

1
P
-SM

An Archaeological Excavation at the
University Playing Fields, Gartree road,
Oadby, Leicestershire (SK 632 017)

Susan Ripper



 Leicestershire
County Council
Historic Environment Record

SLE: 1023, 3161
ELE: 5256
MLE: 4980 (Roman)

SMR 60 SW BC

OADB4

University of Leicester Archaeological Services

University Road · Leicester · LE1 7RH · England

LEICESTER UNIVERSITY
ARCHAEOLOGICAL SERVICES

1996

RECEIVED

**An Archaeological Excavation at the
University Playing Fields, Gartree road,
Oadby, Leicestershire (SK 632 017)**

Susan Ripper

The University of Leicester Archaeological Services

SMR. 60 SW BE

**University Playing Fields, Gartree road, Oadby, Leicestershire.
(SK 632 017)**

Abstract

Following salvage excavations at the development site of the University Playing Fields a range of archaeological evidence was uncovered. A curving ditch, first recognised during a watching brief, was found to be roughly oval in shape enclosing an area of some 250m². This 'enclosure ditch' appeared to contain vestiges of structural activity in the form of a series of internal post holes. Two linear ditches, both aligned roughly north south were also noted either side of the enclosure ditch (one 15m to the west, the other 6m to the east). These may both have represented some form of field boundary system. Running parallel to the easternmost ditch, a second north/south aligned ditch was also revealed. This ditch had been re-cut on at least one occasion suggesting some longevity of purpose. At the northern end of this ditch the remains of a human burial was discovered. Following analysis this was found to be a young male skeleton, buried supine, on a north south alignment, with its arms crossed across its chest. A pottery vessel of a late 1st / early 2nd century date had probably been deposited with the inhumation.

Further to the east of the enclosure ditch evidence of two Roman buildings were discovered. One was found to be a circular cobble founded structure enclosing an area of some 64m². An internal post hole and an area of burnt material (a hearth) was noted. The second building was rectangular (16m x 15m) and again had a cobble foundation, but with some surviving dressed ironstone superstructure. The frontage, facing the Roman Gartree Road, appeared to comprise a central apsidal bay and two projecting corner extensions.

Location and setting (Figs. 1 & 2)

The University Playing Fields Development Site is situated approximately 6.4km south east of Leicester, in the parish of Oadby. It lies immediately adjacent to the major Roman road - known locally as the Gartree Road - which runs north-west to south-east through the estate running from Leicester to Medbourne and Godmanchester (and, ultimately, Colchester). The field slopes from 111m O.D. in its south-west corner down to 98m O.D. in the north-east, and the eastern boundary is defined by a small stream.

The Ordnance Survey Geological Survey of Great Britain Sheet 156 indicates that the underlying geology is Boulder Clay.

Archaeological Background

In the early 1980s metal detecting on the site of the University Playing Fields Development recovered a number of artefacts including fourteen coins of 1st to 4th century date, three brooches, a bronze votive axe and a bracelet close to a pond along the northern boundary of the field. In the autumn of 1993 Leicestershire Museums Archaeological Survey Team completed a programme of fieldwalking in an area around and including the development site (Liddle 1994). The material recovered was from a range of periods and included prehistoric flints, and Roman, Saxon and medieval ceramics. Concentrations of Roman pottery were particularly noted along the northern boundary of the site, so the development plans were designed to impose a minimal disturbance to this area. Provision for access for a watching brief were included as a planning condition but without any financial contribution from the developer.

In March 1996 development of the site as a sports field began which included manoeuvring large amounts of soil in order to terrace the sloping field and provide good drainage. Members of the Oadby Fieldworkers Group walked over the stripped area and found a concentration of Iron Age and Roman pottery towards the north-west of the site. They contacted Leicestershire County Council Museum staff. Representatives from the museum inspected the site and recognised a number of archaeological features including a curving ditch and the remains of an ironstone wall.

In view of the quantity of artefactual material discovered and its likely association with structural features it was proposed that an archaeological excavation should be undertaken to define the extent and nature of this activity. The University of Leicester, as developers of the site, kindly agreed to both divert their development programme while an archaeological investigation took place and to provide voluntary funding of the project. In addition, the developers also agreed to raise the ground level in the area of observed archaeological activity to create a 'buffer' to protect any remains.

Between the 13th and the 22nd of March 1996 an eight day salvage excavation was therefore arranged, to be undertaken by the University of Leicester Archaeological Services (ULAS).

Aims and objectives.

In the knowledge that the site would largely be protected by a 'buffer' zone and that there would only be a limited period available for excavation it was decided that, as a priority, the extent of any surviving archaeology would be revealed and recorded in plan. This strategy would both help to characterise the extent and nature of any remains and enable any future work to be targeted in relation to a located plan. It was also intended that a sample portion of each located feature would then be excavated. This would reveal the depth of any cut features and help to determine both the function and date of any activity, and potentially enable more detailed interpretations of past socio-economic activities as well as temporal and spatial changes.

Results

The excavations revealed a series of features which broadly fall into three categories;

- (I) a series of ditch features with associated post holes,
- (II) the foundations of a rectangular ironstone building and
- (III) the foundations of a circular cobble built structure.

The limited extent and physical separation of these groups, and the limited dating evidence precludes any relative phasing of the site, so the results of each excavated area will be reported separately.

Identification of the ceramic finds have been provided by Richard Pollard of Leicestershire Museums. Initial 'spot dates' have been included in this report but further analysis may both refine the chronology of the material found and help to define the nature of what activity took place on the site.

(I) Ditch features and associated post holes (Figs. 3 and 4)

a. The enclosure ditch

Approximately 100m to the south of the Gartree Road and 50m west of the eastern boundary of the site, lay the curving ditch first recognised during the machining. On being fully exposed this appeared to be the southern half of what would have been an oval shaped enclosure ditch. The oval had a long axis of 17m north to south, the perpendicular axis being 14m across (internal dimensions). The northern section of the ditch had been entirely truncated away, although the northern 'arm' of the ditch had slight indications of a return, suggesting the enclosure would not have been significantly longer. The north eastern section of the ditch lay under waterlogged machine tracked clay, but along its southern edge the ditch survived to a depth of 0.80m. In cross-section the ditch was up to 2m wide at the surface, where it was least affected by truncation. It appeared to have a smooth, regular sloping outer edge, while the internal face of the ditch cut appeared both steeper and more erratic (see sections 9 and 4, Fig.4). The base of the ditch was curved and approximately 0.40m wide. The lower half of the ditch had apparently silted up with a coarse sand clay mix (contexts 35 and 18). Some animal bone was recovered from this fill, but no datable finds were found. The upper half of the ditch was filled with a charcoal rich silt clay (contexts 8 and 17). Again no datable finds were recovered from the fill but a number of fragments of late 1st / early 2nd century pottery were collected from the surface.

Within the enclosure a series of nine possible post holes were identified. These were mostly circular in plan, but with two being distinctively rectangular. All were between 30 - 50mm deep. They did not appear to have any obvious alignment, regularity or pattern but it is possible that additional post holes were either truncated away or remained obscured by the machine tracked clay that concealed much of the northern end of the enclosed area.

The ground surface of the enclosure also appeared to be covered with a thin spread of charcoal flecks within the natural clay. This charcoal was extremely dispersed and did not lie within a definable cut, but may indicate that a considerable amount of burning took place within the enclosure at some time (perhaps contemporary with the upper burnt fill of the ditch) - the charcoal flecks in the natural clay presumably being the result of worm action.

In the north-west corner of the enclosure the ditch had been cut by a rectangular pit. The pit was 1m long (east-west) by 0.50m wide (north-south) by 0.30m deep, with gently sloping sides. It had been filled with a sand silt clay matrix with a high density of charcoal. The fill also contained a number of fragments of mid 1st - early 2nd century Roman pottery.

b. Ditches to the west of the enclosure

Approximately 15m to the west of the enclosure ditch another linear cut was identified. This was a roughly north-south cut, exposed for 17m, by 1.5m wide. A slot trench was excavated across the cut and the ditch was found to be approximately 0.5m deep with regular, gently sloping sides and a curved base. The ditch had been filled with a homogenous sand clay silt fill with frequent charcoal flecks. No finds were found in the excavated slot but on the surface of the fill both late Iron Age and early Romano-British pottery was recovered (late 1st century BC to early 2nd century AD) along with animal bones and ceramic building material.

At the south-eastern end of the exposed ditch the tail ends of three irregularly shaped gullies were revealed. All were truncated by the ditch and did not reappear on the western edge of the ditch. None of the gullies were therefore seen in their entirety, but there was some evidence to suggest that all were slightly curving. All were shallow (50 - 110mm deep) and filled with a well leached sandy clay with some charcoal flecks. The most northerly of the gullies also contained one fragmented sherd of late Iron Age pottery.

