anterior sutures', *Amer. Jnl. of Physical Anthropology*, lxviii (1985), 29-45.

[29] M. Trotter, 'Estimations of Stature from Intact Long Limb Bones', in T.D. Stewart (ed.), *Personal Identification in Mass Disasters* (1970), 71-83.

Preservation and completeness

Preservation of most of the skeletons was fair to good. Only skeleton 206 was poorly preserved. However, all skeletons had some erosion to the cortical surface of the bone. The cranium of subadult 128 was warped and fragmented, probably due to soil pressure in the burial environment. Completeness was generally good with few bones missing from skeletons 115, 128 and 206. Numerous post-mortem breakages of the long bones were present and thinner flat bones, such as the ribs and the iliac blades, were also fragmented on all of the adults. The completeness of skeleton 139 was poor. Bones from both arms and hands, left femur and foot were present, together with fragments of the ribs, pelvis and the lower half of the spine. The grave of this individual was very shallow and a plough furrow, in which the first right rib was found, clearly indicated that the majority of this skeleton was ploughed away at some time in the past.

Age and sex

The assemblage comprised three adult females and one child. Skeleton 115 was aged upwards of 50 years. The child, skeleton 128, was aged between 5 and 6 years. Skeletons 139 and 206 were at least 40 years old.

Stature

Stature could be obtained from all of the females: skeleton 115 was 1.641 m.; skeleton 139 was 1.582 m. and skeleton 206 was 1.556 m. These ranges are not remarkable and are found within modern populations.

Dental pathology

Skeletons 115 and 206 had multiple carious lesions, several teeth had been lost ante-mortem and they also had moderate periodontal disease. This involves the horizontal reduction of the jaw bone, causing the teeth to loosen in their dental pockets. The two women also had moderate to heavy calculus deposits. Slight deposits were also present on the deciduous dentition and the first permanent mandibular molar of skeleton 128. Calculus is formed by mineralised plaque.[30] Skeletons 115 and 206 also had several dental abscesses. All of the dental diseases mentioned are inter-linked. For example, a carious lesion may predispose to a dental abscess. Similarly, excess calculus deposits may lead to gingivitis which (if untreated) would lead to periodontal disease. Though genetic predisposition and environmental factors play a part, the strongest causation of these diseases is poor oral hygiene.

Enamel hypoplasia was also present on two teeth of skeleton 206. Hypoplastic lines are caused by the disruption of the mineralisation process during the formation of the tooth. The aetiology for the formation of these lines is multifactoral. However, they are commonly seen to be caused by nutritional deficiency or diseases during childhood.

The maxillary central incisors and the left lateral incisor and canine of skeleton 115 were heavily worn. Mesio-distal grooves and a large buccal chip were present on the canine. This type of wear may be caused by extramasticatory activities, such as preparation of plant material for basket weaving and hide processing.[31]

Degenerative joint disease

Degenerative changes affected all three adults. The changes consisted of porosity on the surface and new bone formation at the joint margins. The changes observed were caused by the natural progression of the degeneration of the skeleton with advancing age. This would not have caused any major pain or discomfort to the individuals as these changes were only slight to moderate in severity. Skeleton 139 had slight degenerative changes to the right shoulder, left foot and all the fingers in both hands.

Skeleton 115 had moderate and slight changes to the tempero-mandibular joints, the articular surfaces of the clavicles, both wrists and all the fingers, both hip joints and both feet. The degenerative changes were slightly more severe in the right hand. The joints affected on skeleton 206 were the left shoulder and the proximal radio-ulnar joint and both knees. The proximal end of the third right metatarsal was also eburnated indicating that this joint was affected by osteoarthritis.

Spinal degenerative joint disease

Porosity and marginal osteophytes were present on the spines of all the adults. The lesions were slight to moderate. Skeleton 115 also had osteoarthritis on the cervical vertebrae. Skeleton 139 had a Schmorl's node present on the twelfth thoracic vertebral body. These are indentations in the surface of the vertebral body

[30] C. Roberts and K. Manchester, *The Archaeology of Disease* (1995), 55.
[31] C.S. Larsen, *Bioarchaeology. Interpreting Behaviour from the Human Skeleton* (1995), 258-62.

caused by the degeneration of the vertebral discs.[32] Schmorl's nodes, marginal osteophytes and porosity of the joint surfaces are common in adults over the age of 30 years in modern populations, and are caused by normal wear and tear on the skeleton.

