no 92

Barrington Anglo-Saxon Cemetery - 1991
Interim Report

Cambridgeshire
County Council

ANGLO-SAXON CEMETERY
EDIX HILL, BARRINGTON - 1991

INTERIM REPORT
1993
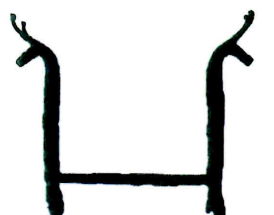
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Report No. 92   Excavation of an early sixth century grave (burial 428)

cambridgeshire
archaeology

BARRINGTON ANGLO SAXON CEMETERY - 1991
INTERIM REPORT

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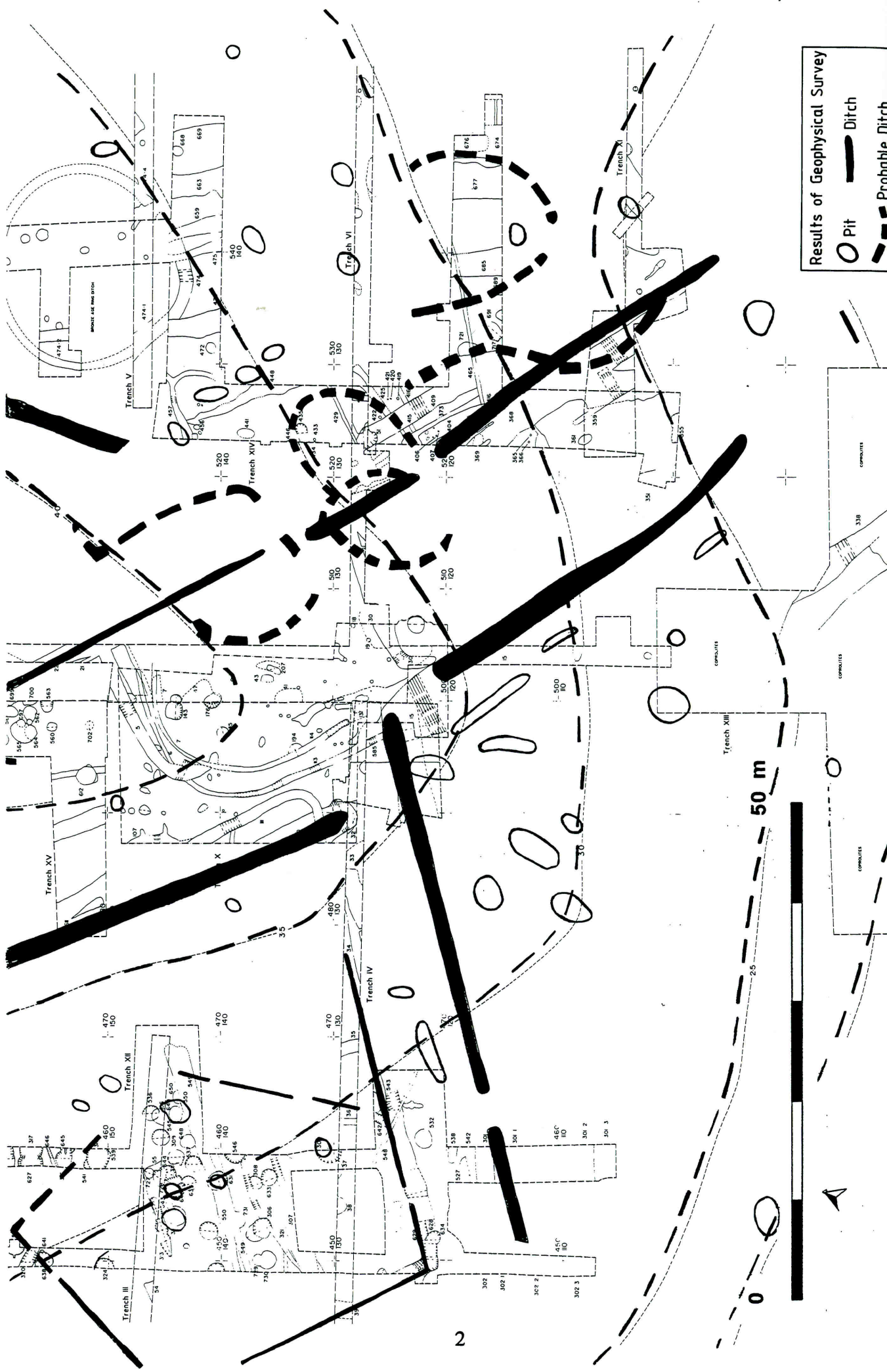
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1 SUMMARY

Following excavations of the Anglo-Saxon cemetery at Edix Hill, Barrington, in 1989 and 1990 a further sixty three Anglo-Saxon burials were excavated during the summer of 1991. Twenty eight Iron Age pits and four major multi-phase ditches were investigated, and a ring-ditch probably dating to the Bronze Age was also discovered. Five trenches were opened (a total of 2000 square metres) and the main settlement area of the Iron Age phase was identified but not excavated. The date range of Anglo-Saxon artefacts extended the use of the site as a cemetery from the late fifth century through to the early seventh. One man was found to have been buried with a shield, and was accompanied by a copper alloy-bound bucket and another had studs indicating a shield had been present, this individual may also have had a drinking vessel buried with him. Eight burials were found to have spears, one being found with a child. Grave-goods buried with women included many "necklaces" with glass and amber beads, sixteen copper alloy brooches, fragments from four bone combs, latchlifters and keys were found with six women, and a chatelaine chain was also discovered. Two women were found to have had bags with ivory rings at their openings. Spiral silver wrist-clasps and a pair of hexafoil design saucer brooches date to the sixth century, whilst a necklace of fine silver rings and gold pendants were probably the latest finds, of late seventh century date. Eleven burials appeared to be multiple, representing the graves of twenty three individuals. Following analysis eighteen burials were found to contain the remains of more than one individual, with thirty nine individuals represented.

2 INTRODUCTION

Excavations had been carried out at Edix Hill, Barrington in 1989 and 1990 and in June and July 1991 further excavation was generously funded by South Cambridgeshire District Council and English Heritage. Thus, 1991 was planned as the final season of the present programme of field work at Edix Hill, the field being required by the farmer to be returned to agricultural use. No incentive scheme to protect the site under grass management was sufficiently attractive to persuade the owners to cease ploughing, nonetheless they willingly undertook not to plough deeply but instead to merely disc the field, thereby minimising damage to skeletons surviving beneath the topsoil. It should be noted, however, that use of agro-chemicals will continue, leading to further damage of metal artefacts, and the effect of which on bone is also suspected to be adverse.

The aims of the 1991 season were to define the extent of the cemetery and to mount a rescue excavation in the areas most threatened by ploughing, to recover enough of the site to give a quantifiable sample of skeletons and their associated grave-goods from all areas, especially from the peripheries of the site, to compare with data assembled from the core of the cemetery excavated in 1990. In this way useful comparative data could be recorded before further damage occurred at the site, whilst leaving a significant proportion of the cemetery undisturbed for future study. In addition it was intended to examine the nature of the Iron Age settlement and to clearly distinguish between Anglo-Saxon and earlier features. These aims were an unsatisfactory but necessary compromise in trying to balance academic priorities with those of preservation and threat, within the constraints of available funding.

In tandem with excavation a programme of school visits with guided tours, work-sheets, and hands-on experience was initiated to maximise the educational potential of the site. Wide publicity attracted hundreds of visitors, and, as work continued seven days a week over a period of two months, scores of guided tours were given (Plate 1). A visitor centre on-site provided background information and a week by week update on the progress of the excavation.

Results of Geophysical Survey

○ Pit

▬ Ditch

▬ ▬ Probable Ditch

50 m

0   25   50

Trench III
Trench IV
Trench V
Trench VI
Trench XI
Trench XII
Trench XIII
Trench XIV
Trench XV

COPROLITES

BRONZE AGE RING DITCH

3 SURVEY

3.1 Geophysical Survey

In October 1990 Geophysical Surveys of Bradford undertook a magnetometer survey of 1.2 hectares covering the brow of Edix Hill. This work had a dual purpose:

i)   to give information that would assist in planning an excavation strategy;
ii) to test the applicability of geophysical survey (in this case by magnetometer) to locate graves with accuracy, enabling rapid planning of the extent of a known cemetery.

The excavations during 1991 were then used to monitor the results of the survey, and assess its validity as a useful technique for investigating cemeteries.

A Fluxgate Gradiometer (Geoscan FM36) was used for the survey and 800 readings were taken in each 20m x 20m grid. Three types of result were plotted:

i)   several linear anomalies representing large ditches and ditched enclosures;
ii) grave/pit-type anomalies;
iii) points of high ferrous anomaly (in the hope that this would reveal the position of some graves).

Excellent correlation between the major features plotted by magnetometer and pits and ditches encountered during excavation was achieved, with responses to linear anomalies that became stronger towards the centre of the survey area. This may have been due to the larger size of these features, their proximity to the surface, or to an enhanced fill which often results from substantial activity such as habitation. Subsequent excavation suggested that all these causes contributed to the strength of the linear anomalies. Four pits shown on the geophysical survey were found to correspond to four Iron Age pits excavated in Trench XII (see Fig 1). Indeed all features interpreted as pits and ditches on the magnetometer plot over areas that were later trenched or had been investigated during previous seasons were tied into existing archaeological features. Identification of individual graves, however, was successful in only six cases. Of these four had shown up as ferrous signals (405 and 553 had spearheads, 626 spearhead and latchlifter, and 683 had a latchlifter) whilst the other two were deep-cut graves that showed up as pits, oriented on the geophysical plot in the same way as the graves. Three other ferrous objects detected by the magnetometer were located in Trench X (excavated in 1990), and these seem to be accurate representations of the location of steel grid pegs which had been hammered into the chalk to provide key points for relocating the site grid.

3.2 Geology

The geological sequence as shown on BGS 1:50000 sheet 204 describes a geology that ranges from Upper Chalk down through Middle and Lower Chalk to the Gault, below which is Lower Greensand resting on Kimmeridge Clay. At Edix Hill the upper deposits have eroded away to Gault Clay leaving a spur of Lower Chalk extending north-westwards from a main core around Barrington and Shepreth. Lower Chalk is subdivided into Grey Chalk, Totternhoe Stone, and Chalk Marl, and it is the last of these which remains at Edix Hill.

Dr. Colin Forbes was asked to advise on geology and naturally derived features, and to identify foreign and "burnt" stones. He suggested that two phases of geological activity could be identified. River gravels had been brought to the surface of the chalk-marl by periglacial action, manifesting itself as gravelly sand polygons in Trenches XII and XIV. The unpublished 6-inch Geological Survey sheet LIII NE has a note about 'Edic's Hill': "Grey marly soil along ridge; frequent worn or far-travelled boulders". Dr. Forbes reported that green patches in the chalk-marl were from Cambridge Greensand, the geological layer most associated with phosphates and coprolite mining, and, indeed, small nodules of

Trench V

Trench XIV

Trench I

Trench VI

Trench XI

Trench XV

Trench X

Trench XVI

Trench XII

Trench IV

Trench XII

Trench II

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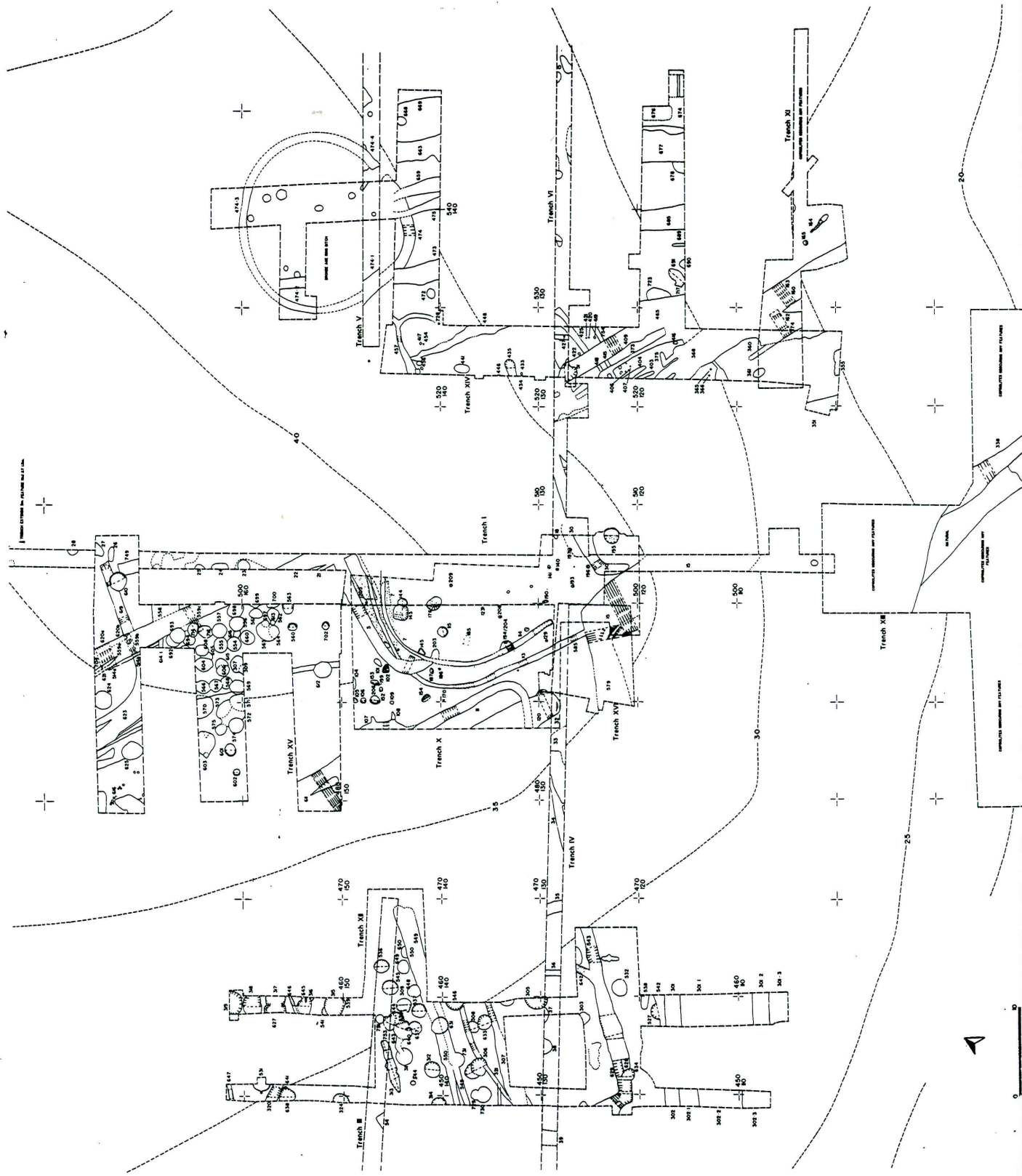
coprolite were evident. The presence of glaucamite suggests that the present level of chalk-marl is within a few feet of its junction with the boulder clay beneath.

The rounded pebbles that abounded on site had not been brought from the river by human action but were stones eroded from the boulder clay. These included bunter pebbles, quartzite, carboniferous sandstone, millstone grit, various erratics and flint, all stones found locally: "The scatter of far-travelled pebbles and cobbles is what one expects below the boulder clay outcrop. Predominance of Bunter Quartzites is the expected result of long-continued erosion and weathering which would remove most of the rock-types one finds in the Boulder Clay, leaving only the most resistant, hardest, types. The various blackish and reddish discolourations evident on the exteriors of some of these Quartzites were distinguishable from the original reddish and purplish colourations of the interiors and indicate exposure to fire at the sorts of temperatures one might find in open, domestic, fires." (Forbes, pers comm).

4 EXCAVATION DESIGN AND METHODOLOGY

The location of trenches was designed to examine some of the ditched enclosures identified by geophysical survey, and to examine the spread and condition of burials immediately around the brow of Edix Hill. Trench numbering carried on from previous years and five areas were opened, their shape and extent determined by the dual needs of exposing a sufficiently large area to establish a clear plan of features whilst still preserving intact as much as possible of the site. Spoil heaps and public access were factors that also contributed to deciding on trench layout, for example Trench XV was designed in an E-shape which effectively sampled a large area in plan, while maintaining wide baulks on which to put spoil. A 5m square plot was hand excavated through ploughsoil as a control to see whether many artefacts and human bone lay at this level which would not have been recovered from those areas opened by machine. A silver pendant was found by metal detecting the hand-dug spoil but otherwise very few finds were retrieved. All the remaining trenches were opened by a supervised mechanical excavator to the level of chalk-marl natural (Plate 2).

Trench XII was an H-shape designed to examine the boundary ditches and interior of an enclosure identified by magnetometer and believed to be of Iron Age date.

Trench XIII was an inverted T-shape designed to examine the southern extent of the cemetery, continuing from the southern limit of 1989's Trench I to the limit of land available for excavation during 1991.

Trench XIV was laid out on a north south axis designed to examine the eastern extent of the cemetery, as well as some of the horse-shoe shaped ditches detected by magnetometer. It was found necessary to have two additional arms running east to supplement this information, and the discovery of a segment of ring-ditch in the northern one of these required a further northwards extension to define the whole extent of the ring-ditch.

Trench XV was a reversed E-shape and was designed to examine a large area immediately north of Trench X to define the northern limit of the cemetery, and to further investigate pits and ditches seen in Trench I in 1989 which could indicate settlement remains.

Trench XVI was a 10m square area designed to examine the terminals of Iron Age ditches found in Trench X.

All graves exposed in the five trenches were fully excavated and recorded. Soil samples were taken from stomach and chest areas of all burials to look for stomach contents and
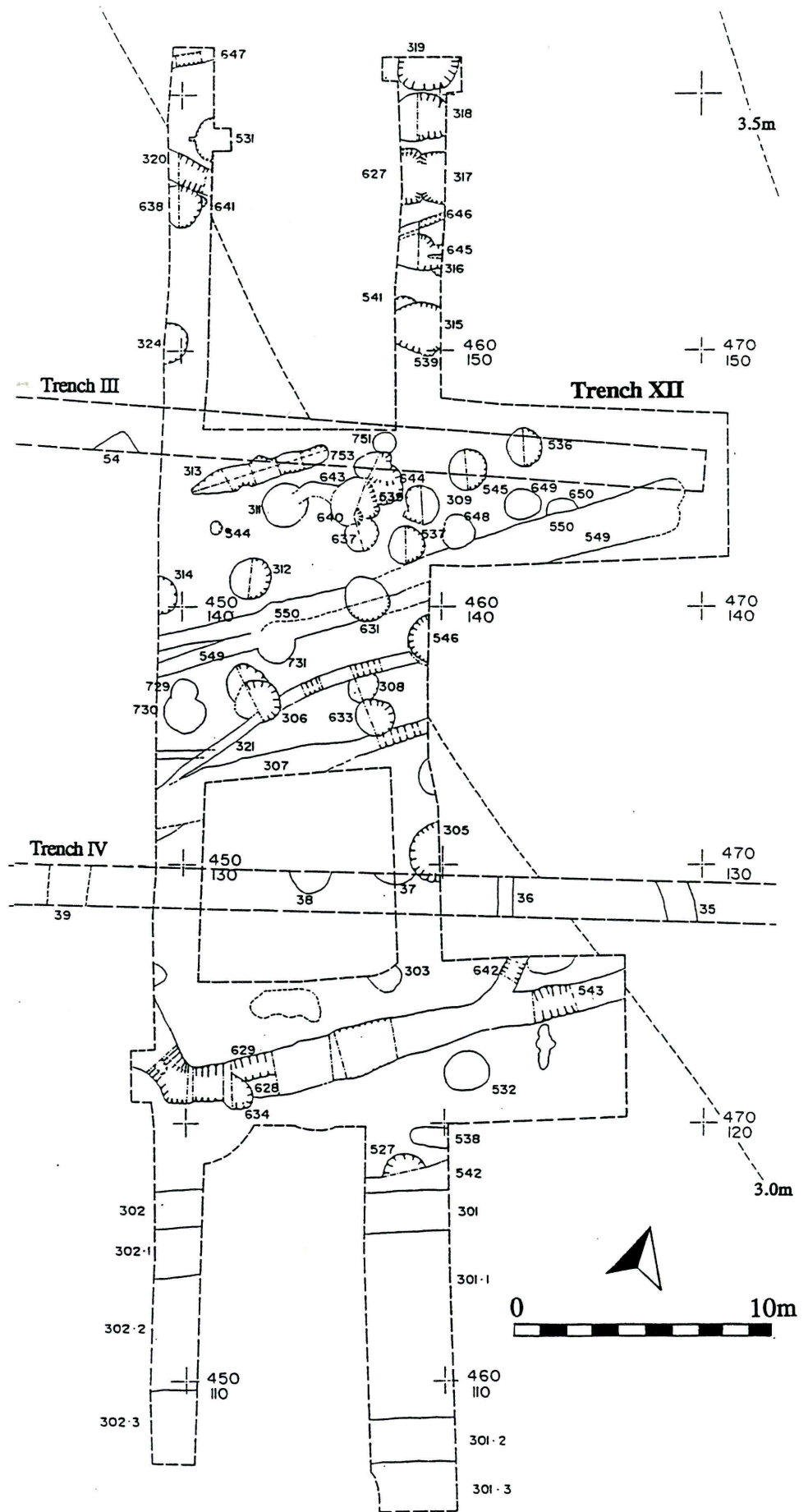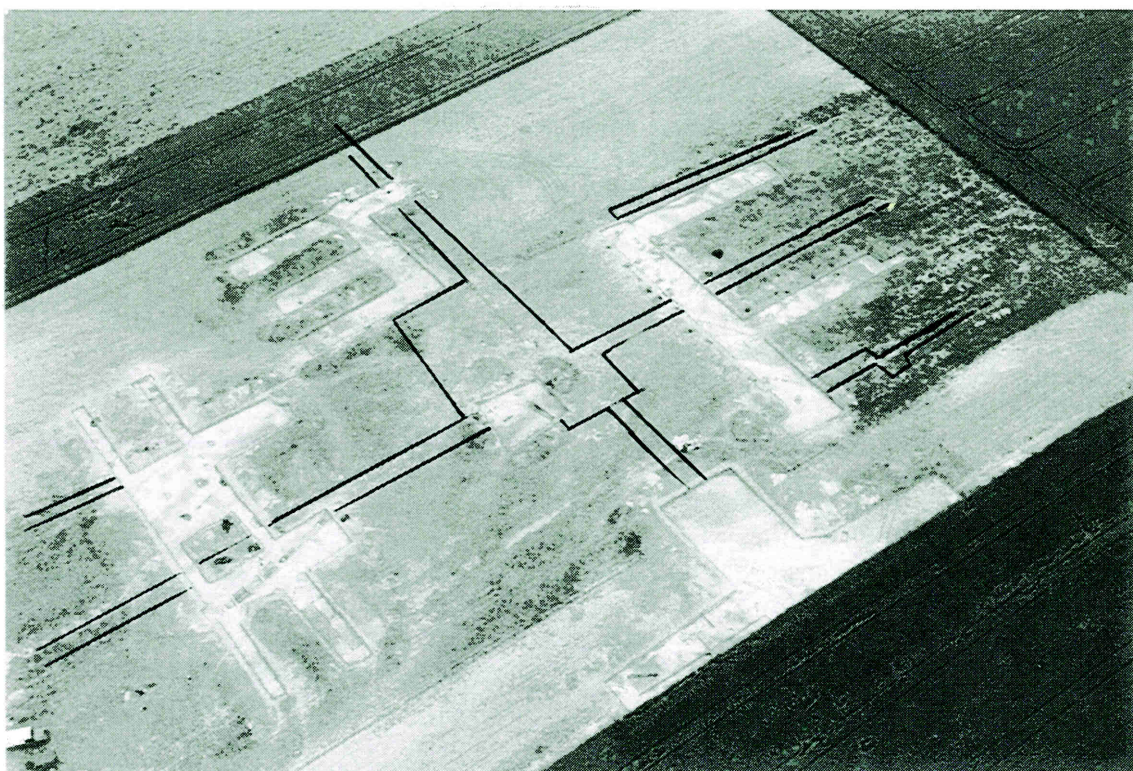
Figure 3 *Plan of Trench XII showing Iron Age pits and ditches*

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Plate 1 *Guided tour of the site*

Plate 2 *Aerial view of Edix Hill showing trenches opened in 1991 and outline of areas previously excavated*

parasites, and for evidence of flowers or other plants laid on the body as a grave-good. Samples were also taken from the soil above and below the left femur as a control for trace element analysis for heavy metals, used as indicators for diet.

