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Archaeological Field Unit

Medieval Burials at 25-27, Market Square  
St Neots

Mary Alexander BA

1994

**Cambridgeshire County Council**

Report No 89

*Commissioned By R.E. Cadge Ltd, Haverhill*

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St Neots**

TL5182/2602

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**Medieval Burials at 25-27 Market Square,  
St Neots**

**TL 182/602**

**Final Report**

**ABSTRACT**

*An archaeological assessment took place to the north of Market Square, St. Neots in advance of the proposed development by R.E. Cadge Ltd of Haverhill.*

*A part of the St Neots Priory burial ground was revealed, lying below a 1.0m layer of ground make-up dated to the 17th-18th century, and some Victorian activity, including cess pits. Forty whole or partial skeletons were excavated, their location suggested that burial intensity increased towards the north, nearer to the site of the priory buildings. One individual was buried with a series of iron half-hoops lying below the body, another burial contained a base metal vessel, possibly a priest's chalice. The southernmost end of the area revealed the outline of a large pit. This feature contained one sherd of St Neots type ware and much burnt building material, indicating earlier, possibly Saxon, structures in the immediate vicinity.*

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## 1 INTRODUCTION

The assessment took place between 5th and 28th April 1993, and 20th September and 7th October 1993, prior to Scheduled Monument Consent for a shop extension at 25-27, Market Square, St Neots (*see Figs. 1+ 2*). The new development was known to be in the vicinity of a burial ground, which lay adjacent to the Priory church, on the south side of the precinct of St. Neots Priory and to the north of Market Square. The medieval priory was in existence from the 12th century until the Dissolution in 1539. It was preceded by a late Saxon foundation, the location of which is unknown.

The work was commissioned by Januarys Consultant Surveyors on behalf of R.E.Cadge Ltd of Haverhill.

## 2 GEOLOGY

St Neots is situated in the valley of the river Great Ouse, on a 1st-2nd river gravel terrace, with depths of gravels up to 4.0m recorded, capped by approximately 0.30m of hoggin'.

## 3 HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

### 3.1 General

The St Neots area has produced archaeological evidence of Roman, Saxon, and medieval occupation, including a medieval Priory. The existence of a pre-Conquest Priory is indicated by documentary evidence. For the main body of information we must thank the initiative of Mr. C.F. Tebbutt, local amateur historian and archaeologist.

The Ouse valley, in which the town of St Neots lies, combines the resources of the river with easily cultivable soils and good communications. Chance finds, excavation, and crop mark evidence reveal prolific activity within the valley, from the Pleistocene age onwards. Although a well-developed river system, the mid Ouse valley is one of the driest catchments in Britain, with fast draining gravels over impermeable Oxford clay providing no ground water. St Neots, however, is in a particularly favoured spot, with good water supplies from the River Ouse, Hen Brook, and Fox Brook.

### 3.2 The Town

St Neots is an ancient crossing point of the Ouse; the original ford and ferry lay at a point to the north of the modern bridge. Routes from here extend to Huntingdon, Godmanchester, Cambridge, Sandy, Bedford and Kimbolton. By Roman times the river was navigable from here to the sea, and may have provided a loading point for grain, as it did in the medieval period.

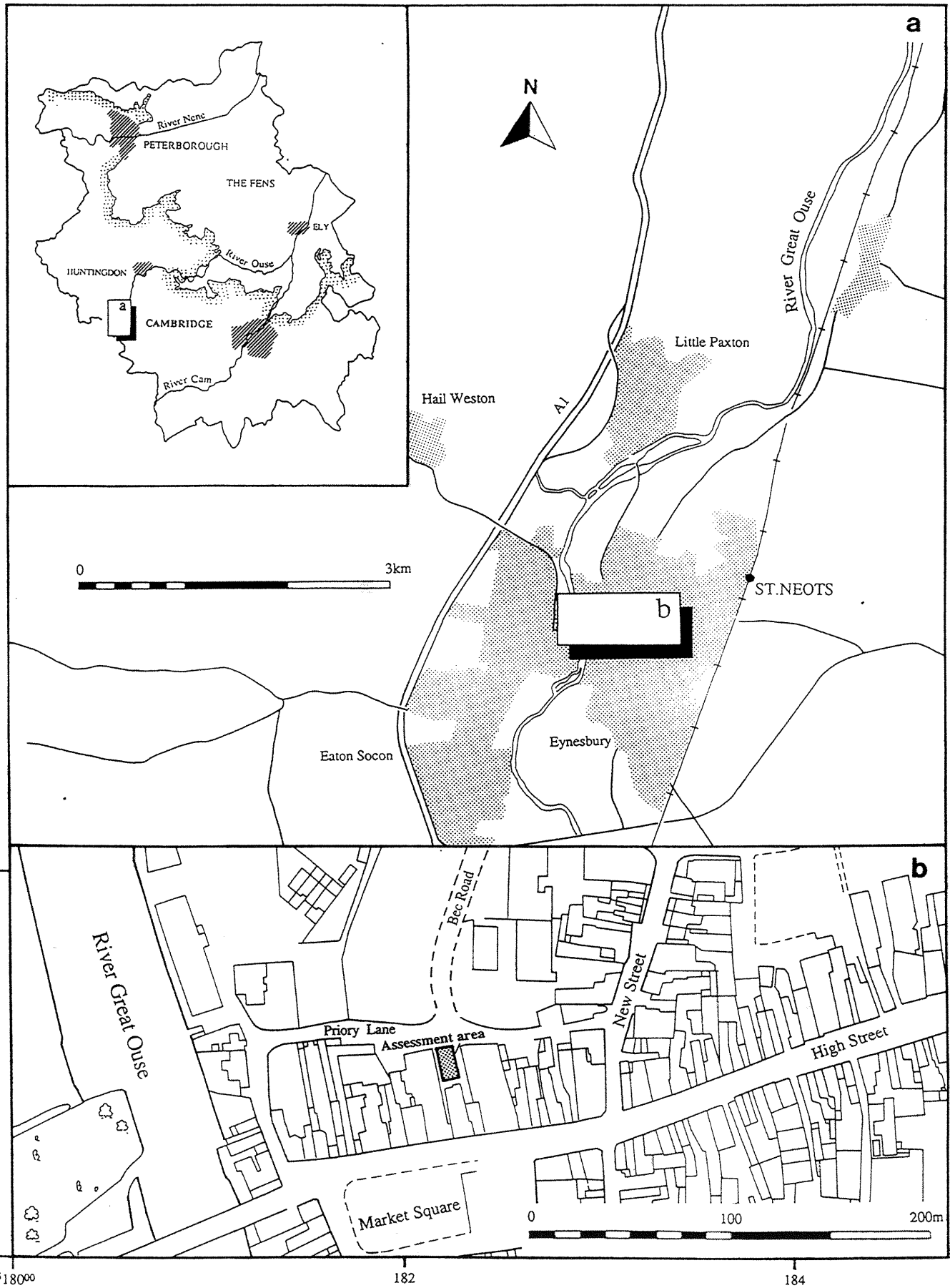


Figure 1. Site Location

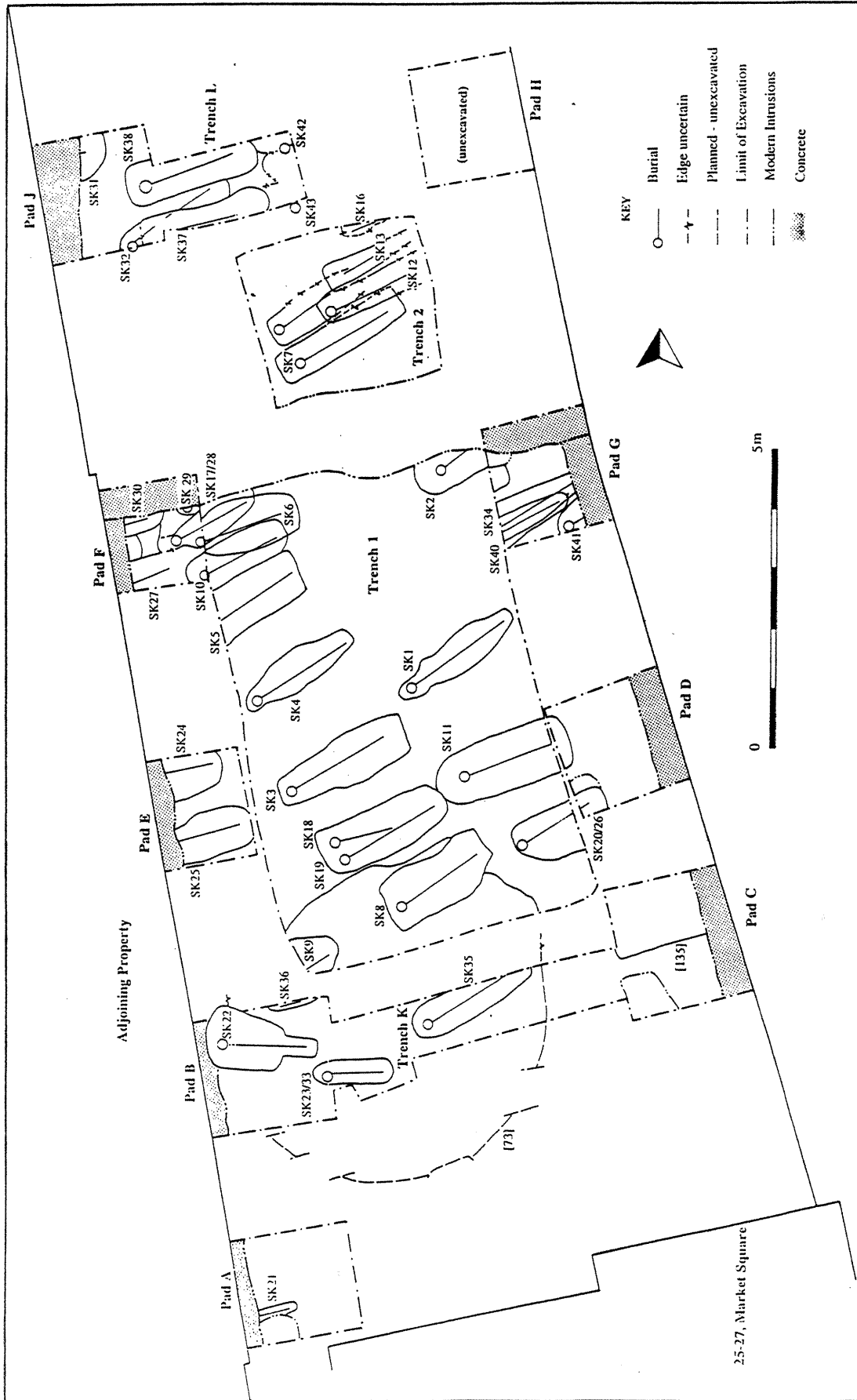


Figure 2. Plan of Excavated Areas and Burials.



Given the importance of the river at this point, the present absence of any early settlement evidence from either excavations or chance finds, in the area near the river crossing seems hard to explain. Tebbutt's own excavations and observations of construction work in this area (Tebbutt, 1955 and 1966) were perhaps not to a sufficient depth to produce early evidence, and there has been a dearth of opportunities since. It may be that the area was too prone to flooding, and not so easy to defend as the area further to the east. An early Saxon cemetery was found to the north-east of modern St Neots at Avenue road, but no associated settlement has been discovered. Mid Saxon evidence is confined to an east-west ditch containing a 6th-7th century *sceatta* and some Saxon pot found below the south end of the medieval Priory 'kitchen' (Addyman, 1973).

Excavations to the east of Church Street, and the existing parish church of St. Mary's revealed Roman settlement overlaid by post built and wattle and daub buildings of Late Saxon date. Finds indicated a mixed farming economy, with weaving and small scale metal working (Addyman, 1973). This settlement was bounded to the west and north by a ditch, and probably covered up to 80 acres extending to the east of Fox Brook. This Saxon ditch is on the same alignment as Church street with evidence that the earliest buildings were erected shortly after the ditch was systematically infilled in the 12th century. This implies continuity from the Saxon period, and suggests early planning of the medieval town in this area. The existing church dates to the 13th century, but may be on the site of the documented 12th century church.

Other evidence for the early medieval town is largely absent from the archaeological record, but is indicated by documentary evidence. Records chart the rising profits of a Thursday market, granted to the Priory shortly after 1113, and taking place, as it does to this day, in the Market Square of St Neots. By 1180 a wooden bridge had been built near to where the bridge now exists, and the development of the settlement close to the market and the Priory was such that during the 12th century St Neots was created as a separate parish from Eynesbury, to which it had hitherto belonged. Tebbutt's observations of the sewer trench dug along the north side of Market Square revealed some evidence of late medieval and early post medieval development, in the form of open drainage ditches flowing at right angles from both the north and south, towards a ditch that ran alongside the early road (Tebbutt, 1955). These ditches contained pottery and other debris including leather from the 15th, 16th, and 17th centuries. Opposite the Cross Keys Hotel was a well with lower stone courses of medieval appearance.

This sewer also ran along Church Street, Brook Street and South Street, and showed all along its length that evidence from the medieval period or earlier was buried under a considerable amount of re deposited material, in some places over 2.0m thick. These deposits were again observed in a sewer trench in Priory Lane, (Horton and Wait, 1990). It is believed that this organised dumping took place on several occasions from the 16th century onwards, apparently to raise the ground surface above normal flood level, (Tebbutt, 1956).

### 3.3 The Pre-Conquest Priory

The earliest surviving manuscript to refer to the Saxon Priory is the *Liber Eliensis*, which relates the story of its foundation based on an earlier Anglo-Saxon charter. In this account Leofric and his wife Leoflaed request that the Priory at Ely establish monks at Eynesbury. Monks were dispatched from Ely and Thorney, and 18 hides of land endowed. An inventory of English saints completed in 1020 lists the bones of Saint Neot as being at rest at the monastery at Eynesbury, (Chibnall in Tebbutt, 1966).

There is almost no other evidence for the pre-Conquest Priory save that the post-Conquest Priory, newly founded in 1086, immediately received rights to some tithes in

the Parish - a common way of compensating a monastery for lands formerly in its possession. However amongst the land pleas for the daughter houses of the Saxon monastery at Ely there are none for land assigned to St Neots, which casts doubt on the priory's connection with Ely and the account in *Liber Eliensis*. St Neots is not mentioned in Domesday book. The more sceptical view is that the pre-Conquest history was invented later to rival the story of the origins of the Priory at Slepe (St. Ives).

No certain traces of a Saxon priory have been found in St Neots. Tebbutt's excavation of the post-Conquest priory did not investigate systematically below the medieval buildings, but a burnt floor to a building, sealed by humus containing sherds of 12th pottery, was noted below later structures to the north of the site, (Tebbutt, 1966). It has also been suggested that the pre-conquest Priory was situated close to, or was in fact part of, the late Saxon site excavated to the east of Church Street, (Addyman, 1973).

