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Plate 13. Watercolour of the Cambridge Observatory by Richard Banks Harraden, showing the landscape of west Cambridge in the 1840s. By kind permission of Prof Lord Martin Rees.

Cover: Watercolour of the Cambridge Observatory by Richard Banks Harraden, showing the landscape of west Cambridge in the 1840s. By kind permission of Prof Lord Martin Rees.

A late Roman cemetery at *Durobrivae*, Chesterton

Rebecca Casa Hatton and William Wall

with contributions by Nina Crummy, Corinne Duhig,
Adrian Popescu and Mark Wood

More than fifty burials represent a portion of a late Romano-British cemetery outside the southwest gate of the Roman town of Durobrivae, near Peterborough. Pre-dating the cemetery were parallel ditches demonstrating rural activity (livestock management) during the mid to late 3rd century. Towards the end of the 3rd century the land was used for burial. Disturbed inhumations of at least 57 individuals were recorded, of both sexes and all ages. The graves lay on various alignments. Some had been placed in wooden containers and two in stone coffins, with a possible instance of stone-packing. There were two possible cases of decapitation. The burials appeared to be unfurnished, with the exception of a child who was accompanied by copper alloy and ivory armlets, as well as amber and glass beads from a necklace. The cemetery appears to have remained in use throughout the 4th and into the early part of the 5th century. The presence of undated headlands associated with ridge and furrow systems suggests that the site reverted to agricultural use during the medieval to post-medieval periods.

Introduction

Cambridgeshire County Council Archaeological Field Unit (CCC AFU), funded by the Highways Agency, undertook rescue recording in 1998 during maintenance work along the western edge of the northbound carriageway of the A1 (Casa Hatton & Wall 1999; TL 1221 9655). The site lies opposite the area known as 'The Castles', between Water Newton and Chesterton, Peterborough (Fig. 1).

Inhumations were observed in both sides of the modern drain; most were damaged in the 1950s during construction and maintenance of the A1 trunk road (former Great North Road). Land to the west and east appeared to be relatively undisturbed, having been under cultivation since the medieval period, while cropmarks (Upex 1995) attest the preservation of archaeology in the area as a whole. The site lies on first terrace gravels overlying the Grantham Formation of the Inferior Oolite Group.

The area between Water Newton and Chesterton has been known to be of archaeological signifi-

cance since the pioneering work of local antiquarian Edmund Artis (1828). The site of 'The Castles' on the eastern side of the A1 is a scheduled ancient monument which includes the Roman town of *Durobrivae*; its history and archaeology have been detailed elsewhere (eg Burnham and Wachter 1990; Mackreth 1995; Fincham 2004).

Burials at the 1998 site relate to a major cemetery outside the southwest gate of the town defences, within a road triangle between Ermine Street and a branch road (Fig. 2). This cemetery was discovered during construction of the Great North Road in the mid 18th century when urns and vessels, together with stone and lead coffins, were found. Later excavations by the Ancient Monuments Inspectorate under Ernest Greenfield in 1956–57 revealed Roman defences (Site 1), suburban occupation to the west of Billing Brook (Site 2), suburban occupation south of the Roman town (Sites 3–4) and an adjacent cemetery (Greenfield nd; Anon 1958; Anon 1959) (Fig. 2). In 1957 plans to by-pass Water Newton prompted investigations by the Water Newton Excavation Committee (later Nene Valley Research Committee; Areas 1–5) which revealed pottery kilns spanning the mid 1st century to the first half of the 4th century (Perrin 1999, *passim*).

Infant and adult graves were located on the extreme western limit of Greenfield's Site 3. One included a female with a necklace of jet beads and a bronze bangle (Greenfield nd). Six infants dated to the 2nd century were found along the inside edge of a 2nd century timber barn later replaced by a wider stone building. Finally, evidence emerged for infants in pits beneath a mid 3rd century building destroyed by fire in the late 4th century.

Several Roman stone coffins have also been found in this area (Taylor 1984, 20). One is preserved on Helpston green. A further stone coffin was excavated by members of the Nene Valley Research Committee in 1983. Records in Peterborough Museum and Art Gallery indicate that more stone coffins were found in 1958: Greenfield records a site located at TL 121 966, close to the 1998 site, where six stone coffins and several unfurnished inhumation burials were uncov-

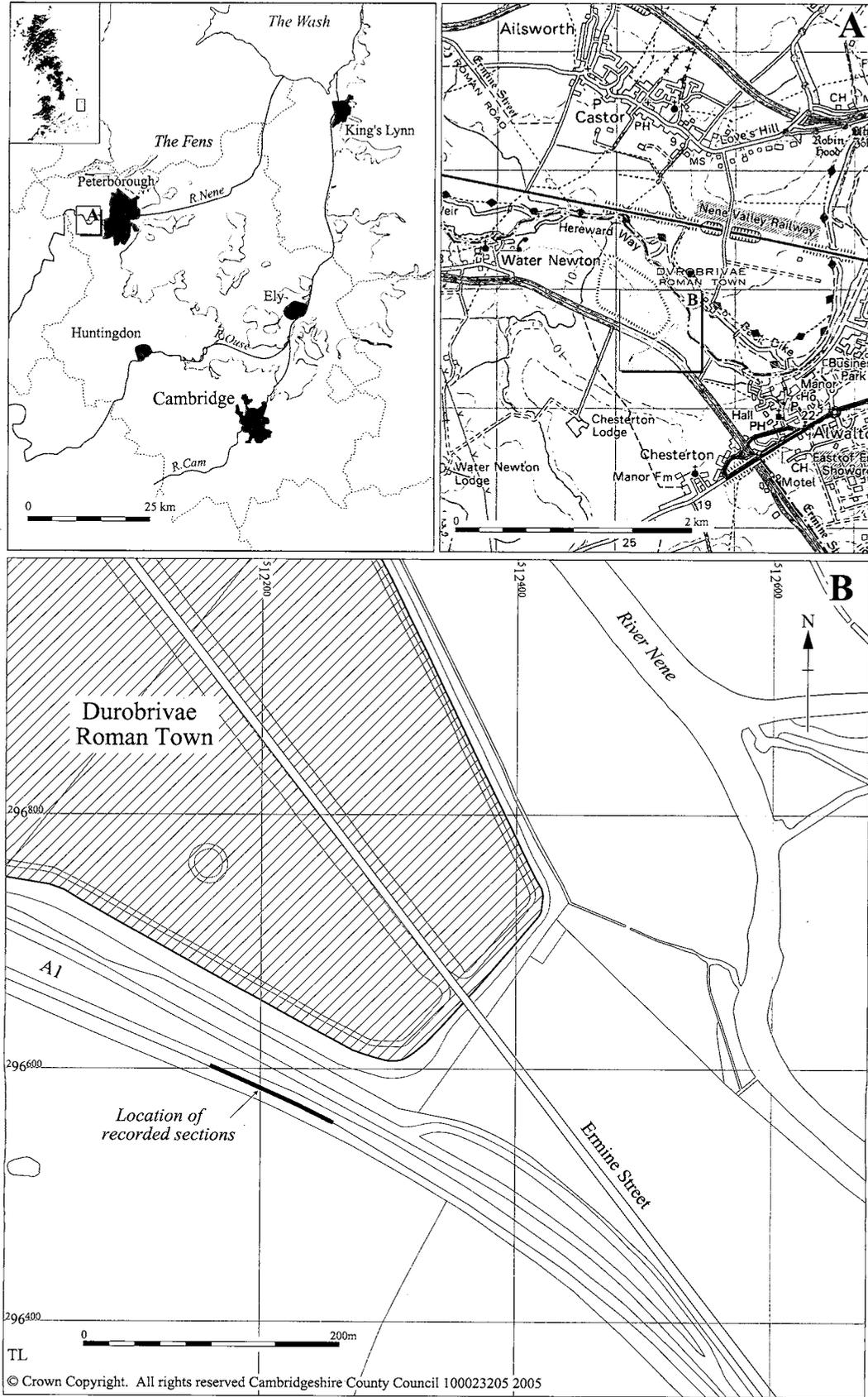


Figure 1. Site location.

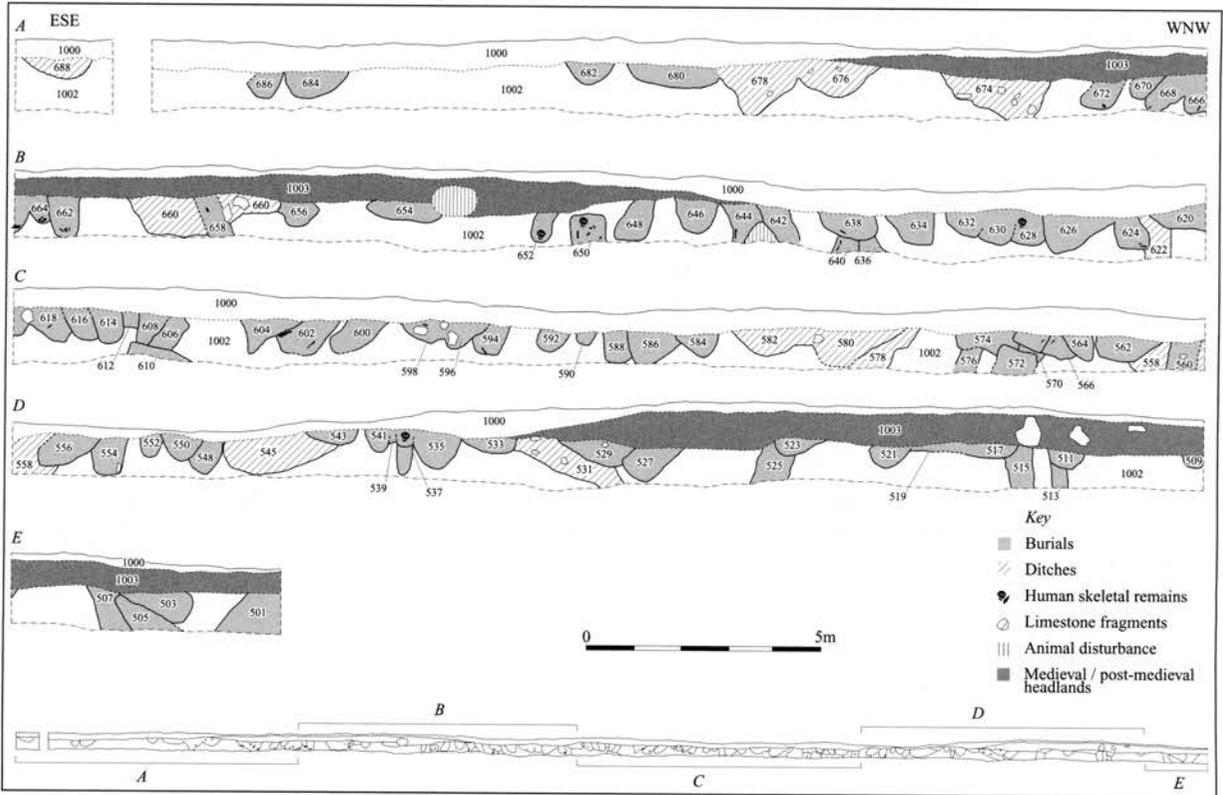


Figure 3. Northeast facing section of drainage ditch.

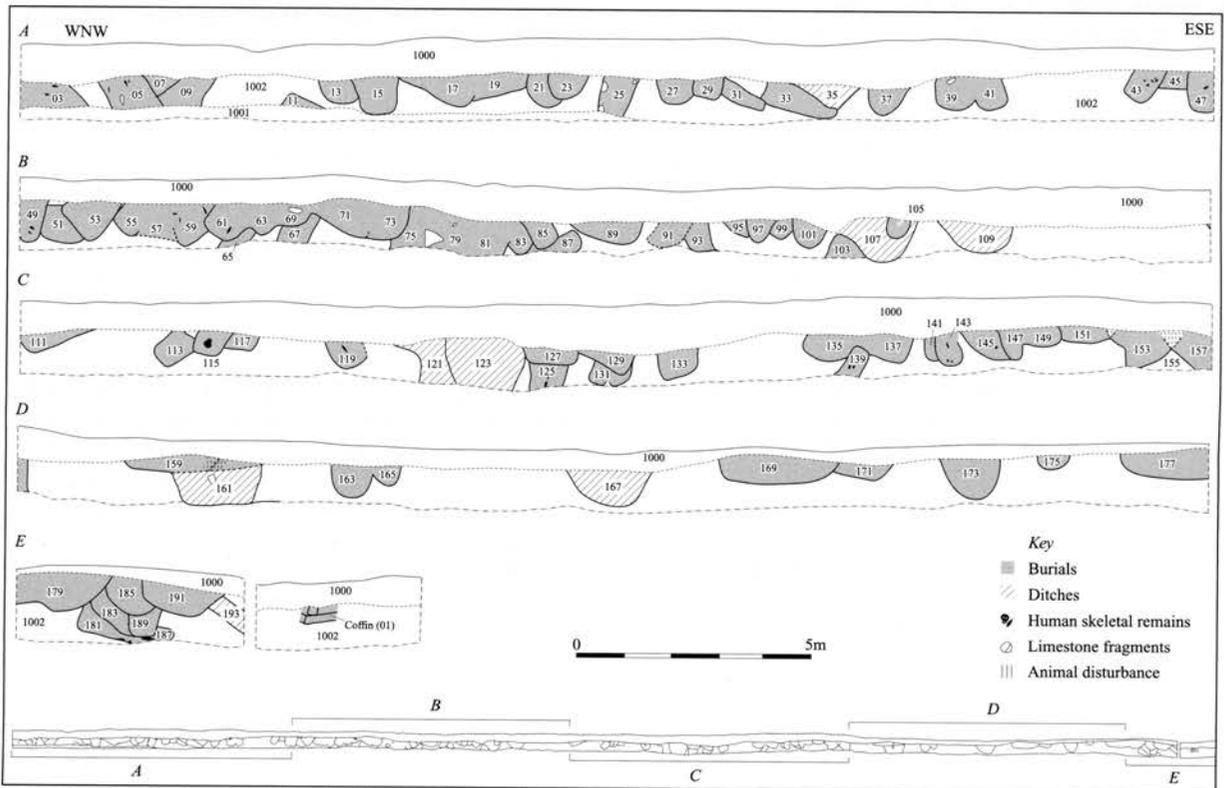


Figure 4. Southwest facing section of drainage ditch.

other. The grave cuts appeared fairly regular and two main shapes were identified (rectangular with round corners and oval), measuring between 0.5m and 0.7m wide and over 2m long. The top of the grave cuts ranged between 0.30m and 1.30m from the modern ground surface, the average depth being some 0.70m. Grave fills were often contaminated and uniformly consisted of greyish brown sandy silt.

Two inhumations were in limestone coffins with lids (1 and 546) which were only partially visible in section. Burial 1 was still sealed, despite its lid being recently broken, and was on an east to west alignment. The coffin of burial 546 had been recently damaged and, through its broken lid, it was possible to see a complete skeleton of uncertain sex and age, the head to the west. The individual was extended and supine, with the arms slightly bent with hands on the pelvis. Although there were no visible grave goods, near the coffin was a scatter of unstratified and disarticulated bones from two or more burials which had been originally interred above the limestone coffin. Iron coffin nails suggest some burials were in wooden containers.

An attempt has been made to group burials by orientation: allocation of graves to particular groups is indicated in Table 1. Most graves were approximately north-north-east to south-south-west (Group 3) and east-north-east to west-south-west (Group 4). There were also instances of north to south (Group 1), west-north-west to east-south-east (Group 2) and east to west (Group 5) orientated graves (Figs 3 and 4). In some instances graves truncated, or were truncated by, burials with a different alignment.

In addition to these loosely defined groups, there were four cases of possible multiple (or stacked?) burials, eg 4a and 4b (grave 5); 70a and 70b (grave 71); 76a and 76b (grave 77); 665a and 665b (grave 666), and 663a and 663b (grave 664) (Figs 3 and 4). In all but one instance adults were associated with infants, children and juveniles. In the case of 663a and 663b (grave 664), two unsexed adults had been buried together. An additional grave (180/181), may have contained two individuals, one an adult male. Only one inhumation belonging to a child (114; grave 115) was furnished. The grave goods, of late 4th to early 5th century date, consist of a group of unworn copper alloy and ivory armlets, together with amber and decorated black glass beads (Figs 5–7; see Crummy below).

Six coins were found (Popescu below). With the exception of a mid 3rd century copy of Victorinus from burial 174 (grave 175), these were unstratified. Sherds of 3rd to 4th century pottery and fragments of animal bone were found in the disturbed fills of some of the graves. These are abraded and likely to represent residual finds dumped from the nearby town.

Medieval/Post-Medieval

Some of the Roman ditches and burials were sealed by a discontinuous and undulating layer of subsoil (1003) between 0.60m and 1m thick along the edge

of the field to the south (Fig. 3). The deposit was interpreted as possible headlands, 2.8m and 2m wide respectively, perpendicular to the present A1. Sealing earlier activity was a layer of loamy topsoil (1000) some 0.50 to 1.10m thick, associated with agricultural use of the land.

The finds

Grave Goods from grave 115

Nina Crummy

Eight copper alloy armlets, three or four ivory armlets, a necklace of ten amber and glass beads, and a possible earring were deposited with child burial 114 (grave 115), apparently placed in a pile close to the body. Similar piles of jewellery accompanied the remains of children and young females in other late Roman cemeteries, for example at Lankhills, Winchester, Hampshire (Clarke 1979, table 2), and Butt Road, Colchester, Essex (Crummy & Crossan 1993, 130). Sometimes deposited jewellery was wrapped in textile (Wild 1970, 1983), or in a leather pouch or bag (Crummy & Crossan 1993, 129). A grave deposit of jewellery in any quantity with a female juvenile or young adult may represent a dowry (ibid 130). Many of the armlets in this grave have a diameter more appropriate to an adult than a young child, making interpretation of the jewellery as a dowry particularly pertinent here. An alternative view might be that they were placed in the grave to provide the child with items she would require in the underworld. Items placed in some burials suggest that children were expected to continue to grow in the afterlife, a good example being an infant at Arrington, Cambridgeshire, which contained figurines that appear to represent the stages the child would pass through as it matured (Green 1993, 196–7).

Evidence from both inhumations and occupation sites suggests that the popularity of bangle-type armlets rose markedly in the 4th century (Clarke 1979, 301), and the change in burial rite from cremation to inhumation has aided preservation of these artefacts. From the bangles at Lankhills, Winchester, Clarke (ibid) suggests that those of iron, bone and shale were more common in the first half of the 4th century and those of copper alloy more common in the second half. However, a more accurate view appears to be that, while bangles of all materials were deposited with burials throughout the 4th century, they were more frequently deposited in the second half of the century (Crummy & Crossan 1993, 136–7). How far this reflects a rise in fashion as opposed to an increased incidence of a burial rite is uncertain.

Copper alloy armlets of the 4th century were decorated in a variety of ways. While simple wire, cable and cable-imitative forms can usually be easily paralleled, where the decoration consists of incised or stamped patterns it may not have a precise match. This is particularly true of armlets elaborately deco-

rated in symmetrical panels, like cat. nos 1–2 (Fig 5). These belong to Clarke's Type E at Lankhills (1979, 307–9), are described at Colchester as employing 'multiple motifs' (Crummy 1983, 45, fig 47), and at Poundbury as of 'multiple units' (Cool & Mills 1993, 89). Clarke cites numerous other examples. While exactly matched patterns on this type of bangle are rare, some elements of the decoration do occur reasonably frequently, notably long panels of feathering flanking a central groove. It is often used, as here, on the long panel at each end, with the panel often defined by one or more transverse grooves, eg at Lankhills (Clarke 1979, fig 37, 525, 502), Colchester (Crummy 1983, fig 47, 1725, 1732), Richborough (Bushe-Fox 1928, pl XXI, 51), and Canterbury (Garrard 1995, fig 434, 368, 371). Large and small ring-and-dot motifs, as on cat. no. 2 (Fig 5), are also frequently seen, the latter often grouped together in single or double rows, as seen again at Lankhills (Clarke 1979, 525, 393, 147, 650), Colchester (Crummy 1983, fig 47, 1725, 1730–2), Richborough (Bushe-Fox 1928, pl XXI, 51), Canterbury (Garrard 1995, fig 434, 371), and also Lydney (Wheeler & Wheeler 1932, fig 17, D, E, G, H, K). Other elements, such as the bead-imitative lozenges, are less common on this type of armlet, but can be found as the sole motif (Clarke 1979, fig 37, 166; Crummy 1983, 44–5).

Two of the *Durobrivae* armlets (cat. nos 3–5; Fig. 5) have not been directly paralleled, but the decorative techniques occur elsewhere (Crummy 1983, fig 46, 1714). Both hatching and alternating diagonal grooving techniques were clearly intended to catch and reflect light. The stout hook and eye clasp on two armlets (cat. nos 7 (Fig. 5) and 8 (not illustrated)), is matched at London (Pierpoint 1986, fig 39, 1), Poundbury (Cool & Mills 1993, fig 66, 12, 17), Colchester (Crummy 1983, 1651), Lydney (Wheeler & Wheeler 1932, fig 17, 56) and Richborough (Bushe-Fox 1928, 49, pl XXII, 59). The angled scoring on the upper and lower edges of cat. no. 7 can be seen as a debased version of the cable-imitative grooving found on the illustrated Richborough armlet (*ibid*).

Ivory armlets do not survive well in the ground, although others are known from 4th century graves at Lankhills (Clarke 1979, 312–13). The surfaces of the examples from the *Durobrivae* cemetery are roughened with decay and discoloured by contact with the copper alloy armlets. Ivory armlets can be in one piece, cut in the round, or in sections butted together and held by one or two sleeves of sheet metal (*ibid*). Clarke suggests that a single sleeve shows that the armlet was made from a strip bent into a circle, while two sleeves show that the armlet was formed from two half-circles cut in the round. Two ivory armlets (cat. nos 10 and 11; Fig. 6) may fit together, but, if so, the sleeves are not set opposite each other.

The incomplete thin wire copper alloy ring (cat. no. 13, not illustrated) is probably an earring, although the terminals are missing. Copper alloy earrings of thin wire are often too delicate to survive deposition.

The armlets and earring from grave 115 are standard late Roman forms and styles. Contemporary

necklaces and bead armlets are usually made up from small beads of brightly coloured glass, coral, shale, or jet (eg Guido 1978, fig 37; 1979, 292–300; Johns 1996, 100–3), whereas the group of ten beads from grave 115 is strikingly different (Fig. 7, Plate 1). Six are amber (cat. nos 14–19), three are of black glass enlivened with coloured zigzags (cat. nos 20–22), and one is a gadrooned bead of plain black glass (cat. no. 23). All are fairly large. The amber beads are roughly disc-shaped, and those of decorated glass barrel-shaped to annular. Some are wedge-shaped along one axis, enabling them to fit together closely when strung. They are sufficiently few in number to suggest that they may have been strung as an armlet, although it is possible that they grouped together at the front of a necklace, leaving thread or thong bare at the sides and back.

The beads are not unique in late Roman Britain, but they are rare. A single annular amber bead came from Lankhills in a grave dated to AD 350–70 (Guido 1979, 295), and another singleton from Icklingham, Suffolk (Liversidge 1973, fig 52a). In both cases these were threaded onto necklaces composed of beads of standard late Roman form. There is a rather different picture at Colchester where twelve amber beads came from five graves in the 4th century cemetery at Butt Road, two from grave 1, three from grave 15, one from grave 69, five from grave 406, and one from grave 609 (Crummy & Crossan 1993, tables 2.52, 2.54–5). Both grave 1 and 15 also contained exotically-shaped beads of black glass (*ibid*, tables 2.52, 2.55; Crummy 1983, fig 37, 1501, 1504, 1505). The amber beads in graves 1, 69 and 609 were strung on necklaces of conventional style, but those in graves 15 and 406 were part of armlets or necklaces that can be attributed with a specifically amuletic character, both of which included pierced coins that date the burials to the last quarter of the 4th century, or possibly the early years of the 5th century. Grave 1 can be similarly dated by a coin residual in its backfill, while graves 69 and 609 have been dated to later than AD 360 (Crummy & Crossan 1993, table 2.67).

Amber comes primarily from submarine deposits around the coast of the Baltic. Like jet, it was prized in antiquity for both its appearance and its electrostatic, seemingly magical, qualities. By the 2nd century BC the trade-route from the Baltic passed southwards through Aquileia, which became a centre for turning the raw product into finished carvings of high quality (Cunliffe 1997, 220; Strong 1966, 33–4). This point of control may account for the paucity of amber in both late Iron Age and Roman Britain. Amber can occasionally be found washed up on the East Anglian coast suggesting that some amber objects might be home-produced. An East Anglian origin could certainly account for both the *Durobrivae* and Colchester amber beads, but the increasing flow into eastern Britain of migrants from northern Europe bringing matching increased trade contacts is most likely to be the source. Amber beads of the type found in grave 115 are common in pagan Anglo-Saxon Britain.

The black glass beads also originated in main-

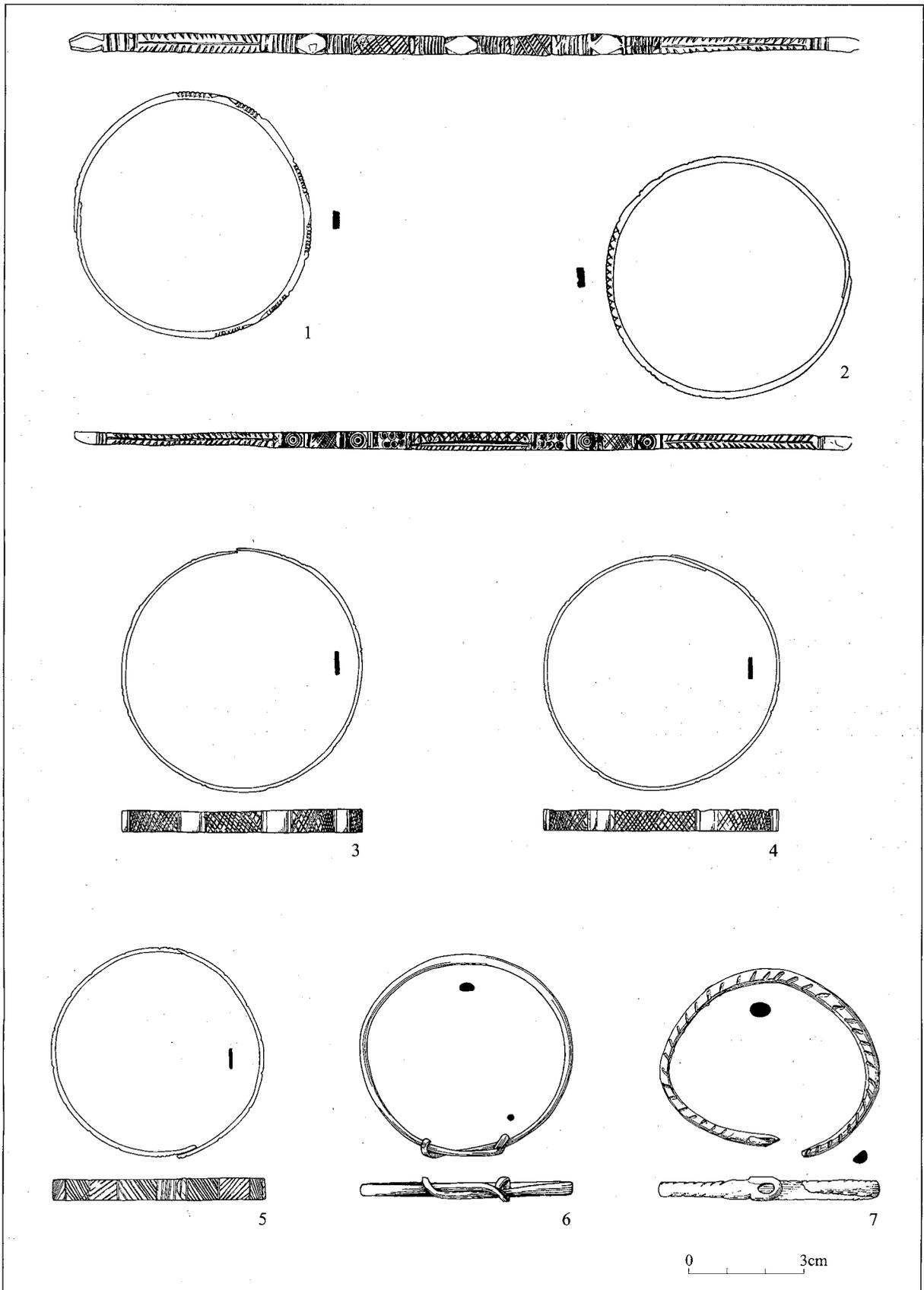


Figure 5. Copper alloy armlets from grave 115.

land Europe (cat. nos 20–23, Fig. 8). The well-made gadrooned bead (cat. no. 23) may be a product of the Trier workshop that started up in the late 4th century, although a more easterly source is possible as 4th century gadrooned beads also occur in large numbers in southern Bavaria (Guido 1978, 99; 1999, 21, Group 2iii). The three beads with coloured zigzags, red, yellow and white, belong to Guido's Group 2vi (1999, 22–3; Guido 1978, Group 5, 135), which may be of Frankish origin and may also have been first produced at the end of the 4th century but are generally found in graves of 5th century date, including some from the Krefeld-Gellep cemetery, Germany. There is a strong possibility that the bead with a white wave (cat. no. 20) is slightly later than those with a yellow or red wave (cat. nos 21–22, Fig 8; Guido 1978, 135). Some similar beads listed by Guido may derive from late Roman contexts, but the white-wave beads that were in association with datable objects come from burials of the Anglo-Saxon period, to which may be added two further examples from Anglo-Saxon graves in Norfolk and Kent (Guido 1999, 178–80; Green & Rogerson 1978, fig 69.7, Jviii; Evison 1987, fig 55, 2e). A slightly later date for the white-wave bead may also be borne out by its somewhat different manufacturing technique; the red and yellow zigzags being marvered neatly into the black matrix while the white zigzag stands above the surface, indicating a different working practice and probably a different workshop. However, black glass beads with unmarvered yellow zigzags have also been found at Colchester and Canterbury, the former probably from an Anglo-Saxon burial, the latter from a late Roman multiple burial (Guido 1981, no. 12; 1999, 180).

The white-wave bead from grave 115 appears, then, to be the latest item in the assemblage. While the armlets from the grave are positively Roman in character and suggest a date in the later 4th century, the amber beads and two of the glass ones can be used to refine this to the final quarter of the century. The white-wave bead provides the best evidence that the burial may not have taken place until the early years of the 5th century. A conservative date range of c. 390–420 may therefore be offered for the inhumation. In its combination of late Romano-British and early Saxon artefacts it can be compared to Grave 3 from Dorchester-on-Thames, dated conservatively by Kirk and Leeds to the late 4th century, but revised by White to the first quarter of the 5th century (Kirk & Leeds 1953; White 1988, 109).

Catalogue

- 1 (Fig. 5). Complete copper alloy armlet with lapped terminals. Maximum internal diameter 60mm, rectangular section 4.5mm by 1.5mm. The decoration combines, in a symmetrical pattern, panels of transverse grooves, feathering, hatching, and raised lozenges imitative of strung faceted beads. One terminal is decorated with a raised lozenge reminiscent of a debased snake's head.
- 2 (Fig 5). Complete copper alloy armlet with lapped terminals. Maximum internal diameter 60mm, rectangular section 4.5mm by 1.5mm. As with 1, above, the decoration is a symmetrical arrangement, here using panels of transverse grooves, feathering, large and small ring-and-dot motifs, and an unusual central panel with feathering on one side, a central groove, and complex notching on the other creating a row of alternating raised and sunken triangles.
- 3 (Fig. 5). Copper alloy armlet with lapped terminals. One terminal is original. The other end appears to be broken, but the metal on the back is scarred, showing that it was soldered onto the original end. They have now sprung apart. Maximum internal diameter 61mm, rectangular section 6mm by 1mm. The decoration consists of hatched panels separated by plain, slightly faceted panels flanked by narrow transverse mouldings. That the lapped joint is a repair, rather than an example of scamped work, is supported by the fact that the original terminal abuts a plain panel, while the other provides a hatched panel much shorter than the others. However, the terminals on 4, below, are exactly similar, making a break unlikely.
- 4 (Fig. 5). Complete copper alloy armlet with lapped terminals and decoration similar to 3. Maximum internal diameter 61mm, rectangular section 5mm by 1mm. As with 3, one terminal is original, the other apparently broken, although see above. Both are slightly wider than the main part of the armlet, suggesting that they were lightly hammered together.
- 5 (Fig. 5). Copper alloy armlet with butt terminals. Maximum internal diameter 55mm, rectangular section 6mm by 1.5mm. The decoration consists of panels defined by single upright grooves and filled with fine diagonal grooving, alternately angled to give the impression of chevrons.
- 6 (Fig. 5). Copper alloy armlet of plain wire with simple twisted join. Maximum internal diameter 52mm, D-shaped section tapering to the clasp, maximum 4mm by 2.5mm. No decoration is obvious, but the metal is quite rough with corrosion and slight decoration, as on Crummy 1983, fig 43, 1656, may be obscured.
- 7 (Fig. 5). Copper alloy armlet with hook and eye clasp, the hook end missing, the eye end almost flat and slightly expanded. Maximum internal diameter, slightly distorted, 50mm, section elliptical tapering to D-shaped near the terminals, maximum dimensions 5.5mm by 4mm. The upper and lower edges of the hoop are scored by slanting grooves. This very minimal decoration can be seen as an extremely debased form of the slanting grooves passing over the outer face of armlets in imitation of cabling (eg Bushe-Fox 1928, pl XXII, 59).
- 8 (not illustrated). Missing, catalogue from photographs. Complete copper alloy armlet with hook and eye clasp. The hook is a stout bar rising up and slightly backwards from the terminal. The eye is a large expanded loop. Just in from the eye is a protuberance similar, although smaller, to the hook. This prominent clasp arrangement is very similar to that on the imitation cabling example from Richborough referred to above.
- 9 (Fig. 6). Ivory armlet held together with a sleeve of copper alloy. Internal diameter 53mm, rectangular section 6.5mm by 2.5mm. The sleeve, and the ivory beneath it, is ribbed at either end. Between the ribs is an incised cross. The shallowness of the cross suggests that it is not impressed into a cross cut in the ivory beneath.
- 10 (Fig. 6). Fragment of an ivory armlet with a ribbed sleeve of copper alloy. Maximum internal diameter 53mm, rectangular section 8mm by 1.5mm. May belong with 11 to

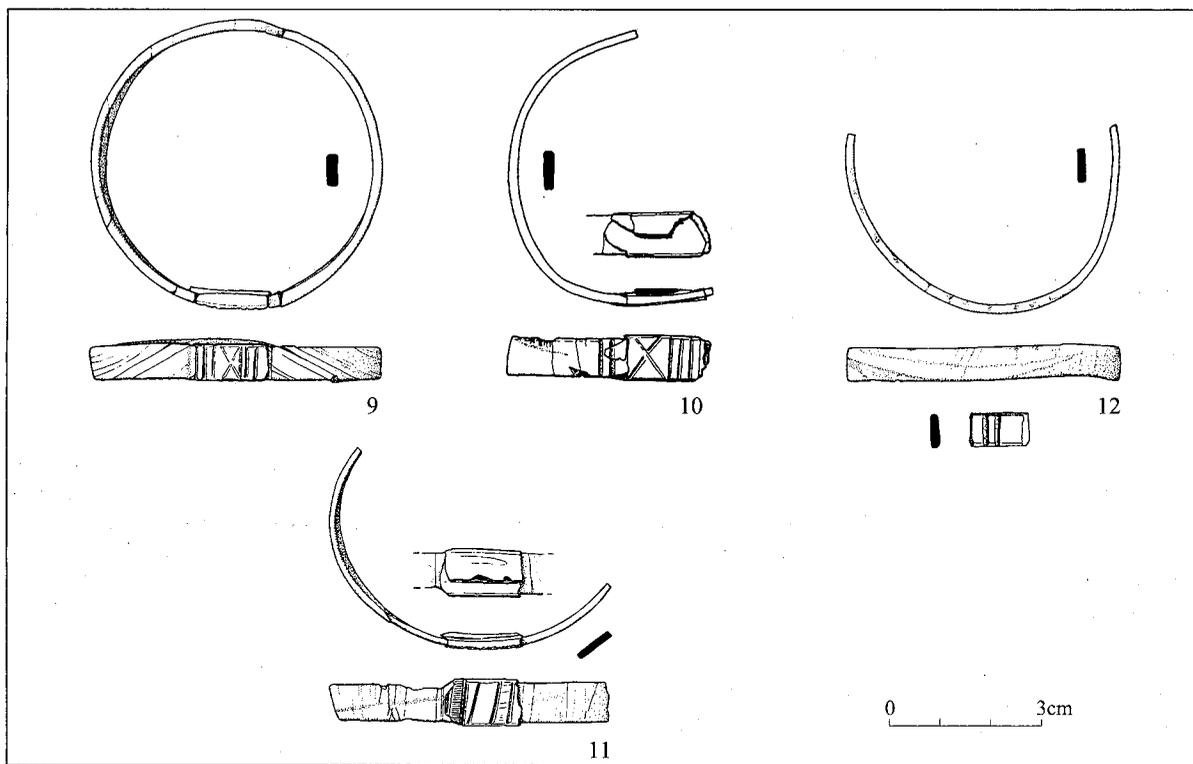


Figure 6. Ivory armlets from grave 115.

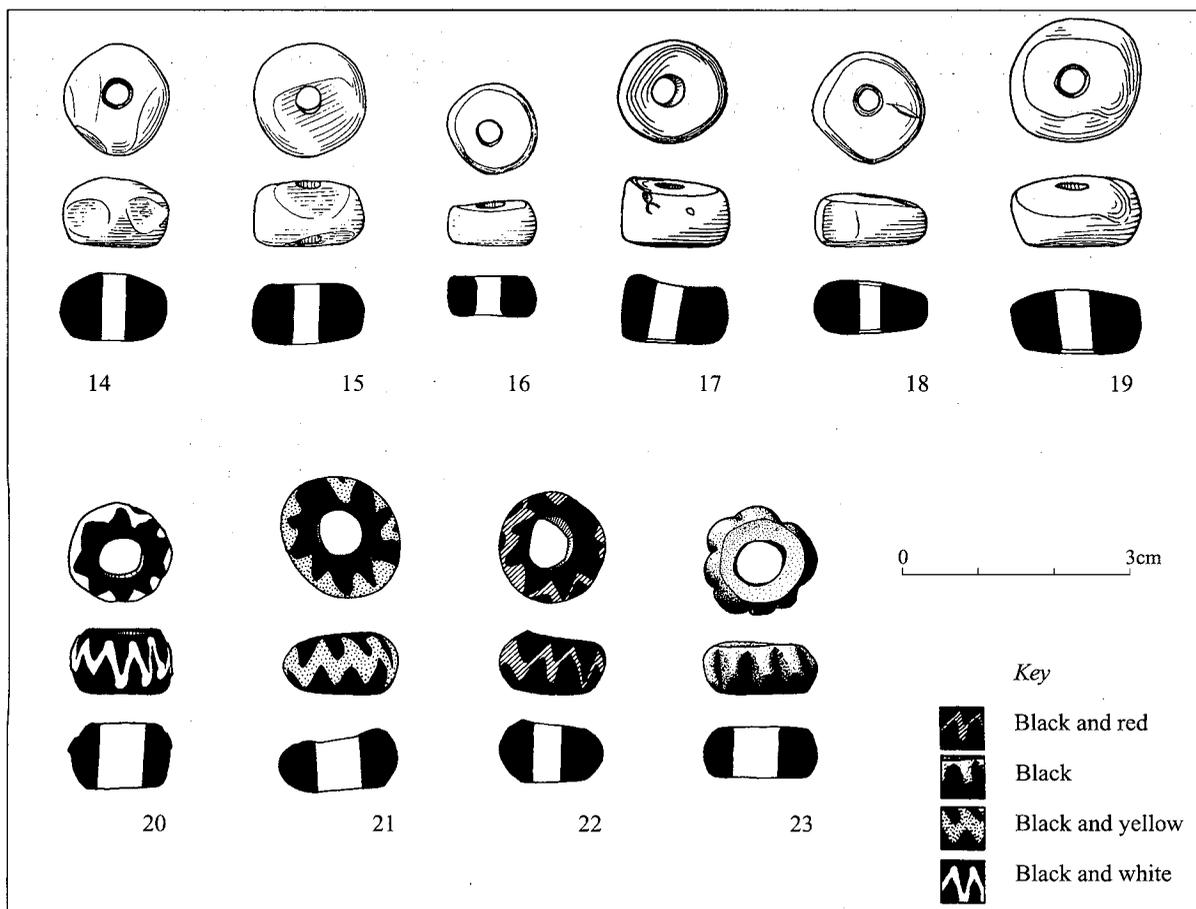


Figure 7. Glass and amber beads from grave 115.

- form one armlet with two sleeves (Clarke 1979, 313).
- 11 (Fig. 6). Fragment of an ivory armlet with a ribbed sleeve of copper alloy. Internal diameter 50mm, rectangular section 8mm by 1.5mm. May belong with 10 to form one armlet with two sleeves (Clarke 1979, 313).
- 12 (Fig. 6). Fragment of an ivory armlet. Internal diameter 51 mm, rectangular section 7mm by 1.5mm.
- 13 (not illustrated). Two fragments of a ring of thin copper alloy wire. Internal diameter 14mm, thickness 1mm. Probably an earring, as Allason-Jones's Type 1, a basic form that cannot be closely dated (1989, 2-3).
- 14 (Fig. 7, Plate 1). Disc-shaped amber bead. Maximum diameter 15.5mm, length 9.5mm.
- 15 (Fig. 7, Plate 1). Disc-shaped amber bead. Maximum diameter 16mm, length mm.
- 16 (Fig. 7, Plate 1). Disc-shaped amber bead. Maximum diameter 12.5mm, length 6mm.
- 17 (Fig. 7, Plate 1). Disc-shaped amber bead. Maximum diameter 12.5mm, length 8mm.
- 18 (Fig. 7, Plate 1). Disc-shaped amber bead. Maximum diameter 13mm, length 6mm.
- 19 (Fig. 7, Plate 1). Disc-shaped bead amber bead. Maximum diameter 15.5mm, length 8mm.
- 20 (Fig. 7, Plate 1). Annular bead of black glass with off-white zigzag trail. Maximum diameter 13.5mm, maximum length 8mm.
- 21 (Fig. 7, Plate 1). Annular bead of black glass with marvered yellow zigzag trail. Maximum diameter 16.5mm, maximum length 8mm.
- 22 (Fig. 7, Plate 1). Annular bead of black glass with marvered red zigzag trail. Maximum diameter 13.5mm, maximum length 7.5mm.
- 23 (Fig. 7, Plate 1). Gadrooned bead of black glass. Maximum diameter 14mm, length 6.5mm.

Coins

Adrian Popescu

Six coins of late denominations were found, only one of which was stratified (cat. no. 24, grave 174 (175)). The remainder were metal-detected from recent deposits within the modern drain. The group includes one 3rd century copy while the rest are 4th century, all types commonly found on Romano-British sites. The majority of the numismatic material is concentrated in the 4th century.

- 24 Copy of Victorinus
Obv. [...]GRIN[...] Head of emperor r.
Rev. [...]IA Salus 1
AE V 1.47 g; 14mm
Cf. Cunetio 2959
MD 1, Context grave 174 (175)
- 25 Constantinopolis
Obv. CONSTAN-TINOPOLIS
Rev. No legend, //TRS
AE XII 2.25 g; 16 mm
RIC VII, p. 217, no. 548, Treveri, 332-333.
MD 8, unstratified
- 26 Constans
Obv. [FL IVL CON]STANS AVG
Rev. VIRTVS-[AVGG N]N, //TRS
AE XII 1.50 g; 15 mm
RIC VIII, p. 144, no. 77, Treveri, 337-340

- MD 6, unstratified
- 27 Theodora
Obv. FL MAX TH[EO-DORAE AV]G
Rev. PIETAS-[ROMANA]
AE VI 0.94 g; 14 mm
Pietas carrying an infant type, illegible mintmark, 337-340.
MD 7, unstratified
- 28 Copy of Magnentius
Obv. D N MAGNEN-TIVS [P F AV]G
Rev. VICTORIAE DD NN A[VG ET] CA - VOT/V/
MVL/X, //AMB
AE VI 2.04 g; 16 mm
Copy of RIC VIII, p. 122, no. 9, Amiens, post 351352.
MD 3, unstratified
- 29 Valens
Obv. D N VALEN-[S P F AV]G
Rev. SECVRITAS-RE[IPVBLIC]Æ, OF-II//CON
AE VI 2.70 g; 18 mm
RIC IX, p. 66. no. 17(b).XIII(b), Arelate, 367-375.
MD 2, unstratified

Pottery

Mark Wood

A small assemblage of 102 sherds (3.256kg) of Roman pottery was recovered, of which 32 sherds (0.816kg) came from grave fills and 13 sherds (0.736kg) were unstratified.

Given the location of the site, it is hardly surprising that the products of the Lower Nene Valley kilns, especially those nearby at Chesterton, Water Newton and Stibbington should all be well represented. Locally produced shelly wares are also fairly well represented. In essence the overall group is later Roman (3rd to 4th century) in character although there are a few exceptions which are 2nd century (context 28 for example).

There is little of note amongst the products themselves, although they include unusual forms from the Nene Valley, as well as products from further afield. These are principally samian and amphorae. Dressel 20 form the bulk of the amphorae with a solitary sherd of a Gauloise 4 flat-based wine amphora. This latter is far from an unusual find in Britain though it may be rarer in this region. The only other noteworthy products are two sherds of Black Burnished Ware 1 from Dorset and a single sherd of Oxfordshire red colour coated ware. The presence of some burnt sherds is not surprising, since the site is a cemetery.

Human remains

Corinne Duhig

Human bones were recovered from 52 contexts, with a single unstratified fragment. The limited nature of the recording work meant that in no case was it possible to recover a complete inhumation. Under these circumstances, the actual number of individuals represented remains equivocal although a minimum

of 57 individuals is represented. Males, females and children down to infancy are represented, although the fragmentary nature of the skeletons prevents sexing of most adults and precise ageing of all but one child and a few adults.

Although the bones have been broken by modern ditching activities they are generally sound with only some surface erosion. Methods used are those of Cho et al (1996) and Ubelaker (1989). In the inventory below, the bones present are listed only by element and side (Table 1). Very few were complete, and the actual portions present, such as 'proximal', 'distal', 'head' (of long bones), the various parts of the skull vault, face and base etc are recorded in the site archive. The note 'one individual' means that it is clear that all the bones from this context are compatible by virtue of age, unusual size and/or condition; this does not mean that other contexts necessarily contain more than one individual — indeed, they probably do not — and in the few cases where more than one person can be identified in a single context this is shown by 'a' and 'b' suffixes to the skeleton number.

Pathological changes are dominated by dental disease and the arthropathies, a situation usual for skeletal remains from the ancient world. However, there are also signs of dietary deficiency or physiological stress in the conditions of *cribra orbitalia* and enamel developmental defects (EDDs). *Cribra orbitalia* is a sieve-like appearance to the upper orbit produced by several anaemias and related conditions, the most common being iron-deficiency anaemia, usually produced by parasitism and infection rather than by inadequate dietary intake of iron (eg Stuart-Macadam 1989, 218–9). EDDs, also known as enamel hypoplasia, are caused by episodes of starvation or severe febrile illness (eg Goodman & Rose 1990). Pathologies are noted in Table 1; in addition:

Burial 2 Grave 3: (juvenile, unknown sex): the left calcaneus, talus and navicular are all fused together by disorganised new bone proliferation, mainly nodular, which surrounds, but does not intrude upon, the joint surface. There is also proliferation around the articulations with the malleoli; all except the most medial of the distal navicular facets are extremely cystic/eroded. Absence of the rest of the skeleton prevents further description or diagnosis of this arthropathic disorder (following Rogers et al 1987).

Burial 649 Grave 650: (adult female) shows evidence of EDDs. It also displays a cut on the left temporal bone (on the anterior tubercle of the glenoid fossa). This is in the position to be expected from a decapitation, but is too eroded for its cause to be determined with certainty.

The amount of information obtained from this small and disturbed sample, and the reasonable condition of the bones, suggests that any future opportunity for full excavation of this site would provide a highly informative skeletal assemblage. Further comments on the two possible cases of decapitation (skeletons 536 and 649) are presented in the discussion below.

Discussion

The Roman field system

The recorded ditches appeared to follow two main alignments, their layout perhaps conditioned by the outer bank of the town defences, and by the road which branches off Ermine Street outside the south gate. The ditches observed in 1998, probably dating to the mid to late 3rd century, may have formed part of a system of rectangular enclosures and linear features on a predominant northeast to southwest alignment visible on aerial photographs (Upex 1995). Both road and enclosures cut through a series of circular features of varying diameter, possibly representing prehistoric round barrows and henge monuments (Fig. 2). The function of the enclosures and ditches visible on aerial photographs is uncertain. They may represent yards or plots of land associated with roadside buildings, pens for livestock or the remnants of field systems.

The Roman cemetery

Chronology

Burial commenced in the later part of the 3rd century and continued throughout the 4th century, a single burial being attributed to the late 4th century or early years of the 5th century (115). With the exclusion of residual sherds of samian and early Lower Nene Valley wares, only five out of 170 graves produced 4th century pottery (3, 169, 173, 179 and 351). The assemblage included bowls, flagons, dishes and jars and reflected the distribution of forms frequently found in the former cremation-using areas north of the Thames (Philpott 1991, 108–109). Graves furnished with 4th century pottery have been recorded within Cambridgeshire at Guilden Morden (Fox & Lethbridge 1924, 54–58), Litlington (Liversidge 1977, 30) and Godmanchester, The Parks (Jones 2003, 35–36). The almost complete absence of pottery in the grave fills is consistent with the decline of pots and vessels in general as grave goods during the 4th century (Philpott 1991, *passim*).

Grave Groups and alignment

Without conclusive evidence for genetic traits in the osteological remains, it was not possible to establish whether the multiple graves belonged to genetically related individuals. Family groups are often identified in late inhumation cemeteries where the evidence for familial correlation becomes more visible in terms of genetic and/or ritual affinities. For instance, there is evidence for families being buried together at Butt Road, Colchester (Crummy & Crossan 1993), Poundbury, Dorchester (Farwell & Molleson 1993) and Lankhills, Winchester (Clarke 1979).

Although the burials at *Durobrivae* are on various alignments, two major features seem to have guided their layout, namely the western bank of the urban defences and the extramural road (Fig. 2). Many graves were cut at approximately right angles to these two

Table 1. Inventory of burials.