Dating evidence suggested that the vast majority of pits and ditches were Iron Age and a limited policy of sampling was adopted to investigate these. In Trench XII virtually all features were excavated, whilst in Trench XIII only one ditch seemed to survive from an area that had been almost completely disturbed by coprolite trenching in the last century. Three ditches, two pits and a post-hole were sectioned in Trench XIV, whilst the extremely complex pattern of intercutting pits in Trench XV would have required considerably more time to examine adequately than we had available, and so only eight pits and five ditches were sectioned in this trench. In Trench XVI a single large Iron Age ditch had a section cut through it.

5   RESULTS

5.1   Bronze Age (?)

A ring-ditch was found on the northern edge of Trench XIV (see Fig 4), just off the brow of Edix Hill on its eastern slope. This feature was situated near the highest part of the hill and was therefore subject to maximum erosion. It was 18m in external diameter, with a U-shaped profile 1.3m wide by 0.35m deep. This ditch had several similar fills but no clear recut, and no pottery was found, in contrast to virtually all other features on site. In the interior a number of small pits or post-holes were seen, but time did not permit further investigation. The location of a Bronze Age barrow on such a local prominence as Edix Hill, situated in marginal valley bottom land, would be consistent with many other known examples (Taylor 1981). It may be that the presence of an extant barrow attracted Anglo-Saxon attention to the site, and, as has been encountered elsewhere, the barrow then acted as a focus for burial activity.

There is little worked flint from Edix Hill, and what has been found is generally Neolithic in date (Way 1993). The flint is of local origin and includes blade fragments, parts of cores and thumbnail scrapers, and an Early Neolithic flaked axe. No diagnostic Bronze Age material was identified which would support the date assigned to the ring-ditch although a piece of copper alloy rapier was discovered by metal detecting.

5.2   Iron Age

The nature of the Iron Age site was further defined during the 1991 season. It consists of a high density of ditches and pits and extends over a long period of time during the Late Iron Age. The deposits filling ditches are complex and multiphase, with a number of recuts apparent. The largest ditches form a rectilinear pattern running both south-west to north-east and north-west to south-east, with corners at right-angles. The main meeting area for these major features is immediately south of the brow of Edix Hill, whilst the greatest concentration of pits is on the highest part of the hill. On the western slope pits also occur (Trench XII) (Fig 3) but are seldom intercutting and less frequent. On the southern and eastern slopes pits are sparse, but in these areas (Trenches X and XIV) (Fig 5) a mass of curving gullies or small ditches were found that can be discerned on the magnetometer survey as horseshoe shaped features.

Pottery from these features was rapidly scanned on site by Morag Woudhuysen who had also examined finds from previous years. Her impression is that this assemblage contains a variety of types with much decoration and was derived from a large settlement. There are definite chronological groups so that the potential exists for safely
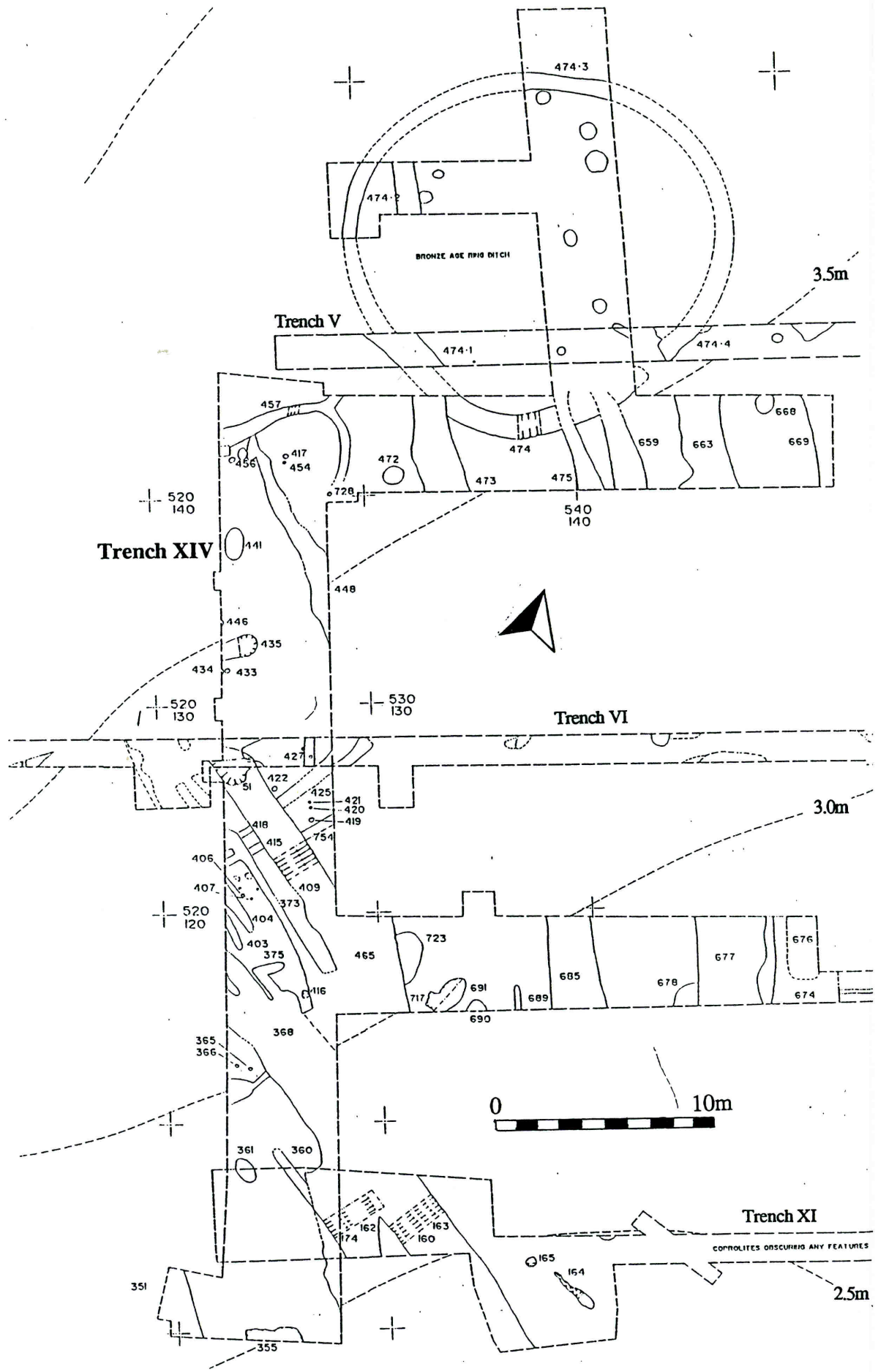
Figure 4 *Plan of Trench XIV showing prehistoric postholes, pits and ditches*
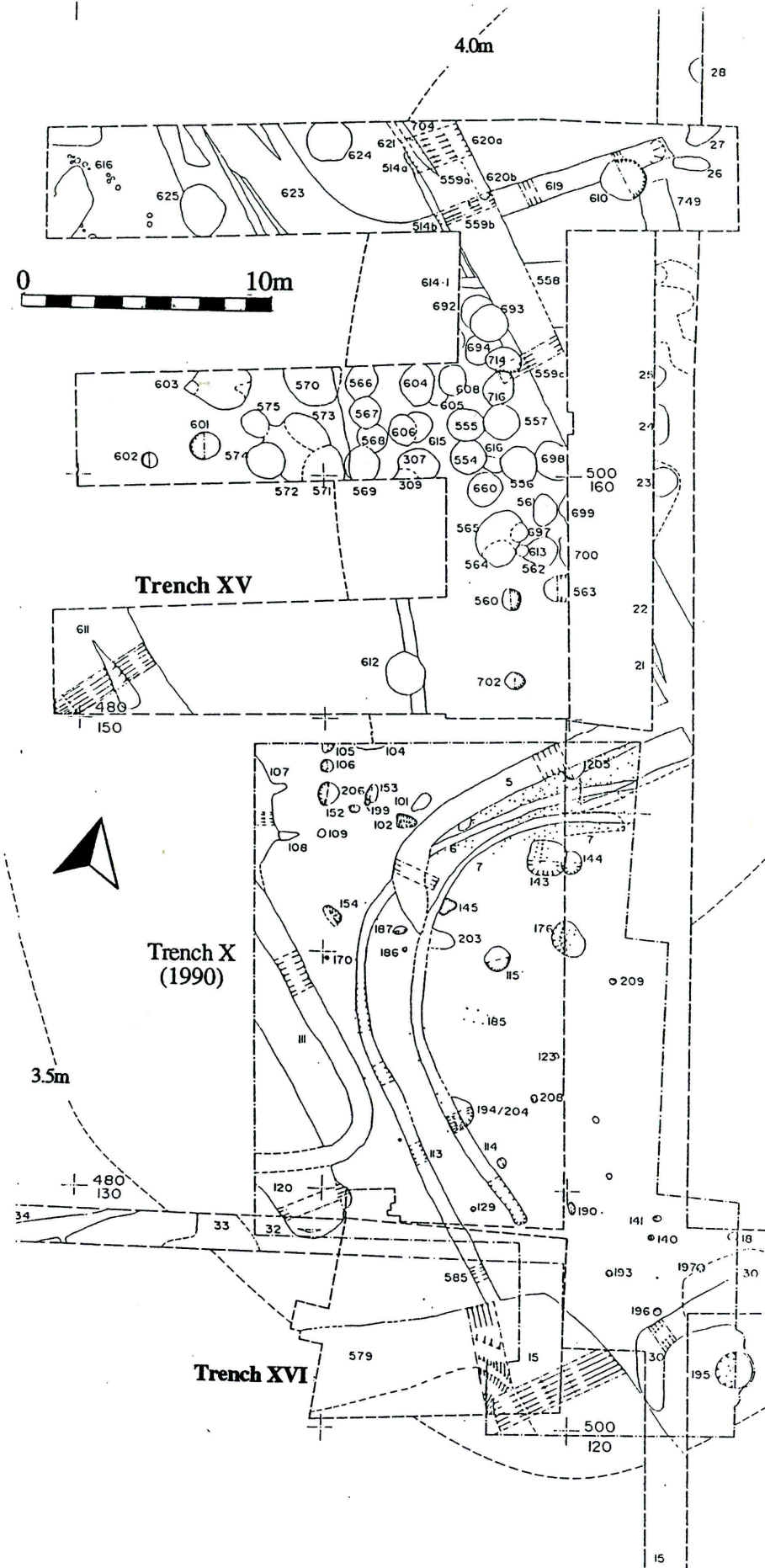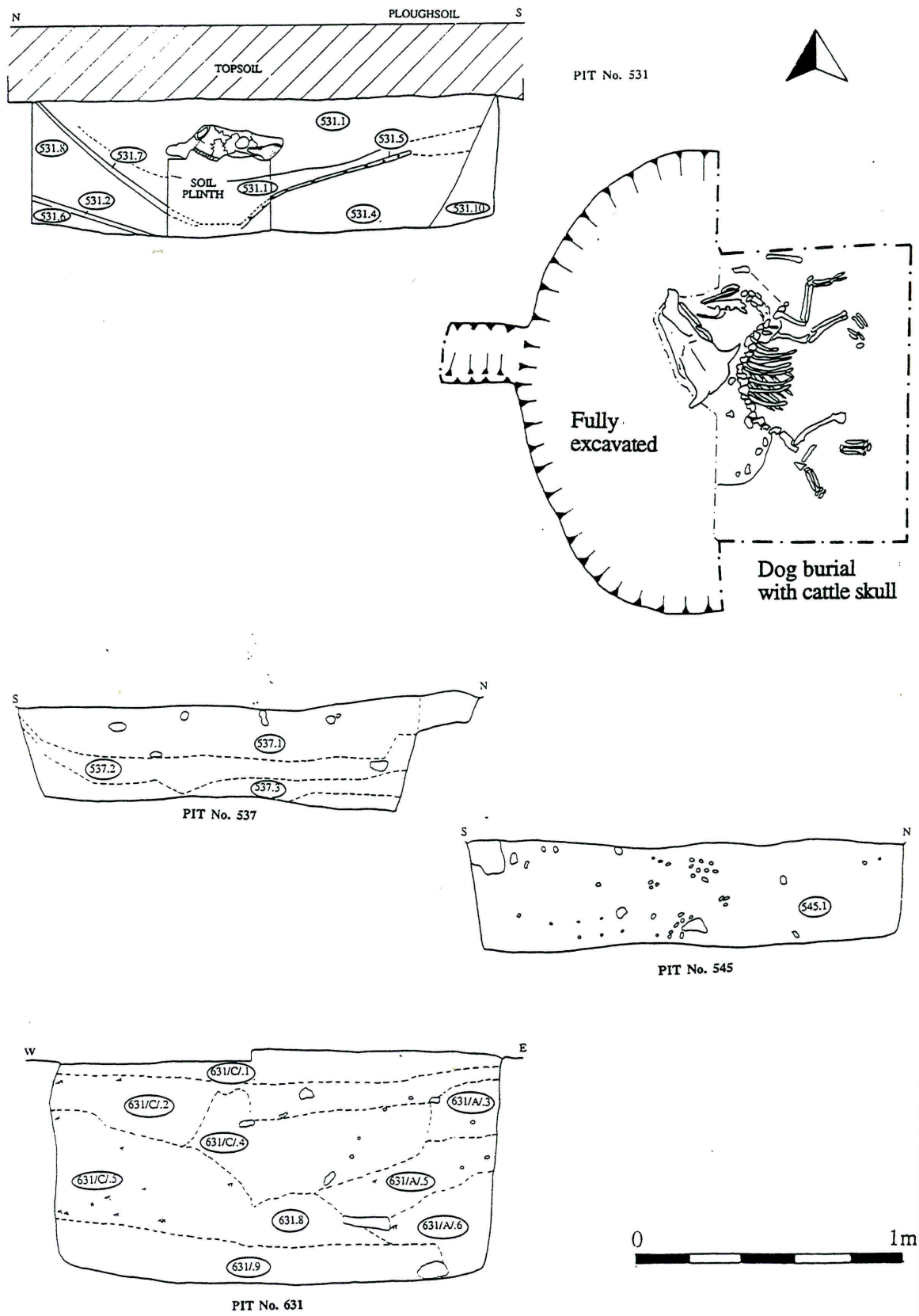
4.0m

28

27

26

0   10m

Trench XV

3.5m

Trench X
(1990)

Trench XVI

Figure 5   *Plan of Trenches XV and XVI showing Iron Age pits and ditches*

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Figure 6 *Representative sections and plan of Iron Age pits*

dating specific features. Earlier pottery appears to form a cohesive assemblage while later finds seem to contain groups of different styles (see Section 6.3: Pottery analysis).

Pits were examined in detail in Trench XII where thirty nine pits were exposed in plan, of which the majority were isolated, with only one major intercutting pit complex. This area seemed to be enclosed by ditches and was targeted as an area for extensive excavation to provide comparative information about the pits. The relative lack of stratigraphic complexity allows an easier functional interpretation than investigation of complex intercutting features, as found in Trench XV. No pits were fully excavated but 25 were half-sectioned to provide maximum information on size, shape, depth, fill episodes, and to allow opportunities for sampling, in a minimum amount of time. Such a strategy resulted in considerable information on pit morphology and variation, but little on phasing and relationships.

Most of these pits were circular, flat based and steep sided, although some displayed "beehive" characteristics. Diameters varied from 1.2 to 2m with two possible groups of between 1.2 to 1.5m and of 1.8m and greater. Depths varied between 0.12 to 0.8m, and generally filled in two or three episodes, but with deeper pits containing several layers with distinct tip-lines. Within the fills Iron Age pottery ranging in date from 150BC to 50AD was found, with burnt stones apparent in many examples. Exceptional finds included a lava quern stone (from pit (305)) a jet ring (80mm diameter) from pit (315) and a possible ritual deposit of a dog found centrally in a partly filled pit (531), with a cow skull placed on top of its head. The ritual function of Iron Age pits is presently the subject of much research and is explored in some detail by Cunliffe (1992). His article suggests that storage pits for seed grain represents initial use of many pits, during a span of one to five years, and that thereafter their effectiveness for storage was reduced, but that a secondary use was made of them by placing votive deposits buried within the ground to stimulate the fresh birth of each new year's crop. Different types of offering were deposited at sequential stages of pit back-fill, including parts of both animals and humans, as well as other inorganic and organic offerings which have enjoyed very differential preservation in the archaeological record. Cunliffe also suggests that these pits are generally of a period slightly earlier than that assigned to them at Barrington, and that they can be substantially larger.

No discernible pattern was evident for pit distribution in this area, and a functional interpretation would discount any primary role as rubbish pits because of their careful and regular construction. This would also argue against their originating from marling activities and so storage or industrial use seems the most likely function. Parallels to these pits can be seen clearly in those excavated at Little Woodbury (Bersu 1940) and in the experimental work at Butser Iron Age Farm (Reynolds 1979). Flotation of soil samples from basal fills of these pits has revealed very small quantities of charred cereals such as barley and spelt, as well as hazelnuts, suggesting cereal processing was occurring somewhere else on site. No large deposits of charred grain or weed remains indicative of grain storage were identified, and there was no evidence suggesting seasonal cleaning-out by burning as might be expected. Molluscan evidence suggested open conditions, with some imported freshwater species (see Section 6.2: Environmental studies).

The relationship between these pits and ditches/gullies within Trench XII was examined in several cases, and showed that some pits pre-dated the linear features whilst others were found to cut them and therefore post-date them. It is interesting that no postholes were found in Trench XII which suggests a lack of structures and perhaps no occupation within this area.

