



An Anglo-Saxon Cemetery on Pilgrim's Way, near Wrotham, Kent

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May 2015

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An Anglo-Saxon Cemetery on Pilgrim's Way, near Wrotham, Kent

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Introduction

by Andrew B. Powell

Part of an Anglo-Saxon cemetery of late 6th–mid-7th century date was excavated *c.* 1 km north-west of Wrotham, Kent, as part of a programme of archaeological mitigation works undertaken in 2008–9 prior to the laying of the Farningham to Hadlow Natural Gas Pipeline (Fig. 1). As two Anglo-Saxon cemeteries are already known from the east side of Wrotham, at White Fields (Wrotham I) and Bradford Platt (Wrotham II) (Meaney 1964), the cemetery reported here is referred to as ‘Pilgrim’s Way’, after the ancient trackway beside which it lies.

The Pilgrim’s Way cemetery, centred on NGR 559470 159580, lay at the southern end of one of five mitigation areas along the pipeline route identified as having archaeological potential on the basis of desk-based assessment, walk-over survey and fieldwalking (RSK Environment Ltd 2008), and geophysical survey (Bartlett-Clark Consultancy 2007). Due to the significance of its discovery, and the detail required to adequately describe and discuss the graves and their contents, the cemetery is reported here separately from the findings from other sites along the pipeline; they are presented in a separate report (Powell 2015). Those findings included a Mesolithic flint scatter at New Ash Green, a series of Middle–Late Bronze Age unurned cremation burials west of Wrotham, a Late Iron Age–early Romano-British enclosure near Ightham Court west of Borough Green, a complex of Romano-British features (including enclosure and other ditches, pits and a large oven) at New Ash Green, and a probable Romano-British villa building in Fairlawne Park, Plaxtol.

Location, topography and geology

The cemetery site lies on the immediate north side of an ancient trackway, now called Pilgrim's Way, so called because it was once a route followed by pilgrims travelling from Winchester to Canterbury. Pilgrim's Way also formed part of a more long-distance prehistoric trackway (Harrow Way) that crossed southern England. At this location the trackway runs along the base of White Hill and Exedown, which form part of the prominent south-facing escarpment that marks the southern edge of the North Downs. The site, at *c.* 155 m above Ordnance datum (aOD), occupies farmland sloping towards the south-east, with extensive views across the Weald to the south. The underlying geology is Middle Chalk, with Upper Chalk capped by clay-with-flints on the scarp to the north, and Lower Chalk, then Gault, to the south (BGS sheet 287, Sevenoaks).

Site description

The exposed part of the cemetery, which occupied an area measuring *c.* 23 m east–west by 19 m north–south, included both simple graves and others located within monumental structures of very variable scale (Fig. 2). The largest of these (7034) was a substantial ring-ditch (or possible penannular ditch) with a central grave. There were also two east-facing penannular ditched monuments to its immediate south-east – one (7065) containing a single grave, the other (7175) containing two graves – and a small monument (7179) defined by a curved gully, perhaps another penannular ditch, on the southern edge of the ring-ditch.

Most Anglo-Saxon cemeteries in Kent contain many more graves than were exposed here (Stoodley, below), and it is likely that only part of the cemetery was uncovered. While the distribution of graves thins towards the east, with the two easternmost graves (7003 and 7023) possibly at the cemetery's eastern extent, there were no comparable indications of its northern, southern or western extents due to the limited area of excavation. Nonetheless, no graves were recorded within *c.* 3 m of the excavation's most southerly edge (nor in a watching brief area a further 15 m to the south). The distribution of the recorded graves suggests that monument 7034 may have been, or become, a focal point within the cemetery, and therefore possibly surrounded on all sides by a comparable density of graves and other monumental structures.

Most of the graves and associated features did not overlap, so that their relative dating relies mainly on their contents (see below); these indicate the use of the cemetery in the late 6th–mid-7th century. However, stratigraphic relationships were observed between a number of graves and mortuary monuments.

Graves

Eleven inhumation burials were excavated (Fig. 2). In many of them there had been significant bone loss, and the condition of the surviving bone was generally poor. In amongst them were five other grave-like features which contained no bone, and these *empty graves* are considered likely also to have been inhumation graves (Table 1); one of them (7115) contained a fragmentary glass bead which was probably a grave good. Four of the empty graves (7033, 7053, 7059 and 7115) were, like the two identifiable juvenile graves (7040 and 7095), relatively small, of a size suitable for children (between *c.* 0.9 m and 1.5 m long compared to the range of *c.* 1.8–3.2 for the adult graves), and it is possible that the less robust bone of such younger individuals had suffered complete decay.

Table 1 Grave summary (graves in mortuary monuments shown in bold); for details see the grave catalogue

Grave	Orientation: burial (grave)	Grave size	Sex	Age range	Evidence for chamber	Grave goods
<i>With human bone</i>						
7003	S–N	■	Male	Adult	-	W - P -
7006	S–N	■	Male	Adult	-	W K P -
7009	W–E	■	Female?	Adult	✓	- - - -
7010	S–N	■	Male	Adult	-	W K P -
7020	S–N	■	Male?	Adult	-	W K P -
7023	W–E	■	Female	Adult	-	- - - -
7040	S–N	■	Female?	Juvenile	-	- - P -
7049	S–N	■	Male	Adult	✓	W K P -
7067	S–N	■	Male	Adult	✓	W K P V
7077	S–N	■	Male	Adult	-	- K P -
7095	W–E	■	?	Juvenile	-	- K P V
<i>Without human bone</i>						
7033	(W–E)	■	-	-	-	- - - -
7047	(SE–NW)	■	-	-	-	- - - -
7053	(W–E)	■	-	-	-	- - - -
7059	(W–E)	■	-	-	-	- - - -
7115	(W–E)	■	-	-	-	- - P -

Key: ■ = over 1.8 m long; ■ = under 1.5 m long; W = weapon; K = knife; P = personal adornment/jewellery; V = vessel

The graves were orientated close to either south–north or west–east. Grave 7003 was orientated due south–north, while another seven, including the central grave in monument 7034, were orientated *c.* 15° east of south at their southern ends. Grave 7009 and probable grave 7003 (both within penannular ditched monument 7175) were orientated due west–east, while another two graves (and, perhaps significantly, three of the small empty graves) were orientated *c.* 15° south of west at their western ends. The only adult-sized empty grave (7047) had an anomalous NW–SE orientation; with a depth of only 0.08 m it was one of the two shallowest graves excavated.

Mortuary monument 7034

This monument comprised the richly furnished, approximately north–south aligned grave of an adult male (7067, see grave catalogue), located centrally within a probable ring-ditch (but possibly a penannular ditch open at the west) (7170), with a setting of evenly-spaced post-holes around the inside edge of the ditch (Fig. 2).

Grave 7067

Following the removal of the grave's upper fill, a clear distinction was visible at a depth of *c.* 0.2 m between deposits of sterile chalk rubble, 0.25–0.4 m wide, running down both sides of the grave, and a darker soil fill between them. At this depth there were also faint indications of thin, dark bands of soil, 50–100 mm wide, at the interfaces of these layers, which appear to represent the sides of a timber chamber, *c.* 0.65–0.75 m wide internally at the top and extending the full length of the grave (see Fig. 14a). These longitudinal stains were more clearly visible at a lower level within the grave, where they were 0.45–0.5 m apart, indicating that the chamber sides were probably angled slightly outwards (see Fig. 14a; Pl. 1). Here they lay at the interface between the chalk rubble backfill and a chalky fill, possibly backfill material that slumped into the chamber as its covering lid decayed and collapsed. The chalky fill overlay a dark brown soil, 0.08 m thick, which surrounded and covered the burial, the organic character of which is likely to be due to the combined decay of the body, organic materials placed within the grave, and the collapsed chamber lid.

In addition to the longitudinal stains, a number of lateral stains were observed, marking further timbers which appear to have divided the chamber into a series of compartment (as well as probably providing bracing for the chamber sides) (see Fig. 14a). Two lateral stains were observed at the grave's north (foot) end – one noted relatively high in the grave *c.* 0.3 m from the end, the other at a lower level *c.* 0.7 m from the end. Found within the resulting small compartment were five copper alloy vessel fittings (Object Numbers (ON) 222 and 240), a glass claw beaker (ON 229), and a bone comb (ON 239).

A further stain was noted, slightly askew, *c.* 0.5–0.7 m from the southern (head) end of the grave, although only at the higher level (see Fig. 14a). There was no clear indication for a yet another lateral timber closer to the southern end (to match that at the north), but this may have been disguised by the darker graves fills at this end. If there was a southern compartment, comparable to that at the north, it is unclear whether the two most southerly grave goods – two silvered drinking horn mounts (ONs 79 and 82) – lay within this compartment, or within the main burial compartment; the latter seems more likely given their proximity to the skull, and the fact that the lateral timber appears to have shifted slightly.

Although no identifiable grave goods clearly lay within any southern compartment, it is possible that objects or materials (possibly comestibles) were placed there that have not survived.

The main compartment, containing the skeleton and the majority of the grave goods (including all the weapons) (see Fig. 14b), measured c. 1.8 m long and, at the base, 0.55–0.6 m wide. The top of the skull lay close to the end of the main compartment, and although the feet and ankle bones were missing, the lowest surviving parts of the tibiae were 0.15 m from its other end.

Ring-ditch and post-hole setting

The surrounding ditch (7071) (Fig. 2), the western part of which lay outside the excavation area, was c. 13.3 m in external diameter (c. 10 m internal), and was 1.2–2 m wide and up to 0.4 m deep, with a variable irregular profile. It contained two fills – a slightly stony primary fill averaging c. 0.1 m thick, and a largely stone-free but calcareous upper fill (from which was recovered two residual sherds of early Romano-British pottery). There were no clear indications in the fill profiles of the erosion of either an internal mound or an external bank.

Four post-holes (from the north 7075, 7035, 7056 and 7105) lay just inside the ditch circuit, regularly spaced at 4.2–5 m intervals; they had similar profiles – c. 0.6 m in diameter and 0.2 m deep. It seems likely that their circuit continued to the west, there being room for another two at the same spacing lying outside the excavation area. A further, single post-hole (7037) lay slightly closer to the grave at the south-east.

Mortuary monument 7179

The upper fill of ditch 7071 was cut at the south by a child's grave (7095, see grave catalogue), which was partly encircled to its south by a length of shallow gully (7093) curving out from the ditch's outer edge (Fig. 2), perhaps part of a penannular ditch. The arc of the gully, which was c. 0.2 m wide and 0.04 m deep, had a projected external diameter of c. 2.4 m (c. 2 m internal), but was not discernible either cutting the ditch fill (probably due to its shallowness), nor evident within the ring-ditch interior. Given that the grave cut the ditch fills, it is likely that the gully did also; the gully contained no finds. Four possible stake-holes were recorded near the grave's eastern end.

Mortuary monument 7175

Ditch 7071 (and child's grave 7040, see grave catalogue) was also cut, at the east, by the western side of a penannular ditch (7190; Fig. 2) which encircled two east–west graves: that

of an adult female (7009) just north of centre, and any empty child-sized grave (7033) to the south (see grave catalogue).

Grave 7009

Grave 7009 contained evidence for an internal chamber, in the form of deposits of chalk rubble (7030), c. 0.5 m apart, lining the grave's two sides, with a narrow dark stain visible at the interface between the rubble on the north side and the chamber fill (7031) which overlay the burial (7017) (see Fig. 6). Although the rubble survived *in situ* only in places, the chamber appears to have extended the full length of the grave.

Penannular ditch

If the penannular ditch (7190) was constructed at the same time as the adult grave, that grave's slightly off-centre position suggests that the child-sized grave may have been for a contemporary, rather than a later burial. The ditch, which was c. 0.3–0.6 m wide and 0.2 m deep, enclosed an area c. 3.2 m wide (north–south) with a 2.7 m wide opening at the east; it contained no finds.

Mortuary monument 7065

The southern edge of penannular ditch 7190 (mortuary monument 7175, above) overlapped, by no more than c. 0.2 m, with the northern side of a second penannular ditch (7189; Fig. 2) which encircled the north–south grave of an adult male (7049) (see grave catalogue).

Grave 7049

This grave (7049) also had evidence for a timber chamber, as indicated by deposits of chalk rubble backfill (7051) against the grave sides; although that on the eastern side appears to have slumped inwards, these deposits were generally c. 0.5 m apart (see Fig. 13). There was no visible organic stain at the interfaces with the grave fill (7052), which overlay the burial remains (7050).

Penannular ditch

The circuit of ditch 7189, 0.2–0.5 m wide and 0.2 m deep, enclosed an area c. 4.3 m wide internally with a 1.4 m wide opening at the east. A single sherd of residual Romano-British pottery was retrieved from its southern terminus.

The nature of the relationship between the two overlapping penannular ditches is of some significance for the chronology and dating of the cemetery (see Discussion, below).

In the site drawings (both plan and section) ditch 7189 is shown as later than ditch 7190. However, this relationship appears much less clear in site photographs, and the possibility must be allowed for that the relationship between them was in fact the reverse, with penannular ditch 7190 (and hence monument 7175) being the later of the two, something strongly suggested by the early date ascribed to some finds in grave 7049 (see below).

Other possible cemetery features

Other, possibly related features in the vicinity of the cemetery (Fig. 2) include an undated subcircular pit or post-hole (7153), *c.* 0.8 m in diameter and 0.44 m deep, with steep straight sides and a concave base, which lay just beyond its apparent eastern extent (Fig. 2). There was also a short length of undated ditch (7156), *c.* 1.6 m wide and 0.2 m deep, which ran south-west from the northern edge of the excavation area, narrowing, possibly to a terminal, as it curved towards the west.

Further to the east, two small post-holes (7085 and 7087), each *c.* 0.4 m in diameter and 0.2 m deep, lying *c.* 2.5 m apart in a south–north line, were flanked *c.* 1 m to the east by a 3.2 m long gully (7083), together forming a small undated structure (7066) of unknown function (Fig. 3).

Pilgrim's Way

A 4.4 m wide linear feature (7081) ran east–west across the excavation to the north-east of the exposed cemetery features (see Fig. 3). The continuation of its line to the west lay outside the excavated area, so that its relationship to any cemetery features in this area was not established. It had moderately steep, stepped sides, *c.* 0.4 m deep on the northern (uphill) side, but only *c.* 0.1 m deep to the south, and a very slightly concave base. A narrower (*c.* 1.4 m wide) unexcavated feature lay almost parallel to it, 3–4 m to its north, ending at a possible terminal *c.* 15 m from the eastern edge of the excavation, while a lynchet (7088) up to 14 m wide (from which five sherds of early Romano-British pottery were recovered) lay *c.* 26 m to its north.

The east–west alignment of all these features reflects the wider topography of the area, but also matches the line of Pilgrim's Way. The present line of the trackway lies just 5 m south of the excavation but it is possible that this is the result of its course having been moved slightly to the south at some time in the past. If so, feature 7081 may represent an earlier line. In the absence of evidence to date this feature, however, it is unclear whether such a move pre-dated or post-dated the cemetery. If the move post-dated the cemetery, then this possible trackway may have defined its northern boundary. By the same token, if the move pre-dated the cemetery (or was even been broadly contemporary with it) the trackway may have defined

its southern boundary; in fact, the slight curve to the south which the present trackway takes to the west of the cemetery (Fig. 1) may be an indication that its line was avoiding the burial ground.

The cemetery lies just north-east of the present ‘crossroads’ of Pilgrim’s Way, which to the east passes just north of Wrotham where two Anglo-Saxon burial grounds have previously been found, and Exedown Road which runs north from Ightham (a settlement with possible early Anglo-Saxon origins – *Ehta-ham* in Old English, possibly from a Jutish personal name; Mills 1991) (Fig. 1). It is unclear how old Exedown Road is, but is at least possible that the cemetery was located at an existing crossroads.

Grave Catalogue

by Nick Stoodley

All grave goods have been allocated unique Object Numbers (ONs). Full details of mineral-preserved organic remains are given in Appendix 1. KEY: L length; W width; D diameter, T thickness

Grave 7003 (burial 7004) (Fig. 4)

Irregular sub-apsidal cut, shallow concave sides and flat base, 1.82 m x 0.62 m, 0.08m deep. S–N burial, extended, supine, arms by sides. Single fill: 7005

Human bone: c. 70%, adult c. 35–45 yr. male

Grave goods:

ON 42: Iron sword. Long two-edged (parallel-sided) pattern welded type with pommel missing. L c. 878 mm; W c. 53 mm; T c. 4 mm.

Organic remains: traces of hilt, possibly of horn; scabbard remains – pelt/fleece and wood (ash).

ON 43: Copper alloy strap end. Triangular-shaped. Six rivet holes (two rivets *in situ*). L 17 mm; W 7 mm.

ON 46: Copper alloy belt mount. Sub-triangular with a sub-circular perforation. Six rivet holes (two rivets *in situ*). L 18 mm; W 9 mm.

ON 47: Copper alloy buckle and rectangular plate. Oval loop 7 mm x 14 mm, pin anchored around loop and resting on it, L 10 mm. Plate bent over loop with two *in situ* rivets. L 11 mm; W 10 mm. Overall L 17 mm.

Grave 7006 (burial 7007) (Fig. 5)

Sub-apsidal cut, moderate straight sides and flat base, 2.47 m x 1 m, 0.2 m deep. S–N burial, extended, supine, arms by sides. Single fill: 7008

Human bone: c. 50%, adult >45 yr. male

Grave goods:

ON 50: Iron spearhead. Long angular straight-sided blade of lozengiform section; Swanton Type E3. L c. 426 mm; max. W 33 mm.

Organic remains: traces of wood (ash, *Fraxinus* sp.) in socket, and textile and wood on blade.

ON 55: Fragmentary iron knife. Tip missing; back of blade appears to be curving down to tip; indeterminate type. L 192 mm; W 20 mm; T c. 4 mm.

Organic remains: remains of leather sheath.

- ON 387: Fragmentary iron buckle and plate. Oval loop, fragmentary pin anchored around loop. Plate bent over loop with four *in situ* rivets; distance between plates is c. 8 mm, indicating a substantial belt, probably of cattle hide or pigskin. L c. 25 mm; max. W c. 40 mm.

Organic remains: traces of threads and possible leather on the buckle loop.

Grave 7009 (burial 7017) (Figs 2 and 6)

Sub-apsidal cut, near-vertical sides and flat base, 2.45 m x 0.80 m, 0.43 m deep; central within penannular ditch 7190 (grp. 7175). W–E burial, extended, supine, arms by sides. Traces of timber chamber (7013); two fills (7030 and 7031)

Human bone: c. 50%, adult c. 35–45 yr. ?female

Grave goods: none

Grave 7010 (burial 7011) (Figs 7 and 8)

Irregular sub-apsidal cut, near-vertical sides and flat base, 2.98 m x 1.56 m, 0.52 m deep. S–N burial, extended, supine, arms by sides. Single fill: 7012

Human bone: c. 75%, adult c. 23–29 yr. male

Grave goods:

- ON 57: Iron sword. Long two-edged (parallel-sided) pattern welded type with simple pommel, guard and a possible ring at the hilt. L c. 895 mm; W c. 52 mm; T c. 10 mm.

Organic remains: scabbard remains – pelt/fleece, wood (willow, *Salix* sp.; or poplar, *Populus* sp), possible leather, textile.

- ON 58: Iron spearhead. Leaf-shaped blade of lozengiform section; Swanton Type C2. L c. 256 mm; max. W 37 mm.

Organic remains: wood (mature ash) in socket; textile on outside of socket.

- ON 59: Fragmentary iron shield boss. ?Straight walls and convex/straight cone terminating in a button apex. D c. 123 mm, flange c. 15 mm wide, one rivet *in situ*. Dickinson and Härke (1992) Type 6. Fragmentary and incomplete shield grip, terminal slightly expanded, one rivet *in situ*; Dickinson and Härke Type I a1. L c. 124 mm.

Organic remains: wood (willow/poplar) from shield and grip; remains of leather and coarse textile around the grip (see Pl. 4).

- ON 60: Copper alloy pyramidal stud. Four faces, silvered and inlaid with garnets/glass insets. The stud is hollow with a band across the base. Each face is decorated with three interlocking garnet triangles separated by a wide band, flanked by a single grooved line. A garnet may be present in the square setting at the apex. Base 14 mm²; H 8 mm. (see Pl. 5)

- ON 63: Iron nail (location not recorded; not illustrated).

- ON 64: Copper alloy pyramidal stud. Four faces, silvered and inlaid with garnets/glass insets (several missing?). The stud is hollow with a (fragmentary) band across the base. Each face is decorated with three interlocking garnet triangles separated by a wide band, flanked by a single grooved line. L 15 mm; W 14 mm; H 8 mm. (see Pl. 5)

- ON 65: Copper alloy pyramidal stud. Four faces, silvered and inlaid with garnets/glass insets. The stud is hollow with a band across the base. Each face is decorated with three interlocking garnet triangles separated by a wide band, flanked by a single grooved line. Base 14 mm²; H 7 mm. (see Pl. 5)

- ON 66: Fragmentary copper alloy buckle and rectangular plate. Loop has faint incised lines. Oval loop 7 mm x 12 mm, pin anchored around loop and resting on it, L 10. Plate bent over loop with three (now separate) rivets. L c. 10 mm; max. W c. 7 mm. Overall L c. 17 mm.
- ON 67: Iron buckle and fragmentary rectangular plate. Oval loop 16 mm x c. 8 mm, pin anchored around loop and resting on it, L 10 mm. Plate bent over loop. L 4 mm; max. W 15 mm. Overall L 15 mm.
- ON 68: Iron knife; fragmentary tang (?nail L 10 mm, *in situ*). Cutting edge appears to curve up to point, back of blade curves down to tip. Böhner (1958) Type A. L 125 mm; W c. 17 mm; T c. 4 mm.
Organic remains: remains of horn handle and leather sheath.
- ON 69: Iron nail (not illustrated).
- ON 70: Pair of iron shield board studs. Ds 24 mm and 20 mm.
- ON 71: Iron and copper alloy/silvered shield board stud. D 24 mm.
- ON 72: Fragmentary iron spear ferrule. L c. 89 mm.
Organic remains: traces of wood (ash) in socket.

Grave 7020 (burial 7021) (Figs 9 and 10)

Irregular subrectangular cut, steep concave sides and flat base, 2.82 m x 1.10 m, 0.47 m deep. S–N burial, supine. Single fill: 7022

Human bone: c. 45%, adult c. 40–50 yr. ?male

Grave goods:

- ON 294: Iron spearhead. Angular straight-sided blade (damaged) of lozengiform section; Swanton Type E2. L c. 225 mm; max. W 39 mm.
- ON 295: Fragmentary iron knife. Cutting edge curves up to point, back of blade curves down to tip. Böhner Type A. L 119 mm; W c. 21 mm; T c. 5 mm. Possible weld line.
Organic remains: traces of horn handle and leather sheath; textile on one side of the blade.
- ON 296: Fragmentary iron shield boss, ?Straight walls and convex/straight cone terminating in a button apex. D c. 122 mm, flange c. 14 mm wide, three/four rivets *in situ*. Dickinson and Härke Type 6. Fragmentary and incomplete shield grip, ?three rivets *in situ*, terminals slightly expanded; Dickinson and Härke Type I a1. L c. 132 mm.
Organic remains: traces of wood (willow/poplar) and leather on boss and grip.
- ON 297: ?Pair of iron ?shield board studs with silvered rivets. Ds 46 mm.
- ON 298: Iron buckle loop and copper alloy plate. Oval loop c. 15 mm x c. 20 mm, pin missing. Plate bent over loop with two *in situ* rivets. L 13 mm; W 11 mm. Overall L c. 30 mm.
- ON 299: Fragmentary pursement/firesteel. Triangular shape with incurving terminals. L c. 140 mm; W 31 mm.
Organic remains: traces of leather and wood (possibly boxwood, *Buxus* sp.).
- ON 300: Copper alloy fragment ?Buckle loop, W 13 mm.

Grave 7023 (burial 7024) (Fig. 11)

Irregular subrectangular cut, shallow irregular sides and irregular base, 1.81 m x 0.90 m, 0.37 m deep. W–E burial, extended, supine, arms by sides. Single fill (7025)

Human bone: c. 35%, adult >50 yr. female

Grave goods: none

Grave 7033 (Fig. 2)

Sub-apsidal W–E cut, steep sides and concave base, 0.95 m x 0.45 m, 0.12 m deep; within penannular ditch 7190 (grp 7175). Single fill: 7032

Human bone: none

Grave goods: none

Grave 7040 (burial 7055) (Fig. 12)

Sub-apsidal cut, 1.33 m x 0.63 m, 0.30 m deep. S–N burial, crouched, on right side, left arm beneath chin, right arm possibly wrapped around chest. Single fill (7039)

Human bone: c. 70%, juvenile c. 6–7 yr. ?? female

Grave goods:

ON 78: Copper alloy buckle (at angle to) and rectangular plate. Oval loop 6 mm x 15 mm, pin anchored around loop and resting on it, L c. 4 mm. Plate bent over loop with two rivets *in situ*. L 11 mm; max. W 10 mm. Overall L 15 mm.

Grave 7047 (Fig. 2)

Sub-apsidal SE–NW cut, shallow concave sides and flat base, 2.50 m x 1.01 m, 0.08 m deep. Single fill: 7048.

Human bone: none

Grave goods: none

Grave 7049 (burial 7050) (Figs 2 and 13)

Sub-apsidal cut, steep straight sides and flat base, 2.77 m x 0.93 m, 0.45 m deep; central within penannular ditch 7189 (grp. 7065). S–N burial, extended, supine, arms by sides. Evidence for timber chamber; two fills (7051 and 7052)

Human bone: c. 69%, adult >40 yr. male

Grave goods:

ON 73: Fragmentary iron spearhead. Angular concave-sided blade of lozengiform section; Swanton Type H3 (? transitional type). Blade is decorated with an ?inlaid cross within a circle motif. L c. 569 mm; max. W 47 mm.

Organic remains: wood (hazel, *Corylus* sp.) in socket.

ON 74: Iron spear ferrule. L 100 mm.

ON 75: Fragmentary iron shield boss. ?Straight walls and convex/straight cone terminating in a an apex of unknown shape. Diameter unknown, flange c. 14 mm wide, four rivets. Dickinson and Härke Type 6.

ON 76: Fragmentary iron knife. Straight cutting edge curves up to point, angled back of blade curves down to tip. Böhner Type C. L 183 mm; W c. 21 mm; T c. 5 mm.

ON 77: Fragmentary iron buckle loop and plate. Oval loop c. 20 mm x c. 30 mm, pin anchored around loop and resting on loop, L c. 25 mm. Plate ?bent over loop with three *in situ* rivets. L c. 15 mm; W c. 24 mm. Overall L c. 65 mm.

Organic remains: traces of leather and textile.

Grave 7053 (Fig. 2)

Irregular sub-apsidal W–E cut, irregular sides and irregular base, 1.11 m x 0.56 m, 0.16 m deep. Single fill: 7054.

Human bone: none

Grave goods: none

Grave 7059 (Fig. 2)

Irregular W–E cut, moderately steep sides and flat base, 0.87 m x 0.56 m, 0.23 m deep. Single fill: 7060.