### 3.4 The Medieval Priory

The later monastery was refounded by Richard Fitz Wimarc shortly after the Conquest. It was not unusual for Norman families to endow monasteries in England as daughter houses to those they had supported in France. The monks of St Neots came from Bec, a French Benedictine monastery. Anselm, Abbot of Bec gave his support to the new foundation during his visits to England, and carried back a small fragment of one of the saint's bones to start a cult at Bec. A new church was started in 1100 and in 1113 the Priory was formally refounded. Shortly after, Henry I granted valuable privileges including a Thursday market and an annual three-day fair.

St Neots was at the junction of several important routes and became a place of pilgrimage. Tithes of the churches of Eynesbury, Turvey and St Neots were impropriated to defray the costs of accommodating many guests. Most evidence points to a degree of prosperity during the 12th and 13th century. By 1294 the Priory had 18 monks and a Prior. Henry III used the accommodation at the Priory on numerous occasions in the 13th century, which must indicate the level of comfort available. The rents from the market continued to show a healthy return, and only a token yearly payment was expected by the house of Bec.

The Alien status of the Priory at St Neots contributed to its decline with the bulk of its resources being diverted to the royal treasury during the wars with France. By 1378 only three monks and the Prior remained. In 1409 St Neots became independent of Bec, and a full English Benedictine Priory. However this did not stem its decline and reports of visits during the first half of the 15th century are a litany of dilapidation. By 1439 the enclosure wall was breached and all were free to pass in and out, also the Priory was in debt. This evidence for the Priory's decline, coupled with a rise in market rents recorded for the period, suggest that it was at this point that the southern Priory precinct wall was moved northwards to enlarge the market area.

By 1507 the situation had greatly improved with all major buildings repaired and the numbers of monks risen to 13. This prosperity continued until shortly before the Dissolution in 1539.

The Priory gatehouse survived standing until 1814. All the other buildings had presumably been plundered for stone after the Dissolution; numerous pieces of Barnack stone have been found in later structures, such as the stone sewer on South street and the cellar of no. 15 Market Square.

During the 1950s and 60s, Tebbutt excavated the foundations of the Priory in the area now given Scheduled Monument status. He excavated in the back gardens of existing properties, and small sections of several stone buildings, and others with timber frames and plaster were recorded. From this evidence Tebbutt produced a ground plan of the

Priory, with all the standard buildings of a Benedictine foundation located. It is possible that this plan lends an air of authority to his interpretations that the actual evidence did not justify. Unfortunately the detailed site records and plans cannot be checked as the archive is now lost.

The most substantial buildings recorded were the chapter house, refectory, dormitory and church, all built of stone, the upper story of the dormitory possibly of wood. Roof tiles of stone as well as clay were found in demolition rubble, and floors were cobbled, mortared, or in the case of the dormitory and church, tiles and glazed tiles were used. It appears that Tebbutt predicted the location of the church to the south of the other Priory buildings by the position of the cloisters. [The church normally lies to the north of the cloisters in Benedictine houses but a southerly position is not unknown.] Two foundation trenches for building work at 11-13 Market Square (Tebbutt, 1956) had found early wall foundations, and some glazed floor tiles *in situ*. In the garden of 3-5, Market Square, Tebbutt found a substantial robber trench, interpreted as the west wall of the church. In a watching brief on a sewer trench on Priory Lane (Horton and Wait, 1990), it was hoped to find more of the church, however the evidence recorded appeared to represent a late building of the 15th century, although one trench matched the projected line of the east-west wall of the north transept of the church.

The 1955 building work had also uncovered several burials, representing fifteen individuals including two females. These graves respected the most southerly wall foundation of the church, implying that the church building did not post-date the burials, at least in this area. Burials, including females, had also been found during building work at nos. 3-5, 15, 29-31, and 33, Market Square (Tebbutt, 1966), and the 1989 sewer trench revealed nine more whole or partial skeletons, two of which are female. Two burials, one female, in decorated stone coffins, dated to the 13th century, were found during the construction of the Waitrose supermarket and carpark to the north of Priory Lane. These burials could be wealthy benefactors of the Priory (Horton and Wait, 1990). All the other burials were orientated east-west without coffins or grave goods. The distribution of the graves implies that the graveyard covered a fairly large area to the south and east of the church.

The occurrence of women amongst the simple Christian burials in the graveyard implies ordinary townsfolk being buried within the Priory precinct. This unorthodox practice may be connected to other lapses from the monastic rule noted in 1439, when the Bishop of Alnwick complained that the townspeople were being encouraged to attend services here, rather than at their parish church.

The work at 11-13 Market Square also showed a robber trench for a wall, with a ditch on the south side, which lay on the line of the Priory wall marked on the 1757 map (Sir Stephen Anderson Survey 1757). The interpretation of this as the later Priory wall, moved to enlarge the market space, is supported by the occurrence of skeletons under, and to the south of, this wall.

#### 4 METHODOLOGY

In the first stage of investigation, and in accordance with the Brief proposed by the County Archaeological Office, an area approximately 12m x 5m was investigated within the area fenced off by the contractors, who also removed the top 1m of tarmac and overburden, under archaeological supervision. A wide, modern, concrete foundation running E-W was left in, and divided the site into two areas; Trench 1, to the south, measuring 5 x 8m, and Trench 2, to the north, measuring approximately 3 x 3m.

The second stage of work required rapid excavation of the deposits not already excavated in Stage One within the areas marked for the foundation pads and connecting cross beams on the construction (revised architects) plans. This involved the excavation of nine 2 metre<sup>2</sup> foundation pads and two connecting trenches 0.75m wide and approximately 5 metres long. The contractors machine excavated approximately 1 metre's depth of overburden in the nine foundation pads, the deposits below this were excavated by hand. The nine 2 metre<sup>2</sup> foundation pads are referred to in the text as Pads A, B, C, D, E, F, G, H and J. Pad H was found to be heavily contaminated by a spillage of parafin and was not excavated. A watching brief was carried out on the tenth and final foundation pad, dug by the contractors after the archaeological excavation was completed.

Archaeological features revealed within these areas were excavated stratigraphically, photographed, and recorded using standard Cambridgeshire Archaeology methods. Most of the burials excavated in the second phase of work were planned schematically due to the constraints of time.

Excavation took place to the depth estimated to be damaged by the proposed construction. This depth varied from north to south from 1.85m to 1.40m below existing hard standing.

## 5 RESULTS

Initial machining showed the whole area to be covered by approx. 1.0m of mixed re deposited material, consisting of yellowish brown, and dark yellowish brown sandy clays and gravels. Pot from this layer (78) was dated to the late 17th-early 18th century. Several features were cut into this layer, some extending into the deposits below.

In the first stage a little damage to the medieval deposits occurred, in Stage Two the damage caused by machining was more extensive, and some pieces of modern rubble were forced deep into earlier deposits.

### 5.1 Modern/ Victorian Features

#### Stage One

Fill (2), Cut [3], and Fill (17), Cut [18], two pits, both containing modern brick.

Fill (6), Cut [7], and Fill (8), Cut [9], two postholes, both containing modern/ Victorian brick.

Fills (10), (11), (12), Cut [13] a square, brick-lined cesspit, lying on the southern edge of the site in Trench I, and cutting through (78). Damaged by machining, but showing a rebuild in section, both types of brick unfrogged, but with a fill containing Victorian domestic rubbish, including pottery and glass.

Fills (33), (34), (38), (39) and cuts [32], [40-46], [62] are part of the same feature in Trench 2 which appears to be a wooden walkway over a dump of rubbish.

Fill (33) posthole fill, and (34) 'gone out wood' filling postholes and beamslots.

Cuts [40-46], [62], containing (33), (34); circular/ oval postholes forming two lines along sides of cut [32], with beam slots joining the two sides.

(38), (39), two fills lying in bottom of cut [32], through which posts and beams were cut. Fills contained modern/ Victorian material.

Cut [32], shallow rectangular cut extending north-wards from concrete on south side of Trench 2. Cut by four postholes on either side and crossed by two beam slots.

## **Stage Two**

### **Pit A**

Fill (125), Cut [126] an irregular shaped cut containing modern brick and tile. Cutting Skeleton 21.

### **Pit B**

Fill and Cut [127], a hole dug and backfilled by the contractor's machine when the tarmac was removed 14.9.93. Cutting skeleton 22.

### **Pit C**

Fill(123), Cut [124]. Sub-rectangular cut containing modern brick and pot.

### **Pit D**

Deposit (160), Cut [161]. Sub-square cut extending under concrete to the east. Containing modern pottery. [161] cuts into (147) below.

Fill (147), Cut [154]. Rectangular, brick-lined cess-pit, east wall and part of north and south wall lay within excavated area. Only the bottom course of bricks survived machining. (147) contained Victorian pottery, brick and tile. This cess-pit is probably contemporary with the cess-pit from Trench 1(see above).

Deposit (144). A layer consisting mainly of mortar, cut by [154].

### **Pit G**

Fills (197),(198), Cut [199]. Rectangular cut extending beyond the limit of excavation to the south and truncated by concrete to the west. Contains modern brick, a re deposited fragment of stone from fill (207) and a residual sherd of Thetford type ware (1000 - 1200). Cuts grave containing Skeleton 34.

### **Pit J**

Fill (196), Cut [180]. Linear cut extending beyond the edge of excavation to the north and south and cut to the west by modern building foundations. Contains modern brick fragments.

### **Trench K**

Fill (184), Cut [185]. Shallow sub-circular pit containing modern undecayed wood.

Fill (186), Cut [187]. Sub-circular cut containing Victorian/modern brick fragments.

## **5.2 The Burials**

In Stage One the burial cuts for approximately 20 partial and complete skeletons were revealed, below the re deposited layer (78), plus two disturbed burials in Victorian deposits. In Stage Two the remaining bones of two of the partial skeletons were

retrieved and 18 or more whole or partial skeletons were uncovered and excavated. (Fig. 2). All but two of the burials were orientated with their feet pointing east-south-east. In the southern half of the site the burials appear to have been laid out in rows, running north-west to south-east, and extending beyond the limit of excavation to the west and east. At the southern end of the area the burials appear to be thinning out. In the northern half of the area burial was more intensive, with several intercutting burials. Displacement of bones was exacerbated by Victorian activity cutting in from above. The burials, and the deposits into which they were cut, appeared to have been truncated, and there was no ground surface associated with the graves.

All burials were extended and supine. All grave cuts appeared sub-rectangular on the surface, some narrowing to body width at the base, (suggesting shroud rather than coffin burial). One possible shroud clip was found with skeleton 1. Some cuts curved round at the head end to form a niche, with corners for the shoulders, as if simulating the shape of some medieval stone coffins (Fig. 3). These grave shapes are referred to as apsidal.

Estimations of sex, height and age taken from the Skeletal Remains report are included below. For a more detailed analysis of the skeletons see Appendix 1.

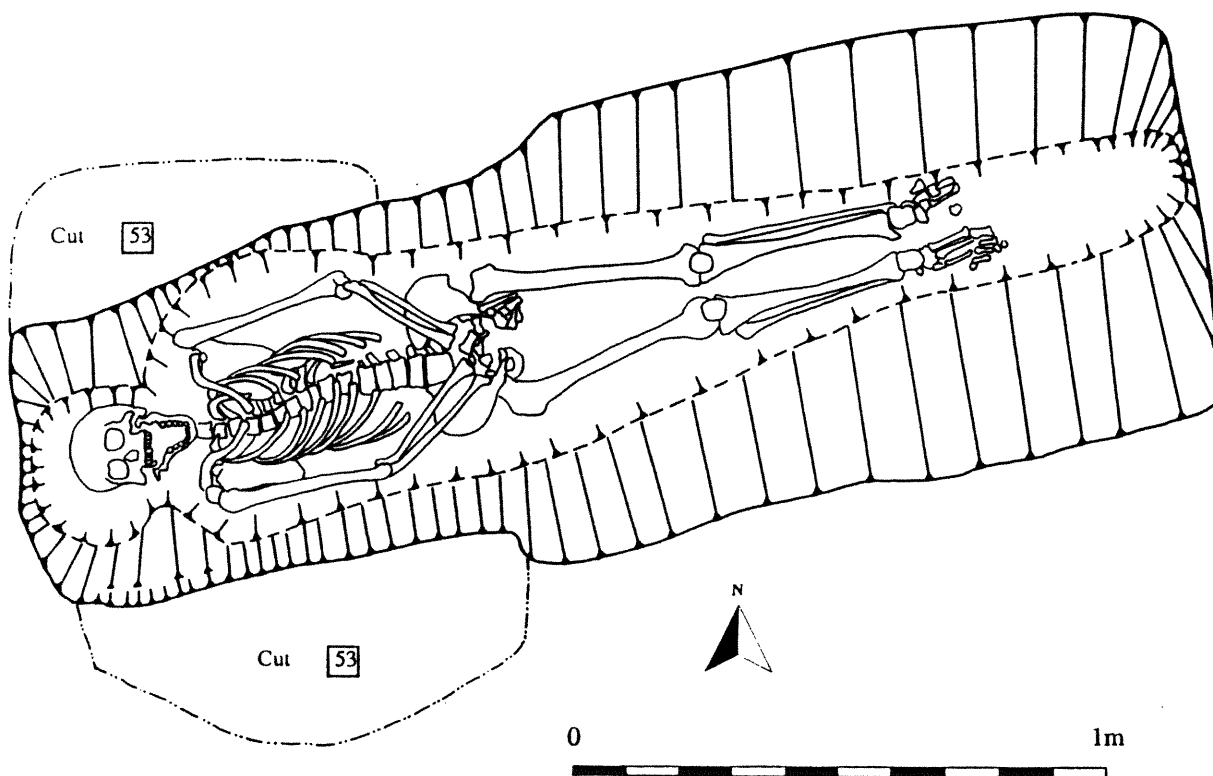


Figure 3. Skeleton 3.

### Phase One

Skeleton 1, Fill (5), Cut [4]. Male. Height 6'. Age 18. Mostly complete, but severely damaged by machine. Supine, extended, with right arm flexed and left arm straight and lying close to the torso. Knees and feet were lying close, as if bound together with a shroud. Grave cut almost completely destroyed but appeared to be narrow, and follow

the shape of the body. Deposits of yellow limestone found beneath west end of burial. One small bronze object [possible shroud clip] found in fill.

Skeleton 2, Fill (19), Cut [20]. Male? Age 45+. Incomplete, only skull, upper vertebrae, right arm and ribs excavated, the rest of the skeleton extending under modern concrete. Supine, extended, head facing north, with right arm lying straight along body. Grave cut had steep sides, with a distinct ledge half-way down southern edge, a sharp break of slope and flat base. Deposits of very pale brown lime were found below, and to one side of the burial. Large fragment of worked limestone at west end of cut. One pottery sherd dated 1000-1200.

Skeleton 3, Fill (24), Cut [25]. Male. Height 5' 6 $\frac{1}{2}$ ". Young or mature. (*Fig. 3*). Almost complete, some of left hand missing. Supine, extended, head facing upward. Arms slightly flexed and hands crossed over pelvis. Knees and ankles fairly close together. Grave cut sub-rectangular on surface, with sides steeply sloping and narrowing to body shape at the base with apsidal head end. [53], a shallow, sub-rectangular feature, 0.90m x 1.10m at head end may be part of the grave cut, or may indicate the presence of some kind of grave marker. One potsherd dated to between 900-1200.

