Repton and the Vikings

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In 873 the Viking Great Army took winter quarters at the Anglo-Saxon monastery of Repton in the heart of Mercia. Excavations 1974–88 found their D-shaped earthwork on the river bank, incorporated in the stone church. Burials of Viking type were made at the east end of the church, and an existing building was cut down and converted into the chamber of a burial mound containing at least 249 individuals. Here is a first account of the evidence for the Vikings at Repton in and after the campaigning season of 873–4.

The church of St Wystan at Repton in Derbyshire (NGR SK 303272) occupies a prominent bluff of Bunter sandstone and pebble on the south side of the valley of the River Trent (FIGURE 1). The river now flows one kilometre away to the north, on the far side of the valley, but originally flowed on the Repton side, at the foot of a low cliff now rising to a height of about 6 m above the Old Trent Water, a remnant of the former course of the river. To the east the land falls away to the broad valley of the Repton Brook, which joins the Trent northeast of the church. Well defined to the north by the river and to the east by the brook, the bluff lies open to south and west. The ground rises gradually to the south through the village towards Hartshorne and Swadlincote, and undulates westwards along the valley edge in the direction of Newton Solney and Burton.

The settlement sequence

The Repton bluff has been the setting for a long sequence of human activity. The first traces appear in the late Mesolithic or early Neolithic period in the 4th or 5th millennium BC. There is then a long gap in the evidence until the Roman period when there appears to have been a settlement on or very near the site. The rubbish from this settlement became scattered over the area, perhaps in the course of manuring its fields: a long period of cultivation, probably ploughing, either in the Roman period or afterwards, distributed fragments of pottery, tile, and other materials of Roman date widely but evenly over the whole of the investigated area. No features of Roman date were found in excavation.

The site may have been continuously settled after the Roman period, but this is unknowable in the present state of the evidence. What seems probable is that it was a princely possession by the later 7th century when land called *Hrepingas* was given by Friduricus *princeps* to Hædda, abbot of Breedon (Biddle & Kjølbye-Biddle 1985: 234). Timber buildings discovered north of the church in 1987–8 may represent the halls and other structures of the estate centre of the 7th century. Since these buildings are directly related in site and structural evolution to the earliest stages in the development of the Anglo-Saxon church and monastery, it seems probable that Friduricus' grant was made for the foundation of the community that was to occupy the site for the next two centuries.

This monastery was a double house for men and women ruled by an abbess who was of noble, perhaps royal, rank. Several of the kings of the Mercian house were buried at Repton, including Æthelbald (716–57). In 849 Wigstan (Wystan) was brought to Repton for burial after his murder in a struggle over the succession to the throne. Wigstan was buried in the mausoleum of his grandfather Wiglaf (*in mausolio Wiglavi regis avi sui*), who was king between 827 and 840 (Rollason 1981; 1983: 5–9; Thacker 1985: 12–14). This mausoleum is almost cer-

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FIGURE 1. *Repton: the parish church of St Wystan, the Augustinian priory and the school, looking southwest. The Old Trent Water appears lower right. The defences of the Viking winter camp formed a D with the church at its southernmost point and the sides curving north to the low cliff above the river (cf.* FIGURE 2*).*

tainly the crypt which still survives and which, together with the church which rises above it, forms one of the principal monuments of Anglo-Saxon architecture (Taylor 1987). Miracles took place at the tomb of Wigstan, the church became a place of pilgrimage, and the entrances to the crypt were rebuilt to accommodate the flow of pilgrims. Before the end of the 9th century, Wigstan had come to be regarded as a saint (Rollason 1978: 79–82), and then or later the original dedication of the church was superseded in his honour.

Monastic life was disrupted in the autumn of 873 by the arrival of the Viking Great Army. For a year in 873–4, as we now know, the site was occupied by a Viking winter fortress. After the departure of the army in the autumn of 874 burial continued around the church, which from about this time acted as a minster serving a large region, probably equivalent to Derbyshire south of Trent, the area known in Domesday Book as *Walecros wapentake* and by 1156 as *Repton wapentake* (Roffe 1986: 106). The church has never since ceased its parochial function, although by the 12th century ecclesiastical developments had reduced its area to a smaller, but still very extensive, parish including the seven chapelries of Bretby, Foremark, Ingleby, Newton Solney, Measham, Smisby and Ticknall (Macdonald 1929: 42). By this time the bluff above the Trent at Repton had undergone two further major changes.

Sometime in the earlier part of the 12th century the earl of Chester built a small but strongly-defended motte-and-bailey castle on the point of the bluff to control the southern

approaches to the fords over the Trent up and downstream from Repton. The site of the castle lay to the northeast of the extensive cemetery surrounding the minster church, the castle ditch cutting into and removing some of the burials at the northeast corner of the cemetery. In the 1140s, during the civil war between King Stephen and the Empress Matilda, the castle formed a link in Earl Ranulf's string of fortresses along the middle and upper Trent, between the Palatinate of Chester and his family lands in Lincolnshire (Cronne 1937: 106–7).

Following Earl Ranulf's death in 1153, his widow Matilda granted the working of the quarry of Repton and the advowson of the church, with everything pertaining to it, to the canons of the Augustinian priory at Calke, near Ticknall, 8 km distant to the southeast. The countess made her grant on condition that the canons built their mother church at Repton, migrating from Calke, which was henceforth to be a cell of the new house. The foundation of the new priory took some years to achieve, and it was not until about 1172 that the canons came into residence (Macdonald 1929: 40–1; Colvin 1982). The buildings, which by then must have been substantially complete, occupied the eastern half of the great cemetery of the minster church and included the whole site of the castle which was levelled and over which the new buildings were in part erected.

For the next three-and-a-half centuries, until the suppression of the priory in 1538, the Repton bluff was the seat of two churches: the Augustinian priory of the Holy Trinity and St Mary with its cloister and monastic buildings and, to the west, the parish church of St Wystan, now served by the canons and still surrounded on three sides by its churchyard. By the 15th century both churches had been crowned with spires, an emulation, as it were, of the triple spires of Lichfield cathedral higher up the valley.

In 1539 Thomas Thacker, from Heage, near Belper, obtained a lease of the suppressed priory, its site, and buildings. Two years later he purchased them outright, converting the prior's lodgings by the river into his private house. In the mid 1550s, his son Gilbert, fearing a resumption of church lands under Mary, demolished the priory church and buildings, in one day, it was said, an effort which earned him Fuller's quip: '*church-work* is a *cripple* in *going up*, but *rides post* in *coming down*' (Fuller 1655: Book vi, 358).

In 1559 the executors of the will of Sir John Port, High Sheriff of Derbyshire in 1554 and a landowner at Etwall on the other side of the Trent, purchased from Gilbert Thacker the surviving west range of the priory together with the site of the rest of the demolished claustral buildings. Here they had already founded, under the terms of Port's will of 1557, a free grammar school, an example of that great flowering of school foundation which followed the loss of monastic schools in the suppression of the monasteries (Macdonald 1929: 79–90).