Four roughly circular stains which may have represented the remains of pits or post holes were also noted in the area around the gullies. Two were half excavated revealing that the more southerly was only 35mm deep, while the more easterly was 170mm deep and also contained both burnt bone and mid 1st - very early 2nd century AD pot.

c. Ditches to the east of the enclosure

Approximately 6m to the east of the enclosure ditch another two linear ditches were identified. Both ran parallel to each other, about 3m apart and on a north-west/ south-east alignment.

(i) The western ditch:

This was exposed for 13m, although continued in both directions (its northern limit truncated in the excavation area, its southern limit hidden by alluvial cover). A slot excavated through the cut showed the ditch to be 0.55m deep, 1.5m wide and with steep, irregular sides and a curving base. The ditch had been filled with a homogenous sand clay silt fill with frequent charcoal flecks. Within the ditch fragments of both animal bone and tile were found as well as one piece of 1st century BC to 1st century AD pot. It should be noted that this ditch was particularly similar to the linear ditch seen to the west of the enclosure ditch.

(ii) The eastern ditch:

This ditch was exposed for some 22m north-west/south-east. At its northern end the ditch appeared to run out (or had been truncated away by modern clearance) but to the south the ditch was not fully exposed. A slot trench was excavated across the ditch which revealed that the ditch had been re-cut in antiquity. The earliest cut was 0.60m deep by 2m wide, with steep, straight sides and a flat bottom. It was filled with a sand clay silt soil which included some late 1st / early 2nd century AD pot, as well as a complete cattle skull. The ditch had then been re-cut with a smaller cut (0.55m deep by 1.2m wide with a curving profile) which was filled with a series of silt clay soils including a layer which was almost entirely charcoal. More late 1st / early 2nd century pot was noted in these fills.

d. An early Roman inhumation

At the northern end of the cut a concentration of pottery was noted on the surface of the feature (late 1st to 2nd century AD). On excavation the pot was found to be associated with a human burial, located somewhere near the skull. The skeleton appeared to be complete, although poorly preserved and severely compressed. It was orientated roughly north-south, lay supine and with its arms folded across its body (?left over right). Its legs were outstretched and the left foot seemed to slightly overly the right. At its right knee an iron nail was found, with a second nail possibly from near the head. This may suggest that the skeleton was originally buried in a coffin, although no supporting evidence (a grave cut or wood staining) was noted. An osteological report on the human remains, by Simon Chapman of ULAS has been included as Appendix I of this report.

(II) The circular cobble structure (Fig. 5)

21m to the east of the enclosure ditch a concentration of large cobble stones was noted. On excavation these cobbles were found to be part of a curving wall, appearing to form the foundation of a circular structure. Time constraints precluded the entire excavation of the structure but two slot trenches were dug to confirm the continuation of the wall in forming a circle. Projecting the unexcavated segment of the circle it was possible to estimate that the structure would have had a external diameter of 10m, a circumference of 31.42m and enclosing an internal area of approximately 63.63m². The wall was approximately 0.75m wide, made up entirely of cobbles but to an unknown depth. No construction cut for the wall was noticed although it may have existed and was either obscured by machine tracked clay or not identified (the consequence of rapid excavation).

Only two small areas were excavated within the structure (Fig. 5). In the more northerly of the excavated areas two patches of dark charcoal rich silts, ringed with haloes of burnt red clay were revealed. Large sandstone fragments (up to 0.20m long) were noted around these burnt areas.

The more southerly trench was dug in order to remove a modern land drain thereby enabling a view through the stratigraphy of the structure whilst avoiding unnecessary damage to the remains. Following the removal of the drain a layer (0.40m deep) of coarse sand silt was removed, lying above an orange sand silt natural. At the extreme east end of the trench a possible post hole (0.15m diameter, 0.10m deep) was revealed. This feature had presumably not been visible from the surface because it had been truncated by the land drain.

No finds were located from stratified contexts and the pottery from the cleaning layer above the structure ranged from late Iron Age to 4th century AD

(III) The ironstone structure

Approximately 75m south of the Gartree Road and 40m to the east of the enclosure ditch a concentration of cobbles and ironstone blocks were noted. The area surrounding these stones had been heavily tracked by both ploughing and Caterpillar tracks, leaving deep ruts. The problem of a highly disturbed ground surface was further compounded by the area being low-lying, near a stream and coinciding with a period of inclement weather, turning the area into a quagmire. Nevertheless, the stones appeared to show some hints of regularity, so an archaeological investigation was pursued. Limitations on time and manpower precluded a full scale excavation, so a policy was adopted, of auguring (with an iron rod) areas that could not be hand dug, in the hope of detecting the dimensions and orientation of any surviving solid structures.

The southern half of the area appeared slightly less waterlogged, so an initial investigation was concentrated there. An expanse of wall was exposed running west south-west to east north-east for some 16m, by 0.50m wide. The wall was constructed by laying a foundation bed of cobble stones onto which blocks of faced ironstone were laid. At least two courses of ironstone walling survived with the blocks being two deep and up to 0.25 by 0.40m long. A test slot dug to the south of this wall revealed a collection of broken Swithland slate roofing tiles lapping up against the ironstone wall. The position of these slates suggest that the ironstone must have been above ground when the building was in use.

At the west end of the ironstone wall a return was found, turning northwards. Although heavily truncated this wall extended for some 13m and appeared to be slightly wider (0.70m) than the southern wall. This additional width could indicate that the wall was load bearing. The ironstone blocks used in this section of the structure also appeared to be slightly smaller than those used in the southern section, although they may simply have been more crushed by machinery.

A return forming the east wall of the building was then also located. The quantity of disturbed soil in this area (nearest the stream) impeded excavation but using an iron probe it was possible to establish that the wall extended for some 15m and was 0.70m wide. Half way along the wall there was an apparent gap in the foundation (approx. 2m wide) but it was not clear whether this represented a genuine structural feature, that cobbles had been robbed in antiquity or that the foundation had been removed during machining.

The north wall of the building would presumably once have been the front wall of the property, facing towards the Gartree Road. None of the ironstone superstructure survived in the northern half of the building, but this may either have been the result of differential stripping or that, being nearer the Gartree Road, the stones had been more heavily robbed. The north wall of the building seemed to extend further to the west than the south wall by some 4m and appeared to include foundations for three apsidal extensions. The extension at the western extreme of the wall appeared to have a roughly square foundation (4 x 4m). Both the other extensions were semicircular with a 1.5m radius. One was located centrally while the other lay at the extreme eastern end of the wall.

In the internal south eastern corner of the building a small trial excavation (2 x 2m box) was attempted in order to establish whether any occupation levels survived. Although heavily affected by wheel ruts, a layer of small dark brown gravel stones identified. A large possible post hole / pit (0.75m diameter) was also noted, but neither feature was fully excavated.

Discussion

(I) Ditch feature and associated post holes

The earliest features identified in this area would seem to be represented by the curving gullies (with associated post holes) observed at the south end of the western ditches. These were, however, all poorly preserved and heavily truncated. Compared to the more visible ditch features and stone/cobble walls the curving gullies were not easily identified in the machine tracked clay, so their identification could be seen as fortuitous because they happened to be located next to a more visible ditch. It would therefore seem probable that more of these gullies existed but were not exposed. Without a more complete plan it would be highly speculative to attempt to define a function for these cuts but it is just possible that they could be parts of the ring gullies associated with prehistoric roundhouses.

The ditch truncating the gullies was notably similar to the westernmost ditch of the eastern set of ditches. Both had similar profiles and similar fills. Again, a speculative interpretation might suggest that they represent contemporary boundary ditches, demarcating an early field system.

Once a reasonable proportion of the sub-oval ditch had been revealed it became apparent that it represented the partial remains of a small enclosure ditch. Projecting a line around the unexcavated third of the ditch (on the evidence of the beginnings of a curve on the northernmost extent of the excavated ditch) the shape and dimensions of the enclosure could be estimated. The enclosure would have had an external circumference of approximately 60m, surrounding an area of about 250m². No entrance way was identified but a series of possible post holes were noted along the central line of the enclosure. These internal features could possibly have been associated with some kind of structural activity within the enclosed areas although their poor survival prevents any detailed interpretation.

The ditch of the enclosure appeared to have filled up in two separate episodes. The lower fills appeared to have been leached of almost all their organic content and did not seem to contain occupation debris (excepting one fragment of animal bone and a horn core). In contrast, the upper fill was rich in both silts and charcoal and contained some Roman pot (1st to 3rd century). It is tempting to associate this upper charcoal rich fill with the charcoal spread within the enclosure, and to assume that they represent sustained or renewed activity in the area.