Skeleton 4, Fill (26), Cut [27]. Male. 5' 8". Age 35-45. Upper vertebrae, ribs, clavicle, left hand missing, thought to be due to animal disturbance. Supine, extended, head facing upward, hands crossed over pelvis. Shallow grave cut, truncated, bow-sided at top, tapering to body shape at bottom, with apsidal head end. Trace of shallow square cut at head end resembles cut [53] from skeleton 3, and may have the same interpretation.

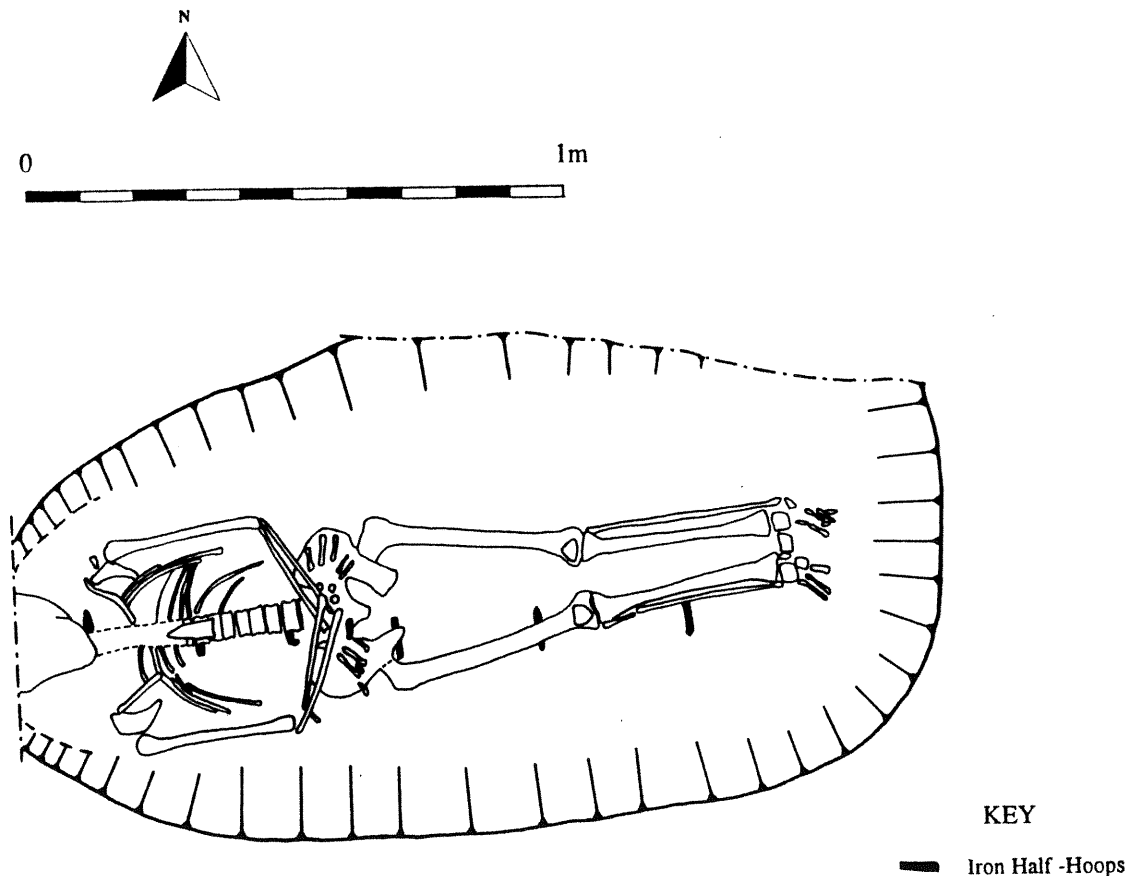


Figure 4. Skeleton 6 with iron staples.

Skeleton 5, Fill (28), Cut [29]. Male. 5' 5". Age 40-45. Complete, except for left patella. Supine, extended, head facing upwards. Right arm flexed, hand resting above pelvis, left arm slightly flexed, resting on pelvis. Wide, sub-rectangular grave cut, steep sides, with a sharp break of slope at bottom. Base is level and flat. Head lay beyond edge of excavation but there was a suggestion that the sides curve in to form a niche for the head. One potsherd dated 1000-1200.

Skeleton 6, Fill (35), Cut [50]. Male. 5' 5". Age 45+. (*Figs. 4+5*). Virtually complete, some right ribs missing. Supine, extended, head facing upwards, turned slightly to the right, arms flexed and crossed over abdomen. Seven large, iron staples were found: three under the spine, two under right hip, and two under right leg (the lower one slightly displaced). Grave cut was wide, sub-rectangular, with steep slightly concave sides and a gradual break of slope to a flat base. Three sherds of pottery dated to 1000-1200.

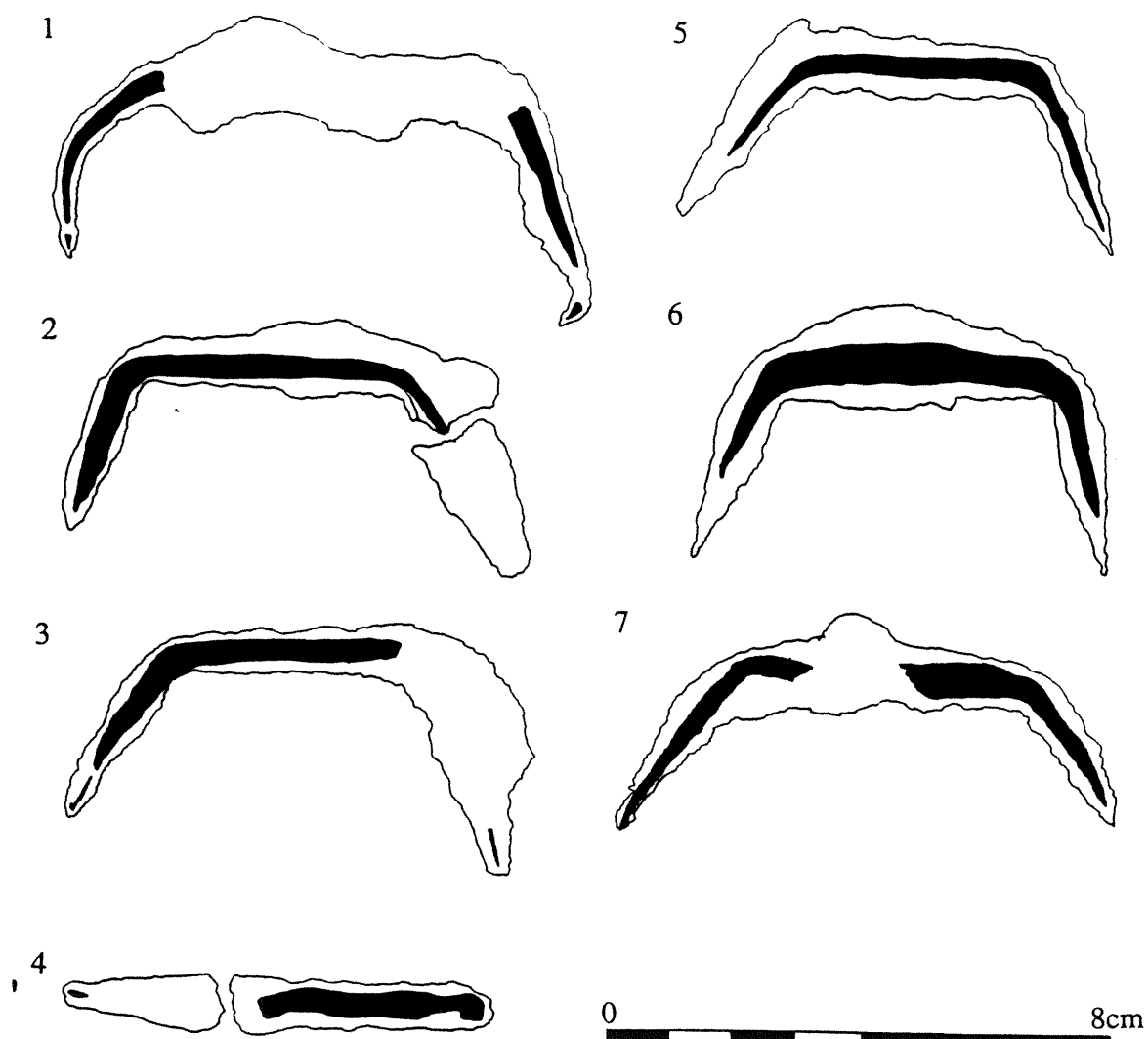


Figure 5. Iron staples from Skeleton 6.



Skeleton 7, Fills (48), (49), Cut [47]. Male? 5' 8 $\frac{1}{2}$ ". Age 45+. Almost complete, feet and hands lost to Victorian disturbance. Supine, extended, head facing upwards. Arms straight by sides, ankles close together. Two iron nails found in fill, and a large piece of sandstone lay over the left hand. Grave cut was rectangular, with sharp corners, steep sides and a flat base. Skeleton lies 0.30m from west end of cut. East end of cut has been destroyed by later activity. Three potsherds found in fill (48), dated to 1100-1200.

Skeleton 8, Fills (37), (51). Male? 5' 4". Age 35 approx. (*Fig. 6*). Almost complete, some of hands, feet, and ribs missing. Supine, extended, head facing upwards, turned slightly to the right. Arms crossed at pelvis, knees and ankles close together. Small pewter vessel with pedestal base found over right ribs. Grave cut was sub-rectangular at the top with uneven edges, and sides falling steeply but unevenly to a narrow "body shaped" cut at base. Cut was possibly apsidal at head end, but was difficult to define where it cut through the re deposited clays of the feature below (Fill (16), Cut [73]), and was backfilled with the same material. One sherd of pottery dated 900-1200.

Skeleton 9/36, Fill (56), Cut [57]. Feet and shins recovered in Stage One, right arm and foot bone found in Stage Two (skeleton 36). Ankles close together. Grave cut appears to be sub-rectangular, steep sides with a slight shelf on the north side.

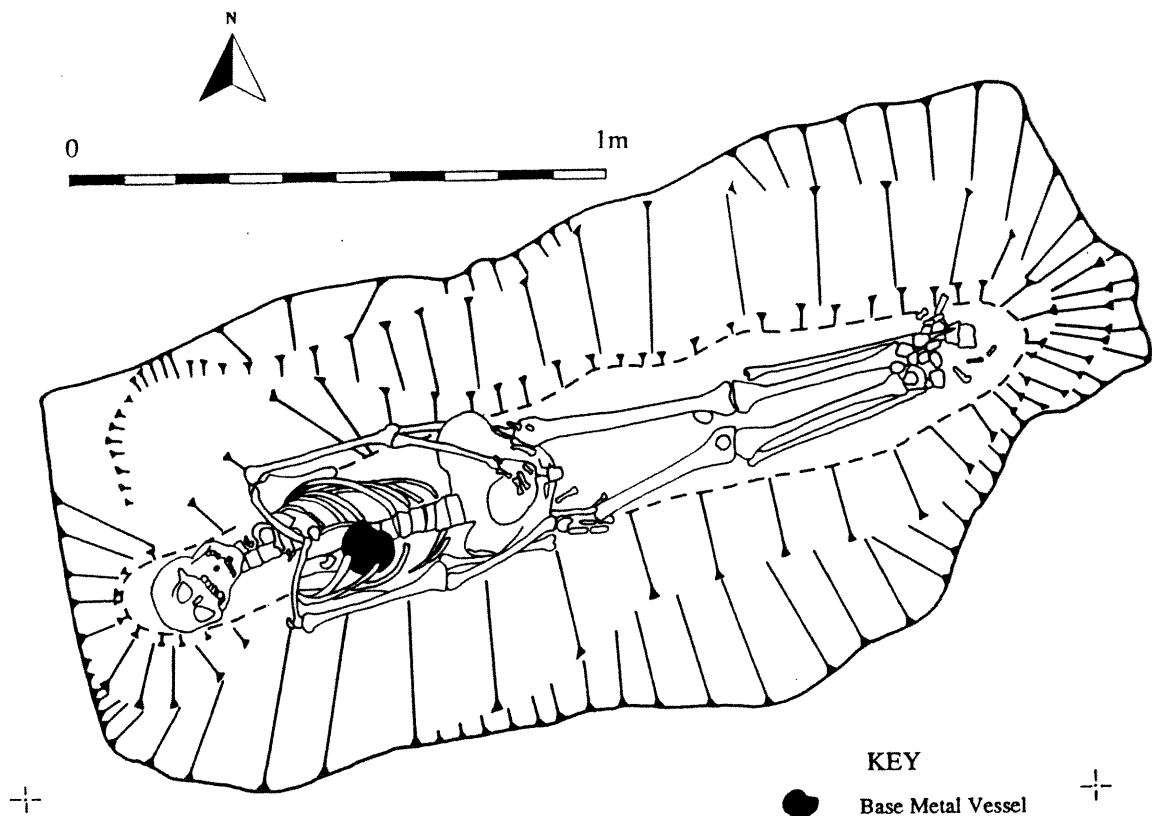


Figure 6. Skeleton 8.

Skeleton 10, Fill (54), Cut [55]. Age 13 approx. Complete. Head lay beyond the edge of excavation. Supine, extended, head facing upwards, turned slightly to the right. Right arm extended, left arm flexed with hand on pelvis. Knees and ankles close together. One sherd of pottery dated 900-1200.

Skeleton11, Fill (58), Cut [59]. Male. 5' 8". Age 25-35. Complete, but lower shins and feet left within edge of excavation. Supine, extended, head facing upwards but very damaged. Arms slightly flexed, lying together on pelvis. Knees close together. A large flat piece of sandstone found near left hip. Grave cut sub-rectangular at top, with steep sides, and a narrow "body-shaped" base.

Skeleton12, Fill (60), Cut [61]. Male? 5' 7". Age 45-50+? Complete, but lower legs beyond limit of excavation. Supine, extended, head turned to the south. Left arm flexed on pelvis, right arm straight by side. Knees close together. Grave cut heavily truncated, and sides hard to determine. Flat base.

Skeleton13, Fill (33). Female? Approximately 50% complete, with legs cut by postholes, and skull and other bones displaced. Supine, extended. Arms slightly flexed and lying wide of the body. Grave cut indefinable due to extensive disturbance.

Skeleton14, Fill (69), Cut [64]. Age 13 approx. Incomplete, cut into above by skeleton 13, lower legs missing. Supine, extended, head facing upwards. Both arms slightly flexed with hands resting on pelvis. Grave cut truncated above, rectangular with sharp corners and steep sides. Flat base. One potsherd dated to 1000-1200.

Skeleton15, Fill (33). Incomplete and highly disturbed, some of upper body on left side survives. Skeleton planned but not lifted as it lay below the limit of excavation. Lower left side of burial extends beyond the north edge of the area. No definable gravecut.