Four further pits were examined on the top of Edix Hill in Trench XV. A plethora of features existed and it was decided to sample excavate very few of these. The majority were circular, 1.5 to 1.7m in diameter, and those that were excavated were straight-sided, flat bottomed pits, 0.5 to 0.7m deep. They were filled with a homogeneous chalky silt

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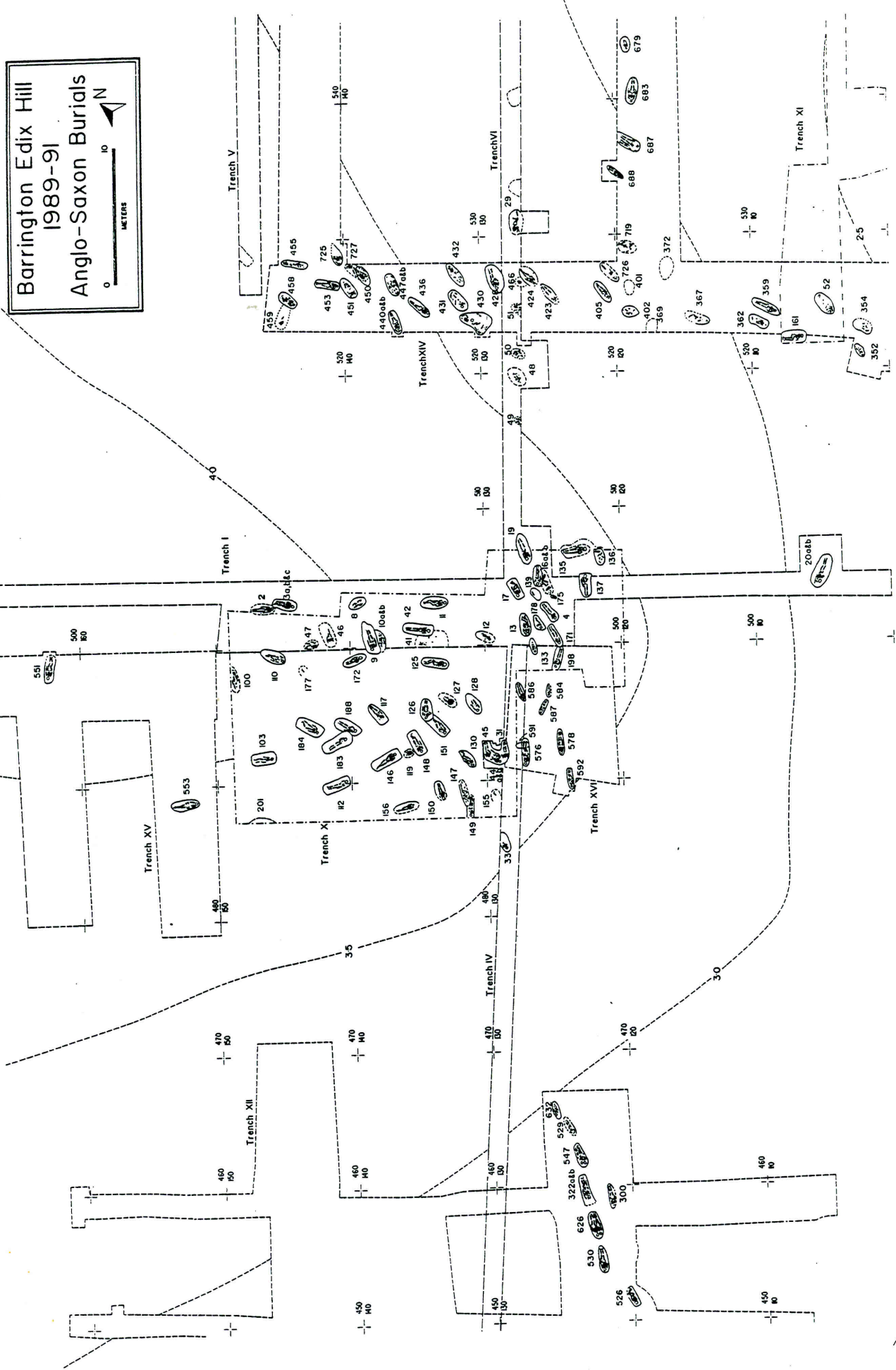
Figure 7   Plan of Anglo-Saxon burials

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which had no trace of burning or organic remains and few artefacts. Three shallow pits (possibly post-pits) were examined (560, 602, 702), 0.5 to 1m in diameter, and 0.2 to 0.3m deep, two of which were found to have stone packing, and a further pit or ditch terminal (563) was examined of similar dimensions. Sections through (559) and (611) displayed several episodes of filling and recutting, suggesting continued use over several years or an even longer time span. Overall dimensions were 2m wide by 0.5m deep, with U-shaped profiles.

In Trench XVI a larger ditch was excavated (579) which was 4.5m wide and 1m deep. This section showed great similarity to the sequence of events in ditch 15 (excavated in 1990), with at least three fills in the original ditch cut and a further four in the recut. Ditch 579/15 must have been a major feature of the settlement for perhaps as much as 100 years (pottery sequence established for ditch 15) and emphasises the length of occupation and use of Edix Hill during the Late Iron Age.

In conclusion, the concentration of pits on the highest point have been interpreted as resulting from extensive settlement, whereas the pits further west may be more for storage, perhaps contained within a corral for cattle, defined by major ditches forming an enclosure seen in survey and excavation. The gullies and small ditches to the south and east perhaps surrounded courtyards used for agricultural or small-scale industrial activities, or formed pens for animals smaller than cattle. The major linear ditches defined trackways and served as substantial barriers for the control of stock. They may also have served a role in drainage, helping to keep the knoll of Edix Hill dry for settlement purposes. Occupation occurred throughout the first century BC and extended into the first half of the first century AD.

5.3 Anglo-Saxon

During 1991 a further fifty one graves were identified and fully excavated. Some of these contained more than one burial, thus sixty three were noticed in the field, and after post-excavation analysis further fragmentary remains were identified which raised this figure to seventy two individuals. Of these forty six were adults, seven juveniles, and nineteen children some of very young age. Of the adults and juveniles twenty were female and twenty five male, with five adults and three juveniles to whom it was impossible to assign gender. Of the multiple inhumations three of the graves had triple burials, and fifteen of the graves could be clearly seen to have two burials in them.

5.3.1 Extent of cemetery The paucity of burials to the north (only two being found in Trench XV) compared with the concentration excavated immediately to the south in Trench X strongly suggests that the northern limit of the cemetery has been located. On the eastern side similar results were obtained with burial concentration trailing off just east of the main bulk of burials in Trench XIV. To the south coprolite digging appears to have removed part of the cemetery (remains of amber beads and human bone were noted in the top of one coprolite ditch) and so we must assume that we have lost the full southern extent. Only on the western side is there still ambiguity in that no burials occur in Trench XII, except as a linear cluster following an Iron Age ditch but in none of the areas is there a clear indication of any physical barrier defining the extent of the cemetery. With this data it is possible to calculate that the cemetery covered at least a hectare, and that 50% has been excavated between 1989 and 1991 which suggests that the cemetery would have contained at least 300 burials, and artefacts that date from between the late fifth century and late seventh century. Forty seven skeletons were reported from excavations at Barrington (Edix Hill) during the nineteenth century but the exact location of these has not been pinpointed and details have not been included in this report.

5.3.2 Cemetery organisation A logical temporal progression of the cemetery would expect its origins in the fifth century at one distinct location, with expansion from this

until it ceased to be used in the seventh century at a distinct area some way removed from the original focus. If the centre was the original core then concentric expansion could be expected with latest burials on the peripheries of the cemetery. At Edix Hill no such clearly defined temporal organisation can be seen, with the chronological sequence showing burials of widely different date ranges located close together. Heinrich Härke (pers comm) suggests that several contemporary early centres may exist within the cemetery which would have had later burials radiating out from each of these until these individual areas met, thus forming a conglomerate whole which now appears as a single phenomenon.

Late fifth or early sixth century burials were found at both western and eastern edges of the cemetery during 1991, whilst a definite seventh century burial (459) was found near the highest point of Edix Hill at the northern edge of the cemetery. The seventh century bed-burials found in 1990 were also situated near the highest point, at the core of the cemetery, as was a seventh century male grave (126). This tends to suggest that there was no initial core to the cemetery, around which later burials were grouped.

Child burials appear to be concentrated just south of the brow of Edix Hill, as can be seen in the plan of burials in Trenches X and XVI. This may suggest some degree of area differentiation, although it is evident that other parts of the cemetery also contain children. Other indicators of possible cemetery organisation can be seen in the grouping of higher status male burials, apparently concentrated just north of the children, mostly in Trench X. In addition, within this area it was noted that three males excavated in 1990 and a female excavated in 1991 were all found to have metopic sutures (a feature of the skull which may suggest a genetic link). They had been buried relatively close together, which may indicate family grouping.

As was noted in previous years all burials excavated during 1991 were supine, and oriented between due east and north-west. On the western side of the site (Trench XII) a group of burials was discovered in the upper fills of an Iron Age ditch, or had been scooped into the chalk beside it, and their uniform orientation facing north-east was thus determined by the direction in which this feature ran (Plate 3). Although Anglo-Saxon burials have previously been recorded cutting into the tops of Iron Age ditches at Edix Hill, this was the first occasion that they appear to have been deliberately positioned along the ditch. This evidence argues for a more pragmatic choice in burial orientation than one dictated by tradition or religious belief, and the lack of any obvious link between particular orientation and a particular period suggest that burial practice at the cemetery required no set formula for orientation.

5.3.3 Results by Trench Trench XII Eight graves were excavated in Trench XII along the Iron Age ditch, four of these were double burials. None of these graves cut into each other, suggesting the locations of burials must have been evident, alternatively the graves may have been dug more or less contemporaneously. Initial analysis of associated artefacts gives dates for burials which include late fifth, sixth and seventh century types, suggesting use over an extended period of time, or that the burials with artefacts of an earlier date contain heirlooms rather than contemporary products.

Of these a double burial (626) of a young woman and man can be dated to the late fifth to early sixth century by a pair of cast saucer brooches (Fig 9). These brooches have affinities with types mostly distributed in the Upper Thames valley and south-east Midlands area. The woman was about 19 or 20 years old and had been buried with 167 amber beads, eleven glass beads and one rock-crystal and a chalk bead, a pair of wrist-clasps and a latch-lifter. Beside her there was an 18 year old man buried with a spear, buckle, and a knife.

The flexed remains of a 35 to 45 year old woman (526), with a grave scooped into the chalk, was the most westerly burial found at Edix Hill. Several interesting details about her costume were apparent as she was found with a small cruciform brooch worn as part

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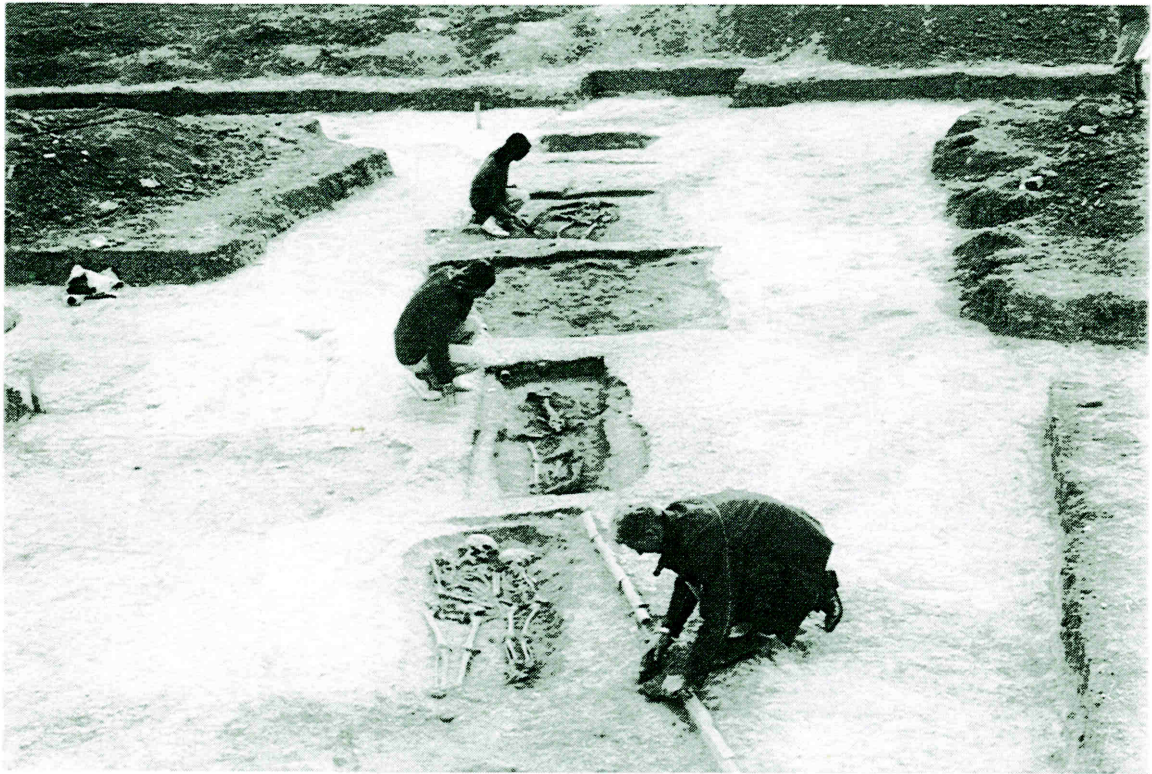
Plate 3 *Trench XII showing 1840's field drain and graves along line of an Iron Age ditch*

Plate 4 *Burial 455 - bones replaced after nineteenth century disturbance*
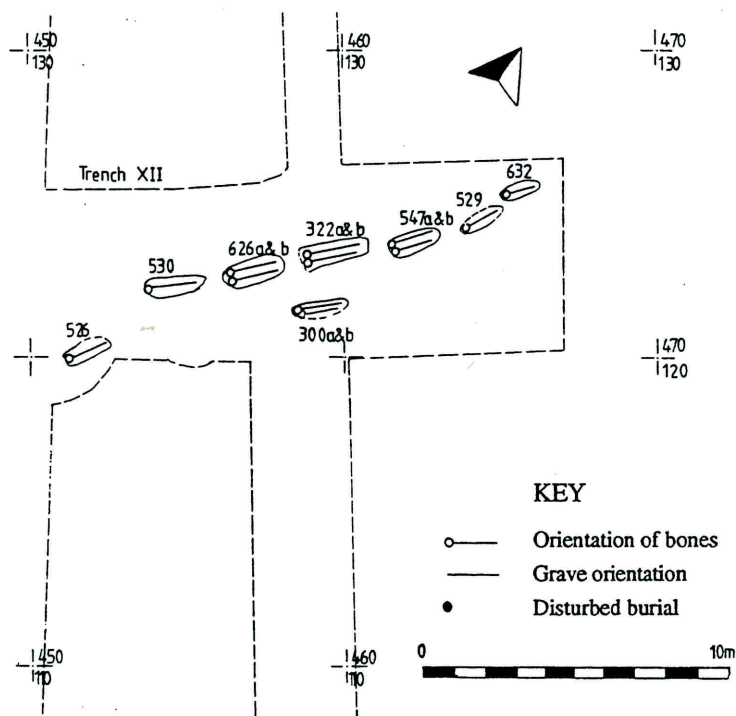
Figure 8 Plan of Anglo-Saxon burials in Trench XII

of a pair with a small-long brooch on the other shoulder. She also had a strand of seventeen amber beads, two pairs of wrist clasps, a pair of tweezers and a knife.

Burial (530) was of a woman in her fifties who was wearing a gilded composite saucer brooch on either shoulder. In between these she had a strand of forty five amber beads, one jet and seventeen glass beads, copper-alloy rings and spangles. It is suggested that this woman died from infection after an abscess broke through bone into her maxillary sinus.

A further double burial (322) was of a man and woman in their twenties, the male buried above the female, the bones of the female were disturbed and there were several centimetres of soil separating the two. A spearhead was found which can be attributed to the male, and seventy two amber beads, two glass beads, a wrist-clasp, a buckle, a knife, and two small-long brooches were found with the woman. It has been suggested that copper-alloy fittings found in the grave formed part of a wooden drinking vessel, an interpretation based on their curvature and rim-width.

A man and baby were found buried together in grave (300) (Fig 10). The man was approximately 35 years old, with unevenly worn teeth, squatting facets, and a deformed sacrum. The two year old child had a copper-alloy bangle around its left(?) arm. Another double burial of adult and child was grave (547) which contained a 25 to 35 year old woman with a ten to eleven year old child. A disc brooch and a small-long brooch were found with the woman, together with twelve amber beads, two glass beads, and a knife (Evison 5) attributable to the seventh century.

Burials (529) and (632) were both of children, nine years old and five years old respectively. The former had a bone pin, a buckle, and knife, whilst the latter was accompanied by a spear (Swanton H1), this form of short spear is typical in child burials (Härke, pers comm) and suggests inherited rather than acquired status.

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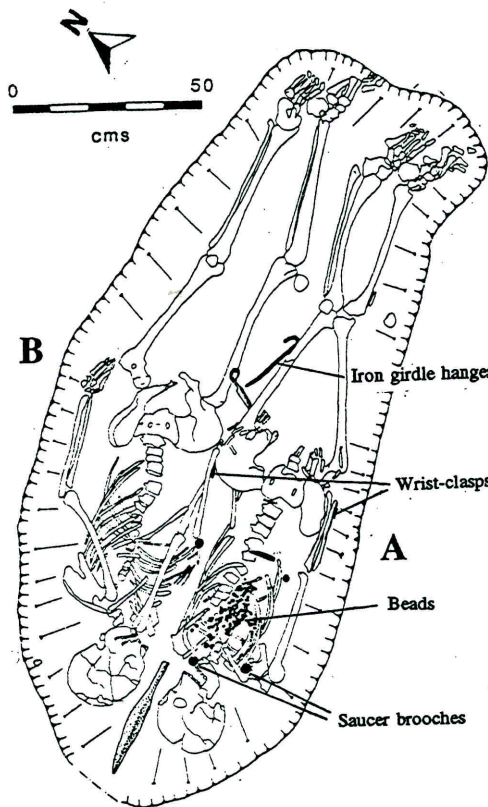
BURIAL 626A

BONE ANALYSIS

AGE	19-20
SEX	Female
HEIGHT	1.65m
COMMENTS	

GRAVE GOODS

180 Beads
2 Bronze gilded saucer brooches
Pair of Bronze wrist-clasps
Iron girdle hanger
Iron buckle and strap end
Iron stud head
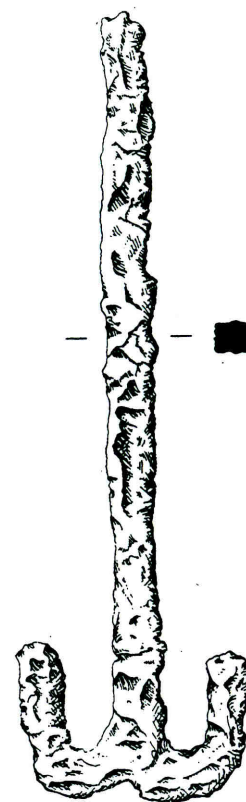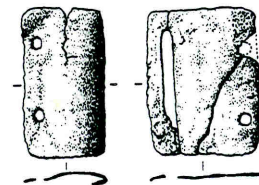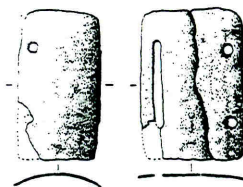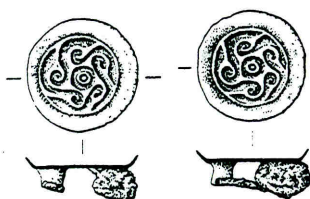
Scale 1:2

Figure 9   Burial 626A

BURIAL 300A&B

N
0 ──── 50
cms

BONE ANALYSIS

BURIAL A

AGE	35
SEX	Male
HEIGHT	1.67m
COMMENTS	A Spare R scapula with copper stain. B 18 month - 2 year old baby - metopic suture closed