For the last four centuries Repton School has been only the latest occupant of this long settled site. In the last century-and-a-half, since the headmastership of Dr Pears (1854–74), a disciple at one remove of Thomas Arnold of Rugby, the Repton bluff has seen that growth of halls, classrooms and playing fields which makes up the fabric of the English public school (Macdonald 1929: 166–96). But of none of the others can it be said, as it has been of the School Yard at Repton, that one can see there 'buildings dating from every century back at least to the tenth' (actually the 8th) (Macdonald 1929: 13).

The discovery of the Viking presence

The excavations of 1974–88 were originally undertaken to elucidate the structural sequence of the Anglo-Saxon church, the study of which had been brought to the point by Dr H.M. Taylor where further advance could only be made by detailed above-ground survey combined with below-ground investigation (Taylor 1971). A joint project was therefore begun under the direction of Dr Taylor and the writers (Taylor 1977; 1979; 1983; 1987; Biddle 1986; Biddle & Kjølbye-Biddle 1985; Biddle *et al.* 1986a; 1986b). There was initially no thought that the work would necessarily encounter remains of the Viking presence in 873–4. The events of that year were set out succinctly in the annal for 874 in the *Anglo-Saxon Chronicle* (Plummer 1892: i, 72–3; translated in Whitelock 1961: 48):

> In this year the army went from Lindsey to Repton and took up winter quarters (*wintersetl*) there, and drove King Burgred across the sea . . . And they conquered all that land . . . And the same year they gave the kingdom of the Mercians to be held by Coelwulf, a foolish king's thegn; and he swore oaths to them and gave hostages . . .

but there was no indication of the location of the *wintersetl* within the large area to which the name Repton might then have been applied, and no certain knowledge of the physical character of such an establishment, or indeed whether it might be detectable in the archaeological record.

There had been a series of earlier discoveries which might perhaps have marked out the site of the church as the possible location of the Viking activity, but these were then either unrecognized, undatable, or not given sufficient weight. The most obvious was the discovery in 1923 during trenching in the angle between the crypt and south aisle (FIGURE 2.4) of a bearded axe of Viking type (Petersen Type E), apparently one of the well-known series of Viking weapon finds in English churchyards (Vassall 1924a; 1924b; Shetelig 1940, 14–15; this and the following early finds are all reconsidered in Biddle & Kjølbye-Biddle forthcoming (a)). As long ago as 1801–2 a hogback tombstone had been discovered in the western part of the churchyard (FIGURE 2.3), but broken up and lost (Bigsby 1854: 249 and n. 246, figure 27), an example of a type which Lang (1984) has called 'a Viking colonial monument'. In 1839 an iron sword was found 'in the midst of a large quantity of human bones' in excavating for a culvert beneath the new road to Willington,

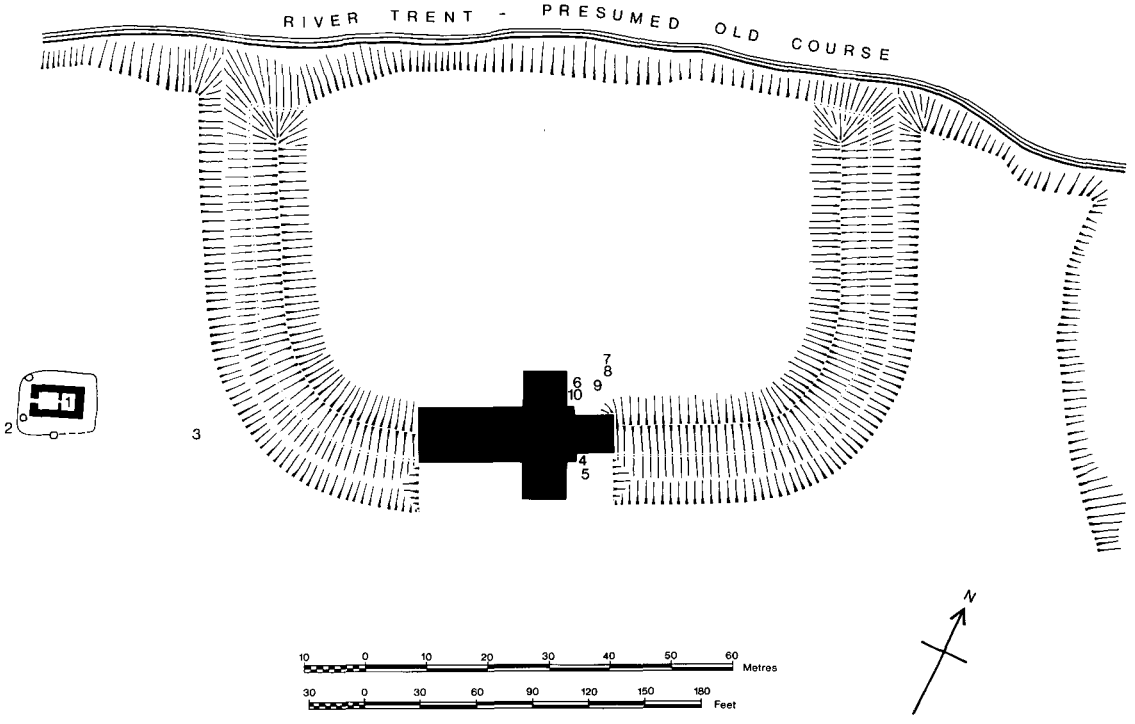


FIGURE 2. *Repton: the Viking winter camp of 873–4, reconstructed plan based on excavation and geophysical survey. The numbers indicate Viking-age burials:*

1 *mass-burial below mound (cf. FIGURES 7, 8)*
2 *Feature 940 with Graves 360–3 (cf. FIGURE 9)*
3 *approximate area of discovery of hogback tombstone in the western part of the churchyard in 1801–2*
4 *Grave 52, ?location of axe of Viking type found in 1923*
5 *double burial, Graves 83 and 84*
6 *Grave 203*
7 *Grave 295 (cf. FIGURE 3)*
8 *Grave 511 (cf. FIGURES 3–6)*
9 *double burial, Graves 288 and 516*
10 *Grave 529.*

beside the Old Trent Water, 150 m northwest of the church (Bigsby 1854: 5, 251–2, figure 28), but it was not recognized as Viking (Petersen Type L) until the 1980s. Another sword, now known only through an electrotype copy recovered from a Repton attic in 1948, may represent a second, but later, Viking sword from the village (Petersen Type X). There was in addition the extraordinary account of the mass burial discovered in the late 17th century in a mound west of the church, but this was not believable without further investigation (see below).

In 1976 the butt end of a large V-shaped ditch of obvious defensive function was found in excavation immediately southeast of the Anglo-Saxon crypt and chancel. The northwest corner of the ditch lay opposite the southeast corner of the Anglo-Saxon masonry structure in such a way that the west end of the ditch lined up with the east end of the crypt and chancel, while the north side of the ditch continued the line of the south side of the building. The filling of the ditch had been thrown in from the north side and probably represented the casting back of a bank which had originally followed that side. It was thus at once obvious that the ditch and bank had been dug in relation to the standing church. Although there were few diagnostic finds from the ditch, it became clear that it had been backfilled after at most a few decades and that burials had then been cut into the fill. We now know that these burials belong to Cemetery 3, which spans the 10th and 11th centuries (Grenville forthcoming).