Grave Cut	Grave Fill/Skeleton No.	Orientation (Group)	Depth (m)	Bones present	Age (years)	Sex	Pathology	Other
3	2	E-W (5)	0.51	Cranium, ribs, R clav, scaps, L ul, rads, L calc/tal/nav	16-18	N/A	L calc/tal/nav: fused	-
5	4a	N-S (1)	0.65	tibs, fib	adult	-	-	1 indiv
5	4b	N-S (1)	0.65	hum, ribs	0.5-1.5	N/A	-	1 indiv
21	20	NNE-SSW (3)	0.8	R tib	adult	-	lipping at distal tibio-fibular joint	-
23	22	NNE-SSW (3)	0.5	L tib	c.7.5-8.5	N/A	-	-
25	24	NNE-SSW (3)	0.9	L innom, R innom, L fem	34-86 mean 61.2	male	L fem, L isch tub: lipping, spicules and nodules, ??DISH	-
27	26	NNE-SSW (3)	0.53	L fib, L tal, R mt1	adult	-	-	-
33	32	WNW-ESE (2)	0.6	cranium, innom, verts, L ul, R fem	adult	?male	verts: o/a; R fem: new bone on less troch	1 indiv
39	38	NNE-SSW (3)	0.7	L fem, R tib	adult	-	-	-
41	40	N-S (1)	0.64	cancellous bone lump	-	-	-	-
43	42	ENE-WSW (4)	0.7	calvaria, ribs	25-49, mean 36.2	male	metopism, lambdoid ossicles, <i>cribra</i> stage 2	-
49	48	NNE-SSW (3)	0.5	R tib, R fib	adult	-	-	1 indiv, robust
51	50	Uncertain (6)	0.75	L calc	adult	-	-	1 indiv
59	58	N-S (1)	0.9	fem	adult	-	-	-
61	60	ENE-WSW (4)	0.9	L fem	adult	-	lipped <i>linea aspera</i>	-
69	68	Uncertain (6)	0.58	skull, vert	adult	-	EDDs	-
71	70a	WNW-ESE (2)	0.75	R fib, R calc, R tal fem	adult	-	-	1 indiv
71	70b	WNW-ESE (2)	0.75		1.5-2.5	N/A	-	1 indiv
77	76a	Uncertain (6)	0.4	ribs, R innom, L fem, R hum, R ul, R rad, R calc	23-57, mean 35.2	male	fem: lipping of head (++) and <i>linea aspera</i>	1 indiv
77	76b	Uncertain (6)	0.4		<16-20	-	-	1 indiv
89	88	E-W (5)	0.46	R fem	c.0.5-1.5	N/A	-	-
115	114	ENE-WSW (4)	0.4	cranium, fib	5 ± 16 months	N/A	-	Cu alloy stains on L occipital and lower left molar
119	118	N-S (1)	0.6	tibs	adult	-	-	-
125	124	NNE-SSW (3)	0.8	L tib, R tal	adult	-	-	-
131	130	NNE-SSW (3)	0.68	R fem, fem, R pat	adult	-	-	-
139	138	ENE-WSW (4)	0.4	L tib, L fib, R fib	adult	-	R fib: distal fracture	-
141	140	N-S (1)	N/A	R fem	c.2.5-3.5	N/A	-	-
143	142	N-S (1)	0.62	L innom, R ul, R rad, R mt3	adult	-	-	-
145	144	N-S (1)	0.6	vert, L hum, l/b sh frags	adult	-	-	-
159	158	E-W (5)	0.35	tib	adult	-	-	-
169	168	E-W (5)	0.6	rib	adult	-	-	-
177	176	E-W (5)	0.6	L tib, fib	adult	-	-	-

Grave Cut	Grave Fill/ Skeleton No.	Orientation (Group)	Depth (m)	Bones present	Age (years)	Sex	Pathology	Other
181	180	Uncertain (6)	0.62	all R: innom, ul, rad, fem, pat, mc1, mc2	adult	male	innom: acet shallow, ?congenital deformity	1 or 2 indivs: fem head not altered by shallow acet
527	526	ENE-WSW (4)	0.7	fib, R tal, mts	adult	-	-	1 indiv, v. gracile, perhaps same as below
529	528	WNW-ESE (2)	0.5	vert, tib	adult	-	-	1 indiv, v. gracile, perhaps same as above
537	536	Uncertain (6)	0.35	cranium, vert, ribs, R innom, R ul, L fem, fem	c.35	female	<i>cribra</i> stage 2; one rib: lipping and cysts of tubercle; L fem: rugosity and lipping of insertion of <i>Glut max</i>	decapitation?
541	540	Uncertain (6)	0.73	sac, L pubis	26-70 mean 38.2	female	-	-
576	575	ENE-WSW (4)	0.57	cranium	adult	-	-	-
602	601	ENE-WSW (4)	0.74	rib, scap, L hum, l/b shaft	18-25 y	-	-	-
616	615	N-S (1)	0.68	R tib	imm	N/A	-	-
618	617	N-S (1)	0.72	fem Fs	adult	-	-	-
620	619	E-W (5)	0.58	fem	adult	-	-	-
624	623	N-S (1)	0.68	innoms, R fem	c.30-34	female	-	-
628	627	NNE-SSW (3)	0.7	cranium	adult	-	-	-
638	637	NNE-SSW (3)	0.5	hum	adult	-	-	-
640	639	NNE-SSW (3)	N/A	R hum	adult	-	-	-
644	643	N-S (1)	0.8	sac, R ul, R rad	adult	-	-	-
650	649	N-S (1)	0.58	skull, hums	adult	female	cut on L petrous, spotted enamel (EDDs), severe caries	decapitation?
652	651	ENE-WSW (4)	0.6	skull, verts, ribs, claws, scaps, hums	32-65, mean 45.5	male	severe a/m tooth loss, caries, abscesses and mal-occlusion; verts: o/a; scaps: lipping of fossae; R hum: rugosity of insertion of <i>Pec mag</i>	-
656	655	N-S (1)	0.5	ribs, hums, L mc2	adult	-	-	-
662	661	NNE-SSW (3)	0.8	verts, ribs, sac, innoms, L ul, rads, fib	18-25	-	-	1 indiv
664	663a	N-S (1)	0.6	L tib, fib	adult	-	-	1 indiv
664	663b	N-S (1)	0.6	R tib	adult	-	-	1 indiv (larger)
666	665a	NNE-SSW (3)	0.8	L fem	<14	N/A	-	1 indiv
666	665b	NNE-SSW (3)	0.8	R ul, R rad	?adult	-	-	1 indiv
682	681	Uncertain	0.44	innom, L rad, L fem	<12	N/A	-	1 indiv

landmarks, the same alignment as the pre-existing field-ditches/enclosures of Phase 1. Given the high degree of disturbance, together with the absence of clear stratigraphic relationships, it was not possible to establish patterns of alignment in relation to chronological changes. It appeared, however, that the north to south aligned burials of Group 1 were amongst the earliest features, being cut by the graves in Groups 2–5, and that the east-northeast to west-southwest graves in Group 4 were amongst the latest. Whether this evidence may indicate a progressive change in orientation towards an east to west alignment is uncertain. There were only few east to west aligned burials, including the two stone coffins (1 and 546), many of which occurred in isolation.

As most skeletons had been truncated during the original digging of the roadside ditch, there was insufficient evidence to allow the analysis of body postures. The least disturbed burials (1, 546, 649 and 651) appeared to be laid supine and extended.

Distribution: burial density and 'empty' zones

The high density of burials together with variations in the alignments must have been responsible for the frequent intercutting of graves. Disturbance may suggest that the graves were not marked. Despite overcrowding, there were areas with lower density of burials and 'empty' zones towards the slope further away from the walled circuit of the Roman town (Figs 3 and 4). Both lower burial density and 'empty' zones could have been caused by natural or artificial constraints, such as trees, ditch banks, topographical

features, shallow graves, etc which may have disappeared.

The former ditches had only partially silted-up and were therefore still visible by the time burial started, possibly guiding the orientation of some of the graves whilst also serving (albeit temporarily) as external boundaries of the cemetery. In the absence of dating evidence, any such suggestion is tentative. It is also possible that the ditches acted as internal boundaries for the definition of sectors or burial plots, possibly relating to land-ownership. Evidence for continuation of established plots in Romano-British cemeteries comes from sites at Butt Road, Colchester (Crummy & Crossan 1993, *passim*), Ilchester (Leach 1994), Kelvedon (Rodwell 1988) and at Godmanchester, The Parks (Jones 2003).

Burial Rites and grave treatment

Burials consisted exclusively of inhumations some of which produced evidence for wooden coffins in the form of loose iron nails in the grave fills (graves 43, 77, 105, 527, 529 and 576). Unstratified clusters of iron nails were located by metal detector throughout the site. More substantial body containers were represented by the two lidded limestone coffins, which supplement the substantial group already known from the immediate area.

Both stone coffins were rectangular with flat lids, and belong to a fairly common type previously recorded in the Water Newton area (Taylor 1984). Stone coffins are commonly found in urban cemeteries and occasionally in rural locations in the context of



Figure 8. Roman stone coffin from Durobrivae, now at the Norris Museum, St Ives. Photo A. Taylor.

villa-holdings or 'imperial estates'. As a whole, the distribution of stone coffins in Roman Britain appears to be influenced by the local geology, with particular reference to the Oolitic-Liassic Jurassic Ridge, indicating that availability of raw material *in loco* played a significant part. This is well exemplified by the distribution in the Cambridgeshire region (Taylor 1984;1993) where the majority of coffins occur in the Peterborough area, near the Barnack quarries, although problems of transport could be overcome by use of rivers. Elements of ritual choice, as well as fashionable trends and status (below), are also likely to have influenced the preference accorded to this type of container, accounting for the variety of associated burial rites.

There was also one possible stone-lined grave (25) (Fig. 4). Although the burial had been disturbed, it was clear that stones had been placed along the edges of the grave. Partial covering of bodies with stones (or tiles) has been related to the use of un-nailed wooden coffins. The practice is frequently found at cemetery sites both in urban and rural contexts along the Jurassic Ridge (Philpott 1991, 63). For instance, partial linings were noted at Ashton (Northants.) where both the position and quantity of stones varied considerably (Philpott 1991). There are also examples from Lankhills (Winchester) which would indicate that the practice became common after c.370 (Clarke 1979), Butt Road (Colchester) (Crummy & Crossan 1993) and Poundbury Site C (Dorchester) (Farwell & Molleson 1993). Local availability of limestone may provide a partial explanation.

Brick, roof tile (*tegulae* and *imbrices*) and limestone slab fragments were found in the fills of numerous graves, and in the fills of two ditches (161 and 674). In the case of the graves, however, it was not possible to establish whether they may have originally represented deliberate stone and tile packing. It is possible that the materials originated from the demolition of buildings located in the proximity of the cemetery site.

Decapitation

Burial 649 (650) presented a horizontal cut on the left petrous consistent with possible decapitation (Duhig, above). It belonged to an adult female whose body had been laid out supine on a north to south alignment with the head to the north. The head had apparently been severed but left in the correct anatomical position. Decapitation is increasingly being found as a minority burial rite in late Roman Britain (Macdonald 1979; Taylor 2001, 123), especially in rural areas. In occasional examples it can be argued that the victim was executed, but the majority (as here) were otherwise normal burials, probably surgically decapitated post-mortem for religious/superstitious reasons linked to releasing troublesome spirits. At *Durobrivae*, a second burial 536 (537) of uncertain alignment, also belonging to an adult female, appeared to have had the skull removed from its anatomical position and placed with care on the pelvis. Despite inconclusive osteological evidence due to the poor condition of

preservation of the skeletal remains, a second case of decapitation is possible.

An 'intrusive' grave?

Burial 114 (grave 115; Fig. 4) was the only furnished burial recorded. During excavation of the child's skull, a group of copper alloy and ivory armlets, together with amber and decorated black glass beads, was found and lifted (Figs 5–8). The bracelets were clearly not worn but stacked together, with the beads placed inside the group of bracelets. The evidence suggests they may have been buried inside a box or bag, since decayed. Ornaments were frequently deposited in a pile near the hip or head in the graves of female juveniles. Preference was given to certain types and combinations including the deposition of bracelets and beads, the latter being commonly associated with the former which could also occur on their own (Philpott 1991, 147–148). Most known examples date to the 4th century. The armlets from grave 115 at *Durobrivae* were of standard late Roman form and style suggesting a date in the final quarter of the 4th century. The beads are Germanic or Frankish imports from the Continent, providing the best evidence that the burial did not take place until the late 4th century or early years of the 5th century (Crummy, above).

Inhumation 114 parallels a similar burial in a stone-lined cist at Wittering (Cams), excavated in 1993 (McKenna, nd). Here a single decapitated female inhumation near the A1 was accompanied by three bone and five copper alloy bracelets, beads and other items, the bracelets showing a marked similarity with those from the *Durobrivae* grave. The Wittering burial was dated on the basis of the artefacts to the (3rd or) 4th century AD (Ian Meadows, pers comm).

At *Durobrivae*, the presence of one furnished grave out of nearly sixty unfurnished burials, together with the typology of the grave goods, raises the question as to whether it may have been foreign. According to the literary sources, Sarmatians and Burgundians are vaguely attested in Britain under, respectively, Marcus Aurelius and Probus (Salway 1985, 549, ff.). The evidence from funerary contexts would suggest that the earliest phase of Germanic settlement, though on a small scale, dates from the early part of the 5th century. These data might throw light on the problem of 'foreign graves' in the context of the late Romano-British cemeteries. For instance, at Lankhills, Winchester (Clarke 1979) the presence of two groups of 'intrusive graves' was defined on the basis of classification, typologies and positioning of objects in the graves with respect to the body. The first group was related to people who had arrived around the middle of the 4th century from the Danube area (Bavaria and Hungary) and had been recruited into the Roman army. The burials of adult males were characterised by knives, crossbow brooches and belt metal fittings as part of military uniforms. The grave goods associated with the female burials consisted of distinctive dress fasteners and other items of adornment. The association of the second group of 'intrusive buri-

als' with later incomers showing Saxon affinities is less convincing, due to the absence of Anglo-Saxon artefacts in the graves. The presence of common late Roman artefacts in the same grave could simply indicate that the Bavarian items reached Roman Britain as the result of increased trade contacts with the Rhine frontier. Furthermore, the absence of male burials accompanied by official uniform metalwork would argue against the presence of recruits (whether local or foreign) in the cemetery.

Status

Fashion, religious beliefs and personal choice are likely to have played a major role by dictating the mode of burial and aspects of conformity in relation to the funerary standards. The burials from *Durobrivae* did not appear to display any marked traits associated with wealth or to show evidence for the presence of treatments reserved for the poorest section of the community, the dominant pattern consisting of unfurnished burials. An exception is represented by the presence of two inhumations in stone coffins. The association of stone coffins with major walled towns and 'high-ranking' rural settlements would indicate a correlation between status and substantial body containers, although local availability of raw material may have been a factor.

At *Durobrivae* skeletal analysis as a whole did not reveal atypical changes, although there were rare instances of physiological stress and dietary deficiency caused by poor hygienic conditions and malnutrition.

Religion

At *Durobrivae*, the apparent progression of the graves towards east to west alignments and, more convincingly, the presence of infants in a formal cemetery alongside adults may be indicative of Christianity (Watts 1991, 38–51). It is interesting to note that infants were found buried in pits at Greenfield's Site 3. Infant burials are commonly found in discrete cemeteries, generally associated with buildings, or in pits and ditches on rural sites. Generally taken to indicate that infants were not held in the same regard as adults (Philpott 1991, 98), the disposal and segregation of infant burials may have had ritual connotations (Scott 1991). With particular reference to the group of infants from Greenfield's Site 3, the quantity of coins together with the burial of joints of animal meat and the fragments of a possible altar may indicate religious use of the building (Perrin 1999, 64). The burials recorded by Greenfield were earlier than those excavated in 1998. The occurrence of infants in a formal cemetery could show a change in attitude during the 4th century, possibly under the influence of Christianity.

The presence of Christian burials would further indicate the existence of a Christian community at *Durobrivae*, where the major evidence is the Water Newton Treasure. This comprises a series of votive leaves from the pagan tradition of *ex-voto* in temples, and items of a Eucharist set with dedicatory inscrip-

tions and *chi-rho* symbols, which may have belonged to a house-church or purpose-built structure for the congregation of wealthy Christians in the late 3rd to 4th century (Painter 1977; Thomas 1981, 113–121). The composition of the Water Newton Treasure is a reflection of the fusion of pre-existing pagan elements and Christian rites. The same syncretism is apparent in the context of the cemetery excavated in 1998, and exemplified by the persistence of pagan rituals, as in the practice of decapitation, alongside Christian trends, such as the formal burial of infants with adults.

The cemetery in its suburban context

The cemetery was evidently established in an area which had been used for rural activities during the mid to late 3rd century, by which time suburban occupation along the road had already begun (in the Hadrianic period) at some distance from the town perimeter (Greenfield *nd*). The apparent presence of an 'empty zone' for rural activities between the town defences (constructed in or after the 2nd century) and the suburban area may reflect land ownership on the fringes of the Roman town. Subsequent use of the former rural 'empty zone' was largely for a cemetery established in the later part of the 3rd century. In the second half of the 4th century, occupation became sporadic whereas burial activity continued. The fact that the cemetery did not encroach upon the buildings nearby may indicate that the suburb was not entirely derelict, the evidence being supported by late Roman pottery and coins from the area (Perrin 1999, 74–77).

In major Romano-British towns, the location of a cemetery between the town circuit and the suburban built-up area would be unusual. However, it would not be unusual in minor towns where burial was more informal. For instance, at Ilchester (Leach 1982, 82–88) and Ashton (Hadman & Upex 1975, 1977, 1979; Hadman 1984), inhumations had been laid out in plots at the rear of street-frontage buildings. The evidence from *Durobrivae* would be consistent with many minor towns where urban planning in general was more flexible (Finch Smith 1987, *passim*; Burnham & Wachter 1990, 31, 316), and had to take into account the fact that unofficial centres developed almost spontaneously due to changed economic and political circumstances which often prompted the promotion of many of these 'minor' towns to a higher status.

Two possible explanations for the location of the cemetery can be suggested. Given the evidence for agricultural activity, together with industrial production and, possibly, trade from the suburban area, it is tempting to associate some burials with the population of the extra-mural area nearby. The cemetery may have been used by both townspeople and suburban residents, accounting for continuity of burial during the 4th century, at a time when the suburban zone had started to contract, although there was still a considerable population residing in the town.

From a different perspective, the location outside the western defence may relate to some form of planning of the suburban area, following construction of

the walled circuit. It is possible that ribbon development was expected, but since expansion did not occur, the cemetery came to occupy the 'empty zone'.

Cemeteries around Durobrivae

Current knowledge rests almost exclusively on antiquarian observations and recording (Haverfield 1902, 170; RCHM 1926, 52; Taylor 1926, 233–234) (Fig. 2). The evidence is summarised below.

- Northwest gate, south of Ermine Street: stone coffins for inhumations and urned cremations recorded during the 18th century by Artis (1828) and Stukeley respectively.
- Southeast corner of the town defences: inhumations excavated by Artis (1828).
- West corner of the defences: urned cremations and stone and lead coffins exposed during construction of the Great North Road in 1739.
- Road to Irchester: cropmarks suggest a system of large enclosures flanking the road. One of the enclosures near the junction with the road branching off Ermine Street contained grave cuts for inhumations. Possible square and circular *mausolea* were also observed, one of which may have been contained within one of the enclosures (Wilson 1975, 10).
- Normangate Field, north of the River Nene: a stone mausoleum contained four burials one of which was accompanied by a gold ring, a silver brooch and bronze bracelets (Dannel & Wild 1969, 7). Scattered inhumations were also found (Burnham & Wachter 1990, 91). The site at Normangate Field may have belonged to one of the villa-estates known to have existed in the area.
- Greenfield's Site 2 by the Billing Brook (Greenfield nd): evidence for 2nd to 3rd century occupation emerged in the form of a well together with ovens, postholes, ditches and gravel pits. There were also several disturbed inhumations and stone coffins (Anon. 1958) which may have belonged to the burial site located at the junction between Irchester road and the road branching off Ermine Street.

Distribution of cemeteries around *Durobrivae* seems to have been guided by the defensive bank. The earliest burials, cremations, were located in cemeteries along the north and west edges of the Roman town, where inhumations are also recorded. To the east, south and southwest of the urban defences burial grounds seem to have contained inhumations only. By comparison with burial grounds for mixed rites, later cemeteries exclusively for inhumations seem to have been re-located further away from the town, as at Greenfield's Sites 2–4 where there was also evidence for suburban ribbon development.

The reasons behind the shift are difficult to explain. It is possible that the early burial grounds lay too close to the town, their development partially constrained by the Nene and the Billing Brook. In the western cemetery pressure on land is exemplified by graves cut through the counter-bank of the

town ditch, suggesting prolonged usage (Burnham & Wachter 1990, 91). It is therefore possible that natural geological features made it necessary to find new areas for later graves, although the rite of inhumation continued to be performed in the earlier burial grounds. Convenience may explain cemeteries along easy access roads for suburban areas. Proliferation of cemeteries in the late 3rd to 4th century may point to an increase in the population at *Durobrivae*.

Another interesting aspect relating to distribution of the cemeteries is the presence of substantial grave markers and body containers in what seem to be preferential locations. For instance, *mausolea* have been found to the west of the town, along the Irchester road. Similarly, the bulk of stone coffins came from the southwest cemetery. It is possible that wealth and status, together with religious beliefs and fashionable trends may have conditioned the choice of areas for 'special' burials.

Conclusions

Durobrivae has attracted the attention of antiquarians since the 18th century. More recent excavations and aerial photographic surveys have produced a growing body of evidence allowing a better understanding of the town development in Roman times. As a 'minor' walled centre, *Durobrivae* began life as a civilian *vicus* attached to a (pre-Flavian?) military fort near the Billing Brook. It later developed into a *mansio* and, possibly, a *civitas* (Rivet 1964, 135). Evidence is also emerging for the organisation of the rural hinterland where villas and farmsteads appear to form a consistent settlement pattern in terms of distribution in relation to the town. From a topographic point of view, not only is there potential evidence for the organisation of the town core, but also for the use of the suburban space for agricultural and industrial activity. Finally, many cemetery sites have been identified which could offer further potential for the analysis of phases of expansion-contraction and changes of land use through time.

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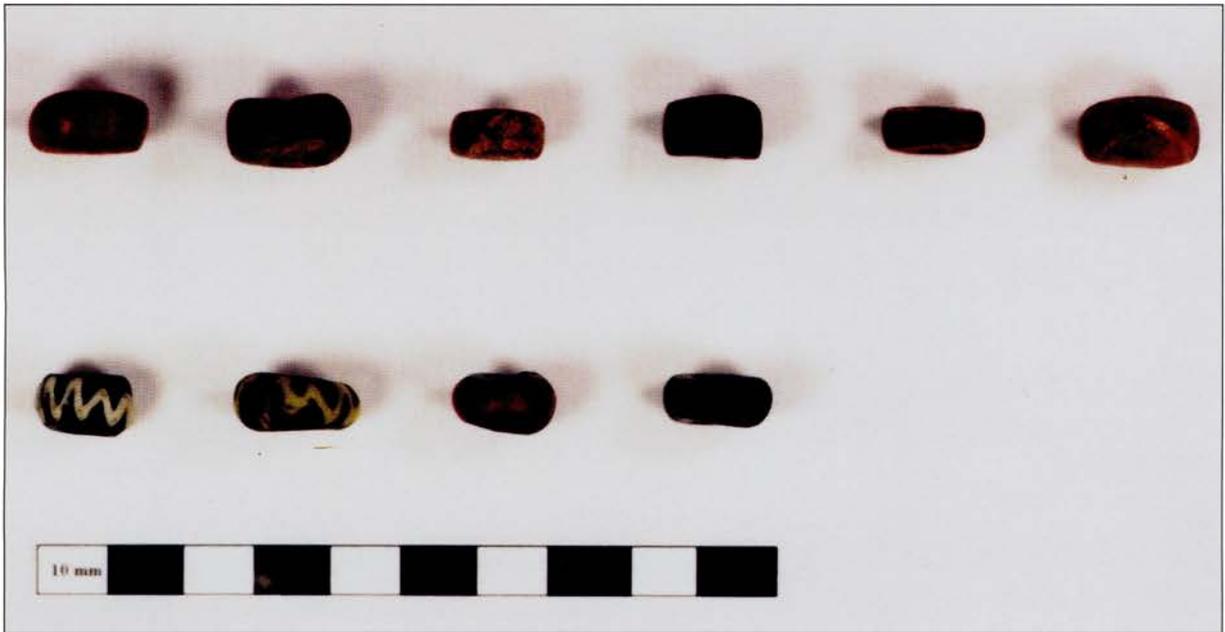


Plate 1. Glass and amber beads from Durobrivae grave 115.

Romano-British and medieval saltmaking and settlement in Parson Drove, Cambridgeshire

Phil Andrews

Contributions by Rachel Every, Stephanie Knight, Lorraine Mephram and
Chris Stevens

The site, centred TL 37440 08460, is located in the silt fenland of Cambridgeshire, on the edge of a roddon, within an area studied in detail by the Fenland Project. The excavation revealed evidence for three phases of Romano-British rural settlement spanning the 1st – 4th centuries AD, associated with salt production and animal rearing. Medieval settlement did not begin until at least the 12th century, the main period of activity was in the 13th – 14th centuries and, as in the Roman period, the layout and alignment of features appear to have been influenced by the existence of the roddon. Trackways and associated enclosures indicate the rearing of animals, and a series of pits and ditches provide further evidence for somewhat unusual, inland saltmaking. The surviving linear village plan of Parson Drove demonstrates its connection with the later medieval, post-reclamation planned landscape of this part of the Cambridgeshire fenland. A single ditch assigned to the 14th or 15th century probably reflects this later medieval phase, characterised by long droves and strip fields associated with the change from pastoral to arable agriculture.

Introduction

The site covers c.1.5ha within the western part of the linear village of Parson Drove (Fig. 1). It is located in the silt fenland of Cambridgeshire, an area dominated by the dendritic patterns of Flandrian river and stream channels. These former rivers and streams are today marked by low banks of sand or silt (roddons) representing infilled channels of once tidal watercourses. Much of the roddon system is likely to have been utilised in the Late Iron Age or early Roman period and reflects a phase when the area was salt marsh dissected by meandering tidal creeks and channels which gradually silted up. The site lies on or close to the eastern edge of a substantial roddon mapped as part of the Fenland Project (Hall and Palmer 1996, fig. 95), at c.1.80m OD.

The village plan of Parson Drove demonstrates its connection with the later medieval, post-reclamation planned landscape (Hall and Palmer 1996, 182). However, cropmark evidence indicates earlier

(Romano-British and ?medieval) settlement orientation to reflect that of the roddons – the new village alignment being almost perpendicular to the former layout.

Archaeological background

Prehistoric

Prehistoric finds are recorded in very small numbers from the pre-Flandrian surface in this part of the Fenland, but nothing is known from the vicinity of Parson Drove. Towards the top of the Flandrian sequence in this area is a relatively thin but widespread peat layer, representing stagnation following freshwater incursion. At Murrow (just south of Parson Drove), this peat has been dated to 2130±50BP (370–340 cal BC; Q2590) (Hall and Palmer 1996, 165). Brown silt occurs over the peat at Parson Drove and forms the chief deposit in this area. There was no dry land in the vicinity throughout most of the Iron Age, and all of the Roman and medieval settlement recorded in the excavation occurred on top of this upper silt deposit.

Roman

The Fenland Project has recorded (largely from field-walking and aerial photographs) extensive evidence for Roman activity on roddons on the fen-edge (Hall and Palmer 1996, 171 and fig. 94). The majority of sites are salterns, or settlements adjacent to and related to salterns, and include an extensive array of enclosures and ditched droves (represented by cropmarks) less than 500m northwest and southwest respectively of the site. No further information of relevance to the site has subsequently been added to this cropmark plot (Rog Palmer, pers comm). These features are consistent with a stock-raising economy, the animals being grazed on the fen in summer. An evaluation undertaken of cropmarks northwest of the site at Throckenholt Farm in 1993 indicated a short period of occupation in the late 2nd – mid 3rd century (Bray 1994). Evaluation of the Parson Drove site (HAT 2003) recorded only 15

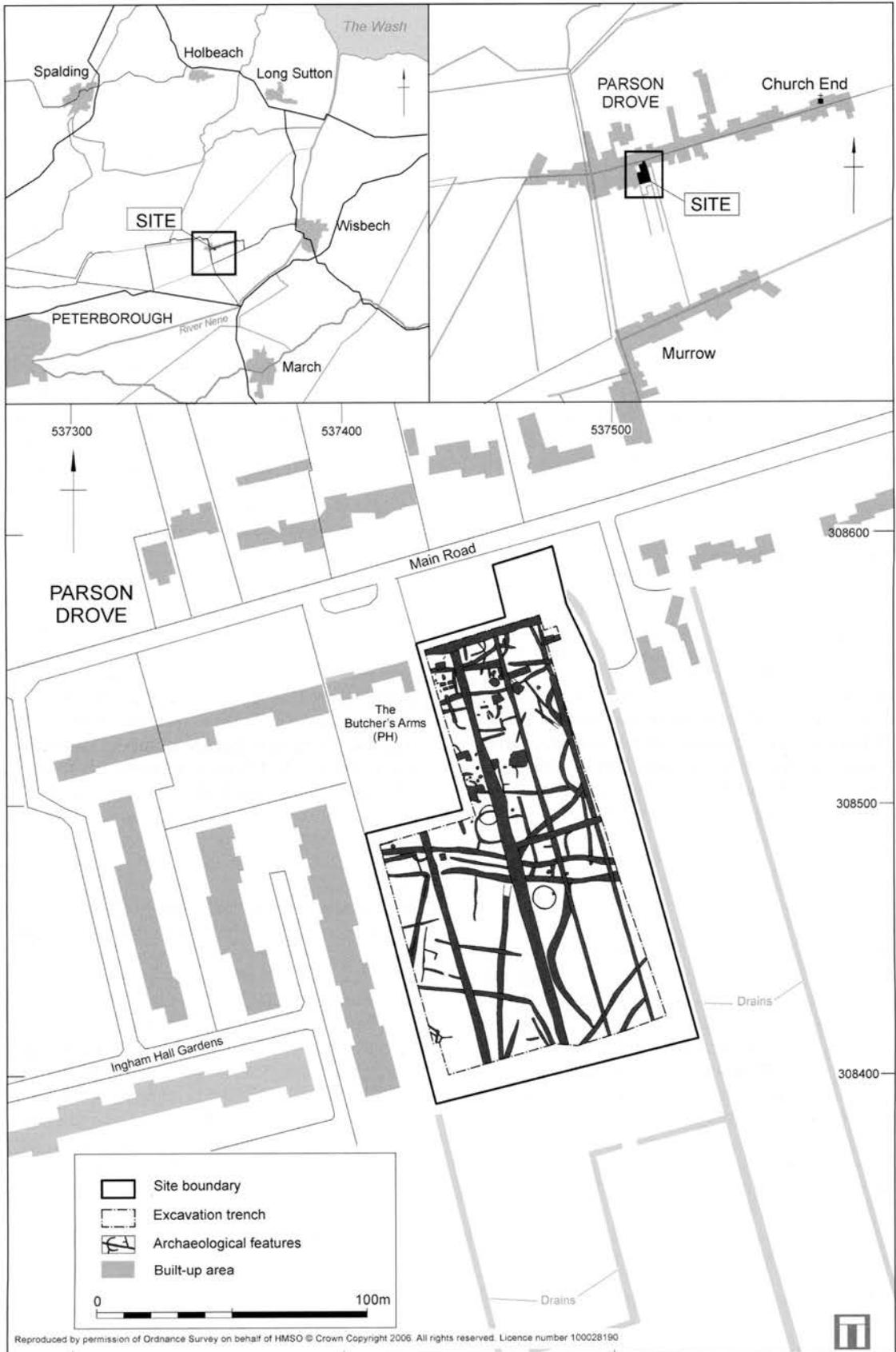


Figure 1. Plan showing excavation area and all features.

(residual) sherds of Roman pottery and no contemporary features. No work undertaken in this area has shown evidence for any 'post-Roman silt' which has been found to overlie much of the Roman landscape in Lincolnshire and Norfolk.

Medieval

The evaluation (HAT 2003) identified enclosures, ditches and pits broadly assigned to the 13th – 15th centuries, representing more than one phase of activity.

Parson Drove is one of the second stage reclamation linear settlements, its location determined by the slightly higher ground provided by a roddon. Like other second stage medieval settlements in this area it is characterised by a long, wide drove reflecting the planned landscape which developed as reclamation of the fen proceeded westwards. St John the Baptist's church, containing 13th century elements, lies in Church End at the east end of Parson Drove, and at the west end of the village is the Fendyke Bank, a major medieval flood defence which was breached on several occasions, most seriously in 1437, 1570 and 1770. The whole area of medieval dry land appears to have been divided into strip fields as former wetland grazing areas were replaced by arable agriculture which followed drainage and reclamation.

A small number of sites in the area have provided rare evidence for medieval settlement and wetland exploitation in the (former) peat fen, all but one located on roddons. One of these sites, within Parson Drove parish, 3km northeast of the site, was partly excavated in 1991 and proved to be a medieval saltern of unusual type in that it lay inland rather than on the coast (Pollard *et al* 2001). The presence of this saltern indicates that brackish water must have backed-up through what was by then medieval arable land until as late as the 14th century.

Post-medieval

Parson Drove has changed remarkably little from its later medieval linear layout. Subsequent housing continued to reflect the original width of the drove, but there is no map or documentary evidence for there ever having been post-medieval buildings within the site itself, and the Butcher's Arms public house does not appear on maps before 1886. The will of one John Bend (dated 1593), gave a message (close to and including the site) with 15 acres of land in South Inham Field, its rents devoted to 'making a stock to set the poor people to work' (HAT 2003).

Site sequence

An average 0.5m of generally undifferentiated topsoil/subsoil overlay natural deposits. The homogeneity of the overburden reflects recent cereal cultivation which had truncated upper parts of archaeological features. This truncation was most apparent in the western third of the site where the fine sand/silt comprising the eastern edge of the roddon was exposed.

Here, the section along the western edge of the site showed that 0.3m or more of this raised feature along with the fills of features cutting it had been mixed by ploughing. Truncation was less pronounced in the slightly lower lying eastern two-thirds of the site where the natural, 'off-roddon' deposits comprised clayey silts/silty clays.

The Holocene sequence recorded locally was confirmed in the excavation, with Roman and later features cutting the roddon and adjacent deposits. These deposits were c.0.85m thick and covered a thin and discontinuous layer of peat up to 0.1m thick which can be equated with the Iron Age peat layer recorded elsewhere and dated to the Iron Age (above). The peat, at c.0.5m OD, lay above saltmarsh deposits variously comprising yellowish brown and blue clays and mid- to dark yellow sands with grey mottling.

The majority of the archaeological features were shallow (only post-medieval ditch 103 and medieval ditch 163 were more than 1m deep) and many contained single, undifferentiated fills. Larger features were generally visible following machine stripping, but several of the smaller features only became apparent after a week or more of weathering. There were no complex stratigraphic sequences and although some relationships were apparent at surface level, others could only be determined with some difficulty through excavation, and a few were never resolved.

Virtually all the features have been assigned to the Roman, medieval or post-medieval periods respectively, with a very small number remaining unassigned. (Note that feature numbers shown in boxes on Figures 2 and 3 have sections illustrated in the archive report, Wessex Archaeology 2004).

Roman (Fig. 2)

Phase 1: 1st – 2nd century

Features were largely restricted to the central part of the site and comprised a small enclosure and an associated group of circular structures. The north and east boundaries to the enclosure (measuring at least 40m by 28m) were represented by shallow ditches 211 and 290 respectively (up to 1.5m wide and 0.5m deep), with ditch 211 producing relatively large quantities of pottery. Gully 292 may have marked a boundary to the south and gully 287 an internal division. Within the area enclosed by these gullies and ditch 211 to the north were two ring-gullies perhaps representing round-houses. The earlier of the two ring-gullies (175) was approximately 7m in diameter, and the later (174) 11m in diameter and substantially deeper (at c.0.25m). No associated post-holes or post-ghosts were identified, but ring-gully 174 had two short 'spurs' on the south and east sides (293 and 291 respectively). A single sherd of Late Iron Age pottery came from ring-gully 174. A further ring-gully (294), surviving as little more than a soil stain, lay approximately 20m to the southeast, outside the enclosure. This ring-gully was 8m in diameter, and a shallow, internal pit (679) on the east side produced one sherd of early Roman pottery. A short length of curvilinear gully (170)

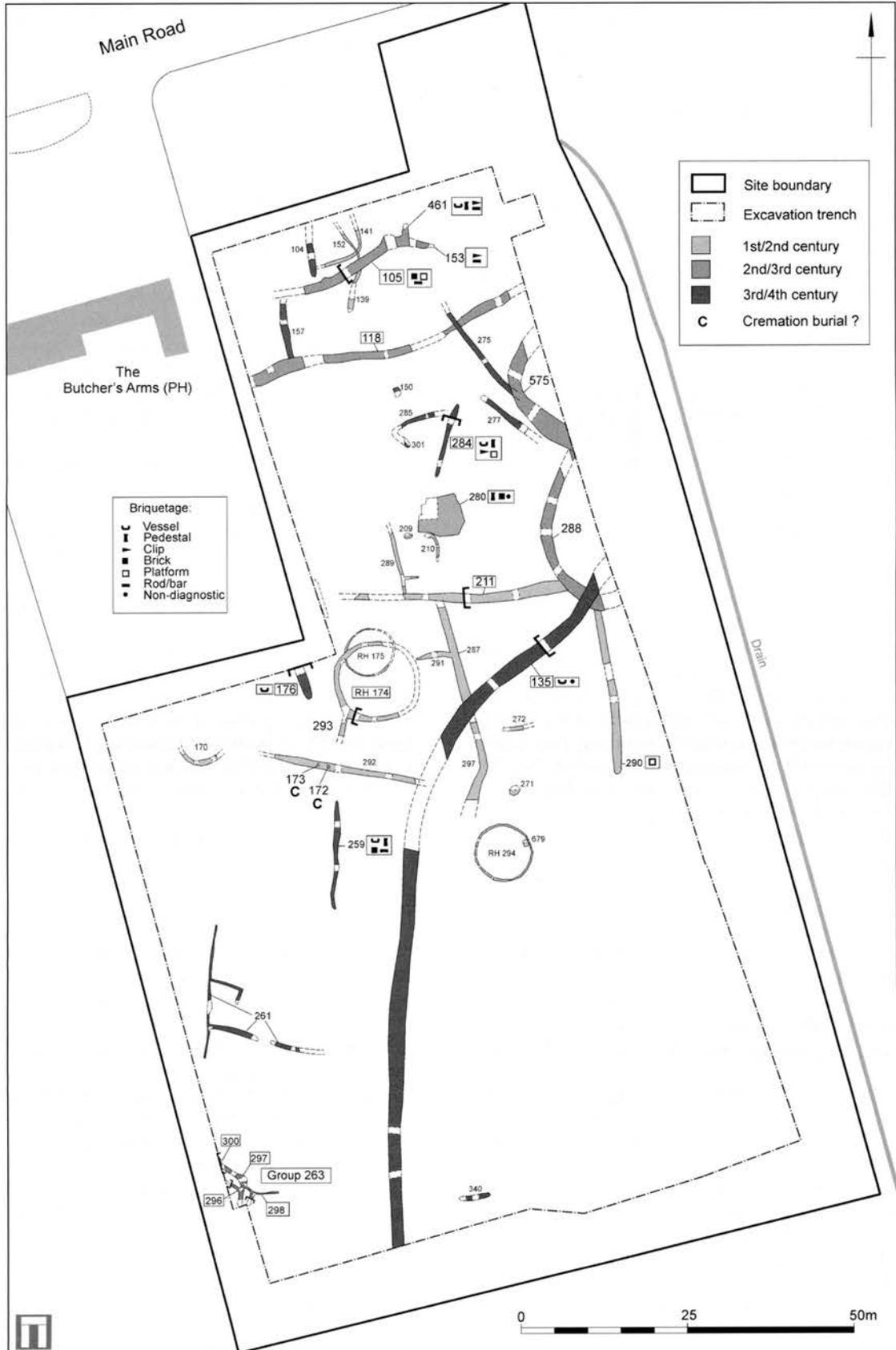


Figure 2. Roman features.

further to the west may represent the remains of another ring-gully. Several of these features contained very small quantities of fragmentary briquetage, and a complete, rectangular clay slab was found in the southern terminal of ditch 290.

Probably associated with the central group of features were pit 271 and a further small complex (pit 209 and gullies 210 and 289). Also assigned to this phase are two heavily truncated possible cremation burials (172 and 173, 0.18m and 0.03m deep respectively), both unurned, placed close to each other in the top of gully 292. Neither feature produced human bone, but both were filled with discrete deposits of charcoal-rich soil that contained small quantities of heavily burnt bone representing one or more young sheep.

Other features which might have belonged to the earliest Roman phase are shallow, intercutting gullies 141 and 152; these produced no finds but pre-dated trackway ditch 105. A large, shallow subrectangular pit (280), c.8m by 7m by c.0.3m deep, remains enigmatic. The 'stepped' edge apparent in plan along the west side suggests that it may have been a small quarry, but its function and place in the sequence are uncertain. It produced some fragmentary briquetage.

Phase 2: 2nd – 3rd century

Features assigned to this phase were dispersed from south to north across the site, but were largely restricted to the western half, on the edge of the roddon. At the southern end, and extending beyond the limit of excavation to the west, were intercutting, curvilinear gullies (group 263, comprising gullies 296, 297, 298 and 299 and pit 300) which produced prolific quantities of pottery including five near-complete vessels. This group of gullies is likely to represent a sequence, though what this was could not be determined with certainty. Gully 297 cut pit 300 and perhaps represents a replacement of gully 296, with gully 298 possibly being a secondary feature. The nature of these features and the amount of pottery they contained suggest that there was contemporary settlement in the immediate vicinity, and the most likely interpretation is that they were rainwater gullies surrounding a structure, possibly a roundhouse, which lay to the west.

At the north end of the site were two more substantial ditches (105/153 and 118), between 1.4m and 1.9m wide and 0.45m and 0.8m deep, which though irregular in plan ran broadly parallel to each other and may have defined an east-west aligned trackway approximately 12m wide. If so, then this trackway appears to have terminated on the eastern edge of the site. Ditch 105/153 produced briquetage including several clay 'bricks', and ditch 118 contained an ashy deposit with charcoal and possible briquetage fragments. Towards the east terminus of ditch 105 was a short, shallow extension (461) on the north side, perhaps a small pit, which contained a concentration of pottery and several types of briquetage.

Along the western edge of the site were two curvilinear ditches (288 and 575), flat-bottomed, 1.9m

to 2.85m wide and c.0.5m deep. Ditch 288 cut earlier enclosure ditch 211, and was itself cut by ditch 135. However, the relationship of ditches 288 and 575 to the other 3rd – 4th century features containing briquetage was equivocal, and it is uncertain which was earlier, or whether they were contemporary.

Phase 3: 3rd – 4th century

Several features assigned to this phase were characterised by the quantities of briquetage they contained, sometimes as discrete deposits, and a distinctive slightly bluey green hue to their fills. They contained little or no pottery, but where stratigraphic relationships could be determined these showed them to post-date the 1st – 2nd century features. Their relationship to the late 2nd – 3rd century features was sometimes less clear. No hearths, tanks or channels directly associated with salt production were identified.

The most substantial feature was ditch 135, up to 2.85m wide and 0.55m deep, which ran close to the eastern edge of the roddon for at least 100m. It contained at least two discrete dumps of briquetage fragments, with a 'background scatter' along its length. Two short gullies or elongated pits (272 and 340) were the only features to the east within the excavated area. An irregular ditch/gully 259 to the west contained several pedestals and a range of other types of briquetage, and ditch terminus 176 contained a dump of briquetage vessel fragments.

Two shallow gullies at 90° to each other (261) had been heavily truncated and contained very few finds, but there was one discrete deposit of pottery close to a gap which probably marks an entrance. A small, trapezoidal arrangement of gullies, open to the south, probably represents a later modification of the system.

Further north, an apparently related group of gullies (275, 277, 284, 285 and 301) and pit 150 all contained fragmentary briquetage. A further group of pedestals, along with other briquetage types, came from gully 284, although only gully 277 contained pottery. Gullies 275, 277 and 284 appear to have formed a funnel arrangement, and 285 and 301 a trapezoidal arrangement similar to that identified to the southwest (see above, gully 261).

Two other features were assigned to this phase on the basis of pottery, but neither contained briquetage. These lay in the northwest corner of the site and appear to represent changes or additions to the earlier trackway. A shallow gully (157) between ditches 105/153 and 118 perhaps marked a gate or temporary fence, and a further shallow ditch or gully (104) may reflect an enclosure or paddock in this area.

Medieval (Fig. 3)

Two principal phases are clearly apparent based on the layout of features and the stratigraphic evidence, but these phases cannot be distinguished by ceramic dating which broadly spans the 12th – 15th centuries, with a likely focus around the 13th / 14th centuries.

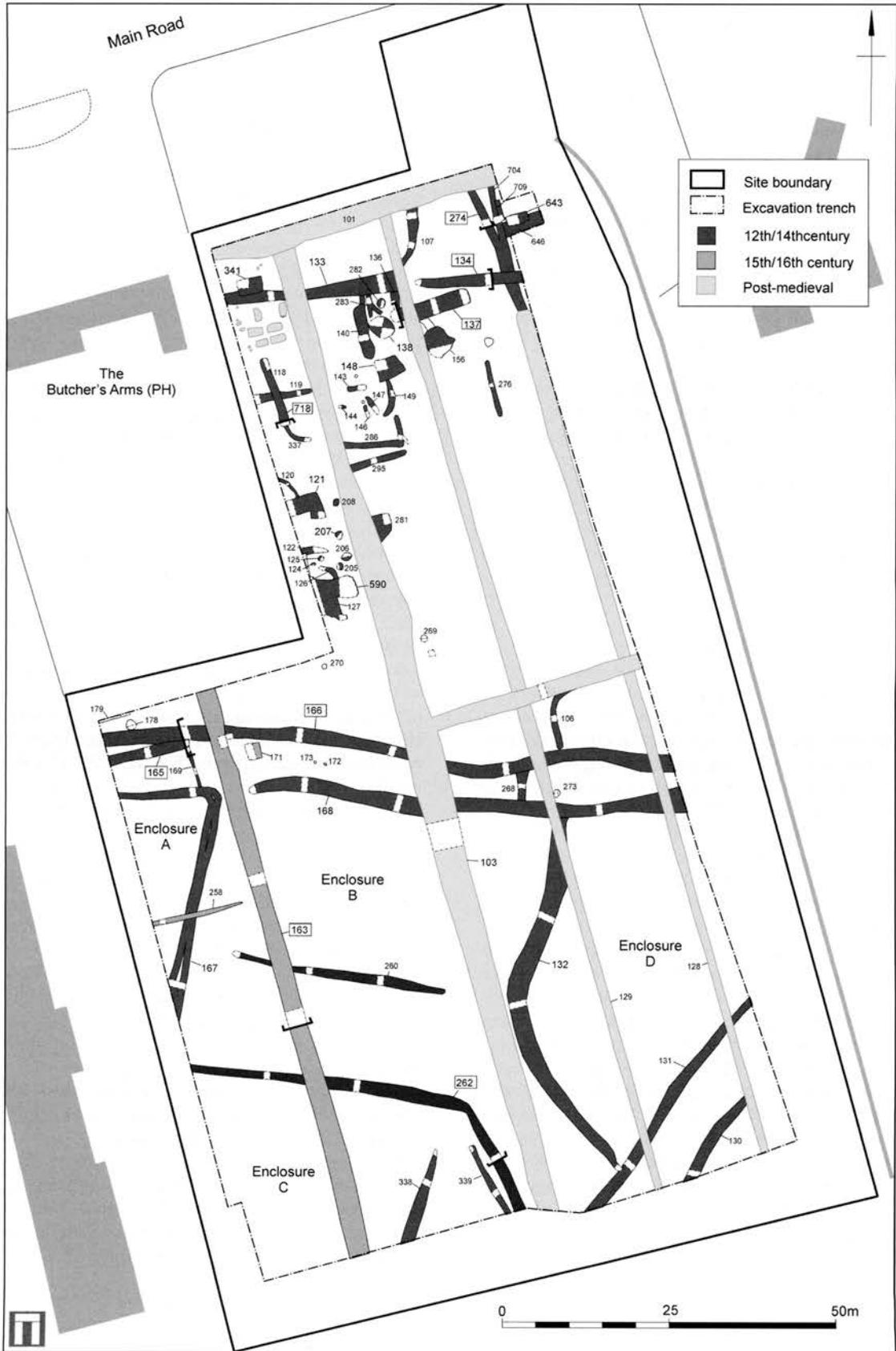


Figure 3. Medieval and post-medieval features.

Phase 1: 12th – 13th/14th century

The absence of any overlap between the features in the northern and southern halves of the site suggests that they were broadly contemporary.

Northern area

Features included at least six subrectangular, near vertical-sided, flat-bottomed pits (137, 148, 341, 643, 709 and 718/720). It is not certain whether all were contemporary, however pits 341, 643, 709 and 718/720 either certainly or probably cut medieval ditches in this area, and pit 148 may be later on ceramic grounds. Pit 137 may have been the earliest of the group, but this could not be demonstrated stratigraphically. The pits, with the exception of 137, varied between 2.8m and 5.3m long (average 3.9m), 1.3m and 3.4m wide (average 2.2m) and 0.55m to 0.85m deep (average 0.65m). Pit 137 was exceptional in that it was 12m in length, between 2m and 2.5m wide, and 0.6 to 0.8m deep. The fills, like those in the other pits, appeared to comprise clearly defined episodes of natural silting and possibly, in the case of the basal fill, marine silting. However, layer 599 near the base of pit 137 at the west end (and layer 689 in the central section) comprised a mixed layer of redeposited silt reddened by burning and containing fragments of fired clay and charcoal. Indeed, all of the pits contained sparse quantities of similar, rather hard, red, brick-like fragments, but not in the concentration recorded in pit 137. There was no clear evidence for linings of timber or wattle (eg post- or stake-holes or timber stains), but this is considered likely in some examples. None of the pits shows evidence of having been cleaned out, though this may not be apparent in features which were lined, but the smallest example (718/720) had been recut. The pits (and ditches) rarely contained more than a dozen sherds of pottery, mostly small sherds in the upper fills, but pit 137 produced a near-complete Grimston jug lying on the base of the pit.

Ditches can be assigned to at least two sub-phases, the earlier certainly pre-dating at least two of the subrectangular pits (341 and 643). The earliest group comprised north–south ditch 274, which itself had been recut (as 704), ditch 646, and ditch 102 (later recut as 133) which ran west to east and then curved to the north (as ditch 107). Together these may have formed an enclosure, with the gap between 107 and 274 possibly forming a driveway. The second phase saw a single, approximately east–west alignment comprising ditch 133, a recut of 102, which continued to the east, after a gap, as ditch 134 that cut across earlier ditch 274. A thin peat layer within ditch 134 may reflect high water conditions or a period of abandonment. All ditches except 133 had U-shaped profiles and were between 1m and 1.8m wide and 0.35m and 0.7m deep. Ditch 133 was flat-bottomed, 0.5m deep, and near its eastern terminus (destroyed by a post-medieval ditch) widened to almost 3m. A further shallow ditch (119) lay 15m to the south and parallel with ditch 133 and may have been contemporary.

Two short lengths of shallow ditches (118 and 140), both approximately 8m long, up to 1.5m wide, and

between 0.4m and 0.5m deep, also lay to the south of ditch 133. Their relationship to the other ditches in this area is unclear, but ditch 118 cut 119 and was cut by pit 718/720. In the same area were a variety of shallow pits/scoops within an area partly enclosed by gullies 286 and 337 on the south and west sides respectively, and possibly also 149 and 283 on the east side. Gully 337 cut medieval ditch 162, but elsewhere it was impossible to be certain of, for example, the relationship between gully 149 and pit 148. Virtually no dating evidence was recovered from these very shallow features, all less than 0.15m deep, nor from the few shallow post-holes and slots (144–147) which lay within the putative enclosure; they may have been contemporary and perhaps represented a structure of small but indeterminate form. A further group of shallow features lay 'outside' to the northeast, and comprised two very shallow pits (136 and 282) and one larger sub-circular pit (138) containing a distinct band of charcoal-rich soil. Gullies 276 and 295, and shallow pit 156, may also have belonged to the same, medieval phase represented in this part of the site. Overall, a clear sequence of activity is indicated by these various features though the precise nature and duration of this remains unclear.

A short distance to the south, but probably still part of the same group, was a further concentration of features on the western edge of the excavated area. Again, the shallow nature of several, the similarity in their fills, the paucity of dating evidence and the prevailing dry conditions made it impossible to establish any certain relationships between them. There were four substantial pits (121, 127, 281 and 590), of which pit 127 was particularly large (5.5m by at least 3.5m and 0.8m deep) and the L-shaped plan of 121 defies comprehension. None but pit 127 was rectangular, but all had flat bottoms, near-vertical or steeply sloping sides and contained similar, virtually undifferentiated fills of brown/yellowish brown clayey silt loams. In the immediate vicinity were six small, shallow, sub-circular pits (124, 125, 205, 206, 207 and 208) and three, somewhat irregular curvilinear gullies (120, 122 and 126). Only pit 205 contained a distinctive fill, incorporating much mussel shell.

Southern area

Features comprised entirely ditches and gullies which defined trackways and enclosures. Their layout and alignment still reflect broadly the edge of the roddon.

The two trackways identified lay on a converging path which (projected) would have met approximately 50m east of the site. The trackway in the southeast corner was defined by two very shallow, parallel ditches (130 and 131) 8m apart, with that in the central part of the site defined by a pair of deeper but more irregular ditches (165/166 and 168) often less than 5m apart. These latter ditches may represent an easterly extension to an earlier trackway defined by ditch 165 and the northern arm of ditch 167 forming Enclosure A. Cross-ditches/gullies 169 and 268 may mark the locations of gates or barriers along the trackway.

Four possible enclosures have been identified within the angle formed by the two trackways, all of rather irregular shape and size, and apparently contemporary. Enclosure A, defined by recut ditch 167, extended beyond the limit of excavation to the west and only a relatively small part of the interior was exposed. To the east lay Enclosure B, entered from the northern trackway through a gap in the northwest corner between ditches 167 and 168, with gully 260 forming an internal division. Enclosure C lay to the south and extended beyond the limits of excavation. It was separated from Enclosure B by ditch 262, and it is possible that it was part of Enclosure A. Two converging gullies (338 and 339) reflect internal arrangements within Enclosure C, and are likely to relate to stock management. Enclosure D lay at the junction of the two trackways and was created by the digging of ditch 132 which closed off the area in between.

13th/14th – 15th century

Ditch 163 ran at 90° to Main Road and was substantial with a variable profile. One section shows it almost 3m wide, 0.7m deep with gently sloping upper edges, becoming steeply sloping with a flat bottom, perhaps indicating that it had been cleaned out. Elsewhere it is recorded with an open V-shaped section, but with no clear evidence of having been recut or cleaned out, although a shallow U-shaped gully (422) was recorded cutting the upper fill in one section and following the same alignment. Perhaps this gully represents the post-medieval boundary shown on the 19th-century tithe map (below). Ditch 163 cut across the earlier (and differing) alignment of medieval trackways and enclosures, as did gully 258 which lay at 90° to ditch 163. Only a very few sherds of medieval pottery were recovered from these two features, insufficient to provide closer dating, and shallow pit 171, adjacent to ditch 163, may have been contemporary but was undated. These features probably also post-dated the complex of pits and ditches at the north end of the site, but any relationships between this complex and ditch 163 lay outside the limit of excavation.

Post-medieval (Fig. 3)

All of the post-medieval features have been assigned to a broad period spanning the 18th – early 20th centuries. The principal features represent drainage ditches in the eastern half of the site, aligned at 90° or parallel to Main Road, but there was also a small group of animal burials and post-holes in the north-west corner.

Ditch 103 was the most substantial feature and may have originated at an early, possibly even medieval date (see below). However, the fills produced large quantities of late post-medieval/early modern finds, although the ditch had certainly been re-cut/cleaned out, perhaps when ditch 583 was dug at 90° to the east. Ditch 583 cut two parallel, rectangular-sectioned

(probably machine-cut) ditches (128 and 129), neither of which produced any datable finds. Both ditches are considered likely to be post-medieval, and had different profiles as well as fills (slightly peaty) compared with medieval ditch 163 to the west. Map evidence indicates that ditch 101, crossing the northern edge of the site, was extant until the early 20th century, and was the former western arm of the drain which defines the eastern boundary to the site.