(II) The cobble structure

On the limited excavations undertaken it was largely only possible to record information in plan. However, it has been established that the structure consisted of a dry built circular cobble foundation enclosing an area of some 64m². Approximately two-thirds of the structure was uncovered but this did not appear to include any form of entrance way. It could be assumed that the cobbles afforded a very solid footing to a building but no evidence was found to suggest the height, breadth or materials used for the superstructure. The relative lack of collapsed building material could suggest that:-

- The structure did not originally have any great height, perhaps just being a small cattle / sheep enclosure. However, the possibility of the two scorched areas representing hearths would argue against this merely being a cattle pen.
- The upper wall material was deliberately robbed and reused elsewhere. A similar circular cobble structure was investigated at the Holme House excavations, Piercebridge, Edinburgh (Harding 1984). The cobble structure there had an overall diameter of 15m and included a single course of roughly dressed limestone blocks surviving above the cobble foundation. The use of ironstone for the superstructure of the rectangular building on the Oadby site could suggest that material may have been robbed from the cobble structure and reused.

The circular house is generally thought to typify the Iron Age settlement record in Britain, but the round house was common throughout lowland Britain during the first and second centuries AD (Hingley, 1989). Similar stone footings have also been observed in the north west of Leicestershire where a circular stone structure (diameter 10.5m) was observed during a watching brief in Ravenstone (Lucas, 1982) and in the north east of Northamptonshire (ironstone footings, 8.25m diameter) during excavations at Weldon (Smith *et al*, 1990).

(III) The ironstone structure

The excavations in the area of the ironstone walls established that a rectangular structure (16 x 13m) had once stood on the site, enclosing an area of 208+m. The building was founded on a solid cobble foundation, appeared to have a dressed ironstone superstructure and a slate roof and seemed to be roughly aligned to the Roman Gartree Road. On the supposed front of the building, facing the Gartree Road the structure had two semi-circular or 'bay' extensions and the square corner extension. Although the exact nature of these protrusions cannot be known from the limited excavations they may indicate that the patron of the building intended some grandeur in the design of the establishment, at least on the most visible face of the building.

The number of internal rooms within this building is not known. From the small area of trial excavation in the south west corner of the structure the only features identified were a post hole or pit and a gravel surface. An interpretation of the function of the pit cannot be attempted as the feature was seen in isolation and not excavated. Similarly, the gravel surface may either have represented a floor surface or have been part of a sub-surface hard-core layer. The limited time available on site also precluded systematic probing of the indoor area of the building, so it is not known whether internal room partition foundations also existed.

Conclusion

The excavations at the University Playing Fields development site produced a range of unexpected archaeological discoveries. The curving gullies to the west of the site may have represented the vestiges of ring gullies, most commonly associated with Iron Age dwellings. These gullies were truncated by the westernmost linear ditch, implying a change of land use. Typologically, the oval enclosure ditch is also likely to have had Iron Age origins, although dated ceramics from the upper fills suggests continued use into the early Roman period. The rectangular pit cut into the enclosure ditch after it had gone out of use gives us a *terminus post quem* of for the enclosure of the mid 1st to early 2nd centuries A.D.

Both the circular cobble structure and the ironstone building were not fully excavated and no stratified datable material was recovered. However, ceramics ranging from the late 1st to the 4th century collected from the surface of these structures suggest a period of occupation post dating the enclosure and continuing for some duration.

As a group it is tempting to suggest that the features found during the excavations represent a settlement of some longevity, from the earliest Iron Age ring gullies, the ?late Iron Age / early Roman enclosure and culminating in the more solid circular cobble structure and dressed ironstone apsidal Roman building. The apsidal fronted building, visible from the major thoroughfare of the Gartree Road, is perhaps indicative of some degree of wealth.

The concentration of structures observed in the brief period of excavations may also suggest that the area observed was only part of what might have been a much larger settled area. Further work on both this development site and in the surrounding area would help to clarify both the extent and precise nature of the activity.

Acknowledgements

ULAS would like to thank the University of Leicester for the generous funding of the project and for providing access to their land. We would also like to thank Pete Liddle for his assistance in negotiating both the access and funding. Much of this work would not have been possible without the help of the many archaeologist (from ULAS, LMARS, students from the School of Archaeological Studies, University of Leicester and local archaeologists) who worked voluntarily despite atrocious weather.

Project manager: Patrick Clay

Site directors: Lynden Cooper and Susan Ripper

Report compilation: Susan Ripper

Finds supervisor: Dawn Harvey.

Finds analysis: Dr Richard Pollard

Bibliography

- Hingley R, 1989 *Rural Settlement in Roman Britain*
- Liddle P. & Hartley F,
1994 *Stoughton Estate: An Archaeological Survey Report*
LMAST 4/94
- Lucas J, 1982 *A Romano-British Settlement at Ravenstone, Leicestershire*
in The Transactions of the Leicestershire Archaeological
Society, Vol LVI, 1980-81
- Smith, Hird & Dix
1990 *The Roman Villa at Great Weldon in Northampton*
Archaeology , Vol 22, 1988-9.