Non-specific infection

Slight porosity indicative of sinusitis was present in the left maxillary sinus cavity of skeleton 115. The lesions may be linked to a number of factors such as allergies, smoke inhalation and upper respiratory tract infections. In this case the lesions had healed. This same individual also had new bone formation on the visceral surfaces of four right ribs. The lesions consisted of globulated lamellar bone, indicating that the lesions were healed periostitis. It is possible that the lesions observed in the maxillary sinus cavity and on the ribs may have had the same aetiology, perhaps a fairly persistent respiratory tract infection which led to the bony changes.

Metabolic disorder

Scattered fine foramina were present in the orbital roofs of skeleton 115. This type of lesion is traditionally thought to occur as response to iron deficiency anaemia. The anaemia was likely to have occurred as part of the body's response to an infectious disease. By withholding iron from the pathogens, it would make them less able to reproduce.[33] The lesions had healed by the time of death of the individual.

Trauma

All three women had traumatic lesions. However, whereas two were likely to have been accidental in origin, one was clearly the result of an act of violence. Skeletons 139 and 115 both had long standing intra-articular fractures. The fracture on skeleton 139 was located on the left trapezium where a fracture line was present on the trapezoid articular surface. Skeleton 115 had a fractured right calcaneus. The fracture line is visible across the articular surface for the cuboid. Secondary degenerative changes had also occurred indicating that the fracture was longstanding. The distal interphalangeal joint of digit 5, left foot, was also ankylosed. This was likely to have been traumatic in origin.

Skeleton 206 exhibited a single large lesion present on the posterior part of the cranium (Fig. 5). The lesion was present on the right side crossing the lambdoid suture. The linear lesion was *c.*76 mm. long and the right side was relatively straight with smooth edges. The left side was more sinuous. The lesion penetrated the inner table in its centre where a 7.7 mm. wide hole was present. Post-mortem damage has obscured the true length but it is likely that the area was between 14 and 20 mm. long. The edges showed evidence of remodelling. The superior half of the lesion only affected the outer table and the diplöe survived in shallow coalesced islands. The diplöe was smooth and appeared sclerotic in places. Slight porosity was also present at the superior and inferior margins of the lesion. This porosity is evidence of hypervascularisation which indicates that the lesion was healing. It therefore appears that although the blow penetrated the inner table, the *dura mater* must have been intact in order for the individual to survive. The location and the appearance of the traumatic lesion strongly suggest that the injury was caused by a blow from behind inflicted by a right-handed assailant possibly using a hafted flat-bladed implement such as an axe.

[32] Roberts and Manchester, op. cit. note 30, p. 107.
[33] Ibid. 167.

Catalogue

Skeleton number 115
Completeness: Excellent
Preservation: Good
Age: Over 50 years
Sex: Female
Stature: 1.641 m.
Dental inventory:

	A									A	Ca					
	X	5	4	3	2	1	1	2	3	X	5	X	X			
8	7	C	C	4	X	2	1	1	2	3	4	5	X	X	C	
Ca	Ca	A	Ca	Ca		Ca	Ca	Ca		Ca	Ca	Ca			Ca	

Dental Pathology: Moderate periodontal disease on the mandible. Small carious lesions on the distal side of the mandibular second right premolar, the mesial side of the mandibular first right molar and the buccal aspect of the mandibular left third molar. Periapical abscesses present on the right maxillary first molar, right mandibular first molar and left maxillary first premolar. Medium and heavy calculus deposits. Extramasticatory wear of the maxillary central and left lateral incisor and canine.

Pathology: Slight spinal degenerative joint disease. Slight to moderate degenerative joint disease on both ends of the clavicles, the temporo-mandibular joints, both wrists and fingers of both hands and on the tarsals of both feet. Cribra orbitalia, type 1. Lesions were healed. Healed maxillary sinusitis and healed new bone formation on the visceral surfaces of four right ribs. Intra-articular fracture on the articular surface for the cuboid on the right calcaneus. Ankylosed DIP joint on digit five, left foot.