Bangle

Baby bones not planned

GRAVE GOODS A

None

GRAVE GOODS B

Bronze bangle

Scale 1:2
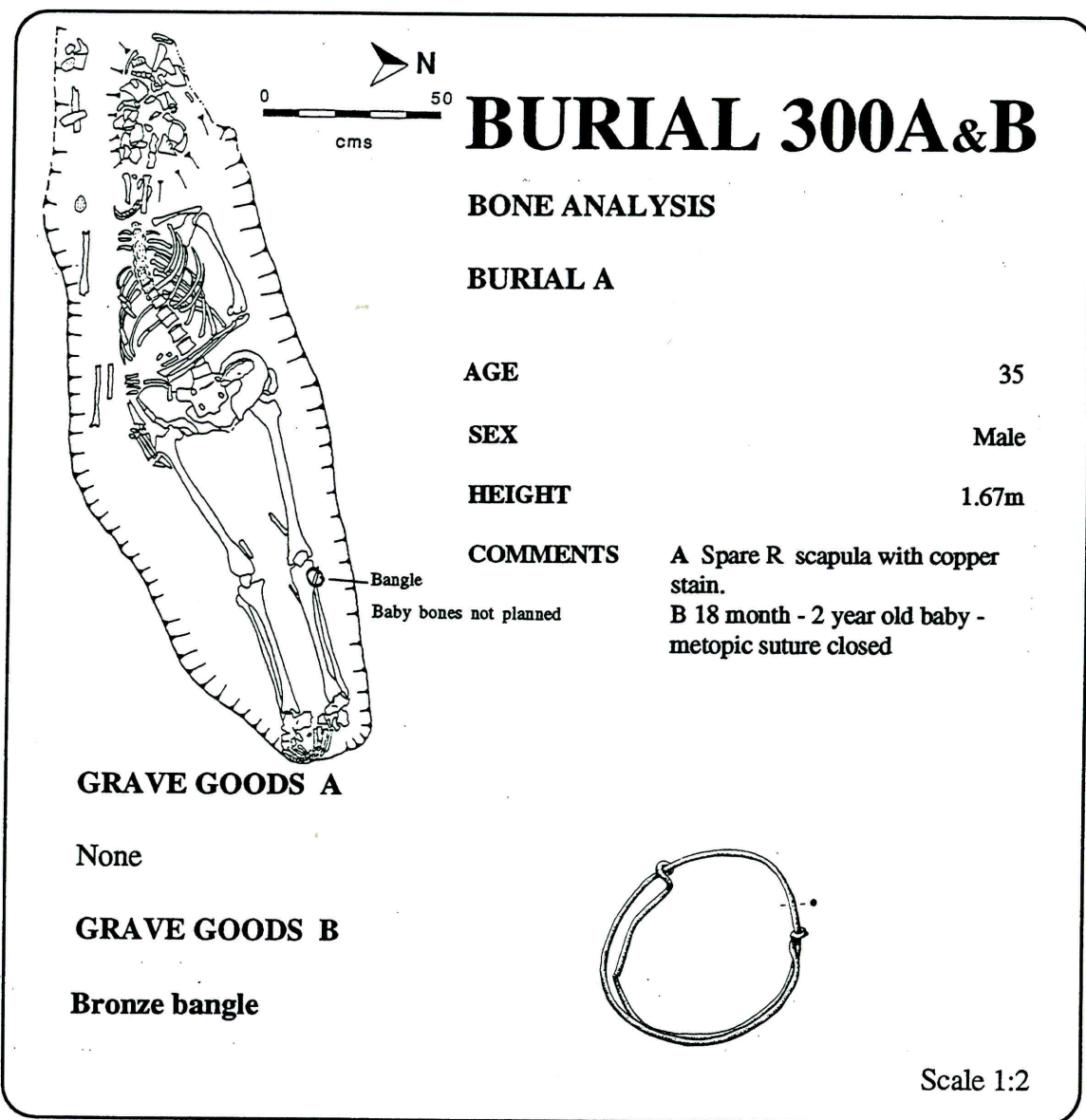
Figure 10   Burial 300 A and B
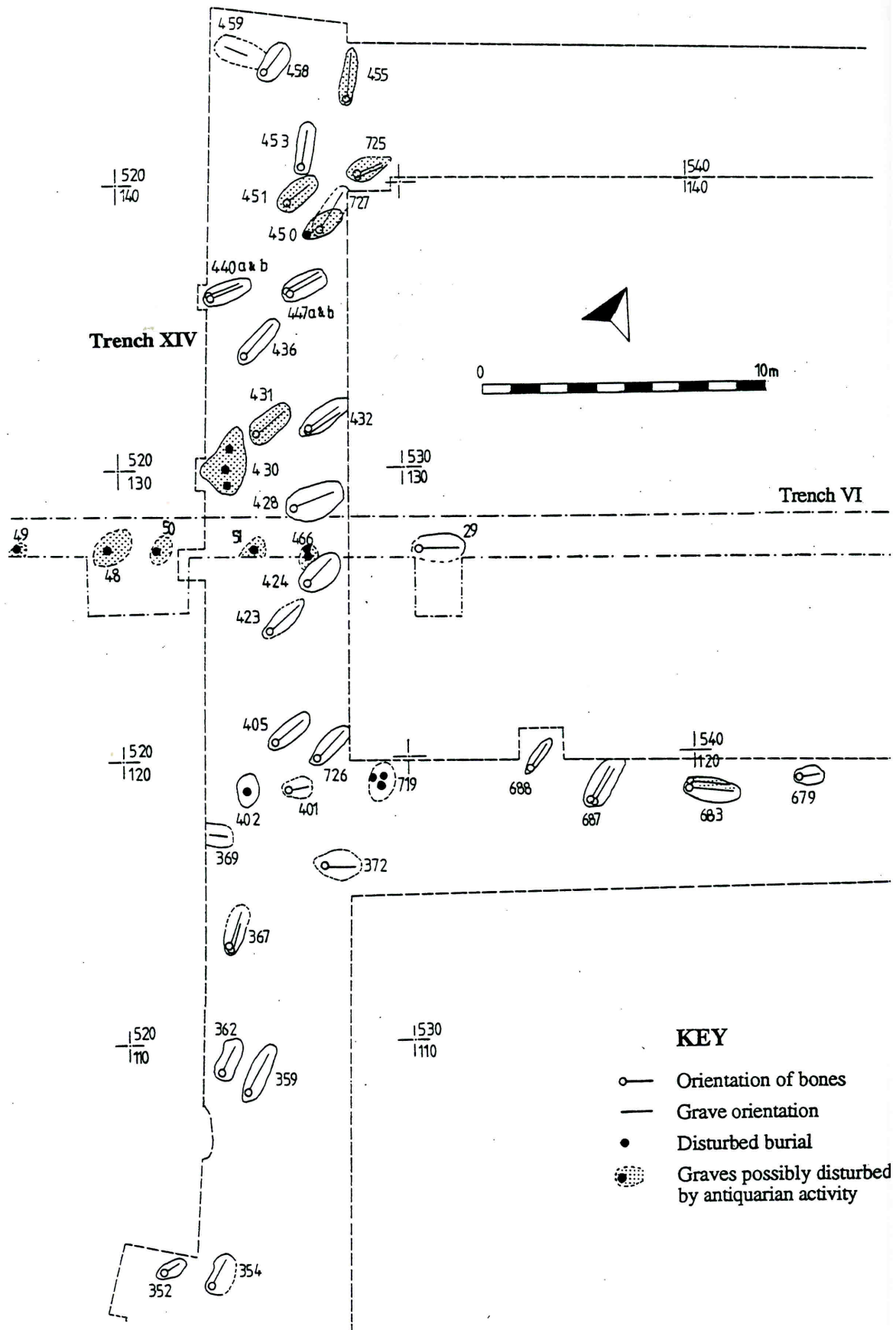
Figure 11 Plan of Trench XIV showing Anglo-Saxon Burials

18

Trench XIV Thirty four graves were excavated in Trench XIV, of which twenty six appeared to be single and eight appeared to be double inhumations, making forty two individuals in total. Burials were mostly supine and extended, oriented in four groups, facing north-west, due north, north-east and due east. Post-excavation analysis revealed the skeletal remains of 50 individuals, several of the multiple burials being from disturbed contexts. Grave goods were found in all but seven graves and sexing according to these artefacts, combined with the study of the skeletons indicated fourteen females, eighteen males, five juveniles, eight children and five unidentified. A definite physical boundary to the cemetery was not encountered in this area, although demarcation is clear from the fact that no burials were found east of the line between 548E/120N and 533E/140N.

Thirteen of the thirty four graves had been plough damaged, in most cases quite severely. Five pipe drains and one mole drain crossed the area, cutting seven graves. Where the graves were noticed by the drain cutters, looting of the artefacts and severe disturbance of the burials had resulted. A fragment of clay-pipe stem had been placed in the mouth of (687A). Other burials had suffered much disturbance for no apparent reason these burials were too deep for plough damage and generally had no associated artefacts although iron fragments and copper stains were evident. These burials may be some of those located by the first antiquarians to visit the site (the exact area in which the nineteenth century excavations took place is unknown) or the result of prospecting by the drainage workers or others (see Fig 11). Burial (455) was also disturbed, and contained no grave goods. Instead of being left in a disorderly scatter, however, the leg bones had been arranged alongside one another, neatly parallel to the grave sides. The grave fill was also a good deal more compact and less humic than that of the three described above; it is probably, therefore, a victim of a much earlier exhumation (Plate 4).

Burials (405) and (459) date to either end of the date range of the cemetery (fifth and seventh centuries respectively). Burial (405) included a late fifth/early sixth century spearhead and a kidney shaped buckle. Burial (459) contained a circular gold pendant with a cross design and centrally set semi-precious stone (probably amethyst), a glass bead necklace, silver slip rings (some interconnecting), fragments of bone comb and a pendant made from a crystal bead set in a 'cage' of gold bands (see Fig 12 for suggested reconstruction, no conclusive evidence links both pendants to the necklace).
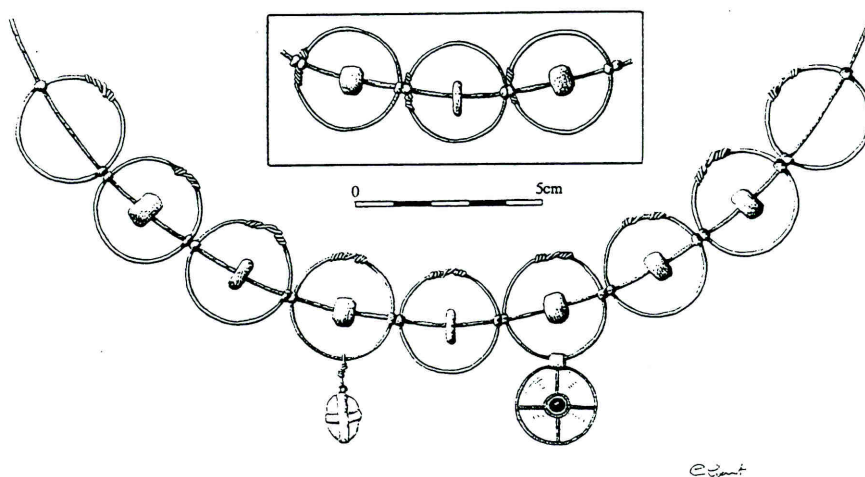
Figure 12 Reconstruction of necklace from burial 459 with inset showing alternative system of linking the silver slip rings

Burial 354 (Fig 13) a female of 45+ years contained a pair of silver Anglian English Hines Class A wrist clasps (dating to the second half of the sixth century) which are unusual, but not unknown, in Cambridgeshire. Also in this grave were a pair of hexafoil design cast saucer brooches, beads, a buckle and various unidentified iron fragments.

Two of the female burials, (359) and (428) included possible 'amulet' bags of which only the ivory rim hoop remained (Figs 14 and 15). Both bags appear to have contained copper alloy (one a possible cosmetic brush holder) and iron objects. Other chatelaine groups were found with burials (424), (436) and (683B). Apart from the 'amulet' bag found in burial (359) (Fig 14), the young woman (of approximately 18 years old), also had wrist clasps (Hines B7, B14), and a knife (Evison type 2). Burial (428) was a 30 to 35 year old female. She had been buried with a pair of cast saucer brooches (six spiral design) dating to the late fifth to early sixth centuries. One hundred and forty five amber beads, thirteen glass beads, a knife, and numerous copper alloy fittings from a belt or clothing were also found.

BURIAL 354

BONE ANALYSIS

AGE	45
SEX	Female
HEIGHT	?
COMMENTS	Bad teeth & evidence of arthritis

GRAVE GOODS

20 Beads
Iron fragments
Silver wrist-clasp
2 Bronze gilded saucer brooches
Iron ?rod
Iron ?buckle fragments

Scale 1:2
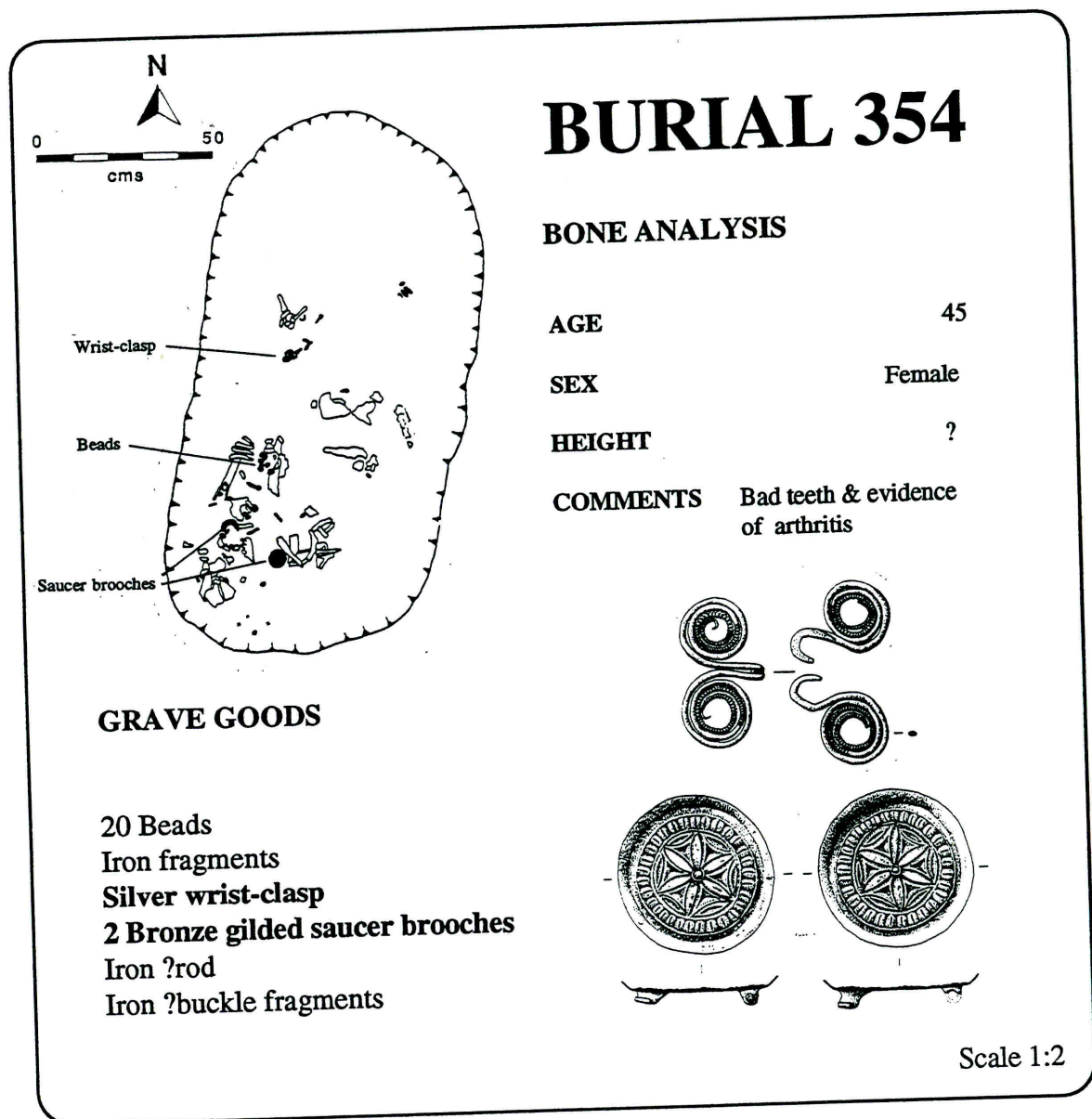
Figure 13   Burial 354
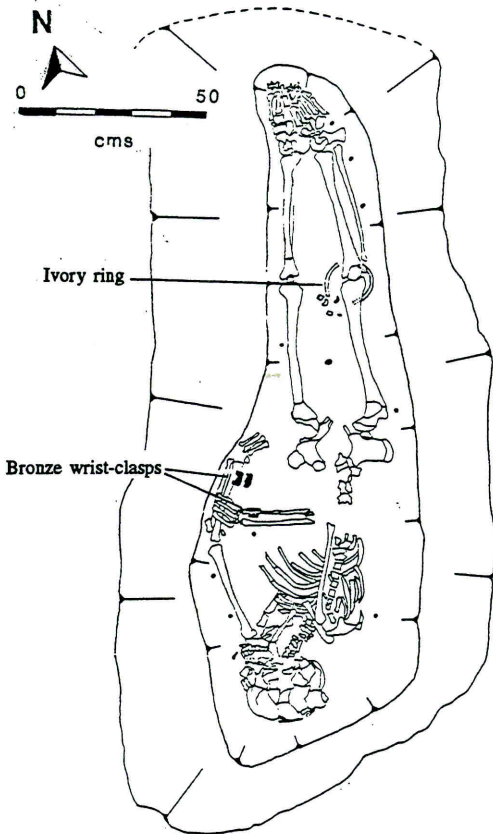
BURIAL 359

BONE ANALYSIS

AGE	18
SEX	Female
HEIGHT	1.61m
COMMENTS	
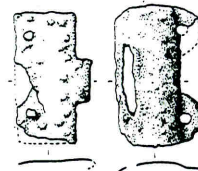
GRAVE GOODS

Iron bead
Iron objects
Pair of Bronze wrist-clasps
Bronze fragments
Ivory ring
Bronze flakes
Iron fragments
Iron pin
Bronze 'tag ends'
Bronze ?buckle
Iron ring fragments
Iron knife
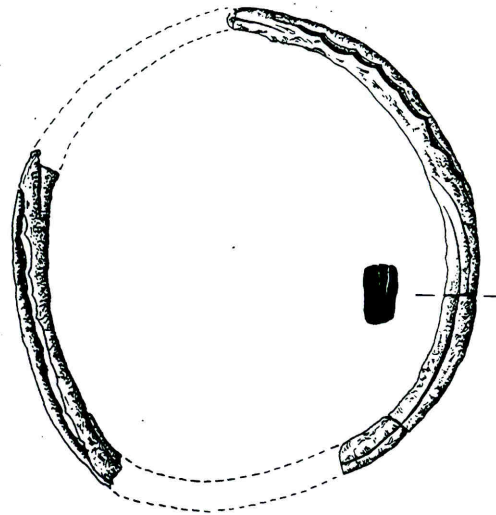
Scale 1:2

Figure 14 *Burial 359*

BURIAL 428

BONE ANALYSIS

AGE	30-35
SEX	Female
HEIGHT	1.62m
COMMENTS	

Latch keys
Ivory ring
Beads
Saucer brooches

GRAVE GOODS

Ivory ring
Bronze cosmetic brush holder
2 Bronze gilded saucer brooches
Iron latch keys
Bronze strap fittings
Bronze stud
Iron buckle/strap fitting
Iron fragments
157 Beads
Bronze ring
Iron knife
Bronze rivets
Bronze tag ends

Scale 1:2

Figure 15   Burial 428

22

BURIAL 679

BONE ANALYSIS

AGE	18 months
SEX	Indeterminate
HEIGHT	N/A
COMMENTS	

GRAVE GOODS

Complete pot
15 Beads
 Potsherd

Scale 1:2

Figure 16   Burial 679

Only two of these burials excavated in this trench were accompanied by pottery vessels, which were small plain hand-made jars. Both (679) and (683B) were located in a similar area and orientation (west to east) as burial (29) discovered in 1989, which was also accompanied by a pottery vessel. Burial (683B), which was somewhat deeper than most others, was of a 35 to 45 year old female buried not only with a complete pot with pieces of iron attached to it, but she also had a copper alloy buckle and disc (coin?), bone spindle whorl, and a chatelaine chain complete with knife (Fig 17). Burial (679) contained a child (approximately eighteen months old) with a large sherd of pottery placed over the pelvic area, 15 beads and a small, complete pot (Fig 16). It is interesting to note that no decoration has been found on any of the Anglo-Saxon vessels found at Edix Hill during the recent programme of work, and that the pottery in general is fairly crudely made and domestic in form.

Burial (440) was a 25 to 35 year old woman buried with a perinatal baby. Twenty eight amber beads, two glass beads, a chalk bead and an iron buckle were the only surviving artefacts. The infant's skeleton was undisturbed and did not have a separate grave cut, showing contemporanity of burials, with the infant forming a pillow for the skull of

23

BURIAL 683B

N

0   50

cms

Complete pot

Iron knife
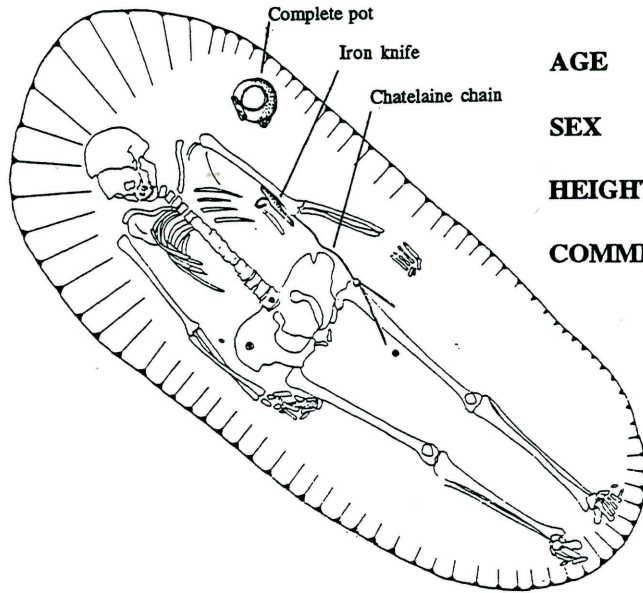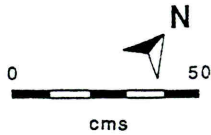
Chatelaine chain

BONE ANALYSIS

AGE	35-45
SEX	Female
HEIGHT	
COMMENTS	

GRAVE GOODS

Glass bead
Complete pot
Iron fragment
Iron chatelaine chain with attached ?key
Bronze disc
Iron knife
Bone spindle whorl
Bronze buckle
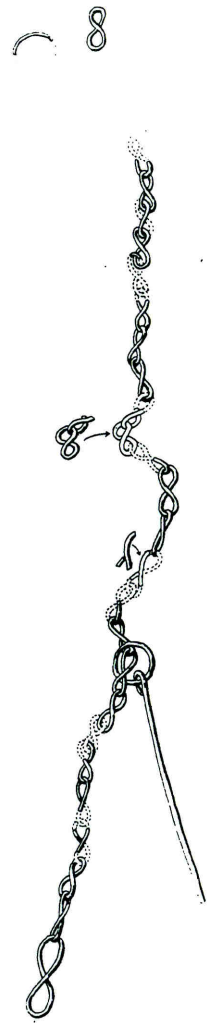
Scale 1:4

Figure 17   *Burial 683*

24
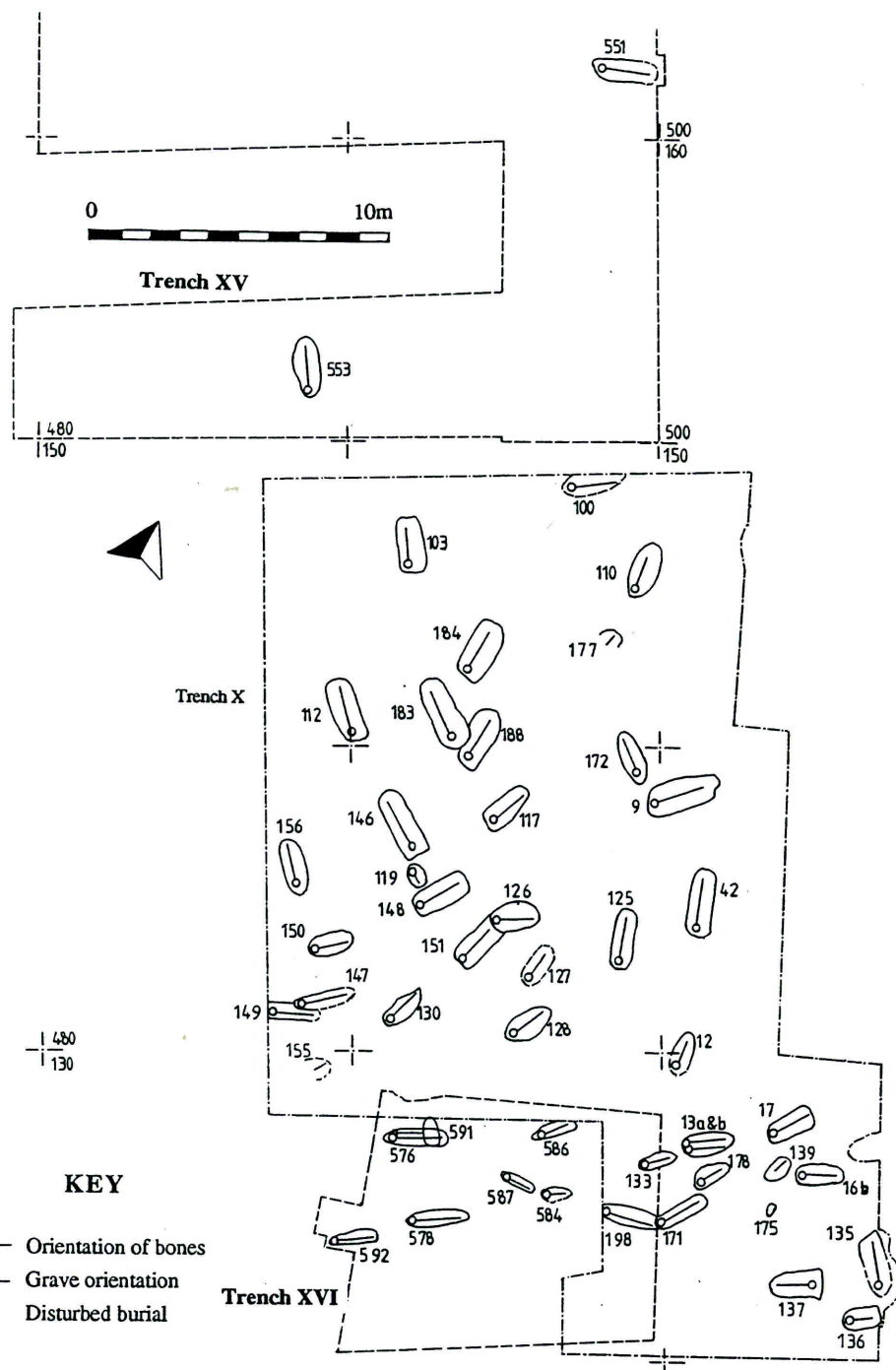
Figure 18 Plan of Trenches XV and XVI showing Anglo-Saxon burials

(440). This is one of the few cases were there is sufficiently strong evidence to suggest the cause of death, namely child-birth.