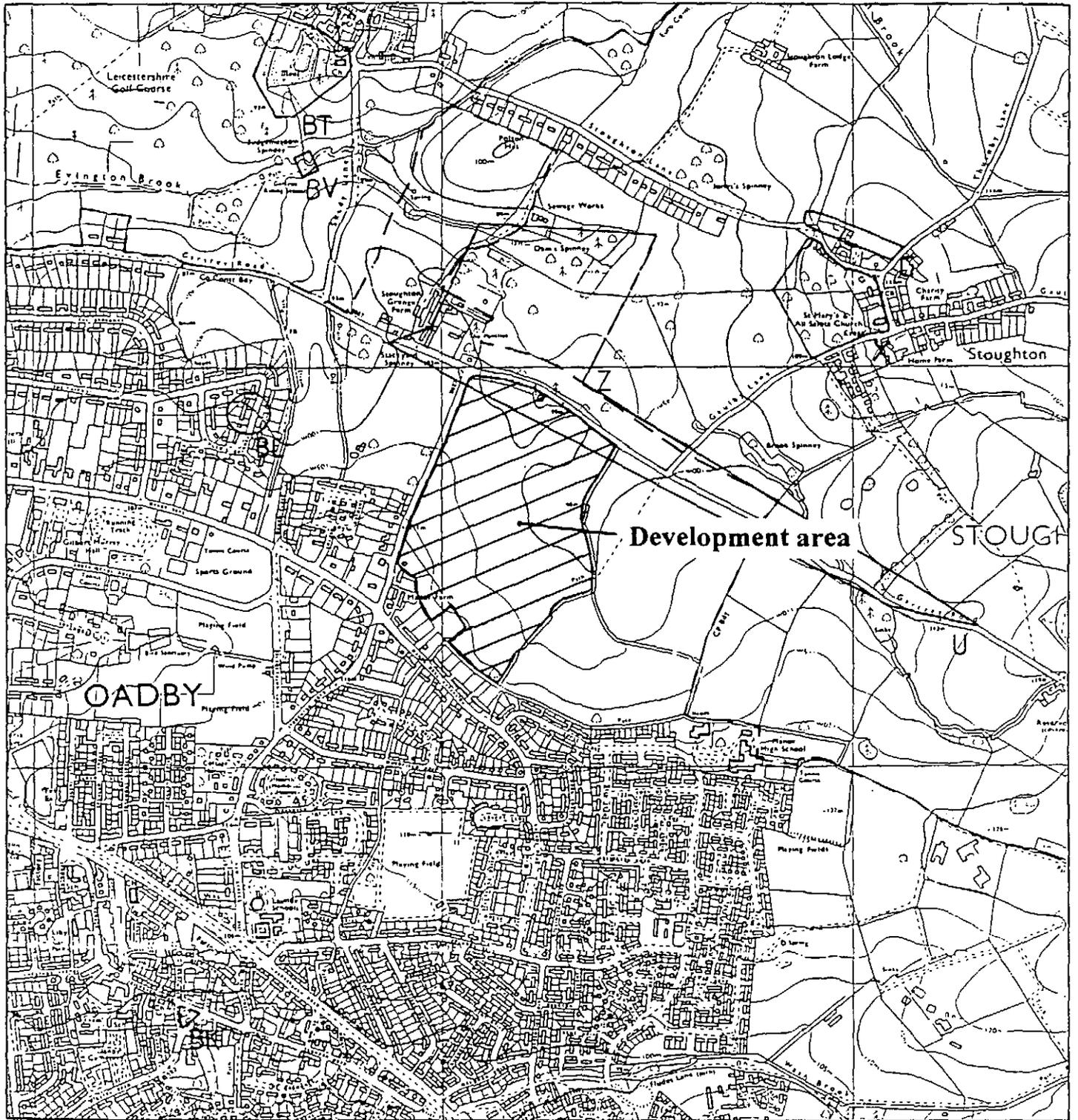


Figure 1: Site location plan

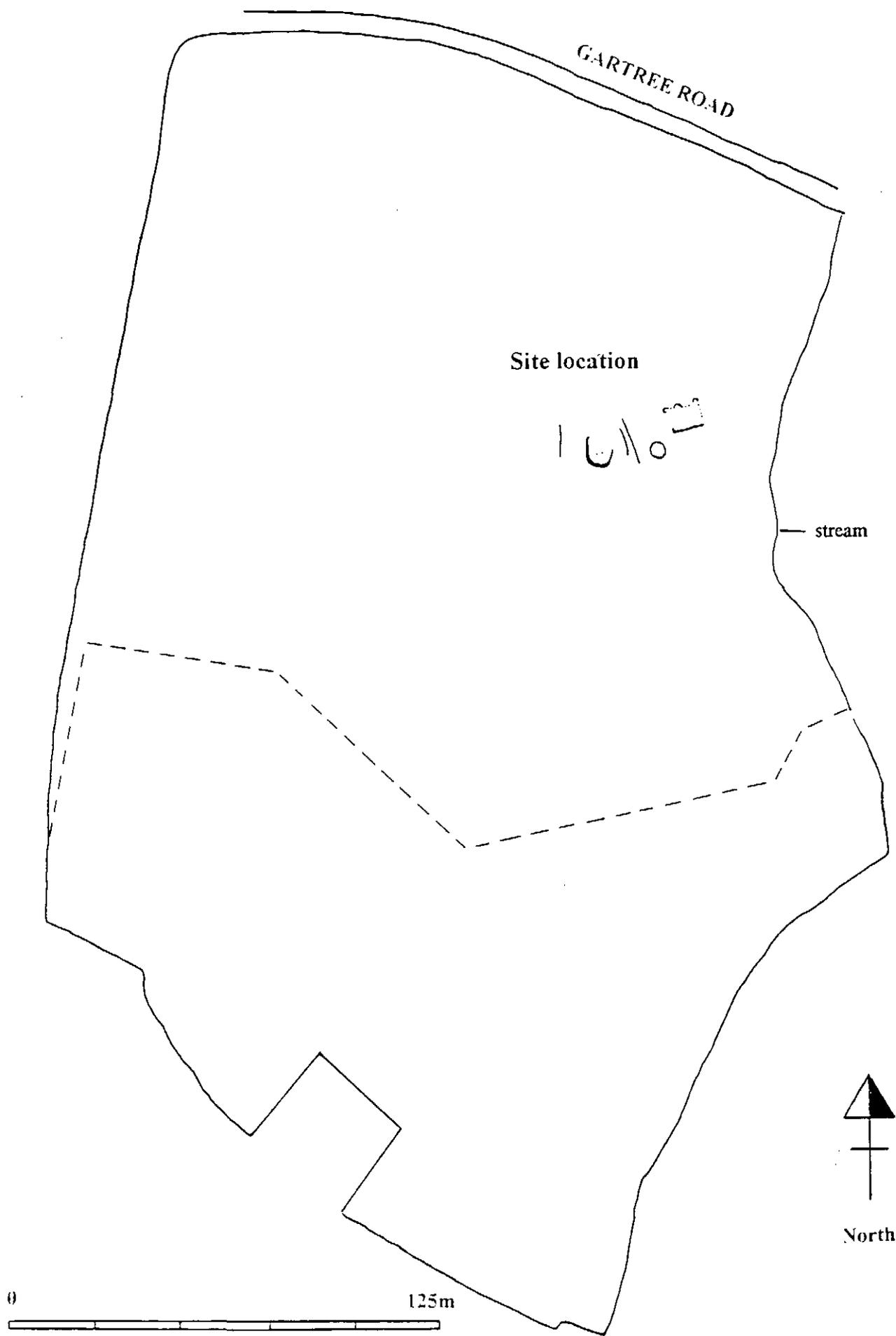


Figure 2: Location of archaeological features

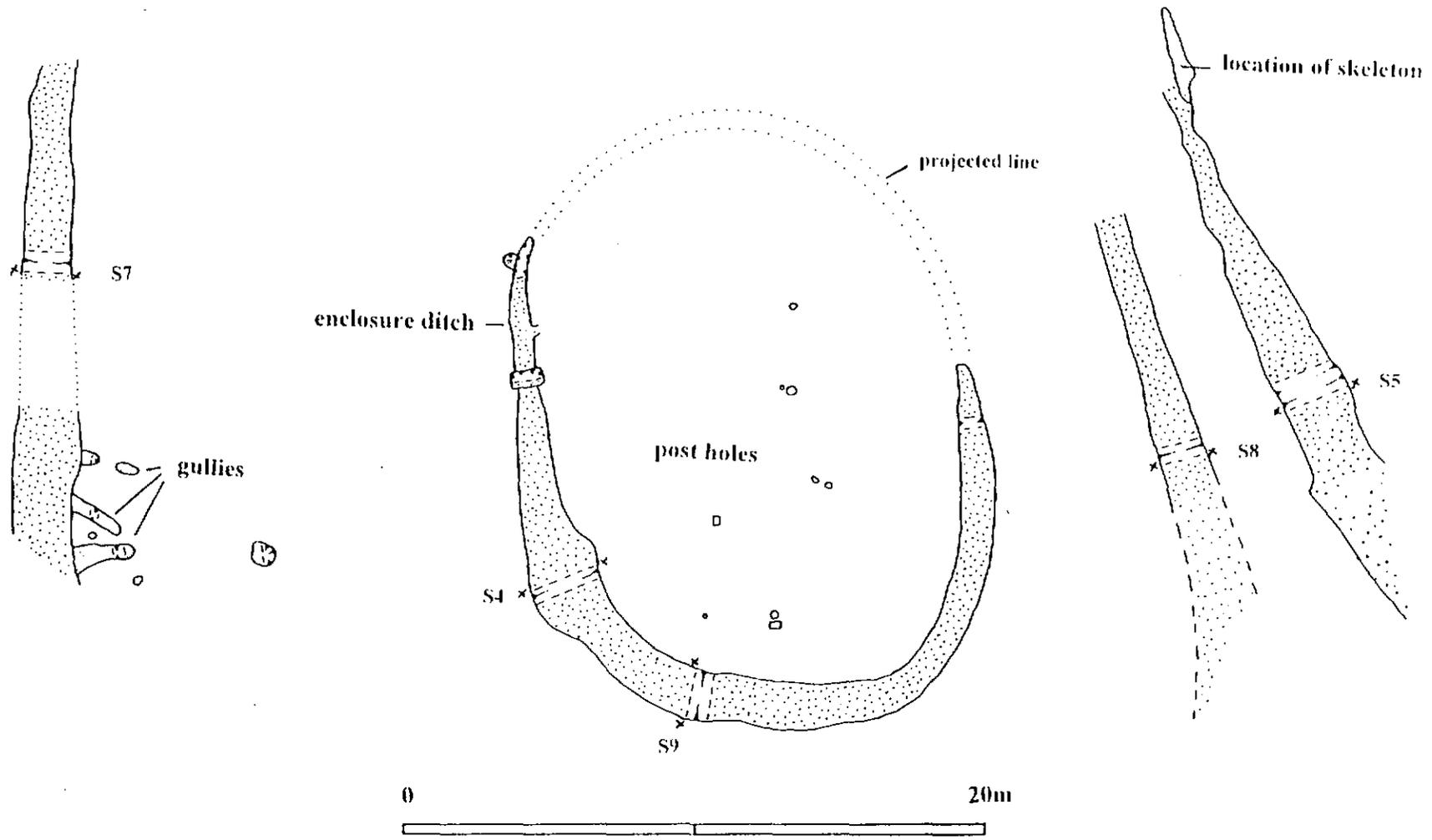
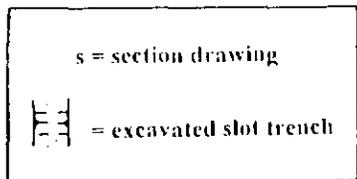