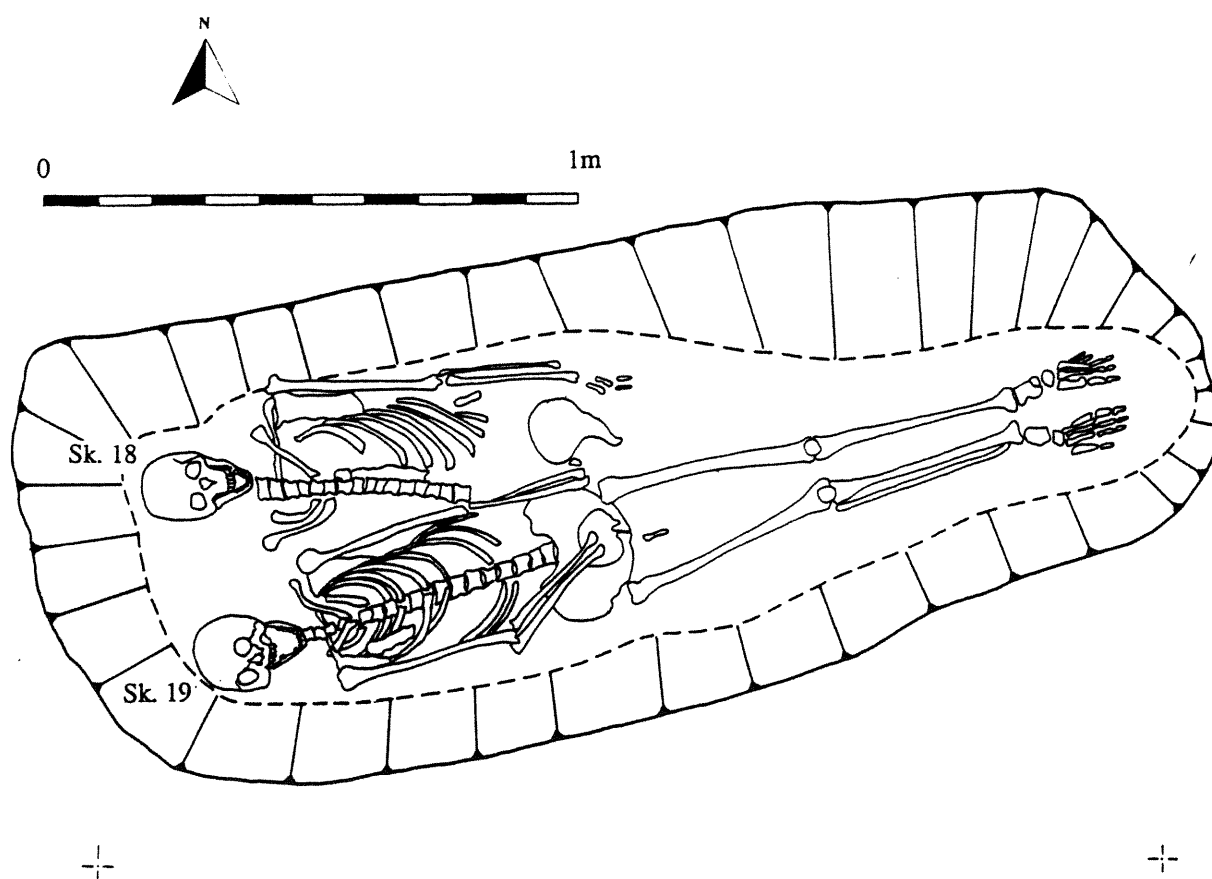


Figure 7. Skeletons 18 and 19.

Skeleton16, Fills (65), (69). Immature, possibly 18 approx. Disarticulated bones, including skull and femur found in two fills. Skull found resting on pelvis of skeleton 14. No grave cut.

Skeleton17/28, Fill (76), Cut (77). Male. 5' 8" approx. Age 23-35. Pelvis, legs, feet, right lower arm and hand, and left hand excavated in Stage One, skull, ribs, vertebrae, right humerus, left humerus, radius and ulna excavated in Stage Two. Supine, extended, arms probably straight, knees and ankles very close together. Sub-rectangular cut, with almost vertical sides and slightly concave base.

Skeleton18, Fill (79), Cut [80]. Male? 5' 8". Age 50 approx. [Fig. 7] Disturbed but almost complete. Right arm, hip, ribs, and right and left legs and feet all displaced by burial of skeleton19, but recovered in the fill. Supine, extended, head facing upwards. Left arm extended by side.

Skeleton19, Fill (79), Cut [80]. Male. 5' 8" Age 35 approx. [Fig. 7] Virtually complete. Supine, extended, head facing upwards, but damaged. Right arm flexed, left arm extended, and resting on pelvis and top of left leg. Knees and ankles close together. Grave cut must represent the original cut for skeleton18, with a recut for skeleton19. Sub-rectangular at the top, fairly steep sided, with a gentle break of slope and a flat base. Base wider at head end than at feet. North west edge of cut suggests original cut for skeleton18 was possibly apsidal. Two sherds of pottery of 1000-1200 date.

Skeleton 20/26, Fill (81), Cut [82]. Male? 5' 8". Age 17-25. Virtually complete, lower legs recovered in Stage Two. Supine, extended, head facing upwards. Arms folded above pelvis. Grave cut sub-rectangular at top, sloping steeply to a flat, "body-shaped" base with apsidal end.

Skeletons 44.1, 44.2, redeposited in a Victorian feature, fill (39), cut [32]. 65 fragments of bone representing two individuals, one aged less than 25, one aged 17-18. At least one burial was male.

## Stage Two

Skeleton 21, Fill (134), Cut [133]. Pad A. Age elderly? Lower legs and feet. Cut by modern building foundations and [126] which displaced the lower right leg found in the fill (125). The surviving northern edge of gravecut was narrow and steep-sided, a small oval depression lay between the feet and the narrow rounded east end.

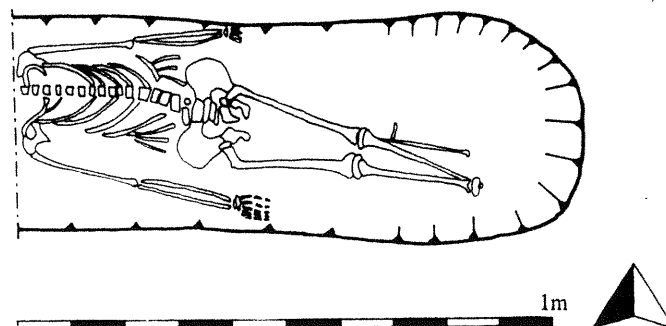


Figure 8. Skeleton 23/33.

Skeleton 22/45, Fill (132), Cut [131]. Pad B. Male. Height 5' 9". Age 50-59. Lower torso and legs, some arm and hand bones. Skull removed by machine but kept. Upper torso and some arm bones destroyed by machine dug hole [127]. Supine. Knees and ankles close together. Gravecut survived around lower legs of the burial and was parallel sided with a squared off end. This skeleton and skeleton 23/33 were the only two skeletons to be orientated with their feet towards the east, as opposed to east-north-east.

Skeleton 23/33, Fill (206), Cut [205]. Pad B. Age 9 (+or- 24 months) [Fig. 8]. Almost complete, some foot bones missing. Supine, extended, arms extended by sides, left lower leg slightly displaced. Skeleton lies slightly at an angle within the gravecut which was subrectangular and considerably wider than the burial. Orientated E-W (see skeleton 22 above).

Skeleton 24, Fill (129), Cut [128]. Pad E. Male. Height 5' 11 $\frac{1}{2}$ ". Age 28-78. Legs and feet only, remainder of skeleton runs under concrete wall foundations to the west. Extended, supine, knees and ankles touching. Small oval depression between feet and edge of grave cut. North edge of cut extends beyond limit of excavation, southern edge was steep-sided at the top becoming less steep towards the bottom.

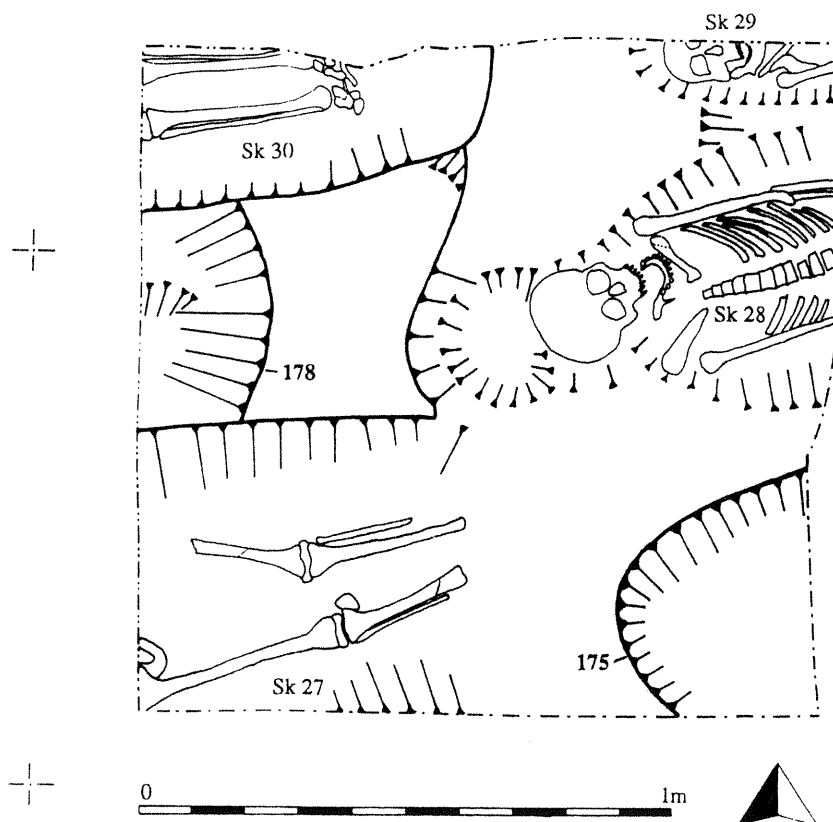


Figure 9. Pad F with intercutting burials.

Skeleton 25, Fill (142), Cut [143]. Pad E. Male? Height 5' 8<sup>1</sup>/<sub>2</sub>". Pelvis, legs and feet, remainder of skeleton runs under concrete wall footings. Supine, extended, finger bones found on pelvis suggest hands were crossed on pelvis. Ankles close together, small gap between knees, feet slightly splayed. Sub-rectangular slightly bow-sided gravecut, with a steep almost vertical north side. South side of cut sloped steeply to a shallow shelf. Bottom 0.06m of the cut followed quite closely the outline of the burial, widening slightly to a bulbous end around the feet, similar to [128] above.

Skeleton 26/20, Fill (159), Cut [158]. Pad D. Feet bones only, remainder of skeleton excavated in Stage One as skeleton 20.

Skeleton 27, Fill (177), Cut [176]. Pad F. Age 17-18. (*Fig. 9*). Leg bones only survive, upper part of skeleton destroyed by concrete wall footings, ankles and feet missing. Supine, extended, with a gap between the knees. South edge of cut runs into trench edge, north edge is steep sided, with a slightly concave base, much wider than the burial. East end of cut lost during excavation but probably cut into (179).

Skeleton 28/17, Fill (173), Cut [172]. Pad F. (*Fig. 9*). See skeleton 17, Stage One. Sub-rectangular cut, with 'apsidal' head end, not occupied by the skull of the skeleton which may have been displaced after burial. Cut by gravecut [170] to the north.

Skeleton 29, Fill (171), Cut [170]. Pad F. Male. Age 25-35. (*Fig. 9*). Skull, right shoulder and some vertebrae. Remainder of skeleton runs under concrete to the north. Only extreme southwest of gravecut remains, it appears to be quite narrow.

Skeleton 30, Fill (169), Cut [168]. Pad F. Age approximately 12. (*Fig. 9*). Lower legs and feet only. Remainder of skeleton extends into concrete wall footings. Supine, extended, with a gap between the knees. Sub-rectangular cut with slightly concave base, which is wider than the burial it contained.

Skeleton 31, Fill (188), Cut [181]. Pad J. Adult. Feet only. Remainder of skeleton runs into concrete wall foundations and the northern limit of excavation. East end of grave cut is rounded, sloping fairly steeply towards a possibly concave base.

Skeleton 32, Fill (195), Cut [182]. Pad J. Male. Height 5' 8<sup>3</sup>/<sub>4</sub>". Age approximately 40-50. Almost complete but disturbed by cut [220] for skeleton 37. Right femur and right half of pelvis lay on top of the rib cage. Supine, extended, left arm lay straight. There was a gap between the knees and ankles. Only north-west end of cut survives and appears to be sub-rectangular. Gravecut was cut by gravecuts [218] and [220].

Skeleton 34, Fill (207), Cut [208]. Pad G. Male? Height 6' 3". Adult. (*Fig. 10*). Skull and upper chest extend beyond limit of excavation. Feet partially destroyed by concrete wall foundations. Supine, extended, hands crossed over stomach. Knees and ankles close together. Gravecut was straight-sided, tapering towards the east, but wider than the skeleton outline. Four sub-rectangular pieces of worked fossiliferous sandstone were found within the gravecut; three forming a discontinuous line along the north side and the fourth lying against the southern edge of the grave. A fifth worked stone fragment, which was probably also part of the grave lining, was found embedded in the concrete and within the fill of [199], which cut into (207).

Skeleton 35, Fill (202), Cut [203]. Trench K. Male. Height 5' 9". Age 50+. Complete, but left foot extended beyond limit of excavation and was not recovered. Jaw damaged by overlying pit cut [201]. Supine, extended, with hands crossed over the pelvis and upper arms pressed close to the torso. The gravecut, heavily truncated by [201], was straight sided with a rounded west end, narrowing to follow the outline of the skeleton. Cut into (16) fill of pit[73].

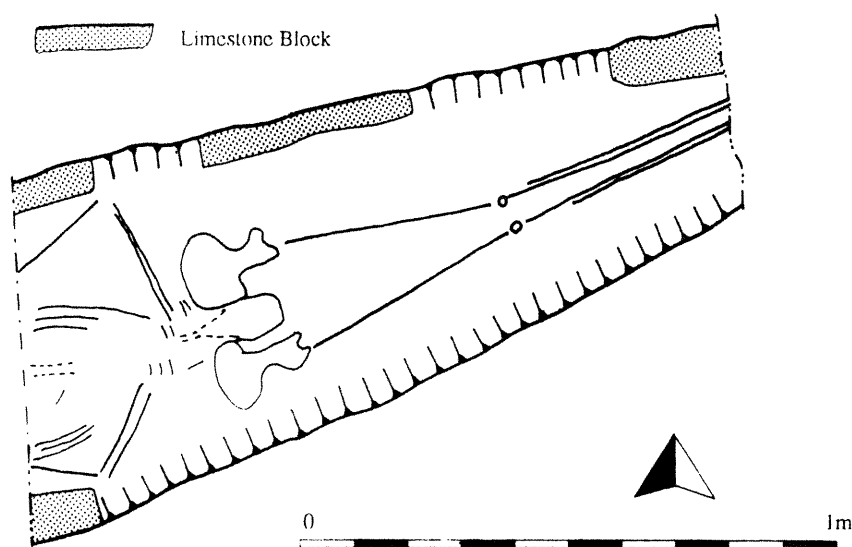


Figure 10. Skeleton 34 in stone-lined grave.