Burial (453) was of a 17 to 25 year old male in a deeply-cut grave. Apart from a shield boss and small spear, he had been buried with a copper-alloy bound bucket, with fragments of mineralised wood, possibly dating from the sixth century. These artefacts suggest the burial of a high status individual (Plate 5).

Trench XV Only two burials were found in this trench, and thus, while many Iron Age features extended further north, the lack of burials in this area clearly demonstrates the limit of the cemetery (at 163N site-grid). Both graves containing extended, supine male burials. Burial (551) was of a 20 to 30 year old individual buried facing east, and found with a single-sided composite bone comb, a buckle and knife surviving from his

25

costume. The other burial (553) was over 45 years old and was oriented to the north-west. He had been buried with a spear (Swanton E1), a buckle and a knife.
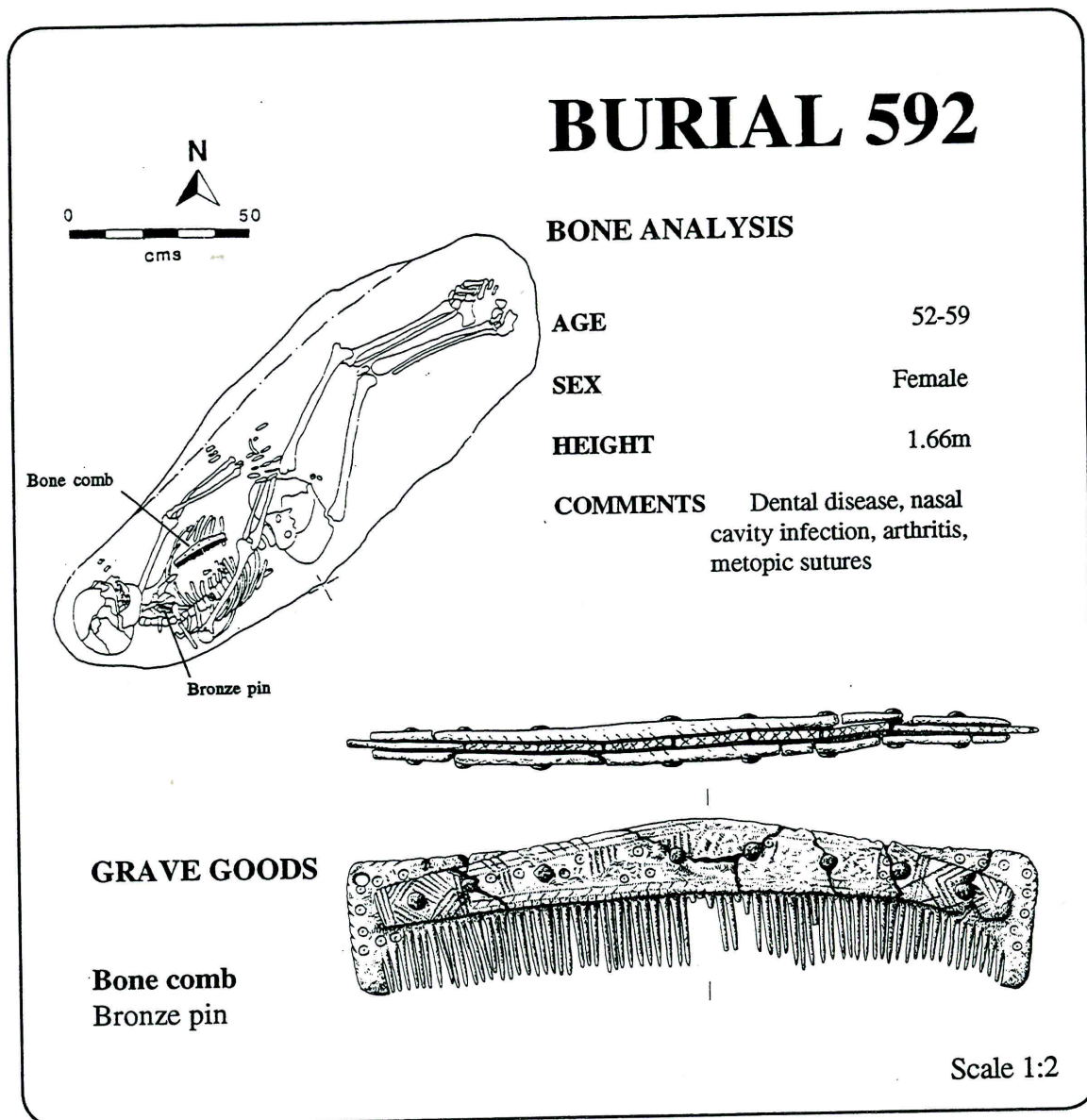
Figure 19   Burial 592

Trench XVI   Six burials were found, all oriented to the east or north-east, all were supine and generally extended. Three burials were juveniles, and the other three were adults, two males and a female. A seventh grave was also recorded (591), oriented north-south, but it had been cut by a later burial (576) in which the bones of a seven year old child were found mixed with the complete adult skeleton contained in this grave. The size of grave (591) is consistent with that for a child. Burials (576) and (578) were respectively 45+ and 20 to 24 year old males, each being found with only a knife.

The other adult (592) was the burial of a woman aged between 52 and 59 years old. A very fine example of a single-sided composite comb was found with her, together with a copper alloy pin (Fig 19). Analysis of the skeleton showed that she had a metopic suture, which was also noticed amongst a group of males excavated in 1990, situated only 20 metres away. This trait may be hereditary and therefore could suggest a familial relationship amongst these burials, concentrated in one area of the cemetery.

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The three children (584), (586), and (587) aged three, ten to eleven, and eight respectively, were all found to have diet related pathologies. A single glass bead was found with (584). Excavations in 1990 suggested a greater concentration of juvenile burials near the area of Trench XVI and the results from the 1991 excavation has confirmed this apparent high incidence of child burials within one area of the cemetery.

Plate 5   *Burial 453 - high status individual with bucket, shield and spear*

CATALOGUE OF BURIALS AND FINDS FROM 1991 EXCAVATIONS (BURIALS 300 - 727)

Bur. No.	Cond.	Position	Orient.	Posture	Age	Sex	Amber	Bone	Glass	Paste	Silver	Round	Cruciform	Buckle	Bucket Fe	Bucket Cu	Chat.	Comb	Knife	Latch.	Pot	Ring Fe	Ring Cu	Boss	Spearhead	Tweezer	W.Clasp	Miscellaneous
300.1	F	S	WSW-BNE	B	A	M																				1		Bronze bangle
300.2	P	S?	?	B	C																	1	1				1	Shield studs, vessel fittings, pin
322.1	G	S	SW-NB	B	A	M	72		2				2	1				1?				1					1	2 crystal beads, iron rod
322.2	G	S	SW-NB	B	J/A	F								1?								1					2	Ivory ring
352	G	S	SW-NB	B	C		18					2		1?					1									Oval disc
354	P	S?	S-N	B?	A	F																						
359	P	L	S-N	B	A	F																						
362	G	D/S	S-N	B	A	M?																						
367.1	P	D	?S-N	D	A	M																						
367.2	P	D	?S-N	D	A	F?																						Bronze disc frag
369.1	F	D	W-B	B	A		10																				.5	Ceramic counter
369.2	P	D	W-B		A																							Bronze fitting
369.3		D	W-B		J																							
372	G	S	W-B	B	B	M																				1		
401	G	S?	?S-N	B	C	F?													1?			1	1					Iron studs and nail
402	P	D	?S-N	B	J	F?																						Bronze fittings
405	G	S	SW-NB	B	J	M?														4		1	2					Ivory ring
423	F/P	S	SW-NB	B	J/A	M	11		12					1(+1?)					1	4								
424	F	S	SSW-NNE	B	J	F?	145		12		1	2		1?														Antler ring, 2 girdle hangers
428	G	S	WSW-BNE	B	A	F																						1 chalk bead
430.1	P	D	?	D	A	M																						
430.2	P	D	?		A	M																						
430.3	P	D	SW-NB	D	A	C	1							1														
431	B	S	SW-NB	B	A	M	10													3	3	3	1					
432.1	F/P	S	SW-NB		A	F?																						
432.2	P	S	SSW-NNE	B	C	C																						
436	G	S	SSW-NNE	B	J/A	F	3		11					1														shark's tooth
440.1	F	S	W-B	B	A	F	28		2					1														
440.2	F	S	W-B	F	I	M																						
447.1	F	S	SW-NB	B	A	C																						
447.2	F	S	?SW-NB	B	D																							
450	F	D	SW-NB	B	D	M																						
451.1	F	D	?	D	A																							
451.2	G	D	?	D	J	M																		1	1			shield studs
453.1	G	S	S-N		E	J/A											1		1									Silver wire/gold pendant
453.2	P	D	S-N		J	M														1								
455	G	L	SSW-NNE	F	D	J														1								
458	F	S	W-B		D	A																			1			
459	P	D	?	D	A	M													1									Bone pin
466.1	P	L	?		D	C/J	17								1				1	1							2	1 Jet bead and one other
466.2	G	S	SW-NB	F	D	F?						2		2		1				1								Bronze pendant, bronze tube
526	F	S	WSW-BNE	B	C	C			7				2						1?									
529	F	S	WSW-ENE	B	A	F?	45		17	1			2															
530	G	S	SW-NB	B	C	F	12		2		1	2		1					1									
547.1	G	S	W-B	B	A	M?			2						1				1	1								
547.2	G	S	SB-NW	B	A	M									1				1	1								
551	F	S	SW-NB	B	SF	M																						
553	G	S	W-B	E	A	F																						
576.1	P	D	?		A	M																						
576.2	G	S	WSW-BNE	B	A																							
578	G	S	W-B	B	C				1																			Bronze pin
584	G	S	SW-NB	B	C																							Crystal & chalk beads
586	G	S	W-B	B	I	C																						Bronze sheet
587	S	?	NNW-SSE		F	C																					1	
591	G	S	WSW-BNE	SF	A	F																						
592	G	S	SW-NB	B	A		167		11			2			1												2	
626.1	G	S	SW-NB	B	A	M																						

...the associated artefacts

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CATALOGUE OF BURIALS AND FINDS FROM 1991 EXCAVATIONS (BURIALS 300 - 727)

Bur. No.	Cond.	Position	Orient.	Posture	Age	Sex	Beads Amber	Bone	Glass	Paste	Silver	Brooch Round	Cruciform	Buckle	Bucket Fe	Cu	Chat.	Comb	Knife	Latch.	Pot	Ring Fe	Cu	Boss	Spearhead	Tweezer	W.Clasp	Miscellaneous
632	P	R	WSW-BNE	SF	C	M?	1							1												1		
679	G	S	WSW-BNE	B	C				1	13											1							
683.1	F	D	?	D	A					2								1										
683.2	P	S	W-B	B	A	F	1		1	1				1			1		1		1							Spindle whorl, bronze disc
687.1	G	S	S-N	B	A	F	6																					
687.2	G	S	S-N	B	A	M																						
688	G	S	SSW-NNE	F	A	M								1					1						1			
719.1	P	D	?	D	C																							
719.2	P	D	?	D	C																							
719.3	P	D	?	D	C/J																							
725.1	P	D	WSW-BNE	D	A	F																						
725.2	P	D	WSW-BNE	D	A	M																						
726	G	S	SW-NE	SF	J/A	F	17							1														
727	G	S	S-N	B	A	M																			1			

G: Good, F: Fair, P: Poor   S: Supine, D: Disturbed, R: Right side, L: Left side   E: Extended, F: Flexed, SF: Semi-flexed   A: Adult (18+yrs), J: Juvenile (12-17yrs), C: Child (1-11yrs), I: Infant (less than 1 year).
Brooches - Round = button, disc, saucer, annular and penannular; Cruciform = small-long, square headed and cruciform

Table 1 Burials excavated in 1991 and their associated artefacts

6 SUMMARY OF POST-EXCAVATION STUDIES

6.1 BONE STUDIES

6.1.1 Animal Bone

Animal bones, mainly from the Iron Age contexts on the site, were examined by Dr. R. Luff and Cristina Sampedro. Apart from the deliberate burial of a dog and cattle skull in an Iron Age pit, a horse's head, and a relatively complete dog's skeleton (in a possibly Anglo-Saxon context) it was considered that there was very little that could usefully be done with the animal bones. Remains of sheep/goat, bovids and horse were identified but the bones were fragmentary and few showed signs of butchery. Several contexts had human bone mixed with the animal bone, possibly as the result of plough damage.

6.1.2 Human bone

DNA studies on the human bones were carried out by Erica Hagelberg from bones excavated in earlier seasons but the technique needs to be refined before useful information can be produced.

6.1.3 Summary of skeletal analysis

A total of 153 skeletons have been examined from the current series of excavations. The general condition of the bone is robust and uneroded, but disturbance, the effects of ploughing and the passage of agricultural machinery have broken most of the larger postcranial bones and almost all the skulls. The skulls have suffered worst both because of the fragile nature of the face and parts of the vault and because many of them were 'pillowed' up in the grave; few can be completely reconstructed, although the majority can be restored to a great extent. Some of the skull vaults were warped, due to water being retained in the graves over long periods of time.

Sex The gender can be determined for 83 individuals, 34 females and 49 males, with ten probably female and eight questionably male, roughly a 1:1 ratio. It is rare to find males and females exactly one-to-one in a population: for example, in most societies the death of women of childbearing age leads to a proportional increase in the number of males in the older age groups, but this is less likely to occur where the dietary and health status of the women is high, as may be the case here. The converse is found when there has been warfare, leading to the loss of young men from the population. The age balance is discussed below.

Although it is not possible, usually, to determine the sex of immature skeletons, nor is the attempt to be recommended, five individuals in late adolescence had sufficiently marked features indicating gender that they have been recorded as four males and one female. One burial (130), at 16 years of age, had developed strongly masculine features and was suffering from a virilizing condition which would confirm the gender determination.

Age It was possible to estimate age for 120 skeletons, of which 110 are shown in Figure 20. Of the remainder 22 are adults and ten subadults of indeterminate age, and one is between late adolescence and adulthood; the overall proportion is roughly 2:1 adults to subadults, an age balance similar to that of other Anglo-Saxon groups. Age distribution is shown in Figure 20a, and in Figure 20b female, male and immature or gender-indeterminable individuals are distinguished. The tables show several main points:
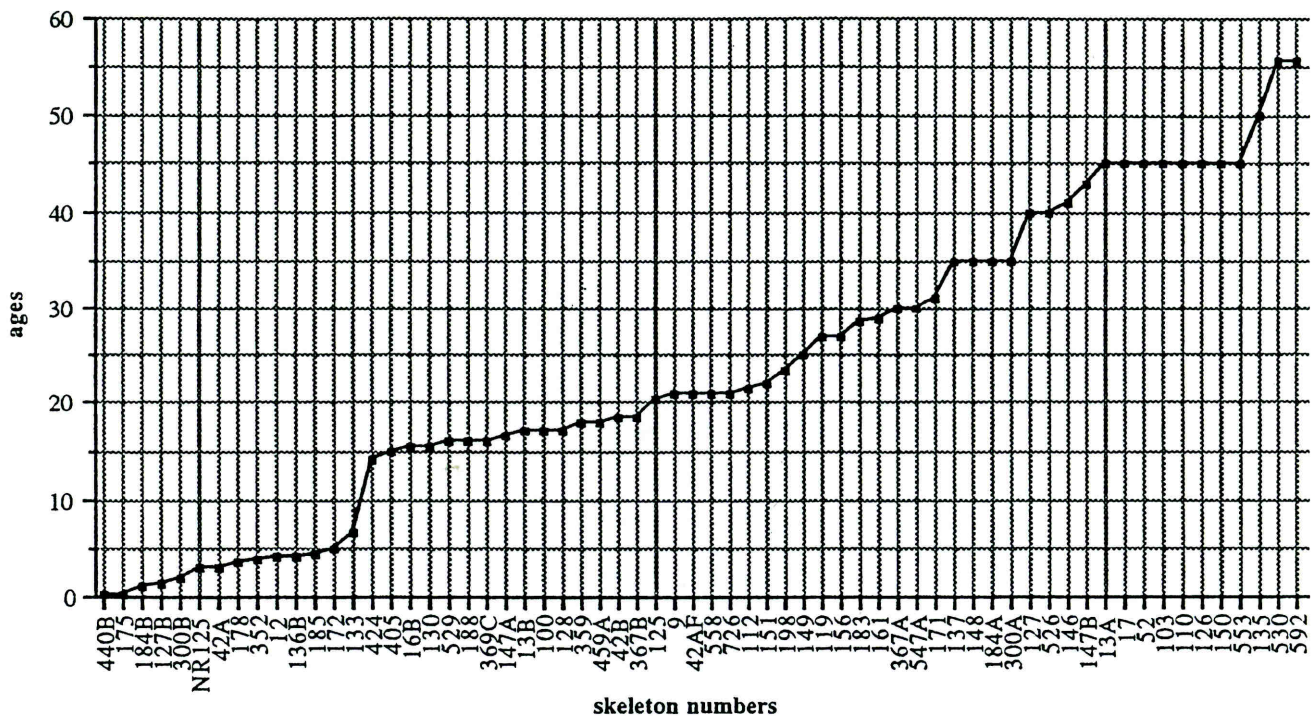
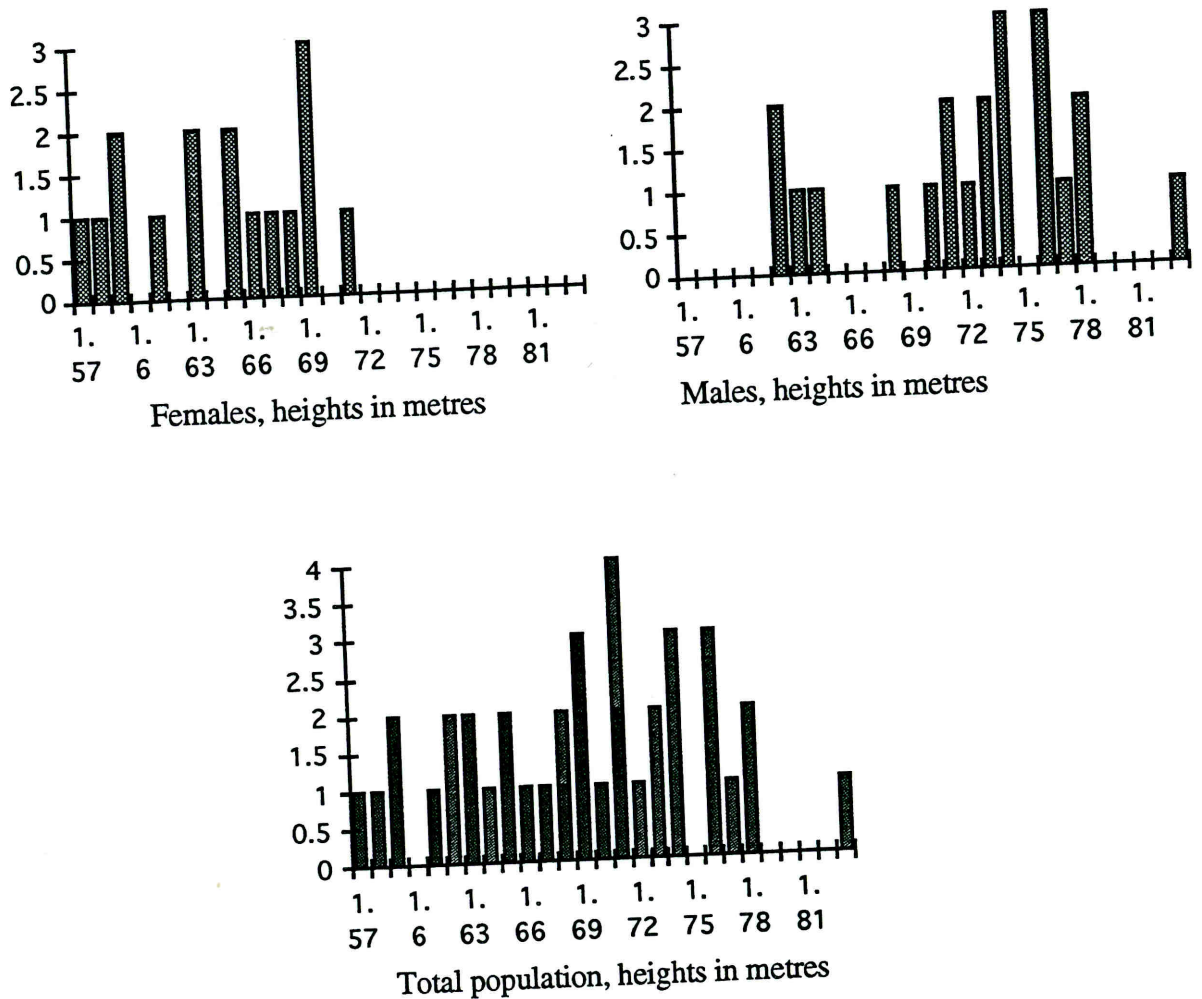*Figure 20* *Graph showing age at death of the Barrington population*

1 Maximum age was up to sixty: 55 for men and 60 for women, but the older people in the population could expect to live to at least 60. It must be pointed out that the methods currently available for age determination do not permit accurate ageing in later life, so the oldest individuals may have been older than they appear; because of the different standards for ageing males and females, an artificial maximum of 55 appears for the men.