Figure 3: The enclosure and surrounding ditches

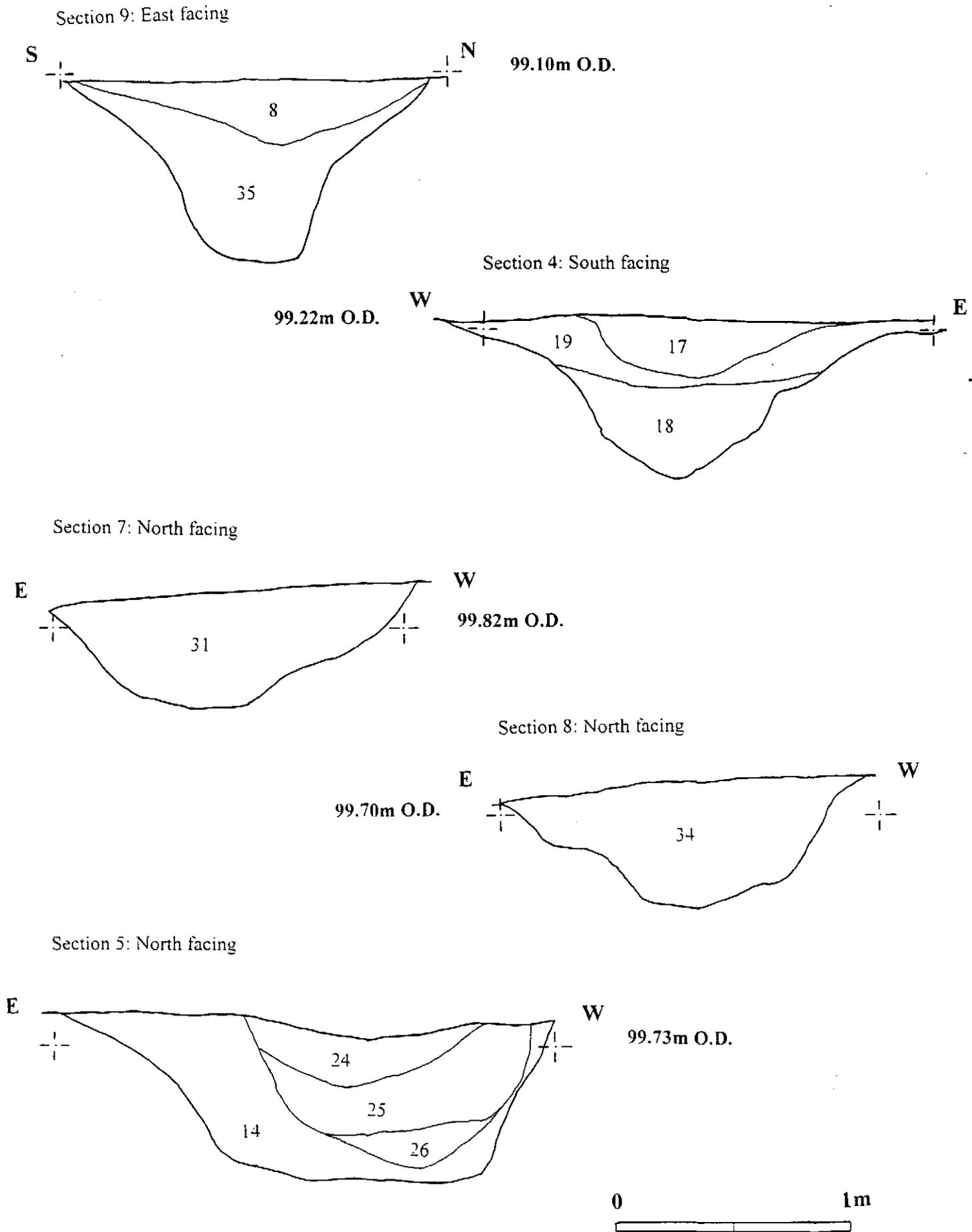


Figure 4: Sections

Figure 5: Circular cobble structure

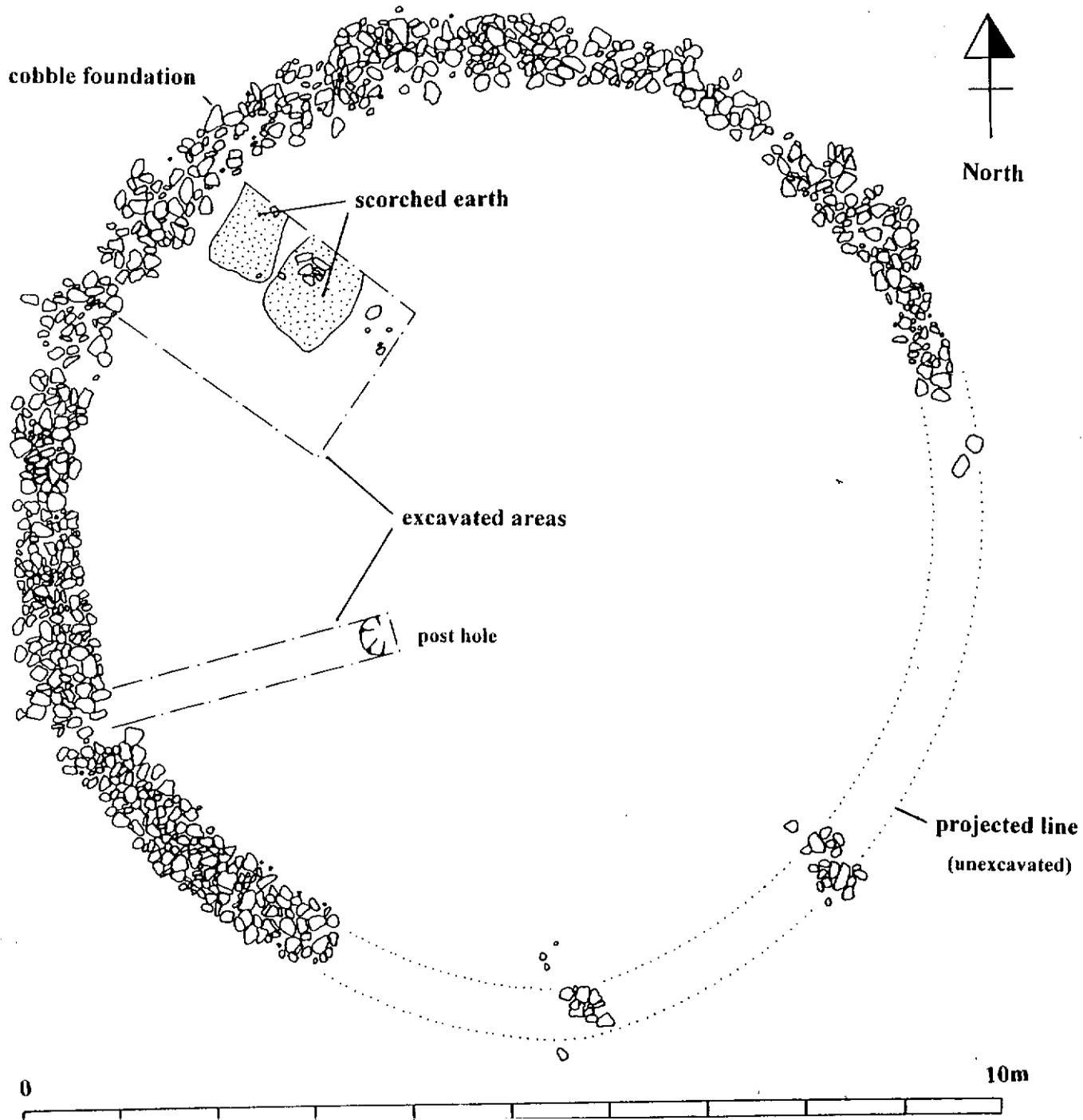
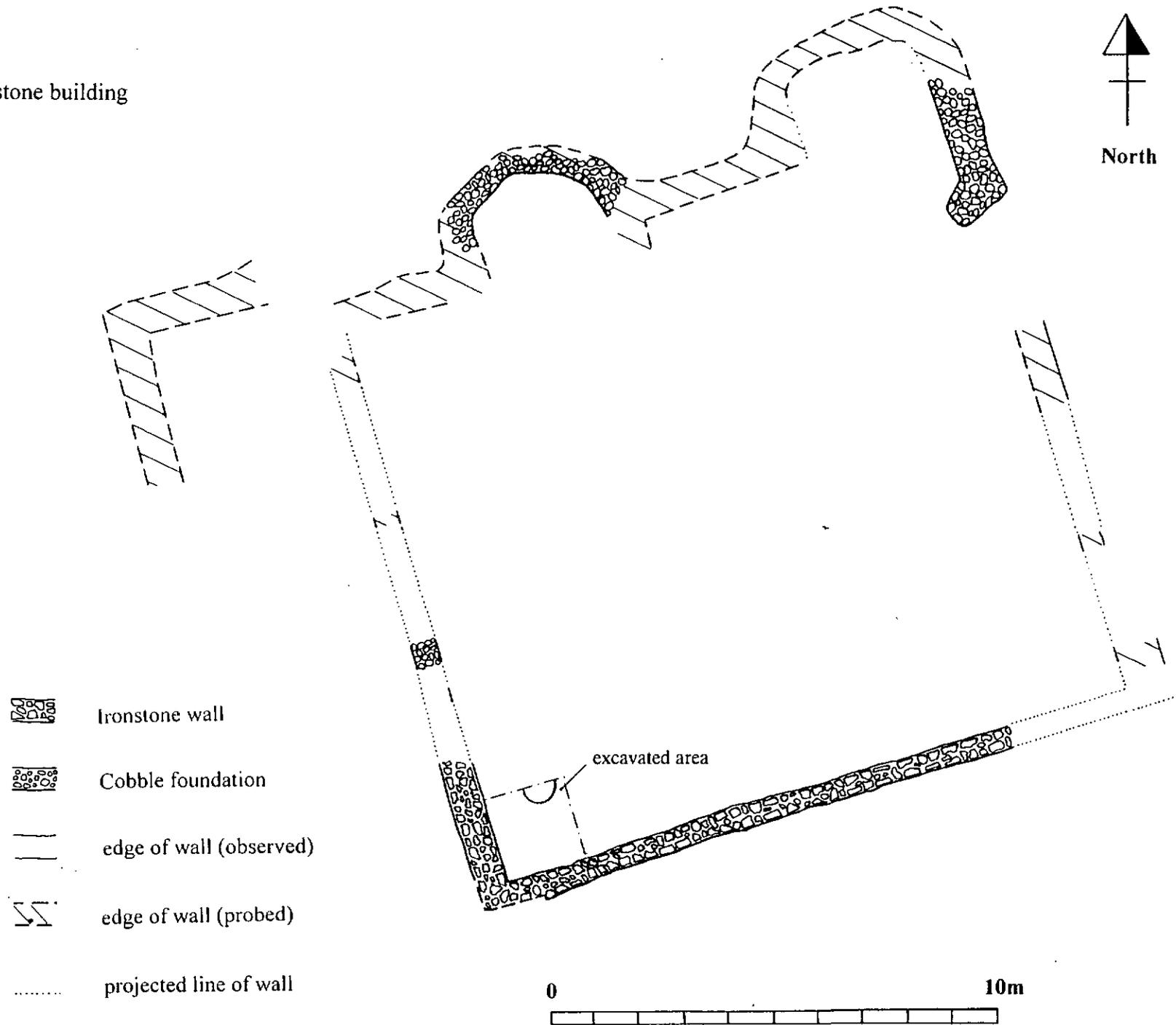