The course of the ditch east of the church was eventually followed by resistivity survey, which produced an exceptionally clear line curving to the north beneath the cloister of the Augustinian priory, now the War Memorial Cloister of Repton School (FIGURES 1 & 2). The course west of the church was more difficult to locate owing to the presence of the churchyard. A line running northwest from the west end of the church was traced by caesium magnetometer survey in 1978, terminating at the cliff above the Old Trent Water (FIGURES 1 & 2). Excavation at this point in 1979 revealed, not one, but four successive ditches, the earliest of which was V-shaped and had been back-filled with clean material shortly after its original construction. No dating evidence was recovered.

The investigations had thus revealed an earthwork on the south bank of the River Trent, enclosing an area of 1.46 ha and incorporating the church in its line. The latter can only have served some defensive function, for the eastern part of the enclosure terminated at the point where it met the church and was laid out in a clear structural relationship to it. Where the church walls stood high, there was no need for a bank or for a ditch to produce the material of a bank. It seems probable that the church served as a strong point and that the south and north doors of the nave provided a defended entrance to the enclosure.

Although dating evidence in the form of artefacts is limited, the stratigraphic sequence at the east end of the church demonstrates that the construction, use and siting of the earthwork belongs to the interval between Cemeteries 2 and 3, that is to say, to the period between the use of the Middle Saxon cemetery south of the crypt and its replacement by burials belonging, as we shall see, to the post-Viking development of the site. This type of earthwork, consisting of a D-shaped enclosure on the bank of a river or other expanse of water, is well evidenced in the Viking period in Scandinavia, on both a small scale as in the beginnings of Aarhus, or later on a vast scale as in the defences of Hedeby (Roesdahl 1991: 120–3, 128–30).

Viking Age burials around the church

In the years during which the plan and character of the D-shaped enclosure were being worked out, a series of burials was excavated around the east end of the church, both within and outside the line of the bank and ditch. These graves provided clear evidence of a Viking presence at precisely the period indicated by the annal for 874 in the Anglo-Saxon Chronicle. The most striking was Grave 511, lying to the north of the church, inside the line of the defences (FIGURE 2.8; FIGURES 3–6). This was the burial of a man aged at least 35–40 who had been killed by a massive cut into the head of the left femur. He lay with his head to the west, the hands together on the pelvis, and wore a necklace of two glass beads (FIGURES 5.2 and 5.3) and a plain silver Thor's hammer (FIGURE 5.1), with a leaded bronze ?fastening (FIGURE 5.4). A copper-alloy buckle (FIGURE 5.5) with traces of textile and leather from a ?belt lay at the waist. By the left leg was an iron sword of

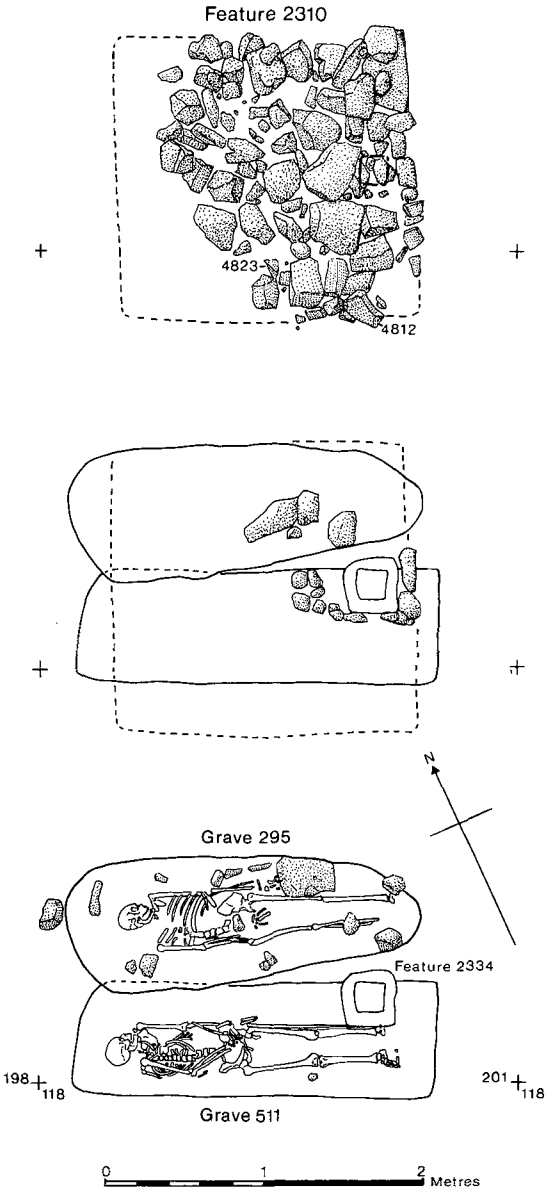


FIGURE 3. *Graves 295 and 511 in relationship to the marker, Feature 2334, and the superimposed stone setting, Feature 2310.*

Petersen Type M in a wooden scabbard lined with fleece and covered with leather (FIGURE 5.7), with a second copper-alloy buckle (FIGURE 5.6) for a suspension strap. An iron folding knife (FIGURE 6.10) and a wooden-handled iron knife (FIGURE 6.9) lay by the sword hilt, and half-way down the blade was an iron key (FIGURE 5.8). Carefully placed between the thighs was the tusk of an adult wild boar, *Sus scrofa* (FIGURE 6.12), and in an approximately square area of softer earth (F.2707), possibly indicating the former presence of a box or bag lower down between the thighs, was the humerus of a jackdaw, *Corvus monedula* (FIGURE 6.11). The man in Grave 511 was 1.82 m tall and similar in physical type to the male population of the mass burial in the mound (see below).

Grave 511 was the earliest burial in its area. A second male, aged 17 to 20 (Grave 295), was subsequently buried with an iron knife (4853) immediately to the north (FIGURE 3). A post-hole 30 cm square (F.2334), off-axis in the eastern end of Grave 511, but centrally placed in relation to the two burials, suggests a substantial wooden grave-marker. The burials were then covered with a rectangular setting of broken stones (F.2310), *c.* 1.8 m square, which included a fragment of an Anglo-Saxon cross-shaft (4823). The position of the wooden marker is central to the east side of the setting and was clearly used to guide its layout.[1] The marker seems to have survived until, in its decay, stones from the setting covered its site.

At least two more weapon burials are known east of the church. Excavation indicated that the bearded axe found in 1923 probably came originally from a burial laid against the east side of the central space of the church, immediately south of the crypt (Grave 52: FIGURE 2.4). And an iron spearhead found loose in a later pit north of Graves 295 and 511 presumably indicates a burial with a spear, later disturbed, somewhere in the vicinity.