Skeleton 36/9, Fill (209), Cut [210]. Pad B. Feet and shins recovered in Stage One, right arm in Stage Two. Remainder of skeleton beyond the limit of excavation. Gravecut recorded in section only.

Skeleton 37, Fill (219), Cut [220]. Trench K. Male. Height 5' 6 $\frac{1}{2}$ ". Age uncertain. Left arm, pelvis and leg recovered. The remainder of the skeleton extended beyond the limit of excavation. Supine, extended, with hands together over the pelvis, the legs lying straight and apart. Gravecut was sub-rectangular with a squared west end with rounded corners and a rounded east end. Steep-sided with a concave base.

Skeleton 38, Fill (217), Cut [218]. Trench K. Female. Height 5' 3". Age 40+. Almost complete. Supine, extended, hands originally crossed at the pelvis, but lower left and right arm bones disturbed after burial. Right fibula also displaced, knees and ankles originally close together. Sub-rectangular cut, wider at the head end than at the feet. The west end was squared with rounded corners, the east end was rounded. Sides slope quite steeply to a narrow bottom.

Skeleton 39, loose bone in Trench L.

Skeleton 40, Fill (213), Cut [214]. Pad G. Male. Height 6'. Age uncertain. Pelvis, legs and left hand. Remainder of skeleton extends beyond limit of excavation. Supine, extended, legs straight with a gap between knees and ankles. Gravecut was severely truncated by gravecut [208] above. Sub-rectangular, with almost vertical sides fairly narrow to the body with a squared east end. Cuts (222) below.

Skeleton 41, Fill (222), Cut [221]. Pad G. Male? Height 6'. Skull, ribs and upper vertebrae, upper arms. Remainder of skeleton lay under concrete wall footings. Gravecut was curved at west end and appeared to run northeast into the section. Base of cut was slightly concave and angled down from west to east. Truncated by gravecuts [213], [208] and pit [199].

Skeleton 42, Fill (225), Cut [226]. Trench L. Male? Adult. Skull and some vertebrae. Remainder of skeleton beyond the edge of excavation. Skull lay face-up at some distance from the west end of the gravecut which was rounded.

Skeleton 43. Removed from the section edge of Trench L. Skull, and some vertebrae. Male. Age 25-35.

Skeleton 45/22. Skull retrieved during machining. See skeleton 22 above.

### 5.3 Earlier Features

Pre-burial activity was represented by some small cuts, of unknown function, and a very large semi circular pit: cut [73] (*Fig. 2*). Undated features include aceramic deposits found below the machined levels in Phase Two which cannot be dated stratigraphically or by their inclusions.

Fill (67), cut [68]. Small, sub-circular pit cut by gravecut [27]. Aceramic.

Fill (70), cut [71]. Small sub-circular pit cut by [27 ] to the north. Aceramic.

Fills (83), (16), (72), Cut [73]. Very large cut extending beyond the limit of the assessed area in Stage One. Stage Two revealed that the cut was sub-circular and approximately 5.60 m. in diameter. Cut into above by cuts [36] (skeleton 8), [57] (skeleton 9), [131] (skeleton 22), [203] (skeleton 35), [205] (skeleton 23/33), and [210] (skeleton 36). Upper fill (83) (found in Stage One only) of reddish brown colour affected by iron staining, this overlay fill (16) blue clay containing burnt daub with wattle impressions. The lowest fill (72) was divided in Stage Two into (211) a creamy white mortar deposit overlying (212), a deposit containing burnt material, including carbonised branches and fragments of burnt red limestone. The second phase of work showed that singeing of the natural sands occurred around the whole circumference of the pit; implying either that a very large quantity of material was transferred to the pit whilst still burning, or that burning took place deliberately within the pit. Fill (16) produced one sherd of late Saxon shell tempered ware.

Fills (155), (136), Cut [135]. Pad C. East-west cut extending beyond the limit of excavation to east and west, but not as far as the east side of cut [73]. South edge of feature sloped very sharply to a flat bottom, which sloped very slightly towards the east.

Fill (137), Cut [138]. Pad A. Oval cut filled with a sandy loam. Undated.

Fill (146), Cut [145]. Pad A. Semi- circular cut filled with loamy sand. Undated

Deposit (139). Sandy silty clay. Cut by [138] and [145].

Deposit (156). Silty, clayey sand. Lies below (139).

Deposits (193), (194). Pad D. Layers cut by [163] and [158].

Fill (164), Cut [165]. Pad D. Possible post hole.

Fill (191), Cut [192]. Pad E. North-south cut edge, cut to the north by [128] and to the south by [143]. Truncated to the west by concrete foundations. Contained one flint flake.

Fill (216), Cut [215]. Pad G. Heavily truncated by [221], [208] and [213] Linear feature probably running north-south with a curved base. No finds.

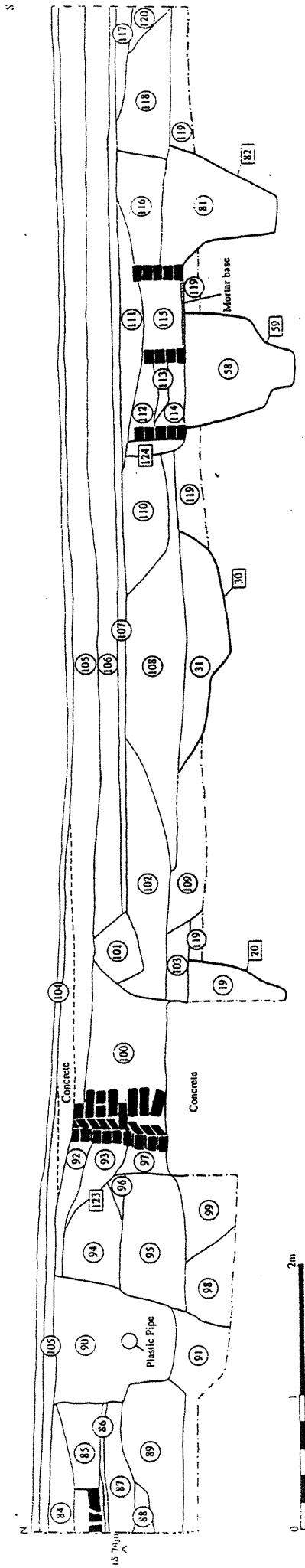


Figure 11. West-facing section and key to contextis



## Key to CONTEXTS

Cxt	Cut/fill	Description
19	fill	Fill of gravecut [20] for Skeleton 2. 10 YR 4/4. Dk. yellowish brown, silty, clayey sandy
20	cut	Cut for Skeleton 2. (Cut by concrete.)
30	cut	Cut for small pit. (Cut by gravecut [4])
31	fill	Fill of cut [30] 5YR 4/4. Reddish brown, clay/silt.
58	fill	Fill of gravecut [59] for Skeleton 1. Dark reddish brown, sandy, silty, clay.
59	cut	Cut for Skeleton 1. Sub-rectangular at top with a rounded head end, tapering to a narrow body shape at base, with probable apsidal head end.
81	fill	Fill of gravecut for Skeleton 20. Dk. reddish brown, gravelly, clayey, sand.
82	cut	Cut for Skeleton 20.
84	deposit	Black, ashy layer with brick fragments.
85	deposit	Tile fragments and ash.
86	layer	Mortar floor with bricks.
87	deposit	Black, ashy, rubble .
88	fill	10YR 4/3. Brown, very clayey sand.
89	fill	10YR 4/4. Dk. yellowish brown, clayey sand with gravel.
90	fill+cut	Plastic pipe in cut with brick, mortar, ash, rubble fill.
91	deposit	10YR 4/2. Dk. greyish brown, sandy clay.
92	fill	Mid brown, sandy silt
93	fill	Ashy layer with gravel.
94	deposit	Brick and tile rubble, and mid brown, silty clay.
95	deposit	10YR 4/2. Dk. greyish brown, clayey sand.
96	deposit	Mid brown, sandy silt.
97	fill	Mid yellow brown, sandy clay and gravel, with modern brick.
98	deposit	10YR 4/4. Dk. yellowish brown, clayey sand.
99	deposit	10YR 4/3. Brown, clayey sand with oyster shell.
100	fill	Brick structure and mid brown, sandy clay with brick rubble.
101	fill	Very dk. brown grey, silty clay with brick rubble, ash.
102	fill	10YR 4/4. Dk. yellow brown, clayey sand.
103	deposit	10YR 4/3. Dk. brown, clayey sand.
104	layer	Tarmac. Modern.
105	layer	Concrete. Modern.
106	deposit	Sand and gravel make-up for concrete. Modern.
107	layer	10YR 3/2. Very dk., greyish brown, ashy, sandy clay.
108	deposit	10YR 6/6. Brownish yellow, sandy mortar.
109	fill+ cut	10YR 3/3. Dk. brown, clayey sand, freq. gravel.
110	fill + cut	Black, ashy, silty, brick rubble, Victorian glass, etc..
111	deposit	Mid brown, silty clay, freq. gravel.
112	fill	Black ash, Victorian glass, pottery etc.
113	fill	Tile fragments, animal bone.
114	fill	Pale greenish brown cess.
115	fill	Brick rubble, tile, Victorian bottles, mortar, Victorian pottery.
116	fill+ cut	Very dk. brown-grey, brick, tile, ash, Victorian pottery, probaly same as 110
117	deposit	10YR 4/2. Dk. greyish brown, sandy, silty clay, freq. gravel.
118	deposit	10YR 4/4. Dk. yellowish brown, sandy clay.
119	deposit	Natural. 10YR 4/4. Dk. yellowish brown, clayey sand, with occasional gravel.
120	fill + cut	10YR 4/3. Dk. brown, sandy clay.
123	cut	Cut above concrete. Contains (92), (93), (97), (100).
124	cut	Cut containing (112), (113), (114), (115), and mortar base.

## 6 CONCLUSIONS

The Victorian features excavated within the area appear to represent typical backyard activity from domestic dwellings, the iron staining found at the south end of the site may relate to waste material from the 18th century bell foundry workshops of Joseph Eayre located behind the market square to the west (Tebbutt 1956).

The metre of re-deposited material forming a layer above the monastic levels represents ground raising operations which took place periodically between the 16th and 19th centuries, in an attempt to alleviate flooding in St. Neots. The truncation of the underlying deposits may have taken place at this time.

It must be emphasised that the sample of complete burials excavated is too small to form the basis for any definite interpretations of the evidence, and the conclusions presented here should be regarded as speculative.

The burials provide no clear evidence of grouping by age or sex, although it could be argued that there was a predominance of skeletons that cannot definitely be said to be male in the northern part of the site, while the two skeletons aged around 13yrs are also in this area.

There is a discernible change in grave cut shape towards the north of the site where there appears to be a predominance of wider cuts, with a flat or concave bottom and sharp corners. The stone-lined grave for skeleton 34 also lies in the northern half of the site. These wider cuts could indicate coffin burials although no evidence of coffins survive, apart from two nails in the fill of the grave containing skeleton 7. This style of cut matches four of the five grave cuts in the sewer trench dug in Priory Lane just to the north, one of these burials was also capped with stone slabs (Horton and Wait, 1989). This may indicate higher status, with more elaborate burial rites nearer the Priory buildings. The stone coffins of two wealthy individuals found beneath Waitrose car park, further to the north, support this theory. In the light of this evidence it may be significant that to the south of the site, skeletons 3, 18, 20 and 23/33 all show dental anomalies associated with periods of starvation or severe infection prevalent in poor communities (Duhig, Appendix 1). Further to the north, skeletons 34, 40 and 41 are a group of adults whose stature indicates good nourishment in childhood, while skeletons 6 and 24 possibly suffered from obesity in later life.

Alternatively, the difference in grave cut shape across the site may be chronological. Unfortunately, no dating evidence exists to establish which is the earlier style.

Dating evidence for the burials is unsatisfactory. The small amounts of 10th-early 13th century pottery found in the grave fills must be interpreted as residual, and the burials can only be very broadly dated to between 10th century and the post-medieval period of ground raising.

The vessel found with Skeleton 8, could be a base metal chalice, traditionally given to the medieval priest after giving his first communion, and thereafter kept for life.

The function of the iron half hoops found with Skeleton 6 remains unresolved, but must relate to the severe distortions of the spine (see Appendix 1). As excavated the hoops apparently surrounded the spine, but it seems very unlikely that the hoops were surgically inserted into a living patient; an operation of this kind would have produced infection, rapidly followed by death. The iron hoops may have been part of a walking stick or wooden supporting staff laid under the body for burial.

In the first half of the 15th century the area of the Priory enclosure was reduced to increase the market space; the new Priory precinct wall running somewhere through the back of the present day properties. This wall does not appear to lie within the excavated area unless it was destroyed by the modern concrete foundation that runs east-west across the area.

The nature of the material within the large pit [73] which pre-dates the burials, suggests pre-Conquest structures within the immediate vicinity. This feature, found at the south end of the site, contains burnt wattle and daub building material as well as unburned clay. The use of wattle and daub was common in this area on Late Saxon settlements (Addyman, 1965, 1973), and continued into the early medieval period, while solid clay walls were found in an early 12th century building at Eynesbury (Tebbutt, 1960).

The chance to excavate a section through the pit during the second phase of work clarified the nature of the fills and implied that the burnt layers at the bottom of the pit represented a separate process to that which had fired the daub building material. The signs of singeing on the pit edge were extensive and intensive enough to suggest deliberate burning took place *in situ*, resulting in the burnt residues (221) and (222). The reasons for this remain obscure. The burnt building material, mixed with unburned clay and soils (16) may have been deposited in the pit some time after the pit had been used for its original purpose, but prior to the use of this area of land as a burial ground. The single rim sherd of late Saxon pottery found in (16) is too small a sample to be used as dating evidence. Cut [135] contained a very similar mixture of soils, blue clay and burnt daub as deposit (16) in cut [73], but without accompanying singeing, although the contemporaneity of these two deposits cannot be proved. These two deposits suggest Saxon, or early medieval buildings lay only a short distance away from the excavated area but without sufficient dating evidence any connection these buildings may have with the Saxon Priory must remain purely speculative.

## RECOMMENDATIONS

The results of this assessment have shown the medieval graveyard extending in all directions beyond the excavations, which should have implications for future property development in this area. The ground to the south of the excavated area is of particular archaeological importance. It contains the potential to provide evidence of the southernmost limit of the burial ground, and to elucidate further the nature of the pre-Conquest activity of which these excavations have provided such a tantalising glimpse. There still remains the possibility of a Saxon priory in the vicinity.

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## Appendix 1: SKELETAL REMAINS

by Corinne Duhig

Forty-five skeletons or part-skeletons were examined: 21 from phase I, of which most were in robust condition, and 24 from phase II, mildly to moderately eroded. General methods used are those of Bass (1987), Steele and Bramblett (1988), and Ubelaker (1989), skeletal anatomy is principally from *Gray's Anatomy* (Pick & Howden 1988), age estimation from dental wear follows Brothwell (1972).