The median age for women was 30, while that for the men was 35. These ages are little different to findings from non-urban populations throughout the archaeological record.

2 The shallower lower part of the curve indicates the generally greater mortality of subadults. Although childhood was clearly a more hazardous time than adulthood in this population, the sample does not show the peak of deaths of neonates and infants which is found in many modern groups with high rates of infection (usually living in urban concentrations) and/or severe dietary stress (commonly, when relying on single-crop agriculture). By contrast, life expectancy for infants of this group was high, decreasing in childhood until adolescence was reached, when it increased again at a regular rate. The evidence may, alternatively reflect burial practice or differential preservation and not all infants and children from the population may have been recovered from the cemetery.

3 There is little difference between the distribution of ages for males and females. However, the lower median point for women, considered with the higher maximum age for women overall, shows a selective factor at work, and suggests loss of women of childbearing age, either in childbirth itself or from its subsequent effects (for example, the dietary stress of lactation). There is only one identifiable example of possible death in childbirth (440A and B), a female with a new-born beneath her head), and although two other women were buried with children, other double burials were of various combinations of sexes and ages.

Stature   Thirty-eight individuals had sufficiently complete long bones for an estimation of stature to be made. Numbers for the sexes were roughly equal, eighteen females and twenty males, and the results are given in Figure 21 and summarised below:

1 The range of heights is between 157 and 183 cm (5'2" to 6'0"), with a median of 170 cm (5'7"), which is similar to height estimates for other Anglo-Saxon and contemporary groups.

2 Female range is 157 to 171 cm (5'2" to 5'8"), a spread of 14 cm. The median is 165.5 cm (5'5").

Females, heights in metres

Males, heights in metres

Total population, heights in metres

Figure 21 *Heights of Barrington skeletons*

3   The male range has a median of 173.5 cm (5'8") and a spread of 21 cm, from 162 to 183 cm (5'4" to 6'0"). The two individuals at the lowest points on the male range were reconsidered. One (13A) is unquestionably a male, both from the skeletal evidence and the grave goods, and the short stature is due to unusually acute angulation of the femoral necks, leading to loss of leg length only; the other, the shortest (17), has mixed features of each gender and ambiguous grave goods, so there is a possibility of the sex estimate being incorrect. However, even if this latter skeleton were excluded, the male heights still cover a greater range than the female.

At the top end of the scale is one exceptionally tall individual (146) at an estimated height of 1.83m (6'). Men in this population may be approaching their optimum heights because of excellent nutrition - a state rarely found until modern times - and this may have been selective. For example, a study of a medieval Germanic people, the Alemanni, has shown that taller men had more weapons in their graves, suggesting that taller men achieved higher status as warriors. Alternatively children from a possible warrior "class" may have been better nourished leading to enhanced stature. Comparison of skeletal and artefactual evidence will show if similar correlations are present in this group.

Pathology   There is very little disease, of the kind that leaves traces on the skeleton, in this sample. Only 102 examples of pathology have been found, in 49 individuals (32% of the sample). The proportions of the various categories of disease found in the population are shown in Figure 22. All dental disease has been grouped together, as it is commonly found that persons with one dental pathology have others, for example, as described below, severe tooth wear is generally found with alveolar resorption, and it is a

preliminary to abscessing. In the same way, several examples of degenerative disease are likely to be found in the same skeleton. These are the two most frequent types of pathological change in this population.
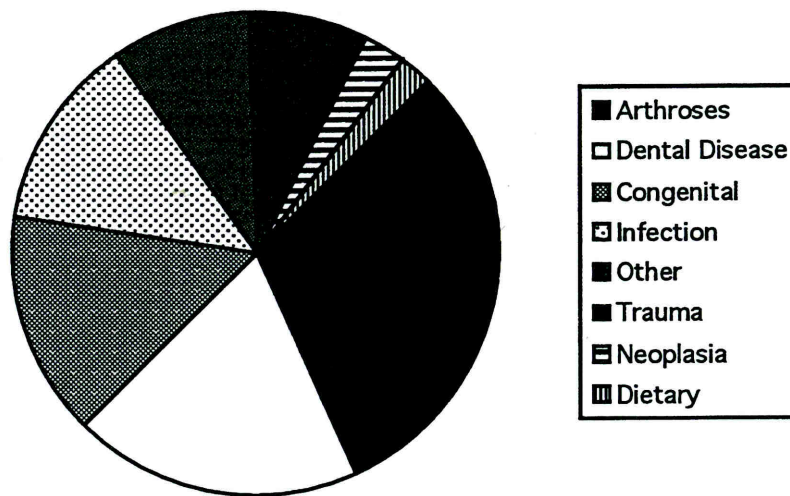
Figure 22   Pathologies of the Barrington skeletons

Arthritis was rife in this population, and began developing at an early age. Of people of 25 and over, 81% had some manifestation of it, usually in the spine, but also in the hip joints, long bones and bones of the hands and feet. The percentage rises to 89% for those over 35, and 93% for those over 40, in which the manifestations are, in some cases extreme, with total breakdown of joints, loss of articular cartilage and bone to bone contact. Even in modern populations, slight changes due to arthritis can usually be found in the spine - indeed, it is one way of making an age estimate from the skeleton - but the severity of the degenerative changes in the Barrington people demonstrates life-long heavy manual labour. In this population, more men than women are affected.

Dental disease is less frequent in the Barrington population than in many modern groups. It is present in 23% of the population, appearing in the first example before adulthood, increasing patchily through the twenties to early forties, but leaping to 86% in persons over 45 years of age. This is unsurprising when the type of dental disease is considered: caries, is rare in this sample, due primarily to the absence of refined carbohydrates in the diet; it is also differently located, being interproximal (probably a result of poor dental hygiene) rather than occlusal. Dental attrition, on the other hand, caused by coarse foods, is progressive, and extreme attrition exposes the tooth pulp, allows infection into the root canal, leads to abscessing and, ultimately, to the loss of the tooth. In addition, extreme wear becomes uneven and loosens the teeth by abnormal stresses on the supporting structures of the gum and jaw. Furthermore, if tooth cleaning is inadequate, as we know it to be in this population because of the presence of tartar deposits, gum disease follows and also loosens the teeth. The Barrington people had broadly similar rates for caries and tooth loss to other Anglo-Saxons, although the frequencies are very slightly lower: 4% carious teeth and 11% teeth lost ante-mortem, compared with 6% and 14% for the populations examined by Brothwell (1972).

Unusually, it is possible to speculate as to the cause of death in five cases from the cemetery, although in no case can it be proved. The woman buried with a new-born child as a pillow has already been mentioned as a possible cause of death being childbirth. Two cases of neoplasia have been found, this term referring to benign and non-benign ('cancerous') tumours. In both these cases the bones have been affected by

cancers of soft tissue which have spread through the bloodstream and produced secondary effects in the skeleton: this is known as metastatic carcinoma. One body is that of a man of over 45 years of age, with erosive 'worm-eaten' changes within the bones of the vault of the skull, in the vertebrae and the sternum, all areas which are commonly affected by metastatic dissemination of tumour cells. The changes are within the bones, so are barely visible except where there has been post-mortem breakage - x-rays will probably show more areas. Although it is not possible to establish the location of the original tumour, the commonest which erode bone in this way are those of the lung, kidney and thyroid.

By contrast, few cancers stimulate bone production. The skeleton of a teenager (130) has these changes, of proliferation both within and on the surface of a bone in the pelvis, lower vertebrae and hip joints. The location of these lesions point to a primary source in the lower abdomen or pelvic cavity, with cells 'seeded' via the vertebral vein system. It is noteworthy that this individual, 15 or 16 years old, has extremely marked male characteristics in the skeleton, rarely found so early in life, leading to the suggestion that excessive hormonal changes at puberty are related to the development of the cancer. Possible primary tumours which are being considered are those of the prostate, testis or adrenal cortex.

A further teenager (128) has changes inside the skull which can be diagnostic of meningitis. If this is the case, it would undoubtedly have caused death in a short time. Another infection which could be fatal in the past was the ubiquitous dental abscess, which usually discharged harmlessly but might set up blood poisoning. In the case of an older woman, one of the two oldest individuals in the group, an abscess in the upper jaw had broken through into the maxillary sinus of the face, an area where infection can develop unchecked, and the bacteria might have developed enough to overwhelm this woman's immune system, especially as she was at an age when resistance to disease is weakening. By contrast, two women with signs of leprosy probably did not die from the disease, in both cases the leprotic changes are slight: A young woman (42B) had the characteristic erosion of the upper jaw and nose, and infective deposits within the nose and mouth and along the legs, but the slow-developing disease would have taken many more years before it endangered her life. It would, however, have been disfiguring and distressing even at this early stage. The middle-aged woman (526) only had changes to the extremities - the 'pencilling' of the bones of the fingers and toes that precedes their loss.

The few fractures and wounds in the population are well-healed, showing that they had good resistance to infection. A depressed fracture of the skull in an older man was in a particularly dangerous area at the top of the skull vault, but he had survived the blow and lived for many years, perhaps decades, after it. Two other skulls have well-healed wounds on the vault showing the characteristic form of sword cuts, with a shallowly-bevelled edge around most of the circumference and a steeper-sided area where the weapon jammed against the bone. Apart from these cases, caused by interpersonal violence, the other examples of trauma are more likely to have been caused by accidents in everyday life, including, as they do, common fractures of the wrist, ankle and clavicle.

There are few traces of dietary insufficiency among the Barrington people, but there are some cases of lines of arrested enamel development in teeth (enamel hypoplasia), which can pinpoint the severity and timing of periods of dietary stress. It is frequently found, in archaeological and ethnographic populations, that there is a pattern of 'weaning' stress, in which the first line of disordered enamel is in similar locations on equivalent teeth in several individuals, marking the age when babies were weaned onto a poor-quality diet. The few examples of hypoplasia from the Barrington group either show only one line, located at a position pointing to development at about two years, or have this line followed by others: so we can suggest an inadequate diet for a growing infant immediately after weaning, perhaps associated with other periods of shortage in childhood; comparison of apparently 'rich' and 'poor' graves might indicate

differential access to resources. However, many other causes of dental hypoplasia have been suggested, and the small sample here needs to be tested for significance. Arrested growth in long bones can be identified radiographically, which will be carried out in selected cases if appropriate.

6.1.4 Study of pre-auricular sulci The study of pre-auricular sulci was carried out as part of a research project undertaken at the University of Bradford. The size and nature of the Barrington sample suggested that it would make a useful comparative population. One theory which was considered worth examining further was Houghton's (1974) work on the differing forms of pre-auricular sulcus: these indentations on the pelvis (relating to the attachment of the ventral sacro-iliac ligament), once used as a diagnostic feature of female skeletons, were classified by him as taking two forms, only one of which could be sex-diagnostic. A study, to consider the anatomy of the sulcus, its differing forms, and its sexual dimorphism, was made by Cristina Sampedro, of the Universities of Sheffield and Bradford, for her MSc dissertation, and the work is outlined below.

Houghton's study was carried out on a population of skeletally-assessed sex and unknown parity status. Clearly, the Barrington sample also has unknown obstetric histories, so the value of the pre-auricular sulcus as an index of past pregnancy could not be considered directly. However, many adult skeletons from Barrington had sex determined both by skeletal features and grave goods, and there was agreement in almost every case, so the relation of sulcus presence/form and gender could be examined. A total of 65 skeletons were used: 34 male and 31 female.

Houghton argued that hormonal changes during pregnancy produced a loosening in the attachments and consequent development of a distinctive type of sulcus (although the way in which hormonal changes affect the pelvic ligaments is still not fully understood). Not all individuals have a pre-auricular sulcus, but, where present, two forms were defined: 'groove of ligament' (GL), which might be expected in the pelves of males and females alike, and 'groove of pregnancy' (GP), to be expected only in parous females.

The typology used in the present study was:
0	lack of sulcus
1	groove of pregnancy (Houghton)
2	groove of ligament (Houghton)
3	shallow depression, created by the existence of an accentuated *tuberculum piriformis* (Sampedro)

Results were (percentages):

Type	Females	Males
0	25	88
1	13	0
2	10	0
3	52	12

The incidence of pre-auricular sulcus varies considerably between populations; in Barrington the percentage absent is very high, markedly higher in males than in females. Type 1 (GP form) was found only in females, confirming the observations of other researchers that this is a female characteristic. It does, however, have a very low incidence, which might reflect the difficulty of identifying this form, or might actually represent the percentage of parous females in this sample. Type 2 (GL form) is also present, at a low percentage, only in females. This might be due to the high number of individuals with absence of sulcus, or because Types 2 and 3 are related, as is

considered to be the case by some researchers. Type 3 was found in both males and females.

Other features of the ilium were considered in relation to the pre-auricular sulcus, and from this it was found that the absence of sulcus correlated with narrow sciatic notch and that the widest sciatic notches were found in those with type 1 (GP) sulci; the size of this notch is also a gender-determining characteristic, but the form of sulcus might be produced by the stresses transmitted by a particular pelvis form, rather than both features being independently sex-linked. Houghton had suggested that the sacro-iliac joint should be considered, as it transmits the weight of the whole upper body to the legs: it was found that the auricular area was very similar in males and females in this sample.

Another feature which should be examined in future research, in the light of weight transmission, is the angulation of the sacrum. The *tuberculum piriformis* is prominent in a large number of individuals in this population, a point which might also be researched further.

6.1.5   Trace Element Analysis   In the summer of 1991, samples for trace element analysis were collected from 27 burials at Barrington Anglo Saxon cemetery. These are being analysed as part of a Ph.D. research project being undertaken at the University of Sheffield. Burials in a reasonable state of preservation were selected, so that age and sex of the individual could be assessed. Most skeletons included for analysis were those of adults. In order to test for diagenesis (post-depositional change in the chemistry of the bones) soil samples were collected from each burial, at measured distances from above and below the bone. Preliminary results from other sites in the research project indicate that multi-element analysis of burial soils in tandem with bone samples is a useful approach to the problem of diagenesis.

Trace element analysis of ancient bone may provide information above diet, health and social status in past populations. Research in this field has proliferated within the last two decades, as improvements in methodology and instrumentation have allowed the accurate measurement of elements present in minute concentrations using very small samples.

Dietary analysis can indicate the importance of different foodstuffs for particular populations, and also identify subsistence shifts, for example from a hunting economy with meat as the main source of nourishment, to agriculture based on cereal crops.

A use of trace element analysis related to diet is in the investigation of social status of individuals within a population The basic assumption underlying this area of study is that different individuals or subgroups within a population will have different access to resources related to their social standing. Various studies have related levels of trace elements in bones of individuals to other indications of status - grave goods, burial architecture, etc. - with some degree of success.

6.2   ENVIRONMENTAL STUDIES

Bulk samples for flotation were taken from a range of Iron Age pits. The samples were processed in a bulk sieving/flotation tank using 0.5mm meshes throughout. Flots and residues were received for assessment, together with a few hand-collected items.

Iron Age pits and ditches   The flots were largely composed of modern roots with very low densities of charcoal fragments, some charred cereal remains and weed seeds and abundant mollusc shells. Mammal bone fragments, small mammal and amphibian bones had been extracted from the residues.

Apart from charcoal the samples included charred cereal grain fragments, *Triticum spelta* type grains, *Hordeum* grains and *Triticum spelta* glume bases, with fruits and seeds of *Rumex* sp., *Lithospermum arvense*, *Galium aparine*, *Eleocharis palustris/uniglumis* and nutshell fragments of *Corylus avellana*. These charred plant remains, however, occurred at very low densities. They must indicate some cereal processing on site, but apparently not in close proximity to the features sampled. No further work on this material is required.

The land mollusc assemblages were generally dominated by species characteristic of open conditions: *Pupilla muscorum, Vallonia costata, Vallonia excentrica, Helicella itala* and a few *Vertigo pygmaea. Cochlicopa* spp and the *Trichia hispida* group were also frequent. In some contexts snails indicating shaded habitats were present: mainly *Carychium* spp and *Discus rotundatus* with *Pomatias elegans, Acanthinula aculeata, Vitrea* spp, *Aegopinella* spp, *Oxychilus* spp and occasionally *Vertigo pusilla*. There were also some freshwater species: *Valvata cristata, Valvata piscinalis, Aplexa hypnorum, Anisus* spp., *Bathylmphalus contortus, Gyraulus albus* and *Armiger crista*, especially in the primary fill of ditch 559.

Discussion The terrestrial snails are assumed to represent the local fauna, indicating generally open conditions but with some more shaded micro-habitats, perhaps in the features themselves. The aquatic snails are mostly not typical ditch species, tolerant of desiccation and poor oxygenation. It seems more probable that they were imported to the site with various raw materials - perhaps hay, reeds or alluvial clay. In view of uncertainties about the taphonomy of these assemblages it does not seem that further work would be useful.

Various objects, thought to be charred seeds, noted during excavation of graves and other features, had been collected by hand. Almost all of these proved to be black sub-spherical soil concretions, although from context 1000/322(6) Trench XIV there was a single large charred seed of *Vicia faba* var *minor* (horsebean), 11mm in length.

Anglo-Saxon burials Small samples collected from the abdominal area of inhumations in 1990 were hoped to contain pollen, parasite ova or macrofossil dietary information. However, the fills sampled were all well-drained chalky loams and included intruded fibrous roots. It is unlikely that any informative micro- or macrofossils would survive in these conditions and, furthermore, intrusive material would present problems of interpretation. These samples were therefore not examined, although all those received have been retained for any possible future palaeopathological studies. Similar samples from excavations during 1991 have also been retained.

6.3 POTTERY ANALYSIS

Bronze Age One small decorated body sherd was found in association with later sherds.

Iron Age The greatest bulk of material from the site was Iron Age in date. Within that general category different types of pottery were recognised; these types appear to be chronologically significant.

Coarse handmade pottery, rather shapeless, and often in poorly finished fabrics frequently with finger tipping and/or squared-off rims. This material corresponds well to Cunliffe's A:5 Ivinghoe-Sandy group which is characterised by sharply angled flat-topped rims. Cunliffe tentatively suggests a sixth century BC date for this pottery.

A second group of Iron Age material was recognised which had two main types of pottery within it. A well made black fabric with external burnishing and a plain sandy fabric with a slightly 'pimply' appearance which was also generally well made. The

out-turned rims and forms of the dense well burnished black fabric would agree well with Cunliffe's A:10 Chinnor-Wandlebury group which he tentatively dates fifth to third centuries BC. However, the characteristic decoration of that group, outlined shapes filled with dot patterns, is not well represented among the sherds from Barrington; logically one might have expected some correlation between the number of rims found and the incidence of decoration. Such dotted decoration is not totally absent from Barrington and its low occurrence may well be no more than a local variant.

A third class of pottery appears to have overlapped with Belgic and Roman sherds, including both large and small vessels, thick walled, in shades of brown and grey. This group corresponds with Cunliffe's group A:23, an undistinguished group of shapeless coarse pots, for which he suggests dates between the third and first centuries BC.

Imported pottery: a number of well recognised types occurred including Belgic pottery, butt beakers, terra nigra and terra rubra, cream-white flagon bodies with triangular rims and amphorae body sherds. These late first century BC/early first century AD sherds were concentrated in the Trench X area. The quantity of this type of pottery suggests a brief but intense Conquest period of occupation in this area of the site.

Roman Period Surprisingly little Roman material came from the site. Early imported material was found in conjunction with Romano-British material, suggesting continuity into the first century AD. Few diagnostic types of pottery were identified.

Roman material is present from the first century AD and there is a little dated to the third/fourth century. Presumably Roman occupation must have taken place at some distance from the site.

Anglo-Saxon Very little recognisable Anglo-Saxon material was seen and it is possible that it has been under-recognised within the corpus of material. There were, however, some identified body sherds which should be published along with the entire pots.

One class of sherds which needs to be looked at with a view to categorising as Iron Age or Anglo-Saxon is a small group of dense black bodied sherds decorated with two or three parallel grooved lines. This type of decoration does occur on Anglo-Saxon pottery in the region, eg from St. John's College, Cambridge, and some comparison could be made.

There were a few medieval sherds found on the site.

Summary of pottery

The earliest sherd is of Bronze Age date but unassociated with any structure. The main period of occupation was through the Iron Age extending into the first century AD. There seems to be little evidence of Roman occupation although Roman pottery is present, suggesting nearby occupation. A few fourth century sherds suggest this occupation continued until that date. In the early Anglo-Saxon period the area was used as a cemetery. No late Saxon or Saxo-Norman sherds were found. There is no ceramic evidence to suggest later use of the site other than a thin extended scatter of later sherds suggesting the continued use of the land, perhaps for agricultural purposes, with pottery arriving through manuring.