Human bone: none

Grave goods: none

Grave 7067 (burial 7068) (Figs 14–18)

Irregular sub-apsidal cut, vertical sides and flat base, 3.20 m x 1.70 m, 0.80 m deep; central within ring-ditch 7071 (grp. 7034). S–N burial, extended, supine, arms by sides. Traces of chamber (7161–5); five fills (7068, 7070, 7160, 7166–7)

Human bone: c. 45%, adult c. 18–25 yr. male

Grave goods:

ON 79: Gilt copper alloy and silver drinking horn mount. A U-shaped rim with three vertical four-fluted bands located at the panel joins. Three separate panels *Pressblech* decorated with Style II animal art contained within a pelleted border. Below is a narrow band decorated with four horizontal flutes. D 63 mm; Th rim 4.5 mm; L rivet 5 mm. (see Pl. 7)

Organic remains: traces of horn.

ON 82: Gilt copper alloy and silver drinking horn mount. A U-shaped rim with three vertical four-fluted bands located at the panel joins. Three separate panels *Pressblech* decorated with Style II animal art contained within a pelleted border. Below is a narrow band decorated with four horizontal flutes. D 64.5–66 mm (at broken edge); H 18.5–20 mm; Th rim 4.5 mm; L rivet 5 mm. (see Pl. 7)

Organic remains: traces of horn.

ON 84: Copper alloy repair clip. L 12 mm; W 6 mm.

ON 222: Silvered copper alloy fitting (rim piece). Eight rivet holes, four rivets *in situ*. L 39 mm; W 48 mm.

ON 223: Fragmentary iron sword. Long two-edged (parallel-sided) with guard. L c. 915 mm; W c. 60 mm; T c. 10 mm. (Includes ON 216: fragments of the scabbard)

Organic remains: traces of horn hilt, and scabbard – wood (willow/poplar), pelt/fleece.

ON 224: Fragmentary iron spearhead. Angular straight-sided blade of lozengiform section; Swanton Type E2. L c. 300 mm; max. W 38 mm.

Organic remains: traces of wood (willow/poplar) in socket, textile remains on blade.

ON 225: Iron shield boss. Straight walls and convex/straight cone terminating in an apex of button shape. D c. 130 mm, flange c. 12 mm wide, ?four rivets *in situ*. Dickinson and Härke Type 6. Fragmentary shield grip with one rivet *in situ*, terminals curved; Dickinson and Härke Type I a1. L c. 130 mm.

Organic remains: wood (willow/poplar) attached to boss and grip.

ON 226: Fragmentary iron knife. Back of blade curved down to point, straight cutting edge. Böhner Type C/Everson (1987) 4. L 98 mm; W c. 18 mm; T c. 4 mm.

Organic remains: remains of horn handle and leather sheath.

ON 227: Fragmentary copper alloy cruciform fitting, possibly attached to a wooden vessel. Punched stamps in a border of tiny ?punched stamps. The terminal of each arm is pierced by a dome-headed rivet. L 20 mm; L 10 mm (rivet).

Organic remains: traces of wood (ash).

ON 228: Fragmentary copper alloy cruciform fitting, possibly attached to a wooden vessel. Punched stamps in a border of tiny ?punched stamps. Pierced at either end by rivets. L 18 mm (strip); W 7 mm; L 10 mm (rivet).

- Organic remains:* traces of wood (ash).
- ON 229: Fragmentary light blue-green glass claw beaker. A conical beaker with a slim body, upright rim and pedestal base. Two zones of horizontal trails: rim and the middle of the body. Two rows of four close-set hollow claws positioned on the upper and middle part of the body in a zig-zag formation; the bottom row partly overlapping with the lower zone of horizontal bands. The claws are decorated with applied indented vertical trails. Closest in type to Evison (1982) Type 4a claw beaker. D 50 mm; H c. 220–240 mm. (Pl. 9)
- ON 230: Fragmentary iron spear ferrule. L c. 75 mm.
Organic remains: traces of wood (willow/poplar) in socket.
- ON 231: Triangular box hinges.
Organic remains: traces of wood.
- ON 232: ?Fragment of knife blade ON 234. L 65 mm; W 19 mm; T c. 5 mm.
Organic remains: traces of leather sheath.
- ON 233: Triangular box hinges.
Organic remains: traces of wood.
- ON 234: Fragmentary iron knife (mainly tang). Indeterminate type. L 52 mm; W c. 15 mm; T c. 4 mm.
Organic remains: remains of horn handle.
- ON 235: Two pairs of iron shield board fittings. a) Ds 37 mm and 32 mm; b) Ds 33 mm and 30 mm.
Organic remains: traces of leather, wood (willow/poplar) and threads.
- ON 236: Copper alloy fitting, possibly attached to a wooden vessel. Punched stamps in a border of tiny ?punched stamps; terminals pierced by dome-headed rivets. L 15 mm; W 6 mm; L 5 mm (rivet).
Organic remains: traces of wood (ash).
- ON 237: Fragmentary copper alloy fitting, possibly part of a wooden vessel. Punched stamps in a border of tiny ?punched stamps; single dome-headed rivet. L 7 mm; W 5 mm; L 8 mm (rivet).
Organic remains: traces of wood (ash).
- ON 238: Fragmentary iron buckle and ?rectangular plate. Oval loop c. 20 mm x c. 21 mm; pin resting on loop, L c. 15 mm. Plate bent over loop with two rivets. L c. 20 mm; W c. 20 mm. Overall L c. 40 mm.
- ON 239: Bone comb with iron rivets. Composite type, double-sided, heavily abraded; traces of incised interlaced ring-and-dot motifs on side-plates.
- ON 240: Four copper vessel fittings (rim pieces). L 28 mm; 30 mm (the rivets *in situ*); L 16 mm; W 20 mm (three rivets *in situ*); L 26 mm; 5 mm (one rivet *in situ*); L 15 mm; 15 mm (three rivets *in situ*).
- ON 245: Unidentified iron fragment. L c. 44 mm; W c. 20 mm.

Grave 7077 (burial 7078) (Fig. 19)

Irregular sub-apsidal cut, very steep sides and flat base, 2.12 m x 0.82 m, 0.40 m deep. S–N burial, extended, supine, arms across the waist. Single fill (7079)

Human bone: c. 80%, adult c. 35–45 yr. male

Grave goods:

- ON 80: Iron knife. Back of blade angled down to point, straight cutting edge. Böhner Type C. L 174 mm; W c. 21 mm; T c. 6 mm.
Organic remains: remains of leather scabbard and horn handle.
- ON 81: Copper alloy buckle (at angle to) and rectangular plate. Oval loop 9 mm x 18 mm; pin anchored around loop and resting on it, L 10 mm. Plate bent over loop with three *in situ* rivets. L 14 mm; max. W 13 mm. Overall L 20 mm.

Grave 7095 (burial 7096) (Figs 2 and 20)

Sub-apsidal cut, near-vertical sides and flat base, 1.46 m x 0.70 m, 0.46 m deep; central with ?penannular ditch 7093 (grp 7179); cut fill of ring-ditch 7071 (grp. 7034). W–E burial. Single fill (7097)

Human bone: c. 3% (skull), juvenile c. 5–6 yr.

Grave goods:

ON 218: Two glass beads. a) Fragmentary faience blue Roman melon bead, D 22 mm; b) green Roman cylinder bead (Roman cane), D 5 mm.

ON 219: Fragmentary copper alloy pin with perforated head. L 33 mm.

ON 220: Iron knife. Back of blade angled down to point, straight cutting edge. Böhner Type C. L 175 mm; W c. 17 mm; T c. 6 mm.

Organic remains: traces of leather scabbard and textile.

ON 221: Pottery vessel. A complete, unbroken vessel. Small, sub-biconical jar with an elongated, upright neck, in an organic-tempered fabric, but relatively fine. Thin-walled and well-finished.

Grave 7115 (Fig. 2)

Sub-apsidal W–E cut, near-vertical straight sides and flat base, 0.87 m x 0.57 m, 0.33 m deep. Single fill: 7116

Human bone: none

Grave goods:

ON 241: Fragmentary glass bead. Opaque red barrel with wavy yellow line (?Koch 20); D 6 mm. (Fig. 21)

Human bone

by Kirsten Egging Dinwiddy

Introduction

The skeletal remains of 11 inhumation burials were subject to analysis. Each burial was made in a separate grave, three of which had evidence for timber chambers. A number of graves lay within mortuary monuments suggesting some form of social distinction regarding the buried individual (Fig. 14).

Methods

Bone condition was recorded in accordance with McKinley 2004, fig. 6.1–7). Age was estimated using tooth and skeletal development (Beek 1983; Scheuer and Black 2000), and age-related changes to the bone (Buikstra and Ubelaker 1994). Sex was assessed from the sexually dimorphic traits of the skeleton (Bass 1987; Buikstra and Ubelaker 1994); where the sexing criteria were compromised the sex may be qualified (‘??’ possible/ ‘?’ probable).

Measurements were taken and skeletal indices calculated where possible (Brothwell 1972; Brothwell and Zakrzewski 2004; Trotter and Gleser 1952; 1958; Bass 1987; Schwartz 1995). Non-metric traits were also recorded (Berry and Berry 1967; Finnegan 1978).

Results

A summary of the results is presented in Table 2; full details are in the archive.

Disturbance and condition

The bone is in poor to very poor condition, most (81.8%) being at least in part grade 5+ (very heavy surface erosion and loss of morphology). Heavy root etching and erosion were the primary factors in degradation. Fragmentation is mostly moderate to heavy, occurring predominantly as a result of fragility from decay. Poor preservation is a common problem in bone assemblages from certain parts of the county (Anderson and Andrews 1997, 214; Mays and Anderson 1995; McKinley 2006, 16). The skeletal remains from those graves with timber chambers were generally more degraded than from those without, whilst the remains found in truncated grave 7040 were the best preserved (grade 0–2: minimal surface erosion). Most of the remains from grave 7067 were particularly poorly preserved and reminiscent of split, weathered wood in appearance; the skull fared better than the rest of the skeleton, probably due to mineral infiltration from the gilt copper alloy mounts of the two drinking vessels found just above it, and possibly protection from whatever caused the backfill to be more organic-rich here (Fig. 3).

Skeletal recovery was moderate with 69–80% of the skeleton recovered from 45.5% of the graves. A similar proportion saw only 35–50% recovered (Table 2). The primary cause of poor recovery was bone degradation.

Table 2 Summary of the human bone analysis

Grave	Context	Deposit type	Quantif.	Age and sex	Pathology/morphological variation (mv)
7003	7004	inhumation burial	c. 70%	adult c. 35–45 yr. male	dental caries; periodontal disease; enamel hypoplasia; osteophytes – 1T & L4 apj, 1 r. rib; cortical defect – l. clavicle; mv – wormian bones
7006	7007	inhumation burial	c. 50%	adult >45 yr. male	<i>ante mortem</i> tooth loss; apical void; calculus; dental caries; enamel hypoplasia; mv – wormian bones
7009	7017	inhumation burial (chamber)	c. 50%	adult c. 35–45 yr. ?female	calculus; dental caries; periodontal disease; enamel hypoplasia; <i>cribra orbitalia</i>
7010	7011	inhumation burial	c. 75%	adult c. 23–29 yr. male	apical void; calculus; periodontal disease; fracture – r. clavicle; mastoiditis – r.; osteophytes – S1 bsm; cortical defect – clavicles; mv – wormian bones, variant teeth, perforation C2
7020	7021	inhumation burial	c. 45%	adult c. 40–50 yr. ?male	calculus; dental caries; periodontal disease; <i>cribra orbitalia</i> ; periosteal new bone – r. tibia (?ulcer); osteophytes – 3 r. ribs; mv – wormian bones
7023	7024	inhumation burial	c. 35%	adult >50 yr. female	? <i>ante mortem</i> tooth loss; calculus; periodontal disease; osteoarthritis – C1–2 af, 1C apj, 1T apj
7040	7055	inhumation burial	c. 70%	juvenile c. 6–7 yr. ??female	calculus; dental caries (deciduous); enamel hypoplasia; <i>cribra orbitalia</i> ; periosteal new bone – r. radius, l. tibia, fibulae; destructive lesion – l. clavicle; thickened & hyperporotic palate
7049	7050	inhumation burial (chamber)	c. 69%	adult >40 yr. male	<i>ante mortem</i> tooth loss; apical void; calculus; dental caries; periodontal disease; hyper-eruption; periosteal new bone – l. femur, l. tibia (?ulcer); degenerative disc disease – L4; osteoarthritis – C4 apj; osteophytes – C1–2 af, C3 apj, C3–5 bsm, 1T bsm; mv – enlarged cranial foramina
7067	7068	inhumation burial (chamber)	c. 45%	adult c. 18–25 yr. male	calculus; enamel hypoplasia; crowding; <i>cribra orbitalia</i> ; mv – wormian bones (double epiteric), multiple infraorbital foramen, plural metal foramen
7077	7078	inhumation burial	c. 80%	adult c. 35–45 yr. male	<i>ante mortem</i> tooth loss; calculus; dental caries; enamel hypoplasia; <i>cribra orbitalia</i> ; solitary bone cyst – r. scaphoid; fracture – r. 2nd & 3rd Mt; Schmorl's node – 1T; degenerative disc disease – L4; osteoarthritis – C2–3 apj; osteophytes – C1–2 af, L4 & 1L bsm, 1 r. rib; pitting – L5 apj; enthesophytes/exostoses – r. clavicle, radii; mv – metopic suture, wormian bones
7095	7096	inhumation burial	c. 3% s.	juvenile c. 5–6 yr.	-

KEY: s = skull (where not all skeletal regions are represented); r = right; l = left; C, T, L & S = cervical, thoracic, lumbar & sacral vertebrae; apj = articular process joint; bsm = body surface margin; af = articular facet; Mt = metatarsal; mv = morphological variation

Demography

A minimum of 11 individuals (MNI) are represented in the assemblage (as summarised in Table 3). A further five probable graves were recorded (7033, 7047, 7053, 7059 and 7115) from which no human bone was recovered. The dimensions of four of these graves suggest that the burials (had there been any) were of immature individuals.

Most adult age ranges are represented, with the majority of adults (77.8%) living beyond *c.* 35 years of age. It was possible to suggest the sex of all the adults and one immature individual. In some cases there is a notable degree of sexual dimorphism – the skulls from graves 7006 and 7049 display extremely masculine traits, while the skeletal remains from graves 7023 and 7040 have particularly feminine features.

There is a predominance of adult males (*c.* 78% *vs.* 22%), akin to the proportions seen in the assemblage from Saltwood, Hythe (*c.* 73% *vs.* 27%; McKinley 2006, 15). The cemeteries at Mill Hill, Deal, and Cuxton, Rochester, had equal proportions of each sex (*ibid.*), whilst more females were recovered from the cemeteries in Ringlemere and Orpington (McKinley 2009). The low representation of immature individuals at Pilgrim's Way (*c.* 18%) is close to the 21% contemporaneous national average calculated by Anderson and Andrews (1997, table 18), and those seen in the assemblages from Finglesham, Kent (18.4%) and the East Kent Access Road (EKAR; 20%) (Grainger *et al.* 2006, 323–4; Egging Dinwiddy forthcoming). Higher rates were seen at Saltwood and Cuxton (24% and 30%, respectively; McKinley 2006, 15), and Mill Hill (40%; Anderson and Andrews 1997, 217), the latter being more representative of what one might expect from a 'normal' population.

The excavated portion of the Pilgrim's Way cemetery suggests it was, at least in part, exclusive, high status and dominated by the burials of males ie, not representative of the 'living' population.

Table 3 Demographic summary

Age range (yrs.)	Male	Female	Unsexed
<i>Immature</i>			
<i>c.</i> 5–12	-	(?)1	1
<i>Adult</i>			
<i>c.</i> 18–25	1	-	-
<i>c.</i> 20–30	1	-	-
<i>c.</i> 35–45	2	(?)1	-
<i>c.</i> 40–50	(?)1	-	-
>40	1	-	-
>45	1	-	-
>50		1	-
Total	7	3	1

Metric data

Stature estimates were calculated for two males: 7011 at 1.72 m (5' 8¼") and 7078 at 1.77 m (5' 10¼"). These estimates fit within the ranges seen in other contemporaneous sites (McKinley 2006, 17; Anderson and Andrews 1997, table 19), and the average calculated for the period of 1.72 m (Roberts and Cox 2003, 220).

The cranial index of male 7021 (73.8) indicates a long or narrow skull (dolichocranic), as is typical for the period (Marlow 1992, 114).

The platymeric index (expressing the degree of anterior–posterior flattening of the proximal femur) was calculated for the femora of male 7078. The difference between the sides may be indicative of uneven biomechanical stresses (right femur: 89.9, left femur: 98.0). Both scores are within the moderate (eurymeric) range, while most other contemporaneous assemblages from Kent show a tendency for more flattened (platymeric) femora (Anderson and Andrews 1997, table 22; McKinley 2006, 17; Egging Dinwiddy forthcoming).

The platycnemic index (reflecting the degree of anterior–posterior flattening of the tibia shaft) was calculated for both tibiae of two males (7050 and 7078). The former's are broad/wide (eurycnemic; right: 74.5, left: 75.0) whilst the latter's are moderately flat (mesocnemic; right: 66.0, left: 64.2). Little difference between the sides was noted. The few examples from Saltwood and Mill Hill were mostly eurycnemic, (McKinley 2006, 17; Anderson and Andrews 1997, table 22) whilst the males from EKAR are on average mesocnemic (Egging Dinwiddy forthcoming).

Achievement of average or greater stature implies that individuals had access to a good diet, were able to optimally utilise available resources, and/or were simply from average or taller stock. In the case of the skeletal indices which can be influenced by a range of factors including genetics, nutrition, pathology and biomechanical action, the albeit small sample is in keeping with local findings, and those from the wider region.

Morphological variation

Morphological variations can potentially indicate genetic relationships within a population (Berry and Berry 1967, 361), whilst others can be the result of activities involving repeated movements and stresses. However, the causes of many variations remain unclear and interpretations can be problematic (Tyrrell 2000; McKinley 2006, 15; 2009, 18). A few variations in skeletal morphology are evident in the Pilgrim's Way assemblage, some of which are repeated. Examples are listed in Table 2; the remainder are detailed in the archive.

Pathology

All but one individual had pathological lesions, although poor preservation limited the range, type and frequency of lesions that could be recorded. Dental disease affected all individuals; fractures, non-specific infections, nutritional deficiency and general joint degeneration are also in evidence, and summarised in Table 2.

Dental disease

Eleven partial or complete permanent erupted dentitions were observed (seven male, three female and one unsexed). Two dentitions comprised predominantly deciduous teeth.

Table 4 Summary of dental pathology rates

	No. teeth	No. tooth positions	Abscess	Ante-mortem loss	Calculus	Caries	Granuloma	Hypoplasia	Periodontal disease
Male	185	129	*1 (0.8%)	7 (5.4%)	86 (46.5%)	17 (9.2%)	3 (2.3%)	16 (8.6%)	32 (24.8%)
Female	65	53	-	2 (3.8%)	31 (47.7%)	2 (3.1%)	-	15 (23.1%)	22 (41.5%)
Unsexed	4	-	-	-	-	-	-	-	-
Total	254	182	*1 (0.5%)	9 (4.9%)	117 (46.1%)	19 (7.5%)	3 (1.6%)	31 (12.2%)	54 (29.7%)
Deciduous	32	11	-	-	7 (1.9%)	4 (12.5%)	-	-	-

Key: * = changes to tooth root, socket not observable

Dental calculus (calcified plaque/tartar) has been linked to a diet of predominantly soft, sticky carbohydrate-rich foods, for example porridge or gruel (Hillson 1986, 278). The condition was observed in between four and 32 teeth, in nine dentitions. Most deposits comprise slight tidemarks at the gumline and affect mandibular teeth most frequently (36% vs. 64%). Generally deposits were seen in fairly equal proportions across all teeth, with little difference between the sexes. Clearly associated with carious lesions, seven left deciduous teeth have a slight calculus build-up on all surfaces including the occlusal. The rate is a higher than the period average calculated by Roberts and Cox (32%; 2003, 193–4), although many in their sample have much higher prevalence rates. Contemporaneous sites in Kent show both lower and higher rates, eg, 21% at Saltwood and 63% at Cuxton (McKinley 2006, table 3), whilst the EKAR rate (50%) is closer to that of Pilgrim's Way (Egging Dinwiddy forthcoming). However, calculus can be dislodged post-depositionally so rates should be viewed as a minimum.

Periodontal disease (gingivitis, often associated with dental calculus) can lead to bone resorption, root exposure and eventual tooth loss (Ogden 2005). The disease was observed in between two and 20 alveoli in six dentitions. Most examples were slight (score 2) though severe

changes (score 3–4+) were seen in the mandibles of one male (7050), and one female (7024), both of whom were more than *c.* 40 years old at death. The purported age-related link to the severity of the condition (Wells *et al.* 2003, 162–3) is supported by the evidence from Pilgrim’s Way, and females were substantially more prone to the condition than males. Rates from Saltwood, Cuxton and Mill Hill are significantly lower than at Pilgrim’s Way, being 2.5%, 2.1% and 4.2% respectively (McKinley 2006, table 3), although poor preservation is likely to have been a factor. A more comparable rate (22%) was noted in the EKAR assemblage (Egging Dinwiddy forthcoming).

Dental caries (destruction of the tooth by acids produced by bacteria present in dental plaque) were recorded in between one and seven teeth in six permanent dentitions. The distribution is fairly even across the premolars and molars. Lesion origins are almost exclusively interdental at the tooth neck. Contrary to the generally recognised pattern, males were more prone to carious lesions than the females; although this probably reflect the preponderance of males in the assemblage. There is some correlation between age and the number of lesions, the largest number being present in a male over 45 years (7007). All of the affected permanent dentitions were from individuals over *c.* 35 years, most of whom were over *c.* 40 years; moderate to large carious lesions were also observed in deciduous molars. The overall rate is a little above the average for the period as calculated by Roberts and Cox (4.2%; 2003, 190–1, table 4.14), although rates up to *c.* 13% are listed in their table. Lower rates were seen at Saltwood (1.5%) and Mill Hill (3.8%) (McKinley 2006, table 3), whilst at 10.4% the EKAR rate is greater (Egging Dinwiddy forthcoming). The Cuxton prevalence is closest to that at Pilgrim’s Way (6.7%; McKinley 2006, table 3).

Apical voids in the supportive structures are the result of inflammation and death of the tooth pulp where it has been exposed to infection (eg, through injury, caries, fracturing or wear). Resultant granulation material can form a smooth walled cavity, however, cysts formed by other mechanisms can be similar in appearance (Soames and Southam 2005, 65–84). Infection can lead to the formation of a dental abscess (Katzenberg and Saunders 2008, 322–3; Dias and Tayles 1997, 548; Soames and Southam 2005, 45–63; Ogden 2008, 283–308). Cystic granuloma appear to have created apical voids in three alveoli in two mandibles. The disfigured roots of a loose maxillary third molar (male 7050) appear to have been subject to infection, ie, a dental abscess. The rate of apical voids (abscess and granuloma lesions) is comparable to the 2.8% average calculated for the period (Roberts and Cox, 2003, 191–2, table 4.15), and the 3.7% rate seen in the contemporaneous assemblage from EKAR (Egging Dinwiddy forthcoming).

Ante mortem tooth loss was noted in between one and five teeth in four dentitions. A slightly higher prevalence was noted in the male adults. Mandibular molars are most frequently

affected, and all are from adults over the age of *c.* 35 years indicating an age-related link. The overall rate is just over half that calculated for the period by Roberts and Cox (8%; 2003, 191, table 4.16), but is comparable to those from Mill Hill (5.5%) and Saltwood (3.4%) (McKinley 2006, table 3). The rates from EKAR and Cuxton are somewhat higher at 9.4% and 13.8% respectively (*ibid*; Egging Dinwiddy forthcoming).

Dental enamel hypoplasia occurs when nutritional or disease-related stresses disrupt the formation of dental enamel, resulting in linear or pitted defects in the tooth crown (Hillson 1986, 376; Lewis and Roberts 1997, 581). Mild to moderate linear defects were observed in between two and 24 permanent teeth from six dentitions, most commonly affecting the mandibular canines. In general stressful periods appear to have occurred between first and seventh years, with some clustering at three years (weaning) and five to seven years (around the maturing of the immune system). Multiple episodes of stress were evident in nearly all cases. Defects in the teeth of the affected juvenile indicate prolonged and/or recurrent periods of stress, increasing in severity towards her demise. The overall rate is slightly higher than the average reported by Roberts and Cox from their Anglo-Saxon sample (7.4%; 2003, table 4.12), but is comparable to that from EKAR (13.7%; Egging Dinwiddy forthcoming).

The relatively high dental pathology rates at Pilgrim's Way, associated with trapped food and irritation of the gums, indicate a slightly poorer oral hygiene and/or a diet richer in sticky carbohydrates compared to Saltwood and Mill Hill, and the national average. The pathological changes in the dentition of juvenile 7055 are probably due to underlying illness or infirmity (see below).

Non-masticatory tooth wear

Six individuals had wear patterns on the teeth, probably reflecting habitual holding or passing) various material/objects between the teeth. Soft fabrics or plant fibres are more likely to polish, while harder materials can lead to heavy chipping. Either may result in localised notching and extreme wear. Consuming gritty food, malocclusion and trauma could also be contributing factors. Similar wear was noted in some dentitions from EKAR and Saltwood (McKinley 2006, 22; Egging Dinwiddy forthcoming), and other sites outside the county (Stuckert 2010, 135; Egging Dinwiddy 2011, 103–4; 2012).

Metabolic disease

Cribra orbitalia (evident as pitting of the orbital roof) has been linked to iron deficiency anaemia a potential result of, for example, malnutrition, chronic blood loss, parasitic infestation and high pathogen load (Molleson 1993; Roberts and Manchester 1997, 166–9; Lewis and Roberts 1997, 583). Bilateral, mild to moderate and mostly healed cribotic lesions were

observed in 69.2% of the observable orbits from five individuals (45.5%; three adult males, an adult female and a juvenile); lesions are unhealed and moderately expressed in the juvenile orbits. All but one individual had other stress indicators (Table 2). The rate exceeds those from EKAR 34.5% (Egging Dinwiddy forthcoming) and Cuxton (50%) (McKinley 2006, 23). Even in the Collingbourne Ducis material, where stress indicators were frequent, the overall rate is rather less at 40.2% (Egging Dinwiddy and Stoodley forthcoming). The 24.6% average calculated for the period by Roberts and Cox (2003, 186–7, table 4.11) is based on limited True Prevalence Rates (TPRs).

It appears that the Pilgrim's Way individuals were particularly prone to iron deficiency anaemia in comparison to other populations in the local and wider vicinity, however, this may be a relic of the small sample, which is unrepresentative of the local 'living' population.

Infection

Infection or irritation of the periosteal membrane can lead to the formation of periosteal new bone, or in some cases bone destruction. Causes include direct trauma, infection and injury to adjacent soft tissues, or via the blood from elsewhere in the body. Particular distribution patterns may be characteristic of certain diseases, conditions and deficiencies, although it is seldom possible to diagnose individual cases from the bone lesions alone. The remains of four individuals have signs of chronic infection, giving quite a high rate of 36.4% of individuals (Crude Prevalence Rate (CPR)).

Deposits of periosteal new bone were identified in three individuals (Table 2). The two domed masses of lamellar new bone seen on the tibial shafts of older males 7021 and 7050 were probably caused by a chronic venous ulcer, or localised infection.