Skeleton number 128
Completeness: Excellent
Preservation: Good
Age: 5-6 years
Dental inventory:

		Ca							Ca		
6	e	D	c	b	X	X	b	c	d	e	6
6	e	D	c		1	1	b	c	d	e	6
Ca	Ca	Ca							Ca	Ca	Ca

Dental Pathology: Calculus deposits, slight or flecks only.

Pathology: None present.

Skeleton number 139
Completeness: Poor
Preservation: Good
Age: Adult, possibly over 40 years
Sex: Female
Stature: 1.582 m.

Pathology: Slight degenerative joint disease on the right humeral head, the fingers of both hands and on the calcaneus and talus and the first metatarsal of the left foot. Slight to moderate spinal joint disease. Intra-articular fracture on the left trapezium. The fracture was healed and longstanding.

Skeleton number 206
Completeness: Good
Preservation: Poor
Age: Over 40 years
Sex: Female
Stature: 1.556 m.
Dental inventory:

	C	6	5	X	3	2	1	1	2	3	4		c	7	
NP	7	X	5	4	3			1	2	3	4	5	6	7	NP

Dental Pathology: Enamel hypoplasia. Two small carious lesions on the mesial side on the left maxillary first molar and the distal side of the right second molar. Medium calculus deposits on the maxillary central incisors, right lateral incisor and canine. Heavy deposit on the right mandibular second molar. Moderate periodontal disease affected mandible and maxilla.

Pathology: Slight to moderate spinal joint disease. Slight degenerative joint disease on the left glenoid fossa, left superior radio-ulnar joint, both knee joints and the proximal end of the left third metatarsal. Large traumatic lesions on the right side of the occipital and the parietal probably caused by an axe. Evidence of healing was present.

CHARRED AND MINERALISED PLANT REMAINS by ELIZABETH HUCKERBY

A total of 12 samples (0.5 to 40 litres) were taken (from the ditch and the graves) during the excavation for the recovery of charred and mineralised plant remains. However, although some of the stomach content samples contained occasional, possibly mineralised, plant remains the evidence was extremely limited and provided little evidence of the local economy or environment (a full report can be found in the site archive).

THE RADIOCARBON RESULTS

All four skeletons were radiocarbon dated at the Rafter Radiocarbon Laboratory of the Institute of Geological and Nuclear Sciences, Lower Hutt, New Zealand. The results are presented in Table 1 and Figure 8. The results of all four dates are as expected, although the date, NZA-16624, on human bone from the Beaker associated grave is slightly earlier than anticipated.

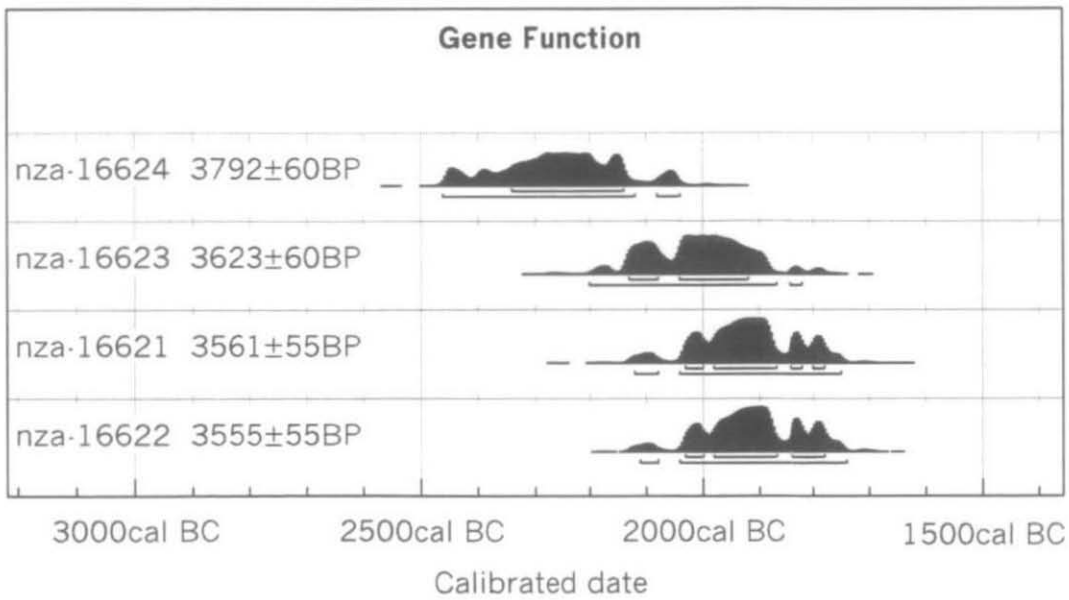

Fig. 8. Calibrated radiocarbon results.