Eight animal burials formed a close group within the angle formed by ditches 101 and 103. They comprised five cattle (112, 158, 159, 160 and 161), one horse with a pig (111) and two sheep (114 and 115). The cattle and horse had been placed in neatly dug graves and the sheep in shallow scoops. Industrial whiteware, indicating a 19th or 20th century date, was recovered from the one completely excavated burial (159); the others were excavated only as far as was necessary to establish what animals had been buried. An arc of six small post-holes (108, 109, 110, 113, 116, 117), one of which produced industrial whiteware, lay in the same area, but their relationship to the burials, if any, is uncertain.

Artefacts

Roman pottery

Rachel Every

A moderate amount of material, 475 sherds, weighing 9428g, was recovered from the excavation. The majority are early to mid-Roman in date, while two are probably Late Iron Age. The assemblage mainly comprises locally-made coarsewares with small amounts of imitation Gallo-Belgic and imported wares. The condition of the material is variable, but generally good to average. The mean sherd weight is high, at 19.82 grammes. Analysis followed standard Wessex Archaeology recording system (Morris 1994), which accords with nationally recommended guidelines (Darling 1994).

Fabrics

Twenty-five different fabrics were recorded, belonging to three broad groups based upon predominant inclusion types (Q: quartz; G: grog; C: calcareous) in addition to a range of 'established' (E) wares of known type or source (Table 1). These included Southern and Central Gaulish samian, Central Gaulish glazed ware, North Gaulish whiteware and Rhineland whiteware mortaria.

The fabrics are largely coarse, locally made wares, from a number of sources. The widest range occurs amongst the sandy wares which can be further subdivided into whitewares (Q103–105, 109, 111, 112), coarse oxidised wares (Q101, 110) and greywares (Q100, 102, 106–108). Potential sources include the Nene Valley industry (Perrin 1999) and kilns of the Cambridge area (Hull and Pullinger 1999).

As at other sites in the southeast Fenlands area, calcareous wares formed a significant part of the as-

Fabric Code	Fabric Name	Number	Weight(g)
Q100	Coarse greyware; frequent quartz <1mm; sparse chalk/limestone <2mm	95	1771
Q101	Fine oxidised ware; moderate quartz <0.5mm; micaceous	8	74
Q102	Greyware; frequent quartz <0.1mm; frequent subangular voids <0.1mm; slightly micaceous	68	872
Q103	Whiteware; frequent quartz <1mm; moderate chalk <1mm; micaceous	26	184
Q104	Whiteware; frequent quartz <1mm; moderate chalk <2mm	8	13
Q105	Fine whiteware; moderate quartz <1mm; slightly micaceous	13	168
Q106	Coarse greyware; frequent quartz <2mm	15	240
Q107	Coarse greyware; frequent quartz <1mm; sparse ?igneous inclusions	10	187
Q108	Greyware; frequent quartz <0.5mm; well finished	10	291
Q109	Fine whiteware; frequent quartz <0.5mm; laminated matrix; sparse grog <3mm	19	434
Q110	Coarse oxidised ware; frequent quartz <0.5mm	17	275
Q111	Whiteware; frequent, poorly sorted quartz <0.5mm; frequent grog <0.5mm; reduced core	10	29
Q112	Whiteware; frequent quartz <0.5mm; frequent quartz <0.5mm; moderate chalk <0.5mm; white/buff with reduced (grey) core	8	8
Q113	Late Iron Age sandy ware; frequent quartz <1mm; mica	1	33
C100	Coarse shell-tempered; frequent shell <2mm	23	227
C101	Coarse shell-tempered; frequent shell <5mm; moderate quartz <1mm; rare patinated flint <4mm	114	3166
C102	Coarse calcareous-tempered; moderate crushed limestone <2mm	3	44
G100	Fine grog-tempered; moderate grog <1mm; moderate quartz <1mm	3	21
G101	Coarse grog-tempered; moderate grog <3mm; moderate quartz <1mm; sparse chalk	1	22
G102	Coarse grog-tempered; frequent grog <1mm; slightly micaceous	12	520
E129	Central Gaulish lead glazed ware (Greene 1979, 90)	1	1
E204	North Gaulish whiteware mortaria (Tomber and Dore 1998, 75)	1	507
E205	Rhineland whiteware mortaria (Tomber and Dore 1998, 78)	1	323
E301	South Gaulish samian	7	17
E304	Central Gaulish samian	1	1
	Total	475	9428

Table 1. Late Iron Age and Roman pottery: Ware groups and fabric types by number and weight.

semblage, accounting for approximately 30% of the overall number of sherds. Although probably derived from a number of different centres (Gurney 1996, 200), the crushed fossil shell in the single most common fabric (C101, Table 1) suggests that at least some of these were located on the Jurassic limestone beds in the south Midlands. These clays were utilised for pottery from the Iron Age onwards and the possibility that some of the less diagnostic sherds in this assemblage are of earlier, perhaps even Late Iron Age, date cannot be fully excluded.

Grog tempered wares formed only a minor component of the assemblage and are probably confined to the early Roman period, although pit 398 did include one body sherd in a coarsely tempered fabric (G101) possibly of Late Iron Age date.

Forms

A site-specific vessel type series was created. Brief descriptions and basic quantification are presented in Table 2, while full details are contained in the archive. One form, a bead rim jar (Fig. 4, 1) in a fine sandy fabric is of Late Iron Age date; the Roman forms mainly span the period from the mid-1st to 3rd century AD.

The white and oxidised wares are represented by a restricted range of flagons (body sherds only), flanged bowls (Fig. 4, 7 and 14) and necked, cordoned jars (Fig. 4, 11) – medium quality wares mainly used at table,

Table 2. Roman pottery: vessel forms.

Vessel Types	Detailed forms	Number of examples	Weight (g)
Flagon	Body sherds only	4	79
Jar	Bead rim jar	2	71
	Storage jar	2	362
	Slack shouldered jar	4	431
	Necked and cordoned jar	10	1026
Beaker	Other jars	6	263
	Central Gaulish Glazed Ware	1	1
Platter	Greyware	1	3
	Imitation Gallo-Belgic forms	2	27
Bowl	Carinated bowl	1	147
	Round-bodied flanged forms	3	117
	Samian	2	3
Dish	Round rimmed dish	1	110
Mortarium	Rhineland whiteware	1	323
	North Gaulish white-ware	1	507
Lid	All forms	1	104
Total		42	3574

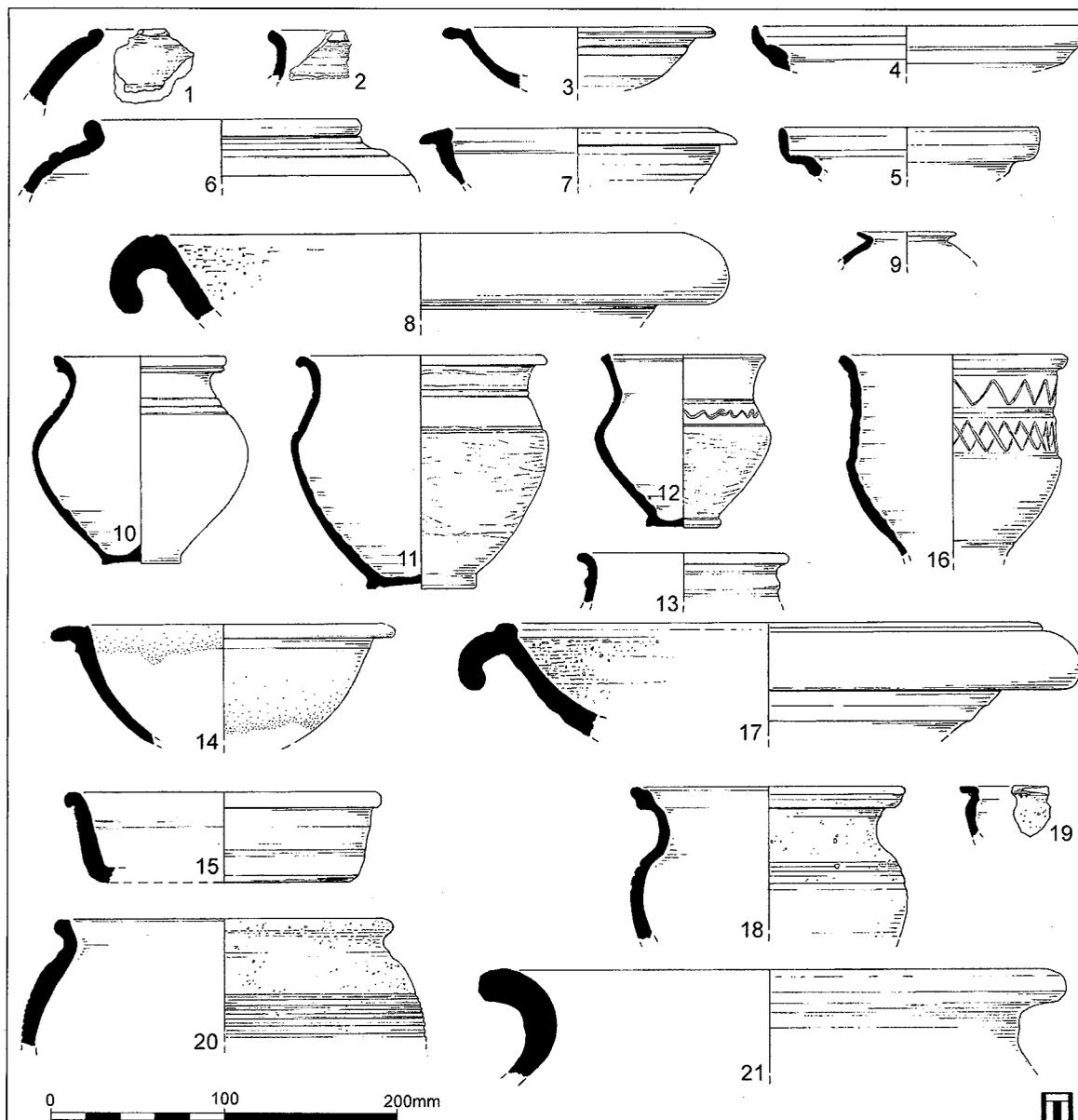


Figure 4. Roman pottery.

1. Bead rim jar, Rim 21, Late Iron Age sandy ware; context 200, ring gully 174
2. Necked jar, Rim 2, Greyware; context 198, pit 138
3. Round-bodied flanged bowl, Rim 3, Greyware; context 198, pit 138
4. Platter, Rim 14, Greyware; context 504, ditch 211
5. Platter, Rim 18, Coarse greyware; context 626, ditch 211
6. Bead rim jar, Rim 19, Coarse greyware; context 627, ditch 211
7. Round-bodied flanged bowl, Rim 17, Coarse oxidised ware; context 626, ditch 211
8. Mortarium, Rim 15, North Gaulish whiteware; context 504, ditch 211
9. Beaker, Rim 1, Greyware; context 309, gully 296 (Group 263)
10. Necked and cordoned jar, Rim 5, Well-finished greyware; context 311, gully 297 (Group 263)
11. Necked and cordoned jar, Rim 6, Fine whiteware; context 311, gully 297 (Group 263)
12. Necked and cordoned jar, Rim 11, Coarse greyware; context 330, gully 297 (Group 263)
13. Necked and cordoned jar, Rim 16, Greyware; context 640, ditch 135
14. Round-bodied flanged bowl, Rim 7, Fine whiteware; context 352, ditch 298 (Group 263)
15. Round rimmed dish, Rim 9, Coarse greyware; context 332, gully 297 (Group 263)
16. Carinated bowl, Rim 10, Coarse greyware; context 330, gully 297 (Group 263)
17. Mortarium, Rim 20, Rhineland whiteware; context 664, ditch 211
18. Slack shouldered jar, Rim 8, Coarse shell and flint tempered; context 331, gully 297 (Group 263)
19. Small vessel with flat, out-turned rim, Rim 12, Coarse shell tempered; context 424, gully 277
20. Jar with short, thickened rim, Rim 13, Coarse shell and flint tempered; context 485, ditch 104
21. Storage jar, Rim 4, Coarse shell and flint tempered; context 336, gully 157

and mortaria (Fig. 4, 8 and 17). A wider variety of utilitarian food preparation vessels as well as 'everyday' table wares was provided by the greywares. These included necked and necked/cordoned jars (Fig. 4, 2, 10, 12 and 13), bead rim jars (Fig. 4, 6), beakers (Fig. 4, 9), carinated bowls (Fig. 4, 16), flanged bowls (Fig. 4, 3), platters (Fig. 4, 4 and 5) and dishes (Fig. 4, 15). The calcareous wares too provided a range of utilitarian vessels, mostly jars for food preparation (eg Fig. 4, 18–20) and storage purposes (Fig. 4, 21). Soot deposits on the exterior surface of jar sherds found in gullies 261, 296 and 297 and ditches 107 and 298 suggest that these were used for cooking while internal residues, possibly representing food remains, were noted on coarse shell-tempered sherds from ditches 104 and 118.

Conclusions

Overall the pottery is similar to assemblages recovered from other sites in the Cambridgeshire Fenland Survey area (Gurney 1996, 199). The range of fabrics and vessel forms can be paralleled at other sites in the region (eg Marney 1989; Perrin 1999; Hull and Pullinger 1999). Amphorae and British finewares – especially Nene Valley colour-coated wares, were notable by their absence, although it is possible that some of the more abraded oxidised wares were originally colour-coated. The character of this assemblage is consistent with domestic debris from a rural farming community of fairly low status.

Briquetage and fired clay

Rachel Every

A total of 1636 fragments (31,820g) of briquetage and fired clay was recovered. The vast majority is assumed to be Roman; most came from features of this date, with some occurring as residual material in later (medieval and post-medieval) features. A relatively small quantity of briquetage came from the evaluation where it was either recorded as undiagnostic fired clay (367g) or mistakenly identified as early to mid-Saxon pottery (298 'sherds' weighing 1816g).

Fabric types are predominantly organic-tempered (recognisable vessel fragments are exclusively in these fabrics), with sandy/silty fabrics much less frequently represented. One small group from ditch 176 is made in a coarse poorly sorted fabric with large inclusions of quartz, flint and organic. As discussed by Morris (2001a, 354), the organic fabrics mark a late development in the manufacture of briquetage, which may also be the case for this assemblage.

Types

Much of the briquetage comprises fragmentary material that cannot be attributed to specific forms. A sufficient number of diagnostic pieces do, however, survive to indicate the presence of the expected range of types. These include containers (Fig. 5, 1–3), clips (Fig. 5, 7–8), pedestals (Fig. 5, 4–6), platforms, rods and bars (Fig. 5, 10–11), bricks (Fig. 5, 9), slabs and a thumb-pot (Fig. 5, 12), all well paralleled within assemblages from later prehistoric and Roman salt-

erns in the Fenland area (Lane 1993; Lane and Morris 2001). Using the type series created by Morris (2001a) the assemblage has been classified into the briquetage classes listed in Table 3 (see archive report for further details, Wessex Archaeology 2004).

Table 3. Briquetage by type and number.

Class	Type	Number
Container	Troughs	2
	Pans	14
	Unidentified vessel	52
Supports	Pedestal	31
	Clip	12
	Rod	2
	Bar	7
	Rod/bar	5
	Brick/slab	23
	Platform	6
Miscellaneous	Thumb pot	1
Total		155

Distribution (see Fig. 2)

Briquetage was distributed in a number of Roman features of all phases across the site, with the largest groups coming from those assigned to the 3rd – 4th centuries, in particular gullies 259 and 284 which produced assemblages of pedestal and vessel fragments. Other notable groups and single finds came from ditches 105 and 176 and pits 280 and 461, with undiagnostic groups of probably largely residual material from medieval pits 138 and 148.

Functional significance

The briquetage assemblage indicates that saltern industries were active in the vicinity from perhaps as early as the Late Iron Age through to the Late Roman period. No structural evidence survives to indicate what heat source was used here, an absence which is typical of other sites in the area (Morris 2001a, 373). Morris has suggested two types of heating devices which may have been utilised: saltern hearths and saltern ovens, the latter being used in the Late Iron Age (*ibid*, 374). The majority of vessels/containers in this assemblage have a powdery texture, illustrating they have been burnt, through use. Organic-tempered fabrics were common in this region from the Late Iron Age onwards and a high percentage of this group is made in this fabric. The addition of organic temper made the fabrics stronger and more malleable, and it has been suggested that the introduction of organic fabrics may have influenced the change from troughs to pans in the saltmaking process. In this assemblage the organic-tempered briquetage is found with Roman shell-tempered pottery. This occurrence of organic-tempered briquetage and shell-tempered pottery is common for the Late Iron Age in the region, as noted at Cowbitt (Knight 2001), and also during the Early Roman period, as seen at Morton Saltern (Crosby 2001).

Development from simple troughs and pedestals in the earlier Iron Age, through to troughs, pans used with pedestals, clips, rods, platforms and bars in the

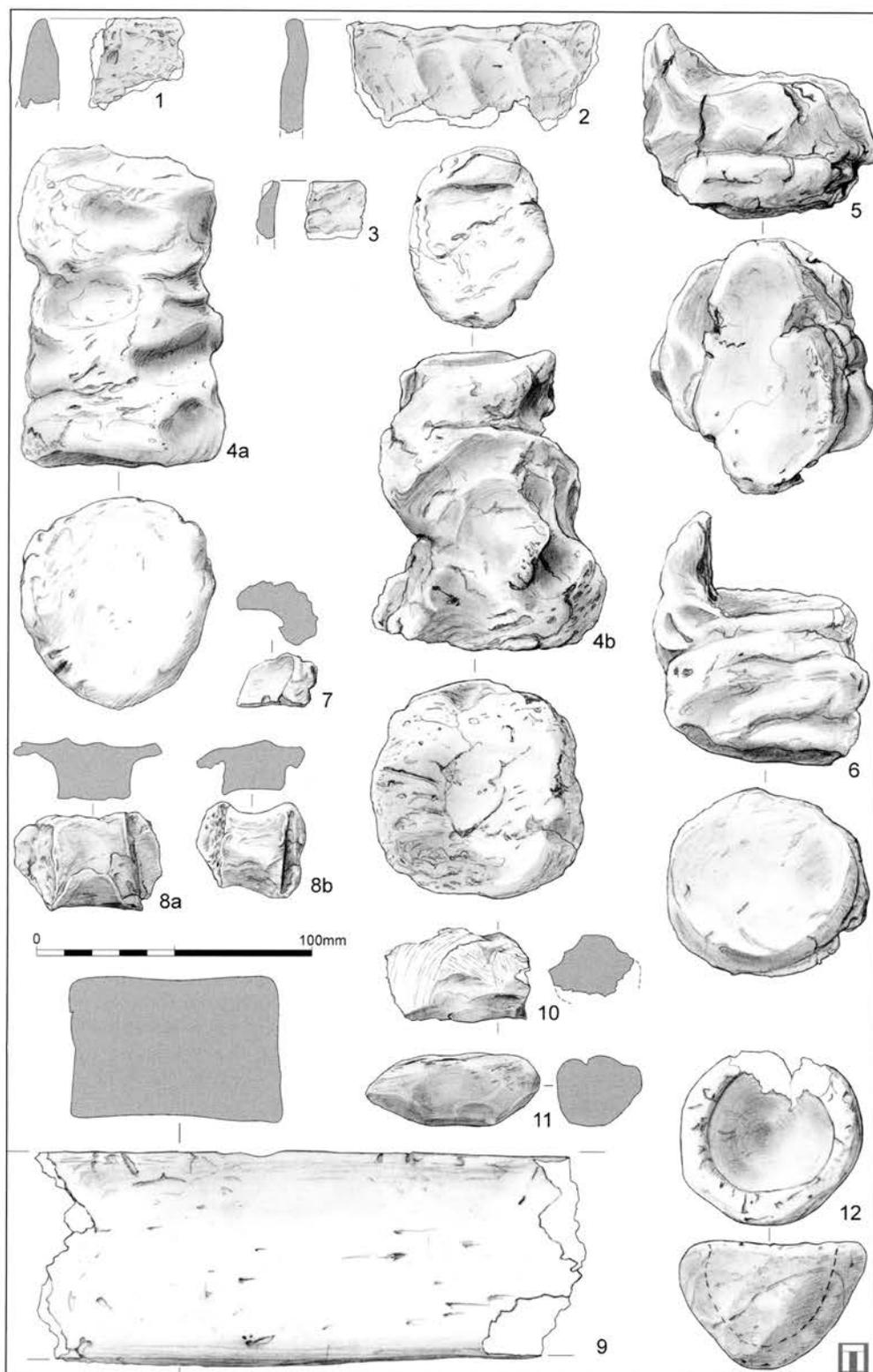


Figure 5. Briquetage.

- | | |
|--|---|
| 1. Rim from pan, R4 type, context 623, ditch 107 | 7. Clip, CL1 type, context 496, ditch 118 |
| 2. Rim from trough, R6 type, context 559, ditch 560 | 8. Clips, CL2 type, context 464, pit 461 |
| 3. Rim from trough, R6 type, context 331, gully 297 | 9. Brick, BK1 type, context 493, ditch 105 |
| 4. 'Squeezed hand brick' pedestals, context 407, ditch 118 | 10. Bar, BR2 type, context 499, ditch 105 |
| 5. 'Squeezed hand brick' pedestal, PD13 type, context 546, gully 259 | 11. Bar, BR2 type, context 546, gully 259 |
| 6. 'Squeezed hand brick' pedestal, context 546, gully 259 | 12. Small thumb pot, Object 1, context 546, gully 259 |

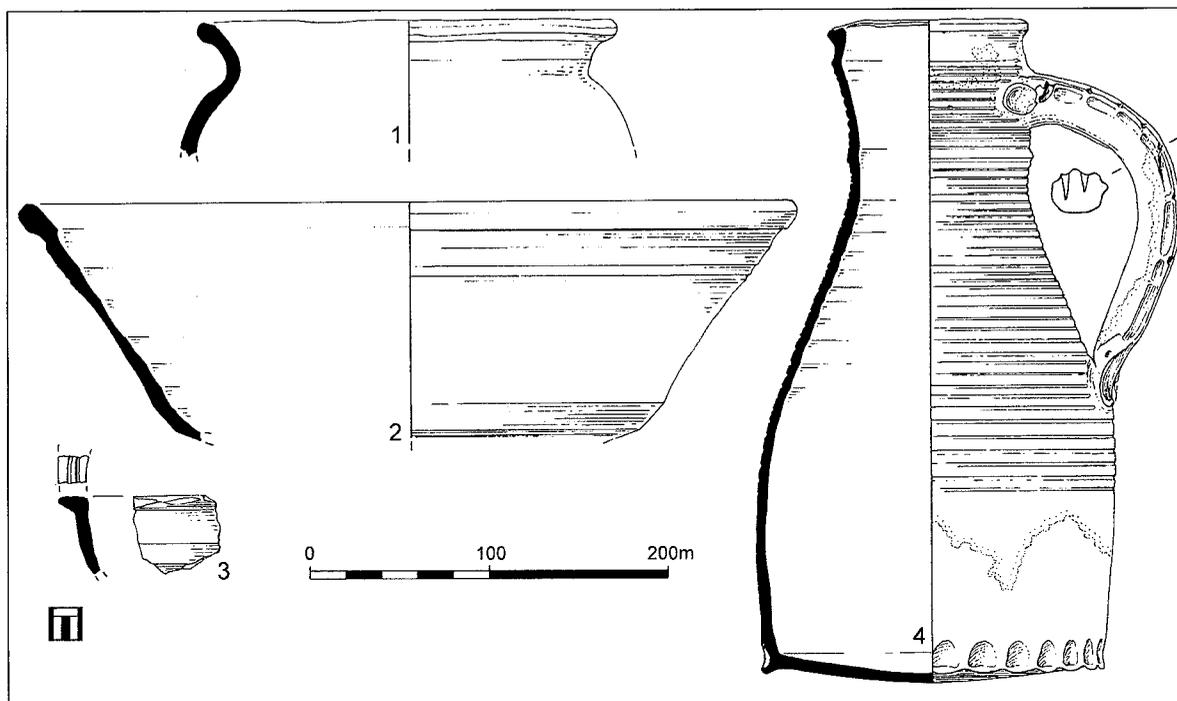


Figure 6. Medieval pottery.

1. Jar rim, coarse shelly ware. PRN (Pottery Record Number) 245, context 428, pit 341.
2. Flared bowl, Grimston ware; internal limescale. PRN 226, context 426, ditch 121.
3. Bowl/dish rim, Grimston ware; knife-trimmed exterior. PRN 248, context 428, pit 341.
4. Jug profile, Grimston ware; horizontal rilled decoration. PRN 301, context 688, pit 137.

Late Iron Age and, finally, flat-bottomed pans with support bricks in the Roman period has been commented on by Morris (2001a, 374). At Parson Drove, 14 contexts have vessels with flat bases in association with brick/slabs, compared with 12 contexts that produced both pedestals and vessels, some of which have curved bases and plain rims. A further four contexts have a mixture of bricks, pedestals and vessel sherds. The assemblage as a whole indicates that both troughs and pans were used on the site, perhaps from as early as the Late Iron Age and continuing throughout the Roman period. This timespan and the range of briquetage make the assemblage particularly interesting in terms of the saltmaking industry in the Fenland, though more work is required on similar assemblages to develop the study of saltmaking industry in this area, and to further understand the transition from troughs to pans.

Medieval pottery

Lorraine Mephram

A total of 246 sherds (4772g) of medieval pottery was recovered. Seven separate fabric types have been identified and coded using the regional fabric type series for Cambridgeshire. Table 4 presents a quantified breakdown of the assemblage by fabric type. A further 74 medieval sherds (1350g) came from the evaluation and are in similar fabrics and of broadly similar date. They are not included in Table 4, but ac-

count of these is taken in the discussion below.

The condition of the assemblage is variable. Mean sherd weight overall is 19.4 grammes, and sherds are generally in a relatively unabraded condition although few reconstructable profiles are present. In many cases, however, it is apparent that sherds have been affected by some process(es) which have resulted in the severe deterioration of glazes, particularly internal. This will be considered further below along

Table 4. Medieval pottery by fabric type.

Fabric Code	Description	No. of sherds	Weight (g)
GRIM	Grimston type ware	177	3917
MEL	Medieval Ely ware	13	184
MELCOAR	Medieval Ely coarseware	17	217
SHW	Coarse shelly ware	2	126
Essex Red	Essex redware (Cunningham 1985, fabric 21)	13	142
BRILL	Brill ware	1	3
Sand	Miscellaneous sandy ware, generally medium-grained with no other macroscopically visible inclusions	23	183
Total		246	4772

with other potential evidence for vessel use.

Fabrics and potential sources

The range of fabrics under discussion here appears similar to that already identified from a medieval salt-ern site 3km to the northeast (Hall 2001), although the relative proportions of Grimston and Ely type wares varies considerably between the two sites – Ely wares at the previously excavated site made up 36% of the total by number of sherds, but only 12% of the assemblage discussed here, while Grimston wares make up, respectively, 19% and 72%. No definite examples of Hall's fabric B, a possible Blackborough End (Norfolk) product, were identified in the current assemblage, but positive identification may have been hampered by the close visual similarity between this and the Ely wares. A miscellaneous category of sandy wares could include further Ely or Grimston wares, or indeed wares from other sources.

Differences in ware proportions between the two sites could be due to chronological factors; the previously excavated assemblage had a restricted date range within the 14th century, while the pottery from the current site has a potential range of 13th to 14th century (possibly into the 15th century), with a few possibly earlier (12th century) wares. It is, however, difficult to see why this should be so, since both Grimston and Ely wares have similar currencies.

Vessel form and condition

Rims and other diagnostic sherds are fairly scarce within the assemblage. Recognisable vessel forms comprise jars (four rims; Fig. 6, 1), flared bowls (five rims; Fig. 6, 2), one dish/bowl with knife-trimmed exterior (Fig. 6, 3), and six jugs (three rims and three [separate] handles), including one complete profile of a pear-shaped jug with rod handle, collared rim and rilled decoration (Fig. 6, 4).

Although the number of identifiable vessel forms is low, a few points can be made. First, the high proportion of identifiable bowls in relation to jars is unusual and is likely to have a functional implication. Second, the surface condition of many of the sherds is noteworthy. The severe deterioration of glaze has already been noted, and to this may be added the presence of residues – sooting and other burnt residues externally, and whitish 'furring' internally. The latter (which reacts with hydrochloric acid) is probably a result of the continuous boiling of liquids. Other sherds exhibit the white surface 'blushes' or slip-like deposits characteristic of ceramics exposed to salt water. These surface effects, coupled with the use of open forms, is consistent with a use for these vessels in the processing of brine to produce salt by evaporation, and a similar conclusion was reached for the previously excavated assemblage from Parson Drove (Hall 2001, 443). However, the larger than normal size range observed there was not matched within the assemblage currently under discussion, largely due to insufficient evidence.

The relative proportion of jugs is also high, and this could, in other instances, be taken as an indica-

tion of a site with some social pretensions. In this case, however, it is possible that the jugs, too, have some functional connection with saltmaking.

Other artefacts

Finds other than pottery and briquetage are represented in small quantities and comprise ceramic building material (including post-medieval brick and tile fragments), clay pipe, burnt flint, stone (building material), fuel ash slag and metalwork. The vast majority of these finds came from post-medieval features, particularly ditch 103, with a few iron nails, an iron bracket and a lead strip from medieval contexts.

Some of the ceramic building material comprises small, bright red, hard undiagnostic fragments of fired clay. Most of this material came from the medieval pits thought to have been associated with saltmaking and it is possible that the fired clay was briquetage in some way associated with the process. Brick fragments (of generally larger size) were also found on the medieval saltmaking site excavated in 1991 to the northeast where it is suggested that bricks may have been used in the construction of specialised hearths (Healey 2001).

Environmental evidence

(Note: Further information and methodologies are included in the archive report (Wessex Archaeology 2004), along with contributions on snails, sediments and foraminifera).

Animal bone

Stephanie Knight

Only the Roman material is considered below as the medieval assemblage is very small (295 fragments) with fewer than 100 bones identified to species. Data from all three Roman phases has been amalgamated to provide an adequate sample size.

Preservation

The bones were in variable condition, with a minority in poor condition due to mineral concretion and the flaking of the bone surface, presumably from exposure to salt water. A few, mainly unidentified, fragments were abraded, and the incidence of gnawing was relatively low, seen on only 20 of the 935 bones. There were low proportions of whole bones (N=14) and helical fractures (N=36).

Species observed

Cattle and sheep/goat were the most common species by NISP (number of individual specimens) and restricted element counts (Table 5). Pig and horse bones were present in small numbers, and one dog bone was recovered. The presence of only two bird bones and no fish, amphibians or small mammals may be more suggestive of their scarcity than of poor recovery, as the addition of sample material (0.5mm sieves) did not increase the species count. Samples contained a high proportion of unidentified fragments as they

Element	Cattle	Sheep/goat**	Pig	Horse	Large mammal	Medium mammal	Dog	Bird	Unidentified	Total
NISP (hand-recovered)	147	85	13	9	64	14	1	1***	290	624
NISP (samples)	5	10	1	0	3	1	0	1	290	311
NISP total	152	95	14	9	67	15	1	2	580	935
Restricted element*	50	29	7	7				1		94

Table 5. *Animal bone (Roman): species presence and frequency.*

* Davies 1992. ** Three positive identifications of sheep, none of goat. *** *c.f.* Domestic fowl.

contained mainly small calcined pieces, especially from contexts 640 (in ditch 135) and 424 (gully 277).

No significant differences between the three Roman phases were observed, but the 2nd–3rd century deposits showed the highest proportion of cattle bones and lowest number of large mammal ribs and vertebrae.

Age

While the majority of the cattle appear to have survived to maturity, bones from very young calves were recovered from five contexts. Young sheep/goats are also in evidence, and approximately a third of individuals seem to have died before the age of six months. An apparently high proportion of sheep/goats did not survive to maturity, with only 50% reaching the age of 18 months, and a very low proportion surviving to three years. Epiphyseal bone fusion and tooth eruption/wear evidence suggests that all pigs survived their first year, but none survived beyond the age of 12–16 months. One horse tooth from an individual aged between 8 and 9 years was recovered, and all horse epiphyses were fused, as would be expected from an animal not kept primarily for meat.

Butchery and consumption

Butchery was noted on 58 bones, mainly cattle. Chop marks and helical fractures were most common, although knife disarticulation was also practiced. Cut marks typical of skinning were found on horse and cattle lower limb bones. Chops to remove the feet from the rest of the limbs were also common, but cut marks from filleting were relatively infrequent.

There is a low frequency of pelves and scapulae, and an absence of distal femora over 50% complete. Flesh from the pelvis and scapula and, at certain times, the ribs and vertebrae may therefore have been intended for use off-site, perhaps immediate consumption or, after salting, trade.

Discussion

The range of species from Roman contexts at Parson Drove is narrower than that from nearby Iron Age–Roman Fenland sites (Albarella and Mulville 2001) and considerably more restricted than in the medieval period (Albarella 2001). This, despite the smaller size of the assemblages from, for example, Iron Age Cowbit Wash, Lincolnshire, and medieval Parson

Drove (Fenland Survey site 15; see Pollard *et al* 2001) represented by restricted fragment counts of 137 and 270 respectively. Considering the wetland nature of the environment, more birds and fish would be expected. The absence of such small bones from sieved samples, and the generally fair condition and presence of fragile neonatal bones, suggests that poor preservation is not to blame. Instead it appears that the economy in the Roman period (at this site and others in the area, as well as the Late Iron Age site at Billingborough, Lincolnshire; Iles 2001) was based on industrial activity and pastoral animal husbandry with little or no exploitation of wild resources.

The predominance of cattle and, to a lesser extent, sheep/goat at Parson Drove is also seen at the Iron Age saltern sites of Cowbit Wash and Langtoft, Lincolnshire, whereas the early Roman saltern at Morton Fen, Lincolnshire, has a predominance of sheep/goat. The small assemblage from the late Roman site of Middleton, Norfolk, consists mainly of horse bones. Thus in terms of domestic species proportions, Parson Drove best resembles the Iron Age sites. However, they also produced more wild species, dogs, cats and birds than Parson Drove, indicating a wider range of activity and/or food procurement.

The advanced age of many of the Roman cattle at Parson Drove could indicate that they were used for ploughing on the higher, drier and sandier soils of the roddons, and therefore that arable agriculture may have been part of the economy. However, the production of meat from pigs, sheep/goats and to a lesser extent, cattle, and cattle and sheep/goat milk formed the mainstay of the economy, similar to late Iron Age and early Roman Billingborough, Lincolnshire (Iles 2001). Storage of dairy products was suggested as a possibility for Cowbit Wash (Albarella and Mulville 2001, 385), but there were a greater number of very young calves (under 1 month old) from this site. Like the other Fenland sites, no particular periods of slaughter of domestic species that could suggest seasonal occupation were observed at Parson Drove; indeed the presence of neonatal domestic animals suggests breeding on or near site, which would be consistent with permanent occupation.

The sizes of animals are roughly comparable with those from the Iron Age and Roman Fenland sites mentioned above, with a slightly smaller withers height for the horse and slightly larger height for

the cattle at Parson Drove. The sheep appear to be very similar in size at all settlements, but no conclusions could be drawn due to the very small numbers. Roman period sheep/goat and cattle are consistently smaller than the late medieval animals at Parson Drove (Albarella 2001).

Butchery marks at Parson Drove indicate skinning, disarticulation and chopping, with some marrow extraction, but very little filleting of meat, consistent with the pattern of butchery that would be expected when meat was cooked on the bone. The relatively high proportion of head and foot bones could be connected to the import or retention of hides, complete with the bones from extremities, for tanning. While no clear evidence for large-scale meat salting or trade in carcass parts has been found, low proportions of certain meat-bearing bones such as the scapula suggest that some meat may have been salted on the bone and then traded off site.

Using data from Essex (though they do not provide any figures) Fawn, Evans and McMaster (1990, 33) suggest that meat salting would produce larger numbers of bones than normally found at salt working sites, and that it would have been more cost-effective to transport the salt to the meat rather than drive animals to, or exchange carcass parts with, salt making areas. This is true of highly specialised sites, but where domestic and industrial activity coincide, a range of activities may be inferred, perhaps taking place seasonally or concurrently if small scale in nature.

Charred plant remains and charcoal

Chris Stevens

Roman plant remains

Grass culm nodes were present in all but a few samples, accompanied by occasional cereal grains of barley and hulled wheats. Identification of other chaff fragments revealed the presence of glume bases (sometimes in high quantities) and spikelet forks of both emmer (*Triticum dicoccum*) and spelt (*Triticum spelta*), suggesting that these cereals were brought to the site and stored in spikelet form. Several samples also contained fragments of hazelnut shells (*Corylus avellana*) and so are indicative of the exploitation of wild foods. Many of the remaining seeds may have come to the site along with the cereals and represent weeds of the fields. Most are commonly recorded as weeds of arable fields from Romano-British sites.

There is a strong likelihood that the abundant culm nodes come from the burning of common reed stems in peat rather than cereal straw. Occasional fragments of charred masses of stems were found in a few of the samples, perhaps also derived from the burning of peat, along with a glossy, vitrified silica material. High numbers of culm nodes might indicate an early stage of processing when straw is removed from the crop, but much larger numbers of weed seeds would be expected, along with other cereal remains. That many of the samples contain high numbers of culm nodes with few weed seeds or other cereal remains

supports Murphy's conclusions from elsewhere in Parson Drove that they represent the burning of peat (Murphy 2001). This conclusion might also be supported by the high numbers of seeds of sedges recorded. For example, a sample from ditch 575 produced many culm nodes, but few other cereal remains, as well as large numbers of seeds of sedges and rushes, which may suggest burning peat containing both fragments of common reed and seeds of sedges and rushes.

However, the sample from gully 261, from a discrete deposit of carbonised material, contained the highest number of weed seeds and cereal remains for the period, along with many seeds of sedges, yet contained no culm nodes. This tends to leave some ambiguity over the source of the seeds of wetland species and whether they indicate the growing of crops upon wetter soils, or are to be associated with either the burning of peat or the burning of reeds and straw in the salting process. As a result of the difficulty in identifying cereal straw from other grasses this issue may be difficult to resolve. Nevertheless, seeds of wetland species have been commonly recorded within charred assemblages containing cereal grains and seen as indicative of crops on such soils (Jones 1988; van der Veen 1992).

There was a relatively high occurrence of barley grains (*Hordeum vulgare*) in the sample from gully 261, and Murphy has suggested (Lane and Morris 2001, 380) that as a salt-tolerant crop its presence may indicate local barley cultivation on poor, slightly saline soils. The presence of capsules and seeds of runch (*Raphanus raphanistrum*) and runch/wild mustard (*Raphanus/Brassica*) probably also indicate cultivation of light sandier soils such as occur on roddons.

The presence of duckweed is of some interest. Of the three species native to Britain only fat-duckweed (*Lemna gibba*) is associated with brackish water, while the remaining two are only associated with freshwater. The presence of seeds of this genus may be associated with flooding, however its absence from some of the shallower features such as gully 261 might indicate that it is present as a result of the bringing of brackish water through the ditch systems and into pits on the site.

Medieval plant remains

The medieval samples, like those from Roman features, contained quite high proportions of grass culm nodes along with occasional charred masses of stems and vitrified silica material, perhaps also from the burning of peat. However, these samples, unlike the Roman ones, did contain reasonable quantities of cereal grains, mainly from free-threshing wheats (*Triticum aestivum*) and barley (*Hordeum vulgare* s.l.). Several of the barley grains could also be seen to be still in their hulls. In one case three were still attached to each other as they would be in the ear and these, along with several rachis fragments, indicate the presence of six-row barley. Rachis fragments of free-threshing wheat were also present in the samples, as were a few grains of rye (*Secale cereale*), and it is possible that some of the larger grains of oat (*Avena* sp.)

represent the cultivated variety. As noted above, barley is a salt-tolerant crop and along with rye, which is suitable for leached free-draining sandy soils, could have been cultivated locally on the roddons. Other crop remains included those of flax (*Linum usitatissimum*) and bean (*Vicia faba*).

The culm nodes may come from burnt straw, but it would again seem probable that they were associated with the burning of peat containing fragments of common reed. While cereal grains were relatively abundant, samples indicative of sheaves should contain higher proportions of both rachis fragment and small weed seeds. Seeds of oats (*Avena* sp.) were common in the samples, but those of other weed species were less abundant.

Seeds of duckweed (*Lemna* sp.) were again common, as they had been in Roman contexts, but were absent from all six of the samples from pit 137. This pit did, however, contain abundant evidence for peat burning in the form of culm nodes. The association of the highest frequencies of duckweed in the same feature, pit 281, as freshwater molluscs may well suggest that all of the seeds of duckweed are to be associated with freshwater.

Charcoal

In general, very little wood charcoal was present, and most could not be characterised as being from roundwood or heartwood, although occasional round wood fragments were present. The general absence of charcoal may be associated with the use of straw or peat for fuel, as also suggested for other sites in the region where woodland, and therefore charcoal, is scarce (Gale 2001).

Discussion

Against the background provided by the Fenland Project for this area (Hall and Palmer 1996), the site represents a significant area of controlled excavation of the landscape through which various assumptions and hypotheses concerning settlement chronology, form, economic basis and environment can be tested.

The excavation has revealed the eastern edge of a substantial roddon mapped as part of the Fenland Project (Hall and Palmer 1996, fig. 95) and shown this edge to lie approximately 100m east of its indicated (ie visible on air photographs) position (see Fig. 7). This represents the maximum extent of the sands and silts of the associated levee(s) rather than simply the infilled channel that ran along the middle. No cropmarks have been discerned on or in the immediate vicinity, presumably because of the heavier nature of the soils in this area towards the edge of and beyond the levee, and the shallow nature of most of the archaeological features. The features recorded at Parson Drove, in particular ditches, indicate that the cropmarks, though predominantly reflecting Romano-British settlement, may include medieval elements.

Roman

Excavated evidence for enclosures, trackways and probable roundhouses, representing rural settlement of perhaps three or more phases, enhances the cropmark evidence recorded on the same roddon to the northwest and southwest respectively (Fig. 7). Limited excavation to the northwest (Bray 1994) indicated short-lived settlement there from the late 2nd to the mid-3rd century, but the excavation at Parson Drove has provided evidence for settlement beginning in probably the 1st century and continuing until the 4th century. There is, however, no obvious continuity in the layout of the features on the site, and perhaps the sequence represents several short-lived shifting 'uses' of this area on the edge of the roddon, perhaps subject to periodic inundation, where more permanent boundaries were not established.

The earliest phase comprised a small enclosure associated with a succession of roundhouses. This phase has been assigned to the 1st – 2nd centuries, but two sherds of Late Iron Age pottery were recovered (one representing the only find from roundhouse 174) hinting at some pre-Roman activity. The quantities of early Roman pottery found in enclosure ditch 211 adjacent to successive roundhouses 174 and 175 suggest these structures served a domestic function, as may roundhouse 294 which contained a small pit. However, the possibility that one or more of the ring-gullies represented drainage gullies around thatched hay or corn stacks cannot be entirely discounted. This interpretation has been suggested for many of the large number of 'fen circles' recorded on aerial photographs, most of which are thought to be of Roman date and lie in the silt fen to the southeast of Parson Drove (Hall 1996, 180). Two possible cremation burials placed in one of the ditches related to the enclosure are also likely to have been associated with the earliest phase of settlement, and pit 280 to the north might be interpreted as a small quarry pit to extract material suitable for making daub or briquetage. The presence of relatively small quantities of fragmentary briquetage does attest to saltmaking in this phase, but perhaps not in the immediate vicinity. This and the evidence for the agricultural economy is discussed further below.

The earliest phase of occupation was succeeded in the 2nd century by new, perhaps more 'open' settlement, though it should be stressed that the excavation lay on the edge of the roddon and, by implication, the edge of the settlement. The group of gullies (263) in the southwest corner of the site provides some evidence for settlement in that they produced the highest quantity of pottery from the site, including several near-complete vessels, which suggest that there was occupation in the immediate vicinity. These gullies are likely to represent a complex of drainage features, perhaps defining part of an enclosure containing a round-house which lay to the west.

What is interpreted as a trackway is likely to have been associated with animal husbandry and the northernmost of these ditches (105) and an adjacent feature (461) produced a notable quantity and range

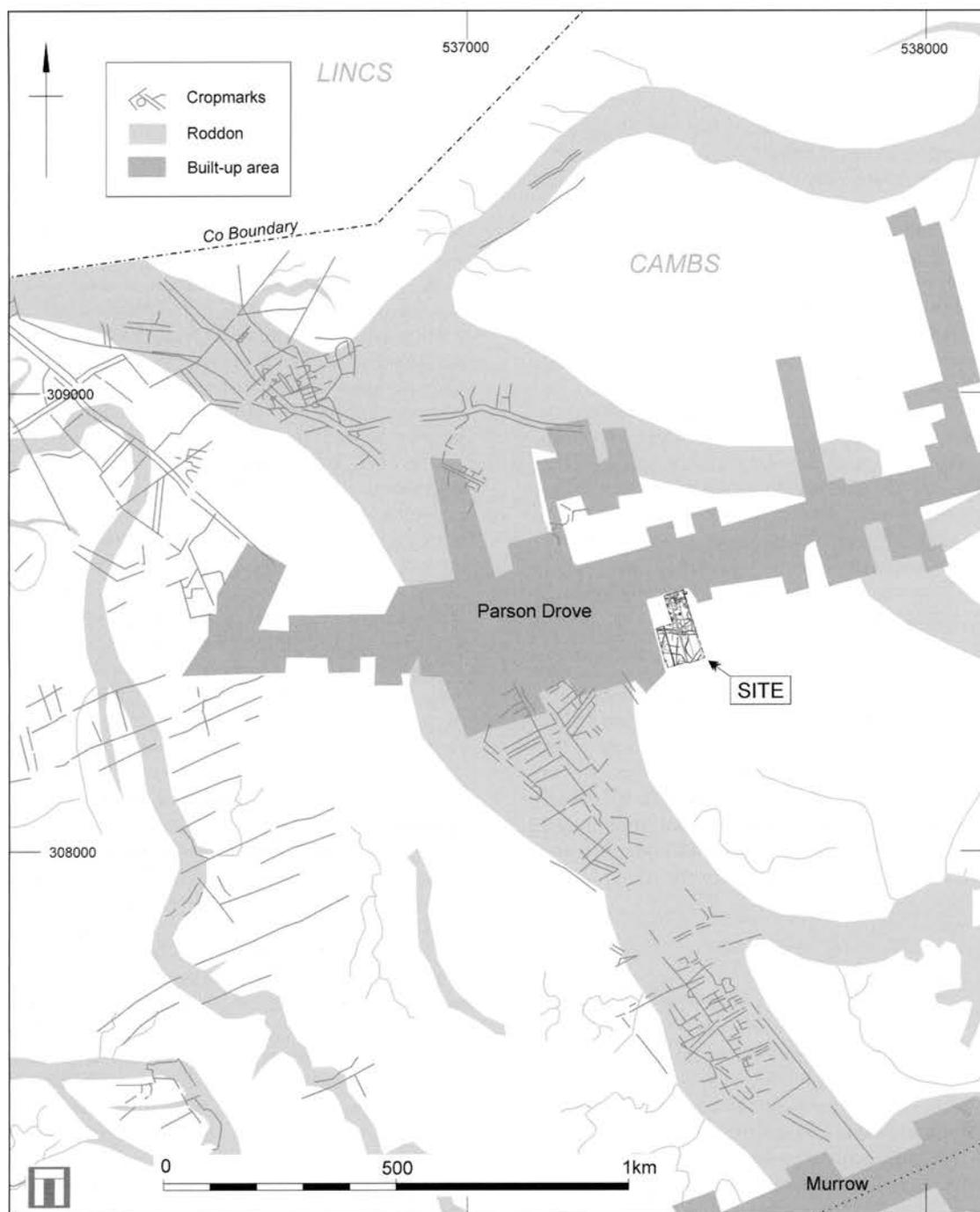


Figure 7. Site in relation to cropmark evidence (from Hall and Palmer 1996, fig. 95).

of briquetage. Two curvilinear ditches (288 and 575) if not the corners of enclosures, may have supplied water for salting, though with the exception of a single pedestal neither contained more than a few tiny fragments of briquetage.

Rearing animals, together with salting, formed the basis of the Romano-British economy in this area. The animal bone assemblage indicates a mixture of activities that probably went beyond production for basic domestic requirements. These activities perhaps included production of milk (or milk-derived foods),

meat salting and small-scale hide working, and were based on pastoral animal husbandry, although some arable farming might be inferred. The charred plant remains have raised the possibility that barley, a salt tolerant crop, may have been grown in small quantities on the lighter, sandier soils on the roddons. Exploitation of wild animal resources is not apparent, and it appears that a restricted range of species was exploited. The low incidence of gnawing and relatively good preservation suggests rapid burial of bone waste, presumably into disused ditches, or tem-

porary accumulation in protected middens followed by disposal into ditches and pits.

Culm nodes of grasses and seeds of rushes and sedges (Cyperaceae) dominated the soil samples from Roman features, with generally few remains of cereal grains and fragments of chaff other than straw nodes. While the culm nodes of grasses could come from cereal straw, Murphy (2001) thought they might come from burning peat that contained stems of common reed (*Phragmites australis*) which might also account for the high proportion of charred seeds of sedges, rushes and stems.

Features containing briquetage represent the final, 3rd – 4th century phase of Roman activity. There is increasing evidence for salt production in the two earlier phases, but it is only in the final phase that the quantities of briquetage indicate saltmaking in the immediate vicinity of or perhaps on the site. Briquetage was found in several shallow gullies whose purpose is unclear, and one larger ditch (135) that ran approximately parallel to the edge of the roddon and may have marked a boundary. No hearths survived and there were no complexes of features which might be interpreted as supply channels or settling tanks, but the briquetage debris, including parts of vessels, complete or near-complete pedestals, clips, bricks and rods/bars, is unlikely to have been deposited far from the focus of activity. A rectilinear arrangement of gullies (261), perhaps representing an enclosure, produced little pottery or briquetage, but contained a discrete dump of carbonised material including the largest assemblage of cereal remains and weed seeds from the excavation. This deposit may provide evidence for occupation in the immediate vicinity, perhaps contemporary with saltmaking. Some of the salt produced is likely to have been used locally in the preparation of salted meat, with the remainder transported further afield.

The channels along the centres of the roddons were clearly still active in the Roman period, though gradually reduced in width, and these would have provided the brackish water required for saltmaking. It was along the narrow banks (levees) of dry, sandy soils either side of the channels that settlement would have developed, sometimes linked with double-ditched tracks (visible on air photographs) which followed the meandering courses of the roddons (Fig. 7). These tracks may have developed as early features which encouraged the spread and growth of settlement along their length, and were used for both communications and stock droves linking enclosures on the roddons and pasture on the lower lying fen. The trackway which follows the roddon at Parson Drove west of the site can be traced northwards into Lincolnshire and represents one of the longer examples, extending over several miles.

Saltmaking sites have been identified, largely from fieldwalking, along many of the roddons, although only one site, on another roddon to the west, had been identified in Parson Drove parish prior to the excavation in 2003 (Hall and Palmer 1996, 171, fig. 94). However, four saltern sites were recorded on the

same roddon as that at Parson Drove approximately 2.5 km to the southeast in Wisbech St Mary (Fig. 8) and others, undetected by field walking, undoubtedly remain to be discovered. In addition to these sites and related cropmark evidence, there is one other Roman site in the vicinity known from Fenland Project survey. This lies approximately 1km east of the Parson Drove site and is unusual in that it is very low-lying, not on a roddon, and there are no associated cropmarks or saltmaking debris (Hall and Palmer 1996, 172). However, there is a notable amount of pottery, much of it of 1st century date, and this might indicate settlement, perhaps only a single building, contemporary with the earliest phase of Romano-British settlement at Parson Drove.

Medieval

No Saxon activity has been identified and it would seem that there was little or no settlement in the vicinity, occupation perhaps being restricted to the higher silts to the east at, for example, Tydd St Giles (Hall and Palmer 1996, 182). There is, however, no evidence in this area for a blanket of post-Roman silts such as recorded in parts of the Lincolnshire fens. Medieval settlement may have begun as early as the 12th century, but the main period of activity was in the 13th – 14th centuries, possibly extending into the 15th. Two medieval phases have been identified, the latter reflecting a marked change in the layout, alignment and use of the area, but these phases could not be distinguished chronologically on the basis of the pottery.

The layout and alignments of many of the features assigned to the earliest medieval phase reflect the continued influence of the roddon and not of the medieval drove (Main Road) which lay at approximately 90° to it, inferring that this drove was not in existence or did not extend this far to the west. Perhaps at this time it extended only as far as the church, manor house and associated settlement at Church End, 500m east of the site (Fig. 1). As in the Roman period, there is evidence for an economy based on animal rearing and, perhaps to a lesser extent, saltmaking.