There are several other burials of Scandinavian type (FIGURE 2), a woman's grave with a gold ring and five silver pennies datable to the mid 870s (Grave 529; Pagan 1986b; Biddle & Kjølbye-Biddle 1986b: 24–6), and a grave with an iron knife, the wooden handle bound with silver wire (Grave 203). There are also two double graves (Graves 83/84 and Graves 288/516). These burials may all form part of a cemetery belonging to, or at least beginning with, the events of 873–4. They also mark the start of a period of burial east of the church which lasted for the next three centuries. The burials of Scandinavian type north of the church form the first grave generation in this area; they were not buried in an established cemetery. Those laid south of the church, outside the defensive enclosure, were in an area

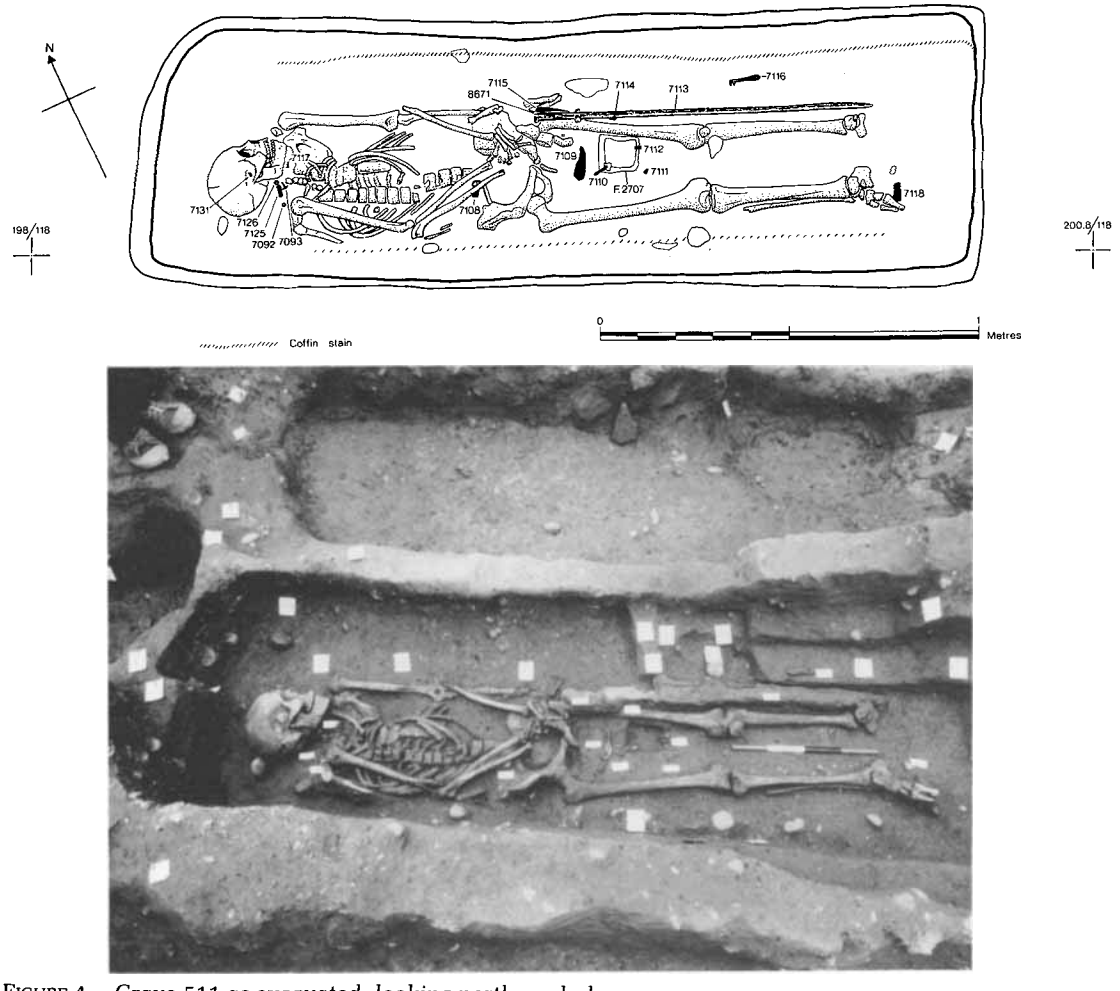


FIGURE 4. *Grave 511 as excavated, looking north, and plan.*

previously used for burial, and show that burial continued here during the period the fortification was in use. This is the first time that burials of Viking type have been excavated under controlled conditions in an English churchyard. Their relationship to the development of the graveyard is complex and provides much scope for reflection on what was clearly a widespread practice in Midland and northern England (Wilson 1967: 44–5; 1968: 293–6; Biddle & Kjølbye-Biddle 1986b).

The mass burial below the mound in the Vicarage Garden

To the west of the church, outside the D-shaped enclosure, and now within the Vicarage garden, is the site of a sunken two-celled stone building of late 7th- or 8th-century date, probably in origin a mortuary chapel (FIGURE 2.1). This was later cut down to ground level to serve as the chamber of a burial mound. When the mound was first opened *c.* 1686 the east compartment contained the stone coffin of a '*Humane Body Nine Foot* long' surrounded by a hundred skeletons 'with their Feet pointing to the Stone Coffin' (Degge 1727–8; Biddle & Kjølbye-Biddle 1986a). Re-excavation in 1980–6 revealed the disarticulated remains of at least 249 people, whose bones had originally been stacked charnel-wise against the walls. The central burial did not survive, but the deposit contained many objects which may originally have accompanied it. An iron axe of early medieval type, a fragment of a two-edged sword, two large