DISCUSSION

The ring ditch is one of an increasing number of late Neolithic and Bronze Age burial monuments found within the limits of the modern city of Oxford (Fig. 1). The 17th-century antiquarian, Dr. Plot, was the earliest recorder of cropmarks or 'fairy rings' in Oxford. This was primarily in the modern day area of the University Parks,[34] immediately to the north of the Oxford University Science Area. A number of these cropmarks have survived to the present day and have been photographed from the air on numerous occasions. There are at least five circular parch marks set within a wider system of linear and rectangular features. These circular cropmarks have never been excavated, but their size and spacing suggests that they are the ditches of ploughed out round barrows that form part of a cemetery.[35] Three of these form a linear group orientated almost east-west, while the remaining two relatively smaller cropmarks and the Rex Richards Building barrow broadly form an arc extending north-south. The ring ditch on the site of the new Gene Function Building appears to be part of the latter group and may have been deliberately paired with the barrow found at the Rex Richards Building.

Of the two barrows it can be argued that the smaller, Gene Function, one was probably constructed first. As already discussed its precise relationship with the Beaker grave 206 is uncertain, and while its construction may post-date this burial it is argued that it may well be broadly contemporaneous with the other graves. At least one other example of a barrow built on the site of a flat grave is known from the Upper Thames Valley at Radley.[36] The size of the ditch at the Rex Richards Building and the character of the grave deposit indicate that this barrow was later within the early Bronze Age period.

In north Oxford, the Victorian passion for antiquities led to the early excavation of at least five Beaker and early Bronze Age sites.[37] Inhumations accompanied by a 'Food Vessel' were uncovered in Park Crescent in 1864,[38] while 'contracted' skeletons were discovered in Kingston Road in 1881, and in Southmoor Road in 1882.[39] They were assumed to have been Bronze Age in date, although this is by no means certain. Beaker burials were found in Summertown in 1875 and in Polstead Road in 1888.[40] In the absence of site records, their contexts remain unknown, but it is reasonable to assume that they were originally located within round barrows. It would appear that this low ridge between the Thames and Cherwell rivers was a favoured locale for the siting of barrows. The topographical association of barrows on gravel ridges overlooking the confluence of rivers was not uncommon in the Upper Thames Valley.[41]

On the undeveloped floodplains around the city centre, aerial photography has also revealed a large number of circular cropmarks, many of which were probably barrows. In 1933, Major Allen photographed 19 cropmarks on the gravel terraces of Port Meadow.[42] These were later surveyed on the ground, and three were excavated. While one proved to be no more than a fungus ring, the other cropmarks did represent archaeological remains,

[34] S. Piggott, 'Dr. Plot, Ring Ditches and the Fairies', *Antiquity*, lix (1984), 206-9.
[35] Parkinson et al., op. cit. note 1.
[36] Barclay and Halpin, op. cit. note 17, pp. 133-9, flat grave 206.
[37] *V.C.H. Oxon.* i, 265.
[38] Ibid.
[39] Ibid.
[40] Ibid. 242, pl. v, 265.
[41] D.N. Riley, 'Archaeology from the Air in the Upper Thames Valley', *Oxoniensia*, viii-ix (1943-4), 64-101.
[42] R.J.C. Atkinson, 'Archaeological Sites on Port Meadow, Oxford', *Oxoniensia*, vii (1942), 24-35.

possibly the components of settlements with associated field systems and burial mounds. Traces of banks were associated with a number of ring ditches, possibly the remnants of disc or pond barrows, but only one at Round Hill had an extant mound. However, two of the excavated ring ditches proved to be later in date than expected, pottery from the primary fills was dated to the late Bronze Age or Iron Age.[43]