Animal husbandry is indicated by the complex of trackways and enclosures in the southern half of the site, representing part of a much more extensive arrangement. The ditches produced little pottery and amongst the small quantity of animal bone cattle was the most common species. This contrasts with the medieval site (site 15) excavated in 1991 at Parson Drove, to the northeast (Fig. 8), where sheep was the most common of a wider range of species which also included red deer, roe deer, hare, swan and possibly wild boar (Albarella 2001). These wild species along with a merlin indicate hunting and hawking, and there were also marine and freshwater fish entirely absent from the 2003 excavation assemblage. For the earlier site it was suggested that the assemblage might indicate a high status site, with evidence for animal rearing on or near the site, and the sheep bred for milk and wool as well as meat (Albarella 2001, 449). The animal bone evidence might be interpreted

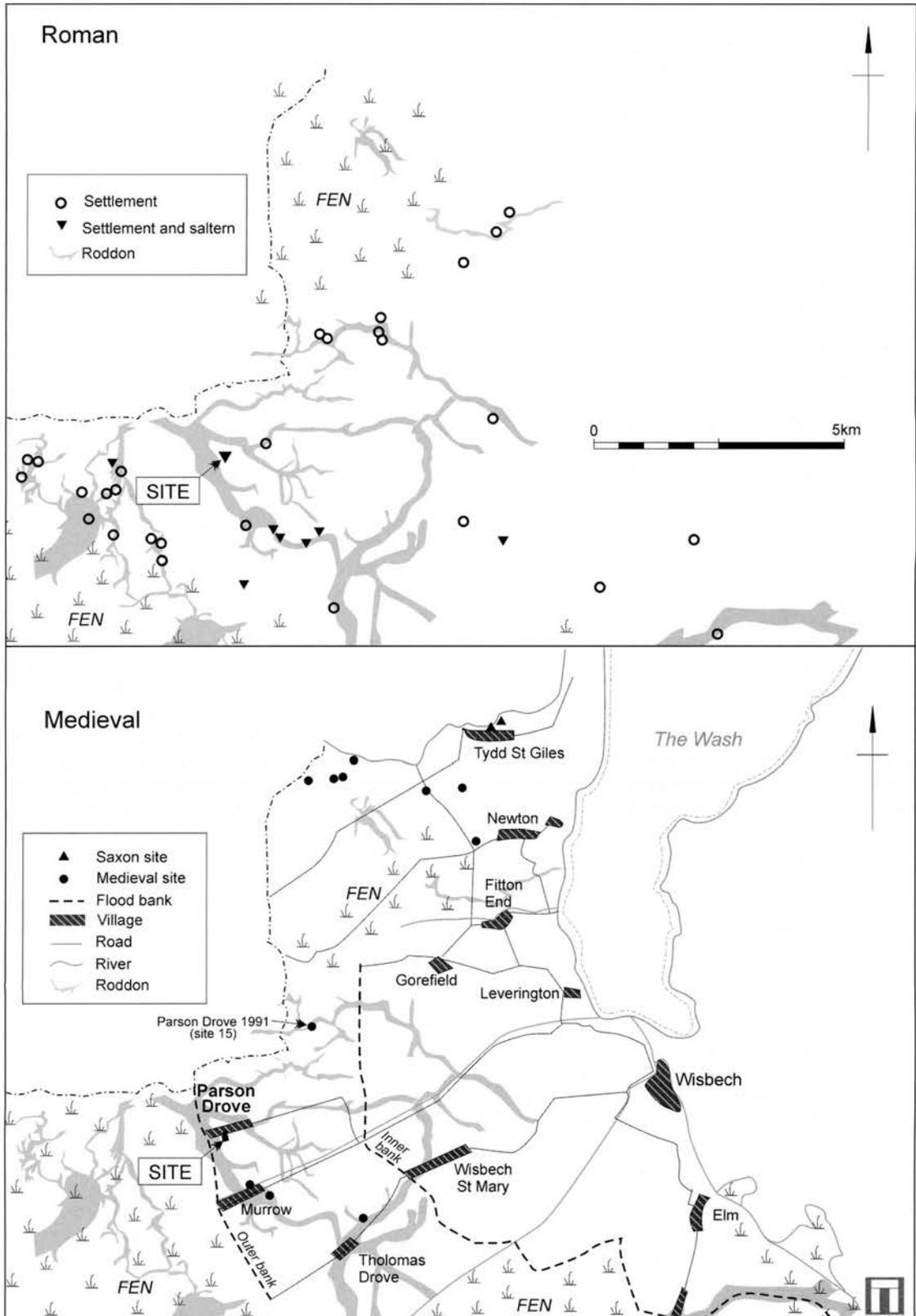


Figure 8. Site in relation to Romano-British landscape (from Hall and Palmer 1996, fig. 94) and medieval landscape (from Hall and Palmer 1996, fig. 98).

to suggest that, as in the Roman period, animals were wintered on the roddons and taken to summer grazing on the fen. Perhaps the various enclosures identified on the site represent these wintering quarters, with the two converging trackways running west to east providing a route to the summer grazing land. There is no certain evidence for any arable agriculture on the roddons at this time, although it has been tentatively suggested that there may have been local rye cultivation (Murphy 2001, 450).

The pits and ditches north of the main trackway suggest a different, contemporary or slightly later use of this area. There was a marked difference in the quantities of pottery recovered from the two areas, with considerably more (though still small quantities overall) coming from the features in the north. This is likely to reflect occupation in the immediate vicinity associated with the use of the pits and ditches, though no coherent building plans were identified. A small enclosure defined by a shallow gully (286 / 337 etc) was a later feature and may have contained an ephemeral structure represented by a few shallow post-holes and slots. To the southwest a cluster of curvilinear gullies, small sub-circular pits and larger rectangular features hint at settlement nearby, probably on the higher ground of the roddon. There is, however, no evidence from the layout and alignment of any of these features that indicates the existence of a medieval drove (represented today by Main Road) as early as the 12th, 13th or possibly even 14th century.

The function of the larger, generally subrectangular pits in the northernmost part of the site has not been conclusively demonstrated. However, as a group, they bear some similarities to the unusual 'inland' medieval saltern excavated in 1991 (site 15), also in Parson Drove (Pollard *et al* 2001. See Fig. 8). This is one of a group of nine sites identified in the Fenland survey, in the parishes of Parson Drove, Wisbech St Mary and Tydd St Giles, which provide rare evidence for medieval settlement and wetland exploitation in the peat fen. Like the site excavated at Parson Drove in 2003, these are (with one exception) located on roddons, and have produced mostly 14th century pottery along with fragments of bright red fired clay. The site excavated at Parson Drove in 1991 has been interpreted, after initial reservations, as a rare saltern which lay on the edge of the peat fen behind the Sea Bank, rather than on the saline mudflats on the seaward side (Pollard *et al* 2001, 426). This is the interpretation which is also put forward here for the site at Main Road, with the pits representing brine settling tanks, though the evidence is somewhat equivocal and other explanations are possible.

The arrangement of pits and ditches recorded at Parson Drove in 2003 do not show as close a relationship to each other as those recorded in the earlier excavations (Pollard *et al*, fig. 140). Furthermore, it is not clear whether some ditches simply represent enclosures, rather than ditches which provided brackish water. There was, however, juxtaposition between some features (eg pit 709 and ditch 704, and

pit 643 and ditch 646, all in the northeast corner of the site), which may not simply represent different phases. Furthermore, the near-vertical or steeply sloping sides and the absence of weathering cones in the pits suggest that they once had organic linings, although no trace of these survived. The sediments and the very limited foraminiferal evidence from pit 137, the largest example (and the only one analysed – see archive report, Wessex Archaeology 2004), indicate that it once held water, perhaps brackish water or material from a vegetated saltmarsh, and there were also deposits of burnt clay perhaps derived from an 'industrial' process. No snails were recorded from this feature, and other medieval features produced generally small numbers of aquatic, freshwater and, rarely, terrestrial species (see archive report, Wessex Archaeology 2004). Significantly perhaps, no species tolerant of low, or fluctuating, salinities was recovered.

None of the briquetage can certainly be ascribed a medieval date on the basis of being different in form to the Roman material, but many of the (small) fragments of fired clay recovered from medieval features are in a harder fabric and do not appear to be ceramic building material. Furthermore, the surface condition and residues on some pottery would suggest an association with saltmaking, in particular boiling brine (Pollard *et al* 2001, 443), rather than, for example, tanning or retting. In addition, the high proportion of bowls, in particular, and also jugs in relation to jars is consistent with this interpretation. Evidence from charred plant remains may provide a further clue. The medieval samples generally contained more cereals and weed seeds than those from Roman features, but they were similar in the high proportion of grass culm nodes present. Perhaps, as earlier, these may have derived from the burning of peat that contained stems of common reed, or from cereal straw, either of which could have been used as a fuel in brine evaporation. Agricola recorded bales of straw being used to fuel the fires under salt pans in the 14th – 15th century in the Netherlands (Agricola 1556, 553). He also records burning peat to make lye, which was then washed through with seawater to extract salt that had naturally accumulated within it (Agricola 1556, 558). The resultant brine was then further boiled with the impurities scooped off. Such methods would also produce charred evidence for material from burnt peat, but might explain the absence of *in situ* accumulations of sediments containing visible burnt peat at Parson Drove.

The roddon channels in this area would certainly have ceased to be active by the medieval period, and there is no obvious local source of brackish water unless the drain bounding the eastern side of the site served this purpose. This drain now runs south to join the Sea Dyke and then eastwards to the Wash. If this drain did originate in the 13th or 14th century then it, and presumably the associated saltmaking activity, post-dated the enclosures and trackways at the southern end of the site as it would have cut across the ditches and gullies defining these. Murrow lay at

the west end of the Sea Dyke and it may be no coincidence that there are two sites there, on either side of the Sea Dyke, which have produced fragments of red clay possibly representing briquetage. Pottery collected from fieldwalking spanned the 13th – 15th centuries, and it has been remarked that saltmaking would have been possible here if brackish water was allowed up the Sea Dyke (Hall and Palmer 1996, 182).

If the evidence from Parson Drove does represent saltmaking then the scale was small, particularly compared to the late medieval coastal salterns. One explanation for the existence of these small inland sites in Cambridgeshire might be that they augmented salt production on the seaward side of the Sea Bank around the Wash, particularly if the larger salterns were periodically washed away in storms. The inland salterns may have been operated seasonally at household level as part of a mixed economy, and were abandoned by the end of the 14th century because of a continuing reduction in the salinity of the channel water available.

This mixed economy was succeeded by activity largely based on arable cultivation, with a quite different and distinct pattern of land use – a pattern that survives relatively unchanged at Parson Drove. This was primarily represented in the excavation by a single ditch (163) which cut across the earlier medieval features and lay at 90° to the drove (Main Road). It seems probable that this ditch represents the establishment of the medieval system of long droves and strip fields in the area, fitting into the ‘planned’ fenland of the second stage of land reclamation (Hall and Palmer 1996, 182). A 13th century date for this ditch is possible, but a 14th or 15th century date is considered more likely – perhaps somewhat later than might have been envisaged if it does indeed represent the second stage of land reclamation. Perhaps the continued operation of the saltern meant that here the division into strip fields did not take place until its abandonment.

The earliest stage of land reclamation, represented by construction of the inner flood bank to the east of Parson Drove (Fig. 8), is of probable pre-Conquest date, and is likely to have been initiated by the manorial owners – Ely monastery and cathedral – to improve the silt lands. This was followed by construction of artificial channels to drain the land and creation of strip fields. The second stage of land reclamation is likely to have begun before the end of the 12th century, represented by construction of the outer flood bank (Fendyke Bank) which ran north to south at the ends of three, wide droves (Fig. 8). It was towards the ends of these droves, perhaps extended westwards as reclamation progressed, that the settlements of Parson Drove, Murrow and Tholamas Drove respectively developed. Strip fields were laid out between the droves, their length, sometimes exceeding 1.5 km, contrasting with the shorter and less regular layout of the fields associated with the earlier phase of reclamation (Hall and Palmer 1996, 185).

There was no evidence for any late medieval settlement adjacent to the drove (Main Road) within the ex-

cavated area at Parson Drove. Perhaps this remained focused around St John’s church in Church End with subsidiary development on the slightly higher ground of the roddon towards the west end of the drove close to Fendyke Bank.

Post-medieval

Ditches belonging to this period were all field boundaries or drainage features. An anomaly is that the field boundary shown crossing the site on the Tithe Map corresponds closely with medieval ditch 163 (by then infilled) and not with ditch 103 which was more substantial and remained open until well in to the 19th century. However, it is possible that a shallow gully running along the top of at least part of infilled ditch 163 might represent this later field boundary. The group of animal burials are likely to reflect a single episode, given the variety of species represented, perhaps the result of an epidemic which affected a nearby farm or smallholding.

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Roman tumuli or medieval industry? Moulton Hills, Bourn, reconsidered

David Baxter

In the early 20th century, the excavator, FG Walker, interpreted Moulton Hills as Roman burial mounds, rebuilt by a passing Danish army. His work is reviewed in the light of new evidence derived from fieldwalking in the vicinity and re-examination of artefacts from the original excavation. The hypothesis is advanced that the mounds are medieval earthworks constructed for the purpose of smelting iron.

Introduction

Three prominent mounds in Bourn, Cambridgeshire, known as Moulton Hills, have long attracted the interest of archaeologists. None have been properly convinced by Walker's (1911) interpretation of the earthworks as Roman burial mounds, but no satisfactory explanation of their origin has yet been produced.¹ A former owner of the site, Lord de la Warr, cut a trench through each mound in 1857, probably in search of buried treasure, but found nothing except 'an old sheep's head' (Walker 1911). FG Walker excavated two of the mounds in 1909;² his finds are preserved in the Museum of Archaeology and Anthropology, Cambridge, and his excavation report was published in *PCAS* 15, 166–177. His plans and sections are particularly valuable: they are reproduced here as Figures 2 and 3. This article presents a critique of Walker's report, and discusses the origin of the mounds in the light of recent surveys of the site, and of fieldwork in the vicinity.

Walker's excavation

FG Walker, a Cambridge archaeologist who had excavated Roman sites in many parts of Britain, was invited to investigate Moulton Hills when the site was threatened with destruction to make way for a cemetery. He cut trenches through two of the mounds, finding quantities of Romano-British and medieval pottery in each of them, together with animal bones and other occupational debris, and concluded that the earthworks were occupied (however briefly) in two distinct periods. He was able to make an accurate distinction between medieval and Roman pottery types

because he was the first archaeologist to recognise a particular vessel form – the shallow basin illustrated in Plate XII in his report – as medieval in date. Walker had found a similar shallow basin during his excavation of the manor of Barton Moats, Cambridgeshire, but was unable to date the piece, other than to assign it broadly to the medieval rather than the Roman period. His find of a shallow basin in one of the 'tumuli' in Moulton Hills enabled him to propose a date for the vessel form in the ninth or tenth centuries (p175):

We can take it for granted that no tumulus like this has been constructed in England since about the year A.D. 1000, for no people in this country later than the Danes would be likely to pile up such a thing.

Modern research into the chronology of medieval pottery has shown that Walker's dating of the shallow basin (and the pottery type which it represents) was in error by several centuries. Paul Spoerry recently examined Walker's assemblage of artefacts in the museum, and dated all the medieval pottery to the 12th to the 14th centuries (pers comm).

Walker considered the south mound ('Tumulus 1') to be a Roman burial mound visited, and perhaps added to, by the Danes. He found that 'Tumulus 2' was complex in construction, with an inner mound and ditch inside the visible mound. His section (Fig. 3) shows the inner mound defined at the sides by a ditch full of black earth, and at the top by a heap of ashes. He interpreted the inner mound as a Roman tumulus, covered by an outer mound of Danish construction. He accounted for the surprising discovery of one tumulus inside another in this way (p175):

... on the top of this inner tumulus a sacrifice was offered, or a feast was made, for no human bones, only animal, were found here. Over the remains of this sacrifice or feast was raised the outer tumulus, in all probability to commemorate some notable person or event, but not as a sepulchre.

Evidence for dating the mounds will be discussed later but we should first consider two more of Walker's finds: many tons of burnt matter, and a large quantity of lava millstone. A great deal of burnt matter was found in both mounds during the 1909 excava-



Figure 1. Two of the three Moulton Hills as they appear today, viewed from the south. Tumulus 1 is in the foreground, Tumulus 2 behind.

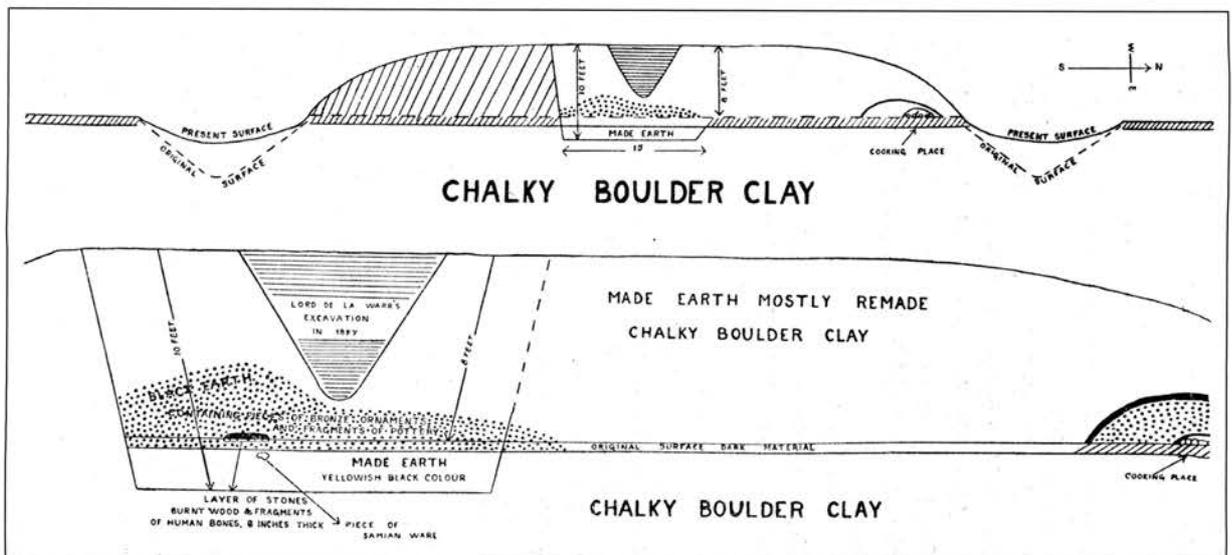


Figure 2. "Section of Tumulus No. 1" from Walker's report published in PCAS 15: 166-177.

amined to prove that they were human. No urn was found with them. The evidence from "Tumulus 2" is equally unsatisfactory (p173):

At the centre slightly below ground level was another patch of black ashes 5½ feet in length and nearly 6 inches deep containing a few fragments of human bones mostly crumbled in pieces...

None of the 'human' bones are preserved in the museum assemblage.

Walker gives no adequate explanation of the large quantities of burnt matter in the mounds. Nor is there any explanation of the amount of Rhineland lava millstone found on the site. His report assumes that the mounds are ceremonial in purpose, and asks no further questions about form or function.

The medieval iron industry in Bourn and neighbouring villages

Recent fieldwork in this area has yielded evidence of a substantial iron industry in Bourn valley. About 200m east of the mounds lies the lost medieval settlement of Densett. Four seasons of fieldwalking have located ten crofts along the east side of Densett Street (Fig. 4). All the crofts, with the possible exception of one that has not been ploughed in recent times, contain

materials associated with the manufacture of iron, including slag, raw and roasted nodules of limonite ore, burnt clay, vitrified brick, and partly-worked iron. The ore found on the Densett sites is rich in iron – up to 86% Fe – and the ore samples analysed are compatible with the iron slag found there [analysis produced by Charles Turner, Earth Sciences Department of the Open University]. The exact source of the ore is not known, but excavation of one of the crofts in 2005 revealed an extensive deposit of iron-rich silt 80cm deep, part of it sealed between two layers of cobbles: this deposit was probably washed down Bourn Brook from quarries upstream. Woburn Sand, an iron-bearing greensand, has been proved in the valley bottom between Bourn and Caxton.

Densett Street is only one of three lines of medieval croft sites discovered in Bourn valley which show evidence of iron working. Fieldwalking in Caxton to the west and Caldecote to the east has located scatters of slag and other iron residues on sites that are rich in pottery from the 12th to 14th centuries.

From evidence so far gathered it is difficult to estimate the scale of this industry. Scatters of slag and burnt clay are still visible in the fields between Bourn and Caldecote, and may represent former woodland iron sites in what had become arable land by the later 14th century, when the fields were first recorded by

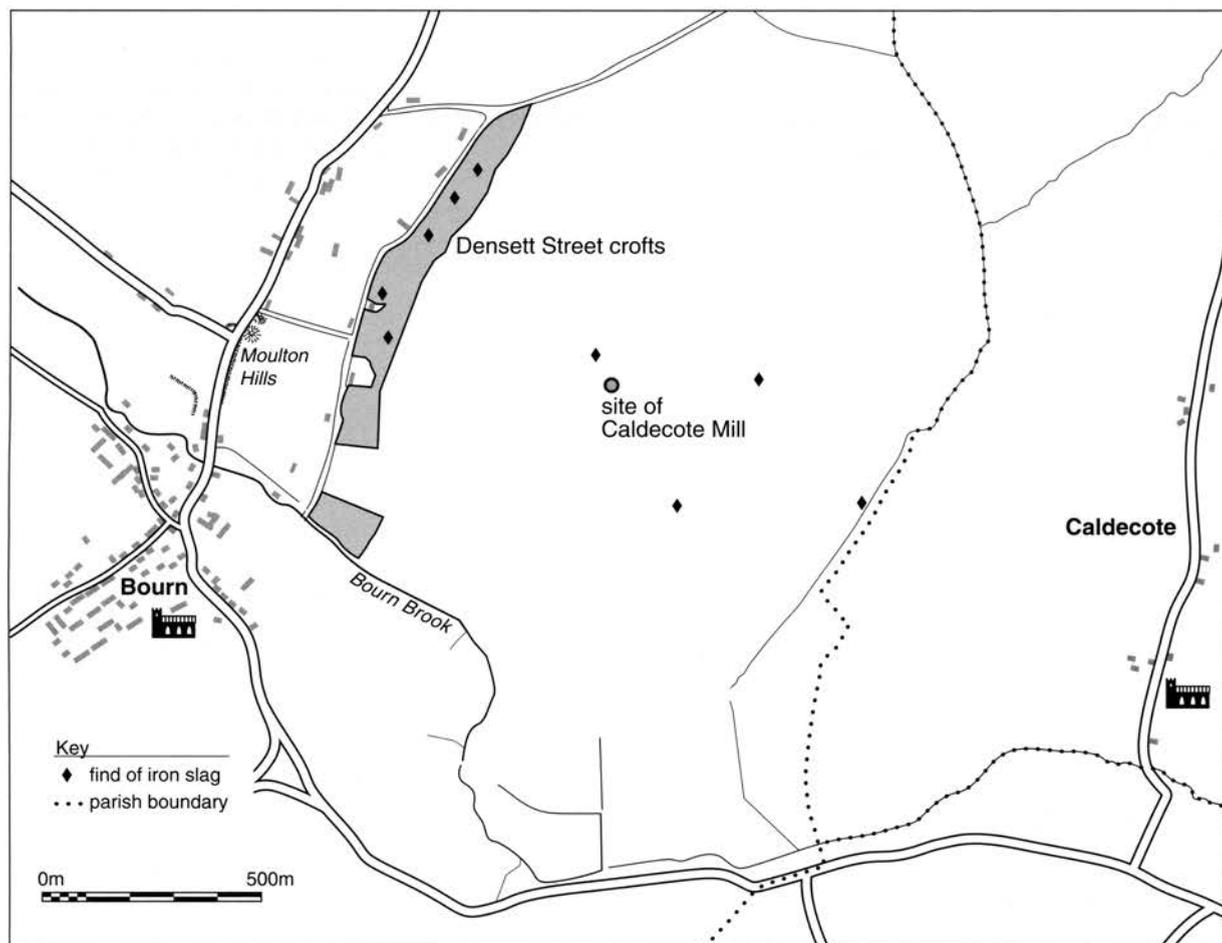


Figure 4. Finds of iron slag shown in relation to the Densett Street crofts and Moulton Hills.

name. The field names *Brunne Wolde*, *Long Wolde*, and *Caldecote Wolde*, indicate that the clay plateau between Bourn and Caldecote was once wooded (Christ's College, Cambridge, muniments: Bourn manor court rolls 1350–1399). This is significant, because of the three materials required to smelt iron in primitive furnaces – ore, clay, and charcoal – only charcoal is likely to have been in short supply locally during the high Middle Ages. Boulder clay is the main drift deposit in the area, and fragments of burnt clay found in slag scatters show the same range of inclusions (mainly chalk and flint) as the boulder clay itself, which appears to have been used without much modification to build furnaces. Ore of good quality was obtainable locally. But a shortage of fuel may have limited medieval iron production in these villages. In 1279, only about 450 acres of woodland were recorded in the Hundred Rolls for the area within about four miles of Bourn (*Rotuli Hundredorum* ii: Stow Hundred).

Walker's finds reinterpreted

This fieldwork has established that iron was produced in Bourn and neighbouring villages during the high Middle Ages. What connection, if any, did Moulton Hills have with this local industry? There is some (but not much) direct evidence of iron working in the museum assemblage of Walker's finds. There are small pieces of iron ore, slag lumps, bits of furnace lining, and smiths' sharpening stones; in all about 20 pieces that can be recognised as smiths' debris, not counting the nails that appear in nearly every context. The paucity of this evidence is not surprising. To anyone familiar with the waste products of primitive forges, the materials are unmistakable; but Walker was not looking for industrial residues. Small pieces of slag can be mistaken for lava millstone which, since it has once been molten, has cavities and gas bubbles like iron slag. If Walker had come across large flows of tap slag, he would no doubt have distinguished them from stone; but slag was valuable as hardcore in the Middle Ages, especially in a stone-poor region like the Bourn valley, where even church walls were built out of stones laboriously gathered in the fields; and one would expect to find slag recycled as road metal

or hard core. The medieval roads to Caxton, Densett, Bourn and Cambridge cut through Moulton Hills.

The presence of smithing debris among Walker's finds indicates that there was a forge in Moulton Hills, but that does not necessarily mean that the mounds were built for that purpose. Any discussion of the origin of the earthworks, must take account of their size and construction, the large quantities of burnt material and of lava millstone contained in them, and the two distinct periods of occupation of the site.

At first sight profiles of Moulton Hills suggest spoilheaps resulting from the extraction of iron ore; there are, however, no accessible ore deposits on the site. Charles Turner made a geological survey of the area in 2004: he took core samples from the bed of Bourn Brook and from locations leading up to the plateau on which the mounds stand, and proved boulder clay over the whole field.

Since those who built Moulton Hills were not extracting ore, the form of the mounds themselves is significant: they were built for a specific purpose, and the form may indicate their function. Walker's discovery of an inner mound and ditch in 'Tumulus 2' gives a clear idea of the sequence of construction (Fig. 3). The original mound was built up to a height of two metres or more with clay dug out of the surrounding ditch (before consolidation of the clay, the height would have been greater than at present). This mound, 31 feet in diameter, was the site of industrial activity, which continued long enough, or at sufficient intensity, to fill the ditch with burnt matter. At some later time a further 200 tons of clay was dug out of the present ditch, which is more than twice the diameter of the earlier one, and the clay was used to build a mound at least 3m high (allowing for consolidation) and 22m across. Digging and piling up 200 tons of boulder clay would represent at least 100 man-days of labour. I stress the labour involved in the enlargement of the mound, because it appears to demonstrate that the builders saw considerable economic advantages in building the mounds up to their present height ('Tumulus 1' is the same height as 'Tumulus 2', and a bit wider). The enlargement of 'Tumulus 2' effectively created a bank 68m long and 5m high from the bottom of the ditch.

A bank of clay is a convenient place to build a furnace, and furnaces built into banks follow a design familiar in the archaeological record (eg Tylecote 1986, Fig. 100): an arch at the bottom of the outer wall allows the fire to be set, a draught to blow through the furnace, slag to be tapped, and the bloom to be taken out. The mass of clay on three sides would act as insulation, leaving only the outer wall of the furnace to be protected against loss of heat. Two of the 'cooking places' that Walker found cut into the sides of the mounds at ground level could well have been furnaces, to judge by the heaps of ashes produced, and there is plenty of room in the unexcavated sections of the perimeter ditch for other furnaces. (A gradiometer survey of the site made by Peter Morris in 2004 revealed a large magnetic anomaly on the south side of 'Tumulus 1' in an area untouched by Walker's trench-



Figure 5. Finds from Walker's excavation, including iron nails from Tumulus 1. Plate reproduced from Walker's report published in PCAS 15: 166–177.

es. This could be another furnace.) The 5m from the trench bottom to the top of the mound may have been important in creating a natural draught, thus reducing or eliminating the laborious work of blowing bellows: if so, then the hilltop site, open to prevailing south-west winds, was no doubt chosen deliberately.

If the smiths in Moulton Hills were able to use the full height of the mounds to build their furnaces into, then the shafts would rise 3m through the reconstructed mound in 'Tumulus 2'. It is possible that the induced draught could have gained further momentum from the additional height of 2m of ditch below. At any rate, the hilltop site, a bank 5m high, and 80 cubic metres of burnt matter, are strong indications of a furnace technology employing natural draught. The length of the bank at 68m would provide ample space for the various processes of making iron – roasting ore, smelting, refining blooms and smithing artefacts – all of which require sustained high temperatures.

Rhineland lava millstone

The hypothesis that Moulton Hills were built specifically for iron working accounts for many of the facts that Walker recorded, including the shape of the mounds as reconstructed in their present form. Does it also explain the presence in all parts of the earthworks of large quantities of lava millstone? It is not only the quantity of millstone that must be accounted for but also its ubiquity. Either the material was brought to the site during the whole period of occupation, and was incorporated into the banks and mounds in each phase of construction, or it must have lain scattered on the surface before any of the work of digging and building was begun. Walker assumed that the Rhineland lava millstone was imported during the Roman period, but lava querns are some of the commonest finds on medieval house sites in the area, and there is evidence that the material was brought to the site during the high Middle Ages. I have examined all the specimens of millstone preserved among Walker's finds, and they are indistinguishable in the way they are cut, from the many fragments picked up from the Densett crofts, and from the site of a medieval windmill half a mile east of Moulton Hills. Some of the pieces in the museum assemblage and from Densett are fragments of querns with narrow, closely spaced channels and a small central hole; others are much thicker, with widely spaced deep channels, and these are clearly bits of actual millstones. It would appear that both household querns and fragments of millstone were taken to Moulton Hills to be reused.

There is an obvious use for a heat-resisting stone in the building of furnaces. Lava withstands heat very well, and small pieces built into the clay walls of a furnace would strongly reinforce the structure. Two of the millstone samples in the museum assemblage show signs of burning, and several of the Densett fragments are either fire-blackened or slagged. The very large quantities and the pervasiveness of the material though every part of the earthworks can be explained by the need to reinforce friable clay walls under intense heat. Clay furnaces are short-lived structures

requiring frequent rebuilding. Walker's finds of lava millstone 'in almost every spadeful of earth' suggests that the mounds were reconstructed more than once – and the location of heaps of ash at the centre of both mounds at ground level shows that where there is now a thickness of eight feet of boulder clay, there were once fireplaces in the open. The deceptive simplicity of circular mounds surrounded by concentric ditches conceals a complex sequence of earth moving. We are fortunate to have one such sequence recorded in Walker's section through 'Tumulus 2'. If it were not for the inner ditch full of burnt matter, and the patch of ashes on top of the inner mound, there would be nothing to distinguish one mass of remade boulder clay from another.

Romano-British and medieval occupation of the site

The fact that Walker found lava millstone in the inner mound in 'Tumulus 2', as well as in every other part of the earthworks, shows that the inner mound is contemporary with the rest: that is, medieval. All Romano-British material in the mounds is residual, thrown up out of ditches into the mounds. The range of Romano-British finds suggests a domestic rather than a ceremonial site (Fox 1923 p195): there are roof tiles in the assemblage, together with fine and coarse pottery wares, and small metal objects. It appears that the medieval smiths cut through a Romano-British settlement when they dug their ditches.

Two coins found by Walker near the top of 'Tumulus 2' give an indication of the date of the last reconstruction of the mound: they are a silver penny of Edward II and a silver halfpenny of Edward III. The earthworks may therefore have taken their present form in the first half of the 14th century.

A gradiometer survey of the field in which the mounds stand by Peter Morris in 2004, shows a pattern of ridge and furrow running up to the ditches of Moulton Hills to the south and east; but since roads cut into the earthwork to the north and west, nothing can be deduced of the relative ages of ridge and furrow and the mounds themselves. The furlong in which the mounds stand was known as *Oldehylls* in the 15th century, which suggests that the earthworks were by then disused. The earliest recorded use of the name is in a court roll of Bourn manor, 7 July 1431 (Christ's College Cambridge muniments).

Moulton Hills and iron technology

The technology of clay iron furnaces is not fully understood, and is the subject of debate and on-going experiment. Our knowledge of clay furnaces is limited by the fact that no excavated example has survived to its full height. A Romano-British furnace built into a bank at Ashwick (characterised by Tylecote as 'the iron-working site par excellence') survived to a height of 1.4m (1986, Fig.100). Well-preserved Early Iron Age furnaces were recently excavated in Germany (Gassmann 2002). But all medieval clay furnaces so far excavated are truncated, and their technology remains a matter of theoretical reconstruction.

Moulton Hills occupies a hilltop site open to pre-

vailing winds, and may have employed natural draught to blow its furnaces. The nearest parallel examples of medieval furnaces that appear to have used natural draught were excavated at Stanley Grange, Derbyshire (Challis 2002). There, all the furnaces were aligned with mouths facing into the prevailing westerly wind, but against the southward grain of the slope:

This strongly suggests the use of wind-power to assist in providing the draught, with the wind entering the furnace mouth after passage over hot charcoal lying within the slag-tapping bays. This quite radical interpretation fits the evidence observed during the excavation...

Such furnaces would probably have needed to be taller than their forced draught counterparts, the added height serving to increase the draught (Challis 2002).

Challis' reconstruction drawings show a shaft height of more than two metres. If the hypothesis put forward here is correct, and Moulton Hills proves to be a medieval iron-working site, then the height of the mounds is likely to be significant, both as a pointer to how the furnaces worked, and as a factor in their preservation. Furnaces built into the sides of the mounds may survive with good superstructures.

Moulton Hills as a smithing site

Another way in which Moulton Hills may prove significant is in the data it could yield on rural smiths. It is clear from the museum assemblage of Walker's finds, that there was at least one smithy on the site: nails were found in every context, and the wear-traces on sharpening stones indicate that metal objects other than sickles were produced there. If smithing hearths survive in good condition in the mounds they could throw light on a dark corner of medieval life. Very few rural smithies have been excavated. Grenville Astill commented in 1997 'Of the eleven excavated smithies in England, only four were located in villages, and all are dated to the later fourteenth or fifteenth centuries.' (Astill and Langdon 1997).

There appear to be industrial 'streets' in Caxton, Bourn and Caldecote where scatters of iron slag are found along medieval road frontages of several hundred metres in each village. Is there a connection between Moulton Hills and the industrial settlement along Densett street? The similarity of finds in the Densett house sites, and in Walker's assemblage from Moulton Hills, make that an attractive possibility.

Conclusion

In this paper I have advanced the hypothesis that Moulton Hills are medieval earthworks constructed for the purpose of smelting iron. This would account for the form and dimensions of the mounds, the ubiquity of lava millstone in all features in the earthworks, and the specific location of industrial quantities of burnt matter discovered during the 1909 excavation.

Moulton Hills is a scheduled ancient monument. It

is currently wrongly dated, and incorrectly described. A small excavation could reopen Walker's trenches without further damage to the monument, and settle questions of origin and function using modern methods of sampling and analysis. If it is a medieval bloomery, then its unusual form, and largely undamaged condition, promise rare insights into medieval technology.

Endnotes

1. Walker's chronology has misled later commentators. Fox (1923) summarised his finds (p. 195): 'The finds indicate cremation burials of II A.D. by Romanized Britons. Roman remains have been found at Bourn Hall near by.' In 'Barrow No. 2' 'the outer barrow was post-Roman, of unknown date'. Fox suggested that the Roman remains below ground level in Barrow No.1 were 'probably occupational', which can hardly be reconciled with Walker's report. Hurst (1956) identified the shallow bowl illustrated by Walker as 'a typical shallow St. Neots bowl, though it has unfortunately been mislaid; it would appear to be Pre-Conquest'. Since Hurst was unable to see the bowl, and relied on Walker's description, the 'Pre-Conquest' date remains doubtful. RCHM (1968) also summarised Walker's finds, but dissented from his conclusions (p.27): 'it would appear that these mounds were constructed from material containing Roman debris, known to occur in an adjoining garden to the N., and that they overlie early medieval hearths. The mounds, the purpose of which is unexplained, are probably later than the Norman Conquest'. The only evidence for an early medieval date for the 'hearths' is the bowl dated by Hurst (see above) as 'Pre-Conquest'. Livensidge (1977) remained unconvinced of the date of the whole earthwork: 'From Walker's account and the fragments surviving in the Museum of Archaeology and Ethnology it seems that these two barrows were erected either to cover cremations of presumably late 2nd-century date, probably burnt in situ, or are post-Roman mounds incorporating a scatter of earlier debris.' The chronological confusion of Walker's report is reflected in all these later commentaries.
2. Fox (*op. cit.* p. 195) notes: 'There is no record of Barrow No III in the paper. Mr Walker, in response to my enquiry writes (Nov 21, 1921): 'No, I did not open the third tumulus. It was exactly like the other two and fragments of Roman pottery turned out in the small hole I made in it.'

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A late Roman Cemetery at Watersmeet, Mill Common, Huntingdon

Kate Nicholson

With contributions by HEM Cool, Jane Cowgill, Nina Crummy, Val Fryer, Tom McDonald, Andrew Peachey and Carina Phillips. Illustrations by Caroline George and Kathren Henry.

Excavation c.200m east of a Roman villa found evidence of an early to middle Roman enclosure, succeeded by a late Roman cemetery with a contemporary field system. Sixty-eight identifiable individuals were buried in the cemetery, with a further four among the field ditches. Inhumations were generally in an extended supine position, oriented west-south-west to east-north-east; there was no evidence for use of coffins, and grave goods were present in only two cases.

The site, c.10–12m OD, is on the southern edge of Huntingdon and the north bank of Alconbury Brook, c.50m west of its confluence with the Great Ouse (Fig. 1). The Roman town of *Durovigutum*, on the edge of modern Godmanchester, lies roughly 1km south-south-east of Watersmeet. The town is surrounded by inhumation and cremation cemeteries of varying sizes (Taylor 1997; Fig. 2); the largest and best investigated of these is The Parks (Jones 2003).

Excavations at Whitehills, approximately 200m west of the western edge of Watersmeet, found evidence of a 3rd to 4th century Roman corridor villa, preceded by a 2nd century timber building on flint footings and earlier (1st to 2nd century) pits and ditches (Davison and Rudd nd; Scott 1993, 39). Trial trench evaluations by HAT (now Archaeological Solutions) at Edward House (Grant and Wilkins 2003) revealed mid 1st to late 2nd century pits and gullies between Whitehills and Watersmeet. Roman coins have been found within Watersmeet, as elsewhere on Mill Common. Two small 2nd century cremation groups have been recovered within 50m to the north of Watersmeet. Undated human remains were recovered within Watersmeet in 1921, and again during assessment of the site (Cooper and Spoerry 2000). Further possible evidence for Roman burials in the area is a stone coffin recovered in the early 19th century, and a grey ware jar described on its recovery in 1824 as a sepulchral urn.

Although the infrastructure of the Roman town had fallen into disarray, continuing occupation in/around Godmanchester in the late and immediate post-Roman period has been attested archaeological-

ly. Excavations at Cardinal Distribution Park revealed features including six sunken featured buildings and several post-built structures, attesting 5th to 9th century occupation (Last 1999). At Rectory Farm the robbed footings of a Roman villa were used in Anglo-Saxon burials (Prosser 1998). Archaeological and documentary evidence suggest an hiatus in activity in Huntingdon between the late Roman and late Saxon periods.

Results of the investigation

Excavations at Watersmeet revealed activity in all parts of the site to the east of a large palaeochannel (Figs. 3 and 4). Activity dated to the Roman and Saxo-Norman periods, with only two small pits potentially representing activity between these times (both contained 5th to 7th century pottery sherds); four small pits post-dated the 10th to 12th century (Fig. 4).

Roman features represent two distinct periods: the late 1st to mid 2nd century (Phase 1) and the mid/late 4th to early 5th century (Phase 3), with only minimal evidence for activity between the two (Phase 2), although several features could be dated only as 'Roman' (Fig. 4). Significant Phase 1 features were limited to four ditches marking two sides of a rectangular enclosure; two Phase 2 ditches may represent the remarking of the enclosure's boundaries. Phase 3 accounted for most of the archaeological features, comprising field ditches, a possible enclosure and an inhumation cemetery bounded by ditches on two sides. Post Roman features can be split into three phases (4 to 6), but only Phase 5 (10th to 12th century) saw significant activity (Fig. 4). A series of large pits, some thought to have obliterated graves from the late Roman cemetery, were dug at this time and used for rubbish disposal.

All features are described in the Interim Report (Hounsell and Nicholson 2003) and the archaeology of all periods is discussed in the Archive Report (Nicholson 2004).

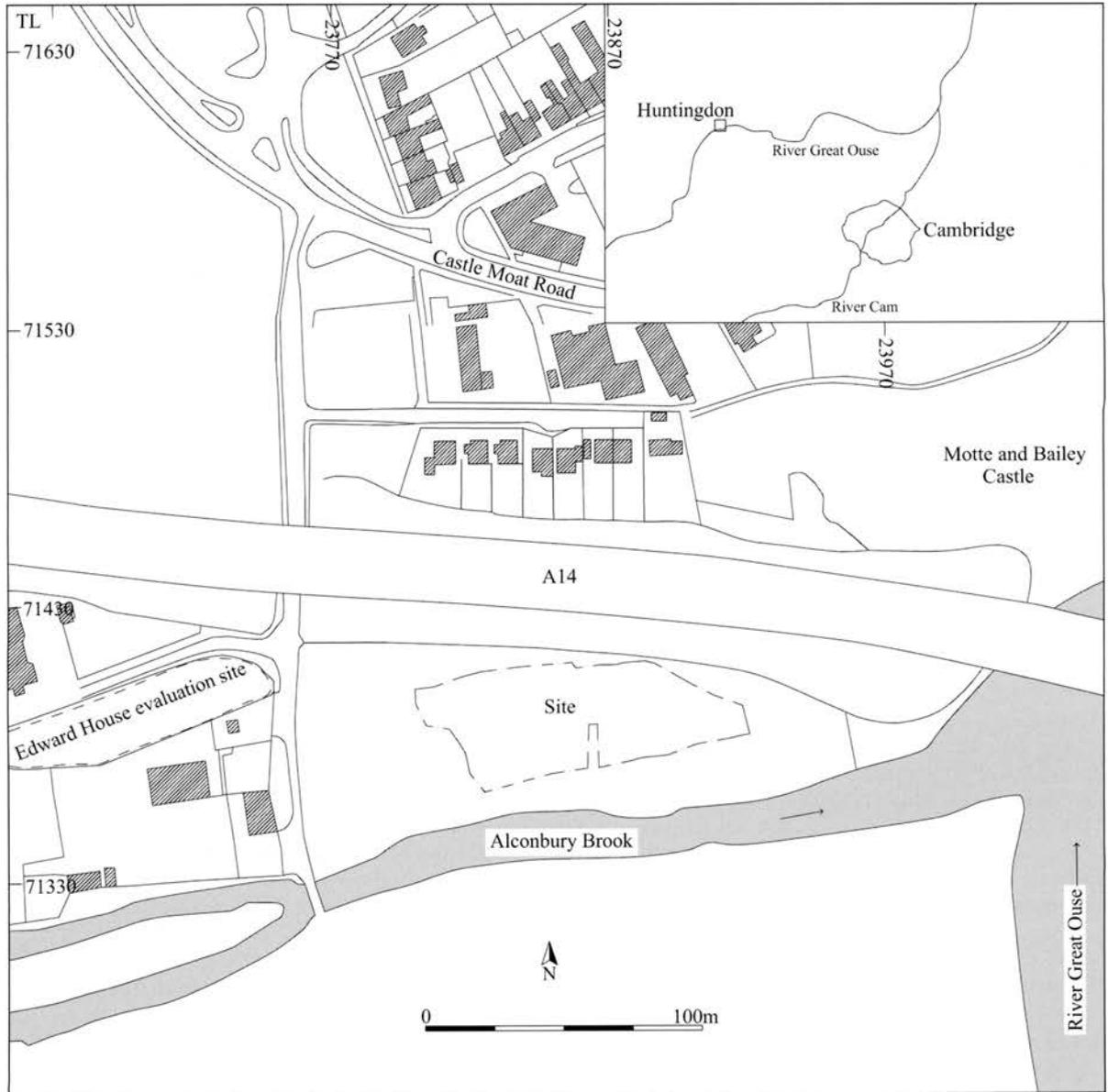


Figure 1. Site location.

Phases 1 and 2

The Phase 1 (late 1st to mid 2nd century) enclosure (Figs. 3 and 4) comprised two sets of two intercutting ditches, forming its east and north sides, aligned approximately perpendicular/parallel to the line of Alconbury Brook. The southern terminus of ditch F2141 was lost in pit F2127; there was no clear stratigraphic relationship between the ditch and pit, and the presence of conjoining fragments from three pottery vessels in both features suggests that they were contemporary (Peachey in Nicholson 2004). As well as a large pottery assemblage, pit F2127 contained the iron tooth of a wool comb or flax heckle (Crummy, this report). An environmental sample taken from the ashy fill of F2141 contained domestic waste including winnowed cereal grain (Fryer, this report). Ditches F2323 and F2325 converged at their western

ends and F2325 extended beyond the northern limit of excavation.

Phase 2 is represented by ditches F2094 and F2132 which may represent the redefinition of the east and north sides of the enclosure. The only other Phase 2 features were two successive cuts (F2083 and F2010) of a linear pit or short ditch to the south of the enclosure, and an east to west ditch (F2369, hidden in plan by its recut, F2367) in the northeast of the site.

Phase 1 and 2 features were cut into the natural clayey deposits of the site. Those in the area which was later to be the cemetery were sealed by L2260, a disturbed stratigraphic unit which is interpreted below. The chronological definition of Phase 2 is weak: most of its features are dated by their pottery content to the 2nd to 4th century, but ditch F2132 is assigned to this phase because of its stratigraphic po-

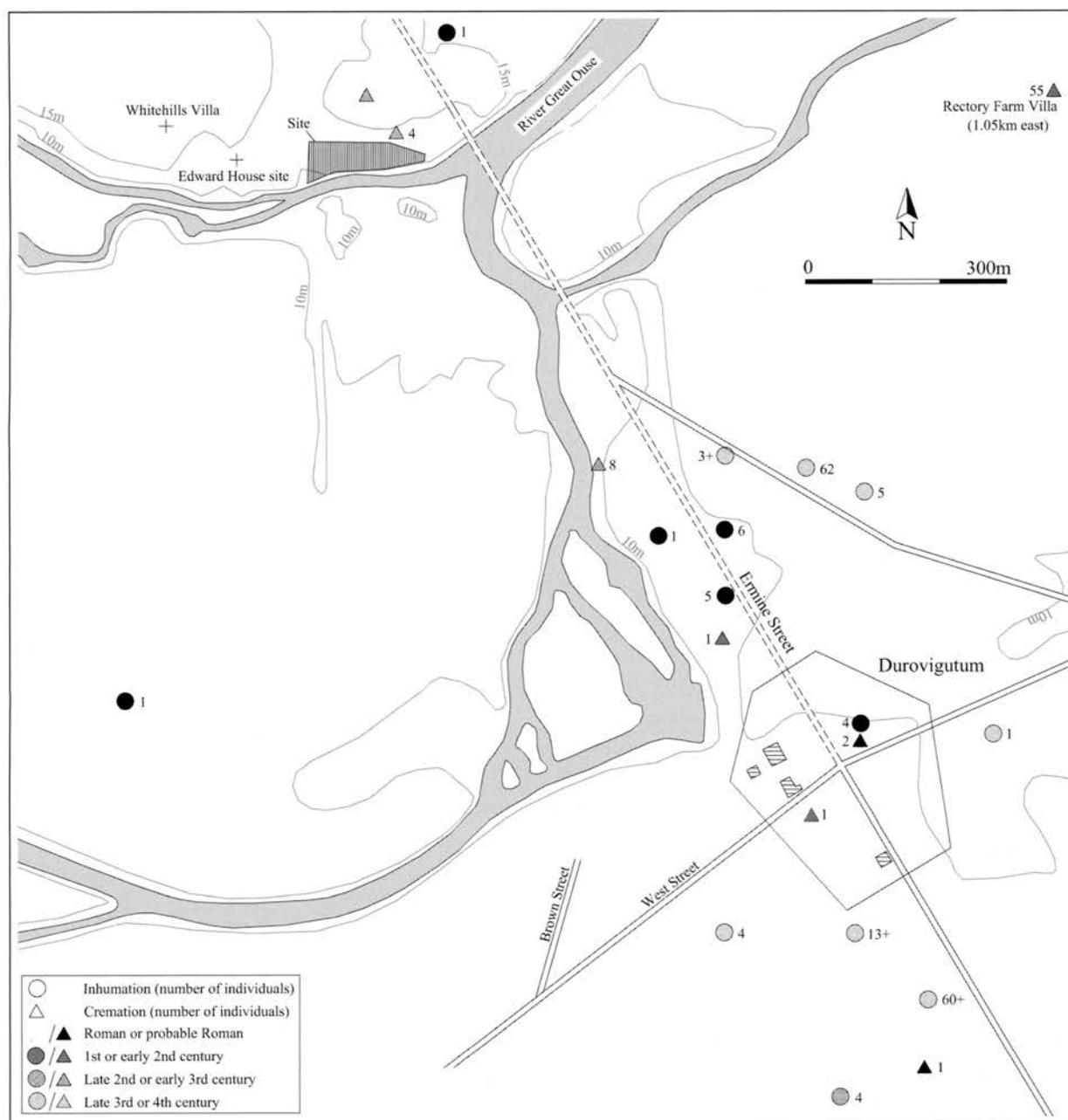


Figure 2. The site in context: Roman burials in the Godmanchester area.

sition (sealed by L2260) in spite of its mid 4th to late 5th century pottery content.

The late Roman cemetery

Cemetery boundaries

The cemetery was bounded to the west by ditch F2241 and to the east by ditch F2147 and its recut, F2170; its northward extent is not known as it continued beyond the northern limit of excavation, and its southern limit is unclear as later features to the south contain human

bone thought to derive from obliterated graves. Ditch F2166 was the southward continuation of either F2147 or F2170, and would have bounded the southern extent of the cemetery.

Ditch F2241 truncated inhumations Sk2294 and Sk2316, showing that it post-dated at least some of the use of the cemetery. Ditches F2241 and F2170 both contained large amounts of animal bone and 4th to 5th century pottery; F2241 also contained part of a triangular fired clay loom weight (Crummy, this report). Ditches running west of and approximately

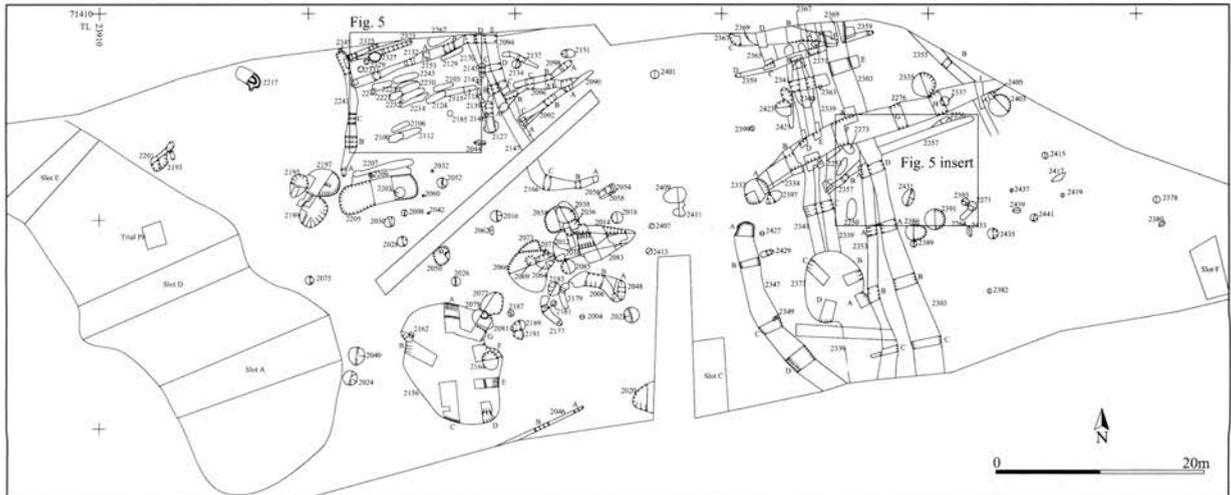


Figure 3. Site plan.