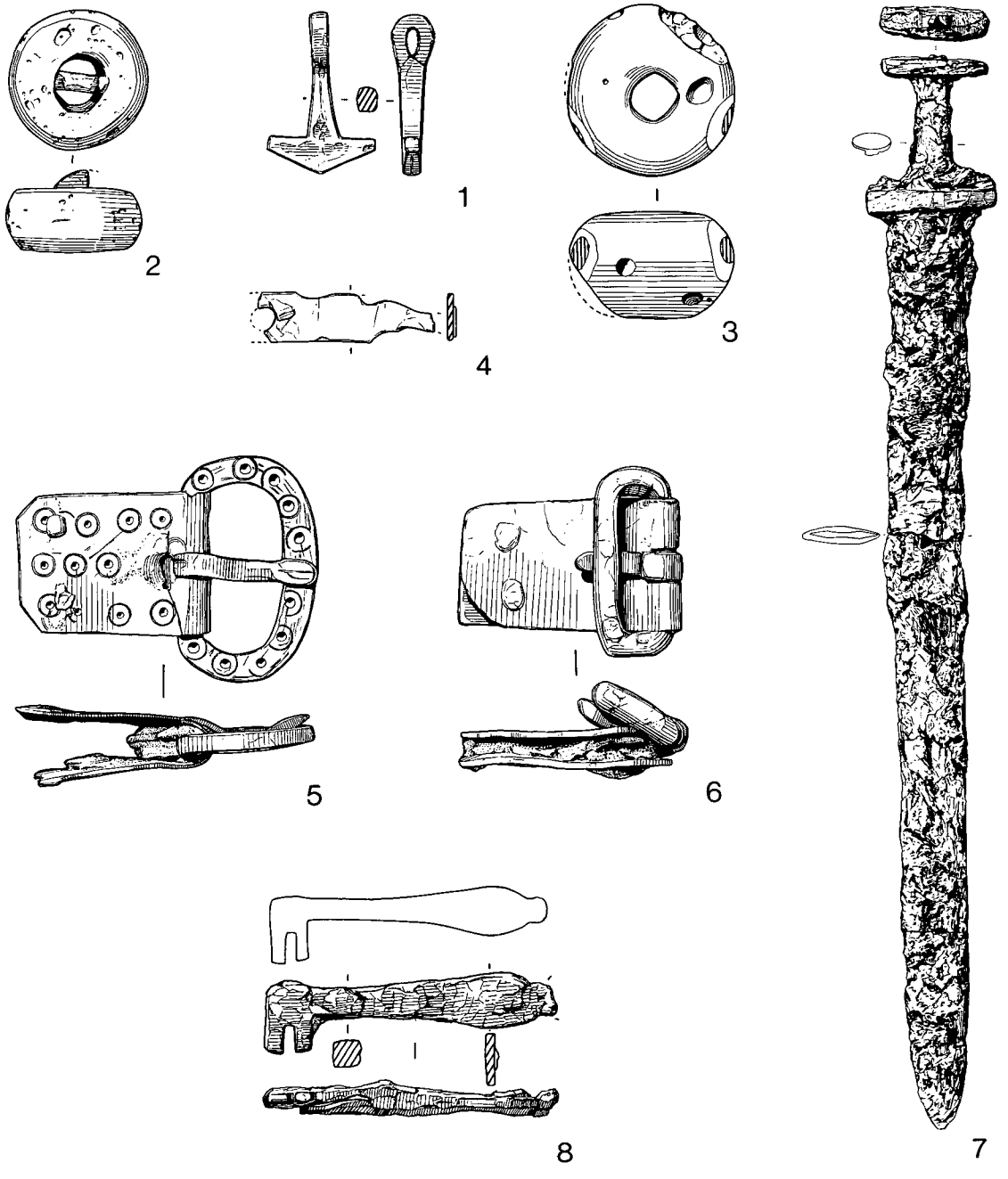


FIGURE 5. *Grave 511:*
1 silver Thor's hammer
2, 3 glass beads (2 with the loop of the Thor's hammer in the hole)
4 copper- alloy ?fastener
5 copper-alloy belt- or sword-strap buckle
6 copper-alloy buckle from sword sheath
7 iron sword
8 iron key (1–6, 1:1; 7, 1:6; 8, 1:2).

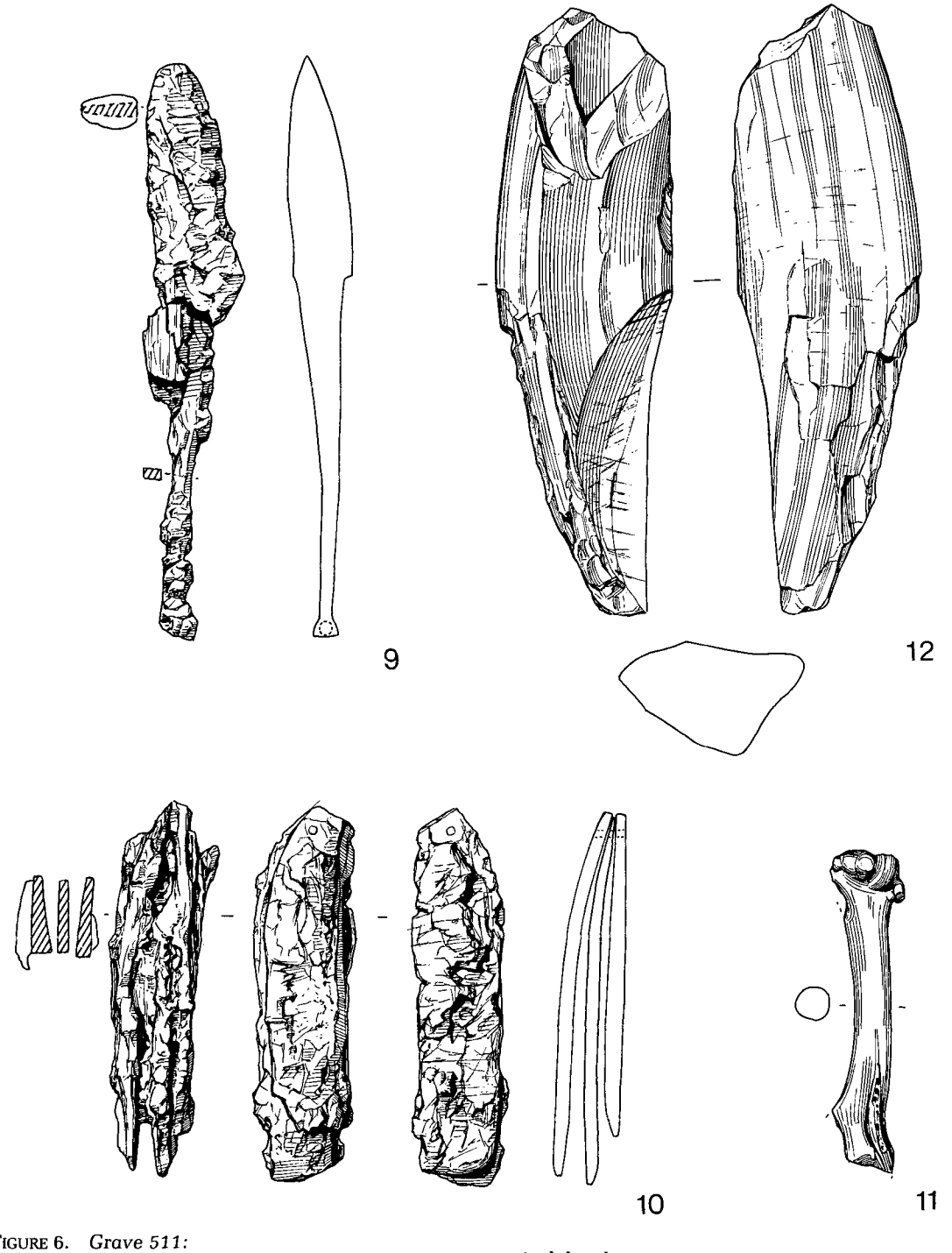


FIGURE 6. *Grave 511:*
9 *iron knife*
10 *iron folding knife*
11 *jackdaw humerus*
12 *boar's tusk (9, 10, 1:2; 11, 12, 1:1).*

seaxes, a series of smaller seaxes and other knives, a chisel, a barrel-padlock key and other iron objects were found among the bones, together with seven fragments of precious metalwork (including a tiny circular silver band, the interior divided into four quadrant cloisons each containing a garnet), and six pins and tacks of gilded copper alloy. There were also five silver pennies, four of which were struck no earlier than c. 872, and the fifth of which may belong to 873/4, 'making 873/4 the earliest possible and indeed the most appropriate time for their deposit' (Pagan 1986a: 117).

This dating suggests that the great deposit of human remains in which the coins were found was in some way connected with the wintering of the Viking Great Army at Repton in 873–4, and with the overthrow of the Mercian kingdom, as set out in the annal for 874 in the *Anglo-Saxon Chronicle* (see above).