Multiple layers of periosteal new bone, from lamellar to woven, were observed on several limb bones of juvenile 7055. Whilst a specific diagnosis is not possible, other skeletal changes (eg, *cribra orbitalia* and enamel hypoplasia) indicate that this child probably suffered a chronic condition throughout her life which may well have contributed to her death.

A probable case of mastoiditis (an infection thought to be the result of *otitis externa* or acute *otitis media*; Flohr and Schultz 2009), which is often very painful and can lead to deafness was observed in the right mastoid process of a young adult male (7011) (Pl. 2).

Trauma

Traumatic injuries were rare, and comprised minor fractures and probable muscle/ligament strains (Table 2), all consistent with accidents and falls.

Healed, well-aligned fractures are evident in the right second and third metatarsals of a mature adult male (7078). Most metatarsal fractures result from direct trauma due to a heavy object falling onto the foot, though a twisting injury or repeated stress can also result in stress fractures (Adams 1987, 287). The most likely cause of injury in this case is a blow to the forefoot, originating from above.

A healed, slightly misaligned mid-shaft fracture was seen in the right clavicle of a young adult male (7011). Such fractures are usually a result of a fall onto the shoulder or an outstretched arm; misalignment often occurs (*ibid.*, 1987, 119).

Enthesophytes are new bone growths at tendon insertions as a consequence of repeat trauma from muscle exertion (Rogers and Waldron 1995, 23–5). Cortical defects are lacunae or gaps in the cortical bone and are usually similarly located. Both may be indicative of muscle trauma, either from specific injury or, more likely, from repeated stress. Other causative factors may include advancing age, various diseases, and a natural predisposition (*ibid.*, 53). It is not always possible to be conclusive with respect to the aetiology of particular lesions. Lesion locations are listed in Table 2, and infer that some of the males were participating in activity that involved repeated stress of the upper chest (as a minimum).

Joint disease

Joint diseases are amongst the most commonly recorded conditions in archaeological skeletal material. Similar lesions – osteophytes and pitting – may result from different disease processes, while some occur as lone lesions largely reflective of age-related wear-and-tear (Rogers and Waldron 1995, 25–26). Many of the conditions are known to increase in frequency and severity with age, and are commonly viewed as degenerative, though other factors can be involved, and aetiologies are often complex.

Parts of eight adults spines were recorded (seven males, one female), comprising 92 vertebrae (Table 5), with 180 extra-spinal joints available for observation (171 male, 9 female). Poor preservation has been severely limiting, and rates should be regarded as a minimums.

Table 5 Summary of number and rates of spinal lesions by sex

	Total	Schmorl's node	Degenerative disc disease	Osteo- arthritis	Eburnation	Lone osteophytes	Lone pitting
Male	85	1 (1.2%)	2 (2.4%)	4 (4.7%)	3 (3.5%)	23 (27%)	1 (1.2%)
Female	7	-	-	3 (42.8%)	3 (42.8%)	-	-
Total	92	1 (1.1%)	2 (2.2%)	7 (7.6%)	6 (6.5%)	23 (25%)	1 (1.1%)

One thoracic vertebral body was found to have a small, shallow Schmorl's node, a depression in the surface of vertebral body resulting from intervertebral disc rupture (Rogers and Waldron 1995, 27).

Two vertebrae (a thoracic and a lumbar) have changes consistent with degenerative disc disease, where the body surface erodes due to the breakdown of the intervertebral disc. The condition commonly reflects age-related wear-and-tear (*ibid.*, 27). Both of the affected males were over *c.* 35 yrs.

Severe lesions consistent with osteoarthritis (*ibid.*, 43–4), were observed in three spines (one female and two male), affecting one thoracic and six cervical vertebrae; all included eburnation – glassy polish. A similar rate was noted in the EKAR material (Egging Dinwiddy forthcoming).

Lone osteophytes on the vertebral bodies were observed in three spines, and in the articular process joints two spines (Table 2). All affected spines were from male individuals, the neck and lumbo-sacral regions being most prone to the condition. The rate is slightly below that recorded in the EKAR assemblage (30.8%; Egging Dinwiddy forthcoming). Slight to moderate lesions are also manifest in five (12.8%; three individuals) of the 39 observable costo-vertebral joints (ribs).

A small crisply defined, smooth-walled cavity observed in the right scaphoid of adult male 7078 probably represents a minor, solitary or simple bone cyst that are usually asymptomatic (Eiken and Jonsson 1980, 285; Salter 1999, 398; Rogers and Waldron 1995).

The nature of the sample is such that little is indicated as to the physical aspect of the lives of those buried at Pilgrim's Way. It might only be said that the neck appears to have been a region particularly affected by degenerative changes, which may be related to occupation activities.

Plastic change

Enlarged foramina were noted in the skull of adult male 7050. The left mastoid foramen and right stylomastoid foramen are noticeably larger than the opposing side and in comparison to the 'norm'. The mastoid foramen transmits various blood vessels and is highly variable in terms of size and location. The stylomastoid foramen carries the facial nerve and stylomastoid artery, and is adjacent to the geniculate ganglion, a bundle of fibres of the facial nerve which controls the muscles of facial expression and is associated with taste, the tongue, mouth and mandible. Enlarged foramen may be due to pathological or morphological anomalies of the transmitted structures, the consequences of which, if any, may be varied and complex.

Miscellaneous lesions

The second cervical vertebra of young adult male 7011 has a small perforation through the right articular surface. No other changes are apparent though there is some post-depositional erosion. This probably represents a developmental defect.

Grave Goods

by Nick Stoodley, with contributions by Jacqui Watson (organic remains), Chris Fern (drinking horn mount art) and Lorraine Mephram (pottery vessel, bone comb)

The majority of the artefacts were recovered *in situ* from undisturbed graves. Most are items of metalwork, and they form the main source for answering questions about chronology, cultural association and social identity. In addition there are four glass objects (which include three beads), one pottery vessel and one bone comb. The cemetery is probably incompletely excavated, extending beyond the limits of investigation, and this corpus should be considered a sample from a larger total.

Small quantities of worked and burnt flint, fired clay, Late Iron Age/Romano-British pottery and Romano-British ceramic building material (CBM) are all likely to be residual.

Metalwork

Nine of the 16 graves (including empty graves) produced 61 pieces of metalwork, all these graves containing human remains. The majority of pieces are iron (n=42/69%), the rest being copper alloy (n=19/31%). However, the poor condition of the metalwork, especially the ironwork, significantly limits its potential to provide accurate typological and chronological information.

The organic material associated with the metal grave goods is mainly preserved in the corrosion layers of the iron objects, and in some cases the wood structure is just a cast in the iron corrosion products and little or nothing of the original cell walls remain. This means that the residual mineral-preserved structure is very fragile and will continue to fragment at the slightest touch. All the objects were examined and recorded to identify the organic and to try to establish how they had been made. This was mostly achieved by close visual examination, but some of the mineral-preserved wood required the use of a scanning electron microscope (SEM) to observe the necessary features and identify the species. Because all of the wood species and organic materials identified were available throughout north-west Europe in the Anglo-Saxon

period, it hasn't been possible to suggest where any of the artefacts might have originated on this basis. A full report on the organic remains is included in the archive (Watson 2011).

Weapons

Iron weapons were found in six graves distributed across the cemetery, which is a higher proportion than at some of the larger, and probably more representative, Kentish sites (Table 6). While it is possible that the excavation targeted a part of the burial ground where weapon burials were prevalent, this may have been a community with a particularly martial character (see below).

Table 6 Proportions of weapon burials in Kent cemeteries (from the writer's database)

Cemetery	No. weapon burials	Total cemetery	%
Pilgrim's Way, Wrotham	6	16	38
Bekesbourne II	4	40	10
Broadstairs III	24	105	23
Cliffs End	5	24	21
Dover Buckland I	35	172	20
Holborough (7C only)	4	40	10
Lyminge II	6	64	9
Polhill	17	130	13
Sarre	70	288	24

Nationally almost 50% of adult male burials had weapons, although for Kent it drops to below 40% (Härke 1989, 49–50); at Pilgrim's Way the figure is 75%. The data confirms Härke's (1990, 36) research that revealed weapons were restricted to the burials of males, and those of adolescent or adult age.

Given the small sample of weapons, it is hard to say anything conclusive about the character of the assemblages (Table 7), although it is surprising that the sword in grave 7003 was not associated with any other types of weapon. In Richardson's study (2005, table 50), 50% of all sword burials in Kent contained spears and shields, while a further 6% added other weapon types. Two other swords were found at Pilgrim's Way and in both these graves there were spears and shields. One grave (7006) contained just a single spearhead, which reflects the most common grave assemblage both in Kent and nationally (Härke 1989). Graves 7020 and 7049 each contained a spear and shield, which is the second most common combination of weapons (*ibid.*).

Spears

Swanton's (1973) classification of spears has been used (Table 7). The majority of the Pilgrim's Way spearheads have angular blades, which may be significant because it contrasts with the general shape of the weapons from the other West Kent burial grounds. For example, at Polhill (Hawkes 1973), c. 9 km west of the Pilgrim's Way site, 79% (n=11) of the known types have a leaf-shaped blade, and the majority at Springhead, Northfleet, are also of this form (Stoodley 2008).

Table 7 Weapon combinations, with Swanton's (1973) classification of spears

Grave	Spear/Group	Shield	Sword
7003	-	-	✓
7006	✓ E3	-	-
7010	✓ C2	✓	✓
7020	✓ E2	✓	-
7049	✓ H3	✓	-
7067	✓ E2	✓	✓

Spearheads with straight-sided angular blades were recovered from three graves. Two (ON 224, Fig. 16; ON 294, Fig. 10) belong to Group E2, which has a wide distribution but is concentrated in East Kent. Examples have been found in burials dating to the 5th, 6th and 7th centuries. In Kent, Group E2 spearheads tend to be placed in graves on their own: 64% of burials with this type have no other weapon. This is not supported by the Pilgrim's Way data: both spearheads were found with other weapon types, and in grave 7067 (in mortuary monument 7034) the spear was accompanied by both a shield and a sword, probably denoting a high-ranking weapon burial (Alcock 1981).

The third straight-sided angular specimen (ON 50, Fig. 5) has a longer blade and belongs to Group E3, which has a similar distribution to Group E2, and examples of which were deposited during the 6th and 7th centuries. Compared to Group E2, it was more common for these to be combined in graves with other weapons (only 50% are found in isolation), with some burials being particularly wealthy. For example, Dover Buckland I (East Kent) (Evison 1987) grave 56 also contained a sword, seax and shield. At Pilgrim's Way, however, the Group E3 spearhead was the only weapon in grave 7006; at nearby Polhill, also, the two Group E3 spearheads were the only weapons in their respective graves (27 and 111), perhaps indicating a regional distinction in the way these spears were used in the burial rite.

A particularly long spearhead was found in grave 7049 (ON 73, Fig. 13). It has an angular, but concave-sided blade, and belongs to Group H3. This is another widely distributed type, although again concentrated in East Kent, in burials of the later 5th and 6th centuries. The

X-ray of this spearhead has revealed a small circular cell (diameter 7 mm), containing a cross, in the area of the shoulders (lower blade). The cross is very similar to the garnet crosses that are surrounded by quadrants filled with white material, such as found on plated disc brooches (a mainly Kentish type of brooch, Avent 1975). Although Group H3 spearheads are the most likely type to display decoration, it is usually found at the junction of the socket and blade, and takes the form of inlaid bronze bands (Swanton 1973, 113–4). However, a decorative motif in a similar position to the Pilgrim's Way example was revealed by the X-ray of a Group G2 spearhead, another large type, from Holborough (grave 7); in that case it consisted of a rune made up of inlaid wires (Evison 1956, 97–100, plate III a). These two examples might be evidence for a rare, possibly overlooked, and perhaps Kentish, method of decorating such imposing weapons. In Kent, just over half of Group H3 spearheads were the only weapon in a burial (57%), although they have also been found in graves with complex weapons assemblages, such as Sarre 39B (Brent 1863) which had a sword, seax, axe and shield, plus a pair of spearheads.

The final example is a leaf-shaped spearhead (ON 58, Fig. 7) which belongs to Group C2, a widely distributed type, but one with notable concentrations in the Upper Thames Valley, the Lower Thames, and Kent. As a group, they are the most common spearhead in Kent, for example outnumbering all other forms at Springhead and Polhill. Examples have been found in 5th-, 6th- and 7th-century contexts. Of all Group C2 spearheads in Kent, just under half were the only weapon in a burial, and it may be significant that this was the case with the three examples from Polhill. Yet at Pilgrim's Way the Group C2 spearhead was associated with a shield and sword, suggesting local variability in how different spears were used in the mortuary rites of these communities.

In all cases the spearheads lay against the grave edge. In graves 7006, 7010 and 7020 they were to the left of the body, while in 7049 and 7067 they were on the right side, a difference which may reflect handedness. The species of wood used for the shafts were identified from mineral-preserved remains as ash (three), willow/poplar (two) and probable hazel (one). Ferrules were recovered from three graves (7010, 7049 and 7067), and the distance from the tip of the spearhead to the bottom of the ferrule gives lengths for the weapons in graves 7010 (1.55 m) and 7049 (2.35 m). There is little evidence from Kent with which to compare spear length (Table 8), although it is notable that the weapon in grave 7049 ranks as the longest in this sample, while that in grave 7010 is one of the shortest. This sample cannot be taken as representative of spear length, however, because the vast majority of graves do not contain ferrules; at the large cemetery of Finglesham, for example, only one ferrule was discovered.

In grave 7067 a ferrule was discovered by the spearhead, which suggests that the weapon was broken and the bottom half of the shaft had been inverted and placed alongside the

spearhead. It is unlikely that that action would have been necessary to accommodate the weapon in the grave, unless it had a particularly long shaft. Perhaps it was already broken, or the weapon had been ritually ‘killed’ (see below).

Table 8 Length of spears from Kent

Cemetery/grave	Length (m)
Bekesbourne 2	2.02
Dover Buckland C	1.82
Dover Buckland 22	1.68*
Dover Buckland 41	1.90
Dover Buckland 56	2.26
Dover Buckland 87	2.06
Dover Buckland 137	1.25*
Holborough 7	2.10
Holborough 8	2.28
Lyminge 1	1.63

Key: * = estimate

Organic remains

All five spearhead sockets contained mineral-preserved wood which could be identified, including ash, willow or poplar and hazel, the common woods used for spear shafts (Table 9). It was also noted that most of the spear shafts have been made from mature timber rather than selecting saplings of the required diameter. In his experimental work on arrow shafts, Urbon (1991) has shown that the selection of mature wood rather small roundwood greatly improves the control of the flight, and it seems likely that using carefully trimmed and shaped wood for a spear shaft will provide a more reliable and accurate weapon.

Table 9 Organic materials associated with the spears

Grave	Object	Wood	Other materials
7006	ON 50 spearhead	Ash (mature timber)	Textile and wood on one side of the blade
7010	ON 58 spearhead	Ash (mature timber)	Textile on outside of socket
	ON 72 ferrule	Ash	-
7049	ON 73 spearhead	Probably hazel (mature timber)	-
7067	ON 224 spearhead	Willow or poplar	Blade covered in degraded or loose weave textile plus masses of pupae cases
	ON 230 ferrule	Willow or poplar (mature timber)	Outside covered in masses of pupae cases

Pupae cases on many items of metalwork, such as the spearhead (Pl. 3) and ferrule in grave 7067, are indicators that the bodies may have been exposed for some time before burial, or that there was a significant airspace within the grave structure, such as a coffin or chambered grave (Turner-Walker and Scull 1997). In order that this preservation can happen objects would have to have been in close proximity to the decomposing body, so it is quite unusual to see this quantity on objects such as spearheads which are normally placed some distance away.

Shields

The remains of four shields were recovered, represented by bosses, grips and associated fittings. Dickinson and Härke's (1992) typology has been used, and all the bosses belong to their Group 6, a type that was deposited in the late 6th to mid-7th century and which is characterised by a low cone of narrow diameter. Although a rare type of boss (Geake 1997, 67), it is relatively well represented in Kent, with three examples from Holborough, and four from Dover Buckland.

Grips were recovered with the bosses from graves 7010 (ON 59), 7020 (ON 296) and 7067, and in each case they are short with expanding terminals (Type Ia 1) (Figs 8, 9 and 16, respectively). Short flat grips are the most common type in all regions of early Anglo-Saxon England (Dickinson and Härke 1992, 24–5, table 4).

The circular iron studs, that were associated with the bosses in graves 7010 and 7020, are the most frequent type of board fitting (Dickinson and Härke 1992, 27), and they provided a simple form of decoration. In Kent, out of 22 shield burials to have produced fittings, 17 (77%) had studs. In the majority of cases the studs are arranged in pairs on either side of the boss (Dickinson and Härke 1992, 27). This was not the case, however, with the Pilgrim's Way shield burials; in grave 7020 one pair of studs was to the north-east of the boss, and in grave 7010, while a pair of studs (ON 70) was presumably close to the board's edge, east of the boss, stud ON 71 was located at a short distance south of the boss. It seems that, unless the studs had been disturbed by animals or the boards were damaged, symmetry was not a priority. A similar situation was also noted at Dover Buckland (grave 71) (*ibid.*): one pair of studs was very close to the boss, while a second was on the edge of the board. In grave 7067 the circular studs in each pair were joined to create a figure-of-eight; again, a similar arrangement is found in the studs from Dover Buckland grave 71.

The position of the fittings in grave 7020 (ON 297), against the edge of the cut, allows the maximum diameter of the board to be estimated. They were *c.* 250 mm from the centre of the boss, which gives an approximate diameter of 500 mm for the board. This would place it within Dickinson and Härke's medium-size group, which is the largest of the three. In grave 7010 two sets of studs were discovered: ON 70 was *c.* 220 mm from the centre of the boss, giving a minimum diameter of 440 mm for the board, which places it on the cusp of the small- and medium-size groups. But this is only a minimum size, and in reality the board could have been much wider. In fact, Dickinson and Härke (1992, 45) discovered that the size of the shield increased over time, and given the date of this grave it would be unusual if it was not larger. All the bosses were recovered from the area of the legs, and it can be assumed that the shield had been laid over the individual's lower half.

Organic remains

The three shield bosses (ONs 59, 225 and 296) have traces of the organic materials that made up the composite shields. The shield boards were originally made from a trimmed wooden (willow or poplar) board that was covered on both sides with leather – this basic structure could be produced in various diameters and curvature, along with any form of decoration (Table 10). Then the metal fittings would be applied; first the iron grip was fixed at the correct height in the cut out area, and the boss would be fixed to the front with the rivets arranged around the pair from the grip.

Table 10 Summary of the materials and features preserved on the iron shield fittings

	ON 59 (Grave 7010)	ONs 225, 235 (Grave 7067)	ONs 294, 296 (Grave 7020)
<i>Wood</i>	Willow or poplar (tangential)	Willow or poplar, RLS	Willow or poplar, shield board (tangential), grip (radial)
<i>Leather</i>	< 1 mm back	< 1 mm front, > 2 mm back	Thin skin front and back
<i>Type of grip</i>	Inserted	-	Inserted
<i>Depth of shield</i>	-	Boss flange 9 mm Studs 15 mm	Boss flange 12.6 mm
<i>Carrying strap</i>	Strip of leather c. 16 mm wide on outside of boss	-	-
<i>Other features</i>	Textile preserved between the iron grip and leather	Iron grip appears to have been broken at deposition	

The use of willow or poplar for shield boards follows the pattern for other shields from English sites, where over 50% have been identified as being made from this wood (Watson 1995), and in association with Type 6 bosses two out of the three from Mucking were made of willow or poplar (Hirst and Clarke 2009, 572). The wooden board would have been made from several sections joined edge-to-edge in some fashion to produce the desired diameter, usually between 500–650 mm wide. It was not possible to estimate the width of these sections, but on ON 225 the position of the cut edge of a board is visible.

The wooden part of the shield board of ON 225 is thinner at the shield boss flange than at the studs, which are usually attached near the rim – a difference of 6 mm at the flange to 12 mm on the studs. The thickness of the wood could be different in these positions if the board had a recessed area to provide seating for the boss, as well as the board being slightly thicker towards the circumference.

Each of these three shields have evidence for the wooden boards being covered on the front and back with leather, in some instances less than 1 mm thick. On both shield boss ON

225 and associated studs ON 235 the leather preserved on the back of the shield was over 2 mm thick, which might have been to produce a stronger construction.

Textile appears to be incorporated in the construction of the grip of ON 59, as it is preserved between the iron and leather on the grip (Fig. 22; Pl. 4). This has not been recorded for other shields, although often the grip has been bound with cord or even woven leather strapping, but this is usually found on the outside of the iron grip not underneath – maybe this is an example of a repair or adaption to the standard construction. There is the possibility of a carrying strap associated with this shield, as there is a strip of possible leather wrapped around the outside of the boss, and another strip of leather around the grip.

Swords

The three swords are long, two-edged (parallel-sided) weapons, also known as the *spatha* type. Current sword typologies are based on the various metal fittings (Härke 1992, 88–9), and the lack of any relevant pieces makes it difficult to date the Pilgrim's Way swords. Those from graves 7003 and 7010 are pattern welded. The former (ON 42; Fig. 4) had been placed centrally over the lower body and has evidence for a bone/horn handle, plus two tiny copper alloy tags that may have originated from a scabbard strap. The latter sword (ON 57; Fig. 7) was located on the left side of the body with the hilt near the shoulder and the tip just above the left knee. Three garnet-inlaid copper alloy pyramidal studs, which were probably fastened to a scabbard strap, were located to the right of it. The sword has a simple pommel, while the X-ray of the weapon has revealed a possible ring at the hilt and evidence for a two-piece lower guard. The fragmentary remains of a lower guard can also be observed on the sword from grave 7067 (ON 223; Fig. 16), while a scabbard is indicated by fragments of copper alloy and mineral-preserved fleece/pelt lining leather covered by wooden (willow or poplar) stiffeners. The position on the left hand side of the body of the swords in graves 7010 and 7067 is typical of Kent, but the position on top of the body of that in grave 7003 is unusual.

Three pyramidal studs were recovered from grave 7010 (ONs 60, 64 and 65; Pl. 5). They are made from copper alloy which is silvered and inlaid with garnets. The detail is clearest on ON 64, but the other two were probably very similar: each face displays three interlocking garnet triangles that are separated by a wide band flanked by a single grooved line. The studs are hollow, and there is a band running across the open base of each piece. A garnet may be present in the square setting at the apex of ONs 60 and 64, but it appears to be missing from ON 65. A very similar example was recovered by a metal detectorist at Headbourne Worthy (Hampshire) (Evans 2004, 84–5). In fact, the majority of pyramidal studs are unstratified finds that have been recovered by metal detectorists; very few have been excavated from sealed grave contexts and those that have are usually singletons or pairs (Menghin 1983, 363).

Pyramidal sword studs have mainly been found north of the Thames and especially in East Anglia (Menghin 1983, Karte 22). They are relatively rare in Kent, which makes the Pilgrim's Way studs an important addition to the corpus. At Sutton Hoo (Suffolk), Mound 1 produced a pair of very intricate pyramidal studs from either side of the sword (Bruce-Mitford 1978, 300–3), while more recently, the excavation of Mound 17 produced a pair of matching studs: the faces of each are decorated with an inlaid central setting of ivory, flanked by cloisonné garnets, while a central garnet sits atop each stud (Evans 2005, 244, fig. 102). In East Kent, Finglesham grave 58 produced a near-circular stud with inlaid garnet cells (Hawkes and Grainger 2006, 63, fig. 2.90). It was in a worn state and had been deposited either as part of a necklace, or in a bag, in the burial of an adult female.

Geake (1997, 101–2) states that such finds seem to be restricted to the 7th century, particularly its first half when associated with swords. They are believed to have functioned as fittings associated with the sword's suspension; for example, at Sutton Hoo Mound 17 one of the studs was discovered on the upper surface of a sword (Cameron 2000, fig. 15; Evans 2005, 244), while the pair from Mound 1 was recovered from either side of the sword (Bruce-Mitford 1978, 302). The position of the three studs in grave 7010 indicates that they had originally adorned a strap – one that was probably associated with the sword's scabbard. The hollow base and cross piece of the pyramids, a feature that the Pilgrim's Way studs share with many of the examples, would have allowed them to be threaded onto a narrow strap.

Two copper alloy fittings were found in grave 7003 (Fig. 4). ON 46 is sub-triangular in shape, with a sub-rectangular perforation and six rivet holes. It was near the pelvis/left hand, and is a probable belt mount. A very similar object was found at Dover Buckland I, in a grave (103) dated by Evison to the final quarter of the 7th century (Evison 1987, 240, fig. 48). ON 43 is a triangular-shaped artefact, again with six rivet holes, and can be identified as a probable strap end. Both these objects were close to the sword and were probably associated with the scabbard's suspension; the large number of rivets required to attach them, may have been for effect – especially if the heads were tinned or silvered.

Organic remains

All three swords were deposited in their organic scabbards, which are now preserved within the iron corrosion along with the organic parts of the hilts (Table 11). The nomenclature of the hilt components follows Bone (1989).

The hilts of all three swords were made from three sections of horn, and the position of these sections is visible as the grain of each is aligned in a different direction. This is commonplace on most Anglo-Saxon swords and is presumably because of the need to use solid pieces of horn for the upper and lower guards and this was only available in horn tips.

Table 11 The component parts of the three swords

	ON 42 (Grave 7003)	ON 57 (Grave 7010)	ON 223 (Grave 7067)
<i>Overall length</i>	885 mm	c. 900 mm	c. 925 mm
<i>Hilt</i>	> 113 mm; in 3 sections each made of horn	c. 113.5 mm; in 3 sections each made of horn	125 mm; in 3 sections each made of horn
<i>Upper guard</i>	Incomplete	c. 12mm	13 mm
<i>Grip</i>	95 mm	76 mm	94.6 mm
<i>Lower guard</i>	18 mm	c. 25.5 mm	16 mm
<i>Scabbard</i>	Composite construction	Composite construction	Composite construction
<i>Blade width</i>	50 mm	c. 50 mm	50 mm
<i>Scabbard width</i>	-	-	> 65 mm
<i>Wooden stiffener</i>	Ash (radial)	Willow or poplar c. 2 mm thick	Willow or poplar c. 4 mm thick (radial)

In all cases the lower guard overlaps the shoulder of the sword blade, and this ensures that this section remains firmly in position during use. The hilt of sword ON 57 (grave 7010) has an unusually deep lower guard and short grip sections preserved on the tang, although this could be because the sections were made to overlap one another by c. 12 mm and now all that remains are the internal positions of the horn pieces. This would provide a solid seating for the grip, and the grip could be a more normal length at around 88 mm; 76 mm is more appropriate for a young adult to hold rather than an adult male.

The hilt of sword ON 223 (grave 7067) has been assembled in a slightly different way where the upper guard and grip appear to have been held firm on the tang using a wedge, 3–4 mm wide, that slots into a recess in the two sections. The position of this recess can be seen on the horn, as the iron corrosion has followed the shape of the underlying void. This construction has also been observed on other swords from Springhead, Kent (grave 2643, obj 413) and Mucking, Essex (883/1) (Hirst and Clarke 2009, 565).