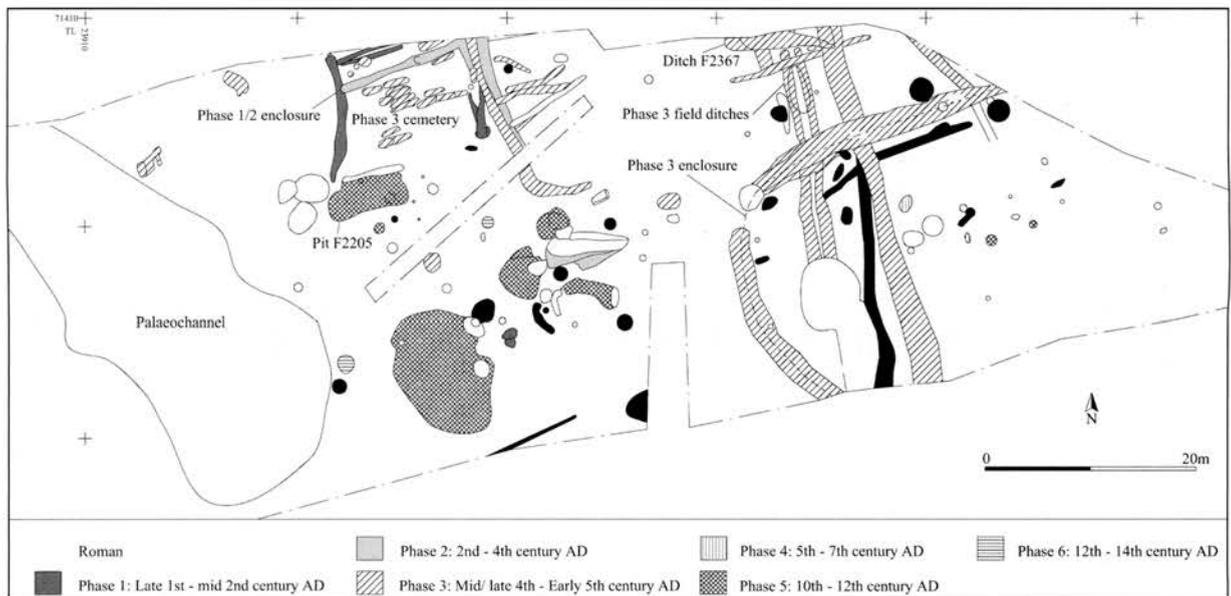


Figure 4. Phase plan.

perpendicular to F2170 indicate some form of land division immediately east of the cemetery (see Fig. 4).

Inhumations within the cemetery

A total of 72 individuals were recovered, in varying states of completeness; this includes four from the eastern part of the site, outside the cemetery. A further (undated) skeleton was recovered during evaluation (Cooper and Spoerry 2000) and (undated) human remains had previously been recovered from the site (see above). The layout of the cemetery and the locations of the outlying burials can be seen in Fig. 5.

The northwestern part of the cemetery had been severely disturbed by rooting, the result being that individual grave cuts in this area were not discernable, their fills having been homogenised with the

surrounding deposit; L2260 is the label applied to this deposit during excavation. L2260 sealed Phase 1 and 2 features in this part of the site, and the bulk of it is thought to have been deposited to level this area prior to its first use as a cemetery. An environmental sample from L2260 contained only wind blown/scattered detritus. The 45 skeletons from this part of the cemetery had been significantly disturbed, more than half of them being less than 25% complete (Table 1). Two additional partial skulls (assigned the numbers Sk2310 and Sk2311 but not included in the total number of individuals) from L2260 may represent additional individuals, but may come from skeletons already identified. Additional disturbance to some skeletons in this area was caused by the cutting of pits F2329 and F2327, both of which contained significant quantities of disarticulated human bone.

Table 1. Description of the inhumations

Sk = Skeleton; G = grave

Orientation: The position or projected position of the skull is given first. Brackets denote the orientation of graves in which the skeleton's alignment could not be determined.

Positions: undetermined; ES extended supine; P prone; R lying on right side.

Arm positions*: absent/displaced; 1 straight at sides; 2 hand(s) over groin; 3 hand(s) under pelvis; 4 other, see notes.

Leg positions*: absent/displaced; 1 legs extended; 2 feet turned to right; 3 feet/ankles crossed, L over R; 4 feet/ankles crossed, R over L; 5: femur(s) angled inwards; 6 other, see notes

Head positions: absent/displaced/unclear; 1 facing north; 2 facing south; 3 aligned with body

Age categories: undetermined; F foetal (pre birth); N neonate (birth – end of 1st month); I infant (birth – end of 1st year); YC young child (to end of 5th year); OC older child (c.6 years – puberty); As adolescent (puberty – young adulthood); C/As child/adolescent (immature, age unknown, >1year); YA young adult (20–34 years); MA middle adult (35–49 years); OA older adult (50 years +); A adult (unknown age)

*Where the positions of the left and right hands or feet differ, they are given in the format L/R.

Sk	G	Orientation	Position	Arms	Legs	Head	Stature	Sex	Age	Condition	Notes
<i>Graved inhumations in the south east of the cemetery</i>											
2101	1	(WSW-ENE)	-	-	-	-	-	-	A	>25%	G1 cut by G5.
2104	2	WSW-ENE	ES	?2	-	-	-	?F	YA	<50%	Arthritis of right hand.
2107	3	(WSW-ENE)	-	-	-	-	-	C/ As	-	<25%	G3 cuts G4, cut by modern pipe trench.
2110	4	(WSW-ENE)	-	-	-	-	-	YA	YA	<25%	G4 cut by G3 and modern pipe trench. Sheep/goat bone found during post-excavation analysis.
2113	5	(WSW-ENE)	-	-	-	-	-	-	-	Fragments	Possible charnel deposit. Not included in human bone analysis. G5 cuts G1.
2116	6, 8	WSW-ENE	ES	2	2	-	1.63m	?F	MA	<50%	G6 cut by G7 to east and G8 to west; upper body elements of Sk2116 form charnel deposit in G8.
2119	7	(WSW-ENE)	?ES	-	-	3	-	-	MA- OA	<25%	
2122	8	WSW-ENE	ES	2	3	-	1.71m	M	MA	<50%	G8 cut by G9.
2125	9	WSW-ENE	ES	-	1	-	-	-	YC	<50%	G9 cuts G8. Sheep/goat bone found during post-excavation analysis.
2130	10	WSW-ENE	ES	1/-	4	1	-	?F	MA	>75%	Arthritis of vertebrae, ankylosis of metacarpal, schmorl's nodes.
2215	11	(WSW-ENE)	-	-	-	-	-	-	-	Fragments	Not included in human bone analysis. Possible charnel deposit.
2220	?12/13									>25%	Possibly a charnel deposit in the head-end of G13, but possibly in a later, tentatively identified subcircular cut (G12).
2221	13	WSW-ENE	ES	1/4	1	3	-	?F	YA	>75%	Right arm bent across torso at c.90°. Arthritis of vertebrae and hip, partial spina bifida occulta, schmorl's nodes.
2224	14	WSW-ENE	-	1/-	-	-	1.66m	?M	MA	<50%	G14 cut by G15 and G16. Arthritis of vertebrae and hand, fractured rib, schmorl's nodes.
2225	15	WSW-ENE	ES	2	1	-	1.71m	M	YA	<75%	G15 cuts G14, cut by G16. Arthritis of vertebrae, schmorl's nodes. Animal bone found during post-excavation analysis
2228	16	WSW-ENE	?ES	-	1	-	-	-	-	<25%	G16 cut G14 and G15. Lower legs recorded in plan; remains could not be found for post-excavation analysis. Not included in human bone analysis
2244	17	WSW-ENE	ES	1	1/5	1	1.65m	F	YA	>75%	Charcoal present in grave fill. Arthritis of vertebrae, myotosis of clavicle, schmorl's nodes. Animal bone found during post-excavation analysis.
2247	18	WSW-ENE	?ES	-	1	-	-	-	A	<25%	Partially overlies Sk2259. Sheep/goat bone and residual human bone (probably from Sk2259) found during post-excavation analysis.

Table 1 continued. Description of the inhumations

Sk = Skeleton; G = grave
Orientation: The position or projected position of the skull is given first. Brackets denote the orientation of the skeleton's alignment could not be determined.
Positions: undetermined; ES extended supine; P prone; R lying on right side.
Arm positions*: absent/displaced; 1 straight at sides; 2 hand(s) over groin; 3 hand(s) under pelvis; 4 other, see notes.
Leg positions*: absent/displaced; 1 legs extended; 2 feet turned to right; 3 feet/ankles crossed, L over R; 4 feet/ankles crossed, R over L; 5: femur(s) angled inwards; 6 other, see notes
Head positions: absent/displaced/unclear; 1 facing north; 2 facing south; 3 aligned with body
Age categories: undetermined; F foetal (pre birth); N neonate (birth – end of 1st month); I infant (birth – end of 1st year); YC young child (to end of 5th year); OC older child (c.6 years – puberty); As adolescent (puberty – young adulthood); C/As child/adolescent (immature, age unknown, >1year); YA young adult (20-34 years); MA middle adult (35-49 years); OA older adult (50 years +); A adult (unknown age)
 *Where the positions of the left and right hands or feet differ, they are given in the format L/R.

Sk	G	Orientation	Position	Arms	Legs	Head	Stature	Sex	Age	Condition	Notes
2268	23	WSW-ENE	ES	2/-	1	-	-	-	A	<75%	Neonate Sk2269 lying across abdominal area of Sk2268.
2269	23	-	R	4	-	-	-	-	N	>75%	Lying on right side, right arm extended to north.
<i>Inhumations recovered from L2260 in the northwest of the cemetery</i>											
2259		WSW-ENE	P	-	-	-	-	F	MA	<50%	Coin of Valentinian I found just S of Sk2259 in L2260, may have been associated. Cattle bone recovered during post-excavation analysis. Foot bone probably from Sk2259 found in G18.
2261		ENE-WSW	ES	-	1	-	-	-	I	<50%	
2278		WSW-ENE	R	2	1	2	1.82m	?M	MA	<75%	Arthritic vertebrae. Animal bone recovered during post excavation analysis.
2279		-	-	-	-	-	-	-	A	<25%	Partial spina bifida occulta. Partially overlay Sk2314.
2280		WSW-ENE	ES	3/-	5/-	2	1.61m	M	YA	<75%	Arthritic elbow joint. Partially overlay Sk2314. Iron nail and puddle of refrozen lead found inside skull. Animal bone found during post-excavation analysis.
2281a		-	-	-	-	-	-	?F	A	<25%	Partial pelvis only. Recovered with Sk2281b, Sk2281c and Sk2281d.
2281b		-	-	-	-	-	-	-	I	<25%	Recovered with Sk2281a, Sk2281c and Sk2281d.
2281c		-	-	-	-	-	-	-	C/ As	<25%	Recovered with Sk2281a, Sk2281b and Sk2281d.
2281d		WSW-ENE	?ES	-	-	-	-	F	MA	<50%	Arthritic elbow and vertebrae. Recovered with Sk2281a, Sk2281b and Sk2281c.
2282		-	-	-	-	-	-	-	A	<25%	Only the feet were present
2283		SW-NE	ES	-	-	-	-	F	YA	<50%	Extended beyond N limit of excavation. Sheep/goat bone recovered during post-excavation analysis
2284		WSW-ENE	?ES	-	-	-	-	F	OA	<50%	Arthritis of vertebrae and elbow. Extended beyond N limit of excavation.
2285		WSW-ENE	?ES	-	1	-	-	-	A	<25%	
2286		WSW-ENE	?ES	2	5	-	-	-	A	<25%	
2287		-	-	-	-	-	-	-	A	<25%	
2288a		-	-	-	-	-	-	-	A	<25%	Skull only. Recovered with infant femur Sk2288b.
2288b		-	-	-	-	-	-	-	I	<25%	Femur only. Recovered with adult skull Sk2288a.

Sk	G	Orientation	Position	Arms	Legs	Head	Stature	Sex	Age	Condition	Notes
2289		WSW-ENE	ES	1	1	1	1.56m	?F	OA	>50%	Arthritis of vertebrae, hip, elbow and shoulder, ankylosis of sacrum. Sheep/goat bone recovered during post-excavation analysis.
2290		WSW-ENE	ES	1	3	2	1.86m	M	MA	>75%	Ankylosis of sacrum and vertebrae, arthritis of knee. Animal bone recovered during post-excavation analysis.
2291		WSW-ENE	ES	1	1/-	3	-	-	OC	>75%	Cribræ orbitalia.
2292		-	-	-	-	-	-	M	OA	<25%	
2293		W-E	ES	2/1	-/1	3	-	-	C/ As	>50%	Hypoplasia. Copper alloy unit of Tasciovanus found inside skull.
2294		WSW-ENE	ES	-	1	-	-	-	A	<25%	Arthritis of hand, feet and knee.
2295		-	-	-	-	-	-	-	A	<25%	
2296		-	-	-	-	-	-	-	A	<25%	Sheep/goat bone recovered during post-excavation analysis.
2297		WSW-ENE	ES	-	1	-	-	-	YC	<50%	Animal bone recovered during post-excavation analysis.
2298a		-	-	-	-	-	-	-	A	<25%	Recovered with Sk2298b.
2298b		-	-	-	-	-	-	-	A	<25%	Recovered with Sk2298a.
2299a		-	-	-	-	-	-	-	A	<25%	Recovered with adolescent Sk2299b.
2299b		-	-	-	-	-	-	-	As	<25%	Recovered with adult Sk2299a.
2300		-	-	-	-	-	-	-	A	<25%	Probably disturbed by cutting of pit F2327, redeposited overlying pit.
2301		-	-	-	-	-	-	F	A	>50%	Arthritis of knee and vertebrae.
2302a		-	-	-	-	-	-	-	A	<25%	Recovered with Sk2302b and Sk2302c.
2302b		-	-	-	-	-	-	-	A	<25%	Recovered with Sk2302a and Sk2302c.
2302c		-	-	-	-	-	-	C/ As	<25%	Recovered with Sk2302a and Sk2302b.	
2308		-	-	-	-	-	-	-	A	<25%	Recovered from L2260 but not recorded in plan; noted as redeposited.
2309		-	-	-	-	-	-	?F	A	<25%	
2312		WSW-ENE	ES	-	-	-	-	-	N	>75%	Dislocated femur.
2313a		WSW-ENE	?ES	1	1	-	-	-	A	<25%	Recovered with Sk2313b.
2313b		-	-	-	-	-	-	-	YC	<25%	Recovered with Sk2313a.
2314		WSW-ENE	ES	-/2	-/1	-	-	M	OA	>50%	Overlain by Sk2279 and Sk2280. Arthritis of vertebrae and hip, schmorl's nodes
2315		WSW-ENE	-	3	-	-	-	F	OA	>50%	Arthritis of vertebrae. Very disturbed by rooting an burrowing
2316		WSW-ENE	ES	1/2	1	-	-	-	As	>50%	Overlain by Sk2293 and Sk2294, truncated at feet by pit F2329 and at shoulders by Ditch F2241. Animal bone recovered during post-excavation analysis.
2317		WSW-ENE	?ES	-/??	-	1	-	?F	OA	<50%	Arthritis of vertebrae and elbow. Extended beyond N limit of excavation
2318		-	-	-	-	-	-	M	YA	<50%	Arthritis of hip

Table 1 continued. Description of the inhumations

Sk = Skeleton; G =grave

Orientation: The position or projected position of the skull is given first. Brackets denote the orientation of graves in which the skeleton's alignment could not be determined. **Positions:** undetermined; ES extended supine; P prone; R lying on right side.

Arm positions*: absent/displaced; 1 straight at sides; 2 hand(s) over groin; 3 hand(s) under pelvis; 4 other, see notes.

Leg positions*: absent/displaced; 1 legs extended; 2 feet turned to right; 3 feet/ankles crossed, L over R; 4 feet/ankles crossed, R over L; 5: femur(s) angled inwards; 6 other, see notes

Head positions: absent/displaced/unclear; 1 facing north; 2 facing south; 3 aligned with body

Age categories: undetermined; F foetal (pre birth); N neonate (birth – end of 1st month); I infant (birth – end of 1st year); YC young child (to end of 5th year); OC older child (c.6 years – puberty); As adolescent (puberty – young adulthood); C/As child/adolescent (immature, age unknown, >1year); YA young adult (20-34 years); MA middle adult (35-49 years); OA older adult (50 years +); A adult (unknown age)

*Where the positions of the left and right hands or feet differ, they are given in the format L/R.

Sk	G	Orientation	Position	Arms	Legs	Head	Stature	Sex	Age	Condition	Notes
<i>Human bone in Phase 5 pit F2205</i>											
2249a							-	F	MA	<25%	Further very fragmented human remains (Sk2205, Sk2211, Sk2212, Sk2213 and Sk2234) were recovered from pit F2205.; these were excluded from the human bone analysis and overall count of individuals.
2249b						-	?M	MA	<25%		
2249c						-	?M	OA	<25%		
<i>The outlying burials</i>											
2255	20	WSW-ENE	ES	4	1	2	1.57m	F	OA	>75%	Both arms bent (c.45°) to right at elbows, lower left arm lying across rib cage, right wrist turned back towards torso. Copper alloy armlet on right wrist. Arthritis of knee, hip, shoulder, elbow, hand and vertebrae, schmorl's nodes. Ankylosis of tarsal, schmorl's nodes. Truncated by Ditch F2357. Truncated by pit F2271. Right arm bent double behind back, left arm extended at c.90° from torso and bent double with left hand under throat. Right leg crossed over left above knee. Arthritis of shoulder, elbow, wrist and vertebrae, fractured ulna, schmorl's nodes. Truncated by Ditch F2276.
2257	21	WSW-ENE	ES	2/-	1/-	-	-	-	MA	<50%	
2265	22	WSW-ENE	P	4	6	-	1.55m	F	OA	<75%	
2274	24	NW-SE	?ES	-	1	-	-	-	A	<25%	

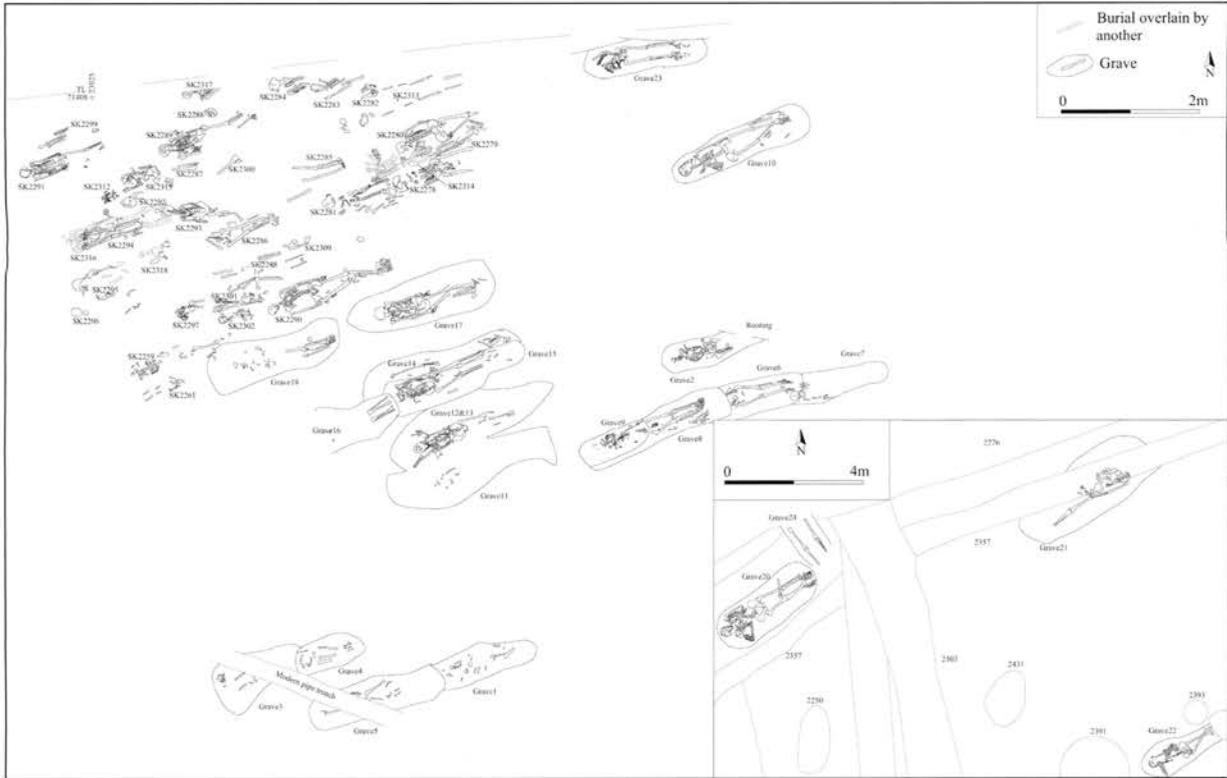


Figure 5. The cemetery.

Pit F2329 seems to have been cut during the use of the cemetery, after the burial of Sk2316 but before that of Sk2193. An environmental sample from F2327 indicated the disposal of domestic waste, including winnowed cereal grain (Fryer, this report).

In the south and east of the cemetery, 19 graves were cut directly into natural clay. The remains of 20 individuals were recovered from these, as grave 23 contained the skeletons of an adult (Sk2268) and a newborn infant (Sk2263). The graves were generally subrectangular (or sub oval) with rounded ends; they varied in length between c.1.12m and 2.24m and in width between c.0.4m and 0.88m, though several were truncated by other graves; most had been truncated from above either by over-machining or by ploughing, and so no accurate measurements of depth were obtained.

To the south of the southernmost identified graves lay a large 10th to 12th century rubbish pit (F2205); three human skulls (Sk2249a, Sk2249b and Sk2249c), were recovered from the base of this pit, and further human bone was found in its fill. It is considered likely that this area had been within the cemetery, and that the Saxo-Norman pit disturbed Roman graves.

Outlying inhumations

Four graves (20, 21, 22 and 24) were outside the cemetery area, in the eastern part of the site. An environmental sample from outlying grave 20 was found to comprise only wind blown/scattered detritus.

The single human burial recovered during the

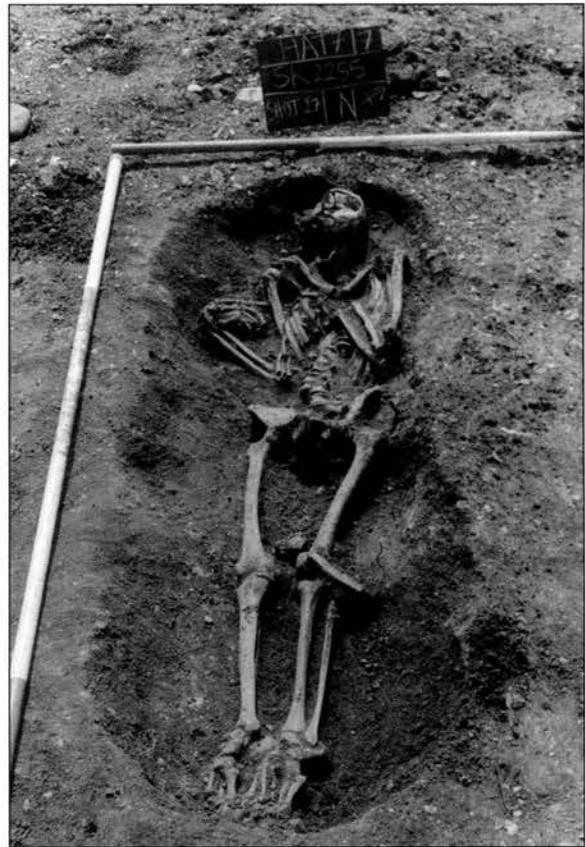


Figure 6. Sk225, outlying grave 20.

trial trench evaluation (Cooper and Spoerry 2000) came from the floodplain, immediately south of the area of open excavation and so should be seen as an additional outlying burial; further burials may exist in this area.

Orientation

Of the 68 inhumations within the cemetery, 44% (30) were oriented west-south-west to east-north-east, with a further six graves also following this alignment (though the orientation of skeletons within these graves could not be determined) (Fig. 5). The alignments of 37% (25) remained undetermined. The single inhumations aligned southwest to northeast (Sk2283 which extended beyond the northern limit of excavation) and west to east (Sk2293) represent variation of the west-south-west to east-north-east alignment, but are not considered distinct from it. One inhumation (infant Sk2261) was oriented east-north-east to west-south-west. It is noticeable that the orientation of the inhumations was approximately parallel to Alconbury Brook.

Three of the four outlying inhumations were also oriented approximately west-south-west to east-north-east, though tending more towards southwest to northeast than was the norm in the cemetery. The fourth outlying inhumation was oriented northwest to southeast, almost perpendicular to the site norm (Fig. 5).

Burial position

Three individuals redeposited in Phase 5 pit F2205 are excluded from this discussion.

In 45% of the remaining 69 cases, the skeletons were too disturbed or fragmentary for burial position to be assessed. However, extended supine positioning seems to have been the norm, accounting for at least 33% (48% including those where identification is only probable) of inhumations. There was variation within this, with the precise positioning of the arms/hands, legs/feet and head exhibiting a range of minor differences (see Table 2).

A few instances of more extreme variation were also identified. Sk2278 was lying on its right side, with its skull consequently facing south, hands over its groin and legs extended. Neonate Sk2269 lay on its right side with its right arm extended to the north, across the abdominal area of adult Sk2268; the slight-

ly bent left arm of Sk2268 may have resulted from positioning to secure/cradle the infant (Fig. 7).

The most extreme variations in burial position were those of Sk2255 and Sk2265 (Table 1), both older females, buried outside of the cemetery. Sk2255 was in an extended supine position, but with its arms distinctively positioned, while Sk2265 lay prone with its limbs contorted in apparently unnatural positions (Fig. 7). A second prone burial (Sk2259) was identified in the cemetery area; although this skeleton had been disturbed by rooting/burrowing, there was no evidence for distorted positioning of its limbs.

Distribution of inhumations within the cemetery

Despite the regular alignment of burials, no consistent, regularly spaced rows of graves could be identified at Watersmeet (though it is possible that identification was hindered by eradication of grave cuts in the northwestern part of the cemetery). A single, irregularly spaced and, in places, intercutting row may be formed by graves 11, 13, 15, 14 and 17 (Figs. 4 and 8), but it is also possible that the positions of these graves result from random distribution on a similar alignment within a confined area.

In several cases it seemed that later graves were deliberately dug through the head or foot of earlier ones. The most extensive example of this is the line formed by graves 9, 8, 6 and 7 (Fig. 8), but other examples can also be seen (eg graves 1 and 5, graves 3 and 4) (Fig. 4). The positioning of some skeletons suggests head to foot lines (eg Sk2284/Sk2289/Sk2315/Sk2312; Sk2316/Sk2293; Sk2284/Sk2289/Sk2315/Sk2312; Sk2290/Sk2302; Sk2259), but the fragmentary and scattered nature of skeletons in this part of the cemetery precludes the definite identification of such lines.

There were several instances of intercutting between graves (Fig. 8), and the arrangement and proximity of skeletons in the northwestern part of the cemetery (where some skeletons partially overlay others) make it likely that the same had been true there. In some cases the damage done to an earlier grave by the cutting of a later one was minimal, but in others the later grave had partially (eg grave 8 cutting grave 6, grave 9 cutting grave 8) or almost completely (grave 15 cutting grave 14) obliterated the earlier one (Fig. 8). Some skeletons (eg Sk2316, Sk2293, Sk2289) were truncated by pits (F2327 and F2329) or ditches

Table 2. Minor variations in extended supine burial position.

Arms/hands (one or both)		Legs/feet (one or both)		Head	
At sides	11	Extended	21	Facing north	4
Over groin	11	Feet turned to right	1	Facing south	3
Under pelvis	2	Feet/ankles crossed (L over R)	2	Aligned with body	3
		Feet/ankles crossed (R over L)	1		
		Femur angled inwards	3		

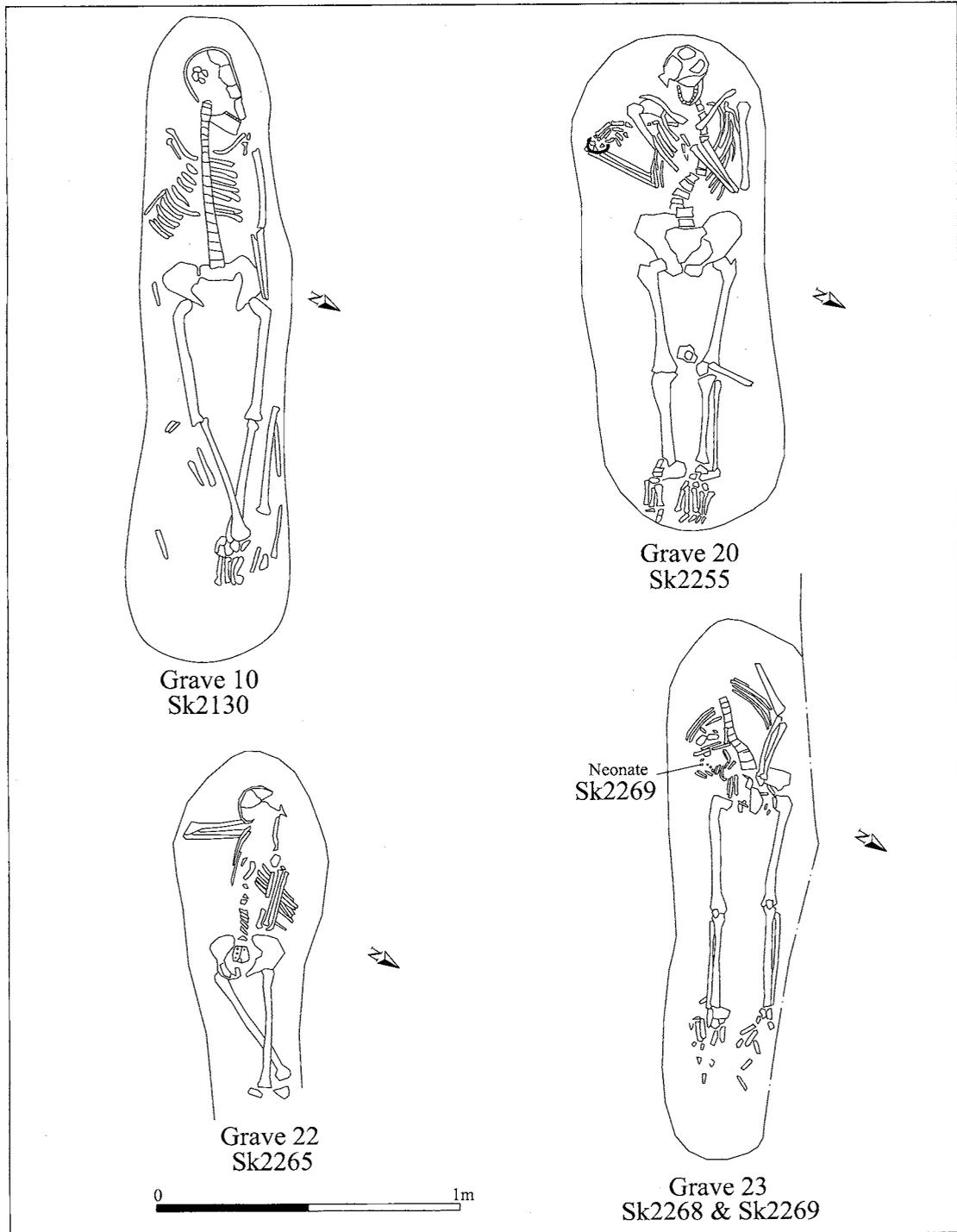


Figure 7. Selected graves.

(F2241) within the lifetime of the cemetery.

Charnel deposits and disturbance of inhumations

There is a large amount of human bone in the Watersmeet cemetery, especially in the northwestern area, which is not in its original burial context. The disturbance of L2260 by rooting and burrowing makes it likely that the majority of the 'loose' human bone was moved from its original position by natu-

ral processes within the burial environment, but it is possible that some elements were deliberately deposited in a new burial context.

There are one clear, one probable and two possible examples of charnel redeposition (Fig. 8). The mandible and humerus of Sk2116 were redeposited in the foot of grave 8 after this grave had truncated the upper body of Sk2116 in grave 6. Sk2220 may represent charnel (re)deposition at the head of grave 13,

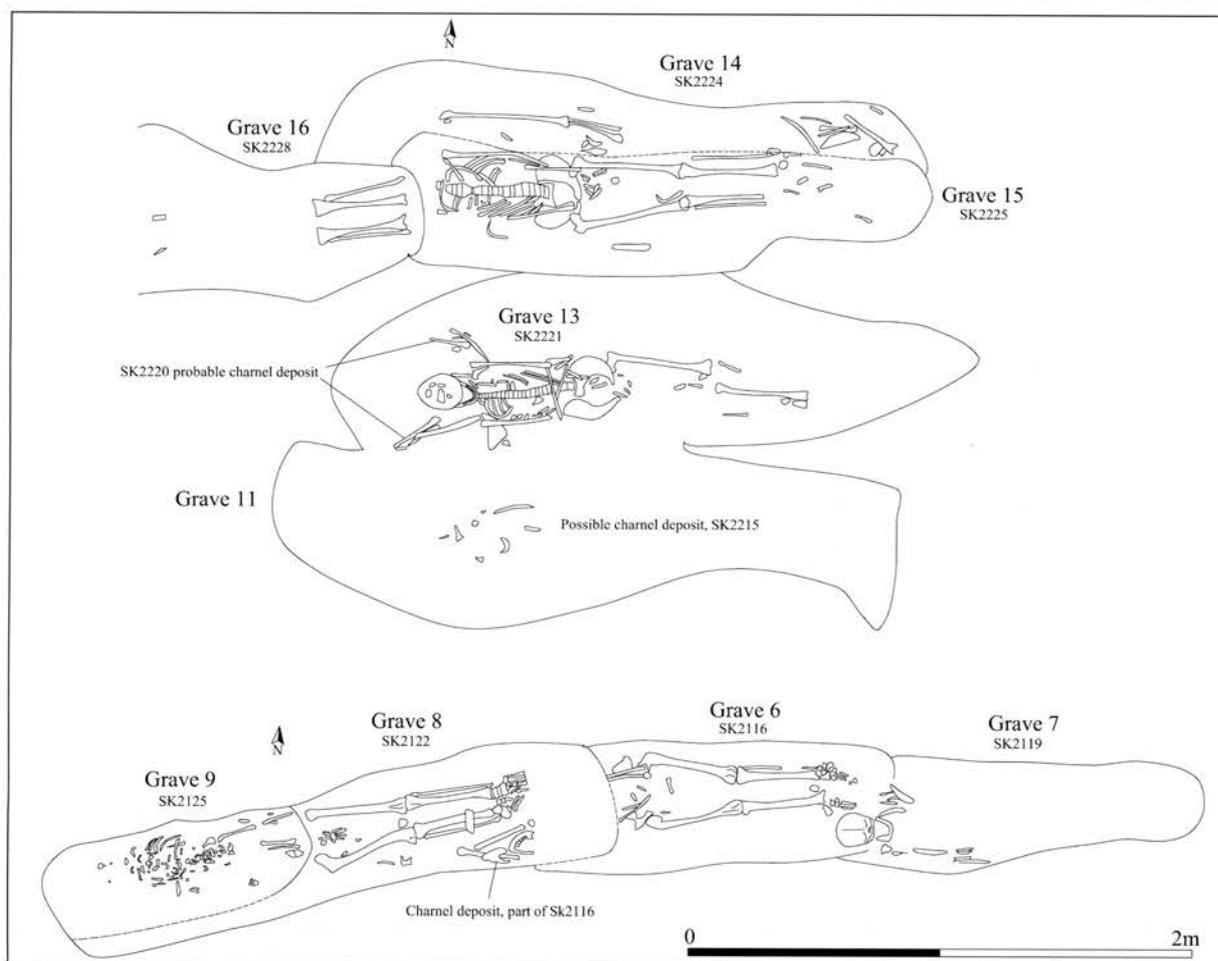


Figure 8. Plans of intercutting graves.



Figure 9. Sk2125 and Sk2122, grave 9 cutting grave 8.



Figure 10. Charnel deposition of parts of Sk2116 in grave 8.

though it is possible that the human bone came from a later cut (the putative grave 12) into the head of this grave. The small amount and fragmented condition of Sk2215 in grave 11 and of Sk2113 in grave 5 may indicate that these were charnel deposits in otherwise empty graves, though it is also possible that truncation and disturbance account for the absence of the rest of the skeletons and the fragmentary nature of what remains.

In most cases, however, skeletons disturbed by later burials were severely truncated and the disturbed bone does not appear to have been placed within the new grave (eg Sk2122, Sk2224). The incompleteness of skeletons in the northwestern part of the cemetery may also be partly due to truncation by later burials (though rooting and burrowing have also been major factors in this area), and there is no evidence to suggest the redeposition of the disturbed elements anywhere close to the remaining skeletal remains. It is possible that the 'missing bone' from the inhumations was disposed of outside of the site boundaries, or in the new graves, but has subsequently removed by ploughing.

The three Sk2249 skulls and other human remains in the base of Phase 5 pit F2205 represent the redeposition, at a much later date, of human remains from disturbed/obliterated graves.

Grave goods and personal adornment

The only definite grave goods in the cemetery area were a refrozen puddle of lead and iron nail inside the skull of Sk2280, and a copper alloy coin of Tasciovanus (Crummy, this report) inside the skull of Sk2293. The positions of these finds suggest that they were placed on eyelids or in mouths. Sk2255, in outlying grave 20, wore a copper alloy bracelet on her right wrist (Fig. 11).

A finger ring and two coins found within L2260 may originally have been deposited in graves, but it is also possible that they were chance losses. Pottery

and animal bone were found throughout L2260 as well as in several graves, as were smaller quantities of slag, oyster shells and struck flint; these are best interpreted as background finds, present across the site.

The absence of both dress fittings and coffin nails suggests the use of shrouds.

Phase 3 field ditches

Contemporary with the cemetery was a series of ditches (Fig. 4). One of these ditches, F2367, was the re-cut of an earlier ditch (F2369), no other clear evidence for activity prior to the mid 4th to early 5th century was identified in this part of the site, though some stratigraphically earlier ditches could be dated only as Roman. Animal bone in the field ditches consisted mainly of cattle and sheep/goat remains; pig and horse were also present in several, and other species such as domestic fowl in some of them (Phillips in Nicholson 2004). The largest animal bone assemblage came from ditch F2367, from which a sheet lead offcut, an iron fitting which may have been part of a lock, and a large quantity of iron smithing slag was also recovered. The slag is not likely to be in primary deposition context (Cowgill, this report) and there is no evidence to suggest metal working on site. Pottery of 4th to 5th century date (mainly Romano-British shell-tempered ware and Lower Nene Valley colour-coated ware) was recovered from most of these ditches, though residual samian was present in F2276 and F2303 (Peachey in Nicholson 2004). A complete Hod Hill brooch was recovered from F2303. Other finds from the field ditches included nails and loom-weights.

Post-Roman features

Phase 5 pit F2205, mentioned above as having destroyed graves in the southern part of the Phase 3 cemetery, was one of four large pits dug during the 10th to 12th centuries. The other three (F2156, F2066

and F2034) were located to the southeast of F2205, and were associated with smaller intercutting pits (Figs. 3 and 4). Among the finds from pit F2066 were three iron spikes which would have been used in fibre (probably wool) processing. All of the large pits contained abraded pottery and animal bone. Residual Roman pottery and glass were recovered from F2156. Deposits within the pits included layers of ashy or apparently organic deposits; an environmental sample from such a deposit in pit F2156 comprised burnt domestic waste, including winnowed cereal grain (Fryer, in Nicholson 2004).

Phases 4 (5th to 7th century) and 6 (12th to 14th century) were each accounted for by very sparse small pits with no obvious significance or function.

The Finds

Struck flint

Tom McDonald

A small quantity of residual struck flint, including a later Mesolithic tranchet axe (reused as a blade core), Neolithic blades, and a Bronze Age button scraper was recovered from excavated features and L2260.

Pottery

Andrew Peachey

The Romano-British pottery assemblage from Watersmeet comprised 2494 sherds (33 384g), of which 505 sherds (4755g) was residual in later contexts. There are also 460 sherds (4907g) of poorly preserved post-Roman pottery comprising Saxon, Saxo-Norman, and medieval pottery (no later than the 13th century). Full consideration and quantification of all the pottery groups, including detailed form comparisons, is included in the Archive Report.

The early Roman (late 1st to mid 2nd century) assemblage from Watersmeet is too small to properly assess the nature of activity or the impact of Godmanchester on the area. There are well preserved small groups of early Roman pottery from the ditches of the Phase 1 enclosure. During this period supply was principally limited to products from the surrounding region including the Cambridgeshire kilns of Cherry Hinton (oxidised fine ware), Godmanchester, Horningsea and the Lower Nene Valley, as well as West Stow in Suffolk (cream ware and possibly mica dusted ware). The presence of the 'Hofheim' flagons suggests a relatively high status and further confirms the link between the Verulamium pottery industry and the Godmanchester kilns with vessels from both centres occurring together in similar forms. Absence of samian ware is conspicuous, while the limiting of pottery from the Lower Nene Valley to grey slipped and parchment wares is indicative of the early date. The coarse wares in the early Romano-British assemblage were, with the exception of the Horningsea wares, probably all used as cooking pots, judging

by the high levels of soot present. The occurrence of Horningsea reduced ware storage jars is to be expected in this region with forms corresponding to existing typologies (Evans 1991, fig. 2.9 and 3.10–11).

Well preserved groups of very late Roman (mid/late 4th to early 5th century) pottery were recovered from the Phase 5 ditches which enclosed the cemetery, and from field ditches in the east of the site, as well as from Phase 2 ditch F2132 (L2133). These pottery groups are dominated by jar and cooking pot forms in shell tempered and coarse Romanising grey wares. The Romanising grey wares were probably produced very locally for purely utilitarian purposes. This appears unusual given the presence of the Godmanchester kilns and may indicate that these had either ceased production or that by this period their output was only sufficient to cater for the immediate town. Alternatively this may be further evidence of the skewed distribution of Godmanchester wares. Products comparable to those from The Parks comprise an exceptionally small percentage of the assemblage with reduced ware, white slipped ware, and black burnished type ware products counting for only 1.48% by sherd count (1.57% by weight) of the Romano-British pottery. The main parallels come from sites south of Godmanchester (Evans 2003, 61). The main suppliers of pottery to Watersmeet appear to have been the Harrold kilns, Bedfordshire and Lower Nene Valley kilns.

Consumption of Harrold products appears to be mainly limited to triangular rim shell-tempered jars (Brown 1994, 74) alongside possible local production of shell-tempered ledge rim jars although the fabrics may be indistinguishable. The pottery assemblage from London Road, Godmanchester (Hancocks 2003) contained only c.5% shell tempered ware, hence there may be a distinct difference in pottery supply to sites north and south of Godmanchester, influenced by The Parks kilns close to the town and the Harrold kilns further to the north. The northern influence may also include unknown closer kilns producing shell-tempered ware in the Godmanchester hinterland and the Lower Nene Valley. A highly burnished, reduced ware jar with a cupped rim from the Much Hadham kilns is highly suggestive of this, as this type of product would not have been easily able to compete in the market if local products still dominated. This type of vessel occurs more commonly on sites such as Baldock (Rigby 1986, type 452).

Fine wares are dominated by colour-coated products from the Lower Nene Valley, principally flanged bowls, small jars and wide mouthed jars, alongside lids, beakers and dishes. The flanged bowls comprise Perrin's (1999) types 222, 258, 259 and 261. The jar forms conform to Perrin's (1999) range of wide-mouthed jars or bowls (types 280–282) and have a tendency to be over fired giving the fabric a pinkish tinge and the colour coat a metallic lustre. This slightly poorer standard of manufacture is widely associated with 4th century production at the Lower Nene Valley kilns, and the production of these forms is considered to continue until the very end of the

industry in the first quarter of the 5th century (Howe *et al* 1981, 8–10). The small jars are mainly represented by small rim sherds, and appear to have curved rims. The notable exception to this is a small jar in F2303 (L2304) with a sharply everted rim and a trace of painted decoration on a cordon. This vessel is similar to the undecorated type 92 (Howe *et al* 1981) but with a more sharply pointed rim, and may be based on this form type. Body sherds of Lower Nene Valley colour-coated ware with white painted decoration also occur in F2303 (L2304) and F2367 (L2368), and the style appears to be confined to scroll patterns bordered with parallel lines of dots. The composition of the Lower Nene Valley fine ware supplemented by the high quality Much Hadham reduced ware forms and sparse Oxfordshire red colour-coated forms (including rosette stamped bowls) ensures that all functions of domestic 'table ware' are catered for, including large jars that could be displayed in 'open' areas of a property. Whereas the range of coarse ware forms is tightly focused on cooking pots that are consistently sized (diameter 14–22 cm) and undecorated for utilitarian use in cooking or 'service' areas only. Well used mortaria with highly worn trituration grits were also present including body sherds of Lower Nene Valley white ware and Oxfordshire red-slipped ware mortaria. The only form that could be assigned was a vessel in F2367 (L2368) in Mancetter-Hartshill white-slipped ware that matches a vessel found at Orton Hall Farm (Hartley 1960, type M183).

The late Roman assemblage from Watersmeet appears to be a high quality domestic assemblage with two purposes. The first is focused on food preparation attested by the high proportion of cooking pots, and the second on relatively high status domestic activity, attested by the colour-coated table wares, accompanied by high quality colour-coated or burnished jars. This dual focus may indicate that this pottery was utilised in a villa (Whitehills villa: Davison and Rudd) or similar establishment where the preparation and consumption of food were segregated. The late Roman assemblage was probably deposited as rubbish from such an establishment and does not appear to be associated with deliberate deposition in the cemetery.

Small finds and bulk metalwork

Nina Crummy

The objects are catalogued in three groups: coins, grave deposits, and general site finds. The latter are listed by material and within material by site phase.

All the coins are late Roman apart from an Iron Age copper alloy unit of Tasciovanus inside the skull of a juvenile (Sk2293). This coin would have been originally deposited within the mouth of the dead child or on one of the eyelids. The obverse shows a bearded head, the reverse is a horse to left above VIR. The coin is worn, but not excessively so considering its age at the time of deposition. There is good evidence that in many cases coins deposited in the graves of children were deliberately selected for their imagery, which in this case could be considered par-

ticularly apt (see Discussion below). The plain penannular armlet found on the right wrist of the elderly female Sk2253 cannot be closely dated but is a typical late Roman form. The nail and lead fragment found within the skull of the young adult male Sk2280 are less easily identifiable as grave goods, but the good state of preservation of the nail suggests deliberate selection and the use of two different metals matches the inclusion of a wide range of materials, particularly iron and white metal, in graves at Colchester and St Albans (Crummy *et al* 1993, 41, 137, 141; Anthony 1968).

Two Hod Hill brooches among the general site finds suggest an early Roman military presence in the area. One of the brooches is complete and came from the basal fill of a Phase 3 field ditch (F2303); both condition and context may point to this being a selective placement. The only items stratified in an early Roman context are a nail and a wool-comb tooth or flax heckle from Phase 1 pit/ditch terminus F2127. Though the majority of toothed fibre-processing combs from Britain have been interpreted as used for wool, the close association of this example with a reliable source of water may link it to linen manufacture, as flax needs to be retted in ponds, ditches or running streams before it can be heckled (Manning 1985, 33–4; Bitenc 2002; Walton Rogers 1997, 1725). The recovery of similar spikes from 10th to 12th century contexts (see below) demonstrates the suitability of the site for this craft. A fragment of a fired-clay slab from the fill of ditch F2241 may be part of a triangular loom-weight, used on a warp-weighted loom, but the piece has unusual characteristics and identification is not certain.

Items from Phase 3 contexts include two finger rings of characteristically late form. Metal working, again an activity that requires a supply of water, is evidenced by at least two punches. Though the metal on which these punches were used cannot be positively identified, offcuts of sheet lead attest to the manufacture of lead items close by. Sheet lead was used for lead coffins and coffin-liners, as well as for tanks and water pipes, for example. Phase 3 features also produced small fragments of quern stone, one of Millstone grit and the rest of Mayen lava. The latter were very weathered and abraded and may be residual, but the gritstone fragment is probably late Roman.

The fills of two late Roman features contain objects likely to be of 5th century or later date. Ditch terminus F2217 contained a small tanged knife with straight edge and slightly curved back, a form as likely to be Anglo-Saxon as Roman, and ditch F2276 contained fragments of one or two annular loomweights. The latter occur frequently on early, middle and late Saxon occupation sites, but not in the Roman period.

Phase 5 pit F2066 produced iron spikes from fibre-processing, and one also came from unphased pit F2373. Other items typical of the medieval period are two nails with narrow rectangular heads from Phase 5 pit F2156 and from a medieval sinkage layer in Phase 3 pit F2386, and a candle holder of cupped stick

type from the subsoil (Egan 1998, 142–3; Ottaway and Rogers 2002, 2856). Several medieval features produced small fragments of Mayen lava querns, which were imported not only during the Roman period but also from the middle Saxon period to the 16th or 17th century. The condition of these pieces suggests they could be residual Roman, but, as there is little residual material in general, they are more likely to be medieval.

Catalogue

Coins

- SF 5. (L2260). Disturbed deposit. Phase 3. Fragment of a copper-alloy corroded and illegible late 3rd or 4th century coin. Diameter 15mm; weight 1.17g (unconserved).
- SF 8. (L2260). Disturbed deposit. Phase 3. Copper-alloy coin of Valentinian I; reverse: *gloria Romanorum* (8). Reference: CK 1017. Mint of Aquileia; AD 367–75. Diameter 17.5mm; weight 2.04g (unconserved).
- SF 10. (L2277) F2276. Ditch fill. Phase 3. Fragment of a copper-alloy corroded and illegible 4th century coin. Diameter 19mm; weight 1.26g (unconserved).
- SF 12. (L2277) F2276. Ditch fill. Phase 3. Copper-alloy copy of coin of Magnentius/Decentius; reverse: two Victories supporting shield inscribed VOT V MULT X, shield not supported on column. Reference: as CK 58. AD 351–60. Diameter 14mm; weight 1.4g (unconserved).
- SF 1. (L2082) F2081. Pit fill. Unphased. Copper-alloy coin of Magnentius; reverse: *gloria Romanorum* (3). Reference: CK 215. Mint of Lyon; AD 350–1. Diameter 21.5mm; weight 4.19g (unconserved).
- See also coin deposited with Sk2293.

Grave goods

- Fig. 11.1. SF 7. (L2254) F2253/Grave 20. On right wrist of elderly female adult. Phase 3. Copper-alloy penannular armlet, with plain elliptical-section hoop tapering to flat pointed terminals. Maximum dimensions: diameter 54mm, height 5.5mm, thickness 4mm.
- Fig. 11.2. (L2260). Found inside skull of Sk2280 (young male adult); perhaps originally deposited in mouth or on eyelid. Phase 3. Refrozen puddle of lead. Maximum dimensions 39 by 25mm.
- Fig. 11.3. (L2260). Found inside skull of Sk2280 (young male adult); perhaps originally deposited in mouth or on eyelid. Phase 3. Iron nail with small flat rectangular head, similar to Manning's Type 5 which consists of a shank with no distinct head (1985, 135).
- SF 18. (L2260). Found inside skull of Sk2293 (juvenile); originally deposited either inside mouth or on eyelid. Phase 3. Copper-alloy unit of Tasciovanus; obverse: head to right, corrosion obscures details; reverse: horse to left, VIR below horse. Reference: as Hobbs 1996, 1706–8. Diameter 16mm; weight 2.49g (unconserved).

General site finds

- Fig. 11.4. SF 4. (L2194) F2193. Pit fill. Phase 3. Fragment of a copper-alloy Hod Hill brooch. Most of the head and the lower part of the foot are missing, as well as one of the knobbed lugs set at the centre of the bow. The bow has four vertical knurled mouldings; the foot is plain.

Length 34.5mm.