### *Phase I*

#### **Skeleton 1**

These remains consist of a complete axial skeleton and limbs, a skull vault with a few fragments of the face, a complete mandible and the body of a hyoid bone, and half the bones of the extremities. Sexing from the preserved portions of the skull is problematical, but all features of the pelvis are unmistakably male, as are the limb measurements. This individual had just reached adulthood, notionally 18 years, with the third molars just erupted and some of the limb epiphyses showing lines of recent fusion. The height would have been approximately 183 cm (6').

One second molar crown has been completely destroyed by caries, despite only having been erupted six years previously, but the other teeth are healthy. In the spine, the fifth lumbar vertebra has collapsed, presumably as a result of occupational stresses since there are no other signs of disease in this bone or the rest of the spine. The first sacral segment is partially lumbarised and a sternal foramen is present, both being normal variants of no clinical significance.

#### **Skeleton 2**

Only the upper part of this skeleton has been recovered: the complete skull and mandible, a hyoid horn and ossified thyroid cartilage, the upper limbs, ribs, and a vertebral column down to the last thoracic vertebra. Sexing, therefore, has had to be carried out only on the skull, and the features generally suggest a male individual. It is less difficult to estimate age, as the condition of the dentition, with particularly worn teeth, the considerable ossification of the thyroid cartilage, and the almost-total fusion and obliteration of skull sutures all point to an age of 45 years or more, perhaps up to 50 years. Stature has not been estimated in the absence of the leg bones.

It is unsurprising that an older man such as this shows signs of degenerative arthritis throughout the spine and in the joints of the shoulder, elbow and wrist, and that there are atrophic spots on the scapulae. His teeth have been worn down to the roots in some cases, not only the molars but two premolars as well, and there are at least four abscess cavities present. Recession of the alveolar bone to the apex of the roots of three mandibular teeth might also be due to abscessing, or might be a more extreme expression of the severe alveolar recession to be found in these jaws, indicative of periodontal disease which could have been brought about, in part, by the massive calculus deposits on the teeth.

#### **Skeleton 3**

A complete and unbroken skull and mandible are accompanied by a postcranial skeleton which has been almost totally recovered; with the hyoid and thyroid cartilage and sesamoid bones of the hands and feet, recovery is approximately 98%. Skull and pelvis features and long-bone measurements all indicate a male individual, whose stature can be estimated as about 169 cm (5' 6 1/2"). Unfortunately, the various methods of ageing the skeleton are vague or contradictory in this specimen: pubic symphysis (usually the best method) gives a wide range from 23 to 59 years, the dental wear suggests an age no greater than 25, but the ossification of the thyroid cartilage is advanced and is that of a person approximately 35 to 45 years old; all that can be concluded is that this man is a young or mature adult. His skeleton is healthy apart from a bump of cortical bone on the shaft of the right femur, which is probably an ossification of the origin of the short head of the *biceps*, due to repeated stresses on this muscle. The *biceps* is one of the hamstring muscles which flex the lower leg and pull the trunk upright upon the legs, for example in rising from stooping, and it also slightly rotates the lower leg; without other signs of muscle stress, it is impossible to suggest what action has caused this change.

There is no dental disease apart from slight alveolar recession in the mandible, but eight of the upper teeth are marked with hypoplastic lines, which are caused by dietary or other systemic stresses as the tooth develops: perhaps episodes of famine or severe illness.

#### **Skeleton 4**

Little of the thoracic region of this body has been preserved, and few hand or foot bones, but the skull and mandible are complete. The form of the skull is interesting, being plagiocephalic — longer from front to back on the right side, so that the occipital bone is tilted. Deformations of this kind can occur when one of the skull sutures fuses before the others, thus preventing further growth in the fused suture while the rest continue to lay down new bone. Another cause is excess growth in one suture, and this is shown in the piling up of bone on the right of the lambdoid suture in this specimen. The deformation, affecting as it does only the skull vault, was probably not particularly noticeable in life.

All features used for sexing show that this individual was male, the brow ridges being particularly marked. Ageing has had to be carried out using only the dental attrition, and this is quite advanced, indicating a mature adult of 35 to 45 years, which is supported by the slight development of osteoarthritic changes in the mid-thoracic region of the spine, and in the hips and knees. Height would have been approximately 172 cm (5' 8").

A large deltoid tuberosity on the left humerus records considerable development of *deltoid*, the large shoulder muscle which raises the arm; this is not uncommon, as many occupations and activities use this muscle. Dental health was fairly poor, with five teeth having been lost in life, one after severe abscessing, two others having their crowns destroyed, either by attrition or caries (as only the roots remain, the cause cannot be determined), and one more with occlusal caries.

#### **Skeleton 5**

Most of this skeleton is present, with the exception of a few small bones. It is clearly that of a male, but the ageing is problematical, as with skeleton 3: the range of ages from the pubic symphysis morphology is 28 to 78 years, which is scarcely helpful. Dental wear gives a range of 35 to 45 years of age, and the development of the condition called DISH, described below, suggests that the upper part of the range is more likely, approximately 40 to 45 years. Stature was on the low side, at 167 cm (5' 5 1/2").

The whole postcranial skeleton shows pathological changes, the spine most markedly: two groups of thoracic vertebrae are fused, with new bone covering the right antero-lateral surfaces of the vertebral bodies, but the facet joints are unaffected. This in itself suggests the condition of DISH (diffuse idiopathic skeletal hyperostosis: Rogers *et al.* 1987) and confirmation comes from the new bone growth in various tendinous insertions (entheses) such as the calcaneus tuberosity, patella, linea aspera, radial tuberosity, iliac crest, ischial tuberosity and many more, and the ossification of the costal cartilages. DISH is a poorly-understood disorder associated with obesity and diabetes, and has been recorded previously in mediaeval monastic communities in which the standard of living is thought to have been high.

The changes of DISH rarely cause modern people to seek medical help, and this man is unlikely to have suffered great discomfort from it, apart from stiffness in the spine. On the other hand, his dental health was abysmal, his teeth are encrusted with calculus, he had lost twelve of them over a period of quite a few years, and six others have abscess cavities at their roots, two being worn down to the roots. Contrary to the implication of DISH, that this man lived a luxurious life in terms of diet, this kind of dental disease, with an absence of caries but high wear and abscessing, calculus and periodontal disease, implies a coarse diet, lacking in refined carbohydrates, combined with inadequate dental hygiene. However, all or some of the twelve lost teeth might have been carious, which would, obviously, imply the reverse and agree with the association of DISH with luxurious eating. Skeletons 5 and 6 have been examined by x-ray (by H. Szutowicz, through the good offices of T.D. Hawkins), in an attempt to refine the diagnoses. The non-fusion of the facet joints of this individual is confirmed, reinforcing the diagnosis of DISH.

#### **Skeleton 6**

Only a few bones of the extremities are missing from this skeleton, which shows a majority of male features in skull and pelvis. Once again, the age band determined from the condition of the pubic symphysis is very wide — 23 to 59 years — but the attrition of the molar teeth is considerable and falls into the 45-plus category. Dental health is again poor, but surprisingly, in contrast to skeleton 5, this man had not lost any teeth during life, although his teeth are very carious, four tooth crowns having been totally destroyed. His stature, were he to have stood upright (see below), would have been about 166 cm.

This man's spine is fused in two areas: a group of seven thoracic vertebrae and a pair of lumbar vertebrae have both the bodies and the facet joints ankylosed, fixing the curves of the spine. The bodies are not joined by the thick growths of 'flowing bone' which are seen in the individual (5) above, but

their contours are squared off so that the fused vertebrae form a block. These features are diagnostic of a sero-negative spondylo-arthropathy (Rogers *et al.* 1987), but it is difficult to equate the condition of this skeleton with the other diagnostic features of these disorders, in which we might expect sacro-iliac changes and a regular development of bony ankylosis up the spine (ankylosing spondylitis) or erosion and areas of fluffy, periosteal new bone (e.g. Reiter's syndrome and psoriatic arthropathy). Certain infections and long-lasting gastro-intestinal disorders also cause changes similar to those described, and these are currently being investigated, although the one that is apparently most likely, brucellosis, can probably be excluded because lytic lesions in the vertebrae are not visible radiographically (Ortner & Putschar 1985). There are, however, developments of lateral osteophytes on the bodies of some other vertebrae, combined with cysts in the joint surface, which are indicative of osteoarthritis, so that this condition is present in addition; this is unsurprising, given the age of the individual and the severe primary changes in the spine.

#### **Skeleton 7**

These are the remains of a young man, as shown by features of the skull, pelvis and femur. The skeleton is almost complete but lacks most of the hand and some of the foot bones; the hyoid, with one fused horn, and an ossified thyroid cartilage were recovered. Almost all of the features used for sexing the skeleton point strongly to its having been a male, although there are some contradictory points: the nuchal area, brow ridge and sciatic notch. The dentition suggests an age of 17 to 25 years, probably in the upper region, and the condition of the pubic symphysis indicates an age in the range 19-35 years, so an age at death of around 25 is likely. Stature approximates to 174 cm, which is about 5' 8 1/2".

Once again, caries is found in the dentition, having destroyed the whole crown of one molar, together with calculus and severe alveolar recession. All the adult teeth are present, however, presumably because there had been little time for tooth loss in this young adult, although he might have expected to lose teeth to abscessing and periodontal disease in later life. There is also malocclusion of the right upper premolars.

No sign of the degenerative arthritis found in the older men is present in the spine of this specimen. Schmorl's nodes on 10 of the lower vertebrae do demonstrate herniation of the intervertebral discs, caused, it is believed, by the stresses on the spine of carrying heavy weights, particularly in youth. Another clue to hard work might be the spur of dense bone on the shaft of the right humerus, located in the area of the origin of the *brachialis* muscle, an important elbow flexor.

Four right ribs had been broken in life and well healed.

#### **Skeleton 8**

The bones recovered for this skeleton are almost exactly the same ones as for skeleton 7, above, but there are only 11 ribs on each side; again, most features of skull, pelvis and long bones are indicative of a male, except for the nuchal area and sciatic notch, which appear to have a female form. This is, however, a much older individual than number 7, having much wear on the molar teeth and falling into Brothwell's category 3, approximately 35 to 45 years of age. This age band is not contradicted by the pubic symphysis ageing, which covers the wide range from 23 to 59 years. The ossified thyroid cartilage has been preserved, and the degree of ossification is considerable, being indicative of a 50 to 60-year-old, but there is no degenerative arthritis in the spine whatsoever, and as this is almost certainly present to some degree in those over 35, an age of around 35 is tentatively suggested. There are no pathological changes in the bones apart from one well-healed rib fracture.

By contrast, dental disease is present, in the forms of caries, both occlusal and interdental, an abscess cavity, alveolar recession over the whole dentition, and one tooth lost ante-mortem. The calculus present in moderate and severe degrees in both jaws shows one cause of periodontal problems, resulting from poor dental hygiene. The upper lateral incisors are both absent, there is no space for them in the tooth row, and no indication of their loss in life. An x-ray would show whether they were unerupted in the maxilla, but absence of lateral incisors is second in frequency only to that of wisdom teeth, so it is assumed that they were congenitally absent.

This man's stature would have been low, even for this group, at 163 cm (5' 4").

#### **Skeleton 9/36**

Only the legs and feet are present of skeleton 9: tibiae, fibulae, most of the tarsals and metatarsals, and a few phalanges. It is not possible to determine the sex of the individual, nor the age. A small amount of extra-cortical new bone on the right tibial shaft and enlarged nutrient foramina in the foot bones are indicative of an infective condition, but it is impossible to be more specific.

It was suggested by the excavator that the remains numbered 36, a right arm and one foot bone, might have belonged to skeleton 9. Their condition and size do not preclude this association, so the two numbers have been grouped together.

#### **Skeleton 10**

The recovery of most of the small bones and loose epiphyses of this immature skeleton does credit to the excavator. The cranium is broken and much of the vault destroyed, but the maxilla and mandible are complete, as are all the long bones and the axial skeleton. Within the dentition, the second permanent molars (the 'twelve-year molars') are present and slightly polished by attrition, but the third molars, which erupt notionally at 18, are not. All epiphyses are loose except for the distal humerus, which is fused, and the proximal ulna, which is in the process of fusing. The age at death can thus be assessed as approximately 13 years.

Sexing of immature human remains cannot be done with any degree of accuracy (Ubelaker 1989), so it is not attempted here. There are no signs of disease on the skeleton.

#### **Skeleton 11**

This individual is represented by a complete skeleton except for a few small bones of the extremities, and includes the hyoid body with one unfused horn. The face is smashed. All areas in the skeleton used for sexing have unmistakable male features, and the complete femora and tibiae can be measured to give a stature of 173 cm (5' 8").

In this specimen, the age estimates are in broad agreement: attrition of the dentition is at Brothwell's stage 2, approximately 25–35 years of age, and the condition of the pubic symphysis is Suchey-Brooks stage 2, from 19 to 35 years, so an age of 25–35 years is suggested. That this man was under 35 years of age is confirmed by the absence of osteophytic lipping, representative of the degenerative arthritic changes of age, on his vertebrae. A slight case of *cribra orbitalia* is present in the left orbit (stage 1: Stuart-Macadam 1982), probably indicative of an anaemic condition.

Both third molars are absent from the maxilla, and could be unerupted, congenitally absent or have been lost during life. They are not unerupted as an x-ray confirms their absence within the alveolus; the diastema (gap) between the upper canines and first premolars suggests that the teeth have become more widely spaced after loss of these molars, but this is contradicted by the wide spacing of the anterior lower teeth also; congenital absence is most common in third molars, and this is taken to be the cause in this case.

#### **Skeleton 12**

Only the upper portion of this body is present, down to the femora. Skull and mandible are complete and a hyoid body is present. The individual has been recorded as probably male, but several important features of the skull and pelvis have a female form. Ageing of the skeleton is also slightly problematical, as the severe attrition of the teeth (Brothwell stage 4), the form of the pubic symphysis (Suchey-Brooks stage 4: 23–59 years), certain degenerative changes in all regions of the spine and atrophic spots on the scapulae point to an age of at least 45 and probably in the 50s, but the erupting condition of the third molars corresponds to an age of about 18 years. Because most evidence supports an estimate of advanced age, it is suggested that the third molars had an anomalous eruption pattern.

Stature, about average for this group, was approximately 170 cm (5' 7")

Surprisingly, for a man of this age, no teeth had been lost in life. Only one molar had a carious lesion in the crown, and this same tooth had two apical abscesses, one of which had penetrated into the maxillary sinus; it is possible that infected material in the enclosed space of the facial sinus could have produced widespread infection throughout the body, perhaps even leading to death.

#### **Skeleton 13**

Even less of the skeleton was present in this specimen: the arms and hands, mid and lower part of the vertebral column, and pelvis. One cuneiform from a left foot was also present, but did not necessarily belong to this individual. The only feature of the pelvis which could be assessed was the sciatic notch, which appeared to be of female form; however, the sciatic notches of most of the pelvises in this assemblage are quite wide, even when other skeletal features are clearly male. The remains have been recorded as possibly female. It is not possible to estimate age, nor, in the absence of lower limbs, the stature.



A small spur of dense bone on the left humeral shaft resembles that on the humerus of skeleton 7, and is probably of similar cause: ossification into the *brachialis* muscle due to strong action of that muscle.