The different layers of the three scabbards were extensively preserved. Each scabbard was made with a fleece or pelt lining with the hairs next to the blade; on top of this are wooden stiffeners c. 2–4 mm thick, and the layers appear to be held together by tightly wound cords or tablet braids. This is a typical construction for most Anglo-Saxon sword scabbards (Cameron 2000). Although a lot of organic material is preserved along the length of the blades, the fragmentary condition has made it difficult to observe exactly how the scabbards are constructed, and if they were decorated or had leather outer coverings underneath the braids.

Textiles noted on number of objects, including plain and twill weaves, are probably the remains of the garments worn by individuals buried. However, other textiles, such as long loose threads that might be the remains of a fringe on a garment or cover, are also present on some objects, such as the tablet braids on the sword scabbard (ON 223) from grave 7067.

Personal equipment

Knives

The graves produced a total of eight knives, with two examples coming from grave 7067. They have been classified according to Böhner's (1958) scheme and examples of his groups A and C are present (Table 12).

Type A knives were common during the 5th and 6th centuries, although they are also encountered in later burials. In fact, the knives in graves 7010 and 7020 were both found with a Group 6 shield boss, indicating a date of deposition in the later 6th–7th century. Type C knives, although found in the 6th century, are more frequently encountered in the 7th century. Two examples could not be classified because of their fragmentary state. The analysis of organic materials has revealed evidence for a leather sheath on four knives, while two examples have the remains of horn adhering to the tang.

Table 12 Knife types by grave

Grave	Type A	Type C	Unknown	Mineral-preserved remains	Buckle
7006	-	-	ON 55	leather sheath (pigskin)	-
7010	ON 68	-	-	leather sheath	at waist
7020	ON 295	-	-	leather sheath, horn handle	at waist
7049	-	ON 76	-	-	-
7067	-	ON 226	ON 232/234	handle	-
7077	-	ON 80	-	sheath, handle	at waist
7095	-	ON 220	-	sheath	-

Throughout the country knives were associated with both males and females (Stoodley 1999a, 30–3), but were found only in male graves at Pilgrim's Way. All the knives were found at the waist. Five of the burials had buckles, and in three cases they were found at the waist supporting the idea that the knives in these graves had been hung from a belt, or tucked behind the strap. In the other instances, the knife may have been secured by a knotted cord belt.

Organic remains

Six of the seven knives have significant organic remains preserved on them that indicate that they all had horn handles and leather sheaths. The horn handles appear to be made from single pieces of horn, and extend over the shoulder of the blade by 2–4 mm, as on knife ON 220; long loose textile threads noted on knife ON 220 might be the remains of a fringe on a garment or cover.

The leather sheaths all seem to be made from a single piece of leather that folds over the back of the blade and is joined along the blade edge, but no evidence remains to suggest what method was used. In two examples, the leather grain pattern is still visible and it was possible to

suggest the animal it originated from – ON 55 probably pigskin, and ON 226 possibly deerskin. Fragments of the leather sheath from ON 226 also have incised decoration that could be some form of interlace ornament.

Pursemount/firesteel

A pursemount/firesteel of triangular shape and with incurving terminals ON 299; Fig. 16) was found in grave 7020, and can be dated to the 7th century – perhaps the later part (Geake 1997, 79–80). Parallels can be found throughout the country, although they are relatively well represented in Kent, with four examples coming from Polhill (graves 66, 68A, 84 and 85) and three from Springhead. In grave 7020, the pursemount was found at the waist, along with a buckle and knife, and in all likelihood was part of the girdle.

Dress accessories and jewellery

The lack of jewellery from the cemetery is surprising, given the presence of up to three women. There are no garnet-inlaid disc and composite brooches, or necklets of beads and wire rings, which are typical of the earlier 7th century. For example, two graves from Springhead both produced composite brooches, and the example from grave 4709 was associated with a necklet. The only jewellery from Pilgrim's Way came from juvenile grave 7095 (a pin and a pair of beads) and empty child-sized grave 7115 (a single bead). The lack of jewellery may be explained by social factors (see below), although it could also be due to the graves with jewellery being located outside the excavated part of the cemetery. At Polhill, the majority of furnished burials were found in the southern part of the cemetery, but the weapon burials were largely confined to the western half of this area, while the jewellery burials were to their east (Stoodley 1999a, 128, fig. 135); it should be remembered that the excavated part of the Pilgrim's Way cemetery produced a relatively high proportion of weapon burials.

Pin

A tiny fragmentary copper alloy pin (ON 219; Fig. 20) was found in the upper chest/jaw area of the juvenile in grave 7095. It has a plain shank and a head that consists of a simple perforated flat disc. Similar examples were found at Finglesham (graves 16, 84, 164, 203) and Dover Buckland I (graves 44, 132 and 138); at the latter they were found in graves spanning the 7th century.

Buckles

The burials produced nine buckles with each specimen having an associated plate. Five are copper alloy, three are iron and one is a composite buckle (ON 298; Fig. 10) with a copper alloy plate and iron loop. The plate of the iron buckle in grave 7006 (ON 387; Fig. 12) had been secured by four ?copper alloy/silvered rivets, which would have increased the showiness of this fastener.

Despite the variety in material, all the buckles are small, simple fasteners. Such buckles are found throughout the 5th to 7th century, although tiny copper alloy examples tend to be concentrated in 7th- to early 8th-century graves. Comparable examples can be cited from both Polhill (Hawkes 1973, 205, fig. 54) and Springhead. Although this form of buckle is typical of the 7th century, the proportion of burials with them (n=7: 70% of burials with metalwork, 44% of all graves (including empty graves)) is unusually high. For example, 8% of burials at Polhill were accompanied by copper alloy buckles of simple form (Philp 1973, fig. 54), while at Springhead the figure is 9% of all burials. Most of the buckles were discovered around the area of the waist, and had probably functioned as belt fasteners. The pair of buckles in grave 7010 was also found in the area of the waist: ON 67 probably fastened a belt, while ON 66 was associated with the sword's scabbard, perhaps to secure the suspension strap that the three pyramidal studs originally furnished. The buckle (ON 77; Fig. 13) from grave 7049 was discovered by the left knee, although the displacement of some of the bones suggest that the grave had been disturbed, and this may have also caused the buckle to be dislodged from its original location. The small iron buckle with plate (ON 238) was found between the lower legs of the burial in grave 7067, probably just on the outer edge of the shield board.

Organic remains

Two of iron buckles (ONs 55 and 77) were examined and both had traces of the original leather belts preserved between the buckle plates or on the loops and tongues. In the case of ON 55, the leather was found to be c. 8 mm thick and so could be pigskin or cattle hide. On the reverse of ON 77 were two layers of fine tabby weave textile (Pl. 6).

Vessels

Drinking horns

The gilt copper alloy drinking horn mounts (ONs 79 and 82) are a rare and particularly significant find (Fig. 15; Pl. 7). The two mounts are very similar in terms of construction and with identical decoration, and would have decorated the mouth-piece of a drinking horn (remains still attached). Each was formed from a U-shaped rim held in place by three vertical

four-fluted bands acting as clips that had been riveted to the vessel at the point where two decorative panels meet, a technique giving the impression of a continuous field of decoration. Although the U-shaped rims are made of silver, all the parts of the mounts were uniformly gilded. The rim clips show wear to their tops, and both silver rims are slightly flattened and dented in places from use (though a large dent and tear in the rim of ON 82 has fresh edges and so is modern). Below the rim are three separate panels (c. 0.25 mm thick), each one decorated by tightly-knit gilt repoussé Style II zoomorphic interlace contained within a cabled border (see below). Under these panels is a narrow band, decorated with four horizontal flutes, that was fixed to the horn (5 mm thick) by small dome-headed rivets (at 12–15 mm intervals). A copper alloy repair clip (ON 84) was found close to one of the horn mounts (ON 82) and would have clamped together a split in the vessel. The pair had been placed to the south of (ie, above) the burial's head.

Similar mounts have been discovered in graves of exceptional wealth, ie, the tier of princely burials, for example, at Taplow (Berkshire) and Sutton Hoo (Bruce-Mitford 1983), which date to the early 7th century. The mounts from those graves are of a similar design to the Pilgrim's Way pieces in that they comprised U-shaped rims held in place by vertical bands which together secured rectangular decorative panels. The Sutton Hoo and Taplow mounts, however, have decorative triangular mounts, or '*van dykes*', that form a lower field of ornament around the vessel's mouth piece. This final element is missing from the Pilgrim's Way pieces. Nevertheless, nothing of comparable quality has been found in Kent. Much simpler drinking horn/cup mounts have been recovered from several of the county's burial grounds. Dover Buckland I grave 29 produced a pair of silver U-shaped rims (diameter 51 mm). Each rim was secured by three fluted bands that were secured through the vessel by rivets. A silver decorative mount was also suspended from a rivet (Evison 1987, 224, fig. 17). Grave 32 produced a simpler silver U-shaped rim (diameter 58 mm), that would have been secured by five fluted bands to a wooden vessel (*ibid.*, 225, fig. 19). In both these graves, the vessels had been placed by the feet of adult females, while at Finglesham (grave 25) a pair of copper alloy curved rims that would have adorned vessels was found by the feet of an adult male (Hawkes and Grainger 2006, 47, fig. 2.81).

Organic remains

The horn, which is still attached to the mounts, but only to the depth of each mount, is well preserved, presumably due to the bacteria-static effect of slight traces of copper in the silver. The original horns were approximately 60 mm in diameter and the sides 5 mm thick. Each mount is made from four components. The main decorated band is attached to the horn with a plain band that folds over the rim, and both are held in place with three riveted strips that are

carefully aligned with the decorated panels. The lower part of the decorated band is secured by a narrow band, riveted to the horn at c. 10 mm intervals.

The art

by Chris Fern

The drinking horn mounts (ON 79 and 82; Fig. 15) are a matching pair with identical animal ornament of Salin's Style II (1904). Each metal brim comprises three rectangular panels of copper-alloy sheet, all struck from the same die block (cast with the pattern in positive), a manufacturing method known in German as *Pressblech* (Coatsworth and Pinder 2002, 109–14) (Fig. 23). They may not have been unique originally; the production method means that multiple identical or similar vessels could have been produced.

Style II art is characterised by abstract animal forms with a tendency for interlinking and interlacing. Head (eye and jaw), leg (foot) and body elements are shown in stereotyped forms; naturalism is rare. The composition in this case is of six interlinking and biting creatures, in three (non-identical) pairs, making eighteen beasts in all on each horn; the design is slightly broader at the centre. The rendering of the creatures with banded, pellet-infilled bodies, and the pelleted border, was intended to imitate gold filigree ornament, as seen on the highest-status metalwork of the period (eg, Speake 1980, pls. 6–7). The creatures numbered in Figure 23 can be characterised thus:

- 1) Zoomorph with a hind-leg, an eye with angled head-surround and looped jaws. Its body interlinks with *Zoomorph 2* and it bites *Zoomorph 5*.
- 2) Zoomorph with a hind-leg, an eye with angled head-surround and looped jaws. It is a pair with *Zoomorph 1*, with which it interlinks, and it bites *Zoomorph 6*.
- 3) Small 'bird' with a hind-leg and a beak. The interlace at the creature's back may represent a wing. It is enwrapped by the jaws of *Zoomorph 5*.
- 4) Small 'bird' with a hind-leg and curling beak, a pair with 'Bird' 3. It is enwrapped by the jaws of *Zoomorph 6*.
- 5) Zoomorph with a limbless serpentine body, an angled head-surround but no eye, and an unusual hooked jaw. It bites 'Bird' 3 and is bitten by *Zoomorph 1*.
- 6) Zoomorph with a limbless serpentine body, an eye with an angled head-surround, and an unusual hooked jaw. It bites 'Bird' 4 and is bitten by *Zoomorph 2*.

The pattern, though contained by the border, was composed so that the interlace at each end (which backs 'Birds' 3 and 4) 'flows' across the conjoined panels, creating a continuous zoomorphic frieze (see Fig. 23).

The origin of Style II animal art, and preceding Style I, is argued to be south Scandinavia (Haseloff 1981, 262; Høilund Nielsen 1991; Hedeager 1992, 293–94). The art

became widespread across northern and western Europe in the later 6th and 7th centuries. Typically, Style II artefacts are found in high-status graves, and are usually gilded or of precious metal. It seems likely the zoomorphic imagery had a basis in the mytho-religious beliefs of pre-Christian northern Europe (Høilund Nielsen 1998; Gaimster 1998).

In this case, the zoomorphic forms point to a connection with so-called 'Kentish' Style II, a regional version with a distribution focused on east Kent (Høilund Nielsen 1999). The curling beak form of 'Birds' 3 and 4 is distinctive. Examples can be seen on the shoulders of triangular-plated buckles from Kent and southern England (Speake 1980, pl. 6b–d), on a gold bracteate from Dover, Kent (*ibid.*, pl.13i; Evison 1987, 53–4), and on a disc brooch from Winnall, Hants (Avent 1975, pl. 75, no.186) (Fig. 24d–e). The wing form of the Winnall bird pair can also be compared to that of 'Bird' 3. The Dover creature (Fig. 24d) is without a wing and has a front leg also, and may be a fantastical bird-headed quadruped, but the combination of the beak, body-shape and hind-leg bears out the comparison.

Zoomorphs with a single hind-leg and angled head-surround, like *Zoomorphs 1* and 2, are prolific in Kentish Style II, though they occur widely in animal art on the Continent also (Fig. 24a–c). They are often shown interlinked and biting back on themselves, as seen (in *Pressblech*) on a gold-sheet cross from Loreto, Italy (Fig. 24c; Roth 1973, Abb. 105). However, the 'paper-clip' jaws of *Zoomorphs 1* and 2 are rare in Kentish Style II. Occasional examples occur in 'Anglian' Style II (the other regional style of Anglo-Saxon England), and are also seen on objects from the Staffordshire Hoard (eg, sword pommels K347, K455, K552 and K1167), the origins of which have yet to be determined.

Style II production in England may have started as early as c. AD 550/565 (Høilund Nielsen 1999, 194), and it continued well into the 7th century. The zoomorphic elements on the drinking-horn mounts pre-date Høilund Nielsen's latest Phases KC and MS (c. AD 620+). The motif formed by *Zoomorphs 1* and 2 at the centre of the panel is essentially the same as that on a buckle from the King's Field cemetery, Faversham (Fig. 24b), a Kentish product of Høilund Nielsen's Phase KB with a date around the turn of the 7th century. Manufacture of the drinking horns is likely to have occurred around the same time, therefore, or in the last decades of the 6th century.

In summary, the suggested stylistic date agrees with the typology of the weaponry (ie, ON 224 and ON 225) and claw beaker (ON 229) from the burial. The horns were possibly interred within a generation of their manufacture, in the first decades of the 7th century. As argued below (see Discussion), grave 7067, whilst not of the status of the Taplow, Sutton Hoo or Prittlewell 'princely' graves, might be thought of as next-to-princely, perhaps the grave of a local petty ruler. It is very possible the drinking horns from grave 7067 were manufactured in an East Kentish 'royal' workshop, conceivably in the reign of King Aethelbert (c. AD 590–616:

see Brooks 1989, 65–67). The glass claw beaker (ON 229) almost certainly has a similar source. History records the ascendancy of the kingdom of Kent at this time, and it might be speculated consequently that the drinking vessels together were a political gift, maybe even presented to the individual in the burial, that attest a client relationship with the powerful southern kingdom.

Wooden vessels

The copper alloy fittings (ON 222 and ON 240 (x4)) from grave 7067 derive from a wooden vessel that had been placed at the burial's feet. These fittings would have decorated the mouth-piece of a turned wood vessel; each grasped the top lip of the vessel with the longer side decorating the outer edge of the container. A pair of ?iron triangular box hinges (ON 231 and ON 233) were also found in roughly the centre of the grave, which may indicate that a wooden container had been placed in the area of the burial's waist.

A copper alloy mount in the shape of a cross (ON 227) and two small copper alloy fittings (ON 236 and ON 237) may have originated from a wooden vessel that had been placed in the area of the lower legs and shield. A very similar mount (ON 228), found on the right side of the burial and close to the waist, may be from the same vessel.

Organic remains

The copper alloy mounts with stamped decoration are all that remains of a wooden vessel; two (ON 227 and ON 228) were attached to wood. The wood was found to be ash, and the sections that are preserved suggest that this was a small lathe-turned object, with walls 4–9 mm thick, with copper alloy mounts or repairs. ON 227 is in the shape of a cross, and has rivets 9 mm long, and would probably have been placed in the centre of the base or lid. However, the fragments of wood associated with it appear to have been pierced – the holes are uniform in size and in groups, which must point to the object being either some form of strainer, a decorated wooden lid for another vessel, or even a sprinkler like the copper alloy example from Swallowcliffe Down, Wiltshire (Speake 1989, 30).

Two pairs of iron mounts (ON 231 and 233) from grave 7067 were the top halves of hinges attached to the curved lid of a casket. The curvature of the lid can be seen when the two sides are assembled; at the base of the mount the lid is c. 17 mm thick and this tapers to 16.5 mm. Two pieces of wood are preserved on each fitting, and the join can clearly be seen on the fittings as well as the X-radiograph of the mounts. The wood preserved on ON 233 appears to have a cut edge with a bubbly deposit that could be the remains of an ancient 'glue', so the lid appears to have been made out of several sections, and then glued to the lid sides (Pl. 8). The casket was made from maple, a wood often used for construction of this type of casket, as in the examples from Swallowcliffe Down and Finglesham (Speake 1989, 28). Unfortunately no other

casket furniture was included with the broken hinges, such as a drop handle or even a lockable hasp for the front. Also there is evidence for woodworm attack in the wood sections, which might mean that this was a damaged object when placed in the grave.

Discussion

This small group of burials represents part of a larger cemetery, but the artefacts deposited in these few graves have added to the evidence for the construction of a number of items, in particular the casket from grave 7067, as well as the sword hilts. Other objects, such as the lathe-turned wooden vessel, also from grave 7067, are much more difficult to define, this example likely to be just fragments of a larger object that has not survived, but which might have important Christian associations like many grave goods included with inhumations of this date.

Pottery

A complete, necked, sub-biconical jar, with a deliberate, post-firing perforation in its base (Fig. 20) was deposited as a grave good in grave 7095 (part of mortuary monument 7065). This vessel is likely to be early to mid-Anglo-Saxon in date (*c.* AD 575–800) and occurs in an organic-tempered ware (similar to Canterbury [CAT] fabric EMS4: Macpherson-Grant and Mainman 1995). A tiny (less than 1 g) shell-tempered sherd from this same context may be of late Anglo-Saxon/early medieval date but is likely to be intrusive.

The other pottery from the cemetery consisted of ten residual sherds of Late Iron Age/Romano-British pottery (weighing 44 g)

Glass

Glass vessel

Numerous fragments of a light blue-green glass claw beaker (ON 229; Fig. 17: Pl. 9) were recovered from the foot end of grave 7067, and were in close association with the fittings (ONs 222 and 240) from the wooden vessel. Parts of all the main elements of the vessel have survived: foot, wall, claws and rim. The claws are decorated with indented vertical trails. The vessel was originally of conical shape with a slim body, upright rim and pedestal base. There were two zones of horizontal trails decorating the rim and the middle of the body. Two rows of four close-set hollow claws were positioned on the upper and middle parts of the body in a zig-zag formation. The bottom row partly overlapped with the lower zone of horizontal trails.

Claw beakers were a popular type of glass vessel in early Anglo-Saxon England, and Kent has produced the majority of the finds. Evison's (1982) typology has been used to identify the vessel. Its conical shape, relatively tall height and indented trails are features found on Evison's Type 4a vessels, of which there are only two other examples (Evison 2008, 15). These were found in the princely burial at Taplow (Berkshire), which dates to the early 7th century. However, ON 229 is not a perfect fit: it is significantly shorter, and also lacks the indented horizontal trail. In this respect it has similarities with several of the Type 3c vessels – the most common type of claw beaker – which dates to the mid-6th century (Evison 2008, 14). It may be correct to view the Pilgrim's Way glass as a transitional vessel, perhaps dating to the later 6th century. The distribution of claw beakers of Types 4a–c suggested to Evison (2008, 15) a possible production site in Kent, at Faversham, while the more numerous Type 3c vessels are more common outside the county.

Beads

A faience blue Roman melon bead (ON 218) and a green Roman cylinder bead (Roman cane) (ON 218, shares same ON) were found in grave 7095 (Fig. 20). Both beads were in the region of the neck and they may once have been part of a small necklet. It is intriguing that they were heirlooms (see below).

From grave 7115 is a fragmentary red opaque barrel glass bead with a yellow wavy line (ON 241). It can be tentatively classified as a Koch 20 (the trails do not appear to cross), a type of bead that was prevalent in Kent in the second half of the 6th century (Brugmann 2004, 38–9).

Worked bone

Comb

The remains of a bone comb (ON 239) were found in grave 7067, close to the claw beaker and wooden vessel fittings at the foot of the grave. This object was found in an extremely fragmentary condition, and the surviving fragments are very heavily abraded, resulting in the almost complete removal of the original surfaces. Sufficient survives to identify this as a double-sided composite comb, with flat rectangular side-plates secured by iron rivets. Traces of decoration are just visible on the side-plates, comprising interlaced ring-and-dot motifs.

Discussion

by Nick Stoodley

Chronology of the cemetery and graves

A chronological sequence can be derived from those graves with chronologically diagnostic goods. Burial may have commenced as early as the later 6th century. Grave 7115 produced a Koch Type 20 bead, which is found in contexts dated to the second half of the 6th century. Grave 7049 contained, amongst other artefacts, a Group 6 shield boss, which occurs in late 6th- to mid-7th-century contexts, but it also had a H3 spearhead, a type deposited during the later 5th and 6th centuries. On balance the individual was probably interred in the late 6th century. A pair of weapon burials can be confidently placed in the early 7th century. Each produced a Group 6 boss, but they had objects that rule out a date of deposition before the 7th century. Grave 7010 had pyramidal sword studs that date to the early 7th century, while a similar date applies to grave 7067 on the basis of its Style II decorated drinking horn mounts. Grave 7095 produced an example of a pin that is found in graves spanning the 7th century at Dover Buckland. Finally, grave 7020 may be one of the latest interments. Although it had a Group 6 boss, it also produced a firesteel/pursemount of a type that is usually found in mid- to late 7th-century graves (Geake 1997, 79–80).

There are several graves that have objects spanning the 6th and 7th centuries: graves 7006 (E3 spearhead) and 7077 (Type C knife); and two graves without chronologically diagnostic objects (7003 and 7040). It is probably safe to assume that these belong to the same timeframe as the more precisely dated graves. Six graves (including four of the empty graves) were unaccompanied and it is difficult to know where they belong in the sequence. They could be roughly contemporary with the furnished burials, or they might be some of the latest graves – interred at a time when the grave good rite had declined (Geake 1992). It is equally possible that they are impoverished 6th-century interments, although this would give an earlier date for the commencement of burial than the chronologically diagnostic grave goods allow. Overall, the evidence from the excavated graves indicates that this part of the cemetery was in use for a period of about 75 years, from the late 6th century to about the middle of the 7th century, ie, c. AD 575 to 650, and would have been used by two or three generations.

Intercutting mortuary structures

The stratigraphic relationships between the external mortuary structures has assisted in the construction of a relative sequence of dates for some of the graves, helping to refine the dating based on the artefacts, and placing some of the unaccompanied burials into the chronological sequence (Table 13). However, as described above, there is uncertainty as to the stratigraphic relationship between the two penannular ditches 7189 (group 7065) and 7190 (group 7175).

Table 13 Sequence of intercutting graves

Phase	Grave and orientation	
I (late 6th C)	7049 (N-S)	
II (early 7th C)	7067 (N-S)	7040 (N-S)
III (mid-late 7th C)	7009/7033 (E-W)	?7095 (E-W)

Nonetheless, penannular ditch 7190 (group 7175) cut both grave 7040 and the large (probably) annular ditch enclosing grave 7067 (group 7034). As grave 7067 is dated to the period AD 600–625), the two graves (7009 and 7033) enclosed by ditch 7190 (both unaccompanied and assumed to be roughly contemporary) would appear to date to some time in the mid-7th century; this accords with the belief that the grave good rite declined during the 7th century (although a lack of grave goods does not necessarily indicate a late date; Scull and Bayliss 1999). It implies that grave 7040 must also date to before AD 625, and possibly be contemporary with grave 7067, a notion supported by the fact that both share a similar alignment. Like group 7175, grave 7095 (group 7179) is also stratigraphically later than group 7034. It produced a type of pin that is found in contexts spanning the 7th century, and it can also be placed comfortably in the mid-7th century.

However, the recorded stratigraphic relationship between penannular ditches 7190 (group 7175) and 7189 (group 7065) appears to be contradicted by the finds evidence. Although ditch 7189 was recorded as being the later of the two penannular gullies, the grave goods in grave 7049 indicate a date in the last quarter of the 6th century, making this the earliest of the enclosed graves. This suggests that ditch 7189 was cut by ditch 7190, not the reverse.

The wider burial rite

All the burials were by inhumation. This is consistent with the situation found throughout West Kent. Although 21 cremation burials were found in the 5th- and 6th-century cemetery at Orpington (Tester 1969; 1970; 1977), and several were noted at Riseley (Horton Kirby II;

Meaney 1964, 133–4), none were uncovered at either Polhill or Holborough, and this appears to reflect a genuine and widespread preference for a single rite in the region by the 7th century. Cremation burial was also rare in East Kent, with only one modern excavation having produced evidence for the rite: Ringlemere with a minimum number of possibly four individuals; as in West Kent, there are no known 7th-century cremation burials.

With such a small sample it is difficult to say anything conclusive about the various aspects of burial practice and this is compounded by the lack of human remains in five graves. From the available evidence it is clear that all the graves contained the remains of single burials. Where the evidence has survived it is found that the majority of the dead were laid out in an extended supine position, which is typical of both Kent and the rest of the country. Grave 7040 is an exception: it contained an individual in a crouched position. Kent has produced very few crouched burials: only six others (1.5% of the 390 inhumations of known position) feature in this writer's database of the county. The figure can be put into context by considering the region of Wessex where 38 (6%) of the burials were found crouched. Five of the examples from Kent came from Polhill and comprised both adult and immature individuals, all of whom were without accompanying goods. Pilgrim's Way grave 7040 contained a juvenile, and a buckle was the only grave good. The rarity of the rite, especially in Kent, suggests that it was a practice that had been used to mark an individual out as someone different to the majority of the inhumed population. It is impossible to say for certain what this difference was, but the correlation between crouched burial and little or no burial wealth may be indicative of a lowly status, or a loss of status incurred through a particular action or behaviour.

Two main orientations were used: either (head) south–north or (head) west–east, the former slightly outnumbering the latter. This range is unusual because the majority of burials in Kent were aligned west–east (Stoodley 1999a, 63–6). Other orientations were used, but they are always in the minority. Pilgrim's Way has more in common with the 5th- and 6th-century cemetery of Orpington, where 20% (n=12) of the burials were orientated with their heads to the south, and Riseley where there was '*no general overall orientation; most graves were roughly EW, some NS, and one group NE–SW*' (Meaney 1964, 133). A mix of both south–north and west–east alignments is also found in the 5th- and 6th-century cemeteries of Wessex, such as Mount Pleasant, Alton (Hampshire) (Evison 1988) and Collingbourne Ducis (Wiltshire) (Egging Dinwiddy and Stoodley, forthcoming). Although this mixture of orientations is a feature of regions with Saxon material culture, it is difficult to know what specific reasons might have been responsible for the variation in grave alignment at Pilgrim's Way. One possible factor is chronology. Most of the west–east graves were without grave goods, and the two that did have them only produced a few simple pieces of jewellery. In contrast, eight out of the nine north–south burials were accompanied, and this includes all the weapon burials. There might

have been two phases of burial with the south–north graves being the earlier of the two, while the west–east graves belonged to a time when the deposition of grave goods had declined. As already cautioned, an absence of grave goods cannot always be explained in chronological terms, although the idea that orientation was linked to chronology is to some extent supported by the stratigraphy (see above): penannular gullies surrounding west–east aligned graves were found to cut those enclosing south–north orientated graves.