The burial chamber, consisting of the eastern compartment of the cut-down mid-Saxon stone building, had originally been covered with flat stones resting on timber joists and the whole building sealed by a low stone cairn, surrounded by an earth mound crowned by a stone kerb (FIGURES 7 & 8). Four pits dug outside the building before the construction of the mound had been carefully back-filled with layers of stone after throwing up the mound. Four young people, three crouched on their side above a single extended burial, at the southwest corner of the mound, may be a sacrificial deposit (FIGURE 9). Burials were subsequently made on top of the mound and to the southeast where some were clothed in gold-embroidered garments (FIGURE 8D).

Anthropological study of the main burial deposit shows that it was 80% male in the age-range 15–45, of a massively robust non-local population type, parallels for which can be found in Scandinavia (Grenville forthcoming). The females were of a different type, possibly Anglo-Saxon. The circumstances of the deposit are still being studied, but it seems likely to have been a burial of kingly status to which the bodies of those of the Viking Great Army who had died in the season of 873–4 and perhaps in previous years had been gathered from graves elsewhere. Since there is little

FIGURE 7. *Repton: the burial mound (FIGURE 2.1), looking east. The crest of the mound is marked by a stone kerb (cf. FIGURES 8C, 8D). Within the mound the two-celled stone building (cf. FIGURE 8A) is in the state left by late 17th-century stone robbing. The further, eastern, compartment contained the bones of at least 249 individuals deposited in 873–4 (cf. FIGURE 8B).*

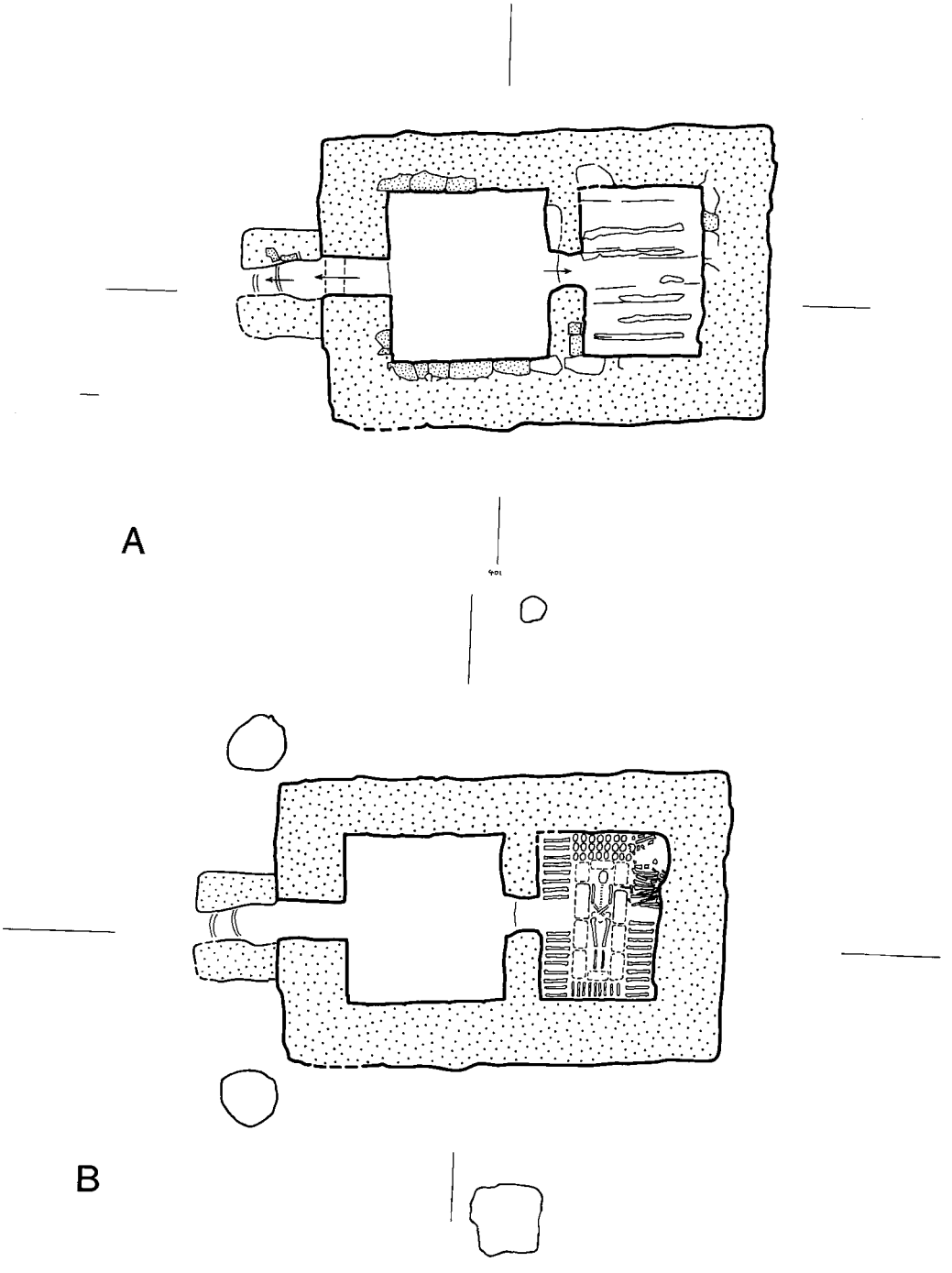
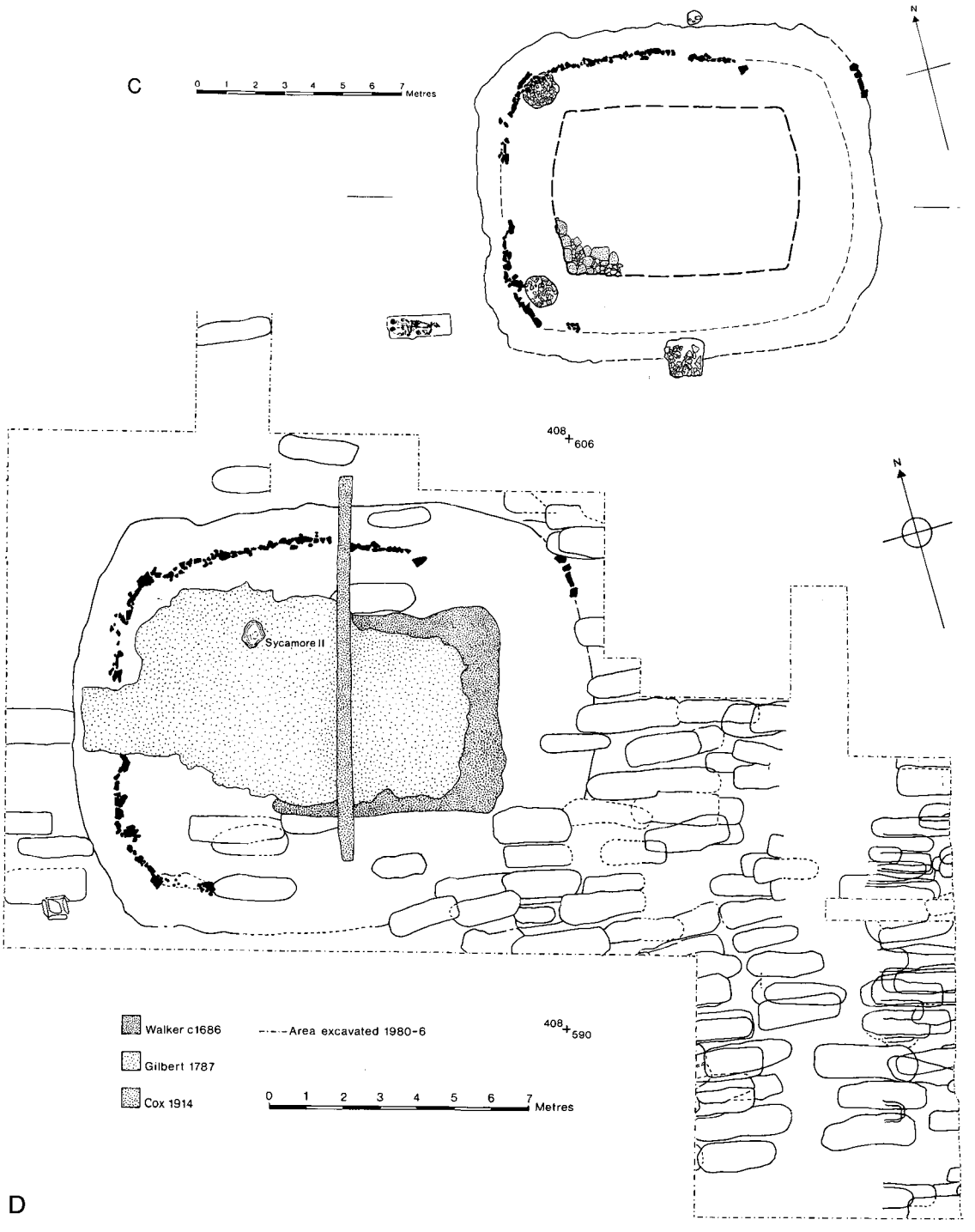