On the opposite bank of the Thames, on the gravel terraces of Binsey fields, an additional 11 ring ditches were identified through aerial photography. These constituted three clusters: Group A consisted of four ring ditches; Group B consisted of two ring ditches; and Group C consisted of four ring ditches and a bowl barrow. None were excavated, but their size, shape and topography were suggestive of three barrow clusters overlooking the river.[44] To the south of the city centre, two further circular crop marks were identified in North Hinksey[45] and a cluster of five were noted in South Hinksey.[46]

The redevelopment of many of the university buildings within Oxford has given the opportunity to excavate several new barrow sites beneath the modern city centre. Excavation in Logic Lane revealed a portion of ring ditch containing a fragmented red deer antler pick, Neolithic flint cores and scrapers, and a barbed and tanged arrowhead of early Bronze Age date.[47] In St. Michael's Street, a substantial curved ditch was excavated. Eleven pieces of worked flint recovered from the ditch fills were tentatively dated to the Bronze Age.[48] At the Sackler Library site, Beaumont Street, portions of two ring ditches were excavated. No artefacts were found within the ditch fills, but eight pieces of residual worked flint, dated to the Neolithic/Bronze Age, were redeposited in contexts within the immediate vicinity.[49]

Another site from this period was the Hamel, off St. Thomas's Street, however this appeared to be domestic rather than funerary in nature.[50] Here the skeleton of a 2- to 4-year-old child, a number of Beaker pottery sherds and domestic rubbish was discovered within the fills of a pit. The twisted body position of the child and the context of burial within a rubbish pit suggests a casual, rather than formal interment. This was very different from the burial ritual associated with burials within round barrows during this period. Nevertheless, the site provides valuable evidence for late Neolithic/early Bronze Age settlement in the area and represents one of a number of such known sites scattered along the Second Gravel Terraces beneath modern Oxford.[51] It is thus not surprising that associated monuments to the dead are situated nearby.

The ring ditch clearly conforms to the Beaker burial tradition of crouched inhumations buried beneath round barrows, a practice that evolved from combined indigenous and continental influences in Britain around 2500 BC.[52] Although perceived principally as a male-dominated rite of a warrior elite, the burial of women and children within round barrows was less usual, but by no means unknown.

[43] Ibid. 33, fig. 6.
[44] P.P. Rhodes, 'New Archaeological Sites at Binsey and Port Meadow, Oxford', *Oxoniensia*, xiv (1949), 81-4.
[45] *CBA Group 9 Newsletter*, 7 (1977), 60.
[46] Ibid.
[47] F. Radcliffe, 'Excavations at Logic Lane, Oxford', *Oxoniensia*, xxvi-xxvii (1960), 38-69.
[48] A. Barclay and P. McKeague 'A Bronze Age Barrow at 24A, St. Michael's Street, Oxford', *Oxoniensia*, lxi (1996), 57-61.
[49] D. Poore and D.R.P. Wilkinson, *Beaumont Palace and the White Friars: Excavations at the Sackler Library, Beaumont Street, Oxford* (Oxf. Archaeol. Unit Occas. Paper 9, 2001), 15-17.
[50] N. Palmer, 'A Beaker Burial and Medieval Tenements in the Hamel', *Oxoniensia*, xlv (1980), 124-225.
[51] T. Hassall, 'Archaeology of Oxford City', in G. Briggs, J. Cook and T. Rowley (eds.), *The Archaeology of the Oxford Region* (1986), 116; A. Dodd (ed.), *Oxford Before the University* (Thames Valley Landscape Series, in press).
[52] A. Woodward, *British Barrows – a Matter of Life and Death* (2001).

All four skeletons were buried in a crouched position within single shallow graves. Two of the adults lay on their right side, in accordance with the convention for female burials during this period.[53] The child was buried on its left side, possibly indicating that it was male. However, the earliest and richest adult female burial contradicts the above in being buried on the left side, as for a man. Indeed, the burial showed a combination of male and female features. The body position and the richness of the flint assemblage accompanying the skeleton were more typical of a male burial, yet osteologically the individual was clearly female, and the flint grave goods showed use-wear (more typical of female grave goods). The female was also unusual in being the victim of a violent attack, leaving the individual with a severe cranial injury. It is tempting to perceive her as a matriarch, an honorary 'man', who was honoured in death by her descendants in this unusual manner.