The analysis of grave size was restricted to adult graves (n=9), because the statistics are affected by the smaller size of the graves that contained immature individuals. The adult graves exhibit a range of sizes, which is typical of the period (Stoodley 1999a, 67–9). When average dimensions are compared against the data from the other West Kent cemeteries, the Pilgrim’s Way graves do not stand out, although the site does record the shallowest average grave cuts (Table 14). If individual graves are considered, however, it is noted that at 3.29 m grave 7067 is clearly the longest: the maximum lengths at Holborough and Polhill are 2.78 m and 2.55 m respectively. Although this is also the widest (1.68 m) and deepest (0.80 m) of the Pilgrim’s Way graves, Polhill recorded cuts that exceed both these measurements, with some especially deep examples: grave 36 was 1.54 m deep, and there were even deeper ones, but these contained multiple interments that had been stacked on top of each other, and are therefore not comparable.

Table 14 Comparison of average grave size in West Kent cemeteries (number in brackets = sample); ‘immature’ graves include smaller (child-sized) empty graves

Dimension (m)	Pilgrim’s Way		Polhill	Holborough
	<i>Immature</i>	<i>Adult</i>	<i>Adult</i>	<i>Adult</i>
Length	1.38 (6)	2.21 (9)	2.03 (57)	2.28 (25)
Width	0.67 (6)	0.96 (9)	0.94 (67)	0.74 (26)
Depth	0.21 (6)	0.37 (9)	0.49 (63)	0.42 (27)

Almost all the graves were of an irregular sub-apsidal shape, although there was one sub-rectangular cut (grave 7020), again with an irregular outline. In contrast, the majority of the grave cuts at Polhill were regular or irregular sub-rectangular (the data from Holborough is not representative).

Evidence for internal grave structures is scarce, although this could be a reflection of the poor preservation of organic remains. Grave 7009 had a timber lining along the north edge of the grave, which may be the fragmentary remains of a container, but the lack of similar evidence from the other sides suggests that this is not the case. At Cliffs End, grave 2557 may have had a timber plank along the edge of the grave (Stoodley 2014), while a number of the graves at Broadstairs I (Valetta House, Unpubl.) produced timber structures that have been interpreted as individual boards, planks or ledges. A range of wooden features could have been

used to afford some protection to the inhumed, or to embellish the interior of the grave, but without further evidence it is impossible to discern their true character.

Much better evidence for an internal timber mortuary structure was provided by grave 7067. A large internal area (3.29 long by 1.68 wide) had been revetted with planks to create a chamber. Planking was also recorded at either end of the chamber which seems to have created a pair of internal compartments. The glass claw beaker, bone comb and wooden vessel had been placed in the compartment at the north (foot) end of the chamber. No objects were found in the compartment at the south (head) end, although it may have contained food stuffs or soft furnishing, evidence of which have not survived. Chambers are rarely encountered in early Anglo-Saxon period graves, and Pilgrim's Way is an important addition to the corpus. Outside Kent, at Spong Hill (Norfolk), two chamber graves (31 and 40) were positioned within annular ditches and both the inhumed had weapons (Hills *et al.* 1984, 80, 91–3). A number of the graves excavated at the Buttermarket cemetery, Ipswich, produced evidence for wooden linings, of which two (graves 2203 and 2339) have been identified as chambers (Scull 2009, 116, 272–4). Chamber graves are one of the features associated with princely burials: Broomfield (Meaney 1964, 85), Sutton Hoo (Bruce-Mitford 1975; 1978; 1983; Carver 2005), Taplow (Meaney 1964, 59; Pollington 2008, 168–71) and PrITTLEWELL (MoLAS 2004) have all produced evidence for timber structures that contained richly furnished burials. In fact, it could be argued that chambers are one of the defining characteristics of these elite monuments. At Sutton Hoo, Taplow, and apparently at PrITTLEWELL, the graves had been covered by barrows, although this does not appear to have been the case at Broomfield (Geake 1997, 151), while at PrITTLEWELL the burial had also been placed in a coffin. The English evidence is not extensive, but it does demonstrate that chamber graves are linked to weapon burial and above-average wealth, both in terms of grave goods and investment in grave structure (Table 15). Although rare, women were also interred in chambers: Sutton Hoo Mound 14 had been robbed, but the surviving artefacts indicates that it originally housed the burial of a female (Evans 2005, 211–5).

Table 15 Princely burials

Cemetery/ burial no.	Burial	Date (AD)	Weapons	Vessels	Grave dimensions (m)	Coffin	Chamber	Barrow/ ring-ditch	Comments
Broomfield	No surviving bones	600–625	Sword, shield and spear	Drinking horns (pair), buckets (2), glass (2), wooden (2) and copper alloy vessels (1). Pot and iron vessel.	2.5 long		✓		No associated graves
Pilgrim's Way grave 7067	Adult male	600–625	Sword, shield and spear	Drinking horns (pair), glass and wooden vessel	3.29 x 1.68 x 0.8		✓	✓	-
Prittlewell	Adult male	615–635	-	Various, glass and wooden vessels. Copper alloy vessel and drinking horn	4 x 4 x 1.5		✓	✓	Close to cemetery with large no. weapon burials. Objects inc. gaming set and harp
Spong Hill 31	Adult male and immature	500–575	Spear and shield	-	2.92 x 2.04 x 1.16		✓	✓	Robbed
Spong Hill 40	No surviving bones	525–550	Sword, shield and spear	Bucket, bowl	2.62 x 1.39 x 1.2		✓	✓	-
Sutton Hoo Mound 1	No surviving bones	600–625	Sword, set of spears, shield, axe, seax and helmet	Drinking horns (2), various silver vessels and a plate, hanging bowls (2), bronze vessel, cauldrons (3), buckets (3), set of wooden cups and pot	6.75 x c. 5 x c. 1.75		✓		Ship burial
Sutton Hoo Mound 2	-	-	Sword and shield	Drinking horn, wooden vessels (2) bucket, copper alloy vessels (2), glass vessel, silver bowl ?box	3.8 x 1.5 x 2		✓		Ship burial, robbed
Taplow	Unidentified, probably male	600–625	Sword, shields (3) and spears (3)	Drinking horns (4) wooden vessels (5), copper alloy (2) and glass vessels (4), buckets (2)	3.5 x 2.5 x >1.5		✓	✓	Objects inc. gaming set and harp. Possibly another drinking horn and bucket

Chamber graves were fairly common in Scandinavia and France (Fischer *et al.* 2009). In Scandinavia they contained weapons burials and objects that involved precious materials in their construction (*ibid.*, 189). In Frankia, chamber graves consisted of plank-lined pits, with some examples marked on the surface by post-holes and circular ditches (*ibid.*, 194). In both regions, the chambers usually contained coffins which has given rise to the term ‘coffin-in-chamber type’. The most common form of chamber grave in Frankia is the Morken type, named after the princely burial from the Rhineland dated *c.* AD 600, which had average dimensions of 3 m long by 2 m wide. In this type the coffin was positioned at the side of the chamber, which allowed the remainder of the space to be furnished with grave goods (*ibid.*). The only definite English example of the Morken type is Prittlewell. At Sutton Hoo in Mounds 1 and 2, and at Taplow, the burial had been placed in the centre of the chamber. The German cemetery of Oberflacht, Baden-Württemberg, has produced especially well-preserved examples of timber grave structures (Schiek 1992; Paulsen 1992), which include chambers that were long and narrow with a space at the foot of the grave for artefacts. Morphologically they are different to the Morken chamber, and the example from Pilgrim’s Way grave 7067 can be classified as belonging to this type.

Graves 7009 and 7033 (group 7175) and 7049 (group 7065) were enclosed by penannular ditches, each with an entrance causeway on the eastern side; grave 7095 was also at least partly enclosed by a curving gully (group 7179). Penannular ditches belong to a group of external mortuary features that are hardly ever encountered before the end of the 6th century (Hogarth 1973). Along with barrows, annular ditches, slots and post-holes, they are part of a general trend for the marking of graves above ground level, and this move to a more visible and permanent symbol of wealth was a development that may have been forced by the withdrawal of grave goods from the burial rite.

Penannular ditches are relatively common in Kent, although it is only a small proportion of the graves in any one cemetery that attracted the extra investment of labour that such a feature involved. In some cases low barrows may have been raised from the ditches; at Finglesham, for example, the remains of chalk mounds were found in the interior of the penannular features, eg, grave 59 (Hawkes and Grainger 2006, 63). However, the entrance suggests that the interior was accessible and therefore that any mound would not have been especially large. It is possible that the ditches were quarries for an earthwork bank, which over time has been spread over the interior. The bank and ditch can thus be understood as having demarcated a sacred zone around the grave, while the presence of post-holes, which have been found in the causeway of some examples, may have served not only to mark the monument, but to restrict access into its interior. At Pilgrim’s Way the ditch surrounding grave 7049 had an external diameter of *c.* 5.6 m, while the one associated with graves 7009

and 7033 was smaller at *c.* 4 m. Both had an eastern entrance and there would have been a space of at least 1 m around each grave. Grave 7095 may have been situated within a small penannular or annular ditch but it was not possible to trace the full extent of the feature during the excavation. The Polhill penannular ditches (*n*=6) ranged in external diameter from 3.96 m to 5.11 m (average of 4.3 m), and all had entrances to the east, while those from Finglesham (*n*=11) were larger, measuring 4.7 m to 6.7 m (average of 5.4 m), and again the entrances were on the east side. At Saltwood, however, there were several larger penannular ditches and although the majority of causeways were in the east, they were also found in other locations. The analysis of the osteological data from both Polhill and Finglesham has revealed that individuals of any age or sex could be buried in the interior of a penannular ditch. Similarly the burials from Pilgrim's Way were not sex or age linked, and it seems that the decision to bury an individual within a penannular ditch was one based on some other aspect of their social identity.

Group 7175 contained a pair of graves (a possible female and a juvenile) and although this is rare, examples of multiple graves can be cited from elsewhere in Kent. At Finglesham three graves (131, 132 and 133), for two immature individuals and an adult male, were enclosed by a penannular ditch, while at Polhill two graves (94 and 95) were associated with a ditch that survived as two separate sections; grave 94 was a small cut that may have contained an immature individual, and grave 95 contained the remains of both an adult and an immature individual. Overall, the evidence suggests the grouping together of individuals of related kin.

Much less common are annular (ring) ditches. At least one example is known from Broadstairs III (St. Peter's Tip), while Springhead and Saltwood have had two examples. The ditches are possibly the remains of quarries from which small barrows were raised. At Pilgrim's Way, group 7034 probably had of an annular ditch, there being no causeway on its eastern side, although this remains unproven since its western part lay outside the area of excavation. With a diameter of *c.* 13 m, it is much larger than most known annular ditches, especially the aforementioned pair from Spong Hill. However, a penannular ditch at Saltwood, with a causeway at the north, had a diameter of *c.* 10 m (Booth *et al.* 2011).

At Pilgrim's Way no direct evidence for a barrow was discovered, although the earthen mound may have eroded away. The notion that it was a barrow is further weakened by the fact that five post-holes were spaced out around the inner edge of the ditch. If, as seems likely, the post-holes continued around the inner circuit of the ditch, the evidence may relate to a wooden structure, perhaps with a covering, which had been enclosed by the ditch. In a similar way, several penannular ditches at Broadstairs III had stake-holes in their bottoms, which may have originally supported the posts of a fence (Wilson 1992, 60). During the 7th

century there was a tradition of marking the locations of inhumation graves with wooden structures. This is evidenced by the post-holes discovered in the causeways of penannular ditches (see above), in addition to the post-holes that lined the edges of some grave cuts. There are various formations of post-holes known from Broadstairs III (Richardson 2005, ii, fig. 16), while at Broadstairs I, one grave was found to have had four deeply-cut post-holes at each corner (*ibid.*, 14). The evidence from these sites probably represents a variety of timber structures that had once covered the graves. A configuration of post-holes from a recently excavated grave on the Isle of Thanet has been interpreted as representing a canopy (Riddler 2008, 294, fig. 3/11). Overall, there is a steadily expanding body of evidence that points towards the importance of timber mortuary structures in 7th-century Kent, and it is in this context that the structure from group 7034 can be understood.

Cemetery layout

Most of the (more) fully investigated cemeteries in Kent have higher numbers of graves, some substantially so (Table 16), and it is virtually certain that those excavated at Pilgrim's Way are part of a larger burial ground, with additional graves to the south, west and north (Pl. 10). The graves thin out to the east and it seems probable that the excavation has found this edge of the cemetery. In addition to the cemetery, the excavation may have identified the course of the Pilgrim's Way, a major prehistoric trackway that linked Wessex to the English Channel. At Polhill, the Pilgrim's Way lies to the south of the cemetery and appears to have served as a boundary. It may also have acted as a boundary at the Pilgrim's Way cemetery, although the possibility that graves continued across the line of the route into the unexcavated area to the north-west cannot be discounted. In fact, a fragment of a feature (7156), perhaps a section of a ditch, can be observed disappearing under the northern edge of the site (see Figs 2 and 3).

Table 16 Number of inhumation graves from Kent cemeteries (E = East Kent)

Cemetery	No. graves
Broadstairs I (E)	119
Broadstairs III (E)	399
Cuxton	36
Holborough	40
Deal (E)	76
Dover Buckland I (E)	414
Finglesham (E)	244
Lyminge II (E)	64
Ozengell (E)	243
Polhill	130
Saltwood (E)	219
Sarre (E)	294

With such a potentially small sample it is hard to say anything definite about cemetery layout. The plan shows that most of the graves are either associated with annular and penannular ditches, or appear to cluster around them. Graves 7003 and 7023 are separated from this main group by a distance of several metres, although there is nothing unusual about this: many early Anglo-Saxon cemeteries record small clusters of graves in relative isolation. Two different orientations were present (see above), with the south–north aligned graves distributed throughout the excavated area. The mix of different alignments is definitely unusual for Kent (see above), but although four of the south–north orientated graves appear to have been placed in a (very) rough row, orientation does not seem to have played a factor in the organization of the cemetery.

The most significant feature in terms of the layout is group 7034, an imposing and sophisticated structure (see above) which appears to have been an important determining factor in the organization of this part of the cemetery, with graves, and their associated mortuary features, clustering around it.

As already described, the use of external mortuary structures to signal the location of graves is a practice that is relatively common in Kent, especially in the later 6th and 7th century (Hogarth 1973). Graves associated with penannular ditches tended to be restricted to the periphery of a cemetery. At Polhill, six penannular ditches were sited on the western edge of the cemetery. At Broadstairs III, a large range of external grave features were excavated, and the annular and penannular structures were again restricted to the edges of the burial ground; while in the south-west part there was a notable cluster of seven penannular ditches. At Finglesham, penannular ditches were found in the southern part of the site and it appears that a line of them served as a boundary to the cemetery. The implication for Pilgrim's Way is that the excavation may have exposed the western edge of the cemetery.

Burial ritual and social identity

In common with the rest of England, the practice of depositing grave goods with the dead started to decline in Kent during the 7th century (Geake 1997). In the 5th–6th-century cemetery of Orpington only one adult was found without any type of grave good, whereas at the predominantly 7th-century cemetery of Polhill, 29% of adults (n=25/85) were unaccompanied; in the mid-7th–mid-8th-century cemetery of Holborough the proportion of unaccompanied burials had risen to 74% (n=23/31). The average number of different grave good types (per burial) drops from 3.9 (Orpington) to 2.3 (Polhill). The gradual reduction in the number of grave goods is a trend that affects both men and women, with a drop in the quantity of weapons and jewellery that was deposited. The majority of 7th-century burials that were still provided with grave goods had simple assemblages, such as knives and buckles.

At Pilgrim's Way only 22% (n=2/9 of possible adults) of the adult burials were unaccompanied, a figure that is in contrast to the general picture outlined above (average number of types = 3.4). A closer examination of the data reveals a more complex picture: several burials produced small quantities of objects, eg, grave 7040 (buckle), 7077 (knife and buckle), 7115 (bead), which is typical for the 7th century, but the proportion of burials with weapons is high at 67% (n=6/adults). In addition, graves 7010 and 7067 both had elaborate sets of weapons (sword, spear and a shield). The proportion of adults with weapons at Polhill and Holborough is 18% and 13% respectively. The high figure from Pilgrim's Way may be a result of the cemetery being established in the late 6th century, ie, when the accompanied rite was still popular. Yet the situation is complicated by the dearth of females, or to be more precise, the absence of women interred with jewellery. In fact, the two graves that did produce jewellery (7095 and 7115) apparently belonged to immature individuals. Of the 40 burials from Holborough, 48% (19) are male and 11% (28) female, whereas at Polhill 35% (46) are male and 19% (25) female, and jewellery was recovered from the graves of a number of adult women. Both these burial grounds contained immature individuals and it is reasonable to assume that they served local communities. In contrast, Pilgrim's Way has a demographic profile that is weighted towards adult males.

It is possible that the excavation sampled an area of the cemetery that had an unusually high number of male burials; a similar situation was identified at Polhill (see above). Alternatively, it may have been established as a largely male-only cemetery, rather than a cemetery for the whole community. Burial grounds of the 7th century that have yielded large samples of males have been recognised in other areas of the country. In Wessex, examples have been found in the coastal areas around Portsmouth and Christchurch harbours (Stoodley 1999b). Bargates (Christchurch) (Jarvis 1983) was sited around a prehistoric barrow cemetery and is notable for the relatively high number of weapon burials and the total lack of jewellery (whether there were any females is unknown because very little skeletal material survived). It dates to the late 6th and 7th century and grave orientation is a mix of both north-south and east-west aligned graves. One grave was also enclosed by a penannular ditch. To the east, the burial ground of Portsdown I (Corney *et al.* 1969), associated with a probable prehistoric barrow overlooking Portsmouth Harbour, is dated to the later 7th and 8th centuries, and although only two of the 28 burials had weapons, there was no jewellery; in fact only three were sexed as female, compared to 17 as male. The 7th-century cemetery at Snell's Corner (Horndean) (Knocker 1956), located close to a Bronze Age barrow is similar: 34 burials were excavated and, of these, five had weapons, but only two were found with jewellery (eight females overall). The mid-7th-earlier 8th-century cemetery at St Mary's Stadium, Southampton, also fits into this category (Birbeck *et al.* 2005; Stoodley 2010). St

Mary's is notable for the high number of weapon burials, some of which were particularly complex, and although the excavation produced two gold pendants, jewellery was generally scarce (Stoodley 2010). The cemetery had been located next to the shore of the River Itchen, very close to where it emptied into Southampton Water.

As a group each of these cemeteries was strategically located and most also benefited from a high degree of visibility. Not only were the burials of women and children in a minority, but they contained fewer grave goods. It is the males that benefited from above average wealth, both in terms of grave goods and labour expended on the associated mortuary monuments. The form of social organisation underlying the establishment and management of such places appears to be different from the community cemeteries: the emphasis is on commemorating the male, and the masculine roles that were important within these contexts. The ritual treatment afforded to these burials may reflect the control of a higher-status group over a population who were denied access to such burial grounds and the types of rituals associated with them.

Pilgrim's Way may be a Kentish example of this type of cemetery. What sets it apart, however, is the level of wealth associated with grave 7067, and the complexity of the grave structure. On the basis of this evidence the grave belonged to an individual of a different social rank to those discussed above. It has more in common with the group of isolated later 7th-century barrow burials, such as Ford (Wiltshire) (Musty 1969), Lowbury Hill (Berkshire) (Atkinson 1916) and Oliver's Battery (Hampshire) (Andrew 1934; Yorke 2010). Each example has produced weapons, plus paraphernalia associated with feasting, such as hanging bowls. Grave 7067 is not directly comparable, however: it is earlier in date, it is not an isolated inhumation, and it exceeds all the other examples in terms of the range and quality of the grave goods, and the complexity of the grave structure.

The very top of the social ladder is occupied by the tier of princely burials, such as Broomfield, Sutton Hoo, Taplow and Prittlewell. Members of this class have much in common and are characterised by large quantities of grave goods, which include rare and prestigious artefacts, although weapons and feasting equipment – objects that symbolized the roles and lifestyle of the deceased – are always present. Each example was interred in a complex monument, which involved timber structures (see above), and in most cases an earthen mound. Princely burials could be part of a small aristocratic cemetery, such as Sutton Hoo, or apparently placed in isolation, which seems to be the case at Broomfield.

Although Kent demonstrates evidence for increasing stratification during the 7th century, with a number of graves containing individuals that must have belonged to the upper levels of society, it has yet to produce an example worthy of the title 'princely.' Kent was the first Anglo-Saxon kingdom to be converted to Christianity (AD 597), and it is possible that

the elite of the early 7th century opted for burial in a church, which in itself would have been a potent and permanent symbol of status. Not all the Kentish elite relinquished the old gods, however; for example, Æthelberht's son and heir, Eadbald, was a pagan at his accession (Kirby 1992, 36). Members of the elite that adhered to the traditional practices would still have required a final resting place that was in keeping with their position in society. A grave that incorporated a large timber superstructure can perhaps be interpreted in the same way as a stone church – it emitted a clear and long-lasting signal of the occupant's rank.

The individual in grave 7067 can certainly be classified as high rank: he occupied the wealthiest and most complex grave so far discovered in Kent. For example, Broadstairs I grave 71 is contemporary to grave 7067 and produced a sword, a pair of spearheads and a shield, as well as a copper alloy vessel and evidence for a wooden vessel. However, although the grave contained a coffin, and is surrounded by a relatively large space strongly suggestive of the prior existence of a barrow, structurally it is much simpler than the monument associated with grave 7067. The excavation of Sarre 39B (later 6th century), yielded a large range of weapons: sword, *seax*, axe, shield and pair of swords, yet the only vessel was a bucket and no evidence for a grave structure was recorded.

Can the burial in grave 7067 be described as princely? The occupant was a contemporary of the princely burials, and Table 15 shows that it has many features in common with them, especially significant is the range of prestigious drinking vessels and the chamber. In addition, it is possible to identify a number of separate zones around which the grave had been structured: there were feasting zones at both the head and foot end where vessels had been deposited; while the space immediately around the burial, which was occupied by weapons, can be interpreted as a warrior zone. This manipulation of space is similar to the situation found in Mound 1 at Sutton Hoo (Carver and Fern 2005, 312). Also similar to Sutton Hoo is the possibility that grave 7067 was a focal point of an aristocratic cemetery. Pilgrim's Way produced several other burials that can be described as high status: grave 7010 with a full complement of weapons, plus a scabbard strap decorated with three pyramidal studs, while grave 7003, which produced a sword, but no other weapons, may also qualify. In addition, the penannular ditches clearly demonstrate that the burials of several individuals had attracted above average amounts of labour. So far so good, but two important aspects argue against grave 7067 joining the upper most echelons of 7th-century society. The chamber is much smaller than the examples from Sutton Hoo, Taplow and Prittlewell, and the overall number of grave goods is much lower. The group responsible for the burial of the individual in grave 7067 was unable to make an investment of wealth on the same scale as had occurred in the princely burials. So although grave 7067 is clearly very wealthy for Kent,

it cannot compete on a national scale, and should be ranked just below the pre-eminent 7th-century burials.

Pilgrim's Way in the wider landscape

There is no record of any previous finds of Anglo-Saxon date from the immediate vicinity of the site, but a number of separate discoveries of 5th–early 8th-century burials have been made close to the nearby village of Wrotham. At White Fields (Wrotham I), several graves were disturbed, which produced weapons and jewellery of probable 5th- and 6th-century date, while at Wrotham II (Bradford Platt) burials were found with objects including sceattas that are definitely early 8th century (Meaney 1964, 141–2).

The Pilgrim's Way cemetery was located at 155 m aOD on the edge of the south scarp face of the North Downs. The steeper slope to the north would have acted as a backdrop to the cemetery increasing its visibility from the lower lying land to the south. Lucy (2000, 128) has shown that Anglo-Saxon cemeteries were located around sites that had funerary associations, but they were also associated with earlier settlements, on natural ridges and around mounds in the landscape because such features served as markers directing people to the burial grounds for ceremonies of interment and remembrance. The area around the cemetery has not produced any evidence for prehistoric monuments, but it was directly to the south of a prehistoric route-way (the Pilgrim's Way). It may be significant that as the Pilgrim's Way approaches the cemetery it deviates from its course to drop slightly southwards, and it is probable that this was a later deviation necessary to avoid the Anglo-Saxon graves. The cemetery of Wrotham II was also sited very close to the Pilgrim's Way trackway. This was not, however, a phenomenon restricted to this particular section of the route: Polhill was sited about 20–30 m west of it, while in East Kent the cemeteries of Harrietsham II and III are within 50 m of it (Brookes 2007, 65). In Anglo-Saxon times the prehistoric trackway was one of a number of important Romano-British and earlier routes that not only aided communication, but which structured the location of many of the burial grounds of East Kent (*ibid.*, 58–65); proximity to this route was also a major determining factor that governed the positioning of cemeteries in West Kent.

At Pilgrim's Way, Wrotham II and Polhill, the cemeteries must have been sited so that each was visible to travellers using the trackway. At Polhill, the cemetery was on a false crest at the junction of the Darent Valley and the North Downs scarp (Philp 1973, 164) and would have been clearly visible to people moving along the route. Moreover, the penannular ditches were sited on higher ground on the western edge of the cemetery and would have been silhouetted against the skyline rendering them clearly visible from the trackway. While at

Pilgrim's Way, the close proximity of the monuments to the trackway, especially the large structure associated with grave 7067, would have directly impacted on the way travellers experienced the cemetery. The visibility afforded to Pilgrim's Way, Polhill, and possibly also Wrotham II, must have been intentional. A number of recent studies have demonstrated how early Anglo-Saxon cemeteries were deliberately placed in relation to routes of communication. For example, in the Avebury region of Wiltshire, Anglo-Saxon burials reused prehistoric monuments, and by the 7th century mounds were being chosen that were in close proximity to route-ways (Semple 2004). Both Yatesbury I, a primary male barrow burial, also associated with a Roman circular enclosure, and Yatesbury II, a multiple burial of a male and female interred in a Bronze Age barrow, were positioned close to the *herepath*, which ran from Marlborough to Wroughton (*ibid.*). This was a frontier region contested by the kingdoms of Wessex and Mercia, and it is argued that the barrow burials functioned as symbols of the conflict for authority to those travelling through this border area (*ibid.*, 82–3).