On a broader assessment it should be noted that the two earlier groups cited in the text - Cunliffe's A:5 Ivinghoe-Sandy and A:10 Chinnor-Wandlebury - lie predominantly to the west of Barrington which is thus at the eastern end of these regional groupings. This reinforces earlier impressions of the material when it was suggested that its affinities should be sought to the west of the region rather than with other Cambridgeshire sites.

If the preliminary suggestion of westward affinities could be strengthened and confirmed by further work it may be possible to suggest, with more confidence, that Barrington lay in a frontier region between Iron Age cultures. It has been suggested elsewhere (Malim, 1989) that this area may have lain on the boundary of the Anglian and Mercian cultures - extending the suggestion of a frontier region back into the Iron Age has considerable potential implications for continuity of regionality.

Barrington is one of several important Anglo-Saxon cemeteries in the area which were discovered in the 1800s and early 1900s. The publication of material from those cemeteries was limited. New, in context, material from Barrington has added to the existing data and supplemented our incomplete knowledge. Publication of all *in situ* pots and specific unstratified sherds should be as full as possible, clearly nearby cemeteries like those of Cambridge and Haslingfield should be compared. Within the region the material is important because it supplements and improves existing knowledge, and because it provides new stratified material for a period when such data is lacking.

6.4 RECONSTRUCTIONS

6.4.1 Reconstruction of an Anglo-Saxon bed
Barrington is the first excavation where the metal work from a well-preserved pagan Anglo-Saxon bed has been excavated using modern techniques. It is, thus, possible and necessary to look at the evidence (Speake 1989) and review existing theories on what structure the surviving metal represents.

The process consists of:

1 Excavation, with accurate recording of the surviving parts, ensuring that their orientation is noted. The metal work is then boxed in its defined orientation.

2 Initial survey of the metal parts looking for evidence of associated material in the corrosion products, both wood grain and textile were noted. 1:1 drawing of each piece including grain directions and orientation was made. From this survey the conservator was asked to clean metal and identify wood species and try to specify the grain direction, eg radial and tangential.

   Three specific points were noted at this stage

   i Two different distinct grain directions were noted on the cleats confirming that two pieces of wood were being joined.
   ii Wood grain only occurred on the shanks of the eyelets.
   iii Wedges on cleats, to confuse the wood grain pattern wooden wedges had been placed between the thinner board and the cleat.

3 From this evidence a functional and spatially accurate reconstruction was made. This model requires discussing and experimenting with to see how it functions.

Stage one - look at the existing reconstruction with the following points in mind:

   i   How this structure would fit in a grave.
   ii   How the structure functions as a litter/bed.
   iii   In what other ways the pieces can be reconstructed.

In the light of this work the surviving evidence then needs restudying to see whether further details may be seen, and if there is any further evidence the reconstruction may need modifying to fit it.

4 A report should then define the evidence accurately, specifically reporting in detail on features which have been employed in earlier reconstructions. If there is considered to be enough evidence a reconstruction should be made using the correct species of timber oriented correctly.

From burial (42B) sufficient evidence survives for an attempt at reconstruction based upon the well-recorded *in situ* location of the iron fittings of the bed. Its height above

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the grave floor and its width are clearly defined, and wood grain surviving on the ironwork shows size and direction of woodwork. Evidence for what happens at the foot of the bed and how the central area supported a mattress or was sprung (leather webbing? wattling? string?) has not survived. Nonetheless, a working model has been built from the available evidence which can be used to test existing theories and from which to reconsider our data, leading to eventual reconstruction which will be as close as possible to the original Anglo-Saxon concept. It should be borne in mind that reconstructions displayed to the public represent a very powerful method of conveying information. It is therefore necessary to ensure that they are accurate and not misleading, and at the same time contribute to important research on the technology and function of these objects.

6.4.2 Reconstruction of a Saxon shield

Anglo-Saxon shields have been reconstructed many times. Most reconstructions are artists impressions, some are purely romantic, whilst others are at least dimensionally accurate. What the artists fail to show is exactly how the shield was made and how it would function.

The County Archaeologist requested that an accurate reconstruction be made, taking into account the most recent evidence. This shield was to be as accurate a reconstruction as possible of the shield from Grave 112 at Barrington dated to the sixth century.

Heinrich Härke (1989) showed that shields are the second most common weapon shown in male graves, (the commonest being spears) and this was borne out at Barrington. The evidence surviving in graves is a metal boss, associated rivets and studs, occasionally the metal handle within the boss, and infrequently a reinforcing bar running part of the way across the shield. Careful excavation may reveal the stain of the shield board and the shape and diameter of the shield. (A few wealthy graves may have shields with metal rims, these can be misleading as they are often larger than the normal shield.)

The stains tell us that the shields were usually 0.6m (2 ft) in diameter, and the rivets through the boss tell us that the wooden board was 6 to 8mm (1/4 to 5/16 inch) thick. Microscopic examination of the mineralised wood attached to these rivets indicates that a number of species of wood were used in the construction of shield boards. Lime wood is common, and the species that is specifically associated in Saxon poetry with shield boards.

The first difficulty in shield construction is that a 6mm (1/4") thick lime wood board would immediately break on impact with a spear or sword. Careful work looking at grain direction on the mineralised wood showed that it was not plywood, although two distinct grain directions may be found where the handle was let into the shield board.

The evidence from Barrington clearly showed a layer of leather between the shield board and the boss suggesting that the board was covered with leather making a composite board. As the wood is so thin this composite board would only function properly if the leather were glued to the wood, for which there is no evidence. However, there is written evidence that waterproof cheese glues (which are the ancestor of cascamite) were known in Europe before the ninth century. This type of cheese glue may have been used, and cascamite was used in the reconstruction.

So far Jacqui Watson from the Ancient Monuments Laboratory has not been able to determine the type of leather from other sites, but Athelstan's laws made it an offence to use sheepskin. Oak tanned ox hide was used in the reconstruction. David Brown suggests that some composite shield boards had leather on both sides, but there was no evidence from the Barrington rivets for a layer of leather on the back of the shield board.

In this reconstruction the board was built from three lime boards glued together, cut to a circular shape, then shaved to their final thickness of 6 to 8mm. Flat lime wood boards can be cut to shape with a sharp draw knife from split planks that were roughly shaped with an axe. A hole was then cut in the centre of the board, this hole was made to measure so that the hand jams into it when the handle is in place. The handle, rounded on the inside, was halved into the thin board. This joint was then covered by the leather, glued on to the board. The handle was backed on the wood side with an iron bar which stretched 0.39m across the back of the shield. This bar was held on with four rivets, two inside the boss and two decorated rivets, one at each end of the bar. The decorated heads being on the leather face of the shield.

Finally the boss was fixed on to the board with five rivets, three of which were decorated. The whole made a light strong shield which flexes on impact, thus absorbing much of a blow.

The carinated iron boss was made by a professional armourer, Will Hutt, who kindly allowed us to watch him hammering the boss to shape. He used a circular mild steel blank, 3mm thick, 200mm diameter, rather than wrought iron which would have been used by the Saxons, this meant that he was able to do much of the work shaping the boss without heating it. Wrought iron would have required a larger number of reheats. First he and two friends hammered the white hot sheet into a rough shape in a hollow in an elm wood anvil with one holding the tongs, and two hammering with cross pein and straight pein sledgehammers (see Figure 23, sketch 1 below). The centre of the top was marked with chalk, and the top was then evened out with a long hammer, cold again, on a wood anvil (see sketch 2 below). Once the shape was symmetrical, the top was brought down to a conical shape, this had the result of thickening the conical front of the boss (see sketch 3 below). The carination was then put in on a flat stake (see sketch 4 below). The flange was put on over a forked stake (see sketch 5 below). The angle between the flange and the boss was sharpened on the edge of a small anvil. There was slight adjustment before the surface was finished with a planishing hammer, filed and polished. Much of this work was done by eye, marking the corrections to be made with chalk. The button was fitted after. The armourer made his own tools, as would a Saxon smith.
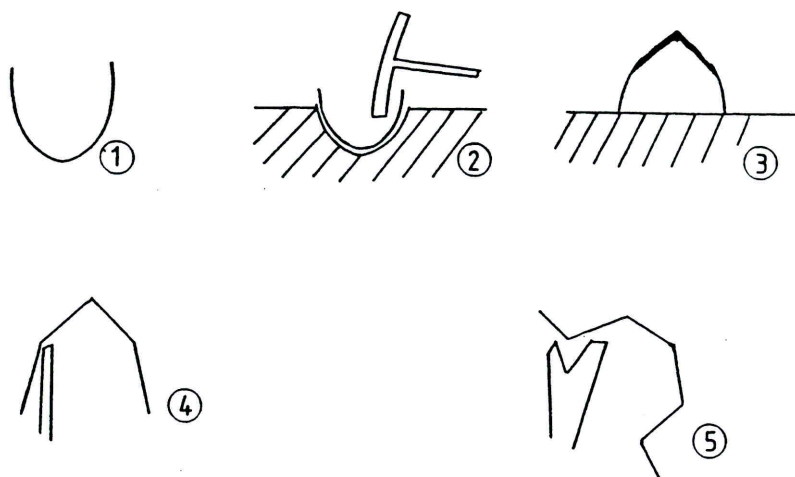
Figure 23   *Reconstruction of an Anglo-Saxon shield boss*

Technical details:

Weight of boss   440 gms
Weight of wood 1065 gms 6 to 8 mm thick
Weight of leather   1420 gms 5mm thick
Weight of bar   285 gms

Total weight   3.25 kg

Further work on the shield The shield reconstruction made use of the evidence from Barrington of leather surviving between the shield boss and the shield board. Although an accurate reconstruction, it is by no means the definitive reconstruction.

Barrington has a number of well preserved pieces of replaced organic material surviving on the bosses, handles and reinforcing bars of the shields. These require careful recording as they indicate several aspects of the shield structure. For example, the metal shield handle bound with a leather strap. They are not unique but add to the evidence which allows us to build a more complete picture of Saxon technology, and the individual who used the shield.

Negative evidence should be recorded here, such as the preservation of the leather on the handle but the absence of leather between the associated rivets and wood of the shield board.

7 DISCUSSION

7.1 Edix Hill cemetery

Individual burials can be seen to have been carefully arranged, although overall organisation of the cemetery is less clear. There are indications of groupings of important male burials, and also of children, and as noted in previous years, some evidence for the possibility of family groups exists. Limits seem to have been identified to the north and east, but coprolite mining to the south has removed evidence for its extent in that direction, and the western edge of the main cemetery still needs to be clarified between Trench XII and Trenches X and XVI. Historical evidence for burials suggests that the cemetery was far more extensive towards the south (Babington 1860) and the west (Wilkinson 1868), but the accuracy of these findspots must be treated with caution.

Evidence for coffins is circumstantial, but does seem to exist in a few cases. Although no nails were found nor stains suggesting the presence of coffins, nonetheless burials such as (453) and (553) were found with the lower mandible open indicating that a cavity existed allowing the jaw to drop whilst the body decomposed. This cavity may have been formed beneath a plank covering the grave cut into chalk, or may have occurred within a coffin.

The quality of the skeletal evidence is of great importance, and shows a healthy and long-lived population in striking contrast to that portrayed from the Raunds evidence (Stafford 1985; 23-4), with the probable causes of death attributable for several individuals (see Section 6.1.3 Summary of skeletal analysis). Definite causes of death can be assumed as child-birth for (440), and an abscess which had broken through to the maxillary sinus of (530) leading to infection and blood-poisoning of this woman. Although human bone from excavations in the last century has not been analysed and has since been lost, Cambridgeshire cemeteries excavated during this century (such as Burwell, Shudy Camps, and Melbourn) are known to have well preserved human bone. These should be examined with modern techniques to provide a useful comparison with Edix Hill and an invaluable database relating to Anglo-Saxons and to supplement the paucity of this type of evidence which has been recovered from the large-scale excavations of other well known cemeteries in East Anglia undertaken in the last three decades.

Grave-goods have extended the date range of the cemetery to a period earlier than previous evidence suggested (eg late fifth century burial (626)), and have continued to demonstrate a mixture of Midland and Thames valley traditions together with artefacts of definite East Anglian origin. Such a mixture of cultural traditions, suggestive of an interface between two zones with distinct tribal differences, is reflected in the analysis of the Iron Age pottery with its affinities far to the west.

A consensus of opinion from various Anglo-Saxonists consulted over the finds has made clear the potential of the site for Anglo-Saxon studies. The artefacts are generally unexceptional in their type-range and wealth, but it is this very normality combined with the way in which the material has been meticulously recorded during excavation that gives the scope for detailed cemetery studies and better understanding of South Cambridgeshire cemeteries in general. This is summed up by Heinrich Härke: "Barrington is the first large cemetery in this area which has the potential for a systematic analysis of correlations between archaeological and skeletal data which alone can lead to a better understanding of the demography and structure of Early Saxon communities" (pers comm). John Hines adds "A properly organised programme of analysis based upon the 153 graves recently excavated from Edix Hill would provide a welcome and valuable opportunity to apply and advance the results of much recent research work in Early Anglo-Saxon archaeology and to pull together the considerable
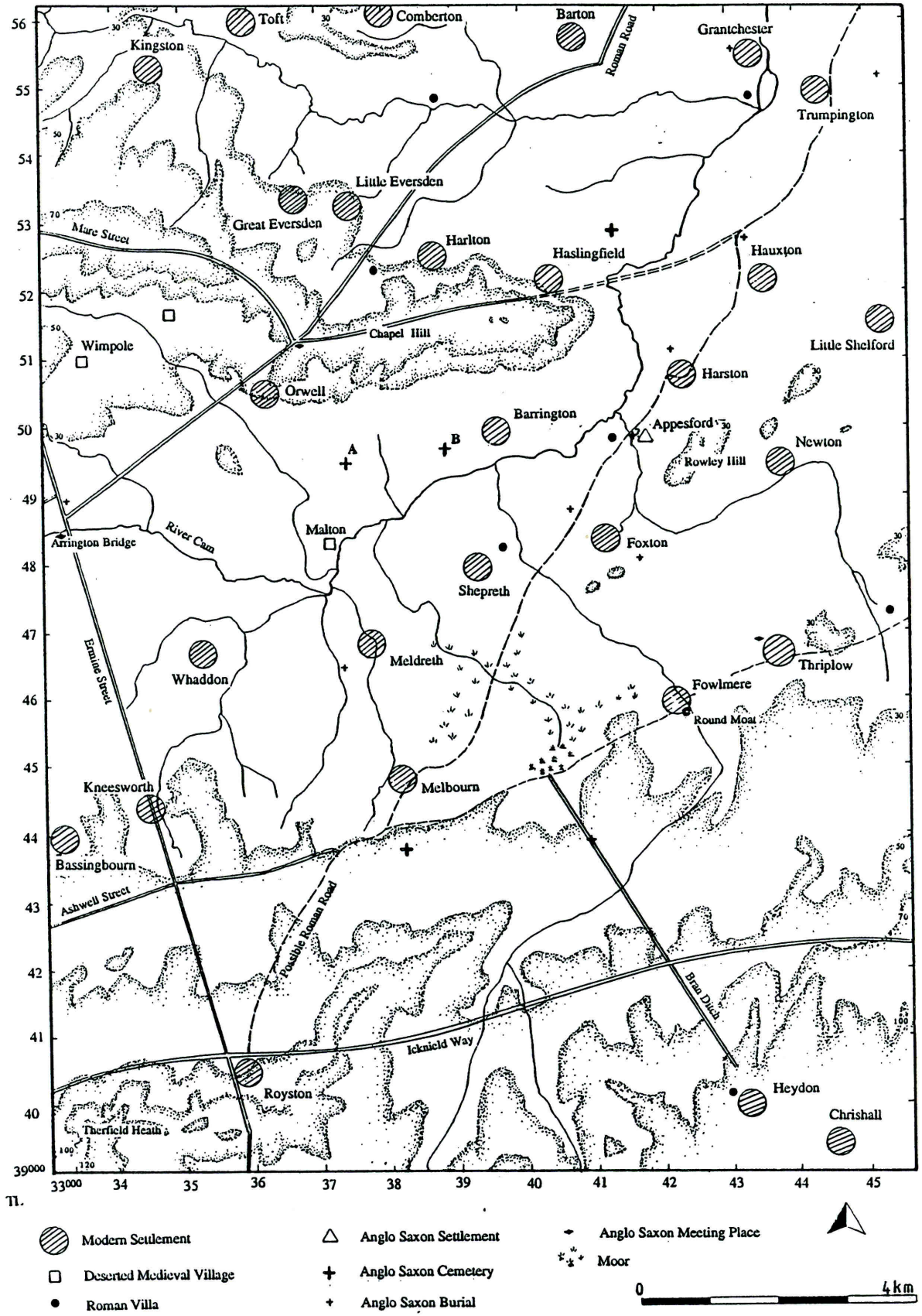
Figure 24 *Map of modern settlement, Roman villas, Anglo-Saxon settlement and cemeteries, burials and meeting places*

amount of similar material from this period from an area that suffered from the shortcomings of very early (nineteenth century) archaeological/antiquarian activity" (pers comm).

7.2 Cemetery context

Place-name evidence in the locality shows that the Barrington cemeteries lie within a solidly English area. Barrington forms part of Wetherley Hundred (from the Anglo-Saxon *wether* meaning a castrated ram, and *-leah* - clearing in a wood), and virtually all the surrounding village names have Saxon origins (Reaney, 1943, Skeat 1911 and Smith 1956). Edix Hill is situated close to the hundred meeting place on Chapel Hill north of Orwell, a hundred that uses streams and Roman roads as its borders, which includes Shepreth peninsula south of the Cam, and is constituted by Arrington, Wimpole, Orwell, Barrington, Shepreth, Harlton, Haslingfield, Barton, Comberton, Hardwick, Coton, and Grantchester.

The distribution of known pagan cemeteries in relation to the topography, important Roman sites, and known medieval settlement pattern reveals several facts (see Fig 24). Firstly, that the focus of burial activity lies along the river plain, close to the Cam, and does not relate to Roman villas or roads. Exceptions to this rule are Melbourn and Wimpole, which lie in the proximity of Roman road junctions, and Bran Ditch where the cemetery probably owes its origin to factors other than normal community practice (Gray 1931; Hill 1976). Secondly, the distribution of medieval villages is generally regular, with an interval of 1.5 to 2.5 km between them, and it is clear that settlement was dense along the valleys on either side of Chapel Hill. Thirdly, this density is interrupted immediately south of the river plain where the land begins to rise from Lower to Middle Chalk towards a ridge which is an eastward extension of the Chilterns. On this gently rising land lie two ancient west-east route ways (Ashwell Street and the Icknield Way), and they form a transitional zone between the lowlands of the river valley and the chalk escarpment, a zone in which no cemeteries are encountered (apart from the anomalous Bran Ditch burials) and there are no villages. Along the chalk ridge settlement is also sparse, but increases on the south side in Hertfordshire. It is clear that this ridge was not a favoured area for early settlement, a situation which can be attributed to wooded conditions and the poor agricultural potential of shallow soils. It is also clear that the zone between Ashwell Street and the Icknield Way was avoided, and the cause for this is not really explicable in terms of agricultural preference, but would seem to suggest instead reasons of a social and political dimension rather than land-use. This terrain was, in effect, a buffer zone between the settled area of the Cam valley and the communities of Hertfordshire, and it is highly significant that the Sites and Monuments Record for Hertfordshire has remarkably few pagan Anglo-Saxon cemeteries in stark contrast to their prolific distribution immediately north of the border in Cambridgeshire. In summary, the distribution of settlement using the evidence of known pagan cemeteries suggests that topographical considerations were of prime importance with preference given to the river valley of the Cam, and that a distinct border zone existed at the present Cambridgeshire/Hertfordshire boundary.

It has been noted that the assemblage from Edix Hill shows types of artefact distinctly Anglian in character (small-long and cruciform brooches) as well as types that have clear affinities with the Midlands and Thames Valley areas (applied saucer brooches). Wider Kentish and continental contacts have been suggested (Malim 1990, 1992a), and both Barrington cemeteries are considered as a select group with Haslingfield by Fox (Chapel Hill group; Fox 1923) because of the mixture of traditions to be seen from the grave-goods. Although no specific settlement sites have been identified for this group, and the only definite contemporary settlement in the area was found at *Appesford*, at the crossing of the Hoffer Brook, Harston (Malim 1992b), locations of pagan burials appear to correlate reasonably closely with later villages suggesting continuity of occupation from pagan times through a shifting of settlement within specific areas.

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WILKINSON'S CATALOGUE OF FINDS FROM 1860 (WILKINSON 1868)

Bur. No.	Cond.	Position	Orient.	Posture	Age	Sex	Comb	Pot	Amber (30)	Paste (3)	MISC	Glass (2+1)	Silver (2)	Bone (1)	BT	Brooch	W.Clasp	Ring Fe	Ring Br	Tweezer	Buckle	Knife	Boss	Spearhead	Bucket Fe	Bucket Br	Sword	Chatelaine	Latchlifter	Amulet
1			W-B						30							2		1												
2										?		3												1						
3																														
4			W-B													1+1?						1								1?
5									80							1+1?		1?												
6																		?						1	1					
7																														
8		S		SF																										
9		S	E-W?	E					?			3?				1						1								
10				F																										
11									?			?				2+1	?	?				1		1						
12																						1?								
13					A?																1?	1		1						
14									1			1				1						1								
15.1																														
15.2																														
16			SW-NB		A?			1								1						1	1	1						
17				F																	1	1		1						
18																														
19		S	W-B																			1		1						
20		S	W-B																			2								
21			SW-NB																	1		1		1						
22.1			SW-NB																	1		1								
22.2			SW-NB		J?																									
23			SW-NB																			1?						?		
24				F																	1?			1						
25																														
26					A?																	1								

G: Good, F: Fair, P: Poor   S: Supine, D: Disturbed, R: Right side, L: Left side   E: Extended, F: Flexed, SF: Semi-flexed   A: Adult (18yrs+), J: Juvenile (12-17yrs), C: Child (1-11yrs), I: Infant (less than 1 year)

Table 2   Burials excavated in 1860-61 and their associated artefacts

Barrington and the surrounding area (parts of the hundreds of Wetherley, Armingford, and Thriplow) (Figure 24) has four main cemeteries (Barrington A and B, Haslingfield and Melbourn (which is of a seventh century date)) and eight other records of burials (plus those from Bran Ditch) which are virtually all inhumations. Further afield the pattern of burial practice shows a greater incidence of cremations, with mixed cemeteries found to the west along the Icknield Way around Luton and Dunstable, to the north-west at Bedford, Sandy and along the Ouse, and to the north-east around Cambridge, Little Wilbraham, and Linton (Meaney forthcoming). These different burial rites, surrounding an area almost exclusively of inhumation cemeteries, may also indicate the homogeneous nature of the population along the Cam valley from Barrington to Grantchester, and thus with a clear boundary to the south, and the difference of tradition to the west, north, and east, we can tentatively trace an outline for the territory of a distinct community. Combined with the present programme of research on Anglo-Saxon Dykes by Cambridgeshire Archaeology, the study of tribal boundaries, community related territories, and later estates, promises rich rewards in understanding population and development of South Cambridgeshire during the Anglo-Saxon period.