Primary or founder burials were a common feature of barrows of this period,[54] frequently forming the focus for later burials. They were most commonly located at the centre of the monument. Local examples include the central cremation pit located within the Rex Richards barrow, immediately to the south,[55] and Barrows Hill, Radley, south-west of Oxford, where primary burials were found in barrows 1, 11, 12, 14 and 201.[56] The true centre of the ring ditch on the site of the Gene Function Building lay several metres beyond the western limit of the excavation, making it impossible to determine whether a primary central burial had originally existed. However, it is evident that the three most northerly graves do appear to reference the centre of the ring ditch spatially, being grouped in an arc around it. The exception, grave 115, was more peripherally positioned within the monument. However, in this case body position may have been used to acknowledge the presence of the central burial. Instead of the south-facing orientation shared by the other three burials, and indeed, by 80% of Beaker burials in Britain,[57] skeleton 115 was positioned facing the north-east and toward the centre of the ring ditch.

The sequence of activity on barrow sites is frequently complex and multi-phased, and may extend over a considerable time span. At this site, the sequence of development of the monument was not entirely clear. From the wide spread of radiocarbon dates for the four skeletons, it is evident that the site was used for burial over an extended period, possibly as long as 600 years. The earliest and richest burial was skeleton 206 (2460-2040 cal. BC), followed by skeleton 139 (2200-1820 cal. BC), and then the latter two, skeletons 115 and 128 (2120-1750 cal. BC and 2110-1740 cal. BC respectively) (see Table 1 and Fig. 8), which appeared to be contemporaneous. The close spacing between, but lack of intercutting of the graves, suggests that earlier graves were marked above the ground, possibly by low mounds or by upstanding markers set too shallowly in the ground to penetrate the gravel subsoil beneath. What is apparent is that this particular place was marked out, either physically and/or mentally, on the ground and in the folk memory of later generations as a place of special significance, such that centuries after the first burial, it was again chosen as a place for the interment of the dead. In referencing a much earlier burial (either the possible central burial, or alternatively, skeleton 206), the later burials were re-emphasising a real or perceived relationship with the dead, which was possibly ancestral in nature. It is possible that the individuals do represent members of a biological lineage. Osteologically, shared

53 K. Ray, 'From Remote Times to the Bronze Age *c.* 500,000 to *c.* 600 BC', in P.C. Jupp and C. Gittings (eds.), *Death in England – An Illustrated History* (1999), 11-39.
54 Ibid.
55 Parkinson et al., op. cit. note 1.
56 Barclay and Halpin, op. cit. note 17.
57 Ray, op. cit note 53.

non-metric traits on the skeleton were used to indicate familial relationships, although the strength of this association has not been demonstrated unequivocally. Of the four excavated skeletons, only the earliest and latest skeletons (206 and 115) could be assessed for non-metric traits. The crania of both possessed parietal and mastoid foramina, shared traits that hint at, but cannot be said to prove, a familial relationship between the two.

Barrows vary considerably in the sequence of construction and longevity of use. In some cases, the site may begin life with a Beaker flat grave, which then becomes the focus for further burials. At a later stage, the ring ditch would be dug and the spoil heaped over the burial group. In other cases, the barrow mound is constructed over a single central primary burial. Secondary burials would then be inserted into the sides of the mound. At the Gene Function Building, the variation in the depth of the grave cuts was too small to suggest that any of the four burials were secondary interments into an existing mound. Indeed, it remains unclear whether a central mound even existed. Due to the lack of finds within the fills of the ring ditch, the date of construction and sedimentation of the ditch could not be established. Consequently, the temporal relationship between the digging of the ditch and the burials remains unclear, and the sequence of development of the site is not fully understood.

ARCHIVE

The archives for the Centre for Gene Function watching brief and excavation will be deposited with the Ashmolean Museum (1999.210, 2002.1) and the archive for the Rex Richards watching brief will be deposited with OXCMS (2002.164).

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