The cemeteries of Pilgrim's Way, Polhill and Wrotham II were also situated in a frontier zone being close to the boundary between the kingdom of Kent and the region of Surrey. This boundary may have its origins in the 7th century when it utilized a stretch of the London to Lewes Roman road (Brookes and Harrington 2010, 67). The Anglo-Saxon cemeteries that were strung out along the route of the Pilgrim's Way may have functioned as political statements in a similar manner to those discussed by Semple for the Avebury region. The kingdom of Kent originally consisted of separate eastern and western provinces. The archaeological evidence demonstrates that West Kent was very different to East Kent: in the 6th century it displays a material culture similar to that of the East Saxons and the Saxons of Surrey and the Upper Thames Valley. This is clearly demonstrated by the early brooches that have been found at Orpington (eg, button, saucer, disc and applied ?saucer), Horton Kirby I (eg, disc), and Riseley (Horton Kirby II) (eg, disc, saucer and applied disc or saucer brooches) (Meaney 1964). Early Anglo-Saxon West Kent was culturally, politically and ethnically a separate territory to East Kent. It has been suggested that the origins of West Kent may actually lie in the kingdom of the East Saxons; rather than being an obstacle, the River Thames helped to preserve the close links between these peoples (Brookes and Harrington 2010, 65). At some time during the 6th century, East Kent subjugated the territory to its west (Yorke 1990, 27), in part probably because of its desire to control the routes of communication leading to London and the Thames Valley, but also because of the fertile soils in the Darent Valley and the dip slopes of the North Downs to the west of the Medway (Brookes and Harrington 2010, 65). That West Kent retained some independence, however, is evidenced in the fact that it was ruled by its own, semi-autonomous, king and had a bishopric at Rochester (Yorke 1990, 27).

The Pilgrim's Way was one of the major tracks linking Kent with the territories to its west: it afforded a direct route to Surrey and Hampshire, but it also intersects with the Roman road from London to Lewes, at Titsey, from which either London or the kingdom of the South Saxons could be reached. People who travelled into Kent via the Pilgrim's Way could have come from a variety of different locations. The junction of the trackway and the London to Lewes Roman road was on the western edge of the kingdom, about 10km west of Polhill. The high visibility of the three cemeteries can be interpreted as reflecting a need to symbolize the power and authority of the kingdom to those entering it and travelling along the route. In particular, the position of the monuments directly alongside the route at the Pilgrim's Way cemetery would have ensured that the significance of the cemetery would not have gone unnoticed. It must be significant that the cemeteries are regularly placed along a major route that crossed a potentially hostile borderland. In the later 7th century, Bede reports that a Mercian army ravaged West Kent to such an extent that the bishopric was temporarily abandoned (Yorke 1990, 30). But the potential for conflict may have been growing ever since East Kent annexed the former Saxon province of West Kent and found itself in direct contact with the surrounding embryonic kingdoms of the late 6th and early 7th century.

The burial grounds may have had different meanings to local people: the engagement with the cemeteries and their monuments may have served to integrate the ancestors into the fabric and routine of daily life. Alternatively, each cemetery may have been intended to act as a political statement. If the annexation of West Kent had occurred by the late 6th century (Yorke 1990, 27), then both Pilgrim's Way and Polhill (started c. AD 625) may have been established to underpin that conquest. Were the cemeteries an overt display of power and authority aimed at the inhabitants of West Kent by their new overlords?

The Polhill cemetery was visible from the village of Otford, which lies a mile to its east and from where a 6th-century cremation was found (Philp 1973, 164, 173). A middle Saxon pit has also been excavated from the village and may be evidence for the settlement that had been associated with the Polhill cemetery (<http://www.kentarchaeology.org.uk/Research/Pub/ArchCant/127-2007/22/432.htm>). At Wrotham, finds of 5th- and 6th-century date (Wrotham I) indicate the presence of an earlier cemetery about 0.75km to the east of the modern village and about 0.5 km south of the Pilgrim's Way. Although no evidence for an early or mid-Anglo-Saxon settlement has yet been discovered, it may have been sited close to this early cemetery. Very little is actually known about the structure and location of rural settlements in Anglo-Saxon Kent (Brookes 2007, 76–79), but the recent and partial excavation of the sites of Newington Biggin's Wood, and the two from Folkestone (Cherry Garden Hill and Cheriton Hill) show that each had been located on the chalk escarpment close to the Pilgrim's Way. On the basis of this limited evidence, the general picture seems to be

one where the living and the dead had inhabited a similar landscape and where routes of communication exerted a significant bearing on settlement topography.

Wrotham was certainly an important place by the later Anglo-Saxon period, as demonstrated by the fact that it gave its name to the hundred. The hundred of Wrotham was one of several in Kent where it corresponded with the territory of an early minster and where the minsterland probably encompassed a number of early estates (Everitt 1986, 271). When the minsterland fragmented in the late Saxon period into a number of separate parishes, these were probably drawn around the territories of the earlier estates (*ibid.*, 276). Thus the parish of Wrotham probably corresponds with the territory of one of these mid-Saxon estates; this is very important because it allows the administrative unit that the Pilgrim's Way cemetery was associated with to be identified. The aristocratic character of the cemetery suggests that this was an important estate, perhaps a royal estate centre – a notion which is confirmed by the fact that the minster church was sited at Wrotham. Studies have shown how a territory administered from a royal estate often contained a minster church (Hase 1988; Yorke 1995, 184–85).

A hundred comprised a meeting place where assemblies convened, and was usually named after its hundred; thus the site of the Wrotham hundredal meeting place was probably somewhere close to the modern village of Wrotham. Meetings were sited away from settlements, however, and open air venues were preferred, such as prehistoric sites, stones, bridges and fords (Brookes and Harrington 2010, 104). Particularly prevalent was the use of a mound, either prehistoric or one constructed during the Anglo-Saxon period (Reynolds 1999, 78). Prehistoric barrows were also popular choices for the site of an early Anglo-Saxon cemetery (Williams 1997), and in some cases the combination of both mound and burial place was selected as the assembly site. For example at Saltwood, where Anglo-Saxon graves focused on three separate Bronze Age barrows, the cemetery was recorded as the meeting place of the *Domesday* hundred of Heane (Brookes and Harrington 2010, 106–07). Thus a hundred meeting place could have its origins in a site with a tradition of activity stretching back into the early Anglo-Saxon period. Documentary records reveal, however, that following the conversion to Christianity, there was an increasing suspicion of mounds that were believed to have been associated with burials, and this could result in the construction of purpose-built mounds (Reynolds 1999, 78). The Pilgrim's Way cemetery may in fact have been the original open-air assembly site for Wrotham, used before it shifted to a location which did not have funerary associations. The external structure that covered grave 7067 would have been a prominent enough marker, while the cemetery's aristocratic associations and tradition of ritual activity will also have contributed to the selection of this site. Moreover, its proximity to a major route-way was another important consideration because it

would have allowed people from the dispersed settlements in the area to converge upon the site for meetings.

Acknowledgements

This project was commissioned by Fabricon Ltd on behalf of Southern Gas Networks Ltd, and Wessex Archaeology thanks Paul Farrance and David Taylor (of Fabricon Ltd), and John Davie, Nick Travis, Stuart Moody, Stuart Boughtflower and Alasdair Paterson (of Southern Gas Networks Ltd), in particular, for their assistance, as well as Shane Jestin and his team at Murphys Pipelines Ltd, and Joe Tomaney of Capita Symonds. The assistance and advice of Wendy Rogers (Senior Archaeologist, Kent County Council) and Brigitte Buss of RSK Environment Ltd (archaeological advisors to Southern Gas Networks Ltd) is also gratefully acknowledged. Special thanks are extended to Adam Stanford of Aerial-Cam for his photography of the archaeological works. The project was managed for Wessex Archaeology by Richard Greateorex, and the excavation was directed by Rob De'Athe. This report was compiled by Andrew Powell, and the illustrations are by Rob Goller and Elizabeth James. Chris Fern thanks Dr Tania M. Dickinson for commenting on a draft of his report.

The archive and finds are currently stored under project code 70300–4 at the offices of Wessex Archaeology, Old Sarum, Salisbury, until accepted by a Kent museum.