- Fig. 11.5. SF 15. (L2305) F2303. Basal ditch fill. Phase 3. Complete copper-alloy Hod Hill brooch, with traces of tinning on the head, bow and foot. A moulded and knobbed lug is set on either side of the top of the bow, which has marginal mouldings and a raised central panel showing a knurled line between mouldings. The whole length of the foot is decorated with transverse mouldings and there is a prominent terminal knob. The catchplate is solid. Length 47mm.
- Fig. 11.6. SF 17. (L2260). Disturbed deposit. Phase 3. Penannular finger-ring with expanded terminals and hoop decorated with vertical grooves. A decorative bezel may originally have been attached to the terminals to form a continuous hoop. Internal diameter 18mm, height of main part of hoop 2mm, thickness 1mm. A finger-ring of similar form with one terminal soldered on top of the other, and with no sign of an attached bezel, came from the fill of a late Roman grave at Colchester (Crummy 1983, fig. 50, 1765).
- Fig. 11.7. (L2001). Subsoil. Penannular finger-ring with overlapping pointed terminals and lozenge-shaped section. Internal diameter 16.5mm, maximum height 2.5mm, maximum thickness 2mm.
- (L2370) F2369. Ditch fill. Phase 2. Corroded fragment, in two pieces, of a copper-alloy tapering strip. Length 23mm, maximum width 8mm.
- SF 11. (L2277) F2276. Ditch fill. Phase 3. Refrozen puddle of lead. Maximum dimensions 96 by 24mm.
- Fig. 11.8. (L2362) F2359. Ditch fill. Phase 3. Offcut of thick sheet lead; one end is folded back on itself. The face on the opposite side has a pair of lightly scored guidelines running into the one (original) corner. Maximum dimensions 31 by 19mm.
- Fig. 11.9. (L2368) F2367. Ditch fill. Phase 3. Two offcuts of thin sheet lead. One has an irregular original edge and a clipped edge; maximum dimensions 77 by 35mm. The other has an original edge, and a cut edge. The two sides have been folded towards the centre, obscuring details of the other edges; maximum dimensions 56 by 20.5mm.
- Fig. 11.10. (L2150) F2127. Basal pit fill. Phase 1. a) Iron square-section spike, probably a tooth from a wool comb (Manning 1985, 33–4). Length 70mm. b) Not illustrated. Iron nail with round flat head and clenched shank. Length 50mm (bent).
- Fig. 11.11. (L2260). Disturbed deposit. Phase 3. a) Iron punch. Length 67mm. b) Not illustrated. Narrow ?punch. Length (bent) 54mm. c) Not illustrated. Two iron nails, each with damaged flat round head. Lengths 34mm, 26mm (bent).
- (L2254) F2253/Grave 20. Phase 3. Tapering iron strip fragment. Length 42mm, maximum width 9mm.
- (L2277) F2276. Ditch fill. Phase 3. Iron nail shank fragment. Length 34mm.
- (L2304) F2303. Ditch fill. Phase 3. Small iron hook of rectangular section. Length 23.5mm.
- (L2366) F2365. Ditch fill. Phase 3. Curved iron rectangular-section strip fragment with one rounded terminal surviving. Length 90mm, width 8mm, thickness 5mm.
- (L2368) F2367. Ditch fill. Phase 3. a) Fragment of an iron fitting with one recessed face; possibly part of a lock. Maximum dimensions 48 by 20 by 13mm. b) Iron nail with round flat head. Length 35mm.
- Fig. 11.12. (L2133) F2132. Ditch fill. Phase 3. Iron square-section punch with damaged tip. Length 50mm.
- (L2218) F2217. Fill of ditch terminus. Phase 3. Small iron

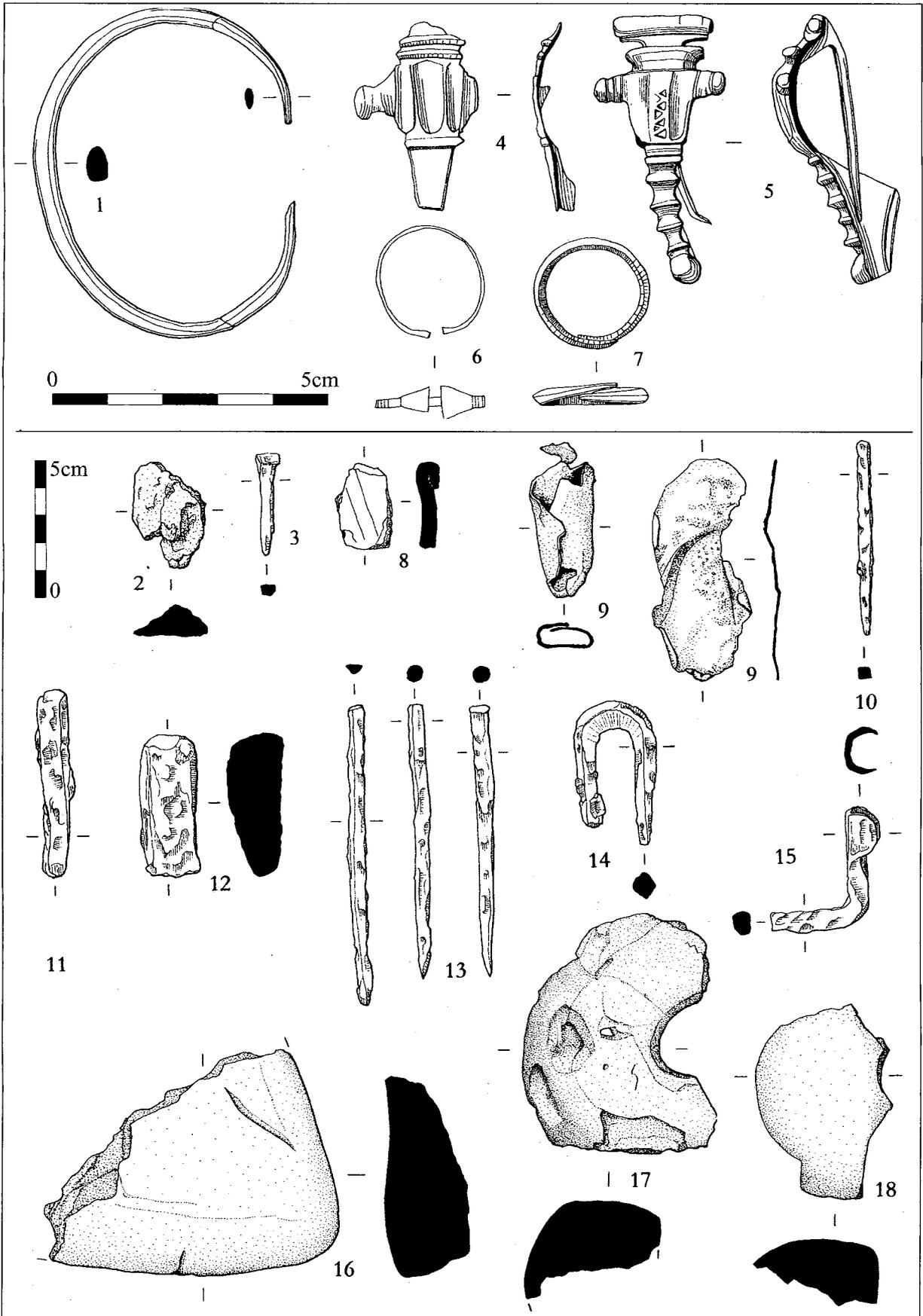


Figure 11. Metal and fired clay objects.

- tanged knife; the blade is narrow and has a straight edge and slightly curved back. Length 79.5mm, maximum width 11mm.
- (L2338) F2337. Pit fill. Unphased. Iron rectangular-section shank with tapering and slightly bent ends; possibly a punch or awl. Length 137mm. Probably post-Roman.
- (L2021) F2020. Pit fill. Unphased. Iron shank (untapered) with one bent end. Length 90mm.
- Fig. 11.13 (L2067) F2066. Upper pit fill. Phase 5. a) Three round-section spikes from fibre processing. Lengths 99, 98, and 110mm. b) Not illustrated. Two iron shank fragments, probably also from fibre processing spikes. Length 87mm. c) Not illustrated. Iron nail with round flat head. Length 60mm.
- (L2157) F2156. Upper pit fill. Phase 5. Iron T-shaped nail with small rectangular head no wider than the shank. Length 84mm.
- (L2388) F2386. Medieval sinkage in Phase 3 pit. Iron T-shaped nail with narrow rectangular head only slightly wider than the shank. Length (bent) 19mm.
- (L2080) F2079. Pit fill. Unphased; medieval. Iron nail with round flat head. Length (bent) 38mm.
- (L2374) F2373. Amorphous pit. Unphased; medieval or later. Fragment of an iron round-section spike fibre processing. Length 53mm.
- (L2384) F2373. Amorphous pit. Unphased; medieval or later. a) Iron nail fragment with part of the round flat head surviving. Length 22mm. b) Iron nail shank fragment. Length 49mm.
- (L2358) F2357. Ditch fill. Unphased. Iron nail with round flat head. Length 31mm.
- Fig. 11.14–15. (L2001). Subsoil. a) Iron joiner's dog. Length 52mm, maximum width 28mm. b) Socketed candleholder with the tang bent back at right angles to the socket, which consists of two rounded flanges. Length (bent) 42mm, internal diameter of socket 11mm.
- (L2001). Subsoil. Two iron nails with round flat head and a shank fragment. Lengths 64, 43, and 46mm.
- Fig. 11.16. (L2242) F2241. Ditch fill. Phase 3. Corner fragment from a fired clay slab, probably from a triangular loomweight, but with three unusual characteristics. It is fairly thin, it has one straight and one slightly curved side, and the sides and one surface have been wiped smooth. Despite the latter, the sides are not flat. The other surface, the underside when the weight was drying, is more typical of loomweights and has irregular hollows from lying on a rough surface. Some of the hollows have been made by vegetation. The fabric contains no grit, pebbles, or other tempering and is hard-fired to grey-buff. Maximum height 94mm, maximum width 115mm.
- Fig. 11.17. (L2277) F2276. Ditch fill. Phase 3. Fragment of an annular loomweight in a fabric containing only one visible piece of flint grit and fired to buff with patches of pale grey and a streak of dark orange. The core is partly reduced. Diameter approximately 120mm.
- Fig. 11.18. (L2277) F2276. Ditch fill. Phase 3. Fragment of an annular loomweight as above, but fired externally to patchy brown and black. Diameter approximately 100–120mm.
- SF 13. (2304) F2303. Ditch fill. Phase 3. Seven weathered small fragments and many tiny pieces from a Mayen lava quernstone. No original surfaces remain. Total weight 202g.
- (L2260). Cemetery subsoil. Phase 3. Fragment of Millstone grit quernstone. The grinding surface has worn smooth. Thickness 48mm. Weight 129g.
- (L2260). Cemetery subsoil. Phase 3. Small fragment of weathered Mayen lava quernstone. No original surfaces remain. Weight 15g.
- (L2039) F2038. Pit fill. Phase 5. Small fragment (in seven pieces) from the lowerstone of a Mayen lava quernstone; the grinding surface has worn smooth. Thickness 14mm. Weight 70g.
- (L2157) F2156. Pit fill. Amorphous pit Phase 3. Fragment from the rim of a Mayen lava quernstone with traces of vertical tooling on the edge. Weight 71g.
- (L2039) F2156. Pit fill. Amorphous pit Phase 3. Small fragment of weathered Mayen lava quernstone. No original surfaces remain. Weight 13g.
- (L2206) F2205. Pit fill. Amorphous pit. Phase 3. Small fragment of weathered Mayen lava quernstone. No original surfaces remain. Weight 10g.
- (L2374) F2373. Amorphous pit. Unphased; medieval or later. Five weathered small fragments and many tiny pieces from a Mayen lava quernstone. Two of the pieces retain part of the grinding surface, now worn smooth. Total weight 93g.

Slag

Jane Cowgill

A total of 5179g (81 pieces) of slag and associated materials were submitted for recording. The slag formed a disparate group, probably the by-product of numerous iron-smiths. Both coal and charcoal were used as fuel. As smithing using coal and charcoal require different techniques (H Cole, pers comm), it is likely that the two were used by different smiths. Some of the slag is clearly abraded (that in F2250, F2337, F2339 and F2367), indicating that it has either been redeposited a number of times and/or suffered from weathering on the ground surface. This latter group will be a minimum number because much of the surface of some pieces is missing (it also accounts for a high percentage recorded just as slag and not given a more specific identification). Only two pieces (both from L2260) were in a fresh condition; one was a proto hearth bottom, the other was a piece of smithing slag lump.

Roman glass

HEM Cool

Two vessels can be identified as to form. No. 1 is most likely to be from a ribbed conical jug (Price and Cottam 1998, 152–7), and can thus be dated to the later 1st to mid 2nd century. No. 4 is a conical beaker with a fire-rounded rim and would have been in use during the later 4th and into the 5th century (Price and Cottam 1998, 129). The other fragments can only be dated broadly depending on the colour of the glass. The colourless fragment no. 3 would have been in use during the 2nd and 3rd centuries, and the bubbly light green fragments (nos. 5 and 6) came from 4th to 5th century vessels. Blue/green glass of the type used for no. 2 was in used from the 1st to 3rd centuries, but the pontil scar on the base would suggest it was of 2nd to 3rd century date because the use of the pontil iron does not appear to be a feature of 1st century glass-making practice.

Catalogue

Light yellow/brown

1. F2024, L2025: pit fill. Body fragment; straight sided with vertical ribs. Dimensions 24 x 19mm, wall thickness 2mm. This is most likely to be possibly from a conical jug of Is

Blue/green

2. F2156, L2157: upper pit fill. Base fragment; central part of thickened concave base with pontil scar. Dimensions 30 x 24mm.

Colourless

3. F2303, L2304: ditch fill. Body fragment.

Light bubbly green

4. L2260: disturbed deposit. Conical beaker; rim fragment. Out-turned rim, edge fire-rounded; straight side sloping in. Rim diameter 70mm, wall thickness 1mm, present height 15mm. EVE 0.2.
5. F2303, L2304: ditch fill. Body fragment.
6. L2260: disturbed deposit. Body fragment.

Human Bone

Carina Phillips

The excavated cemetery contained the remains of 72 individuals; however analysis of the human remains considered only 69 of these. The small amount of bone in graves 5 and 11 that was too fragmented for analysis and the bones from grave 16 were recorded on site, but lost before processing and analysis was possible. It should also be noted that L2260 and pits cutting it contained a large amount of highly disturbed and fragmented human bone that could not be assigned to a particular skeleton; this was excluded from the human bone analysis. Disarticulated human bone was also present in Phase 5 pit F2205. The only bone from this pit to be included in the analysis was three crania and two mandibles (coming from three individuals). This report thus includes only those skeletons which were complete enough for productive analysis; it is acknowledged that these do not represent the cemetery in its entirety.

Recording used the 'Standards' pro-formas (in Buikstra and Ubelaker 1994). Recording methods and assessments followed this reference unless otherwise stated.

Each skeleton was examined to determine completeness and preservation and, when possible, to assess age, sex, and stature. Age estimations for adult skeletons were based on the pelvic features of the auricular surface and pubic symphysis and on 'cranial suture' closure. Dental wear ages for adults were considered following Miles (1963). Immature remains were assigned ages based on dental eruption (Buikstra and Ubelaker 1994), bone fusion (Buikstra and Ubelaker 1994) and long bone length (Ubelaker 1999; Scheuer *et al* 1980). When it was not possible to closely assign age the remains were classed as infant, child, child/adolescent, adolescent and adult (Table 3). For ease of analysis and discussion all ages were

grouped as presented in Table 3 (age groups follow Scheuer and Black 2000; Buikstra and Ubelaker 1994; Ferembach *et al* 1980).

Sex estimations for adult remains were considered using the sexual traits of the pelvis and cranium (for details see Buikstra and Ubelaker 1994; Ferembach *et al* 1980). It was not possible to estimate sex for immature remains.

Table 3. Age group definitions.

Age group	Definition
Foetal	Before birth
Neonate	Birth to the end of the first month
Infant	Birth to the end of the first year
Young Child	Early childhood: to the end of the fifth year
Older Child	Late childhood: c.6yrs to puberty
Adolescent	Puberty to young adulthood.
Child/Adolescent	Immature unknown age; older than 1 yr
Young Adult	20-34 years
Middle Adult	35-49 years
Older Adult	50+ years
Adult	Adult unknown age

Measurements were taken when possible and have been converted to stature estimates for the adult remains following Trotter (1970). Development, eruption and wear were recorded for all dentition. Dental caries and presence of calculus were also recorded when present. All other skeletal pathologies were recorded, as was the presence of non-metric traits. All data is available in the site archive.

Preservation and completeness

Preservation and completeness of the Watersmeet skeletons are presented in Table 4. 48% of the skeletons were less than 25% complete. Poor preservation affected 51% of the skeletons. A large proportion of the incomplete and poorly preserved bone came from L2260. The large number of poorly preserved and largely incomplete skeletons (ie <25%) will restrict analysis.

Age and sex

It was possible to estimate the ages of 61% of the skeletons, using the features described above. The remaining 39% were classed into broad age groups ie child/adolescent, adult for analysis.

Adults accounted for 78% (54 individuals). 56% of the adults (30 individuals) could be aged into tighter age groups. 'Young', 'middle' and 'older adults' were present in similar numbers, 'middle adults' were very slightly more frequent accounting for 20% of all adults, as opposed to 17% (older adults) and 15% (young adults).

The 15 immature individuals ranged from neonatal to adolescent. Neonates and infants aged less than 1 year formed a third of the immature assemblage. 26% of the immature assemblage consisted of child/

Table 4. Preservation and completeness of Watersmeet skeletons.

Completeness		Preservation					Total	%
		Good		Moderate		Poor		
		1	2	3	4	5		
1	>75%	7	1	0	0	0	8	(12%)
2	50-75%	0	6	4	0	2	12	(17%)
3	50-25%	0	4	3	5	4	16	(23%)
4	<25%	4	0	0	0	29	33	(48%)
Total		11	11	7	5	35	69	
		(16%)	(16%)	(10%)	(7%)	(51%)		

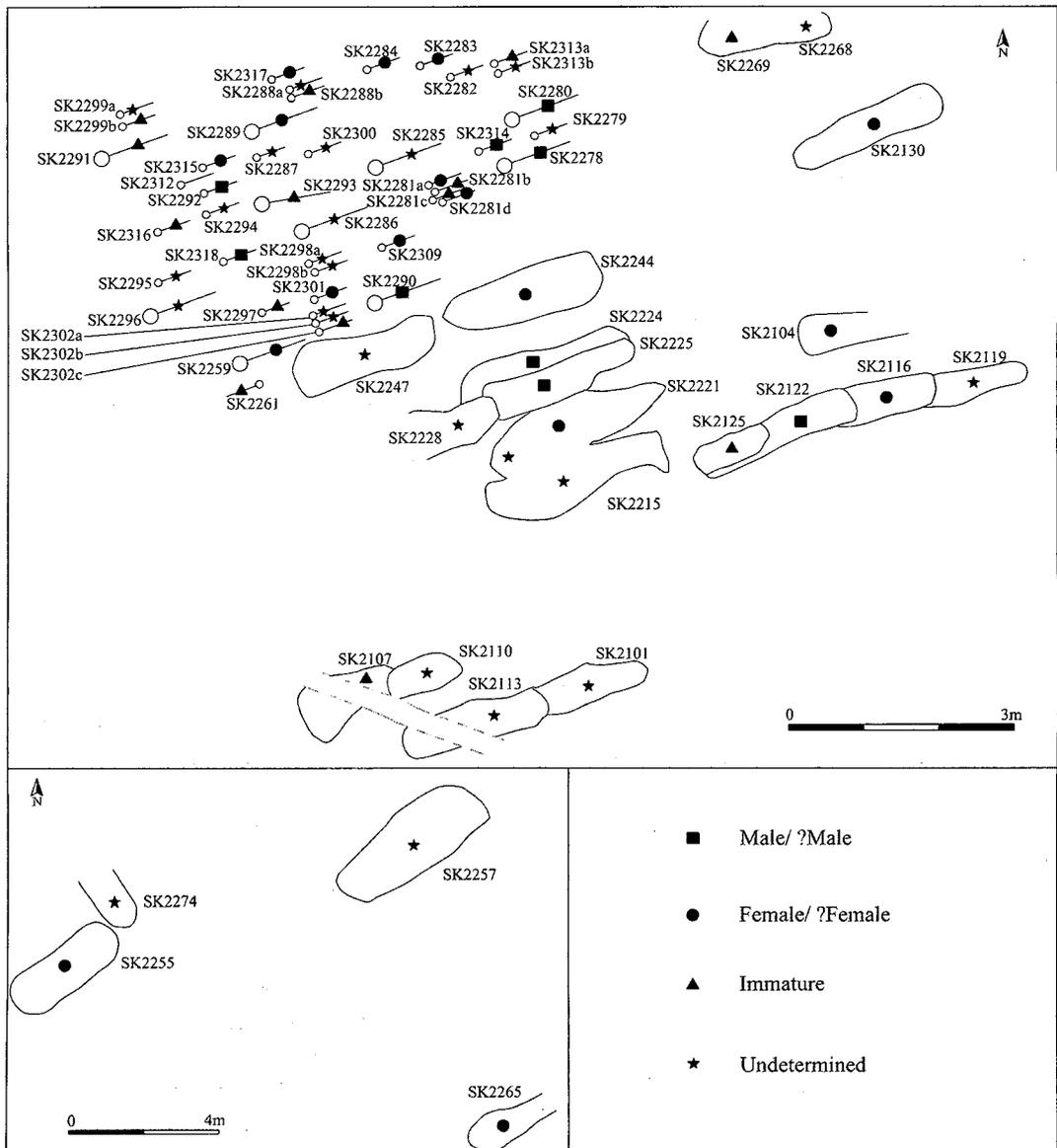


Figure 12. Synthetic plan of cemetery and outlying burials, showing sex of individuals.

	Female	Male	Probable Female	Probable Male	Unknown Sex	Total
Neonate	-	-	-	-	2	2 (3%)
Infant	-	-	-	-	3	3 (4%)
Young Child	-	-	-	-	3	3 (4%)
Older Child	-	-	-	-	1	1 (1%)
Child/Adolescent	-	-	-	-	4	4 (6%)
Adolescent	-	-	-	-	2	2 (3%)
Young Adult	1	2	3	1	1	8 (12%)
Middle Adult	3	2	2	3	1	11 (16%)
Older Adult	2	2	3	1	1	9 (13%)
Mid-Older Adult	1	-	-	-	1	2 (3%)
Adult	2	-	-	-	22	24 (35%)
Total	9 (13%)	6 (9%)	8 (12%)	5 (7%)	41 (59%)	69

Table 5. Age and sex estimations for Watersmeet skeletons.

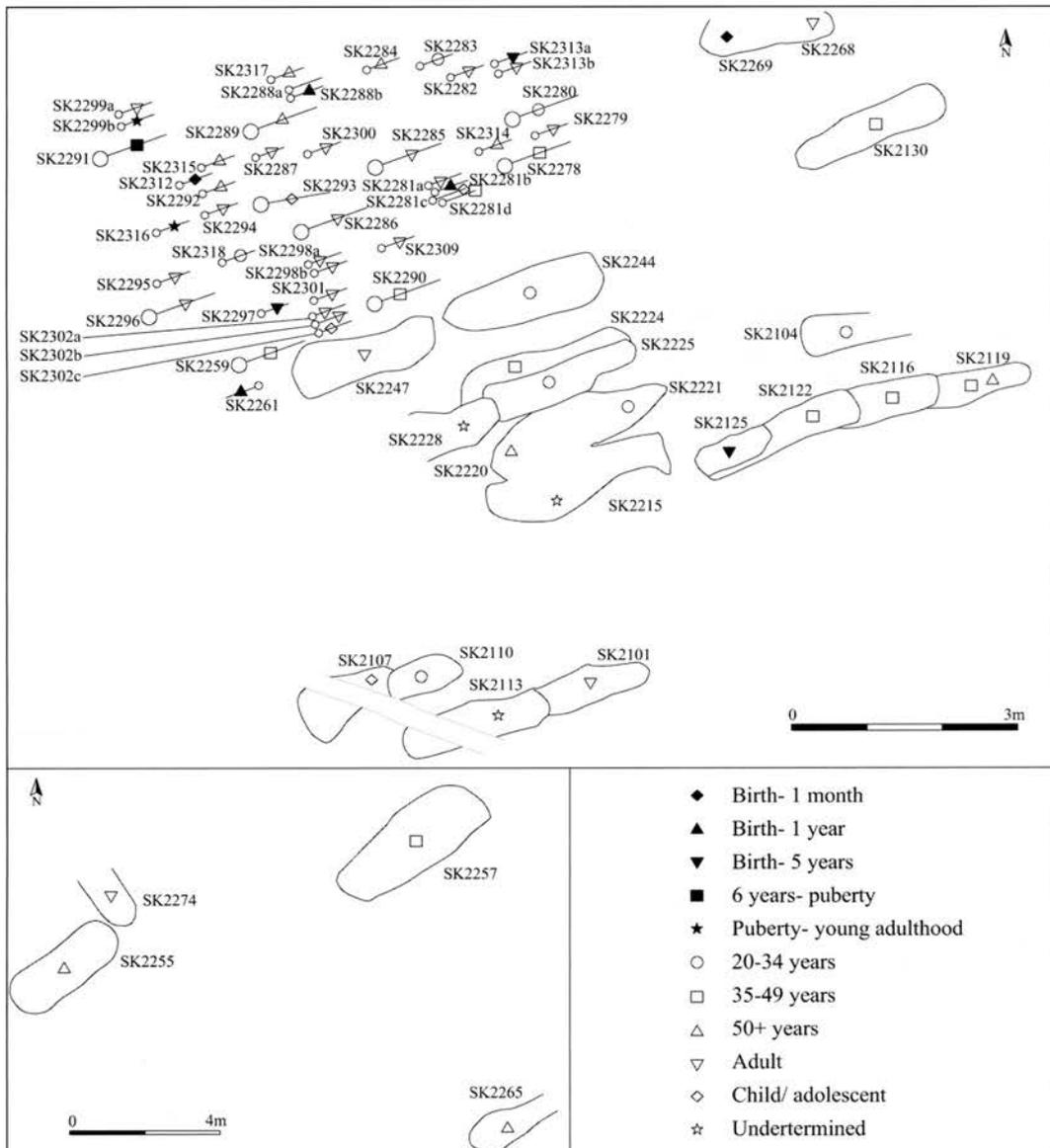


Figure 13. Synthetic plan of cemetery and outlying burials, showing age ranges of individuals.

adolescents; these could not be aged into tighter ranges. 'Children', including both 'young' and 'older children' also formed 26% of the immature assemblage. Only two adolescents were present.

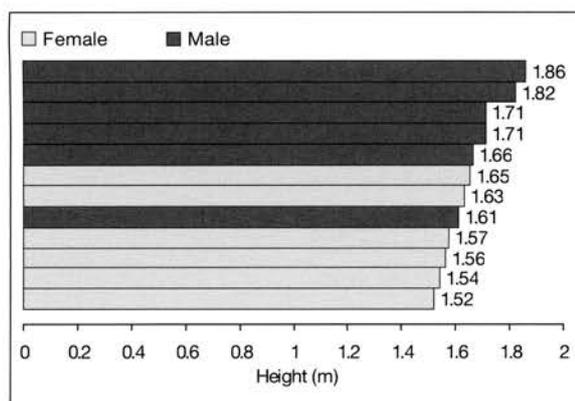
It was possible to estimate sex for 41% of adults. Females were most frequent giving a female-male ratio of 1.5 (calculated with the probable sexes assumed to be correct). The 'young' and 'middle adults' were present in similar numbers for both sexes. More 'older adult' females were present than males (this includes the individual aged as mid-older adult). This cannot be considered as a reflection of the mortality pattern for the population. Due to the sample biases caused by excavation of part of the cemetery distortion of the results is likely, particularly if gender grouping occurred in burial (as is tentatively suggested below, see Discussion). The poor preservation of the assemblage and substantial incompleteness of a large proportion of the assemblage is also likely to have contributed biases.

Stature

An estimation of stature based on the measurements of long bones was possible for twelve skeletons (six male, six female) following the regression formulae by Trotter (1970). Male stature ranges 1.61–1.86m, with a mean of 1.73m; this is close to the mean of modern British males, which is 1.74m (Gardner nd). This is higher than the range and mean given for the Roman period which currently stands at a range of 1.59m–1.78m, with a mean of 1.69m (Roberts and Cox 2003, 142). The Watersmeet data includes two very large male individuals of 1.85m and 1.83m, both falling outside the published Roman height range; these distorted the male mean. The female stature range is 1.52–1.65m, giving a mean of 1.58m, lower than the modern British equivalent of 1.61m (Gardner nd). The Watersmeet females fall within the published Roman stature ranges and have a similar mean (1.59m) (Roberts and Cox 2003, 142).

The results show some small overlap within the heights of the sexes (Fig. 14).

Figure 14. Stature Estimates of Watersmeet skeletons.



The differences in height between the sexes emphasise a normally sexual dimorphic population. Molleson

(1993, 214 in Conheaney 2000) suggests that a lack of sexual dimorphism can reflect a society with poor nutrition, a low male stature reflecting a society with low protein. It thus seems that the Watersmeet population had an adequate diet, though the small size of the sample may have biased the stature means.

Dental health

Only eighteen adult skeletons had teeth and jaws present for examination; 190 teeth were present in total. This number is lower than expected and is probably influenced by the poor survival of the cranium in a majority of the skeletons. Unfortunately a larger number of females than males had teeth present for analysis, inhibiting the comparison of dentition between the sexes.

Overall the dental health was relatively poor. Dental caries have been related to genetic factors, dental hygiene and diet. Dental caries were present on 10 of the 18 individuals examined (56% of the individuals with observable dentition); this is 46 teeth (24%) of the total teeth examined. This percentage is much higher in comparison to other Romano-British sites such as Cirencester at 5.1%, Trentholme Drive at 4.6% and a survey of five Romano-British sites at 13% (Harman and Molleson 1981, in Conheaney 2000). A number of the caries were so large their origin could not be established. Those in which the origin was observable were mainly situated on the molars at the cemento enamel junction and some on the occlusal surface. Studies suggest that before the 17th century in Britain the most frequent site for carious lesions was at the cemento enamel junction (Moore and Corbett 1978, in Mays 2000, 150–151). Abscesses were present in three individuals, both associated with a carious lesion. This is 17% of the total number of individuals with teeth examined, a lot higher than the 1.2% found in the Roman period (Roberts and Manchester 2003, 71). The high frequency of caries and abscesses is likely to be related to biases caused by the poor survival of teeth and crania.

Nine of the 18 individuals had some degree of ante mortem tooth loss; seven of these were in middle and older adults. Three older adults had all or most of their mandibular teeth lost and reabsorbed and caries on all remaining mandibular and maxillary teeth. Due to the age and amount of caries present this is likely to be the result of caries or primary gum disease; however it is not possible to distinguish tooth loss from other causes such as trauma and deliberate removal (Waldron 2005, 65).

Deposits of calculus (mineralised plaque) were present in 11 (61%) of adult individuals whose teeth were examined. These amounts are likely to be an under representation due to the fragile nature of calculus in archaeological material (Hillson 1996). Calculus was present on all teeth of the affected individuals, indicating that poor hygiene was probably a main factor, which is also likely to account for the high frequency of caries.

Table 6. Observable dentition of the Watersmeet skeletons.

Sk no.	Sex	Age	No. of teeth present	Lost post-mortem	Lost ante-mortem	With calculus	With caries	No. of abscesses
2301	Female	Adult	19	2	0	18	0	0
2116	Female	Middle Adult	7	3	5	2	4	0
2130	Female	Middle Adult	16	8	0	9	0	0
2259	Female	Middle Adult	6	2	0	5	1	0
2281	Female	Middle Adult	16	15	3	11	1	1
2255	Female	Old Adult	16	0	0	15	2	0
2265	Female	Old Adult	0	0	2	0	0	0
2284	Female	Old Adult	6	8	15	0	6	1
2289	Female	Old Adult	7	0	16	0	7	0
2317	Female	Old Adult	17	0	10	11	14	0
2221	Female	Young Adult	10	6	0	4	2	0
2283	Female	Young Adult	3	0	6	0	0	0
2290	Male	Middle Adult	18	5	0	0	4	0
2280	Male	Young Adult	14	0	0	9	2	1
2101	Unknown	Adult	7	7	1	2	3	0
2257	Unknown	Middle Adult	4	6	0	0	0	0
2244	Unknown	Young Adult	24	0	0	18	0	0
Total:			190	62	58	104	46	3

Dental hypoplasia

Hypoplasia (termed as a 'stress indicator') is defined as 'deficiencies in the enamel matrix composition' (Roberts and Manchester 2003, 75). It is caused by physiological stress during growth. The overall tooth formation and eruption are little or not affected by physiological stress. The individual exhibiting this at Watersmeet had a dental eruption age of 12–15 years, but long bones of a size expected for an individual aged 10 years. During periods of nutritional stress physical growth is affected before tooth development (Conheaney 2000, 205). It is therefore possible that the small size of this individual is linked to physiological stress causing dental hypoplasia.

Dental attrition

The age assignment based on dental attrition (following Miles 1963) is noted to be approximately 10 years younger than ages based on pelvic and skull characteristics. Due to this and the small number of suitable molars present, ages based on dental wear have not been used in this analysis. The low level of wear suggests that the Watersmeet population were consuming a diet that caused less dental wear than the 'pre-medieval' population used by Miles in forming the ageing data.

Skeletal pathologies

Table 7 illustrates counts of observable joints in the adult assemblage. A total of 54 adult skeletons were recovered, but the most frequent joint represented (the hip) was observable to some degree in only 36 adult individuals. The counts of joint disease and other pathologies cannot therefore give a true representation of the proportion of the population exhibiting pathologies.

Table 7. Individuals from Watersmeet with at least part of the joints observable.

Joint	No of individuals
Shoulder	24
Elbow	28
Wrist	27
Hand	27
Hip	36
Knee	26
Ankle	25
Foot	23

Joint disease

Osteoarthritis (degenerative joint disease) is the most common disorder found in archaeological skeletons, particularly in the spinal column. At Watersmeet too it was the most frequently exhibited pathology. Osteophytes, porosity and eburnation of the bone are traits of osteoarthritis. The disease occurs mainly at the load bearing joints, such as the spine, knees and hip. Its causes are mostly mechanical although it is also an inherent part of the ageing process.

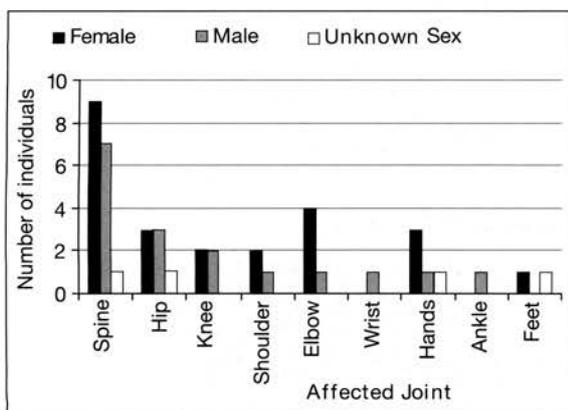
Twenty two adults exhibited osteoarthritis on one or more joints at Watersmeet. It was most commonly found on the vertebrae, but instances were also found on the shoulders, elbows, wrists, hands, hips, knees, ankles and feet. Ten individuals displayed osteoarthritis on only one area of the body, three on two areas, five on three areas, three on four areas and one individual (Sk2255) exhibited osteoarthritis on seven areas of the body. Inter-observer differences have been noted in the traits used to diagnose osteoarthritis (Rogers 2000, 166). To compensate for this Table 8 presents additional counts of osteoarthritis on joints (other than vertebrae) exhibiting both osteophytes and eburnation.

Table 8. Instances of osteoarthritis. (n)=number of joints (other than vertebrae) exhibiting both osteophytes and eburnation.

	Spine	Hip	Knee	Shoulder	Elbow	Wrist	Hands	Ankle	Feet
Young Adult Female	2	1	-	-	-	-	1	-	-
Middle Adult Female	1	-	-	-	1 (1)	-	1 (1)	-	-
Old Adult Female	5	2 (2)	1 (1)	2 (2)	3 (2)	-	1 (1)	-	1
Adult Female	1	-	1	-	-	-	-	-	-
Young Adult Male	2	2 (1)	1	-	1	-	-	-	-
Middle Adult Male	4	1	1	1	-	1 (1)	1	1	-
Old Adult Male	1	-	-	-	-	-	-	-	-
Old Adult	1	-	-	-	-	-	-	-	-
Adult	-	1 (1)	-	-	-	-	1	-	1

Twelve female and nine male skeletons exhibited osteoarthritis (Fig. 15). Analysis of osteoarthritis was restricted by the incompleteness of a large proportion of the assemblage (see above). Osteoarthritis of the spine, elbow, hands and shoulders was more frequent in females. This could be a result of the higher number of females in the assemblage. It could also be due to the presence of more females in old age (see Fig. 16), the age and sex composition tentatively suggests females may have lived longer. More evidence of osteoarthritis would be expected as the body degenerates with age. It is possible that these results indicate differences in occupation between the sexes. Perhaps the females buried at Watersmeet stressed their elbows and hands in an activity that was more commonly carried out by females. However, the use of this as an occupation indicator in such a small assemblage is tentative.

Figure 15. Counts of osteoarthritis by sex.

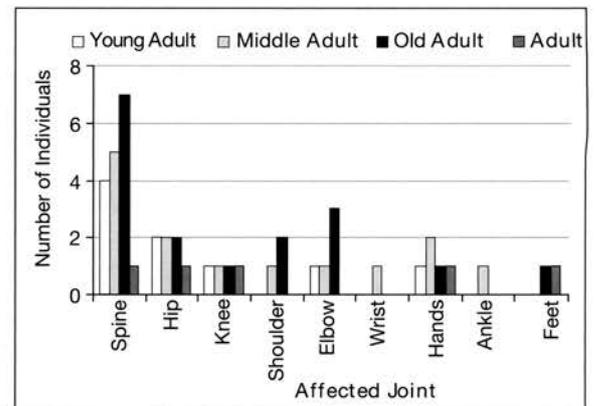


Other spinal conditions

Schmorl's Nodes were observed on the thoracic and lumbar vertebrae in eight individuals. They are associated with vertebral osteoarthritis and the degeneration of the intervertebral discs, occurring when the disc contents exert pressure in the vertebral body surfaces (Roberts and Manchester 2003, 140). These are therefore seen as degenerative, although trauma

is thought to be one of the major causes, due to excessive weight bearing during adolescence or later herniation of the disc and is therefore initially of traumatic origin (Conheeny 2000, 282).

Figure 16. Counts of osteoarthritis by age.



One individual exhibited transitional vertebrae displayed as a lesion between the 5th lumbar and sacrum and the 4th and 3rd lumbar vertebrae (Fig. 17). This is a common anomaly occurring in 3.5% of the population (T Waldron pers comm). This individual represents 1.4% of the analysed Watersmeet population.

Trauma

A fracture of the distal shaft of the right ulna was present in the skeleton of an old adult female (Sk2265). It is a complete fracture, resulting in the formation of callus indicating the fracture took place earlier in life. Non union of the fracture has led to a false joint/pseudoarthrosis (Fig. 18). The non union of this fracture will have been caused by continued movement at the broken surface. These types of fractures are commonly found in the forearm, as is this example.

The skeleton of a middle aged man (Sk2224) had a partial or 'greenstick' fracture on a rib. This type of fracture is where breakage and bending of the bone is combined (White and Folkens 2000, 384). Greenstick

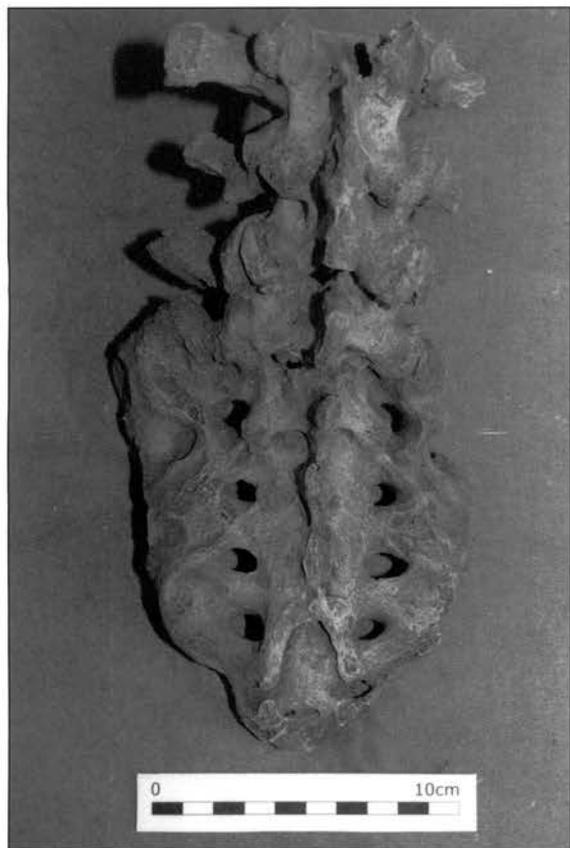


Figure 17. Transitional vertebrae exhibited on 5th lumbar and sacrum and the 4th and 3rd lumbar of Sk2290.



Figure 18. False joint/pseudoarthrosis in the right ulna of Sk2265.

fractures are common in juveniles and on adult ribs (Buikstra and Ubelaker 1994, 119).

A case of *myositis ossificans* was present on a clavicle of a young adult female (Sk2244). This is the formation of bone within the muscle tissue and is usually of traumatic origin (Buikstra and Ubelaker 1994, 119).

Abnormal bone loss was observed on the humeri of two individuals. It was present on the right proximal shaft (lateral) of young adult male (Sk2280). In a middle adult of ambiguous sex (Sk2257) it was observed on the proximal medial shaft of the left humerus. Both were situated on the periosteal and had well defined margins, but no sign of sclerotic reaction. Infection is likely to have caused this bone destruction, although exact diagnosis is not possible.

Other skeletal pathologies

Cribra orbitalia was found on one older child, aged approximately 10 years (Sk2291). It is recognisable as porosity on the orbital lesions and is often found in immature skeletons. The causes of this condition are thought to be due to an iron deficiency in the diet, other suggestions include nutrient losses due to diarrhoeal diseases, or infection (White and Folkens 2000, 394). An iron deficient diet is thought to have had more of an impact on prehistoric populations (Klepinger 1992 in Schwartz 1994, 22), although many believe parasites

were the main cause. The presence of this disorder on only one individual may be affected by the poor survival of crania in the assemblage.

Two instances of partial spina bifida occulta were recorded on Sk2221 and Sk2279. Spina bifida occulta defines incomplete fusion of the posterior neural arches of the sacral segments and/or lumbar vertebrae (Roberts and Manchester 2003, 54). In life the area would have been covered by cartilage or membrane, protecting the spinal cord, and therefore would not have known by their possessors. It is a congenital defect, and can be found in varying numbers in different populations.

Non metric traits

Only 13 skeletons had crania over 50% complete, which has made the recording and analysis of non metric traits for the crania difficult. Due to a majority of the non metric traits recorded being on the cranium, further discussion of these is not carried out (data available in archive).

Noteworthy individuals

Sk2255 was a substantially complete and well preserved skeleton. Aged in old adulthood, this female suffered from advanced osteoarthritis of the spine, in addition to osteoarthritis of the shoulders, elbows, hands, hips, knees and feet. This individual exhibited

the most osteoarthritis observed on one skeleton in the assemblage. A copper alloy bracelet was found on the right wrist of this skeleton (Crummy, this report) and her arms were positioned in an unusual manner (see Table 1).

Sk2265 and Sk2259 were the only burials to have been in prone position (face-down). Sk2265 was female and in old adulthood. Osteoarthritis was present on the thoracic and lumbar vertebrae and a fracture resulting in pseudoarthrosis was present on the ulna of the left lower arm (see above). Sk2259 was also a female, aged as a middle adult.

Sk2268 was buried in grave 23 with neonate Sk2269 across the abdominal area. Sk2268 was approximately 50–75% complete. Estimation of age was based only on bone fusion due to the absence of the cranium and much of the pelvis. The fusion state of all post cranial bones except the clavicle was observable, indicating the individual was at least a young adult. Estimations of sex were hindered by the absence of the cranium and much of the pelvis, although the few pelvic traits observable were male in appearance. However, the size and gracility of the individual, is more suggestive of a female.

Pit F2250 contained the disarticulated remains of at least three individuals, including three skulls (Sk2249a, Sk2249b, Sk2249c). Two skulls were aged at middle adults (one female, one unknown adult) and one probable male aged at old adult. These have been interpreted as the remains of three individuals originally from the Roman cemetery, redeposited in the 10th to 12th century after disturbance. The skulls were in good condition and were all substantially complete, suggesting they were redeposited soon after disturbance.

Conclusions

Analysis of the Watersmeet human bone assemblage was hindered by the poor preservation and incompleteness of a large proportion of the bone, but a few tentative points can be made. A majority of the skeletons were adults; those that were possible to age into tighter age groups fell mainly into the middle and old adulthood. The assessable dentition illustrates relatively poor dental health. Carious lesions and calculus were common, and dental attrition was lower than expected suggesting the individuals consumed a diet that was not too abrasive to the teeth. The high amount of calculus and caries suggests poor dental hygiene. The distribution of osteoarthritis in the assemblage was more frequent in females, particularly on the shoulders and elbows. This could suggest differences in the activities performed by different sexes. However, reliability of this conclusion is questioned by the small proportion for which sex could be established, in addition to the incompleteness of many of the remains.

The probable association of the cemetery with the villa at Whitehills is important. To date there are very few skeletal remains associated with villas and consequently it has not been possible to compare the health status of those living in villas with those not (Roberts

and Cox 2003, 121). Therefore, although only tentative conclusions could be drawn from the Watersmeet assemblage, it does contribute to the number of skeletal remains associated with villa life.

Animal bone (Table 9)

Carina Phillips

A full report on the animal bone from the Watersmeet excavation can be found in the Archive Report. Only those assemblages large enough for meaningful discussion (those from Phase 3 and 5 features) are included in the following summary.

The assemblages of both periods were dominated by sheep kept for a variety of uses including prime meat and probably wool production. Cattle appear to have been kept primarily for prime meat in both periods. However, lower numbers of cattle and higher numbers of pig in the 10th to 12th century indicate a rise in the use of pig meat in this period.

Domestic bird species, particularly domestic fowl also contributed to the food supply with eggs and meat during both periods. Horses and dogs were present in small numbers in both the late Roman and 10th to 12th century assemblages, and cat was observed in only the 10th to 12th century. Utilisation of horse meat and marrow was seen in both periods through the presence of chopped and smashed bone. Wild species contributed little to diet, although the small numbers of rabbit and roe deer in the late Roman assemblage and hare and red deer in the 10th to 12th century assemblage suggest that these species may have been hunted for meat, fur and antler. Trade in fish is suggested by two cod (*Gadus* sp) bones in the 10th to 12th century assemblage; the fish was probably transported in brine or salted to inland destinations (Wilson 1991, 28).

Environmental samples

Val Fryer

Of the 13 samples submitted for assessment, ten were from features/contexts of Roman date. The majority of these (including two graves and L2260) produced insubstantial assemblages, probably derived from low densities of scattered and/or wind-blown detritus, accidentally incorporated within the features. The three exceptions (from early Roman Enclosure ditch F2141, from a pit cutting L2260 and from pit F2327 which truncated skeletons in the northwest of the cemetery) produced assemblages which may be consistent with small deposits of domestic waste. Two of these assemblages included small amounts of bone and eggshell and all three contained cereal processing waste. The relative abundance of grain and lack of chaff in these samples may indicate batches of cereal at an advanced stage of processing; the predominance of larger seeds in the weed assemblage supports this hypothesis.

Table 9. Number of Identified Specimens/fragments (NISP) and minimum number of individuals for mammal, bird and fish species. *All bones from one skeleton.

	Phases 1 and 2		Phase 3		Phase 5	
	NISP	MNI	NISP	MNI	NISP	MNI
Sheep/goat (<i>Ovis/Capra</i> sp.)	40	3	187	12	282	16
Cattle (<i>Bos</i> sp.)	14	2	169	8	135	8
Pig (<i>Sus</i> sp.)	5	2	74	5	91	7
Horse (<i>Equus</i> sp.)	4	1	24	2	10	2
Dog (<i>Canis familiaris</i>)	1	1	5	1	7	1
Cat (<i>Felis catus</i>)	-	-	-	-	1	1
Hare (<i>Lepus europaeus</i>)	-	-	-	-	2	1
Rabbit (<i>Oryctolagus cuniculus</i>)	-	-	2	1	-	-
Red Deer (<i>Cervus elaphus</i>)	-	-	-	-	1	1
Roe Deer (<i>Capreolus capreolus</i>)	-	-	2	1	-	-
Water Vole (<i>Arvicola terrestris</i>)	1	1	-	-	-	-
Domestic Fowl (<i>Gallus</i> sp.)	-	-	16	-	28	-
Duck (<i>Anas</i> sp.)	-	-	-	-	4	-
Wigeon (<i>Anas penelope</i>)	-	-	1	-	-	-
Goose (<i>Anser</i> sp.)	-	-	2	-	7	-
Swan (<i>Cygnus</i> sp.)	-	-	-	-	1	-
Red Kite (<i>Milvus milvus</i>)	-	-	1	-	-	-
Raven (<i>Corvus corax</i>)	-	-	25*	-	-	-
Crow/Rook (<i>Corvus</i> sp.)	-	-	-	-	3	-
Unidentifiable Bird	-	-	6	-	9	-
Cod (<i>Gadus</i> sp.)	-	-	-	-	2	-
Unidentifiable Fish	-	-	1	-	1	-
Large sized	34	-	329	-	287	-
Small sized	61	-	374	-	613	-
Unidentifiable	88	-	389	-	580	-
Total	248	-	1607	-	2064	-

Discussion

The early Roman enclosure

Ditches of the early Roman enclosure contained animal bone including cattle, horse and pig, but were dominated by sheep/goat. The enclosure was approximately contemporary with early Roman activity on land adjacent to Edward House (Grant and Wilkins 2003) and with the first phase of occupation at Whitehills (Scott 1993, 39; Wilson and Hurst 1967, 175) (Fig. 2). It is possible that ditch F1023 at Edward House was aligned approximately parallel to ditches F2339/F2141 at Watersmeet, but there are no further similarities to be seen. The pottery assemblages from the Edward House and the early Roman phase at Watersmeet included broadly similar fabrics, but were not directly comparable (A Peachey, pers comm). The Edward House assemblage had a higher proportion of fine wares than the Watersmeet early Roman assemblage, and both the Edward House and Whitehills

assemblages included samian ware which was absent at Watersmeet except as residual finds in 4th to 5th century contexts (Peachey in Nicholson 2004). There is no evidence linking the early Roman enclosure at Watersmeet to the late 2nd century cremations found to its northwest.

The late Roman field system

Land at Watersmeet may have been a part of the estate of the villa at Whitehills, though the latest phase of occupation at Whitehills (3rd to 4th century) apparently pre dates the main period of activity. Finds recovered from the ditches included Romano-Saxon pottery, annular loomweights and a tanged knife, all suggesting that the ditches may have remained open beyond the end of the Roman period.

The extent of the field system is unknown as it extended beyond the limits of the excavation. The Phase 3 animal bone assemblage was dominated by sheep/goats (probably sheep), indicating a typical animal husbandry regime for the period (Phillips in

Nicholson 2004).

Slag recovered from ditch F2367 (and other contexts at the site) did not appear to be in its original depositional context, but the large quantities suggest iron smithing somewhere close by. At the Whitehills villa, one room contained hearths and ashy deposits, suggesting that it had been put to some industrial use (Scott 1993, 39); it may be that the slag in ditch F2367 originated with iron smithing in that room.

Ceramic building materials are thought to have been deposited before the cemetery came into use. It is possible that this deposition coincided with the restructuring of the Whitehills villa known to have taken place in the late 3rd or early 4th century.

The Roman cemetery and outlying burials

The mid/late 4th to early 5th century cemetery was located in an area where human activity was attested from early Roman times onwards. The cemetery extended northwards beyond the excavated area, and so beyond the area of the early Roman enclosure. The southern extent of the cemetery was disturbed when pits were dug in the 10th to 12th century. At least one of the ditches marking the limits of the cemetery post dated the earliest use of the cemetery; it seems most likely that an earlier boundary feature was present but that no archaeological trace of it has survived. Throughout the following discussion, the question of whether the cemetery was Romano Christian or pagan in nature will be given consideration, as the excavated evidence is somewhat ambiguous.

The finds recovered from outlying graves could not be dated precisely enough to determine whether they were contemporary with the cemetery. The pottery assemblages from the cemetery were very similar to those recovered from the field ditches which cut two of the outlying graves. This may imply that the outlying burials pre-date the cemetery, though any chronological difference between them is not thought to have been great. It is considered most likely that the cemetery and outlying burials were approximately contemporary and that their differences should be explained in social terms.

Burial position

The extended supine position exhibited by at least 33% of the Watersmeet inhumations is the normal burial position in Christian cemeteries. This burial position is also common in pre-Christian Roman cemeteries (Philpott 1991, 53). The positioning of the arms at the side or with the hands over the groin is the most common burial position at Watersmeet (see Table 2), as well as more generally in late Roman Britain. The minor variations in burial position seen at Watersmeet (see Table 2) have also been recognised at many other sites but their significance, if any, remains unknown. There was no obvious correlation between burial position and age or sex of the skeletons (Figs. 12 and 13), although the two prone burials (Sk2259 and Sk2265) and the one with the most distinctive arm position (Sk2255) were all female.

The prone burials

Prone burials are well attested in late Roman (and Anglo Saxon) cemeteries. They appear sporadically throughout the Roman period but are most commonly found in 4th century and later contexts (Philpott 1991, 71), and are more common at rural than at urban sites (Watts 1994, 194). 2.8% of all burials at Watersmeet (excluding the three individuals re-deposited in pit F2205) were prone; the percentage of all burials within a cemetery made up by those in a prone position seems to vary (eg 0.6% at Poundbury, 9.7% at The Parks, Godmanchester; Jones 2003, 34) but this variation has not been linked to any other cemetery characteristics.

The two prone burials identified at Watersmeet are quite different to each other. Sk2259 was buried within the cemetery, face down, with nothing to attest limb positioning other than extended. This burial probably falls into the category described by Philpott (1991, 72) as 'formal prone burials': apart from its facing downwards there is nothing distinguishing between this burial and any other in the cemetery area. The burial of Sk2265 in grave 22 (Fig. 7) is quite different: in addition to having been placed face down in the grave, the skeleton's limbs are bent at unnatural angles (see Table 1 and Fig. 7). This burial may fall into Philpott's (1991, 72) category of 'coerced burials', a category which also includes skeletons whose hands seem to have been bound, decapitated skeletons and skeletons weighted down with rocks. Such burials tend to occur outside of formal cemeteries, as in this case, sometimes making use of existing pits or ditches rather than having a deliberately dug grave.

There are various explanations proposed for prone burials. Burials such as Sk2259 could be an error by an undertaker dealing with a shrouded corpse (Philpott 1991, 73; Taylor 2001, 123) though such burials are too common for this to be the usual explanation (Watts 1993, 194). Unusual limb position may be a result of rigor mortis (McWhirr *et al* 1982, 78) but this does not explain the prone position of Sk2265. Another possibility is a deliberate attempt to confine the spirit to the grave (Philpott 1991, 74; Black 1986, 225), though it has also been suggested (Roberts and Cox 2003, 116) that prone burial could be a mark of respect.

Burial alignment

West to east alignment is the norm in late Roman cemeteries, and is usually considered to be the result of the spread of Christian belief, though west to east alignment alone is not sufficient evidence for identifying a Christian cemetery (Watts 1989, 379; Rahtz 1977, 54) and is known in pagan Roman cemeteries (eg Cannington, Somerset). Burials at Watersmeet are consistently aligned west-south-west to east-north-east, parallel to Alconbury Brook.