Figure 6: Ironstone building





Illustrations I - III: The enclosure ditch (looking north east), the circular cobble founded structure (looking south west) and the south west corner of the rectangular ironstone building (looking south east).



Illustrations IV and V: The human skeleton (after the removal of the skull) and a 'working shot' during the excavation of the circular cobble structure.

Appendix 1

**Osteology Report On A Human Skeleton Excavated
From University Playing Fields, Gartree Rd,
Oadby, Leicestershire. (SK 632 017)**

By Simon Chapman MA

Contents

	<u>Page</u>
<i>Illustrations</i>	2
1 - Introduction	3
2 - The Analysis	3
2.1 Parts present & condition	3
2.2 Metrics	5
2.3 Non-metric variations	6
2.4 Ageing	6
2.5 Sexing	7
2.6 Stature	7
2.7 Pathology	7
2.8 Dentition	9
3 - Summary	9
<i>References</i>	10

Illustrations

Fig 1. Stylised drawing of the Oadby skeleton showing parts present/identifiable at time of analysis (shaded areas).

Plate 1. Active periostitis of the left ulnar (elbow region), probably the result of a minor trauma. Reproduced at actual size.

Plate 2. Schmorl's nodes on the superior surfaces of three fragmentary thoracic vertebrae,

1 - Introduction

The human remains that are to form the basis of this investigation were excavated by representatives of the University of Leicester Archaeological Services between the 13th and the 22nd of March 1996. The excavation was undertaken on behalf of the University of Leicester, in advance of the development of the site.

The excavation of the playing field site revealed a series of ditch and post hole features, the foundations of a rectangular ironstone building, and the foundations of a circular cobble built structure (Ripper 1996). The inhumation burial was located at the northern end of the eastern ditch cut. Dating of the inhumation was possible by its association with a small quantity of late 1st - 2nd century AD pottery.

The skeleton appeared complete despite its poor preservation/fragmentation. It was aligned roughly north-south and had been laid out supine with arms folded across the body and legs in an extended position. Iron nails, located near the right knee and head, may represent a coffin which has since rotted (though no wood stain was discernible during excavation). A small assemblage of apparently disturbed bone was also located close to the articulated skeleton, but it was not clear whether a second individual was represented by these small fragments.

The remainder of this report will be concerned with the analysis cataloguing and interpretation of the human remains excavated from the University playing fields in 1996.

2 - The Analysis

The osteological analysis of the Oadby skeleton was carried out by the author, at the University of Leicester's bone laboratory, between the 9th - 11th of September 1996. The analysis followed standard accepted methodologies employed in studies of this nature, as described by Bass (1987), Brothwell (1981) and Ubelaker (1989). Methods and texts used during the analysis will be cited, where appropriate, under the relevant categories of the following investigation.

2.1 Parts Present & Condition

The bone remains had been washed and fully dried prior to analysis. Condition varied from almost perfect preservation, with bone retaining a good outer sub-periosteal layer and well preserved cortical/compact bone, to heavily weathered bone having lost sub-periosteal layers and displaying weathered and cracked cortical/compact bone. All bones had apparently been heavily compressed in post-deposition, as a result none were preserved in any reasonable state of completeness. The majority of bone elements were in a highly fragmented state.

Once laid out it was possible for a full inventory of the surviving remains to be compiled. Despite a couple of conspicuous absences of certain bones, which can only be explained as a result of various taphonomic processes, the skeleton was otherwise in a fairly complete state. Most parts of the body were represented to some extent (see below and *fig 1*). The cranium was of particular note since although it had been badly crushed and weathered a near complete maxillary and mandibular dentition could be retrieved, despite all having been separated from their sockets in post-deposition. These were valuable in the ageing of this skeleton, section 2.4.

The second assemblage of bone apparently originated from the head region of the articulated skeleton (including cranial and mandibular fragments, teeth and cervical vertebrae frags.), these possibly having been disturbed at some time during post deposition.

Parts Present

Cranium: Numerous vault frags (parietal, occipital and temporal inc. l & r auditory meatus' & mastoid proc.)
Mandible (frags. inc. l & r coronoid proc. and right condyle)

Dentition: R $\frac{7\ 6\ 5\ 4\ 3\ 2\ 1}{6\ 5\ 4\ 3\ 2\ 1}$ | $\frac{1\ 2\ 3\ 4\ 5\ 6\ 7}{3\ 4\ 6\ 8}$ L

Vertebrae: Cervical x 2 (frags. inc atlas)
Thoracic/Lumbar (10 x body frags. + numerous spinous/arch frags.)
Sacrum (frags. S 1 & 2)

Scapulae (2 x frags.)
Sternum (manubrium frag.)

Ribs: 4 x right distal ends
2 x left distal ends
22 x unsided frags

Arms: Left humerus (shaft frags. + distal end frag)
Right humerus (3 adjoining shaft frags.)
Right ulnar (2 adjoining shaft frags. + distal head)
Left ulnar (distal & proximal ends + shaft frags.)
Left radius (distal + shaft frags)
Right radius (shaft frag. + proximal head)

Hands: 3 x left carpals (scaphoid, lunate, triquetral)
7 x right carpals (capitate, lunate, trapezium, hamate, triquetral, pisiform, trapezoid)
1 x left metacarpal
2 x right metacarpals (1st, 2nd, 3rd,
4 x left proximal phalanges
4 x right proximal phalanges
1 x right distal phalanx

Pelvis: Left & right acetabulae + ilium frags.
2 x pubis frags. (left and right)

Legs: Left femur (2 large joining proximal frags. + head & distal condyle frags)
Right femur (shaft frags + head & distal condyle frags)

Left Patella
Left tibia (shaft frags.)
Right tibia (shaft frags. + prox .and dist. ends))
Left fibula (
Right fibula (3 joining shaft frags.)

Feet: Left tarsals (frags. talus, calcaneus, navicular, medial cuneiform, sessamoid)
Right tarsals (frags. talus, cuboid, intermediate cuneiform, medial cuneiform, lateral cuneiform)
Left Metatarsals (3rd, 4th)
Right metatarsals (1st, 4th, 5th)
Unsided Phalanges (x 13)

The poor state of the surface bone and the incomplete/shattered appearance of most of the long bones was to limit the scope of this investigation, particularly in terms of the metrical analysis (section 2.2), the estimation of living stature (section 2.6) and potentially in the diagnosis of pathological conditions (section 2.7) since these require good bone preservation. In an attempt to aid analysis and interpretation adjoining bone fragments were refitted wherever possible.

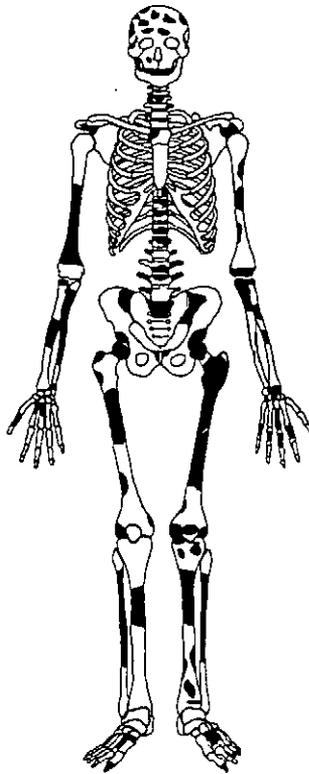


Fig 1. Stylised drawing of the Oadbyskeleton, showing parts present /identifiable at the time of analysis (shaded areas).

2.2 Metrics

The high level of fragmentation observed in this collection of bone meant that very few useful measurements could be taken during the course of this investigation. Several standard measurements (described by Brothwell 1981.85-7) could however be made of the large fragments of the left and right femora (Table 1). The size of the femoral head (FHD₁) will be relevant later in discussion relating to the sex of this individual (section 2.5).