FIGURE 8. *Repton: the development of the burial mound.*
A *mid-Saxon sunken stone building.*
B *the building cut down and the eastern compartment transformed into a burial chamber, with the original arrangement of the charnel and supposed central burial reconstructed, and external ?offering pits.*



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C *stone cairn, mound, and kerb over the burial chamber, the ?offering pits filled with stone, and Feature 940 (cf.* FIGURE 9*), to southwest.*
D *later cemetery around and on the slopes of the mound.*

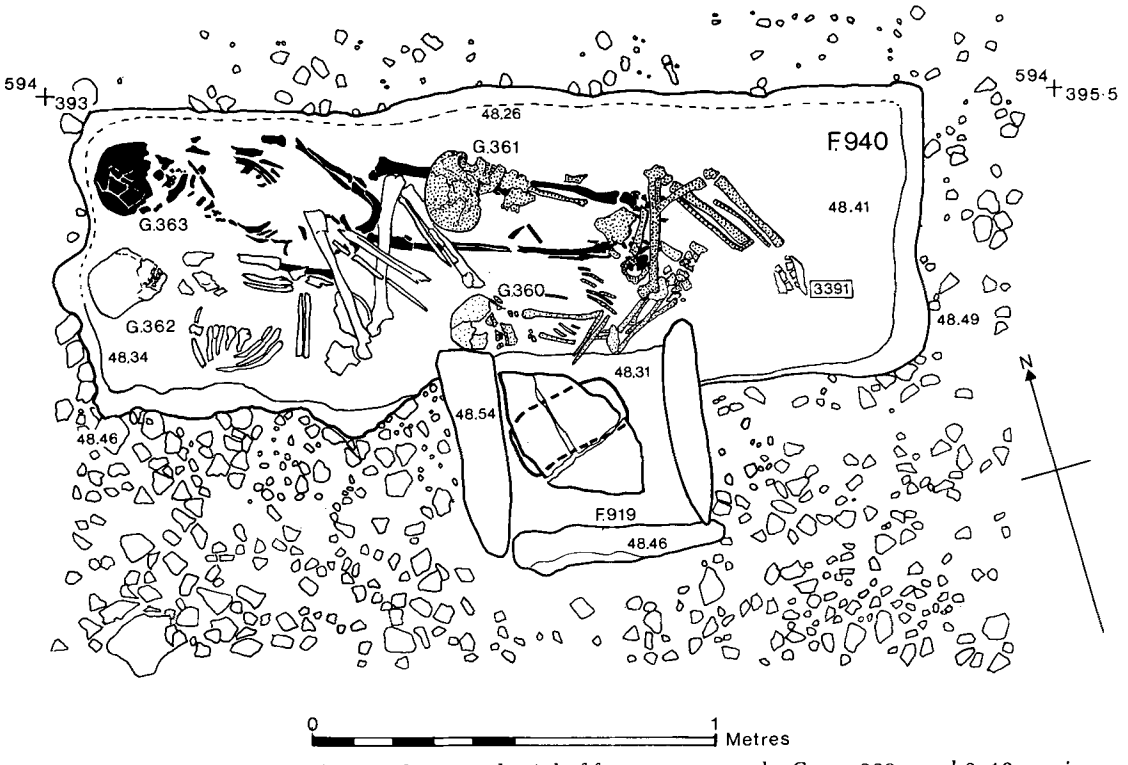

FIGURE 9. *Feature 940 with the simultaneous burial of four young people. Grave 363, aged 8–12, supine below Graves 360–2, the crouched bodies of two children aged between 8 and 11, and a c. 17-year old, Grave 362. The significance of the ?later stone box, Feature 919, is unknown.*

evidence of terminal trauma, the idea of a battle cemetery is excluded. The division of the Great Army in the autumn of 874 may have been the occasion for so singular and ritually complex a deposit (Plummer 1892: i, 72–5, s.a. 875).

Conclusions

The purpose of this article has been to survey briefly the range of evidence now available for the study of Viking activity at Repton. This is not the place to attempt explanations of the distinction between Viking burial beside the church and burial in the chambered mound outside the enclosure, nor of the contrast between inhumation at Repton and cremation burial under mounds at the Ingleby cemetery only 4 km downstream on the same bank of the Trent (Posnansky 1955; 1956; Wainwright 1947). These and other problems, not least the interpretation of the mass burial in the mound, will form the subject of the final reports now in preparation as *Investigations at Repton* (Grenville forthcoming; Biddle & Kjølbye-Biddle forthcoming (b); Wickenden *et al.* forthcoming). The first of these, dealing with the human populations from the four cemeteries and from the mound burial, is complete and subject to arrangements for publication should appear in 1993.

Grave 511: catalogue of grave goods

As this is one of the first, if not the first, Viking weapon inhumation burial to have been excavated under controlled conditions in England, a full catalogue of the grave goods is published here in advance of the final publication. The bold numbers refer to the items on FIGURES 5 and 6; the four-figure numbers in [] are the site Recorded Find numbers.