Alignment of burials approximately west to east but oriented parallel/perpendicular to major topographic features perceived as being aligned west to east/north to south is seen at several late Roman cemeteries. For example at The Parks, Godmanchester, the most popular burial orientation was parallel to earlier

plot boundaries (Jones 2003, 28); at Ospringe, Kent, graves are aligned parallel to Watling street (Black 1986, 212), and at Lankhills graves in the eastern part of the cemetery are aligned perpendicular to a large ditch while those in the west are perpendicular to the road to Cirencester (MacDonald 1979, 131–132).

The only exception to the normal alignment was infant Sk2261, which was buried, still parallel to Alconbury Brook, with its head to the east-north-east. A similar situation is seen at Butt Road, Colchester (Crummy and Crossan 1993, 119). Given that in both cemeteries only one skeleton, in both cases an infant, was buried on an east to west alignment, it may be that the most fitting explanation is simply that an error occurred and a small coffin (at Butt Road) or shrouded body (at Watersmeet) was accidentally buried the wrong way around.

The orientation of one of the outlying burials (Sk2274), almost perpendicular to the norms of the cemetery, may indicate that it pre-dated the cemetery. Alternatively, it and the other outlying burials may have been deliberately excluded from the cemetery and normal burial practice.

Cemetery organisation

Layout of graves

The apparent lack of organisation is noteworthy, but by no means unique. In the 4th century cemetery at The Parks, Godmanchester, which was nearby and of a similar size, possible rows of graves similar to those tentatively identified at Watersmeet (see above) have been identified, though it is admitted that these could result from the random distribution of similarly aligned graves (Jones 2003, 32). The lack of intercutting between graves at most Roman cemeteries, including The Parks (Jones 2003, 23), indicates that the location of graves remained apparent for significant periods of time (Taylor 2001, 115). At Poundbury postholes mark the positions of stone or wooden grave markers (MacDonald 1979, 184–185), but literary evidence tells us that grave markers were often as ephemeral as tiles, pots and pot sherds (Taylor 2001, 118; de la Bédoyère 2002, 101).

There were several instances of intercutting graves, and of graves being cut by other late Roman features at Watersmeet. The degree of intercutting between west to east aligned graves is unusual for a Romano-Christian cemetery, suggesting that the graves were not clearly marked. Possible explanations include burial within a family plot, whereby graves are grouped closely together, making intercutting more likely, and limitations of space meaning that the disturbance of a grave was acceptable after a lapse of 20 years. The degree of disturbance to earlier skeletons at Watersmeet makes the former explanation unlikely, and there does not appear to have been a lack of space in the cemetery area. It is possible that the degree of intercutting results simply from a lack of official planning/organisation, as attested at several large urban cemeteries (cf Jones 2003, 32).

Possible groupings by age or sex

Most of the immature skeletons were found in the west/northwest of the cemetery (Figs. 12 and 13). Those further east were closely associated with adult skeletons.

Any attempt to identify patterning by sex or by age among adults in the cemetery will inevitably be skewed by the large proportions of adult skeletons whose sex could not be determined (55%), or whose age could be assessed only as 'adult' (49%). However, one grouping of female skeletons (Sk2283, Sk2284, Sk2317 and Sk2289) is apparent in the north of the cemetery, with only one unsexed adult and one infant (Sk2288a and Sk2288b) lying between them. It is noticeable that all of these except Sk2283 fell into the older adult category (50+ years). Sk2278, Sk2314 and Sk2280 may represent a group of male skeletons, though Sk2279 (part of the same 'cluster') remains unsexed, and Sk2314 stratigraphically preceded Sk2279 and Sk2280.

The skeletons in graves 6 to 9, which form a head to foot line (Figs. 5 and 8) are a middle to old adult, a middle adult female, a middle adult male and an older child (Figs. 12 and 13); it is tempting to see a family group in this, but the large degree of damage done to grave 6 by the cutting of grave 8 and to grave 8 by the cutting of grave 9 argue against this.

It may be that graves at the Watersmeet cemetery were grouped by gender and/or age but the inhumations were too disturbed and the skeletons too fragmentary for any definite statements to be made about this.

Charnel deposits

Although there were cases of charnel redeposition from a disturbed grave within the grave which disturbed it, there were also several cases of graves having been severely truncated during the use life of the cemetery, with no attested careful redeposition of the disturbed remains. Lack of consistency in how the disturbance of graves was reacted to reinforces the idea of a cemetery without formal management.

Infant burials

Infants (three) and neonates (two) accounted for 7% of all skeletons (Fig. 13). The two neonates were Sk2312 closely associated with old adult female Sk2315 and Sk2269 with adult Sk2268; infants Sk2288b and Sk2281b were both recovered along with adult female skeletons, but Sk2261 was buried in relative isolation. Two of the three young children in the cemetery (Sk2125 and Sk2313b) were also in close association with adults. The clearest association is between neonate Sk2269 and adult Sk2268 in grave 23: the neonate was recovered from a position across the abdominal area of the adult (Fig. 5), perhaps indicating the death of both during childbirth. However, the sex of Sk2268 remains undetermined, and infants are known to have been buried with males and females in Roman cemeteries.

Grave furniture

There was no evidence to suggest the use of coffins at Watersmeet, although it is acknowledged that the large degree of truncation could have hindered identification, and it is possible that coffins were held together by wooden pegs. This contrasts with other inhumation cemeteries in the Godmanchester area, where coffins for at least some burials seems to have been the norm (Taylor 1997, 391–392; Jones 2003, 26–27).

The lack of dress fittings suggests the use of shrouds, a normal practice in late Roman times. Elements of the positioning of some of the skeletons, eg the placement of hands over the groin, crossing of the feet or ankles and the inwards angling of the femurs, may be consistent with bodies having been tightly wrapped for burial.

Grave goods and personal ornamentation

Only two burials included grave goods, and only one skeleton wore an item of jewellery (though other items were recovered from L2260). Christian belief in a physical resurrection caused the deposition of such items to become theoretically obsolete from the mid 4th century onwards, and early Christian cemeteries are characterised by a lack of grave goods. This is not, however, necessarily evidence of a Christian cemetery, nor is the presence of grave goods necessarily inconsistent with Christianity (Rahtz 1977, 55).

Jewellery is not common with Romano Christian burials, usually only occurring with children and young girls (Taylor 2001, 125). Sk2255 was an elderly woman suffering severely from arthritis (see Phillips, this report); her perceived vulnerability may have seemed child-like. Given the reputation of copper jewellery in European folklore and modern alternative medicine as an alleviator of arthritis, it is interesting to note that she was both the only person wearing jewellery and the one most afflicted by arthritis; there is however, no documentary evidence for copper being used to alleviate joint pains in the Roman period (R Jackson, pers comm.). Another possibility is that the position in which SK2255 was found is the position in which she died, and that the onset of rigor mortis prevented both the repositioning of her arms (cf McWhirr *et al* 1982, 78) and the removal of the bracelet from her sharply intumed wrist.

Coin inside the skull of Sk2293

Written with Nina Crummy

A coin was recovered from inside the skull of child/adolescent Sk2293. The positioning of a coin on the eyelid or in the mouth of a corpse was a product of the belief in the need for the deceased to pay Charon's fee for passage across the river Styx. The practice is known from as early as the 5th century BC in Greece, but had become rare in Britain by the 3rd century AD (Taylor 2001, 103). The deliberate deposition of coins in graves became more common in the 4th century, with the mouth being the favoured position, but the meaning of the practice may have changed or been forgotten by this time (Philpott 1991, 212, 214).

The coin in the skull of Sk2293 was minted at

Verulamium by the Catuvellaunian ruler Tasciovanus, in the 1st century BC to early 1st century AD, and was thus at least 300 years old at the time of inhumation. How such an old coin became available as a grave offering in the 4th century is uncertain. The deliberate conservation and use of old coins as votive offerings (and even their marketing for this purpose) is a recognised practice of the 4th century (Philpott 1991, 211; de la Bédoyère 2002, 100), but the lack of excessive wear on this coin suggests that it may have been lost during the 1st century AD and recovered shortly before being buried with Sk2293.

It is thought that the imagery on a coin was important in its selection for deposition in a 4th century burial; this particular coin shows a horse and the letters *VIR* on its reverse side. A coin bearing the legend *VIR* (which would originally indicated the mint at Verulamium) could be seen as a particularly apt accompaniment to this burial if it is assumed that the deceased child/adolescent was male and on the point of attaining the status of a *vir* (man). The horse could have been chosen to represent the Celtic goddess Epona, who was closely associated with horses, but also seen as a motherly figure and as having connections with death and the underworld, making her a suitable guardian for the spirit of a deceased youth (Crummy 2001; Green 1997, 91–94, 171–175). This particular youth was probably small for his age (see Phillips, this report) and so may have been considered particularly in need of such protection. A number of cults associated with horsemen are known, particularly in eastern England, and a mid 2nd century example of a horse figurine deposited with a cremated (girl) child in Godmanchester (Taylor 1997) attests a previous expression of beliefs involving horses in a funerary context in the Watersmeet area.

Neither original beliefs associated with the placing of a coin in the mouth of the deceased, nor the imagery on the coin in question are consistent with Christian practice or belief. Coins deposited in this way are, however, known in burials at other cemeteries otherwise considered to be Roman Christian (eg Barber and Bowsler 2000, 120; Crummy *et al* 1993, 198).

Nail and refrozen lead inside the skull of Sk2280

Inside the skull of Sk2280 were found an iron nail and a puddle of refrozen lead. It is hard to conceive of a post-depositional process which would allow these items to enter the skull of this well preserved and articulated skeleton from the burial environment. The position of these finds suggests that they were originally placed on the eyelids or in the mouth. No direct analogue has been identified for these peculiar offerings, but iron nails have been found in Roman cremation urns (eg at Chalkwell, Kent, and at Welwyn, Hertfordshire) and it has been suggested that these were deliberate inclusions seen as being somehow connected to gaining access to the underworld or to confining the dead (Black 1986, 223–224). If such an explanation can be applied to the iron nail recovered from inside the skull of Sk2280 it implies beliefs other

than Christian among the population.

Demography

Although analysis of the age and sex of skeletons at Watersmeet was hindered by poor preservation of many of the skeletons, the demographic makeup of the cemetery seems to have been typical of a resident population, the best represented age group being middle to old adults and the female male ratio 1.5. The regular orientation and positioning of the burials and the consistent use of the cemetery area suggest that this cemetery was used by a resident community. However, intercutting of graves and the absence of orderly, evenly spaced rows suggest that the cemetery was not officially 'managed', as many of the larger urban cemeteries of the period were. It seems likely that the cemetery was used as and when needed, by a small, local, rural population.

Given the lack of other settlement evidence from Huntingdon, it is possible that the people were the inhabitants of the nearby Whitehills villa. From the little information available about Whitehills, it appears to have been a high status building, with a mosaic floored room, and a corridor layout. It is most likely that the inhabitants of such a building would have had a large number of dependants, and the presence of a cemetery within the villa's estate would be consistent with this; people may have continued to live and farm on the estate even after the villa itself was abandoned. The question arises of where the villa's earlier occupants were buried; it is possible that some of them are represented by the late 2nd century cremations known from just north of Watersmeet. The small size of the known burial 2nd century burial group as compared to the 4th century cemetery can be tentatively related to the growth of the building at Whitehills from a flint footed timber building to a fully fledged corridor villa. If the people buried at Watersmeet did live at/around the Whitehills villa, then this cemetery conforms with the pattern of rural cemeteries being located on the fringes of settlements, as noted by Collis (1977, 34).

Three of the four outlying burials differed identifiably from the norms: Sk2274 was aligned almost perpendicular to the normal alignment, Sk2265 lay prone, possibly having been bound and/or coerced at burial, and Sk2255 wore an armband and had distinctively positioned arms. Only two of the four (Sk2255 and Sk2265, both older females) were complete enough for their age and sex to be determined, the others being an adult and a middle adult of undetermined sex. There is thus insufficient evidence for any conclusions to be drawn as to possible social reasons for the burial of certain individuals outside of the cemetery area, though differences in belief or in the timing of death are considered likely possibilities.

The 10th to 12th century evidence and the Norman castle

The sparse 10th to 12th features encountered during the excavation and evaluation (Cooper and Spoerry 2000) were insufficient to support the hypothesis (cf Inskip Ladds 1937, Dickinson 1972) that a second bailey of Huntingdon's Norman castle extended into the area of Watersmeet. The excavation found no trace of a palisade fence tentatively identified during the evaluation and the excavated 10th to 12th century features did not appear to be defensive. The function of the 10th to 12th century pits remains unclear, as both the pottery and animal bone assemblages were smaller than might be expected for rubbish pits of their size, but neither assemblage suggests disposal of waste from the presumably high status kitchens of the castle.

Conclusions

The earliest archaeological features at the Watersmeet site date to the early Romano-British period. Earlier activity in the area is evidenced by residual flint tools. In Roman times Watersmeet was probably a part of the Whitehills villa estate, lying on the flood plain and the slightly higher ground north of Alconbury Brook. It must be noted, however, that there has been little excavation in the area of the modern town of Huntingdon north of Mill Common, and this may cause the association of the features on Mill Common to seem stronger than in fact it is. The site lies close to the projected course of Ermine Street, the major south to north routeway of Roman Britain, and would have been visible from the road. The residual presence of two Hod Hill brooches in late Roman contexts is probably explained by the closeness of the site to Ermine Street, initially constructed during the conquest, and the presence of forts at nearby *Durovigutum*. Given the proximity of Watersmeet to Ermine Street it is interesting that none of the finds recovered at Watersmeet are of discernibly non-regional origin.

The cemetery was located too far from *Durovigutum* to be classed as an extra mural roadside burial ground, and is probably best understood as a small rural cemetery serving a villa estate, or the population which remained after the decline of the villa. The cemetery cannot be said definitely to be Christian: although the most obvious characteristics of the cemetery (approximate west to east alignment, the presence of infants, extended supine positions, apparent use of shrouds, and general lack of grave goods) would support this interpretation, other factors (the presence of some grave goods, the degree of intercutting between graves and the presence of burials (including a prone burial) outside of the cemetery) argue against it. Cemeteries characterised by west to east orientation and lacking in grave goods but otherwise not obviously Christian are a well known phenomenon in late and immediately post Roman Britain (Rahtz 1977, 53).

The proximity of the Whitehills estate to Ermine

Street would have allowed easy access to *Durovigutum*, less than 1km away. Walls were built around the core of *Durovigutum* in the 3rd century, but much of the town remained outside these defences (Jones 2003, 188). Although close by, Watersmeet and the Whitehills villa definitely fall outside of the area of *Durovigutum*; another villa is known approximately 1km to the east of the town (Green 2000, 22). Villas are commonly found near to small Roman towns, where they may have functioned as working farm estates, providing for the town's population, and/or as luxurious country residences for wealthier citizens. The agricultural nature of *Durovigutum* perhaps makes it more likely that the primary function of the Whitehills villa was a country residence, though the animal bone and environmental assemblages show that land at Watersmeet was in agricultural use.

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A Romano-British temple complex and Anglo-Saxon burials at Gallows Hill, Swaffham Prior

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A Romano-British temple complex just southwest of Devil's Dyke overlooked a Roman villa 1km away in Reach, to which the site appears linked by a trackway. The complex consisted of a main compound, defined by a palisade trench, containing three subsidiary areas: the large outer enclosure may represent a funerary precinct or temenos. Placed centrally within it is a rectangular area, itself subdivided, which, on the basis of cropmark evidence, contains a possible shrine or temple. To the north, post-dating the central enclosure, an internal double-ditched courtyard surrounds a circular feature and associated square structure, possibly a second shrine or temple. Within the third enclosure to the southwest a small single-celled building may represent another shrine or mausoleum.

On the basis of artefactual evidence, the whole complex appears to have been short lived, the main focus being during the 1st century and earlier half of the 2nd century. The site was subsequently abandoned and was reused by Early Anglo-Saxons as a burial ground. An undated adult inhumation was found within demolition debris associated with the shrine/mausoleum located within the southwestern enclosure, while seven further inhumations were scattered across the investigation site. Two were identified as Anglo-Saxon on the basis of associated grave goods. The remaining graves were not excavated and may have been late Roman or Anglo-Saxon in date.

In 1990, a survey of Cambridgeshire County Council's farmland identified sites of special archaeological interest and made recommendations for future management (Malim 1990). During this survey a complex system of rectilinear cropmarks was identified at Gallows Hill, Swaffham Prior (TL 578 643; Figs. 1, 2 and 3). Subsequent opportunities were taken for fieldwork assessment to determine the value of the site. A variety of techniques were used to investigate the site, including trial trenching, resistivity survey, metal detecting and fieldwalking covering one hectare. Excavation and other investigations were kept to the minimum required to justify management changes, with no more than 10% excavated. The results justified proposals for the preservation of the site, with

removal of the land from arable agriculture and conversion to grassland with some tree cover.

Location, topography and geology

The site lies near the fen-edge, on an outcrop of Middle Chalk surrounded by a band of Melbourn Rock. The chalk hill, known locally as Gallows Hill, rises up to over 35m OD from a ridge of Lower Chalk which crosses southern Cambridgeshire (BGS Sheet 188) (Fig. 1). The site has a commanding view across the landscape. To the northwest the land drops away sharply into the fens, while to the south and southeast it gradually descends from the chalk ridge to gently undulating chalkland.

Devil's Dyke, lying approximately 350m northeast of the site, runs from Reach in a southeasterly direction for 12km, terminating between Stetchworth and Wood Ditton.

Archaeological and historical background

The archaeology and history of the immediate surrounding area is well studied, with numerous finds' spots representing all periods recorded on Cambridgeshire's Historic Environment Record. The site is positioned within a landscape that has long provided a focus for settlement and activity with the attraction of the combined resources of the fen and upland chalk grassland.

Immediately south of Gallows Hill (Fig. 2) are five ring-ditches, possibly the site of prehistoric barrows, and to the north, on the fen-edge, an Iron Age settlement and burials. The well-defined cropmark of a ditched trackway leads down the slope from the site to a lavish Roman villa, 1km away in Reach. The villa was excavated in the late 19th century and appears to belong to the winged-corridor type with substantial walls of flint and Barnack limestone, facing south towards Gallows Hill (Atkinson 1893). Unfortunately there is no evidence that can be used for dating in

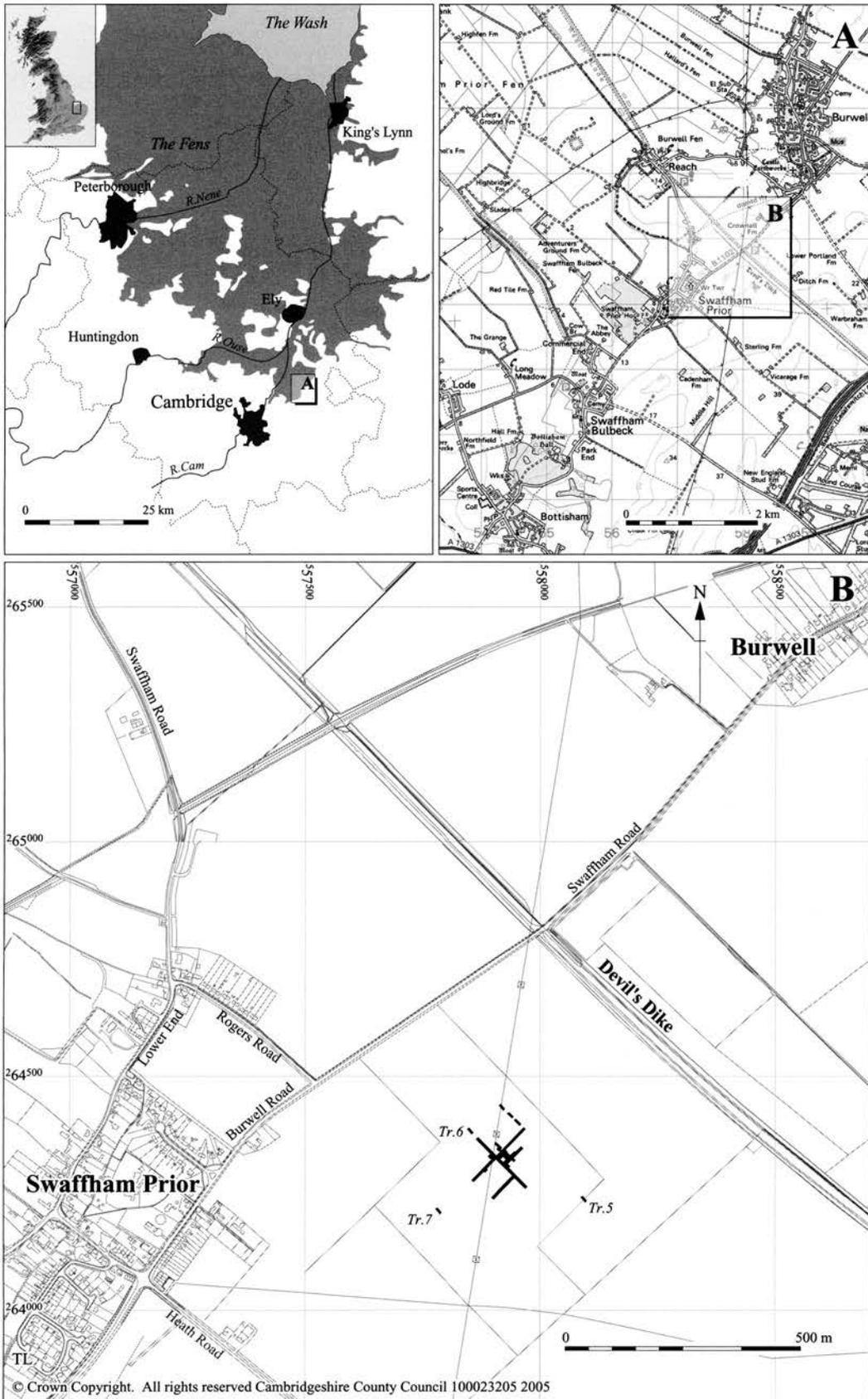
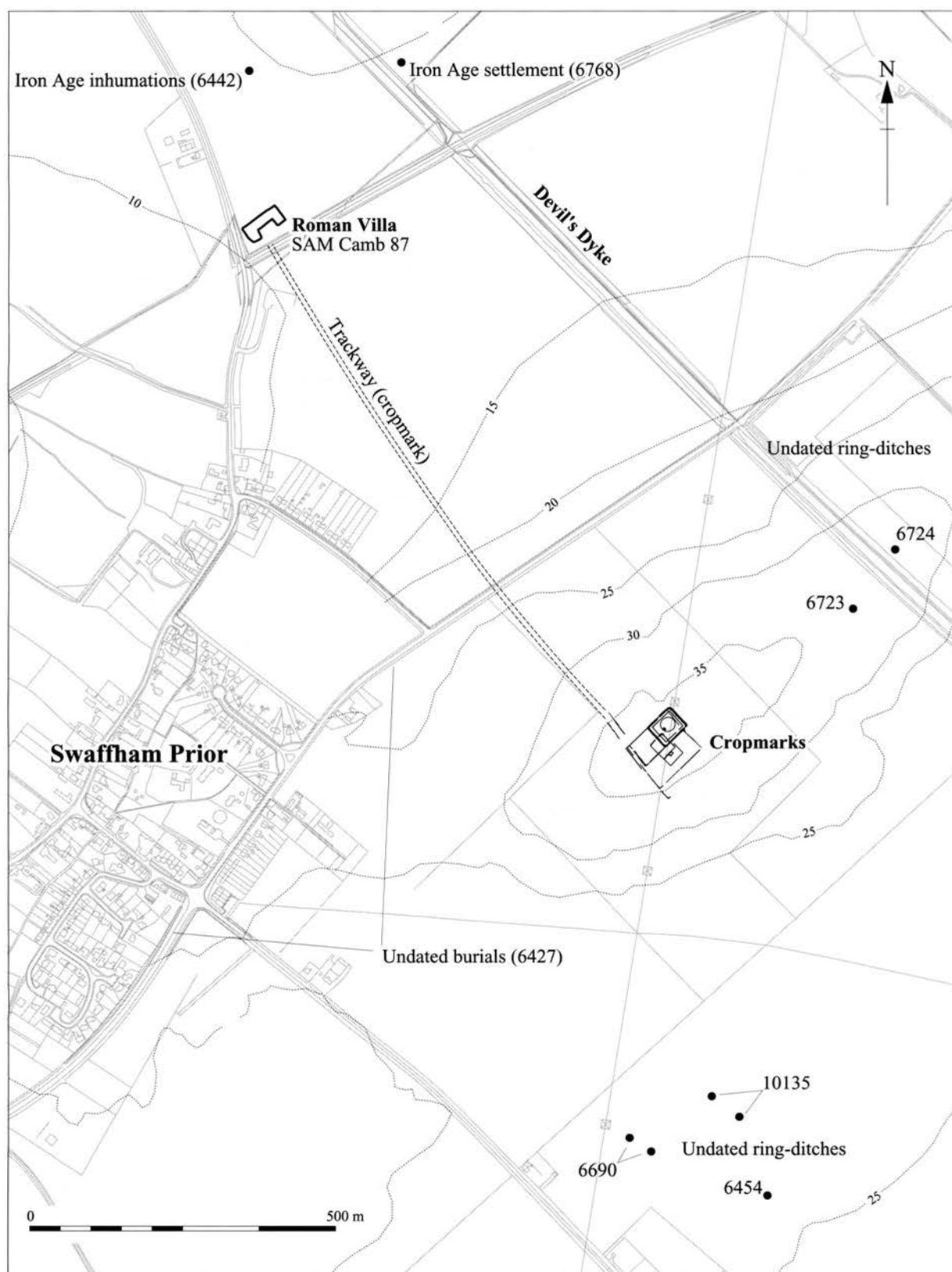


Figure 1. Location map with trenches in black.



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Figure 2. Location of villa in relation to square cropmark enclosure.

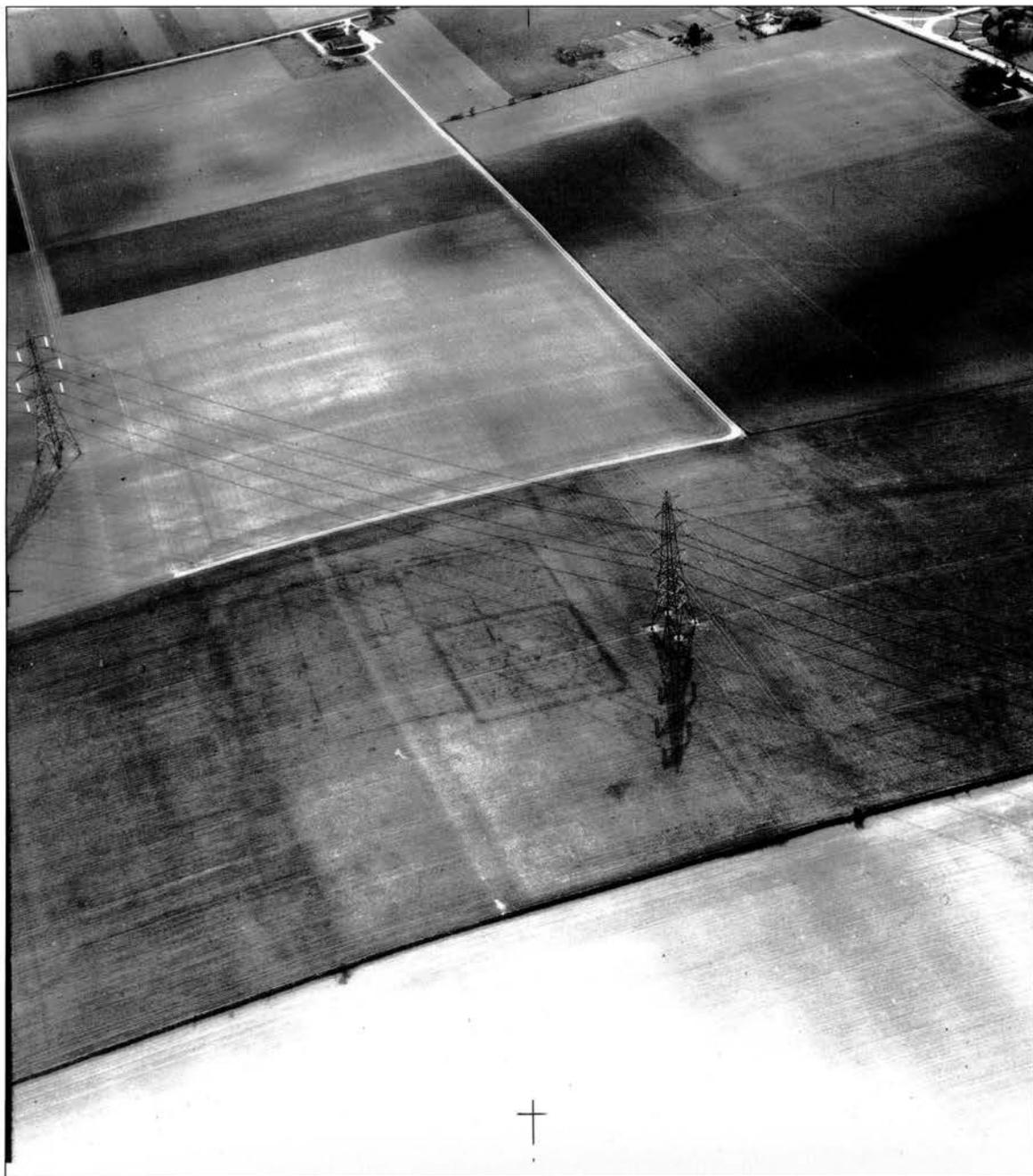


Figure 3. Aerial photograph of the cropmarks on Gallows Hill, taken in 1977, viewed from the east (CUCAP BFE 60: copyright reserved).

the published report. The trackway was partially excavated in 1992 and 1993: ditches 6.5m apart were located, although no metalling or wheel-ruts were apparent (Robinson 1992, 20).

Devil's Dyke, the longest and most impressive of a series of four dykes in southern Cambridgeshire is traditionally seen as a defensive earthwork in use in the 7th century when conflict occurred between the Mercian and Anglian kings. Alternative explanations have been put forward, according to which the dyke may represent a statement of political control on the landscape, a deterrent against cattle rustling

or a means of controlling trade. Excavations in 1973 confirmed a post-AD350 date of construction (Hope-Taylor and Hill 1976). More recent work on another dyke, Fleam Dyke, showed that this monument had been constructed in the immediate post-Roman period (Malim *et al* 1997).

During the construction of Swaffham Prior by-pass in 1973 up to six skeletons without grave goods were found. Two further Anglo-Saxon burials were reported from Cadenham Road to the south, whilst between the by-pass and Gallows Hill six other skeletons had been found in 1966 during pipe-laying operations

(HER 6427, 6419 and 6428). The name of Gallows Hill and Cage Hill at Swaffham Prior could, however, suggest that these burials derive from an execution site, consistent with the discovery of a skeleton in an iron casket (or a 'cage') as reported by locals in 1993 who remembered the skeletons found on the by-pass. The location of gallows in prominent positions on parish boundaries is well known.

The place-name Swaffham may derive from the Old English *Swafham* meaning 'the Swabian Home', ie the land of the *Swaeffe*, a tribe originally from eastern Germany (Ekwall 1991). The settlement was first recorded in the early 10th century, and later in the Domesday survey of 1086 (Reaney 1943, 133). It may have received the name of Swaffham Prior in the late 12th century, following the foundation of a priory of Benedictine nuns under the Prior of Ely.

The excavation

Roman (1st to 3rd century)

Trackway

Cropmark evidence indicates a trackway connecting the investigation site to the nearby Roman villa (Fig. 2). Running parallel to the temple complex was a ditch (106) some 1.50m wide and 0.70m deep, steep-sided with a flat base (Fig. 4). This may represent a continuation of the southern trackside drainage ditch indicated by cropmarks. A second ditch (67) ran parallel to the first at a distance of some 12m and was 1.50m wide and 0.10m deep with steep sides. Its fill contained small abraded sherds of 3rd-century pottery. It was initially suggested that this feature might have been Iron Age in origin, representing the northern drainage ditch of the trackway (Bray and Malim 1998, 14, 25) although, on the basis of its shallow depth and location in relation to cropmarks, it is possible that the ditch was in fact part of an ephemeral square enclosure surrounding a shrine or mausoleum (below). This would indicate that the track was either out of use or truncated by the time of the insertion of the enclosure above it. The trackway also appeared to pre-date creation of the main enclosure and a pre-Roman origin remains plausible (see discussion below).

Main Enclosure

The main enclosure, 85m northwest to southeast by 90m southwest to northeast (with a cropmark indicating a possible additional element extending to a total of 105m northwest to southeast), was aligned with its corners on the points of the compass (Figs 4 and 5A). The ditch was steep-sided with a basal slot for a possible wooden palisade. It was 0.50m to 0.60m deep and varied slightly in width, being between 1.20m and 2.20m wide (Figs 4 and 7). Its fills contained 1st-century pottery and animal bone, with lesser quantities of 1st- to early 2nd-century pottery. Two large postholes (25 and 340; Figs 4 and 7) may indicate a fence later replaced by a palisade (indicated by a slot

built along the base of the ditch).

Pits and postholes lay scattered across the main enclosure. Furthest to the north a rectangular pit (261) 2m x 1m x 0.50m deep contained sherds of un-abraded late 1st-century pottery and a cattle, horse and sheep/goat bone. To the southeast an oval feature (164) was interpreted as either a pit or the terminus of a ditch not visible as a cropmark. It was not excavated. Nearby lay three rectangular postholes (175, 181, 183) each c.0.40m in diameter: although undated, these may relate to internal divisions within the main or central enclosure. Only one (181) was excavated and was 0.17m deep with a post-pipe and chalky silt packing.

One rectangular pit (338) contained chalk rubble, small flecks of charcoal, fragment of cattle bone and a few unabraded sherds of 1st-century pottery. Cutting this was an oval pit (11) which contained small, abraded sherds of 1st-century pottery and sheep/goat and red deer bone, along with an iron pruning hook(?) (Fig. 12, cat. no. 23) on its base.

Central enclosure

The central enclosure consisted of a rectangular area (47m by 29m), subdivided at 15m from its southeastern end by a ditch (191) measuring 1.3m wide and 0.45m deep (Figs 4 and 5A). Its fill contained abraded sherds of 1st-century pottery and fragments of cattle bone. Immediately adjacent to this ditch to its southeast was a possible structure, perhaps a shrine or *cella* (c.7m x c.4m) indicated by aerial photographs but not archaeologically investigated. The northeastern side of the enclosure was marked by another ditch (290), 1.6m x 0.62m deep, which contained no finds. A possible entrance may have existed on the enclosure's northwestern side.

Double enclosure and associated features

Post-dating the central enclosure was a substantial subsidiary enclosure consisting of four distinct elements: an inner and outer enclosure, a circular cropmark and a square, masonry structure (Figs 4 and 5B). Its full extent enclosed a rectangular area c.42m northwest to southeast and c.52m southwest to northeast, extending some 10m outside the main enclosure to the northeast. Entrances may have been located on the eastern and northwestern perimeters.

The outermost elements of the enclosure consisted of ditchwork (Trench 8, ditches 400 and 404; Trenches 10 and 11, ditches 409 and 420; Fig. 4). On the southwestern side, the ditch (400) was 4m x 1.5m deep and steep-sided with a slot at the base possibly for a wooden palisade. This stretch of ditch provided the best dating evidence for infill processes: its primary fill produced large unabraded sherds of late 1st- to early 2nd-century pottery, while the middle fill contained large sherds of early to mid 2nd-century pottery. This ditch apparently obliterated the northwestern perimeter ditch of the central enclosure. The northeastern ditch (404) was 2.8m x 1.5m deep, again exhibiting a slot at the base (Figs 4 and 7).

An inner enclosure appears to have consisted on

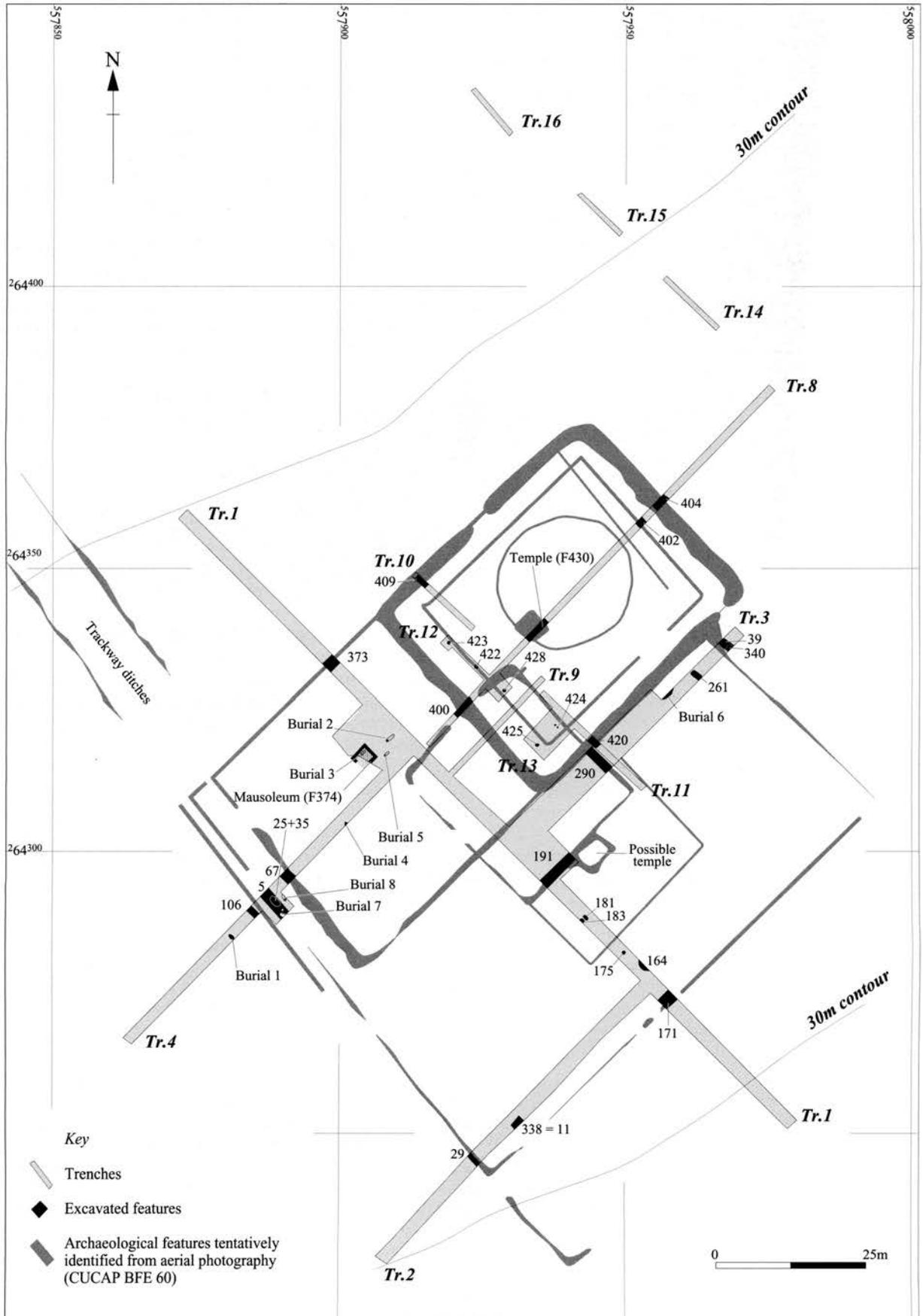


Figure 4. Cropmarks of features in Trenches 1 to 4 and 8 to 13.

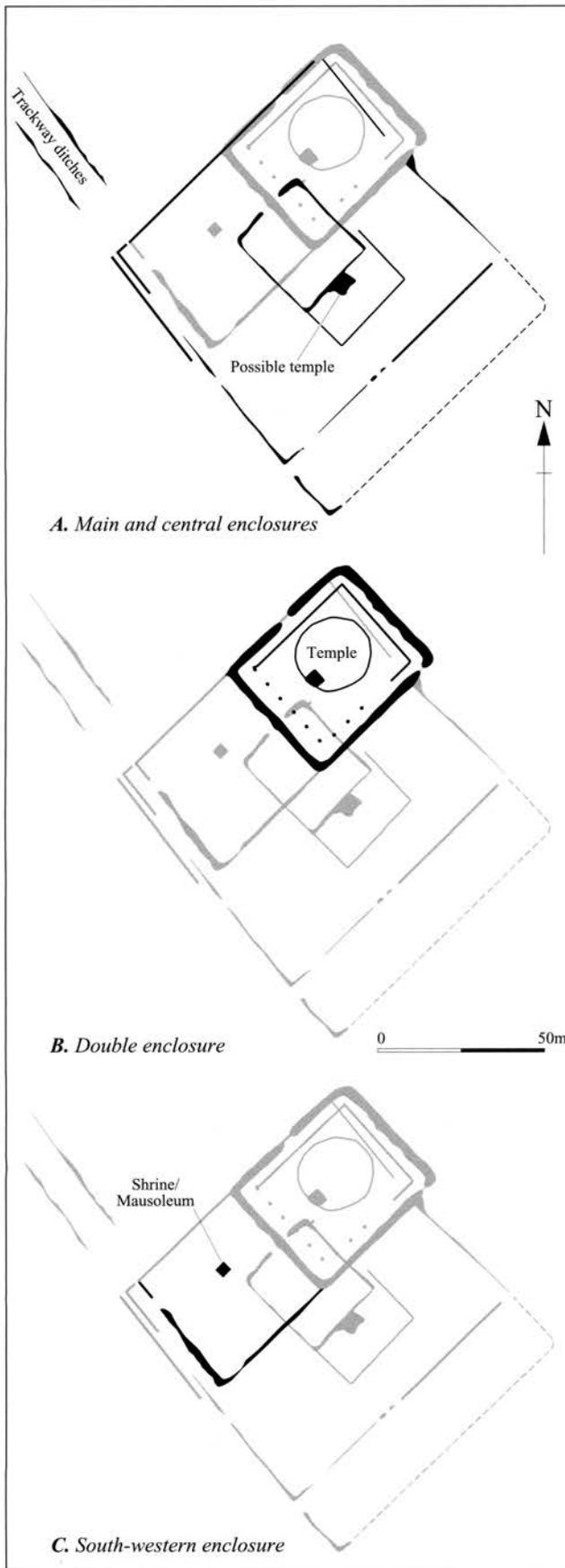


Figure 5. Development of the temple complex.

two sides of a wooden palisade marked by alignments of postholes some 0.75m in diameter set 5m apart. Such posts were recorded in Trench 13, where they ran parallel to the outer ditch, and in Trench 12. One excavated posthole (425) was 0.25m deep and contained large unabraded fragments of *tegula*. On the northeastern side the inner boundary was defined by a shallow ditch with a line of stake holes along its western side. The ditch was 1.5m wide and 0.6m deep, with a basal slot.

Slightly offset within the inner enclosure was a circular enclosure *c.*20m in diameter, visible in cropmarks. Set at its southwestern side were the foundations of a square building, possibly the *cella* of a temple (F430, Fig. 4). The foundation trenches were 0.30m wide and one excavated example was 0.20m deep. A circular posthole was cut into the base of the trench. These foundations flanked an area of very compacted yellow sand with gravel and mortar mix, measuring 5m by 5m. No artefacts were recovered from the structure.

Southwestern enclosure?

Set within the southwestern corner of the main enclosure a subsidiary area contained a possible shrine or mausoleum (Figs 4 and 5C). Although no direct archaeological evidence for the developmental sequence was forthcoming, this enclosure may have been associated with or may post-date the double enclosure, superseding the central one. Its southern limit may be defined by a shallow ditch (67, Trench 4), although it was originally suggested that this feature might have been Iron Age in origin, representing the northern drainage ditch of the trackway (above, Bray and Malim 1998, 14, 25). It enclosed an area *c.*42m square.

At the centre of this possible enclosure was a square, single-celled building respecting the alignment of the surrounding ditchwork. Its foundations were 0.2m deep and 0.53m wide, enclosing an area of *c.*2.5m² (Fig. 6). Its walls were of clunch and flint blocks, with remnants of plaster on the outer faces. A demolition deposit sealed the internal area of the building and contained the fragmented remains of an undated adult (Burial 3). Above the burial, building debris extended some 5m outside the structure and contained fragments of *tegulae* and iron nails, as well as late 1st- to early 2nd-century fine wares. The original presence of a tiled roof is therefore indicated. A copper alloy fitting of uncertain date (Fig. 12, cat. no. 24) was recovered from ploughsoil above the building.

Some limited evidence for industrial processes was found, in particular in Trenches 1 and 8 (Fig. 4), comprising a few pieces of slag and a large piece of kiln lining.

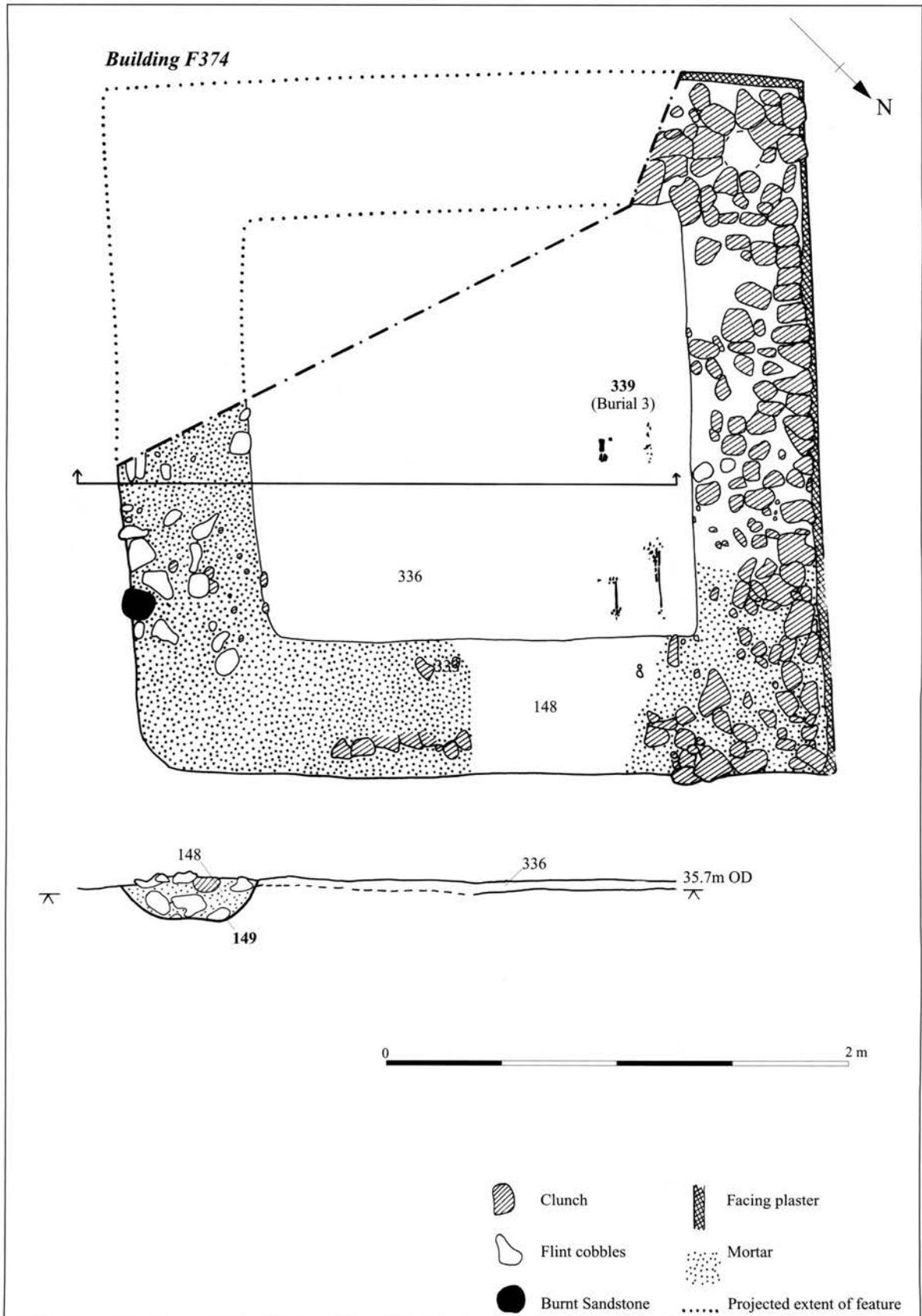


Figure 6. Building F374.

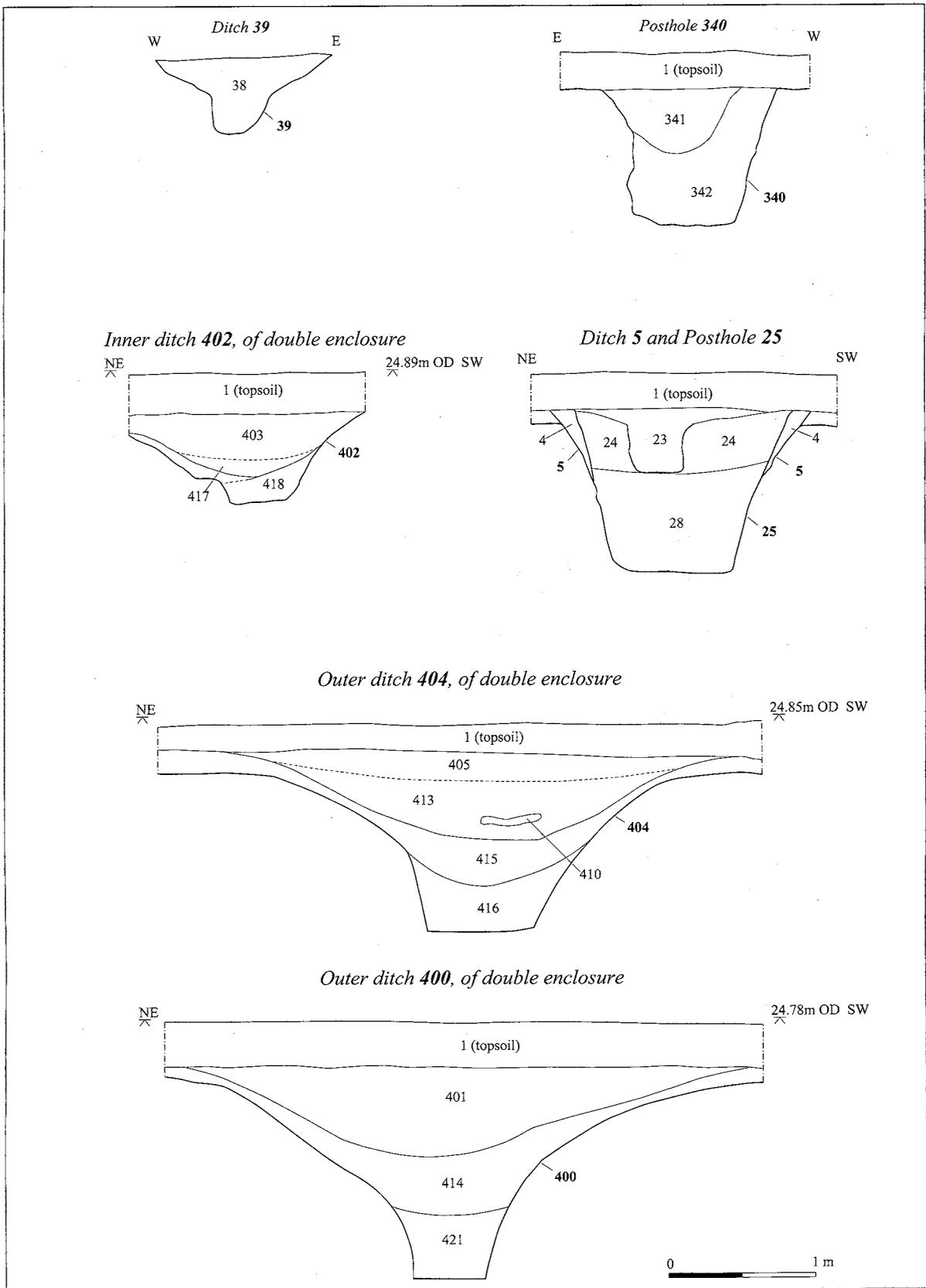


Figure 7. Ditch and posthole sections.

Early Anglo-Saxon

At least two Anglo-Saxon burials were present (Burial 1 and Burial 2). A further six undated inhumations (Burials 3–8) were found scattered across the site, only two of which were excavated. Burials 3–8 could have been late Roman or Anglo-Saxon in date: they are presented below as the latter.

The Burials

Burial 1 (Figs 4, 8a and 9)

Lying to the southwest of the trackway, this subrectangular grave was positioned on a northwest to southeast alignment, with vertical sides and a flat base. It measured 1.5m x 0.6m x 0.5m deep and was filled by firm greyish brown chalky silt. It contained a juvenile approximately 11 years old in a semi-contracted position, head to the northwest. The positioning of the legs flexed to the left is possibly indicative of a female (see Malim in Malim and Hines 1998, 34–41). A single broken bowl of 5th- to 6th-century date (Fig. 9, cat. no. 1) was found covering the left side of the pelvis and the left hand.

Burial 2 (Figs 4, 8b and 10)

A subrectangular grave (36) with vertical sides and a flat base, 1.6m x 0.85m x 0.2m deep, on a northeast to southwest alignment. It was filled with firm greyish brown chalky silt with fragments of sheep/goat and dog bone. It contained an adult female aged between 25 and 35 years old, buried extended and supine with the head to the southwest and the arms stretched alongside the body. A posthole (130) 0.20m in diameter and 0.20m deep at the foot of the grave may represent a grave-marker.

The burial was accompanied by rich grave goods of 6th-century date (Crummy, below). Osteological analysis shows that the teeth and gums had been subjected to severe stress in life. The analysis also identified non-metrical traits in the spine, including a thirteenth thoracic vertebra and only four lumbar vertebrae, as well as a partially lumbarised first sacral segment. Similar traits affecting the spine were noted in the skeletal remains of Burial 1, suggesting genetic affinity (Duhig, below).