#### **Skeleton 14**

Almost complete except for the lower legs, this immature skeleton testifies to a particularly skilful excavator, as all the small bones and all the loose epiphyses, even the somewhat formless ones within the pelvis, have been recovered. Had the legs been accessible within the grave, recovery would have approached 100%.

Apparently very slightly older than number 10, this skeleton has epiphyseal fusion at the distal humerus and the proximal ulna, and the third molars are still within their crypts except one which has erupted to the level of the alveolar plane. All other epiphyses being unfused, it would be hard to justify an age much beyond that of number 10, 13 years; we might be seeing natural variation between two individuals of the same age, or, indeed, number 14 might even have been slightly younger. An age of 13 to 14 years is suggested.

There are three non-metric traits (genetic variants of no clinical significance) to be seen in the skull: additional (Carabelli's) cusps on the maxillary first molars, persistence of the metopic suture in the frontal bone — this is usually closed in childhood — and supernumary bones within the lambdoid suture at the back of the skull. Within a population thought to contain related individuals, these traits would be considered when seeking to identify these relationships, but are uninformative in an unrelated population such as this. The only pathological condition is a stage 3 *cribra orbitalia* in the eye orbits, a milder case of which was noted in skeleton 11.

#### **Skeleton 16**

This individual is represented by a randomly distributed selection of bones, less than 20 in all, and including a complete but smashed skull, a pair of legs, and left and right humeri. This was another immature person, whose third molars had not long been erupted and whose knee and shoulder epiphyses had just fused, so suggesting an age of 17–18 years. Three skull features are of male form, two of female form, and one is possibly male: a possible male has been recorded. The few bones and complete maxillary dentition show no evidence of disease.

#### **Skeleton 17/28**

Bones from the lower body and legs were recovered for this specimen in the first phase of excavation, and the skull and upper body in the second stage. Most sexing features are of male type except the form of the eye orbit. The stature can be calculated from the leg bones as around 172 cm, or 5' 8"

Initially, findings from the pubic symphysis were unhelpful in estimating age, as the symphysis equates to Suchey-Brooks phase 4, an age range of 23 to 59 years. The recovery of the skull, however, gives evidence of dental wear which equates to Brothwell's stage 2, approximately 25–35 years. Changes in the vertebrae indicative of the degeneration due to age suggest at least the upper end of this range.

A small (c. 9 mm), round indentation on the left side of the skull vault contains coarse new bone. The inner table of the skull and the edges of the defect are normal. This is probably an injury from a pointed weapon or other object which made an incomplete penetrating wound; as it did not enter the skull the wound is unlikely to have been dangerous and it appears to have healed cleanly.

#### **Skeleton 18**

Most of this body has been preserved, the complete skull and mandible being found with the hyoid body and ossified thyroid cartilage, and the right malleus and incus still in the auditory meatus; very few hand or foot bones are present. There are mainly male features to the skull, pelvis and femur, and the long bone measurements give a stature estimate equal to that of skeleton 17, above. It is clear that this individual was an older adult, shown by the pubic symphysis (28–78 years), dentition (45+), fusion of the skull sutures, ossification of the thyroid cartilage (51–58) and presence of osteoarthritic changes in the cervical spine (50+), thus, an age at death in the 50s has been recorded.

Several teeth had been lost in life, while others were carious and/or adjacent to abscess cavities. Linear enamel hypoplasia is present over most tooth crowns, but this form of hypoplasia is thought to protect against caries (Duray 1992). One maxillary molar with a large abscess cavity around the buccal roots had those same roots covered with dental calculus, showing that the gum had receded away from the whole area — the tooth would have been unstable and liable to be shed. An additional and peg-like tooth occupies the midline of the maxillary dentition.

Various pathological changes and non-metric features were found: a fracture of the left clavicle, with loss of length and altered proximal articulation; new bone, indicative of osteoarthritis, on the right acetabulum and distal right femur, and more advanced changes of similar cause on the cervical vertebrae, as mentioned above; Schmorl's nodes on six thoracic vertebrae; ossified costal elements on both first ribs; persistence of the metopic suture (as with skeleton 14); a thoracic form, with rib facets, to the first lumbar vertebra.

#### **Skeleton 19**

This is another skeleton of which most has been recovered, apart from the small hand bones, and again the thyroid cartilage and part of the hyoid (one horn) are present. It is unmistakably that of a male, with marked masculine features to skull, pelvis and much of the skeleton. Height would have been the same as the two preceding individuals.

An age estimate of about 35 years has been made on the basis of the pubic symphysis form (Suchey-Brooks phase II, 19–35 years) and dental attrition (35–45 years). This is not contradicted by the slight development of arthritic lipping in the lumbar spine.

As with the individual above, number 18, there is an anomaly of the lower vertebral column, but in this case it is the last thoracic vertebra which is of transitional form, having the lumbar shape but one rib facet on the right side — and the number of ribs reflects this variation. Schmorl's nodes are present on nine of the lower vertebrae. An anaemic condition is suggested by a stage 3 *cribra orbitalia* in the eye orbits. This man had dental caries, abscesses and alveolar recession, and had lost several teeth in life.

#### **Skeleton 20/26**

Truncated at the knees in the phase I excavation, and with both feet recovered in phase II, this skeleton has no signs of disease apart from well-healed fractures of five left ribs. Most skull and pelvic features are masculine in form, although there are some which are feminine or indeterminable. The age is clearly not great; the pubic symphysis is too eroded to use for age estimation, but the teeth are very little worn, corresponding to Brothwell's stage 1, or 17 to 25 years of age. Five of the teeth are carious, and this may be due to the enamel hypoplasia present in most of the dentition, which is more severe than that of individual 18 and has spotted as well as linear defects.

Like that of skeleton 4, the skull is plagiocephalic, with the right frontal shortened and right parietal shorter than the left. There is a corresponding asymmetry of the face, which might have been noticeable in life, although it is not very severe.

Height would have been, once again, around 172 cm (5' 8").

#### **Remains from context 39 ('skeletons' 44.1 and 44.2)**

Because these remains were not given skeleton numbers, and to avoid confusion with skeleton 39 (below), a number was allocated when the excavation second stage was completed: the next available number was 44.

Two persons are represented by the 65 fragments from this context. A complete mandible is the principal bone from individual 44.1, an adult with little wear on the third molars, and therefore probably not older than 25. Two molars had already been lost in life, four other teeth were carious — two had lost the whole crowns — and an abscess cavity is present. Other bones which could have belonged to the same individual are some skull vault fragments, a hyoid with fused horn, ten vertebrae and part of a right scapula. Most of the remaining bones are immature, with unfused epiphyses, some of which must come from a person of 17–18 years (44.2), and some of which might belong to either 44.1 or 44.2. At least one of the two individuals was male, as seen in the sub-pubic angle of an innominate bone, but the unfused condition of the iliac crest and ischial tuberosity could equate to either.

The scapula allocated to number 44.1 has fine-grained extra-cortical new bone over an area on and adjacent to the proximal spine, indicative of some indeterminable infection.

#### **Phase II**

#### **Skeleton 21**

A pair of legs and feet are the only remains from this skeleton. They are from an adult, and the osteophytic lipping — indicative of arthritis — of the ankle and toe bones suggests that this person was not a young adult. Sex cannot be determined from these bones, nor can stature be estimated.

## Skeleton 22

This lower body has been truncated at the level of the first lumbar vertebra, the recovered bones consisting of the pelvis and lumbar vertebrae, femora and tibiae, parts of the arms and a few bones of the feet and hands: approximately 35% of the complete skeleton. All relevant features of the pelvis are male in conformation, the condition of the well-preserved pubic symphysis is indicative of the broad age range 28–78 years, but the auricular surface is that of a man of 50–59 years of age. Height, estimated from the lengths of the leg bones, approximates to 176 cm (5' 9"), which is about the average for this population.

No pathological conditions are present in this skeleton, apart from lipping on the body of the fourth lumbar vertebra; in a person of this age, some lipping on the vertebrae is to be expected, probably more widespread than is found in this case.

## Skeleton 23/33

The youngest individual in this assemblage, this child's age can be determined, from the state of tooth eruption and formation, as 9 years ( $\pm$  24 months). The deciduous canines and molars are present with the permanent incisors and first molars, and the second and third molars are visible in their crypts. Approximately 80% of the skeleton has been recovered, only the smaller bones of the extremities and some of the smaller epiphyses being absent, and the skull is complete despite crushing.

It is noteworthy that, of the 24 teeth present, 20 have linear and/or spotted hypoplastic defects of enamel. Hypoplasia, thought to be indicative of starvation or infection during the enamel-development period in childhood, is discussed in more detail below, but this is clearly a particularly severe example. The child also had *cribra orbitalia* in both eye orbits, in the most advanced form (stage 4: Stuart-Macadam 1982), showing that he or she had iron-deficiency anaemia at the time of death. Considering the two conditions together, very poor nutrition throughout childhood is indicated (perhaps with iron deficiency caused or exacerbated by parasitic infection: Harrison *et al.* 1978). Although iron-deficiency anaemia in itself is rarely fatal, the general debility probably predisposed to other illnesses, one of which might have been the cause of death.

## Skeleton 24

Like individual 22, this skeleton consists of the lower part of the body only, but was truncated at a point immediately above the pelvis, so there are no vertebrae and only the distal parts of two arm bones. About 30% of the skeleton is extant. These are the remains of another male, whose height approximates to 182 cm, or 5' 11 1/2". In the absence of any other suitable features for ageing, only the pubic symphysis has been used, which is hardly helpful in this case: the age range is 50 years, from 28 to 78.

Many of the bones of skeleton 24 have lipping adjacent to joint surfaces, such as in the feet, elbow, knee and ankle, but without any subchondral bone reaction which would allow a diagnosis of osteoarthritis. The condition known as DISH has been discussed in relation to skeleton 5, and in this individual certain areas of tendinous insertions exhibit new bone development (for example, the *linea aspera*), but without the spine it is impossible to diagnose this disorder either. It is possible that the osteophytic lipping is simply a change due to age.

## Skeleton 25

This is yet another body of which only the lower half (approximately 30%) has been recovered, in this case from the last lumbar vertebra downwards, with fragments of the forearms and hands. Destruction of the pubic bone on both sides prevents both accurate sexing and ageing; some features of the pelvis and femur are strongly male, some probably male, some others possibly female, so the overall assessment is that this is probably a male individual. The bones are extremely light, perhaps due to bone loss in old age, although there are no other signs of advanced age in this specimen, or perhaps due to local soil conditions which have leached calcium from the bones.

Stature, determined from the leg bones, was around 174 cm, or 5' 8 1/2".

## Skeleton 27

Only a pair of legs and one foot bone, belonging to a sub-adult individual, were recovered from this skeleton. The bones are large enough to be those of an adult while all the epiphyses are unfused, so the age at death must have been 17 to 18 years. No pathological conditions are evident.

### **Skeleton 29**

'Skeleton 29' is, in fact, only a skull and mandible with well-preserved dentition. It is almost certainly that of a man, with rugged features in most areas of the skull. That he was an adult of mature years is shown by the closure of the vault sutures and the condition of wear on the molar teeth (Brothwell stage 3, 25–35 years).

The teeth and jaws had been in relatively poor condition in life, with three molar crowns attacked by caries, three abscesses adjacent to these carious teeth, three examples of ante-mortem tooth loss, and a medium degree of alveolar recession. It is likely that this man's dental hygiene was inadequate, as his incisors and canines were coated with calculus on both inside and outside surfaces.

### **Skeleton 30**

This young person is represented by a pair of legs and some of the foot bones only. All epiphyses are unfused (indicating an age of less than 17–18 years) except the distal epiphyses of the first metatarsals: these epiphyses are uncommon, the distal end of the first metatarsal usually being formed with the main shaft, but, when they are present, they appear at about 7 or 8 years of age (Pick & Howden 1988). So, a broad age range between 7/8 and 17/18 years can be established; from the size of the bones, an age in the middle of this range is suggested, about 12 years.

### **Skeleton 31**

Twenty-three bones from a pair of feet represent this 'skeleton'. They are those of an adult, with no noteworthy features.

### **Skeleton 32.1**

This is the first of three skeletons each of which had a group of additional bones. In each case the main skeleton has been recorded as .1 and the few extra bones as .2. Number 32.1 is a reasonably complete skeleton lacking the face, parts of the right arm and hand, the right patella and a few toe bones — in all, about 85% of the body has been recovered. Sexing features of skull and pelvis show that the individual was a male, and his stature can be estimated from the long bones of the leg to be around 175 cm (5' 8 3/4").

It is difficult to determine the age at death of this man, because the dental wear, which in this assemblage usually confirms the other age estimates, appears to contradict them for this specimen. Dental wear gives an age of 25 to 35 years (Brothwell stage 2); the pubic symphysis is at Suchey-Brooks stage V on the left and stage IV on the right, age ranges of 28 to 78 years and 23 to 59 years respectively; the thyroid cartilage is fully ossified, which suggests an age not less than 60 years. The pattern of developing arthritic changes of the spine is discussed and shown in figure 4 below, and when the changes in the spine of this individual are compared with others, they would seem to coincide with those of mature adults in their 40s. Overall, a tentative age estimate of between 40 and 50 is suggested.

Apart from arthritic manifestations in the spine — osteophytic lipping and cysts on the vertebral body surfaces — there are new bone developments at the tendinous insertions of the patella and calcaneus. Two skeletal variants of non-pathological significance are a sternal foramen and an unfused acromion of the left scapula. The right foot bones are extremely light and pierced with small foramina, but, in the absence of changes of similar nature elsewhere in the skeleton, no explanation can be suggested.

### **Skeleton 32.2**

Twenty-two heavily eroded vertebrae, from the first cervical to the third lumbar, comprise this 'skeleton', boxed with number 32.1. The vertebrae are of similar size and condition to those of number 34.2, and probably form a group with them; their separation from each other and association with other, complete, skeletons must have occurred after excavation, as graves 32 and 34 did not appear to contain additional bones and are not adjacent.

### **Skeleton 34.1**

The upper body of this individual has not been recovered, the spine commencing at the seventh thoracic vertebra, the right lower leg and most of the hand and foot bones also being missing; approximately one-third of the body is present.

The few features which are available for assessment of sex indicate a male person. This is the tallest skeleton in the whole assemblage, of around 192 cm (6' 3"), which is exceptionally tall for any individual before the modern period. Body proportions are correspondingly massive. Unfortunately, the absence of the pubic symphysis and the eroded condition of all the bones prevents any estimate of age other than that of 'adult'.

### **Skeleton 34.2**

Probably belonging with number 32.2 (above), only two bones are present: a sacral arch with sacralised fifth lumbar vertebra, and the arch of the fourth lumbar vertebra.

### **Skeleton 35.1**

By contrast with many of the previous skeletons, number 35.1 is almost complete, representing about 90% of the body. Some small bones of the extremities are missing, and both wrists. Many ossified costal cartilages were recovered.

Evidently a man, from all the relevant skeletal features, this individual had lost nearly 69% of his teeth at death and shows other signs of advanced age in skull and pelvis. Many changes in the spine indicate degenerative arthritis, from which no vertebrae are free, the blades of the scapulae are thinned, ossified costal cartilages are present, as mentioned above, and there are arthritic developments in the clavicles:

all confirming the age estimate of more than 50 years. In addition to the tooth loss that this man had experienced in life, the remaining teeth have a high percentage of caries, and several of the sockets show abscess cavities.