Necklace

1 [7092] Thor's hammer, silver alloy, perhaps

silver/gold, without plating. The loop is broken off and is now in the hole of bead **2**, but fits at right-angles to the hammer head. Undecorated, but forging marks visible. Extant L to break: 16.5 mm; original L: *c.* 24 mm; W: 15 mm; Th at head: 2.5 mm; Th at break: 3.4 mm.

Found at the neck, above the right shoulder, between beads **2** and **3**.

2 [7126] Bead, white glass, opaque and pitted. Pierced by a straight-sided hole in which is corroded a silver suspension loop of square cross-section originally attached to **1**, the silver Thor's hammer, which was found immediately adjacent. D of bead: 20 mm; D of hole: 7 mm.

Found at the neck, above the right shoulder, with **1** and **3**.

3 [7093] Bead, blue glass, surface pitted and chipped (or flawed). Straight-sided, somewhat rectangular hole.

Three circular insets, two well preserved and consisting of a green core surrounded by white glass; the third larger, degraded, and crumbling, with considerable loss of material, apparently consisting of several ?twisted rods of blue, green and white glass. D of bead: 25 mm; D of hole: *c.* 8 mm.

Found at the neck, above the right shoulder, with **1** and **2**.

4 [7117] Fitting, leaded bronze with silver present. The sides are parallel over a length of 14 mm. Pierced at the wide end and broken across the piercing. The edges of the other end are lost, narrowing the piece to an irregular strip 2 mm wide which is broken off. The surface is finely polished with traces of engraved lines. The other surface has possible traces of organic remains, unidentified. The object may have been part of a clasp for the necklace. L: 25 mm; W: 5 mm; Th: 1 mm.

Found at the neck, above the left shoulder, to the north of **1–3**.

Belt and strap fittings

5 [7108] Buckle, copper-alloy with iron rivets. Rounded loop of flattened cross-section, decorated on its outer surface with ten ring-and-dot devices. The loop, which has been analysed, is a leaded tin bronze. The plate consists of a single sheet folded around the loop and secured by iron rivets, which would have held a belt at least 19 mm wide. The outer corners of the upper plate have been cut to a chamfer and the surface is decorated with twelve ring-and-dot devices in three rows of four. The pin, which swivels around the loop through a rectangular slot in the fold of the plate, tapers to a 'neck' before expanding to an ovoid terminal set off from the neck of the pin by a slight step. The terminal is incised with an axial line and there are traces of other features suggesting eyes and nostrils as if the pin was decorated with an animal head. The corrosion products have preserved traces of various organic deposits, including minute fragments of Z-spun textile, possibly a twill, what may be leather (?pig-skin) and a black waxy substance, possibly resin. Overall L: 41 mm; W of loop: 32 mm; W of plate: 19 mm.

Found at the right waist, under the bones of the right forearm.

6 [7114] Buckle, copper-alloy: the pin is tin bronze, but the remainder is too corroded for XRF analysis. Sub-rectangular loop of rounded cross-section. Simple pin swivelling in a cut in the fold of a rectangular plate which is fastened by two copper-alloy rivets. The plate contains the possible remains of a strap, which would have been at least 18 mm wide. Fine hair-like impressions preserved on both faces of the plate may be traces of the suede-side of a skin or leather (*cf.* buckle 5). Overall L (unfolded): 45 mm; W of loop 26 mm; W of plate 18 mm.

Found attached to the scabbard of sword **7**, where it presumably adjusted a suspension strap running up to the belt.

Sword group

7 [7113] Sword, iron, in wooden scabbard lined with fleece and covered with leather. The blade is double-edged and tapers to a slightly rounded point. It is *c.* 4 mm thick and has two ridges longitudinally down each face, forming a 'blood groove', probably the result of welding the cutting edge to the core. The blade is very corroded and extensive radiography has revealed no sign of pattern welding or of an inscription.

The haft is integral with the blade and passes through the hand-guard and pommel-mount. The grip is made of softwood in longitudinal strips, covered by woollen textile (a plain tabby weave, Z-spun), perhaps applied as a binding. No decoration was found by radiography.

The scabbard is made from two lengths of wood shaped to the blade outline. It is lined with hairy skin, probably sheepskin, the hairs lying directly on the blade. The outside of the scabbard is covered with leather. The wood of the scabbard had been attacked before burial by the common woodworm.

Traces of textile (a plain weave, the thread S-spun) on the side of the sword which lay against the leg probably came from the man's clothes or from a wrapping around him.

Overall L: 897 mm; L of blade: 773 mm; W of hand-guard: 105 mm; W of pommel mount: 85 mm; W of blade: 62 mm; Th of blade: 4 mm.

Found against the left leg, lying on its edge, much as it would have hung in life. The buckle **6** was attached to the scabbard, probably for adjusting a strap running

up to the belt. Knife **9** lay parallel to the grip, its point to the west, and the folding knife **10** lay beneath the knife, balanced against the end of the pommel mount.

8 [7116] Key, iron, completely corroded. Simple bit with a single ward-cut, set in line with the stem which widens upwards, the sides becoming convex before narrowing to a looped terminal, now largely missing. L (from X-ray): 78 mm; max. W of bit: 18 mm; W of stem: 15 mm.

Found beside the left lower leg, to the north of the sword **7**.

9 [8671] Knife, iron with traces of a wooden handle, replaced by iron oxides. Whittle-tang blade, badly corroded and misshapen. The tang is longer than the blade, from which it is set off. The blade is extremely worn, but the back is straight before curving down to the tip.

Remains of a wooden handle survive at the junction of blade and tang. Overall L: 165 mm; L of tang: c. 95 mm; L of blade: c. 70 mm; W of blade 20 mm.

Found corroded to the hilt of sword **7**, above folding knife **10**.

10 [7115] Folding knife, iron with leather and textile, the iron completely corroded, the organic remains totally replaced by iron oxides. The knife consists of a blade folding into a case. The case is made of two iron plates, both slightly larger than the blade, rounded at one end and narrow at the other where they are pierced. At the unrivetted end the plates are welded together and their edges along one side turned inward, leaving the other side open for the blade. A rivet holds the plates together at the pierced end and acts also as a pivot for the blade, whose form cannot be made out on the radiographs. The case seems to have been covered with leather. Traces of textile lying on the leather are probably part of the textile associated with the body, as on the sword **7**. Overall L: 108 mm; W: 28 mm; Th: 20 mm.

Found corroded to the hilt of sword **7**, beneath knife **9**.

Offerings(?) or the contents of a box or bag placed between the thighs

11 [7110] Jackdaw, *Corvus monedula*, right humerus, broken at proximal end. Overall L: 46 mm.

Found between the thighs, in an area of soft earth, possibly indicating the former presence of a box or bag.

12 [7109] Wild boar, *Sus scrofa*, lower right canine tooth (tusk) from an adult animal. The tooth root was broken off anciently at about the jaw line. The rough irregular damage towards the tip opposite the wear facet was probably caused by fire. Overall L: 85 mm.

Found on the floor of the grave, placed between the upper thighs, at right angles to the body.

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