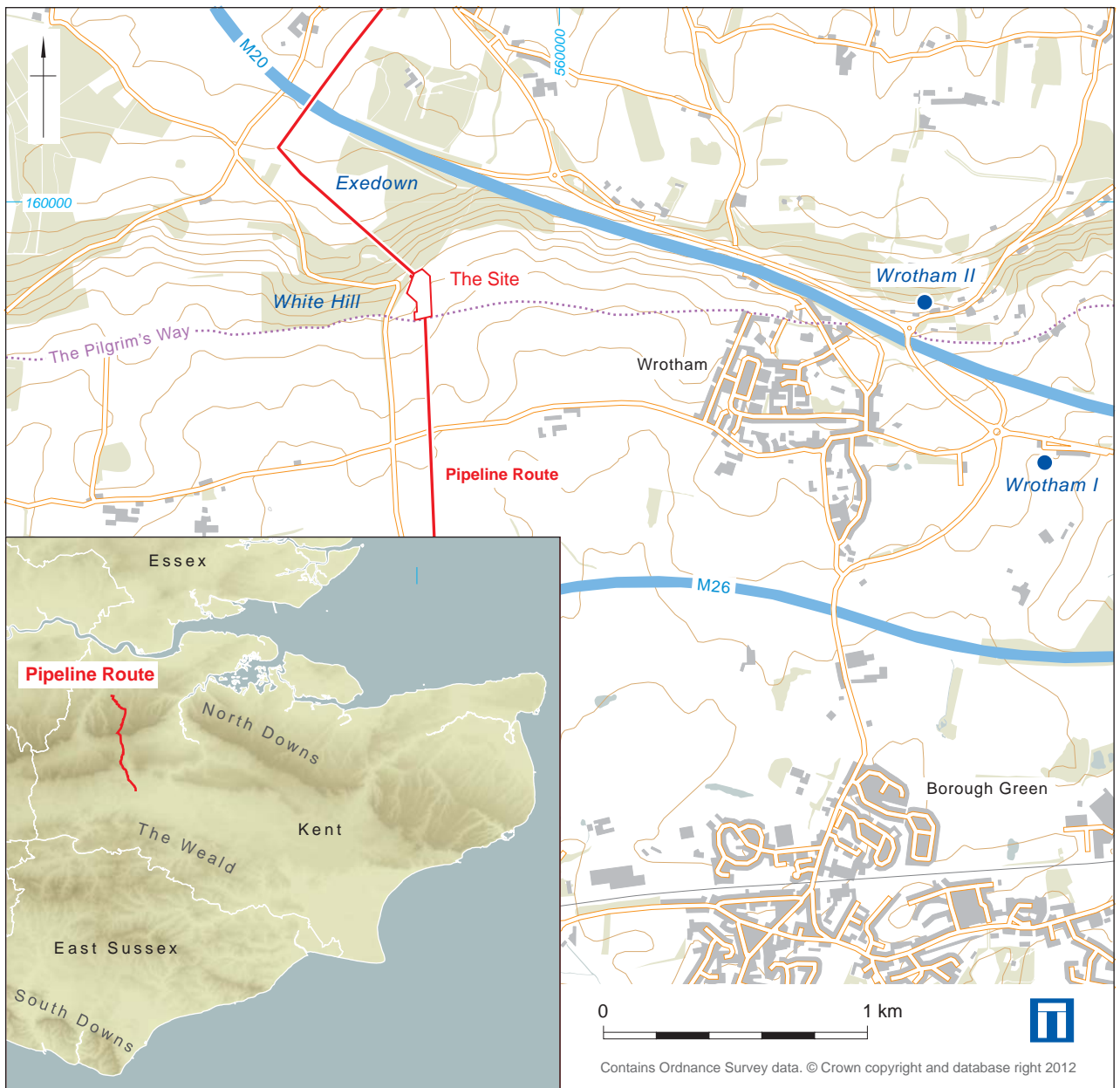


Figure 1: Cemetery location



Figure 2: The cemetery

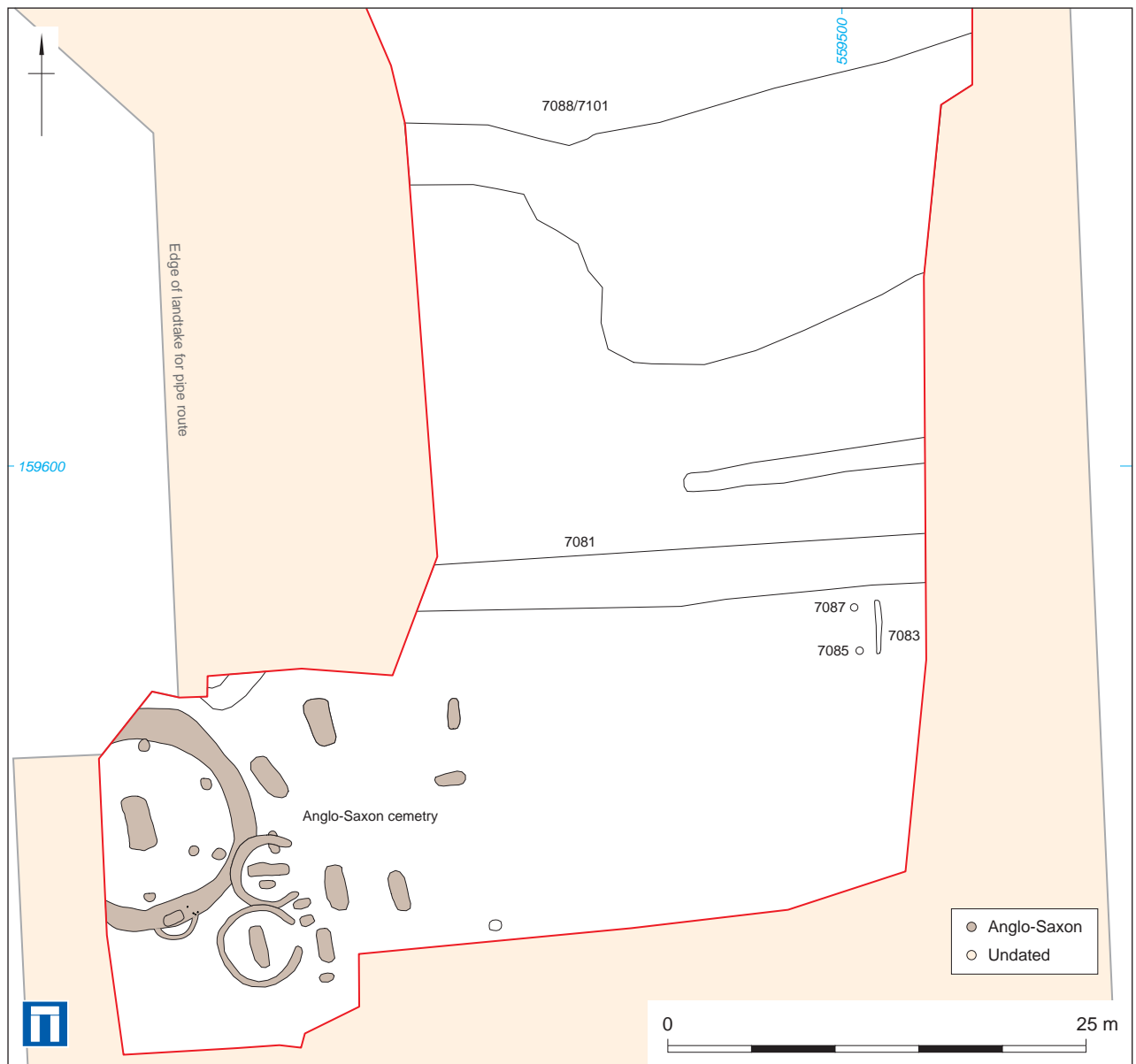


Figure 3: Other features

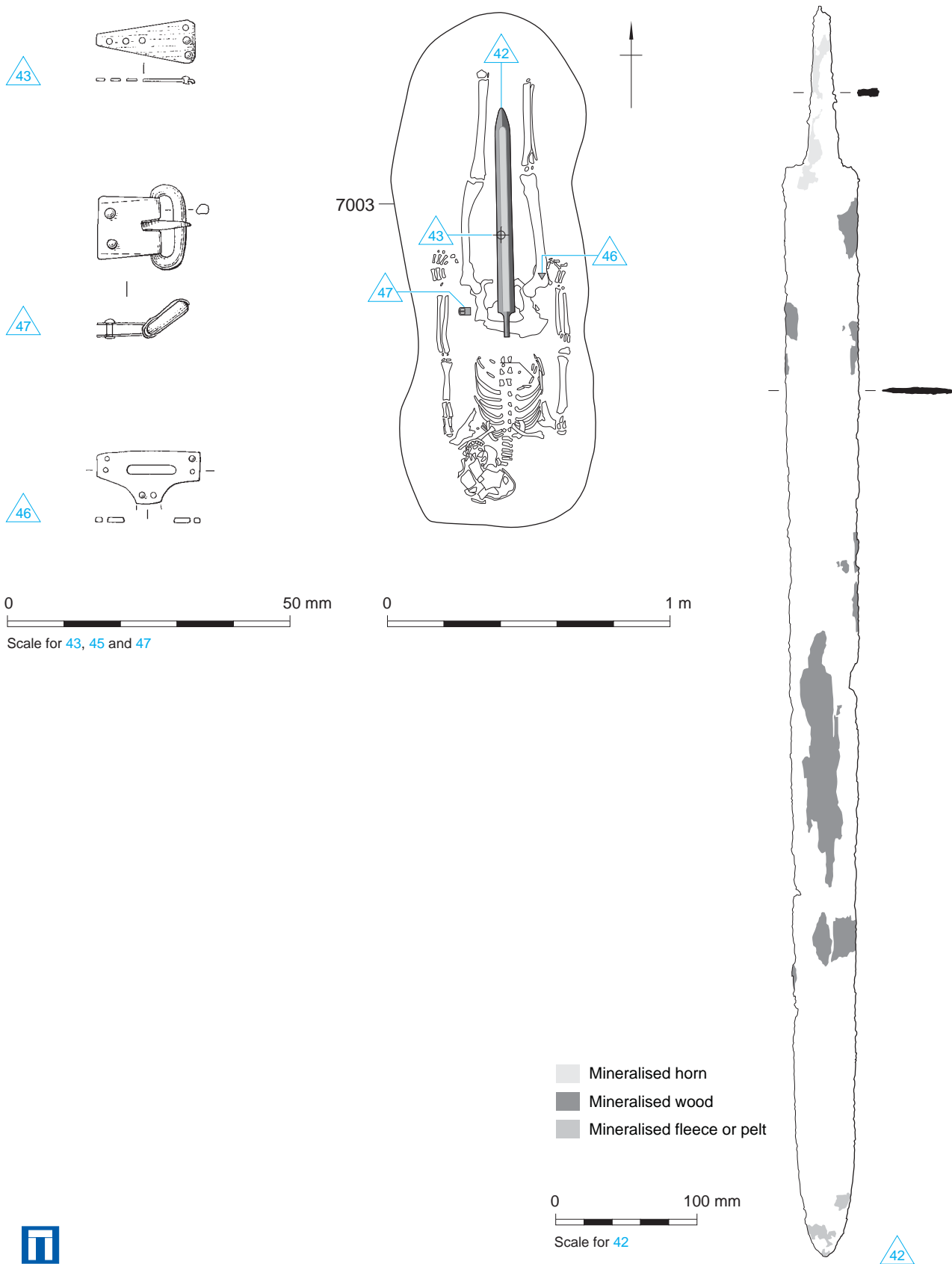


Figure 4: Grave 7003

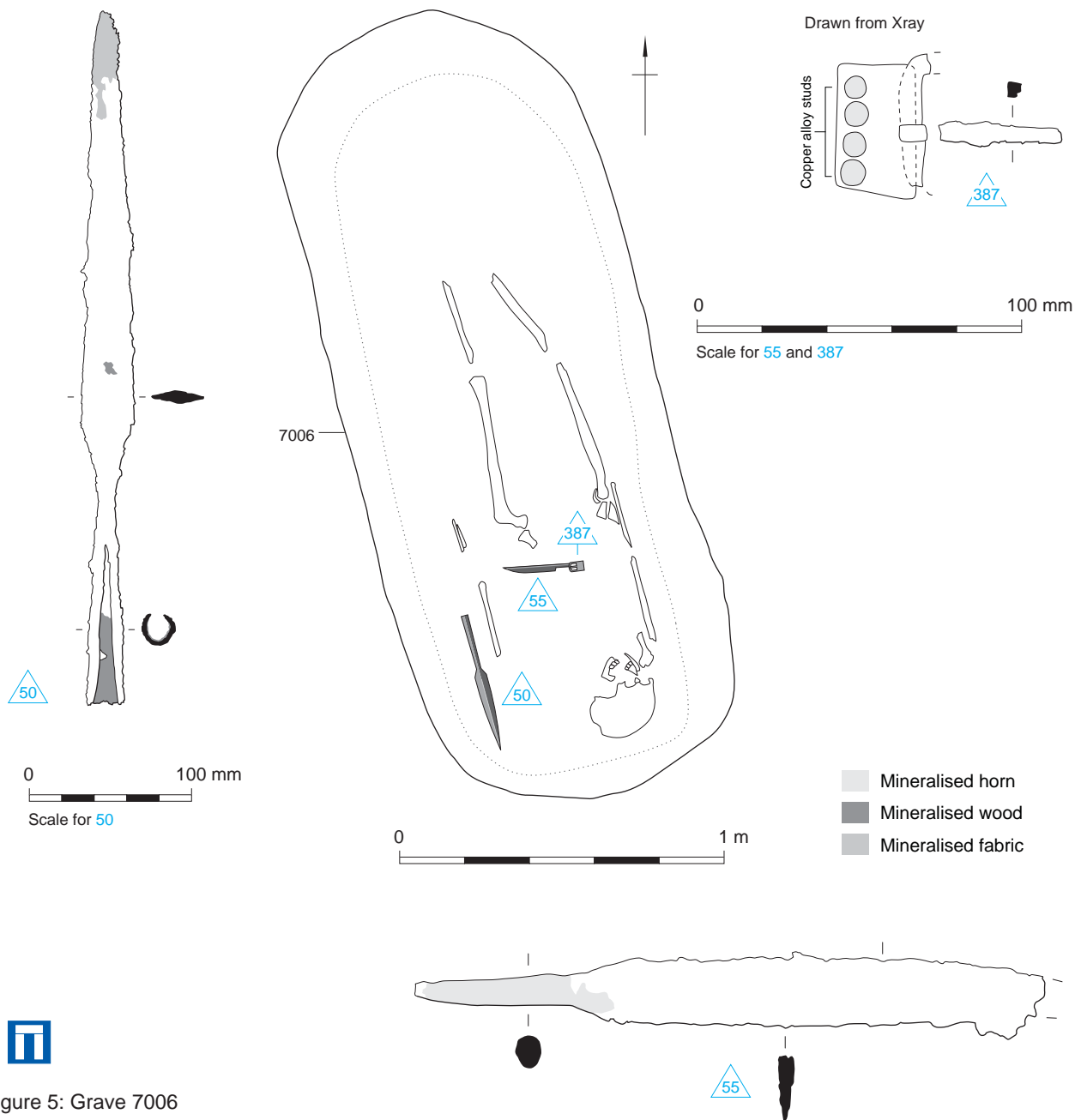


Figure 5: Grave 7006

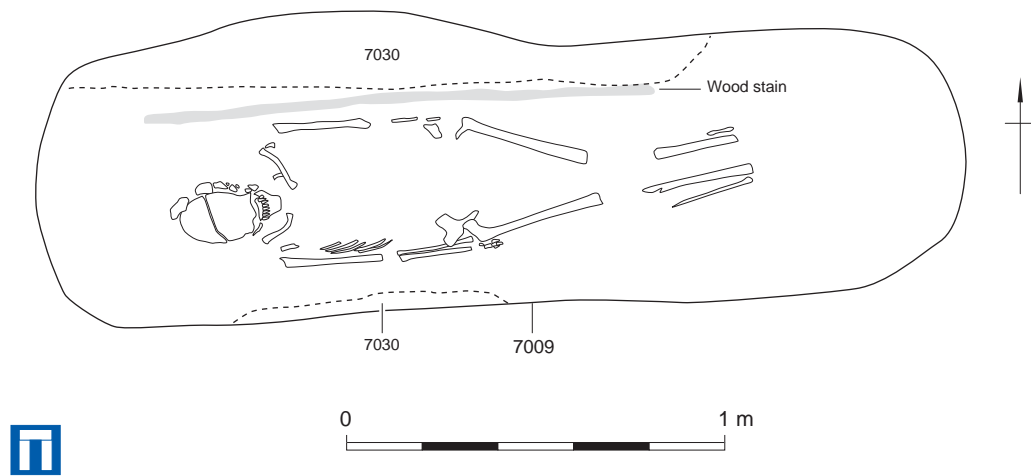


Figure 6: Grave 7009

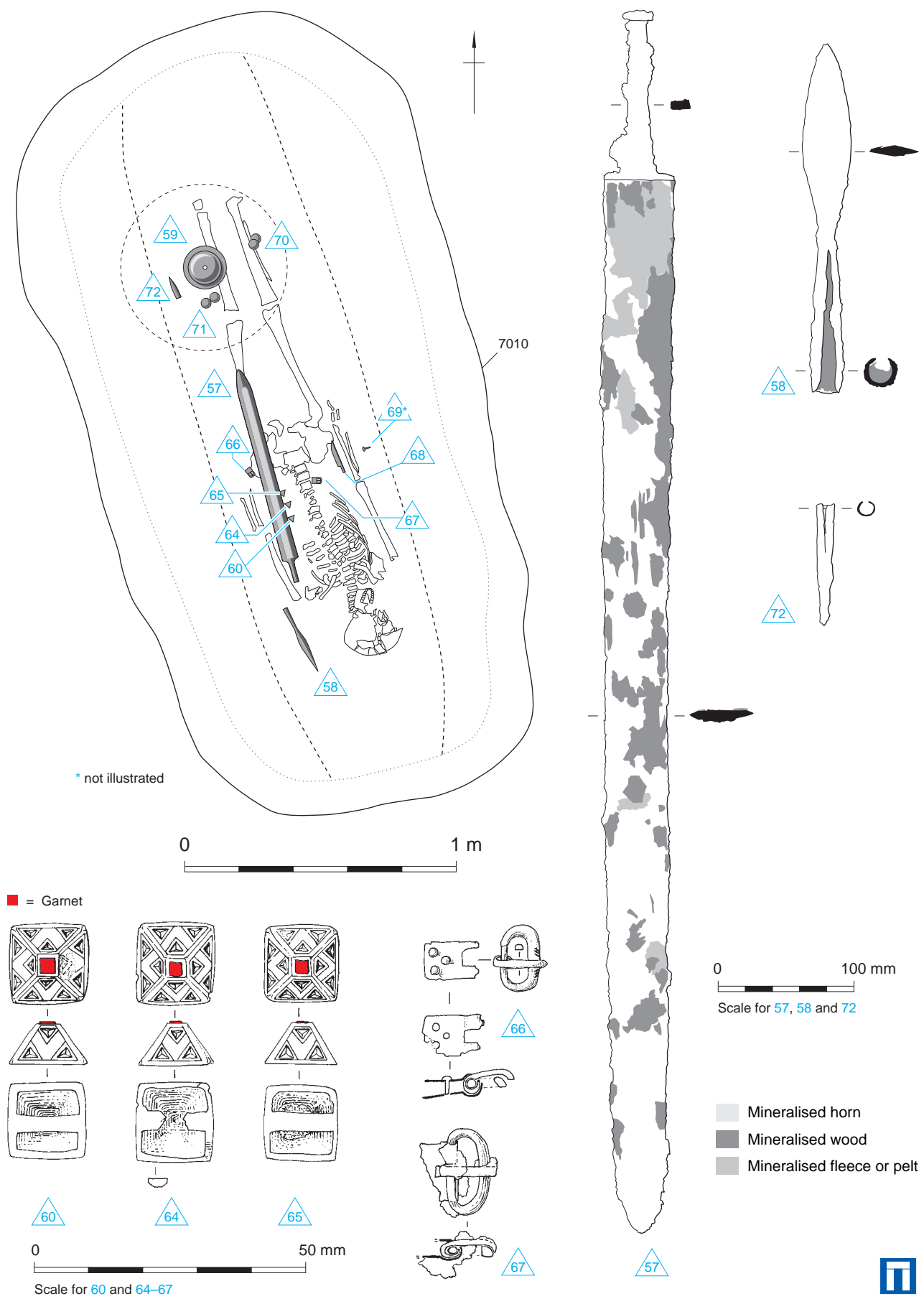


Figure 7: Grave 7010

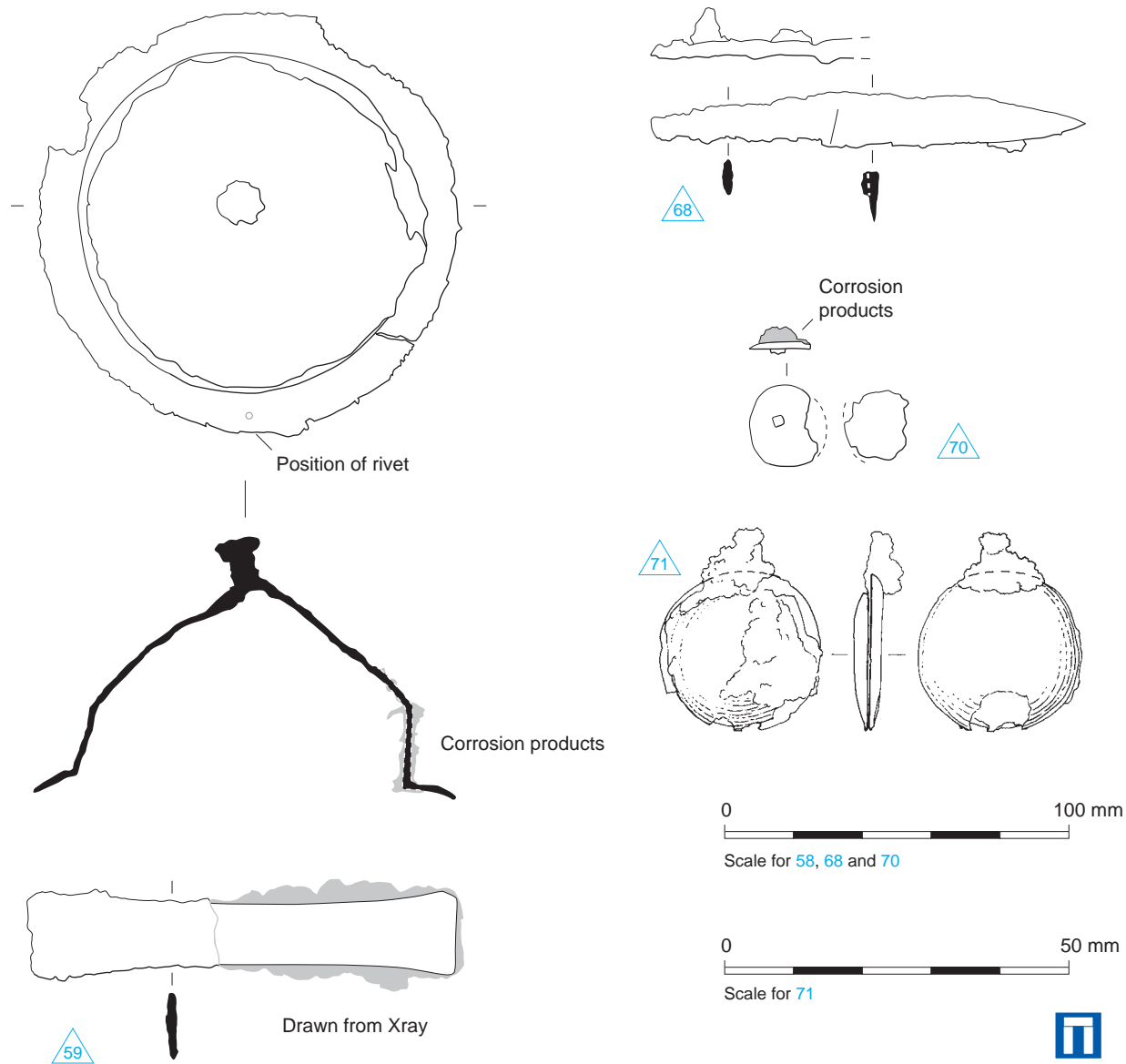


Figure 8: Grave 7010

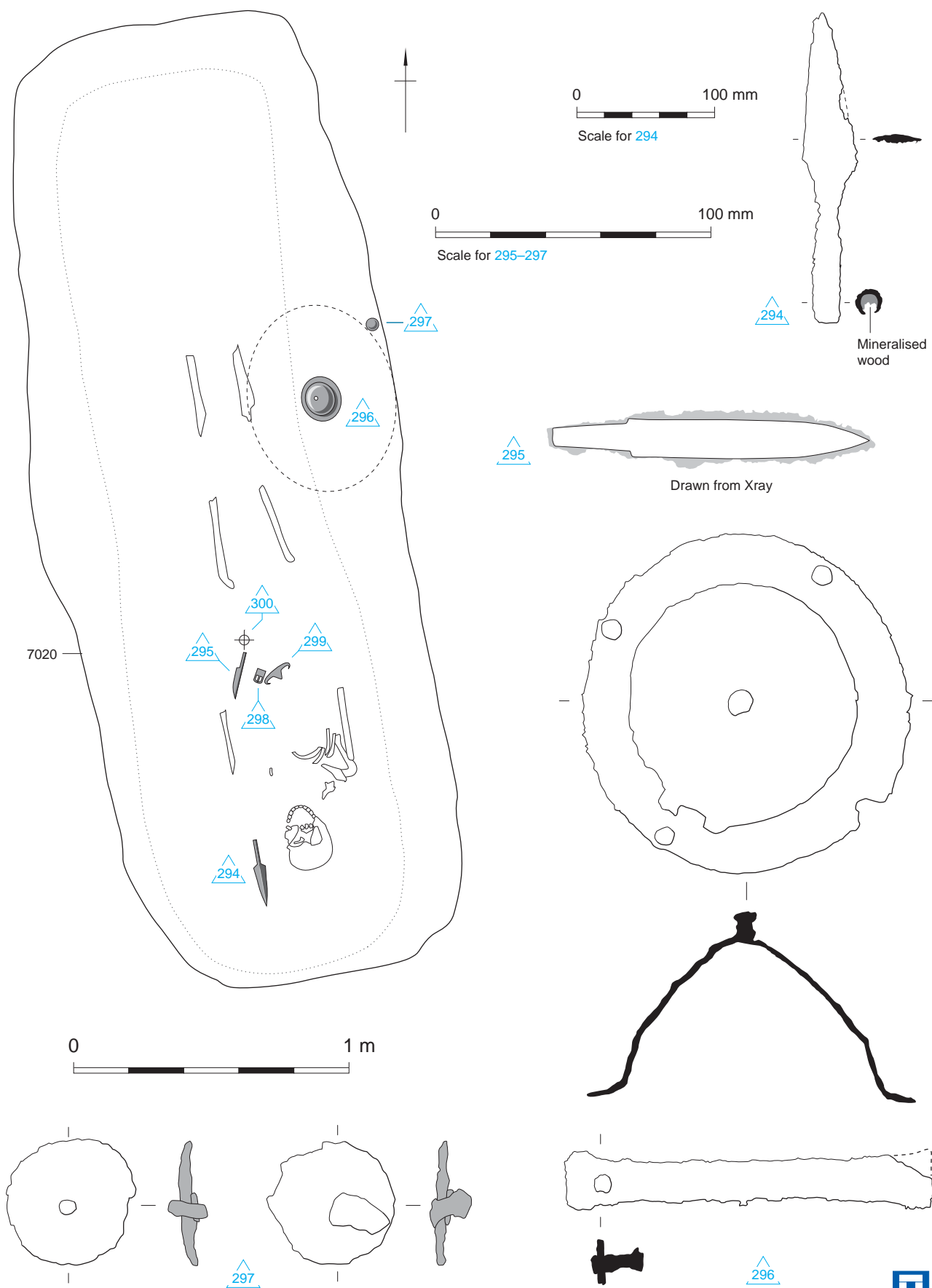


Figure 9: Grave 7020



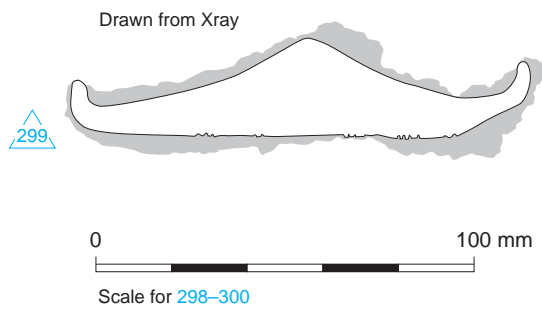
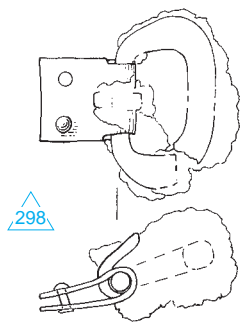


Figure 10: Grave 7020

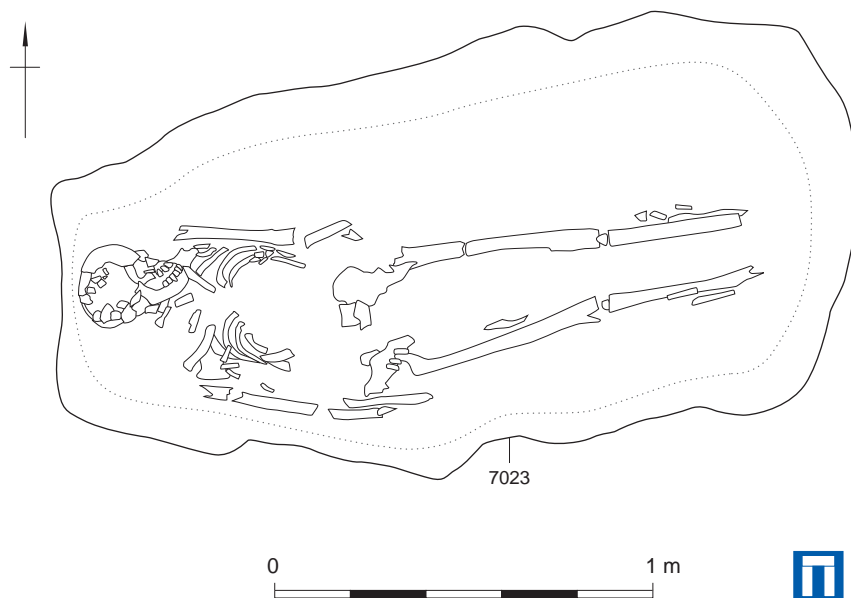


Figure 11: Grave 7023

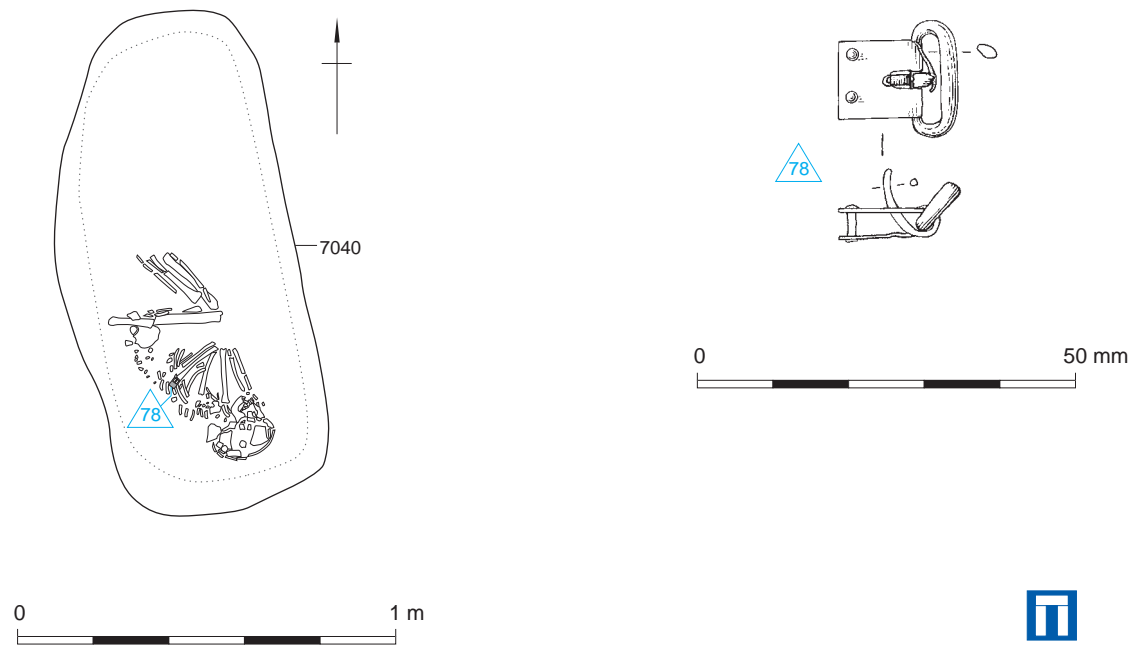


Figure 12: Grave 7040

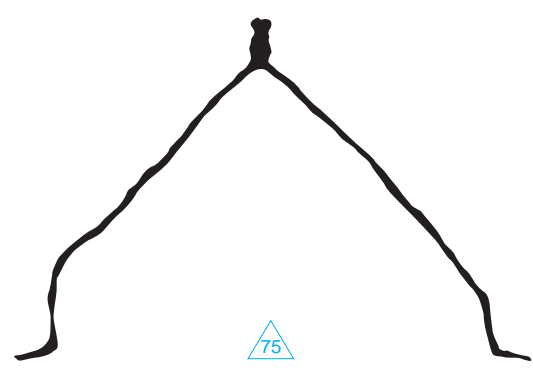
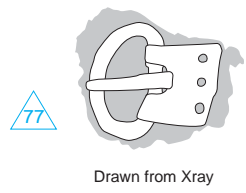
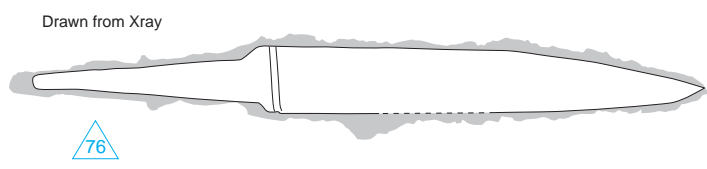
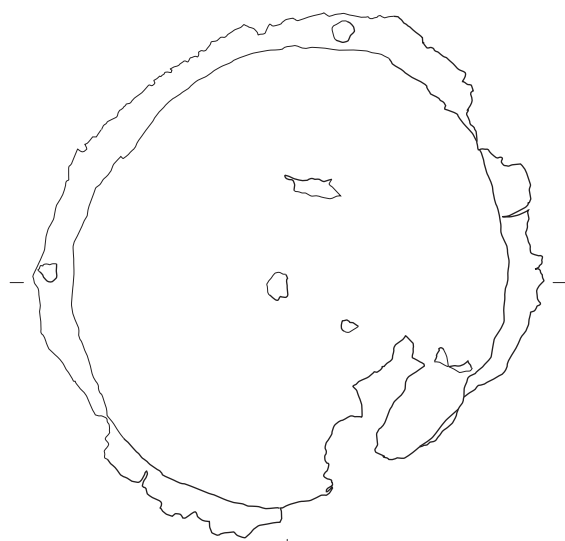
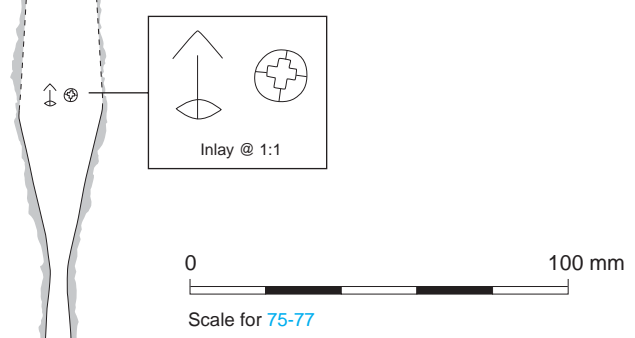
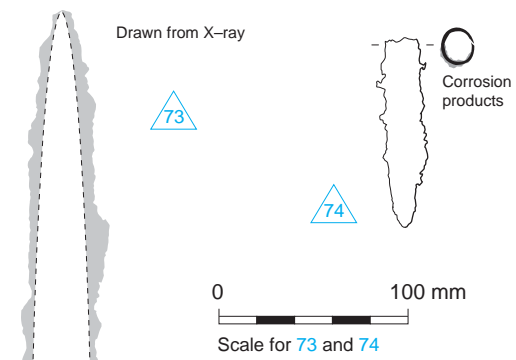
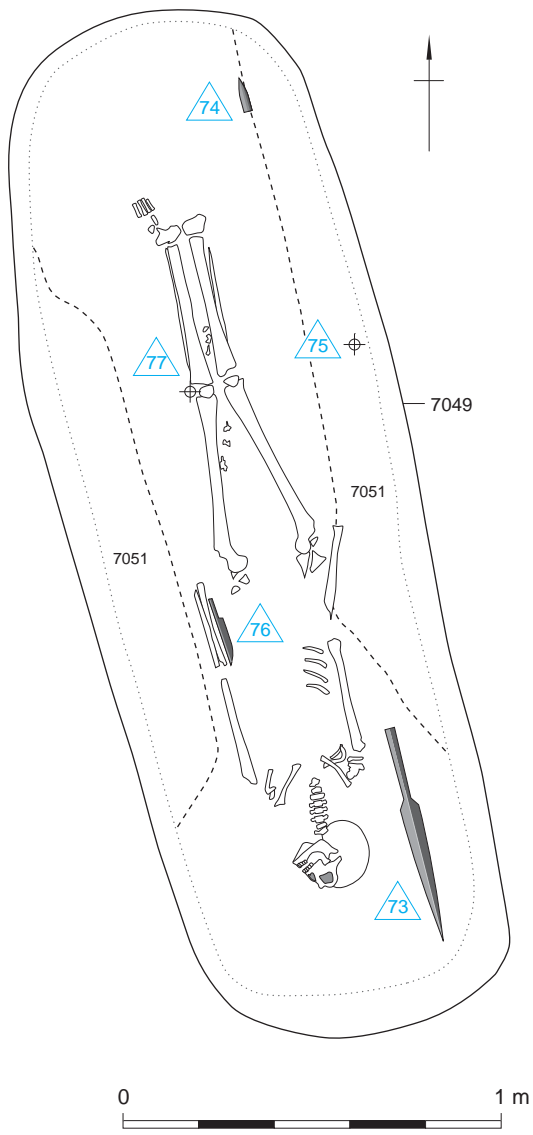


Figure 13: Grave 7049

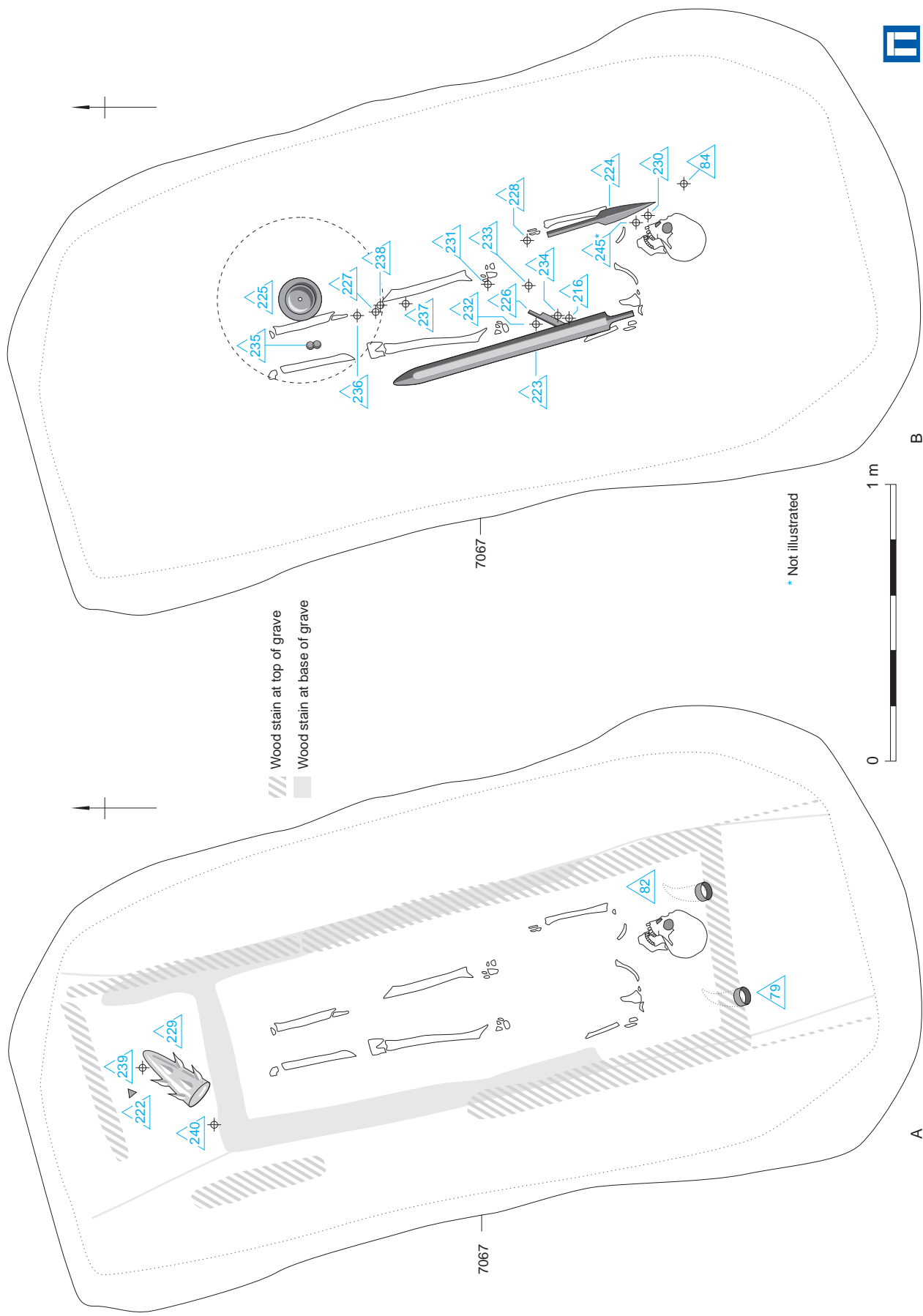
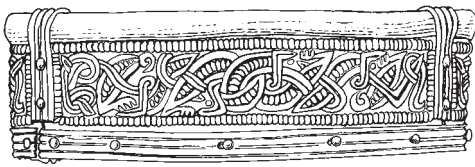
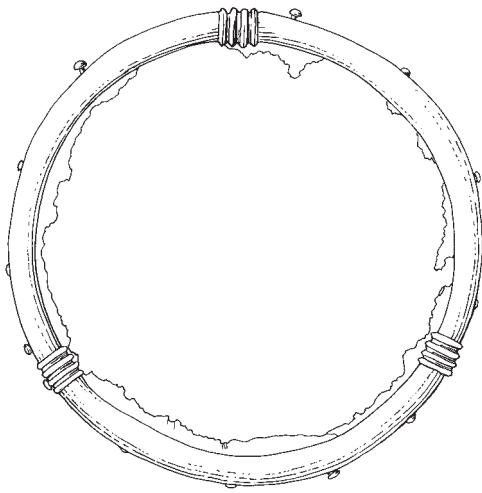


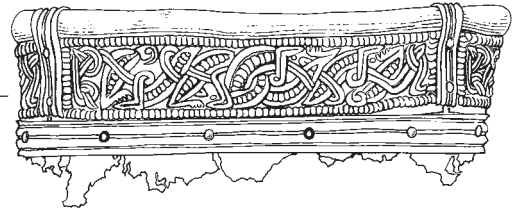
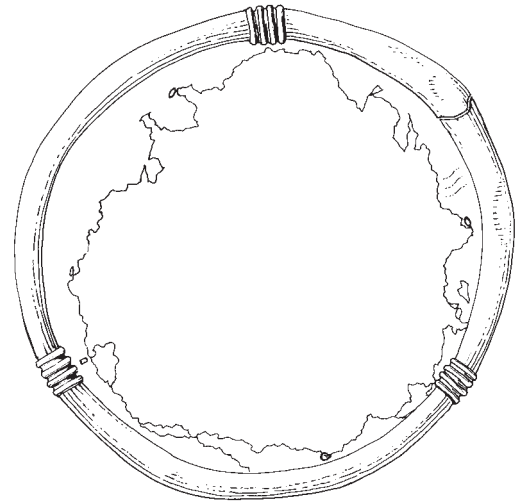
Figure 14: a) Grave 7067 showing position of burial within wood staining of chamber, and locations of grave goods in relation to end compartments b) Grave 7067 showing positions of other grave goods