Table 1. Post-cranial metrics (all measurements given in mm)

Metric	Left	Right
FeD ₁ (min anterior-posterior femoral diameter)	28.7	-
FeD ₂ (Transverse femoral diameter)	37	-
FHD ₁ (femoral head diameter)	50.36	48.52

Using the metrics described in table 1 it was possible to calculate the Platymetric index of the left femur of this individual. Brothwell (1981.88-92) provides a concise discussion of the possible causes of differences in the Platymetric index. In the case of the Oadby skeleton the left femur can be classified as being of 'Platymetric' type, ie. broad or flat from front to back.

$$\text{Platymetric index: } \frac{\text{FeD}_1 \times 100}{\text{FeD}_2} \quad \text{ie.} \quad \frac{28.7 \times 100}{37} = 77.57 \quad (\text{Platymetric})$$

2.3 Non-metric variations

No non-metric /discontinuous skeletal traits were observed during the course of this investigation. Such traits are a common feature in all skeletal populations, these usually being non-pathological variations in skeletal morphology, believed to have a basic genetic origin. Since non-metric variations are usually very subtle it is often very difficult for these to be observed and recorded in fragmented skeletons, as in this case.

2.4 Ageing

The criteria on which this individual was aged depended largely on the nature of the bones available. Where possible a range of criteria were employed, the several results obtained being combined to produce an *average* (most likely) age for the individual.

Since the growth centres or 'epiphyses' of the major bones of the human skeleton are known to fuse or 'ossify' at quite specific times of life (Brothwell 1981 *fig 3.4* & White 1991 *fig 16.4*) it is possible, by determining the level to which the bones have ossified, to estimate the age of a given individual. Close observation of the epiphyses of the Oadby skeleton suggested that full skeletal maturity had not yet been reached (*Table 2*), since many epiphyses had yet to fuse. At most, as in the case of the femoral head, fusion had only just begun. Here resulting in the partial fusion of the epiphyseal head to the shaft of the femur, though the point of union had not begun to fade (suggesting very recent fusion).

Table 2. Stage of epiphyseal union in various bones of the Oadby Skeleton.

Epiphysis	Left	Axial	Right	Estimated age
Proximal radius	Unfused	-	Unfused	< 19 yrs
Distal radius	-	-	Fusing	15-23 yrs
Distal m.carpals	Fusing	-	-	14-21 yrs
Proximal phalanx	Fusing	-	-	14-21 yrs
Vertebral body	-	Unfused	-	< 25 yrs
Sacral promontory	-	Unfused	-	< 25 yrs
Femoral head	Fusing	-	Fusing	15-20 yrs
Distal femur	Unfused	-	Unfused	< 23 yrs
Proximal tibia	Unfused	-	-	< 23 yrs
Distal tibia	Unfused	-	-	< 20 yrs
Estimated age overall				<u>15-18 yrs</u>

Examination of dentition is also a well accepted method by which to age a skeleton, primarily looking at the level of tooth development (most useful for individuals below the age of 21 yrs) and at the degree to which the permanent teeth have become worn during life. Ageing through dental attrition is possible due to the fact that the teeth of a certain population, if diet and dental activity are held in common throughout the group, are seen to become progressively worn through the period of tooth use. Methodologies for the calculation of age using attrition patterns have been produced by Brothwell (1981.72), Lovejoy (1985), and Miles (1963).

It was apparent, by the presence of a single lower 3rd molar (wisdom tooth), that this individual was in the latter stages of adolescence since these usually erupt between the 16th - 21st year. Unfortunately since the tooth was not embedded in the mandible it was impossible to state just how fully this tooth had erupted,

however it was noticed that the roots had not yet fully developed and the crown had not been noticeably worn, suggesting an age of c.17-18 yrs. Attrition patterns were likewise minimal on the remainder of the permanent teeth, the most heavily worn being the 1st molars. The degree to which each of the molar teeth had been worn in this individual is consistent with an adolescent who had reached the age of c.16-20 yrs (Miles 1963).

Finally, the presence of both the left and right pubic symphysis of the pelvis, despite being fragmented, could be used to support estimations of age made on the basis of epiphyseal fusion and dentition. Using a methodology described by Brooks and Suchy (1990), the pubic symphyses of this individual can be said to be those of an individual who had died between c.15-25 years of age (Brooks & Suchy's phase I).

From the results of the above investigation it can be said, with a high degree of certainty, that the Oadby skeleton represents an individual who had reached an age of 17-18 yrs by the time of death.

2.5 Sexing

The highly fragmentary nature of the skeleton meant that very few of the features diagnostic of sex had survived sufficiently well to allow a reliable estimation to be made. Determination of sex was only possible through an evaluation of the dimensions of the bones present, most importantly the dimensions of the femoral heads (both of which had survived in this case).

Most of the bones of this individual appeared thick, robust and with medium sized muscle attachments, this tentatively suggesting a person of fairly large build (especially in one so young).

The maximum diameter of the femoral head is well known as a sexually dimorphic metric in most populations (Bass 1987.220), (Stewart 1979.120), (Thieme 1957). Comparison of the dimensions of the femoral head of the Oadby skeleton, with dimensions recorded by Stewart (1979.120 -below-) from European individuals of known sex, it can be said that this skeleton almost certainly represents a Male.

Female	female ?	Indeterminate	male ?	Male
< 42.5 mm	42.5-43.5 mm	43.5-46.5 mm	46.5-47.5 mm	> 47.5 mm
			Oadby Skeleton	<u>50.4/48.5 mm</u>

2.6 Stature

In the absence of any complete bones, and especially of any complete long-bones, it was not possible to estimate the living stature of this individual using the standard regression equations described by Trotter and Gleser (1952 & 1958). Even after the refitting of broken long-bones such as the left fibula (to 24.7 cm) and the left femur (to 26.9 cm) no bone could be said to have been more than 3/4 complete. The dimensions of the recognisable fragments did, however, suggest that a reasonable adult stature had already been attained.

2.7 Pathology

Extreme fragmentation of the surviving bone severely limited reliable diagnosis of pathological conditions. It is possible that some conditions, especially if subtle, would have been masked by the poor preservation of the bone. Two observations were however possible during the course of the analysis.

Firstly, a small region of active periostitis (bone inflammation) was observed on the posterior surface of the left ulnar, at the level of the supinator crest (*Plate 1*). Due to its localised position it seems unlikely that this inflammation was a result of a general infection of the periosteum, rather it seems more likely that it was a result of a recent injury to the left elbow. That the periostitis was still active (the region appearing rough and porous) suggests that this person died while still recovering from this injury. One cannot, however, attribute cause of death to this trauma.

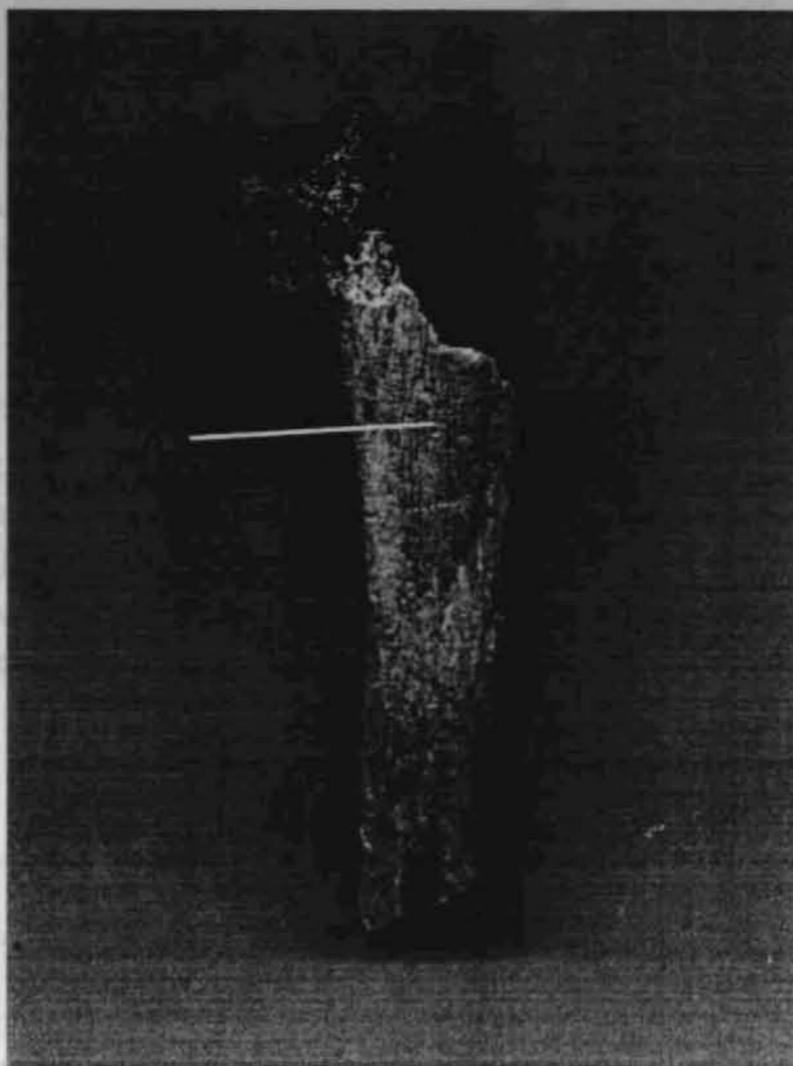


Plate 1. Active periostitis (A) of the left ulnar (elbow region,), probably the result of a minor trauma. Reproduced at actual size.