His height was about average for this population: 176 cm, or 5' 9". Wormian (additional) bones in the skull vault, and a persistent metopic suture in the frontal bone are non-pathological developmental variants.

#### **Skeleton 35.2**

With skeleton 32.1 were these seven 'spare' bones which articulate with one another: a right calcaneus, talus, medial and lateral cuneiforms and the third, fourth and fifth metatarsals. They are those of an adult.

#### **Skeleton 37.1**

The upper body and much of the right side of this skeleton are absent, in all approximately 45% being preserved. Stature can be determined, from measurements of the leg bones, as 169 cm (5' 6 1/2"), the overall estimate of gender being that these are the remains of a male individual.

Unfortunately, like skeleton 3, it is not possible to determine age, because the various methods which can be used give such broad or contradictory age ranges. This is despite the preservation of the pubic symphysis, which is usually the most informative area of the skeleton for ageing purposes — the ranges are 23 to 59 years for the left side and 28 to 78 years for the right side. The auricular area appears to belong to a person of advanced age, but the rest of the bones have little or no degenerative change, and resemble those of a young adult.

It is not possible to determine what muscular action has produced the spur of bone near the head of the left fibula.

#### **Skeleton 37.2**

Three right foot bones represent this adult individual. They cannot readily be associated with any other skeleton, and so have been given their own number, but it is probable that they derive from one of the other, more-complete, interments.

#### **Skeleton 38**

The only definitely female skeleton from this cemetery (the sex indicated by features of skull, pelvis and other bones), skeleton 38 lacks only the hands and feet. Because of the completeness of the arm and leg bones, and because the ribs were recovered from an unnumbered bag, it is suggested that the hand and foot bones were lost at the post-excavation stage.

This woman was very gracile, her stature approximating to 160 cm (about 5' 3"). Although her teeth are not particularly worn in the mandible, indicating an age of 25 to 35 years (Brothwell stage 2), the maxillary molars have a greater degree of wear and equate to Brothwell's stage 3, 35 to 45 years. The severe breakdown of the pubic symphysis conforms to the Suchey-Brooks sixth stage, a range of 42 to 87 years, and it would be reasonable to record her age at death as not less than 40. Sixty-seven percent of her spine was affected by degenerative arthritis.

Pitting on the dorsal aspect of the pubic symphysis, as found in this specimen, is what has been known as 'scars of parturition', once used as indicators of childbirth. It is now known that such diagnosis is simplistic and parturition can not be identified by this means, sadly for skeletal analysts (Cox 1989).

This woman had a very extreme underbite, given that the mandible belongs to the skull, which it appears to do because of the perfect occlusion of the molars. Skeleton 41 also had an exceptional underbite, but there are no other features which might suggest a familial relationship between the two; only DNA analysis could determine whether the two individuals were related.

#### **Skeleton 39**

The six disparate adult bones — ulna, tibia, fibula and three foot bones — which make up 'skeleton' 39 were thought by the excavator to be part of number 32, but they are not compatible, so another individual is represented. However, as mentioned in relation to number 37.2, they probably belong to another body of which we have the major part, but which one cannot be determined.

#### Skeleton 40

Very eroded bones of the pelvis, legs, feet and one hand make up this individual — approximately 30% of the skeleton overall. It is clear that a man is represented, but his age is impossible to establish because of the poor condition of the bone and the absence of the pubic symphyses of the pelvis. He was one of the tallest of this assemblage, having been just under 6' tall (182 cm), and shows no signs of disease.

#### Skeleton 41

This skeleton consists of a complete skull and mandible, a spine from the first thoracic vertebra to the third lumbar, all ribs, and both shoulders and upper arms. The skull has almost all male features, some strongly marked. Age is not determinable due to the unusual pattern of attrition on the teeth (very advanced on the first molars and slight on the second and third). This unusual pattern is probably due to the peculiar stresses of an extreme underbite, which was so severe in life as to have produced wear on the anterior surfaces of the upper teeth and corresponding wear on the posterior surfaces of the lower teeth — a 'bulldog' effect. The teeth are, however, otherwise healthy. This man also had a scoliosis (twist to the spine), produced by wedging of four of the middle thoracic vertebrae, yet, surprisingly, had no signs of arthritis in these or any other vertebrae; he was probably not old enough for any changes to have had time to develop.

Height would have been the same as that of the previous individual.

#### Skeleton 42

A nearly-edentulous skull and mandible is accompanied by the upper three cervical vertebrae and a pair of hands. Although the individual has been recorded as male, there are contradictory features in the skull, some being strongly male in form and others being slightly female. As with skeleton 41, above, the face is unusual, but in this case the bite is normal (for pre-modern times, being edge-to-edge) but the maxilla and mandible themselves are extremely short and broad. The dentition is widely spaced and the third molars are absent: the fact that all four third molars are absent implies congenital absence rather than ante-mortem loss, although loss might have been the cause because eight other teeth had been shed in life, an abscess cavity existed at the root of another, and there was severe bone recession away from the roots of all the mandibular teeth.

'Healed' *cribra orbitalia* is present in the eye orbits. As discussed below, *cribra* is related to iron-deficiency anaemia, in this case probably an episode in youth, resolved later in life. The metopic suture is present, as in skeletons 14, 18 and 35.1, and supernumerary bones in the sutures of the skull vault, as in skeletons 14 and 35.1. These features can identify relatedness in human remains, but they also occur randomly at a fairly low level, so familial relationships should not be assumed. Neither is the correlation of metopic sutures and supernumerary sutural bones significant, as it is likely that the same mechanism predisposes to both — but the correlation with *cribra orbitalia* could be more informative, as the genetic predisposition to metopism and supernumerary bones is thought to be expressed in individuals under dietary or other environmental stress.

The three uppermost thoracic vertebrae have osteophytic lipping.

#### Skeleton 43

Most of the bones of this skeleton have not been recovered: only the skull, mandible and upper two vertebrae are present. All relevant aspects of the skull are strongly male in form, the dental wear is clearly of the age band 25–35 years (Brothwell category 2), there are no noteworthy features on the bones, and the teeth lack any sign of dental disease. The only significant factor is the presence of the linear form of dental hypoplasia on eight of the teeth, showing that this person was under physical stress of some kind when the teeth were developing in childhood.

#### Skull from trial hole ('skeleton' 45)

At the end of the analysis, when all skeleton numbers had been allocated, this skull was given the last number, 45. The face is broken away and there are only two fragments of mandible, containing one tooth. This is probably the skull of a man, age indeterminable.

#### Discussion

General points relating to the skeletons are tabulated in the figures. Of course, this sample is both too small and too selected to draw significant conclusions from, but it will be valuable to compare with

other assemblages of similar period. From Figure 1 it can be seen that the ages range from 9 to approximately 50 years, with a peak at age 40 which is, to some extent, an artefact of the ageing methods available: frequently, absence of more useful areas has necessitated age estimation from the dental wear alone, which has only four age bands and, therefore, only four central age points. It would probably be more useful to say that the majority of this population died when in mature adulthood, rather than as children, adolescents, young adults or older adults. However, if the population was a monastic one, it is unlikely that there would be a significant number of young persons (depending on the age of recruitment of monks or novices), compared to the general population, available to join the death assemblage, so it is unsurprising that they are absent.

One definite female and one possible female were present, showing that this was not an exclusive monastic graveyard, but the disproportion of the sexes is so extreme that it probably excludes the possibility that excavation has touched a secular burial ground.

Figure 2 shows the range of heights that could be calculated. The lowest is for the one woman, who was 160 cm tall. The range for men is from 163 to 192 cm (approximately 5' 4" to 6' 3") The tallest, skeleton 34.1, is 8 cm beyond the next tallest, and this pattern is, interestingly, almost exactly the same as that from an Anglo-Saxon cemetery recently reported (Duhig n.d.). The gap between the heights from 176 to 182 cm might also be significant: is there one continuous range of heights (the usual distribution of heights in a population being a regular bell-shaped curve), with the gaps caused by missing data, or are there two or three separate height ranges? Studies of modern groups show that, in Europe, marked differences in the stature of social classes can be observed, due to variations in nutrition and disease experience (Harrison *et al.* 1978), so unusually tall individuals might be those of higher status, whose nutrition and health were good in the growing period — status as adults, however, might not be the same, so they should not necessarily be expected to have 'high status' burials. This would explain a double-peaked curve, but if there is a triple-peaked one no explanation can currently be suggested.

Prevalence of dental disease in this group was high, with 55% of the individuals having one or more teeth missing at death, 52% having at least one abscess cavity, while 45% had at least one carious tooth. However, when the total number of teeth in the population are examined, it is found that the percentages are 5.3% carious teeth, 4.3% abscessed sockets and 10% ante-mortem tooth loss. Compared with Brothwell's (1972) figures for change in frequency of dental disorders, the caries figure is low: carious teeth in his mediaeval sample were more than 20%, only having been lower than 5% in the Neolithic and Bronze Age. Ante-mortem tooth loss was approximately 13%, having been exceeded in all earlier periods except the Bronze Age. The frequencies are tabulated for each individual in Figure 3; in order to test the hypothesis that all dental disorders increased with age, the skeletons are arranged in age order (skeleton 1 is the first adult), and it can clearly be seen that there is no correlation between age and prevalence in any of the three conditions. The relationship between the three is complex. They appear to vary independently, but skeletons 2 and 5 are notable in that neither has any carious teeth but both have high levels of abscesses and tooth loss, numbers 38 and 42 having lower abscess percentages but still high tooth loss: carious teeth tend to develop infected pulp and then abscesses at the roots (Hillson 1986), and abscessed teeth are more liable to be shed, so the relationship is one of progression. On the other hand, it is clear that teeth can be abscessed without having caries, and this is due to attrition removing the surface enamel allowing infection in, or to the presence of infective agents in diseased periodontal soft tissue. Almost all persons in this population had alveolar recession indicative of periodontal disease.

The teeth of individuals 3, 18, 20/26, 23/33 and 43 are hypoplastic, 20/26 and 23/33 having pitting as well as linear hypoplasia. Hypoplasia appears in the developing teeth as a result of many physical problems, but principally of starvation or severe infection, and is very prevalent in poor communities (Hillson 1986). Thus, it is possible to speculate that the three adults might have been disadvantaged in childhood, when the permanent teeth were developing. The combination of hypoplasias and *cribra orbitalia* in the child, number 23/33, appears to confirm the suggested aetiologies of both these disorders, as it would be unsurprising to find iron deficiency in combination with a more generally inadequate diet. It is known that pitted hypoplasia predisposes to caries because of the thinned enamel and the inaccessible nature of the pits, but that the linear form tends to protect against caries because there is hypermineralisation of matrix in the lines (Duray 1992). This is not contradicted by the higher number of carious lesions in the teeth of skeleton 20/26, and the lower number in skeletons 3, 18 and 43.

In Figure 4, arthritic changes in the spine have been ordered in the same way, by increasing age of the individual. The number of affected vertebrae are expressed as a percentage of the number of vertebrae present, which is rarely the total number possible; a vertebra is considered affected when it has at least one change attributable to osteoarthritis/degenerative arthritis (Rogers *et al.* 1987). The figure shows that only one individual below the age of 35 was affected, 35 being the age generally held to be the minimum for appearance of osteophytic lipping of the spine, and that there is a slight tendency to increase with age. The first five individuals are of unknown age, so, from this pattern, it might be



suggested that number 3 (marked on the graph) was in mid-adulthood, 37.1 was an adult of advanced age, and the remainder were quite young adults. Skeleton 32.1, whose age was difficult to determine, has been recorded here as age 47, and it can be seen that the amount of spinal arthritis is compatible with such an age estimate.

The pathological conditions found in this assemblage show that at least some of the individuals had had severe dietary or other environmental stress in childhood, but the great stature achieved by four of the men implies that these four were far from having been nutritionally compromised in youth. As adults, certainly one, and perhaps two, men had disorders associated with luxurious living.

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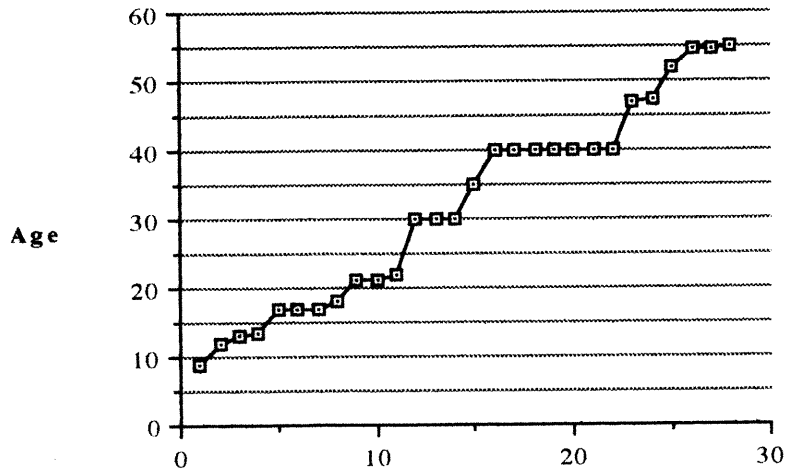
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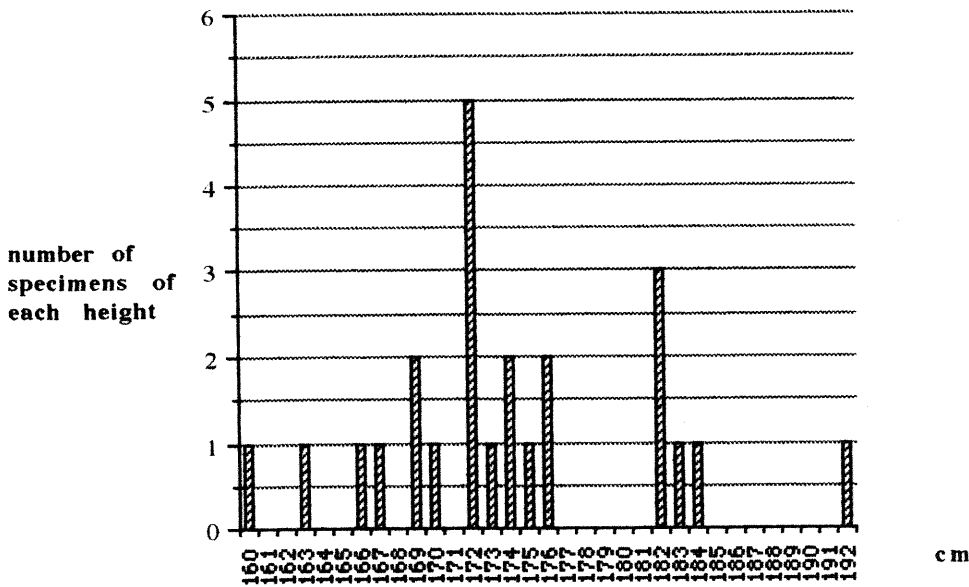
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**Ages of St Neots population**



**Heights of St Neots population**







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