79



0 50 mm



82

Figure 15: Grave 7067: drinking horn mounts

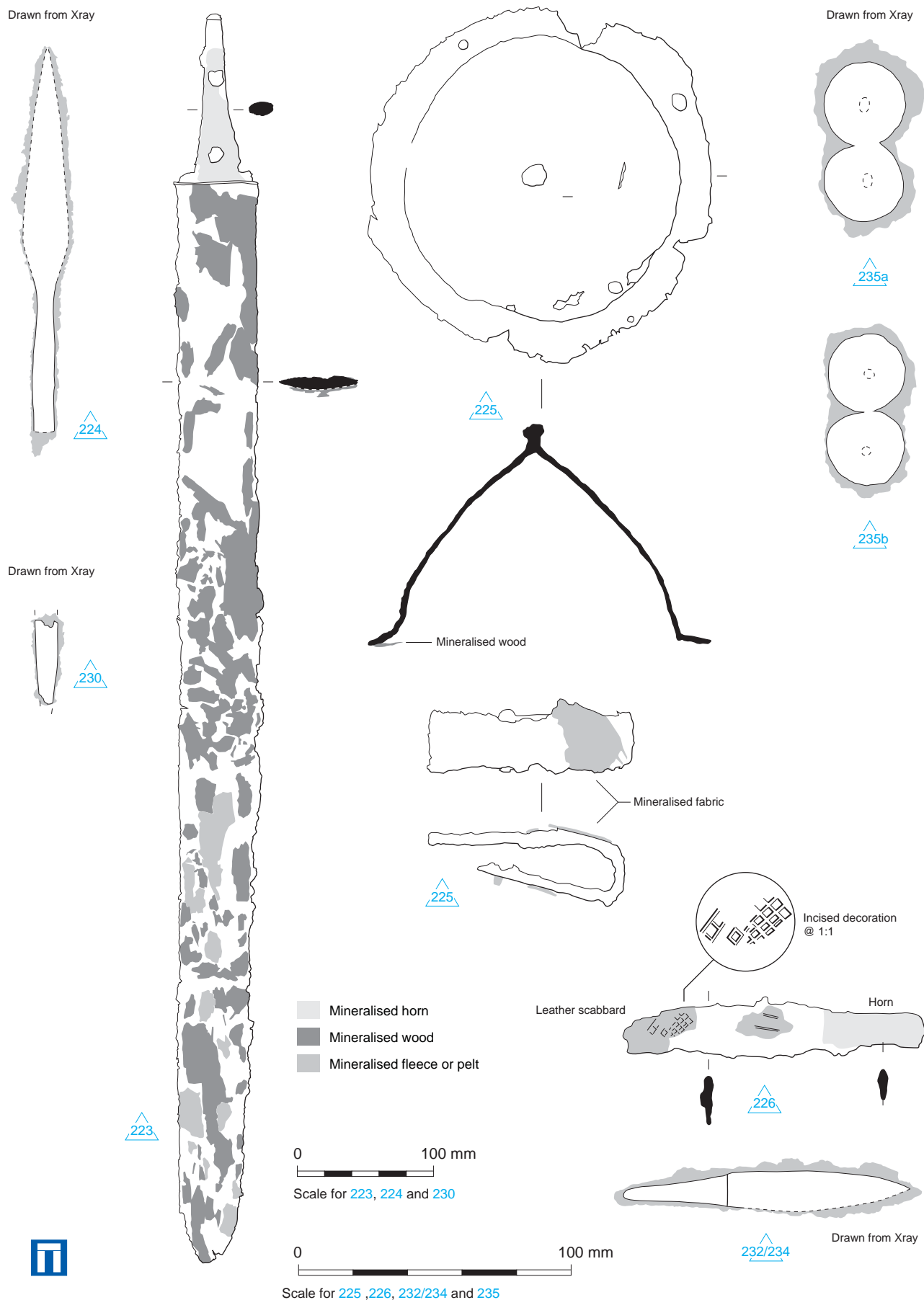


Figure 16: Grave 7067: weapons and knives

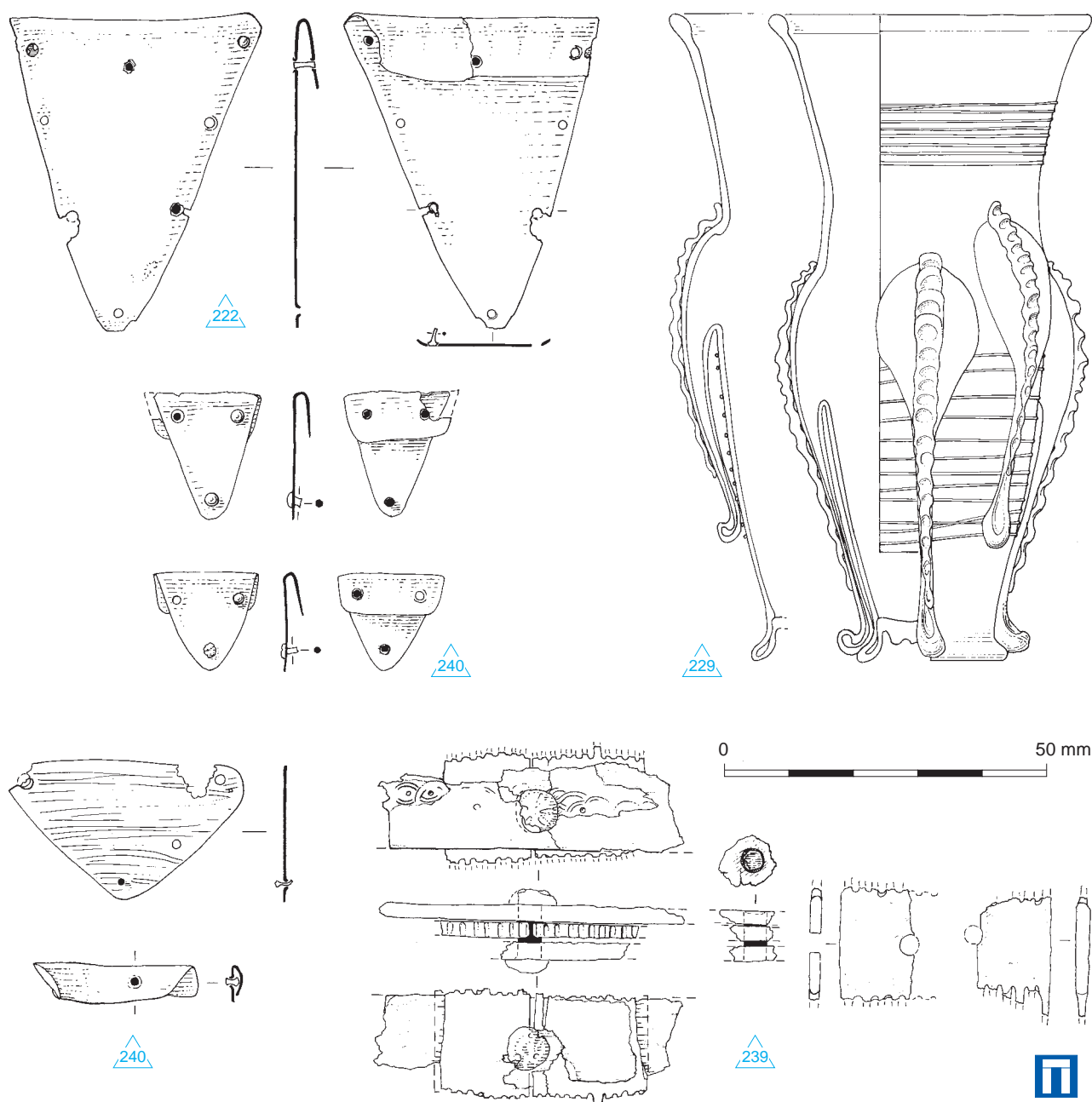


Figure 17: Grave 7067: grave goods in compartment at foot end of chamber

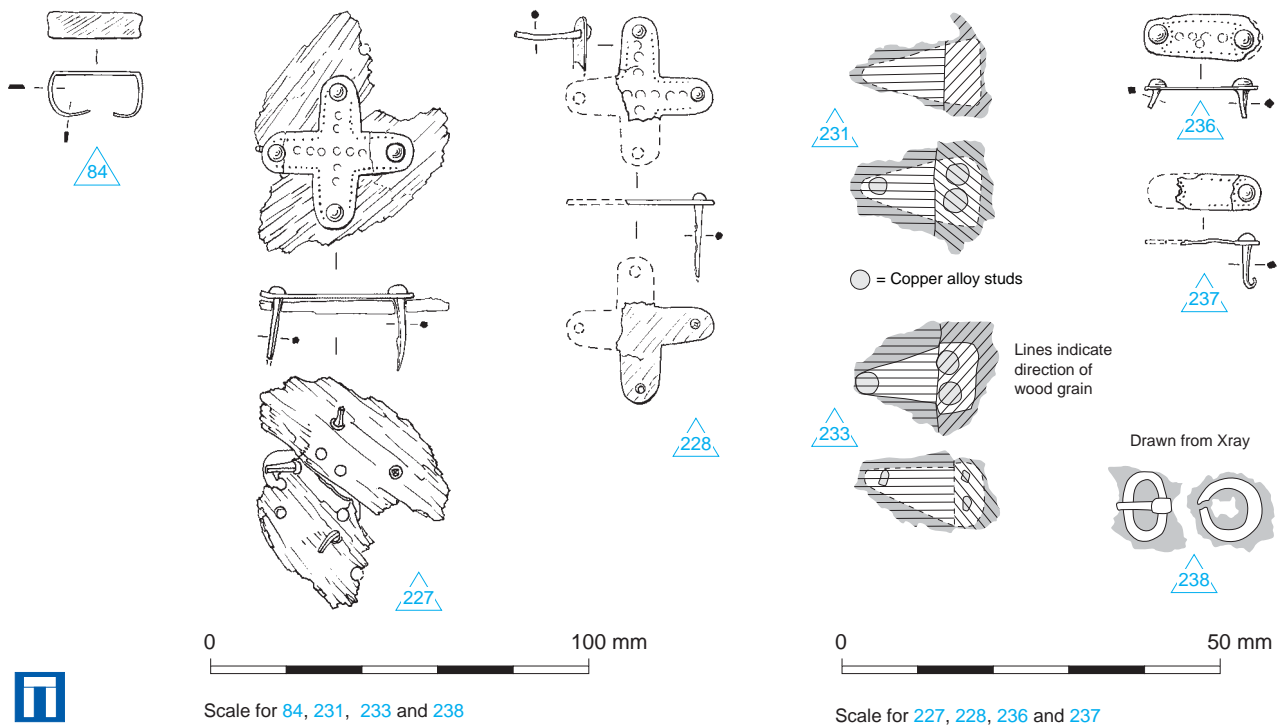


Figure 18: Grave 7067: other objects

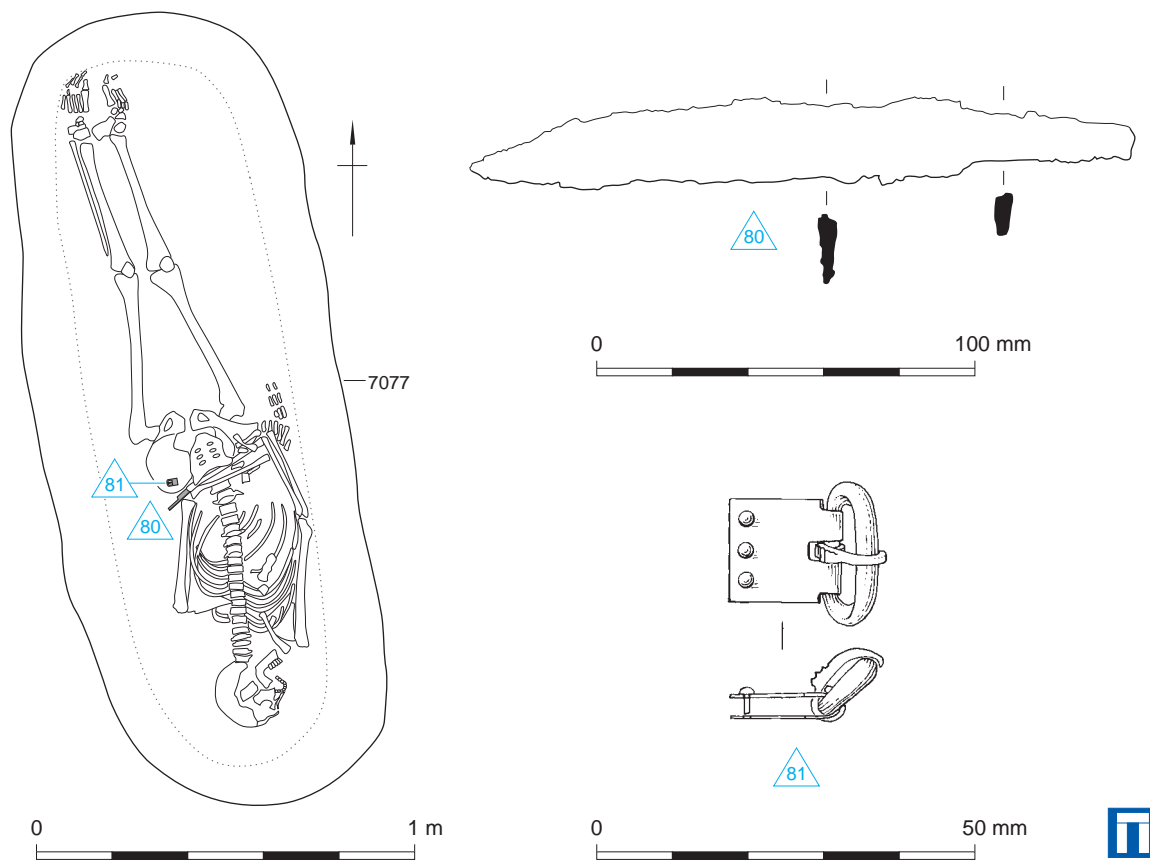


Figure 19: Grave 7077



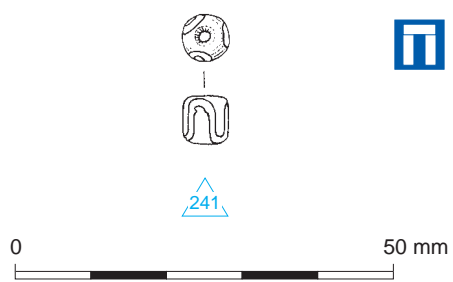


Figure 21: Glass bead from grave 7115

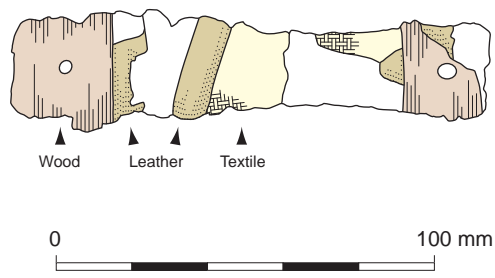
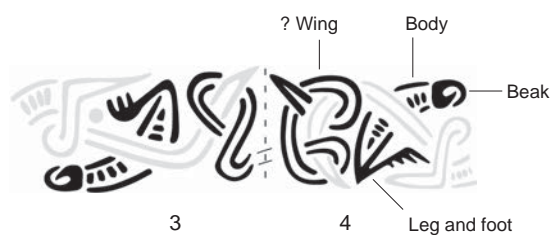
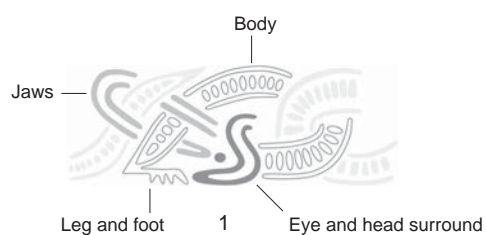
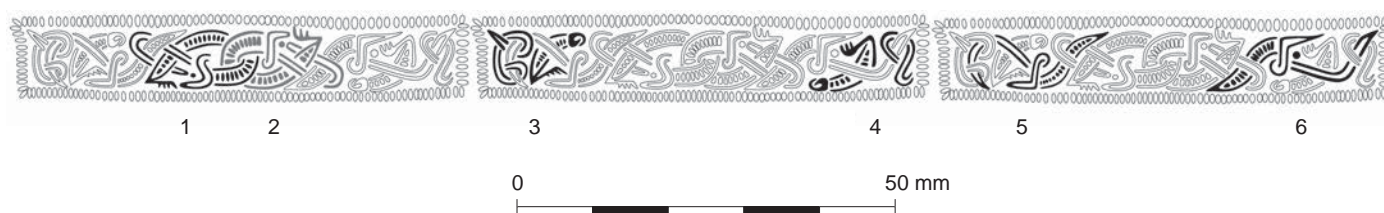
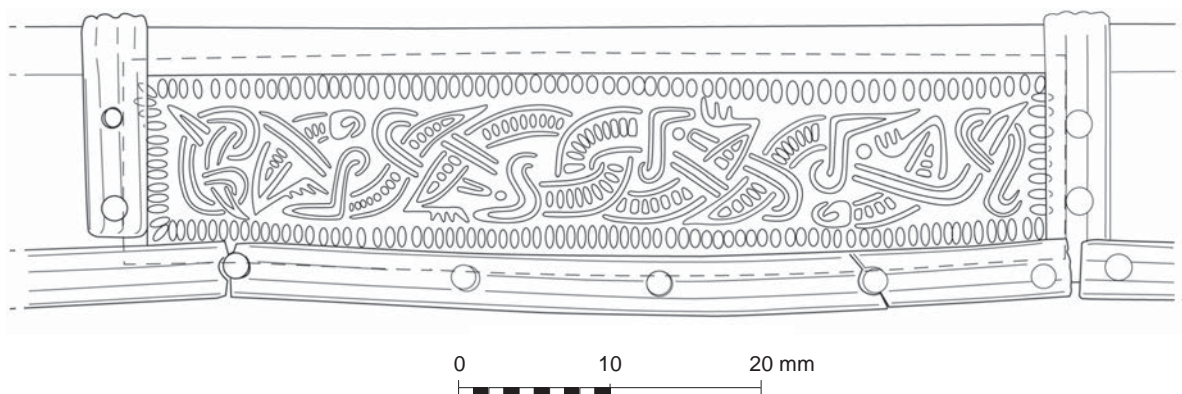


Figure 22: The position of different organic materials on shield grip ON 59, grave 7010



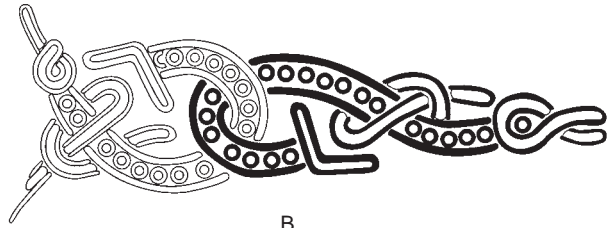
Zoomorphs

'Birds'

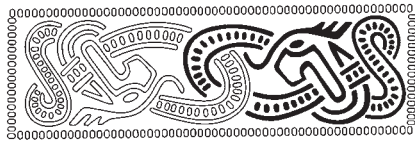
Figure 23: Decoration on drinking horn mounts



A



B



C



D



E

Figure 24: Art comparanda



Plate 1: Grave 7067 during excavation, showing the staining from the decayed timber chamber, and the chalk packing around it (view from north; scale = 2 m)



0 50 mm

Plate 2: Evidence of mastoiditis in burial 7011 (grave 7010)



Plate 3: Pupae cases covering a large area of spearhead blade, some containing near adult insects (ON 224, grave 7067)



0 50 mm

Plate 4: Organic remains on shield grip ON 59, grave 7010



0 10 mm

Plate 5: Garnet-inlaid pyramidal sword studs (ONs 60, 64 and 65; grave 7010)



0 20 mm

Plate 6: Two layers of fine tabby weave textile on the reverse of buckle ON 77 (grave 7049)



Plate 7: Drinking horn mounts (ONs 79 and 82; grave 6067)



Plate 8: Side of box hinge ON 233 with cut edge and remains of 'glue' (grave 7067)



0 5 mm

Plate 9: Glass claw beaker (ON 229; grave 7067)



Plate 10: Aerial view of the cemetery from the south

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Appendix 1:

Catalogue table of examined organic materials associated with the metalwork

by Jacqui Watson (a full report is included in the archive (Watson 2011)).

Grave	ON	Description
7003	42	<p>Complete iron sword with very little organic material preserved.</p> <p>One can just make out that the hilt was made in three sections, possibly of horn</p> <p>The scabbard remains are minimal and very compacted with pelt/fleece with hairs next to the metal, and wooden stiffener with a radial surface possibly made from <i>Fraxinus</i> sp. (ash).</p>
7006	50	Iron spearhead with long slender blade with textile and wood preserved on one side. Wood remains in socket (ash) from mature timber
	55	Iron knife has layers of mineral preserved organic material and a pattern-welded blade visible on X-radiograph 11628. A thick leather sheath made from a single piece of pigskin, folded over the back of the knife and joined along the blade edge – identified by the grain pattern preserved on one side at the tip of the blade
	387	Iron buckle loop and plate with four copper alloy rivets. The distance between the iron plates is c. 8 mm, which would be a substantial belt, probably made from cattle hide or pigskin. There are traces of loosely spun threads and possible leather on the broken buckle loop
7010	57	<p>Complete iron sword in its composite scabbard. Total length of sword c. 89.5 mm.</p> <p>Hilt made from three sections of horn which correspond to the upper guard c.12 mm, grip 76 mm, and lower guard c. 25.5 mm. Total length c.125 mm.</p> <p>Scabbard has a pelt/fleece with hairs next to blade, wooden stiffeners c. 2 mm thick, (willow or poplar). Possibly a very thin piece of leather holds the whole structure together which is also bound with plied thread. Fragments of z,z spun tabby weave textile* are preserved on one side.</p>
	58	Iron spearhead with mineral preserved wood in the socket (ash) from mature timber. Textile is also preserved on the outside of the socket.
	59	<p>Iron shield boss and grip with mineral preserved organic materials from the original shieldboard.</p> <p>On the boss, leather is preserved on the underside of the flange, but no complete studs remain to give an indication of the original thickness of the composite board. More evidence is preserved on the grip with a thin layer of leather preserved between the iron and the wood. The board was made from willow or poplar, with a tangential surface, the extent and grain orientation is clearly visible. There are no wood remains in the central part of the grip, but coarse textile and a possible strip of leather bound across it.</p> <p>On the outside of the boss, just below the ridge is a band of organic material, c. 16 mm wide and possibly leather.</p>

Grave	ON	Description
	68	Iron knife with mineral preserved organic material including a horn handle and leather sheath. The leather sheath is preserved in isolated spots along both sides of the blade with masses of pupae cases in between. Enough remains of the leather to indicate that it was made from a single piece that was folded over the back and joined in some fashion at the blade edge.
	72*	Iron ferrule with mineral preserved wood in the narrow socket (ash). The shaft was fashioned from mature timber. Outside is covered in masses of pupae cases, some of which still contain the larvae/adult stage
7020	295	<p>Iron knife with mineral preserved organic material including traces of the horn handle where the stop is clearly visible on one side of the blade.</p> <p>Traces of the leather sheath are also preserved on the blade, and this appears to be made from a single piece of leather which folds over the back and is joined at the blade edge.</p> <p>On one side of the blade is a piece of fine-weave textile c. 15 x 20 mm</p>
	296	<p>Iron shield boss and grip with mineral preserved organic materials from the original shieldboard. A thin layer of leather is preserved between the wood and iron on the boss flange and also underneath the wood on the grip, which indicates that leather was present on the front and back of the shield. The wood present on the shield grip illustrates that a piece of wood was rebated into the front of the shield board and held in place by the rivets on the ends. The shield board was made from willow or poplar, the main part of the board having a tangential surface whereas the grip has a radial surface and the grain is perpendicular to that of the shield board. The complete rivet indicates that the composite shield board was 12.6 mm thick at this point</p>
	299	<p>Triangular iron pursement or firesteel with layers of organic material preserved on both sides. Leather is preserved on one side and wood on the other. The traces of wood have a very smooth surface with an incised line, the wood appears to be of a fine grained type, possibly boxwood (<i>Buxus</i> sp.), and these tiny fragments may be all that remains of a decorated box or container that the firesteel was placed in the grave?</p> <p>The striker can be seen on the radiograph, it is highly corroded to the point of being hollow and in two pieces, with a square section tang and a circular section point. There is no evidence to suggest how it was attached to the firesteel.</p>
7049	73	Iron spearhead with mineral preserved wood, <i>Corylus</i> sp. (hazel), in the socket, made from mature timber.
	77	Iron buckle and plate held together with three rivets. Leather is preserved between the plates, but only the flesh side is exposed so cannot identify the type, but it seems to have been c. 4 mm thick. On the reverse of the buckle, two layers of a fine tabby weave textile are preserved
7067	79	Gilt copper alloy mount for a drinking horn, one of a pair, with the remains of the horn preserved to just beyond the depth of the mount. The horn was c. 60 mm in diameter with a thickness of 3.5 mm

Grave	ON	Description
	223	<p>Iron sword with mineral preserved organic remains from the original hilt and scabbard.</p> <p>The hilt was made from three sections of horn which are visible by the change in grain direction of each section. The lower guard overlaps the shoulder of the blade and 16 mm deep, the grip section fits onto this and is 94.6 mm long, the upper guard sits below the pommel and is 13 mm thick. On one side there is the remains of groove cut into the upper guard extending into the grip section, 3–4 mm wide, and may contain a small wedge used to hold these sections firmly in place on the iron tang.</p> <p>The layers of the composite scabbard are present along the length of the blade, with a pelt/fleece with the hairs next to the metal, two pieces of wood (willow or poplar) <i>c.</i> 4 mm thick, bound together with a tablet braid.</p> <p>Sword length <i>c.</i> 915 mm, width of blade 50 mm, width of scabbard >65 mm.</p>
	224	Iron spearhead with mineral preserved wood (willow or poplar) in socket. Blade covered in very degraded or loose weave textile and masses of pupae cases.
	225/2 35	<p>Shield boss and grip (225) in three pieces. The boss has one complete rivet which gives the thickness of the shield at this point as only 9 mm made up of layers of leather and wood, where a thin piece of leather has been used on the front and thicker piece, > 2 mm, used on the back. The board also has a definite cut edge where it would have abutted another board, but no evidence for this remains.</p> <p>Two pairs of iron studs attached to large sections of the composite shield board (235). One set of studs has a complete rivet, that indicates that the board at this point was <i>c.</i> 15 mm thick, and made up of leather < 1 mm thick on the front, <i>c.</i> 12 mm wood (willow or poplar), then leather >2 mm on the reverse. The wood had a radial surface. On the front of the stud head are the remains of a fine 2,1 twill, along with long loose threads</p>
	226	Iron knife with a handle made from a single piece of horn. There are the remains of a leather sheath on the iron blade as well as among the loose fragments. The sheath appears to have been made from a single piece of leather, and the grain pattern suggests it might be of possibly deerskin. Many of the fragments have sections of incised decoration that might form part of an interlace ornament along the length of the sheath
	227, 228, 236, 237	<p>Four copper alloy fittings, some with sections of wood on them: <i>Fraxinus</i> sp. (ash). The length of the rivets gives an indication of the thickness of the wood.</p> <p>227 – two copper alloy mounts placed on top of one another to form a cross, and the rivet shanks are 9 mm long. The wood associated with this seems to be pierced with lots of holes 2–3 mm in diameter</p> <p>228 – rivet shanks on this mount are 9 mm long.</p> <p>236 – rivets are 4 mm long, and the wood has a radial surface.</p> <p>237 – short piece of copper alloy sheet; and the rivet is turned over to give a depth of 7 mm.</p>
	230*	Iron ferrule with mineral preserved wood (willow or poplar) in the socket.

Grave	ON	Description
	231, 233	<p>Two pairs of triangular iron plates possibly used to secure two pieces of wood –fragments of hinges from a box with a curved lid. Each set is made up of an outer plate decorated with three rivets, which have non-ferrous metal tops visible on X-radiograph. The inner plate appears to be plain and slightly smaller.</p> <p>The two plates can be positioned together to get a profile of the wood section they were mounted on, which is slightly curved and tapers from c. 17 mm at the wide base of the plates, to 16.5 mm at the apex. The position of the join between the two pieces of wood can be see clearly on the X-radiograph, and by a change in grain orientation of the wood remains.</p> <p>The wood preserved on 233, exhibits a cut edge on one side with a deposit full of small bubbles that might be residues of some type of glue that was used to attach the back to a side?</p>
	232, 234	<p>Iron knife in two pieces, the tang (234) has remains of the horn handle and the blade (232) has traces of the leather sheath. The sheath was made from a single piece of leather that was folded over the back of the knife, but no grain pattern was preserved on the abraded surface. On one side layers of a fine tabby weave textile are preserved.</p>
7077	80	<p>Iron knife with mineral preserved remains of the horn handle and leather sheath. Along the back of the knife near the shoulder there are hairs preserved that might have come from a nearby pelt or coarse textile</p>
7095	220	<p>Iron knife with horn handle that extend over the shoulder of the blade by c. 3–4 mm, and traces of the leather sheath along the blade. On one side there are layers of textile which may be from folds in a garment and possibly a fringe of thick separate threads</p>

* spear ferrules ON 72 and ON 230 originally mis-numbered