8   HISTORICAL AND CARTOGRAPHIC RESEARCH

There has been confusion over the two cemeteries at Barrington for over a hundred years. Fox sorted out the basic problem in his study of the Archaeology of the Cambridge Region (1923) when he grouped together all finds earlier than 1880 or that had been reported as having come from Orwell, Malton, or Edix Hill as being from Barrington A, whilst finds from Hooper's Field and Barrington found after 1880 came from Barrington B. By this 1923 the finds from the last century had been dispersed to the Ashmolean and British Museums as well as the Cambridge University Museum of Archaeology and Anthropology, various colleges and private collections. The location he gave for the cemetery at Edix Hill is based on the memories of old coprolite diggers, whilst Hooper's Field had been plotted on to the first edition Ordnance Survey map of Barrington (1887).
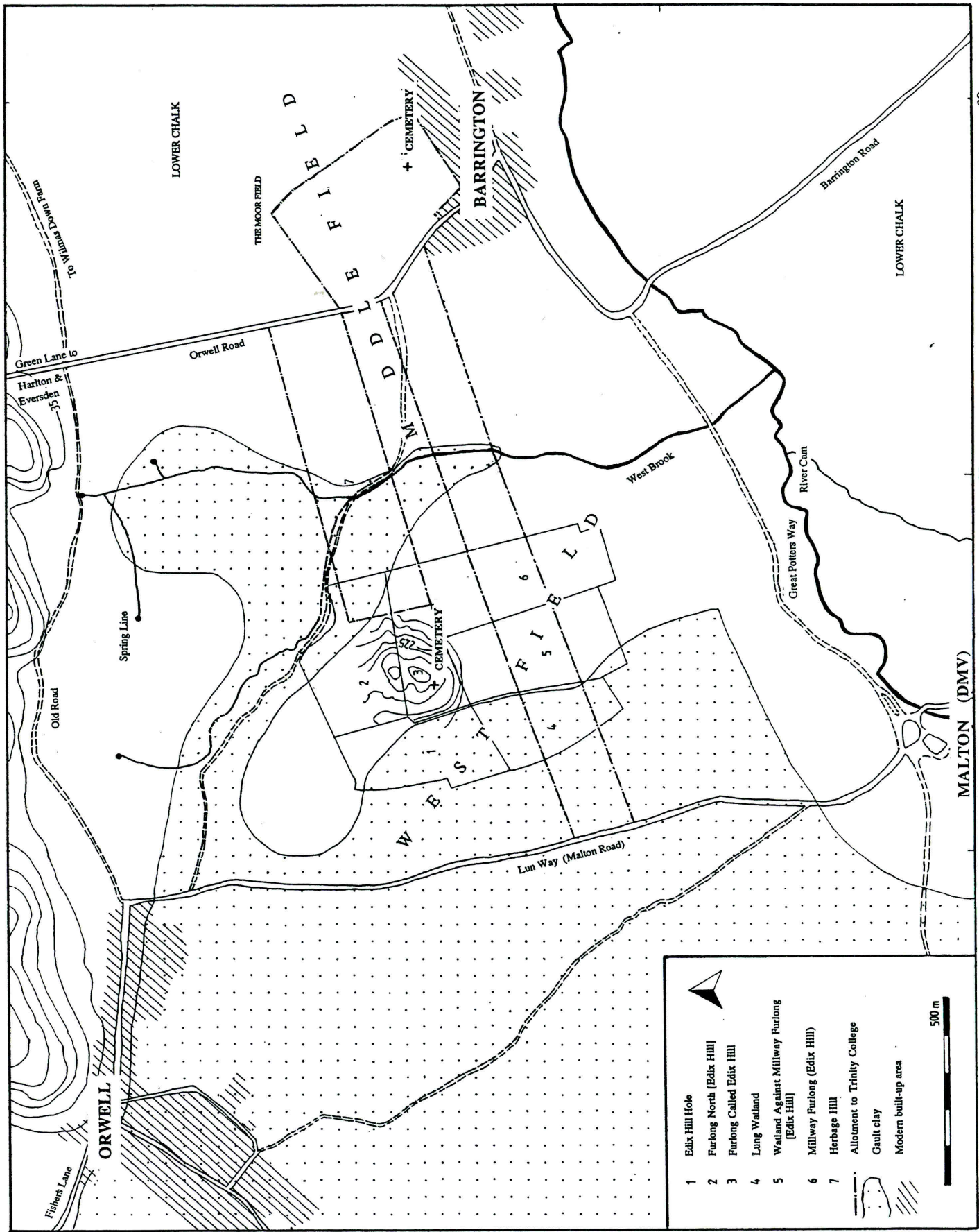
The chronological sequence of reporting of finds is as below:

1840 - "a perfect skeleton was found with a double-edged sword by its side, on the land of Mr Pearse" (or Mr Pearce) (Babington 1860)

1860 - skeletons found during drainage works at Edix Hill Hole; Bendyshe excavated up to ten, "the remains lay upon a slightly rising slope"; some finds were given to the Museum of the Cambridge Antiquarian Society, these included three shield bosses, four spearheads, six knives, two brooches, and 100 amber beads. At least one skeleton was lifted and given to the "Anatomical Museum" (Babington 1860).

1861 - Wilkinson excavated thirty seven skeletons on Bendyshe's land, eleven acres tenanted by Joseph Worsley, and known as Edix Hill Hole. He refers to the previous finds reported by Babington as being removed by "a gentlemen from Cambridge " and goes on to say that on this occasion only one labourer was available "owing to coprolite digging in the neighbourhood" and that "The graves were situated on a slightly rising slope.....the lower parts of the field are very wet.....There were no tumuli over the graves..... though perhaps a careful observer might detect a kind of table-land, or large flattened tumulus". He concludes that in total about fifty graves "had been opened" at the site but that "no instance of the sword occurs" (Wilkinson 1868) (see Table 2).

1880 - Foster excavated 114 graves at Hooper's Field on Trinity College land, tenanted by Mrs Wallis, at the west end of the village of Barrington. "These graves were situated on the south side of some rising ground ......There were no signs of tumuli or anything to denote the presence of graves". The cemetery had been found in the process of coprolite digging and he concludes "Judging from the number and richness of the specimens from the same spot which Mr Conybeare and Mr Griffith have laid before the Society this evening, I should consider that by far the greater part of the cemetery must have been opened before my arrival" (Foster 1883).

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ORWELL

LOWER CHALK

To Wilma Down Farm

Green Lane to

Harlton & Eversden

Orwell Road

THE MOOR FIELD

M I D D L E   F I E L D

+ CEMETERY

BARRINGTON

Barrington Road

LOWER CHALK

Old Road

Spring Line

West Brook

Great Potters Way

River Cam

525

+ CEMETERY

W E S T   F I E L D

1 2 3 4 5 6

Lun Way (Malton Road)

MALTON (DMV)

Fishers Lane

35

39

38

37

50

49

48'000

'26000

1	Edix Hill Hole
2	Furlong North [Edix Hill]
3	Furlong Called Edix Hill
4	Lung Watland
5	Watland Against Millway Furlong [Edix Hill]
6	Millway Furlong (Edix Hill)
7	Herbage Hill
	Allotment to Trinity College
	Gault clay
	Modern built-up area

500 m

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1881 - artefacts and map shown to the Cambridge Antiquarian Society by Griffith and Conybeare (notes in PCAS volume V 1886).

1903 - Conybeare's collection of artefacts described, and it is noted that Foster's finds had been dispersed between the Museum of the Society, Trinity Library, Foster and Conybeare (Conybeare 1904).

1923 - Fox reviews the finds and assigns labels of Barrington A and Barrington B to Edix Hill and Hooper's Field respectively (Fox 1923).

1934 - Lethbridge, O'Reilly and Leaf review the Griffith collection which had been bequeathed to the Museum of Archaeology and Ethnography on Griffith's death. Many of the artefacts had been labelled 1879, and therefore predated Foster's excavations (Lethbridge et al 1935).

No maps exist which show the location of the cemeteries, or plans of the graves in the ground, but there are descriptions by the nineteenth century excavators of the topographic positions and names of landowners and tenants. Background cartographic evidence is best given in two maps:

   i   the 1798 draft inclosure by Alex Watson which shows the medieval open field system of Barrington Parish (West, Middle, and East Fields) complete with leys, strips, furlongs (with their names and acreages in the attached field book), streams, springs, footpaths and roads (TCC Great Chest); (Figure 25)

   ii the 1800 Inclosure Map with new fields allotted to landowners and with acreages included (CRO P8/26/1) (Figure 26).

The coprolite industry was very important in Barrington, Orwell and neighbouring parishes during the latter part of the nineteenth century and many of the finds of Anglo-Saxon cemeteries from South Cambridgeshire came about as a consequence of this, as was the case for Hooper's Field. Conybeare, the long-term vicar of Barrington in the 1870s and 1880s, is reported to have had a map of the parish with find-spots of artefacts (PCAS notes 1886 p.xii), but it has not been possible to find this map in either the Cambridge University Museum of Archaeology and Anthropology or Trinity College archives where it might have been deposited in its own right or as part of the Griffith collection. However, inclosure maps and documentary sources relating to coprolite workings do exist from which it is possible to piece together some of the land occupancy and extent of mining seen in later years.

Edix Hill, unlike Hooper's Field, was initially discovered not through coprolite diggings but by drainage works. During the course of our recent excavations we have found pottery drainage pipes of this period, sometimes cutting through burials and occasionally even showing us the sensitivity of the Victorian workmen who had deliberately placed the bones back in the grave on top of the newly laid pipe. But we have also found evidence of coprolite workings around the knoll of Edix Hill, and have proof that the southern part of the cemetery (at least) has suffered damage from them.

In the light of the above information it was decided to review the evidence we had for cemetery locations at Barrington; to investigate the established view that there were two contemporary cemeteries surprisingly close to one another or, alternatively, whether they could be finds from the same cemetery. Fox had never questioned the location of Hooper's Field, and he had given the location of Edix Hill on the testimony of two coprolite workers; the contention was that these old men would hardly have been able to remember the small-scale excavations undertaken by Wilkinson with one labourer during the winter of 1860. On the other hand, as coprolite diggers themselves they may well remember the approximate location of the much larger scale and more recent excavations of Foster within the existing coprolite workings. Were they therefore referring to Foster's work which they identified as happening close to Edix Hill? In addition the first burial referred to by Babington, from the 1840s, is reported as having been found on Mr Pearse's land, which can be seen immediately south of Edix Hill as

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ORWELL

Chapel Hill

Enclosure Road

"Flakelands"

JOHN COLEMAN

2ND COPYHOLD ALLOTMENT

184a 2r 16p

1876-1882 Coprolites excavated
by Wallis and Mrs. Wallis

R. BENDYSHE, ESQ.

BARRINGTON A

Worsley (tenant)
11 acres approx.

1860-61 Drainage &
5 skeletons excavated

1862 Wallis second licence to
extract coprolites

1864 Wallis agreement to
extract coprolites

Parish Boundary

8TH FREEHOLD ALLOTMENT

87a 0r 11p

TRINITY COLLEGE

61a 2r 37p

TRINITY COLLEGE

ALLOTMENT FARM

1840 Skeleton
with sword

WILLIAM PEARCE

Trinity Farm

JOHN COLEMAN

JOHN COLEMAN

1879 John Coleman's
Coprolite Pit

1862 John Coleman and Griffin
licensed to dig coprolites

TRINITY COLLEGE
"HOOPER'S FIELD"

BARRINGTON B

1879-84 Mrs Wallis
coprolite pit

Hoopers Farm
X

BARRINGTON GREEN

Shepreth Parish

Parish Boundary

Meldreth Parish

1862 Coprolites worked by
Charles Roads at Malton Farm

Also called Barrington Hall Lands or
Bulbeck Mill Land beneath Edix Hill (TCC 460)
(see below for list of tenants of Allotment and
Hoopers Farm)

Settlement Area, 1800

Coprolite diggings

Allotment to Trinity College
(Allotment and Hoopers Farm)

Tenants of Allotment and Hoopers Farm
1817   Wm Pearce (TCC458)
1829   Ed Prime? Barrington Hall Lands (TCC460)
1863   T.L.Smith/S.J.Wallis Barrington Mill &
       Hall Lands (TCC494[a])
1871   Martin Cole & Rectory Farm (TCC507[b])
1882   Mrs. S.J. Wallis & Rectory Farm (TCC538)

0   500 m

50

36000

37

38

39

48000

49

50

we know it today (1800 Inclosure Map) beyond a long piece of land allotted to Trinity College (close to the location spot described for Barrington A by Fox), which suggests that the cemetery may have extended originally a considerable distance beyond known boundaries on to flat land south of Edix Hill.

So what definitive evidence is there for the two cemetery locations? Unlike Fox we know exactly where the Edix Hill site was situated (his description is in fact slightly erroneous), and therefore in retrospect it is worth looking instead at the reliability of the evidence for the location of Hooper's Field.

Both sites have names attached to them in their excavation reports, and the 1887 OS map has marked the spot of Hooper's Field within the north-western edge of the village of Barrington. Was their information derived purely from the name, or from talking to people who showed them the find-spot? The position given by Foster also fits with this location; "situated on the south slope of some rising ground in a field ..... at the west end of the village". However, the land referred to as "Hooper's Field" has a Mrs Wallis as the tenant of Trinity College, and land which formed part of Hooper's Farm extended on the west side of the Orwell road to abut against Edix Hill on both its eastern and southern flanks (see Figure 26). A valuation of Hooper's Farm in 1817 (TCC 458b) shows the acreage of the farm as 69 acres 0 rods 12 perches, which is virtually equal to two areas on the 1800 Inclosure map allotted to Trinity College (69 acres 0 rods 4 perches). These two areas are both at the north-west end of Barrington village and extend west of Orwell Road as far as Edix Hill. Part of the fields to the east of Edix Hill was known as Herbage Hill on the 1798 draft inclosure map and field book (TCC Great Chest) and the field to the south of Edix Hill was known as "The Allotment Farm" (TCC 538). However, a valuation document of 1882 (TCC 538) demonstrates that all the land of Hooper's Farm together with Allotment Farm was under the same tenancy of Mrs Wallis. It is clear that the total acreage under discussion combines the farmland of Hooper's and Allotment Farms. Thus "Hooper's Field" may not be a specific name but instead may just refer to farmland belonging to Hooper's Farm, and the topographical position for the cemetery given by Foster could be found not only where the 1887 OS map has it situated, but also at Herbage Hill, on the east flank of Edix Hill itself, or on Allotment Farm on the south side of Edix Hill.

It would seem very likely that the husband of Mrs Wallis was a well-known local coprolite entrepreneur called Swann Jepp Wallis, who had been the first man to gain an extraction licence for mining coprolites in 1862 from John Bendyshe. A second licence soon included 87 acres on the "8th Freehold Allotment" tenanted by Joseph Worsley (O'Connor unpublished ms). This is clearly the same land as that described by Babington and Wilkinson (see above), in other words Edix Hill and the lands either side stretching between Malton Road and the Barrington-Orwell/Harlton road (TCC 494a and b; and 1800 Inclosure map) (see Figure 26).

By 1864 Wallis had a licence from Trinity College to mine two fields south of his earlier workings, totalling 61a 2r 37p. This acreage can be identified exactly on the 1800 Inclosure map as a long field directly south of Edix Hill which was later known as Allotment Farm (see Hooper's Farm above). By 1869 forty acres had been dug by Wallis on Trinity College land, 9a 1r 27p of which was at "Edrick's Hill" (O'Connor unpublished ms) (see Figure 26).

Coprolite diggings on the north side of Edix Hill appear to have occurred during the 1870s on Trinity land copyhold to Bendyshe, there is various correspondence and dispute regarding claims for payment (TCC 527a and b; 526L; 528b) some of which refer to Wallis again as the actual contractor. Sketch maps show the extent of these workings at "Edricks Hill" in 1876 (TCC 505L) (see Figure 26) by which point 6a 0r 11p had been excavated, and again in 1882 which showed a total quantity of 18a 2r 21p dug by Wallis (who died in 1876 (O'Connor unpublished ms)), his son, and his widow.

It is clear that a large amount of coprolite digging was undertaken around Edix Hill throughout the period 1862-1882, in the course of which Anglo-Saxon artefacts could have been discovered. What evidence do we have for coprolite extraction in the immediate proximity of Hooper's Farm itself, in the position for Hooper's Field as marked on the 1887 OS map?

In 1862 John Coleman (copyhold) was given a licence by Trinity to extract coprolites from four plots in Middle Field, a total of 47a 0r 24p (O'Connor ms). Although these quantities are not possible to trace on the 1800 Inclosure Map it can be assumed that they relate to land held by Coleman immediately north of Hooper's Farmland on both sides of Orwell Road, and in fact in 1879 a sketch map confirms some of these workings on the eastern edge of this location (TCC 526F).

A tracing with sketch maps of Hooper's Farm in three allotments (dating approximately to 1880) shows that all this land was surveyed by borehole for coprolites (TCC 533). A valuation by Bidwells in 1882 of Mrs. Wallis's tenancy (TCC 538) gives the acreage of Hopper's Farm in three allotments to be exactly the same as acreages shown on the 1800 Inclosure map, this clearly reveals the extent of the

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farm. Therefore, coprolite workings could have taken place on any of this land, and indeed we know that it certainly happened on the part of it known as Allotment Farm. In addition to all the above information on the extent of the farm and its potential for coprolites, there also exists a map showing the areas mined until October 1879 (TCC 529f), with a list of further quantities extracted until 1882, and payments to Trinity College until 1893. This map has the name Hooper's Field clearly marked, and the tenant is Mrs Wallis, and it therefore represents the most concrete evidence we have for the likely location of the cemetery - one which corroborates the spot marked by Ordnance Survey.

This overview of the historical evidence shows that much coprolite working took place at Edix Hill and that artefacts and burials found by coprolite mining could well include finds from Barrington A cemetery. It might explain why Fox's informants could remember the location of the Edix Hill burials - a location inaccurate according to recent excavations, but one that is similar to the location of the first burial reported on Mr Pearce's land by Babington, and similar to one area worked for coprolites by Wallis. The famous find of Hooper's Field cemetery as part of coprolite mining could therefore relate to workings close to Edix Hill as it is clear that Trinity College land with topographical description similar to that given by Foster, and tenanted by Mrs Wallis, certainly abutted Edix Hill. The weight of evidence comes down heavily for vindication of the original OS location of Hooper's Field as shown on the 1887 map as one sketch map from Trinity College archives shows "Hooper's Field" with its list of coprolite revenues positioned adjoining Hooper's Farmhouse north of the Green at Barrington. It is surprising that no mention is made of antiquities in this documentation when we know from other agreements, such as that in 1868 between Charles Roads and Richard Bendyshe on Barrington Farm (O'Connor unpublished ms), that they are specifically referred to as being the property of the landowner. In balancing all the available information described above we must therefore conclude that two cemeteries were in existence simultaneously, and that the somewhat haphazard nature of coprolite trenching has remarkably avoided a main part of the Edix Hill cemetery. It is possible that some of Hooper's Field may also still lie preserved, and the final proof for location of this cemetery could be obtained through a programme of small-scale evaluation excavation.

Why were there two cemeteries so close, and where did the Anglo-Saxons of Orwell-Barrington live? The 1798 draft inclosure map shows a stream running from several springs (which outcrop along the base of Chapel Hill) southwards to the River Cam. This stream was called West Brook and seems to have formed an important territorial division in the medieval field pattern. An ancient system of footpaths can also be seen, with the Old Road from Orwell winding along the base of Chapel Hill to the north of the spring line, and with a parallel west-east path beside the River Cam (Potters Way). Two footpaths ran from Orwell towards the south-east, one to the Saxon village of Malton, and the other to Barrington by way of a tributary of West Brook, and which would have passed close to both cemeteries. This pattern suggests that Lunway (Malton Road) and the present Barrington-Orwell/Harlton road were later (medieval) additions aligned along a different orientation, and that the parish boundary, which runs along Malton Road and which is disproportionately close to Orwell, may in fact have moved and replaced an earlier boundary that would have separated the precursor communities of Orwell and Barrington. It is suggested that this presumed earlier boundary was along West Brook, which would place the cemeteries of Edix Hill and Hooper's Field equidistant from it, a situation similar to that seen for the churches at Great and Little Shelford, each a little distance either side of the river boundary. Further work on the boundaries of Anglo-Saxon estates are necessary to more fully explore this suggestion.

Much fieldwalking over Edix Hill and the surrounding land, as well as extensive work at Malton, have failed to show any signs of settlement, and it would seem logical that the next area to look at in detail would be along the spring-line and old road at the base of Chapel Hill. Medieval Orwell appears to have been not only around the church and green, but also eastwards along the road at the base of Chapel Hill. Perhaps this part of the village was not so much an expansion from the village core but rather should be regarded as a reflection of earlier dispersed settlement occurring along the spring-line from which the later medieval village of Orwell developed.

ACKNOWLEDGEMENTS

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