Secondly, several depressed lesions were identified on the superior (upper) surfaces of three fragmentary bodies of thoracic vertebrae (*Plate 2*). These lesions appear to represent so called 'Schmorl's nodes' caused by the herniation of the intervertebral discs. Such lesions are common in the elderly, as a result of degenerative disc disease. However, their presence in children and adolescents is very rare, occurring in only 2% of this age group (Bunnell 1982). Their presence in this individual may be an indicator of a strenuous working life, albeit a short one, whereby the back was subjected to excessive or regular stress. Alternatively these lesions could have resulted from a fall from a height (Man 1990.52).

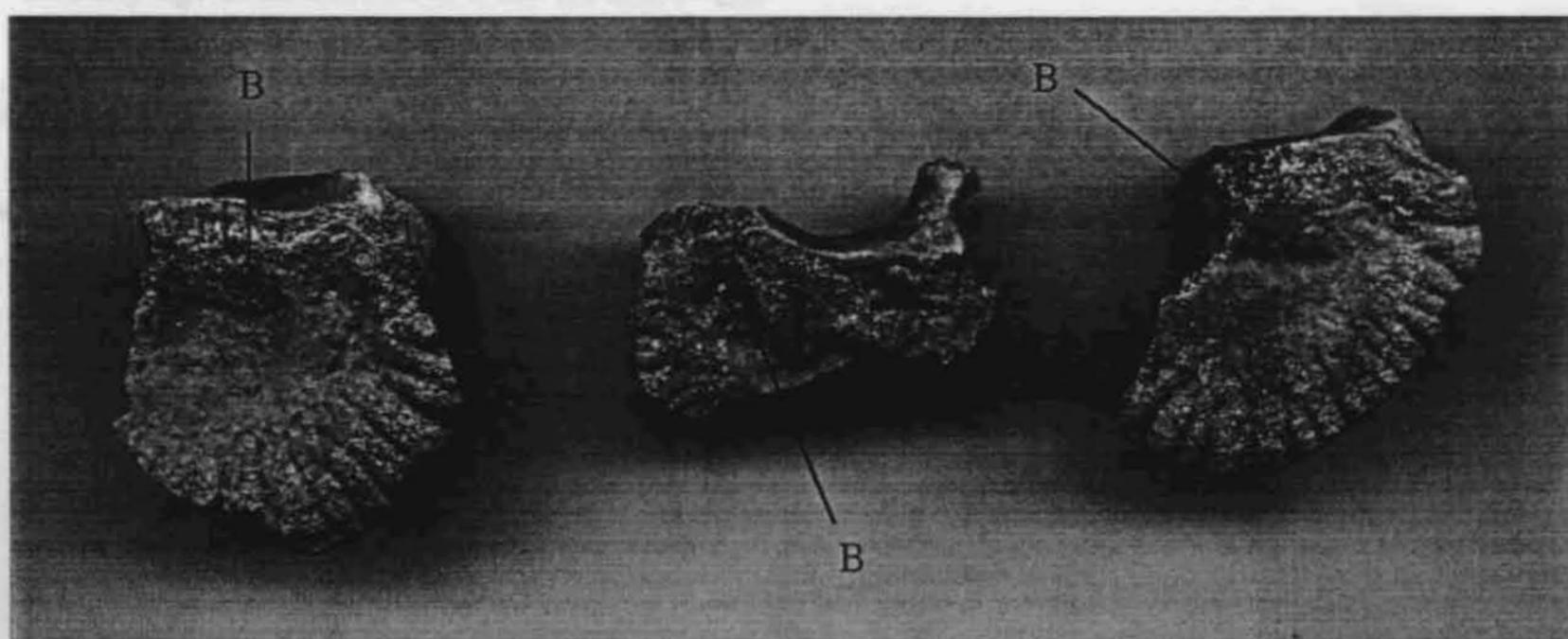


Plate 2. Schmorl's nodes (B) on the superior surfaces of three fragmentary thoracic vertebrae, Note also the billowed margins of the centrum indicative of the sub-adult vertebrae. Reproduced at actual size.

2.8 Dentition

R	NP	7	6	5	4	3	2	1	1	2	3	4	5	6	7	NP	L
	NP	NP	6	5	4	3	2	1	NP	NP	3	4	NP	6	NP	8	

The dentition of this individual was nearly complete and in very good health. None of the teeth had been significantly worn, no caries were present and calculus (tartar) build up was very minimal, mostly around the molars. It was not possible to determine whether any teeth had been lost during the life of this individual. Eight adult teeth were not represented in the assemblage, but since all teeth were loose and three of these were 3rd molars, these could have been lost in post-deposition or not erupted in the first place. The lower left 3rd molar was present but with incomplete root development (with tips missing), suggesting that the 3rd molars were beginning to erupt at the time of death.

3 - Summary

It has been the intention of the current report to catalogue and attempt to interpret the metrical and observational data retrievable from the analysis of the human remains from the University playing fields at Oadby.

In summary, the Oadby skeleton represented the remains of a 17-18 yr old male. This individual was relatively well built, but of unpredictable living stature. In the absence of any obvious deficiency disease (anemia, rickets, enamel hypoplasia etc.) it seems reasonable to suppose that this individual received adequate nourishment during the period of most active bone development.

The general health of this individual was reasonably good, there was no evidence of bone fracture nor gross pathological alteration. Some early manifestations of degenerative disease were apparent in the form of vertebral Schmorl's nodes. These possibly having arisen from employment in back strenuous labour from an early age or as a result of a fall from a height.

The dentition of this individual was complete and in very good health. None of the teeth had been significantly worn, no caries were present and calculus (tartar) build up was very minimal. It was not possible to determine whether any teeth had been lost during the life of this individual.

As to the cause of death little can be said. It should, however, be remembered that most diseases known to effect humans leave no traces of their presence on dry bone, thus a soft tissue infection cannot be ruled out by this investigation. It cannot be suggested that death came as a result of either of the traumatic lesions of the vertebrae or ulnar, since in both case a degree of healing could be observed. The young age of this individual does, however, imply that death came prematurely, but from an unknown source.

References

- Bass. W. (1987) Human Osteology: A laboratory and Field manual. 3rd Edition. Missouri Archaeological Society.
- Brooks.S & Suchey.J.M. (1990) Skeletal Age Determination Based on the os Pubis *Human Evolution* Vol.3 pp 227 - 238.
- Brothwell. D (1981) Digging up Bones. London. British Museum Press.
- Bunnell.W.P. (1982) Pack Pain in Children. *Orthopedic Clinics of North America*. Vol. 13 (3): 587.
- Lovejoy.C.O (1985) Dental wear in the Libben population: Its functional pattern and role in determination of adult skeletal age at death. *American Journal of Physical Anthropology*. vol. 68. 47-56.
- Mann. R.W. & Murphy.S.P. (1990) Regional atlas of bone disease: A guide to pathological and normal variation in the human skeleton. Charles C.Thomas Publishers,USA.
- Miles.A.E.W (1963) The dentition in the assesment of individual age in skeletal material. In R.D.Brothwell ed. Dental Anthropology. Vol.V Symposia of the society for the study of human biology. Pergamon press.
- Ortner. D.J & Putschar.W.G.J. (1981) Identification of Pathological conditions in Human skeletal remains. Smithsonian institution press. Washington & London.
- Ripper.S. (1996) Excavations at University Playing Fields, Gartree Rd, Oadby, Leicestershire. U.L.A.S Excavation Report.
- Stewart.T.D. (1979) Essentials of Forensic Anthropology. Springfield, Illinois.
- Thieme.F.P. (1957) Sex in Negro Skeletons. *Journal of Forensic Medicine* 4: pp72-81.
- Trotter.M & Gleser.G.C. (1952) Estimation of stature from long bones of American whites and Negroes. *American Journal of Physical Anthropology* vol.10. 463-514.
- (1958) A re-evaluation of estimation of stature based on measurements of stature taken during life and long-bones after death. *American Journal of Physical Anthropology*. vol. 16 79-123.
- Phenice.T.W. (1969) A newly developed visual method of sexing the Os pubis. *American Journal of Physical Anthropology*. vol. 30. 297-302.
- Ubelaker.D.H. (1989) Human Skeletal Remains: Excavation, Analysis & Interpretation (2nd edition) *Smithsonian Contributions to Anthropology*.