Burial 3 (Fig. 6)

Within the demolition deposit of the Roman mausoleum/shrine were the fragmented remains of an extended and supine adult individual, aligned southwest-northeast.

Burial 4 (Fig. 9)

To the southwest of the possible mausoleum was another subrectangular grave, measuring 0.8m x 0.5m x 0.25m deep, with steep sides and flat base. It was positioned on a northwest to southeast alignment and contained the badly deteriorated remains of an infant approximately four years old. The body was in a semi-contracted position with the head to the southeast. The skull showed signs of an infection possibly associated with meningitis.

Burial 5

To the northeast of the possible mausoleum, another grave (132) remained unexcavated. It was subrectangular in plan, 1.4m x 0.7m, on a northeast to southwest alignment. No artefacts were recovered from the surface, al-

though part of an Anglo-Saxon silver Class A wrist clasp was found in the spoil above the grave (Fig. 12, cat. no. 25).

Burial 6

Isolated from the other burials to the northeast of the complex, another grave (Trench 3, 263) remained unexcavated. It was subrectangular, 1.5m deep and over 0.3m wide, on a northeast to southwest alignment. No artefacts were recovered.

Burials 7 and 8

Two further burials lying above the line of the trackway (Trench 4, 386 and 487) were not excavated. Burial 7 was subrectangular, over 1.25m long by 0.5m wide, on a northwest to southeast alignment. The grave had been cut into the upper fill of the southwestern boundary of the main enclosure (ditch 5). Burial 8 was also subrectangular, over 0.6m long by 0.3m wide, on a northwest to southeast alignment. During fieldwalking and metal-detector survey two Anglo-Saxon iron spearheads (Fig. 10, cat. nos 21 and 22) were recovered from the ploughsoil above these burials.

Other features

A square pit (Trench 4, 35) of uncertain function was cut into the upper fill of ditch 5 of the main Roman enclosure. It contained a small, complete cup of possible 5th- to 6th-century date (Fig. 12, cat. no. 26).

Grave goods from Burial 2

Nina Crummy

The position of the grave goods from this burial in relation to the body is indicated in Fig. 10. The woman was buried fully clothed and wearing her jewellery and other personal effects. She had a small-long brooch, a double necklace of at least 118 beads (four glass, the rest amber), an iron knife, an iron buckle, and an iron ring; a small copper-alloy fitting found beneath the jaw was probably a dress fitting of some kind. A second brooch, indicated only by staining on some of the bones, was also originally in the grave, but there was no evidence for a third.

The surviving brooch (Fig. 10, cat. no. 2) is of cross-head derivative form and has side lappets that show the type's links with cruciform brooches. Several other brooches of closely similar form have been found in the area. One was found unstratified in the ploughsoil at Edix Hill (Barrington A), Cambridgeshire (Malim and Hines 1998, fig. 3.65, 19) and a pair came from a female grave at Great Chesterford dated to c.500–75 (Evison 1994, fig. 29.40, 1–2). Another was in a female grave at Holywell Row, near Mildenhall, (Lethbridge 1931, 37, fig. 17.82, 1; Lethbridge cites others from Newnham and Little Wilbraham as comparable to the Holywell Row brooch, but they are not close parallels). All five brooches share the same general form, differing only in small details such as the precise shape of the bead and lappets and the type of punch marks. A sixth example came from a 6th-century grave at Mitchell's Hill, Icklingham, but the side-plates of its cross-head are also indented and there is also a ring-and-dot in the middle of the central panel



Figure 8. 8a: Burial 1, viewed from the southeast; 8b: Burial 2, viewed from the northeast.

and another on the foot (MacGregor and Bolick 1993, 141 no. 15.62; West 1998, fig. 50, 4). Mention should also be made of a brooch from Exning, Suffolk, which has a straight edge to the top-plate of the cross-head but indented side-plates, an extra row of punch marks on the head-plate, and large lappets but only a rudimentary bead (West 1998, fig. 42, 5). A more developed variety can be seen in a pair from Haslingfield (MacGregor and Bolick 1993, 141, no. 15.63). Further research may add others to this list, but to date the close proximity of all these brooches, to some extent mirroring the fen-edge, indicates that they came from a common source, probably a local workshop.

The Swaffham Prior brooch lay on the left shoulder; the pin was iron and most is now missing apart from some iron staining and a fragment fixed in the catchplate. In the 6th century the tubular gown worn by Anglian women was often fastened by a brooch on each shoulder, with a single or double festoon of beads hung between them. A loop of thread preserved on the reverse of the brooch passes in an unbroken line across the back but no trace of it was found across the front. It can therefore be identified as the thread on which the bead necklace was strung rather than an indication that the brooch was sewn to the garment to reinforce a weak or broken pin.

Copper-alloy staining in the area of the right

shoulder, strong enough to colour the clavicle (see Duhig below), shows where the second brooch from the suite originally lay. The necklace would have been looped around this object so that it formed a double string (as Owen-Crocker 2004, fig. 32). This arrangement would present a coherent suite of jewellery across the upper chest (as Taylor *et al* 1997, fig. 81).

The majority of the beads are small, but a few of the amber pieces are larger and may have been positioned near the centre of the upper or lower string of the necklace. The same may be true of the four glass beads recovered (those illustrated appear in Fig. 11, cat nos 5 and 6). One is a small globular bead of opaque green glass, the other three are all segmented gold-in-glass beads; two of the latter consist of two segments, the third is in tiny fragments that may only represent one segment. The gold-in-glass beads are a very long-lived form and examples in 6th-century graves in the Anglian region may come from a production centre in southwest Germany (Guido 1999, 79–80).

The amber beads, numbering at least 114, vary considerably in shape but fall into three main forms, viewed across the perforated axis: globular (ie with no distinct facet), wedge-shaped (ie with three distinct facets), and cube/cuboid (ie with four distinct facets). A representative sample of each form is illustrated in Fig. 11. Many of the cuboid beads are quite

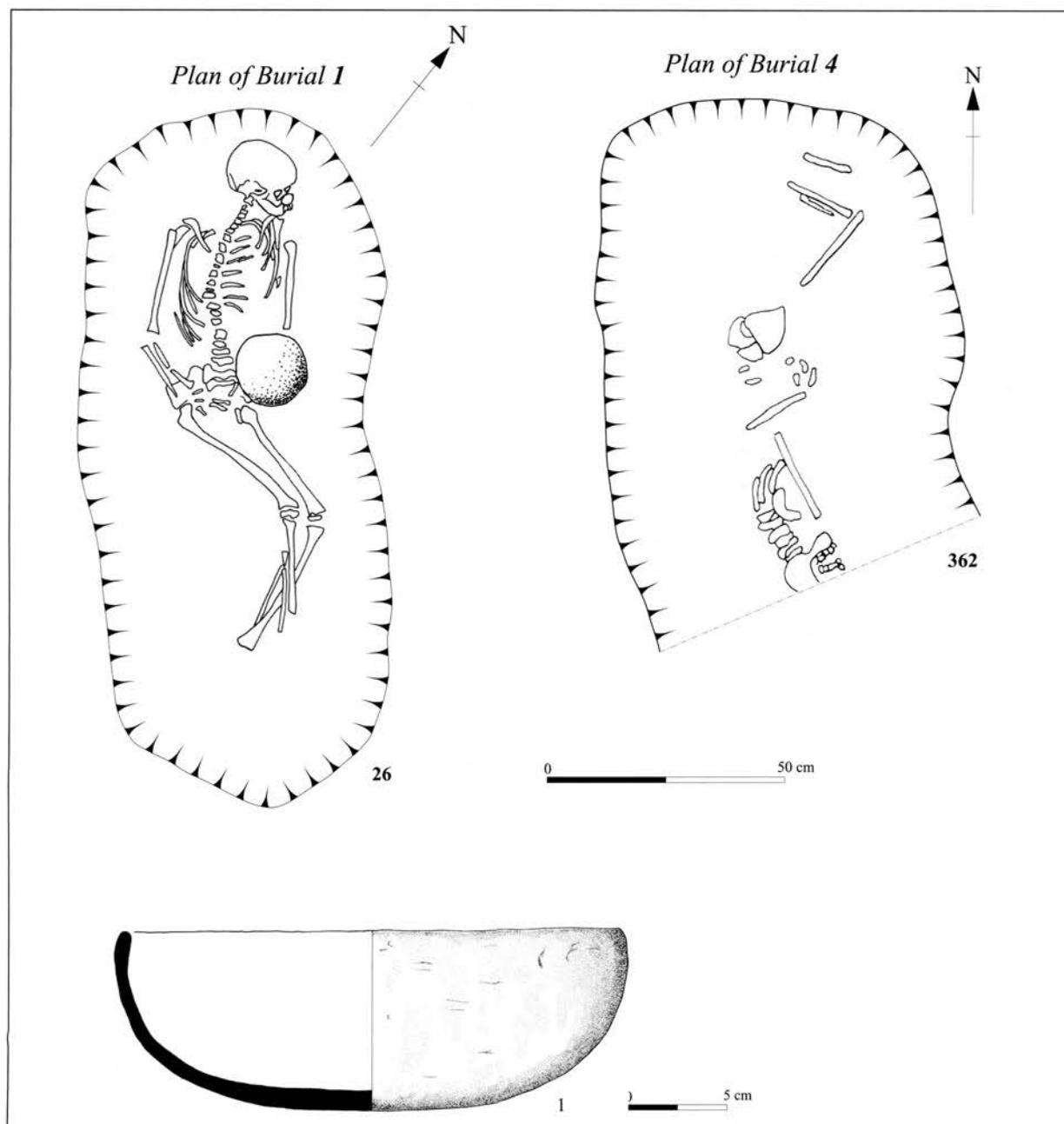


Figure 9. Burials 1 and 4. Pottery from Burial 1.

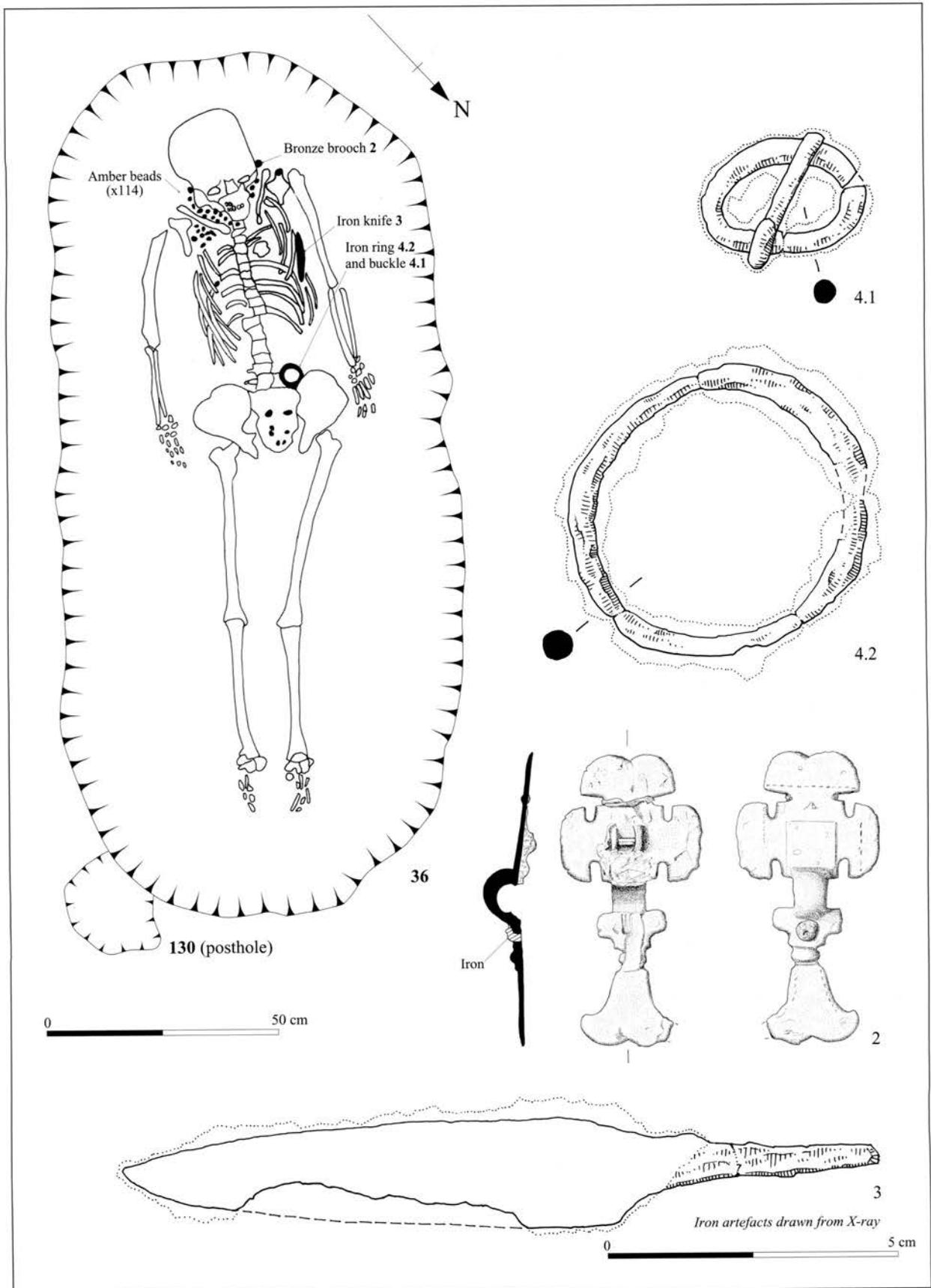


Figure 10. Burial 2 and small finds from grave.

thin on one axis. Two (Fig. 11, cat no. 15 and SF 28, latter not illustrated) are perforated from corner to corner and should more correctly be termed lozenge-shaped. The largest bead is cuboid on the perforated axis, but wedge-shaped on the other (Fig. 11, cat. no. 13). Another is wedge-shaped on one axis, but was perforated from an edge to a face and therefore has four sides to the cross-section (SF 44, not illustrated). In addition there is a discoid bead with large perforation (cat. no. 18), two discoid beads with large perforations that are best described as annular (cat. no. 20 and SF 9, latter not illustrated), one that is roughly heart-shaped (SF 78; not illustrated), and two that are irregularly polygonal (SF 19 and SF 58, not illustrated). Apart from on the discoid and annular beads mentioned above, the perforations are small. Some complete beads are not intact. In all cases the edges are rounded and there is also usually some degree of curvature to one or more of the faces, often, on some beads, producing a barrel-shaped longitudinal profile. Given that all these beads appear to have been carved quite casually, it is inevitable that some fall somewhere between cuboid and wedge-shaped. The cross-section was probably determined (if so strong a word should be used) by the original shape of the unworked fragment.

The number of small amber beads from this burial is very large, a characteristic that matches the 6th-century date (Duncan *et al* 2003, 110). Amber beads formed nearly 80 per cent of the bead assemblage at Edix Hill, and it has been suggested that they may have been sold in weight groups of about 10–12g. This idea has not been tested against the Swaffham Prior beads, as some have not been conserved and still retain a coating of hard chalky soil, but one group from a grave at Alwalton, near Peterborough, lay on this standard at 10g while another from the same site was either over- or underweight at 27g (Crummy forthcoming).

A bronze strip coiled to form a neat ring was found beneath the jaw of the Burial 2 skeleton (SF 2, not illustrated). This position is close to that of a similar strip found on the upper vertebrae of a female at Great Chesterford (Evison 1994, fig. 38.81, 4 and fig. 77.81, 4). The precise function of these strips is not certain, but the position suggests that they were sewn onto the gown. The Great Chesterford coiled strip was not associated with a necklace, but it did lie at the midpoint between a copper-alloy ring on the right shoulder and a bead on the left shoulder; perhaps a thong or lace of coloured thread passed from shoulder to shoulder through the coil. In the same way, the upper string of the Swaffham Prior necklace may have passed through the metal coil so that it hung in two small swags rather than a single long one; this would also serve to secure the necklace to the garment when it was not being worn.

The knife (Fig. 10, cat. no. 3) lay against the ribs inside the left upper arm, too high a position for it to have been stuck in the girdle or held in a sheath attached to the girdle, but it may have been in a pocket or sheath sewn into the sleeve or body of the

undergarment, or possibly into the gown. Its length, 132mm, falls at the lowest end of the range defined by Härke for large knives (1989, 146). The iron girdle- or belt-buckle (Fig. 8, cat. no. 4) is of simple oval form and was found with an iron ring just above the left hip. Unlike the larger rings of elephant ivory that were used to form the frame for the mouth of some cloth bags, the usual interpretation of iron rings is that they were stored in girdle bags and so were probably treasured possessions with some significance in terms of wealth or status (Meaney 1998, 275), whether or not they served as the suspension ring for latchlifter groups. Rings of similar or smaller size made from copper alloy or antler appear to have held similar meaning (eg Lethbridge 1931, fig. 32; Timby 1996, fig. 100, fig. 149, 11; Malim and Hines 1998, fig. 3.58). However, in this instance the close proximity of the ring to the iron buckle, so close that on excavation both were presumed to be one corroded but fragmented object, makes interpretation as a bag-ring seem appropriate, though an alternative interpretation is that it was threaded onto the girdle.

Illustrated items are catalogued below.

Metalwork

- 2 Fig. 10. Small-long brooch of cross-head derivative type. Length 78mm. The upper curved edge of the head-plate is indented and mirrors the shape of the fish-tail foot. The central panel has a slightly raised square element defined by knurled lines. Lines of punched crescents define the inner edge of each of the three arms. Plain side lappets link the form closely to that of cruciform brooches. There is a bead-shaped moulding above the foot. The side edges of the foot are marked by a row of punched crescents that did not continue onto the lower edge. On the reverse the iron pin was held between two rounded lugs set in the middle of the central panel. The catchplate, a simple copper-alloy strip (12.5mm long, 9.5mm wide) rolled over at one end, is now detached; it still retains part of the pin. A single loop of thread that passed around the narrow neck between the central panel and the head-plate is still preserved on the back of the brooch.
- 3 Fig. 10. Iron knife with central tang and straight back tapering gently to the tip. The edge is very damaged but was probably initially straight before curving upwards to the tip. There are very slight traces of mineral-replaced organics on the base of the tang, probably from a wooden or horn handle. Length 132mm.
- 4 Fig. 10. 1: Oval iron buckle in two pieces, the tongue remains in position on the larger fragment. Length 20mm, width about 30mm. 2: Iron round-section ring in fragments. Internal diameter 46mm, section diameter 5.5mm.

Beads*Glass*

- 5 Fig. 11. Globular opaque green glass, chipped. L 9.5mm, D 10.5mm. Guido 1999, Group 5i.
 6 Fig. 11. Segmented gold-in-glass bead; two segments. The outer layer of glass and much of the gold foil has decayed or worn away, but large patch of gold foil remains on one segment. L 8mm, D 4.5mm. Guido 1999, Group 13.

Amber, globular

- 7 Fig. 11. ?Complete; either irregular at one end or chipped in antiquity. L 5.5mm, W 5mm.
 8 Fig. 11. Complete. L 8mm, D 8mm.
 9 Fig. 11. From sieving. Complete. L 4.5mm, D 5mm.

Amber, wedge-shaped

- 10 Fig. 11. From sieving. Complete. L 5.5mm, W 6mm.
 11 Fig. 11. From sieving. Complete. L 11mm, W 8.5mm.
 12 Fig. 11. From sieving. Complete. L 10mm, W 11.5mm.

Amber, cube/cuboid

- 13 Fig. 11. Complete. Large, cuboid across the perforated axis, wedge-shaped across the other axis. L 19.5mm, W 20mm.
 14 Fig. 11. Complete. L 16mm, W 16mm.
 15 Fig. 11. Complete. Perforated from corner to corner. L 14mm, W 14.5mm.
 16 Fig. 11. From sieving. Complete. L 9.5mm, W 9mm.
 17 Fig. 11. From sieving. Complete. L 7mm, W 7mm.

Amber, other

- 18 Fig. 11. Complete. Discoid, with large perforation. L 3.5mm, D 17mm.
 19 Fig. 11. Complete. Polygonal L 10.5mm, W 12mm.
 20 Fig. 11. Complete. Annular. L 3mm, D 12mm.

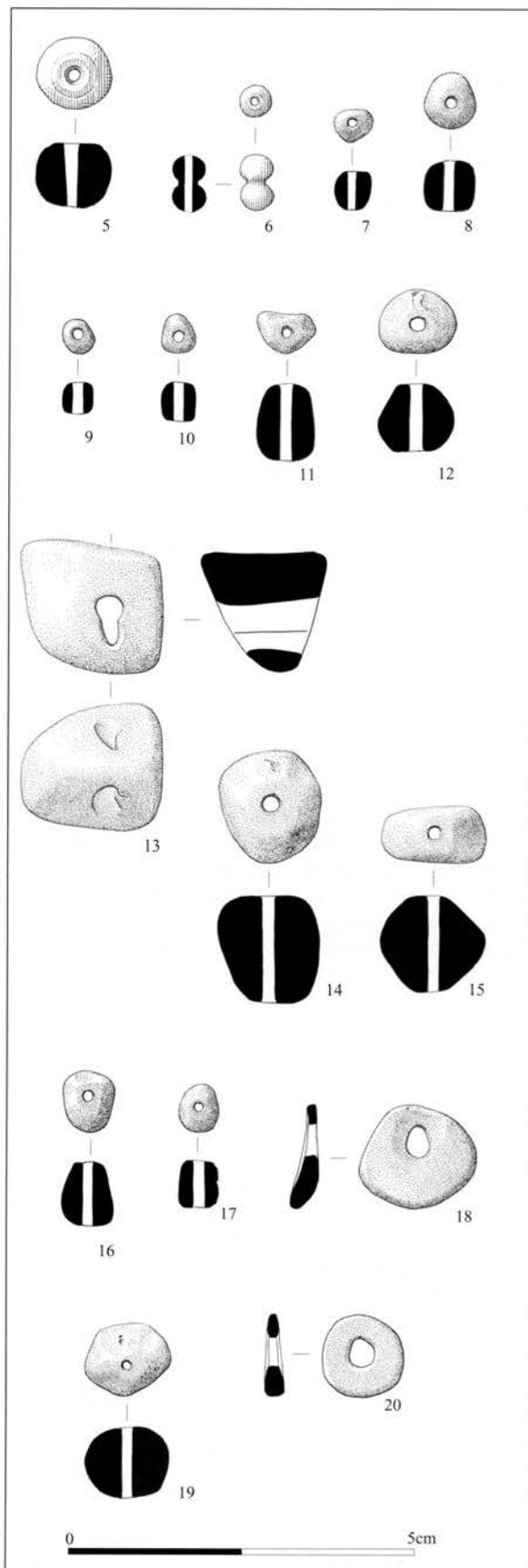


Figure 11. Beads from Burial 2.

Other metalwork

Nina Crummy

A number of further objects were recovered from other features or deposits, most having been retrieved during fieldwalking and field surveying. They include Roman, Anglo-Saxon and modern objects, as well as undateable items. There is a coin dating to the later 2nd or early 3rd century, the socketed blade from a Roman pruning-hook or similar agricultural hooked tool, and a large copper-alloy strap-guide from horse harness of uncertain date but probably Roman or medieval

A fragment of a silver coiled wire wrist-clasp and two iron spearheads are Anglo-Saxon. The wrist-clasp came from topsoil and may have been disturbed and redeposited from Burial 5 (Fig. 12, cat. no. 25); if so, it represents only one quarter of one pair of clasps, and one eighth of a full set. The type is not in general very numerous, but examples came from three graves at Holywell Row in Suffolk, a site that can be linked to Swaffham Prior through the style of the small-long brooch from Burial 2, and there are others nearby from Eriswell and Little Eriswell (West 1998, fig. 38, 3; Lethbridge 1931, graves 17, 20, 79; Hines 1984, 319).

- 21 Fig. 12. Field survey. Iron spearhead with long open socket and short solid tang between blade and socket. The blade is leaf-shaped. At the junction with the tang the blade has been bent over almost at a right angle. Length (straight) 328mm, maximum width 41mm. This belongs to Swanton's Series C3, which dates to the later 6th and 7th century (1973, 55-9).
- 22 Fig. 12. Field survey. Iron spearhead with open socket and little, if any, neck. The blade is long and straight, with angular shoulders at the lower end. The tip is missing. Length 158mm, width above shoulders 20mm. The form is probably Swanton's Series G; Series E is also a possibility as it is more numerous, but examples tend to have longer sockets. A 6th-century date would be appropriate in both cases (Swanton 1973, 77-80, 98-101).
- 23 Fig. 12. Trench 2. (10). Pit 11. The iron blade of a pruning-hook or similar tool with open socket. Length 82mm. Similar blades occur in Late Iron Age and Roman or later contexts (Manning 1985, 56-8, pl. 24).
- 24 Fig. 12. (9). Spoilheap. Large round hollow-backed copper-alloy strap-guide with two rectangular loops on the rim. Diameter 34mm, height 16.5mm. Date uncertain.
- 25 Fig. 12. (9). Spoilheap. Fragment of a silver wrist-clasp of coiled hook-and-eye type (Class A, Hines 1984), diameter 17mm.

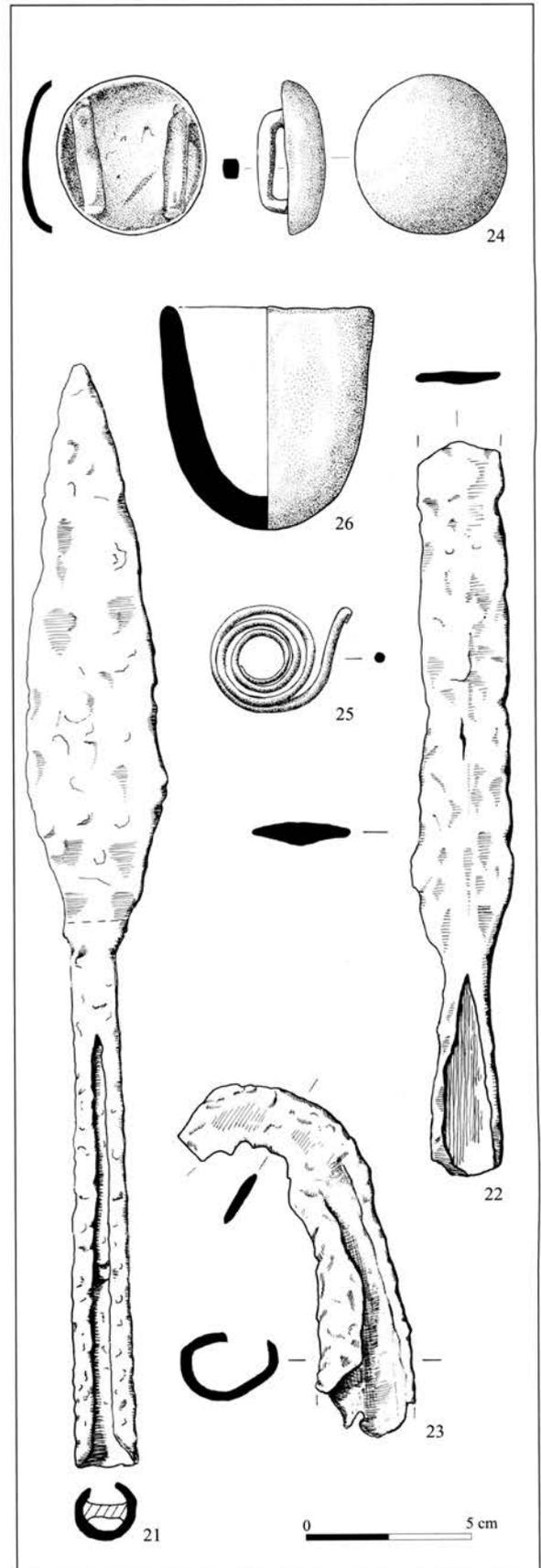


Figure 12. Artefacts from excavation and metal detector surveys.

Pottery

Gavin Lucas

The ceramic assemblage from Gallows Hill produced 27 identifiable fabric types. Most consists of fairly local wares in the Late Iron Age or Belgic tradition. They tend to be in dark sandy fabrics, often with burnished surfaces, and the vessels are carinated or round-shouldered open jars with cordons, grooves or rilling. A finer ware with a grey slip also occurs in similar forms, while a flint and chalk-tempered fabric, though common, is usually residual and has no recoverable forms. Much of the pottery consists of small, abraded sherds and is probably residual. The more familiar Romano-British greywares are not common, though their presence indicates 2nd-century activity. There are none of the typical Romano-British fine wares such as Nene Valley colour-coated vessels. By contrast, samian, local Gallo-Belgic and Colchester wares do occur on the site, albeit in small quantities. In general, the pottery assemblage dates to the 1st and earlier half of the 2nd century AD, with strong pre-Conquest origins. Apart from one feature (fill 366, ditch 67), nothing later than the earlier 3rd century AD was identified.

The pottery assemblage from the northern enclosure (ie the double enclosure and associated features) is contemporary with that from the main enclosure. The Belgic dark carinated jars are frequently the best surviving forms, along with other greywares such as necked jars and flat-rimmed bowls. Most of the pottery is of fairly local manufacture, though a Terra Nigra platter and amphora demonstrate the occurrence of imported vessels, indicative of some status. The only notable absence is of stratified samian, though it did occur in the previous collection. As with the previous assemblage, the overall date suggests a range of mid-1st to mid 2nd century AD, with nothing conspicuously later (or earlier, though pre-Conquest origins should not be ruled out). The pottery from Trenches 1-6 was generally more abraded and consisted of smaller sherds than assemblages from Trenches 7-16), possibly reflecting proximity to the double enclosure.

In addition to the pre-Conquest and Roman pottery assemblages, two Anglo-Saxon vessels were found (cat. nos 1 and 26).

- 1 Fig. 9, Burial 1: large hand-made bowl with plain, slightly incurved rim in dark, sand and grog tempered fabric. 5th to 6th century.
- 26 Fig. 12, Pit 35: small closed cup with plain rim in dark sandy fabric. ?5th to 6th century.

Skeletal remains

Corinne Duhig

The remains of four burials were examined, of which Burial 1 (26) and Burial 2 (36) were almost complete skeletons. Burial 3 (339) consisted mainly of some leg fragments and Burial 4 (362) of the skull and some post-cranial bones (Table 1). All bones were eroded and fragmented. General methods used for analysis are those of Bass (1987), Steele and Bramblett (1988) and Ubelaker (1989). The remaining burials (5-8) were not excavated.

Burial 1 (Figs. 8a and 9)

This skeleton was almost complete, though the less dense parts of the long bones, such as the humeral and radial heads, for instance, were highly eroded or absent. Some epiphyses were recovered, but were unfused in all cases. Although the skull was crushed into small pieces, the vault was complete. Two fragments of maxilla survived and the whole mandible, so it was possible to estimate age from the condition of eruption and formation of the permanent teeth, using Ubelaker's (1989) method. The canines were half erupted, roots incomplete on canines, premolars and second molars, and the unerupted crowns of the second molars were present in their crypts, giving an age range of 11 years (\pm 30 months). The sex could not be determined as this was an immature individual. The condition of *cribra orbitalia* was visible in the right orbit (the left was too eroded and fragmented to examine), a condition thought to indicate iron-deficiency anaemia. An eighth cervical and thirteenth thoracic vertebra were present (the normal number is seven and twelve), variations of no clinical significance, but often indicating a familial relationship. This is noteworthy because similar anomalies were present in Burial 2.

Burial 2 (Figs. 8b and 10)

This was the skeleton of an adult, determined as a female from various diagnostic features of the pelvis and skull. It was in better condition than the others from this site. Stains on the jaw, neck and shoulders indicated the position of copper alloy grave goods deposited with the burial (Crummy, above). An almost complete dentition was present. The attrition of molar crowns gave an age estimate of 25-35 years (Brothwell 1972). However, the crowns of the upper incisors had already been completely worn away, one premolar had been lost and the socket obliterated, and the supporting bone of the molars had resorbed to below the division of the tooth roots. Clearly the teeth and gums had been subjected to severe stress in life, which could have led to many problems, including teeth loosened in their sockets, infections in the pulp cavity, abscesses and ultimate tooth loss. It is in fact surprising that more teeth had not been lost, given the severe attrition of the anterior teeth. Various conditions were present in this skeleton which were not strictly pathological. The spine had thirteen thoracic vertebrae, only four lumbar (usually five) and

a partially lumbarised first sacral segment. Burial 1 (above) also had thirteen thoracic vertebrae and another vertebral anomaly. These traits have familial tendency, although only DNA analysis could confirm genetic correlation. The deltoid tuberosities on the humeri are marked, indicating strong development of this muscle through lifting movements. There was an 'Inca bone', a large triangular bone at the back of the skull, at the intersection of the lambdoid and sagittal sutures, which is another skeletal variant with some familial tendency. It is relatively uncommon in European populations. Within the skull vault, in the frontal bone, are slight changes of *hyperostosis frontalis interna*, a condition of poorly understood aetiology sometimes connected with obesity in older women.

Burial 3

Burial 3 was incomplete and badly fragmented. On excavation the leg bones could be seen in the anatomical position, so it is assumed that all the recovered fragments came from one skeleton. No information could be gleaned from them, apart from the recognition of an adult individual.

Burial 4

The remains of Burial 4 were badly fragmented and eroded. Fortunately, a complete immature dentition with permanent teeth in process of development and eruption was recovered. The permanent lower central incisors and first molars were erupted to near the alveolar margin, the molars had only a small part of the roots developed and the permanent second molars were within their crypts, a stage defined by Ubelaker (1989) as corresponding to 4 years (\pm 12 months). The sex could not be determined as this was an immature individual. On the inner table of the occipital bone there was a small area of pitting and extra-cortical new bone, indicating a focus of infection. It has been suggested that these changes within the skull vault could indicate meningitis (Schultz 2001) which would need to have been of sufficiently long standing to produce these changes. In pre-antibiotic times meningitis would almost certainly have caused death in a short time, particularly in a child, so it is debatable whether survival would have been long enough to allow any bone changes at all.

Table 1. Burial data.

Burial No.	Cut No.	Trench	Orientation	Posture	Bones Present	Sex	Age	Pathology	Notes
1	26	4	NW-SE	Contracted, head to the NW	Complete, apart from sternum, pubic bone and most of the feet bones	N/A	11 years (\pm 30 months)	<i>Cribrra orbitalia</i>	8 cervical and 13 thoracic vertebrae, genetically related? to Burial 2
2	36	1	NE-SW	Extended and supine, head to the SW	Complete, apart from the smaller bones of the feet	F	25-35 years	<i>Hyperostosis frontalis interna</i>	Only 4 lumbar vertebrae but 13 thoracic vertebrae, genetically related? to Burial 1
3	339	1	NE-SW	Extended and supine, head to the SW	Radius, one finger phalanx, femur, tibia and two fibulae	N/A	adult	N/A	Badly fragmented
4	362	4	NW-SE	Contracted, head to the SE	Calvarium, two fragments of maxilla, mandible, seven long bones	N/A	4 years (\pm 12 months)	Infection in the occipital bone (meningitis?)	Badly fragmented and eroded
5	132	1	NE-SW	-	-	-	-	-	Unexcavated
6	263	3	NE-SW	-	-	-	-	-	Unexcavated
7	386	4	NW-SE	-	-	-	-	-	Unexcavated
8	388	4	NW-SE	-	-	-	-	-	Unexcavated

Faunal Remains

Lorrain Higbee

A total of 5.369kg of animal bone was recovered from hand excavated features and a selection from the two phases of excavation was analysed for general quality, species present and butchery marks. Although much of the assemblage had survived as calcified fragments, it had suffered severely from chemical weathering and root etching. The combination of these two taphonomic processes had made it virtually impossible to see surface details such as cut marks and/or pathological changes.

Of the identifiable part of the assemblage (68%; 92 fragments out of a total of 134) cattle bone were the most common, followed by sheep/goat, horse, pig, deer and dog. The age of the cattle was between 24–42 months. This is by no means mature but it was significantly older than the sheep/goat present on the site. These have been aged between 3 and 9 months. None of the pig bone assisted in determining age estimates. The horse and dog bones present belonged to mature individuals and the horse could be estimated at +42 months. Due to the small size of the assemblage, little could be estimated about the husbandry of the stock animals. Exploitation of wild red deer appeared to be of some significance, although nothing could be determined about the relative importance of wild deer to the site economy.

Discussion

Pre-Conquest origins and the local Iron Age context

A faint circular cropmark is visible within the double enclosure, containing a small structure on its southwestern side. These and other features are reminiscent in form to temple sites such as Fison Way, Thetford, Norfolk (Gregory 1991), Elms Farm, Heybridge (Atkinson & Preston 1998), and Hayling Island (Downey *et al* 1980). The parallels are discussed in more detail below, but the date for Hayling Island is early (mid-1st century) and has been interpreted as representing a continuation of local native tradition. In broad concordance with these aspects is the ceramic report which stresses the Iron Age tradition apparent within the pottery assemblage from Gallows Hill, a native element which continued to dominate the deposits well into the Roman period.

There is therefore some circumstantial evidence to suggest that the Swaffham Prior temple might have been founded pre-Conquest, in the first half of the 1st century AD. The temple complex then developed during the latter part of the 1st century and through the 2nd century as a hybrid combining native and classical elements. This process reflects Romanisation of the area that occurred during this period, and it would be easy to imagine that the patronage of the temple complex came from a local elite Catuvellaunian family who would have also constructed the villa at Reach. It

is probably no coincidence that a powerful figure was based here, on the border between Catuvellauni territory and the Iceni. The Iron Age cemetery to the north of the villa, and settlement evidence to the west, helps support the idea that this was a pre-Roman focal centre.

This pattern of Romanisation by the native Iron Age elite of the region, and the links between their domestic centres, cemeteries and temple sites, can be witnessed at a number of important locations. Bartlow Hills are a particular example of how a wealthy family chose to continue native burial practice beneath huge barrows during the 1st and 2nd centuries AD, and yet they furnished these burials with the rich trappings of a Roman lifestyle. Further to the west and located on the Roman road of Street Way, Litlington provides another fine example at the other end of Cambridgeshire. The massive villa there has been shown to have been founded on an elite Iron Age site, one that looked south to the barrow and square enclosure on Limlow Hill, around which a number of burials were placed (Malim 2000). The burials were early Roman in date (mid-late 1st century) and Iron Age pottery sherds were found in the basal deposits of the enclosure ditch. Beyond Limlow Hill the pre-historic barrow field on Therfield Heath would have been visible in the distance. Such an arrangement of villa looking south towards contemporary and ancient ritual sites is a direct comparison to the pattern at Reach villa and Gallows Hill. It is worth noting that Litlington is located on another important territorial boundary, Mile Ditches.

Between Litlington and Gallows Hill a number of Roman temples of various dates exist, such as those at Heydon, Great Chesterford, and Mutlow Hill, Fulbourn. These are not so clearly linked to great houses, but the proximity of each of these to the other three Cambridgeshire dykes is reminiscent of the proximity of Gallows Hill to Devils Dyke and thus also to potential Iron Age territorial boundaries (which were more emphatically rebuilt during Anglo-Saxon times) (Malim *et al* 1997). The temple at Great Chesterford, partially investigated in the 1970s and 1980s (Miller 1995) lies near to the southern terminus of Brent Ditch, whereas Heydon was discovered by RC Neville in the 19th century (Neville 1848) and lies near the southern terminal to Bran Ditch. A circular building (also excavated by Neville) at the Bronze Age barrow of Mutlow Hill, located on a local high point of Fleam Dyke where it is crossed by the Icknield Way, has been interpreted as a temple; a hill-top location, associated with earlier burial practice and with a circular structure which are all elements similar to the Gallows Hill and Limlow Hill complexes (Fox and Palmer 1924).

Iron Age precursors to Roman temples are also found along the fen edge and within the fens themselves, for example those of 2nd- to 3rd-century date at Haddenham (Evans and Hodder 2006) and Stonea (Jackson and Potter 1996). The Haddenham temple was also located on a Bronze Age barrow and was accompanied by a number of sheep sacrifices. At

Gallows Hill a number of ring-ditches presumed to represent the cropmarks of Bronze Age barrows are found in close proximity, and amongst the animal bone from pits at the temple the identification of sheep/goat may reflect similar sacrifice and offerings. At Stonea an Iron Age temple complex was adapted during the Roman period for a Romano-Celtic building with classical pretensions, and the circular terminus ditch could well be a surviving element from its original foundation. The main deities appear to have been Minerva, Epona as well as Mercury etc, and thus demonstrate that native goddesses continued to be worshipped (Jackson and Potter 1996).

Further south in Essex the temple at Harlow provides a further parallel for Gallows Hill. This also lies on top of a prominent hill, previously used during the Bronze Age for burial. This site also included an early circular building prior to construction of the early Romano-Celtic rectangular temple with a square inner shrine. Animal sacrifice was practised and Iron Age coin hoards have been found, whilst stone carvings of a possible warrior suggest that the deity may have been a war god. This temple was located adjacent to the tribal boundary of the Trinovantes with the Catuvellauni, a symbolic location perhaps reflecting and adding strength to the boundary between earthly and spiritual realms (Green 2005, 121).

The Romano-British temple complex (1st to mid 2nd century)

Rebecca Casa Hatton

Chronology

Although short lived, the temple complex appears to have been multi-phased. Notwithstanding the possible pre-Roman origins noted above, diagnostic materials from the excavations, together with the few direct stratigraphic relationships, indicate a 1st century origin for the construction of the main enclosure, and the later part of the 1st century for that of the double one. Activity appears to have continued until the early to mid-2nd century, with only small quantities of later 2nd- to early 3rd-century pottery recovered. The temple complex fell from use around the beginning of the 3rd century.

Main and central enclosures

Cropmarks (Figs. 3 and 4) indicate a large square enclosure, its corners oriented to the cardinal points of the compass. On excavation, this enclosure was found to be defined by steep-sided ditches with basal slots for wooden palisades.

The location of a small enclosure exactly at the centre of the main compound suggests that these two features formed part of the same original complex. It is possible that the unexcavated square structure within this central area represented a shrine in its own right, with the central enclosure acting as the precinct, or series of interlinked multiphase precincts, set within a larger *temenos*. It is also interesting to note that from the cropmark evidence on the northeastern side of the central enclosure the inner and outer ditches seem

to form a partial narrow 'ambulatory' some 3m wide (Fig. 5A). However, this 'ambulatory' is not visible on any of the other three sides, indicating that the outer ditch might simply represent a separate phase of construction or maintenance of the central enclosure. If the square structure represents a shrine, it is possible to find comparable evidence at Springhead (Sites 3–5, Lewis 1966) and Richborough (Site 4, Lewis 1966) in Kent, Wycombe (Temple 1, Lewis 1966) in Gloucestershire, Bowes in County Durham (Drury 1980, 62–64) and Orton's Pasture in Staffordshire (Ferris 2000, *passim*). Rectangular religious buildings of non-Romano-Celtic form are still relatively rare in Roman Britain although more are now being found, and are often found in association with forts. They tend to be short-lived small masonry structures, square or rectangular in plan, sometimes with an internal subdivision, varying in size from 20m² to 80m² (Drury *ibid*). At Orton's Pasture the shrine was located within an irregular enclosure which had been redefined throughout the 2nd century (Ferris *ibid*).

At Gallows Hill the use of timber for the *temenos* is consistent with the early date of the complex. A parallel is found at Godmanchester where the *cella* of the temple associated with the 2nd-century *mansio* was surrounded by a timber portico. As time progressed, timber in Romano-British temples seems to have been replaced by more durable material.

A series of subrectangular pits was recorded within the main enclosure at Gallows Hill along the south-eastern and northeastern perimeters. Despite the limited nature of the available evidence, it is notable that all these appeared to be located at a distance of 3m to 5m from the boundary of the main compound, pointing to some regularity in their spacing. The apparent spatial regularity, together with the presence of possible food offerings and containers, may indicate a ritual function for these pits.

Double enclosure

In the northern corner of the main precinct was a double enclosure, the outer boundary of which was defined by substantial ditches with slots at the base for possible wooden palisades (Fig. 5B). Based on aerial photographic evidence, entrances might have been located on the eastern side and along the northwestern perimeter. The internal boundary was defined by a series of unexcavated postholes on the southwestern and southeastern sides, and by a shallow ditch with a basal slot on its northeastern side (402). The ditch contained large sherds of unabraded pottery, including jars and possible beakers, giving it a date in the late 1st century, and one of the postholes had a 1st-century bowl sherd in its uppermost fill. A gap on the southeastern side might have marked a possible inner entrance. A line of stakeholes along its western edge suggests a possible double fence line.

Within the centre of the double enclosure was an unexcavated circular feature with an adjacent square structure (F 430), an arrangement in design and size similar to that seen at Stonea (Jackson and Potter 1996). In the initial site report it was suggested

that this structure represented the *cella* of a Romano-British temple within an ambulatory (ie the double enclosure) defined by wooden columns or fences on the southeastern and southwestern sides and defined to the northeast by a ditch (Bray and Malim 1998). It was also suggested that the main enclosure represented the *temenos* of this temple, an interpretation that is derived from detailed comparison to other temple sites.

Based on visible cropmarks, the complex of features associated with the double enclosure at Swaffham Prior is at least superficially reminiscent of the circular temple at Hayling Island, near Portsmouth in Hampshire. The latter was built c.AD55–60 over a 1st-century BC Iron Age timber shrine which retained a circular plan within a fenced square courtyard (Downey *et al* 1980). The cult practised here may have been a Celtic version of the cult of Mars, as attested in circular temples of central and western Gaul (Woodward 1992, 36). The Romano-British complex comprised a circular *cella* of dressed local limestone rendered with painted plaster, approximately 14m in diameter. Cropmark evidence at Swaffham Prior suggests a circular structure with an internal diameter of some 20m, therefore bigger than the shrine at Hayling Island.

At Hayling Island the *cella* was enclosed within a square *temenos* with an ambulatory defined by columns on three sides and by a range of five rooms and a large niche on the eastern, entrance(?) side. At Swaffham Prior the evidence again suggests a *temenos* with ambulatory defined by columns on two or three sides, with an opening on the northeastern, entrance(?) side. The courtyard at Gallows Hill seems to have enclosed an area of 42m by 52m, the ambulatory being some 3m wide. Similarly the courtyard at Hayling Island was 40m by 40m with an ambulatory 3m wide. The circular shrine at this latter site had an entrance porch on its eastern side measuring c.7m by 4m. At Gallows Hill, the rectangular structure (F 430) could also have represented a porch 5m by 5m in size and facing southwest. On excavation it was found to have substantial gravel foundations, although the centre of the structure was not examined.

If it is assumed that the circular cropmark at Swaffham Prior derives from the foundations for a building, rather than a circular courtyard, then – notwithstanding the smaller example at Hayling Island – there are no British parallels for such a large-scale temple, the closest comparable examples being found in central and western Gaul. Two sites in adjacent counties, however, are of similar date and exhibit broadly similar features to Swaffham Prior. At Fison Way, Thetford, Norfolk, Tony Gregory excavated a temple complex which consisted of circular buildings (measuring up to c.13–14m in diameter) set within a rectangular *temenos*, and concentric rows of features within the outer enclosure that may have represented ‘fences’ or a stylised grove of trees; this complex was dated c.40–70AD (Gregory 1991). At Elms Farm, Heybridge, Essex, a 10m diameter circular building or *cella* was enclosed by a rectilinear feature (a

boundary wall?) with porticos to the east; this phase of the temple was also dated c.40 – 70AD (Atkinson and Preston 1998).

This type appears to have been more common in the tribal territory of the Coritani in the East Midlands where early, as well as late, Roman small timber-framed or dry stone walled structures some 10m (or less) in diameter have been recorded. In many instances, circular shrines in Roman Britain appear to have been built over an Iron Age predecessor retaining the circular plan, as at Hayling Island or Maiden Castle in Dorset (Wheeler 1943), though the temple site at Collyweston in Northamptonshire, as at Gallows Hill, produced no direct evidence of pre-Roman activity (Drury 1980, 64 ff.). The site at Gallows Hill would therefore seem to have combined local tradition from the neighbouring Coritanian area, especially in the use of timber (eg for the ambulatory), and Gaulish influence in the size and general plan (*cella* and columned ambulatory).

The mausoleum

Mausolea associated with villas, such as that at Swaffham Prior, are recorded from the 2nd century throughout the whole of the Roman period, having been introduced by official dignitaries and progressively adopted by the local rural gentry. They usually went out of use in the 3rd century, undergoing the same fate as their ‘associated villas’ during the period of political instability which led to a series of Gallic usurpers in Britain. They were frequently (re)constructed in the course of the 4th century, mirroring the occupational/refurbishment phases of villas (Casa Hatton 1999). Mausolea on villa estates often took the form of temples or were associated with them, as at Bancroft and Lullingstone in Kent (Meates 1979), Harpenden in Hertfordshire (Lowther 1937) and Wood Lane End, Hemel Hempstead (Neal 1984), this latter being part of a major ritual complex possibly associated with the villa at Gorhambury, near *Verulamium*-St Albans (Neal *et al* 1990).

At Gallows Hill, sherds of late 1st- to early 2nd-century pottery were recovered from a layer which sealed a demolition deposit associated with the possible mausoleum. Bearing in mind the limited nature of the available evidence, the pottery might provide a *terminus ante quem* for the building, which would have been constructed and used some time during the later part of the 1st century, being contemporary with the religious complex and thus representing one of the earliest known examples of such structures in Roman Britain.

The demolition deposit associated with the shrine/mausoleum also contained the fragmented remains of an inhumed unsexed adult (Burial 3). It was the presence of this inhumation that provided a clue for the excavators as to the function of the structure as a possible mausoleum. Given the extent of plough disturbance, the burial, which could have been either late Roman or Anglo-Saxon (above), was not assigned to any specific period (Bray and Malim 1998). The absence of a grave cut would indicate that the

inhumation was placed over the demolition deposit of the shrine/mausoleum being therefore secondary to the building. If the early date for the structure is correct, then its associated primary burials are likely to have been cremations. However, no cremated remains were uncovered during the archaeological investigations.

The 'offerings'

Analysis of possible offerings is hampered by the limited nature of investigation so far conducted at Swaffham Prior. No clear indication of specific cults was recorded and the finds from the site had no particular votive connotations. Pits within the main enclosure contained animal bones, as well as sherds of jars and flagons, perhaps associated with libation rituals or sacrifice. Offerings at Romano-British temple sites show in general that items of jewellery were most common, together with figurines, miniature weapons, tools and pottery, sheet and leaf plaques, metal vessels and coins, as suggested by the assemblages deposited at the ritual complex at Uley in Gloucestershire (Woodward 1992, 66ff). Although a very small and statistically insignificant assemblage of animal bone was recovered from the pits at Gallows Hill it would not be inconsistent with the pre-Conquest and later tradition of sacrifice (Wait 1985). No complete animal burials were recorded.

Limited evidence for industrial processing in the form of slag and a large piece of kiln lining was found scattered across the excavated area. Although there was no evidence for kilns or furnaces, it is possible that light industrial activities were carried out, where metalwork and pottery could have been manufactured to be sold to worshippers. It is not unusual to find evidence for metalworking at temples in Roman Britain. An example is provided by Uley where bronze rings were produced and sold to pilgrims. At Nettleton Scrubb in Wiltshire remains of pewter and iron working were identified (Woodward 1992). It has been suggested that waste generated on a ritual site had to remain within its confines (Green 1976).

Anglo-Saxon burials

Rebecca Casa Hatton

Two grave alignments were identified, northwest to southeast (Burials 1, 4, 7 and 8) and northeast to southwest (Burials 2, 3, 5 and 6), being clearly conditioned by the orientation of the ditches and structures associated with the Romano-British ritual complex. The evidence would therefore suggest that, although in disuse, this latter was still visible on the surface, as further demonstrated by the presence of Burial 7 within the ditch of the main enclosure. There was no consistent pattern in the position of the heads in relation to the alignments of the burials. By contrast, there were two recurrent body postures, extended and supine (Burials 2 and 3), and contracted (Burials 1 and 4). The latter posture appeared to be associated with juveniles, as was the relative absence of items of furniture. Based on the series of similarities described

above, it is possible that the inhumations might have been contemporary with each other, representing the burials of members of the same family group. Dating evidence provided by Burials 1 and 2 and a silver wrist clasp from above Burial 5 (Fig. 12, cat. no. 25), belongs to the 6th century. Of two spearheads (Fig. 12, cat. nos 21 and 22) from the ploughsoil above Burials 7 and 8, the latest is a Swanton Type C3 spearhead of the late 6th to 7th century (Swanton 1973).

The presence of furnished and unfurnished inhumations within the same burial ground is not unusual in the context of Anglo-Saxon cemeteries, nor is the appearance of a variety of body postures. Unfurnished graves, whether extended or contracted, have been traditionally assigned to indigenous people, although some unfurnished burials could have also represented pagan Anglo-Saxons who became influenced by British practices. Similarly, the location of Anglo-Saxon burials in close proximity to a former ritual/burial site in a position of good visibility dominating a much earlier, ritual landscape is not uncommon for the period, and could indicate the desire expressed by the incomers to be associated with the local ancestors, or an attempt to legitimize power (O'Brien 1999, 60). Whether the burials at Gallows Hill might have represented indigenous, as well as Anglo-Saxon people, is uncertain. More certain is the intentional reuse of a former ritual/burial site by an intrusive group, and the possibility exists that some of the structural elements of the complex could, in fact, be Anglo-Saxon pagan shrines (Blair 1995).

Conclusions

Results of investigations of the cropmarks at Gallows Hill suggests that they represent a religious centre associated with a nearby villa. Whilst the site witnessed major Roman activity including two possible temples, a shrine/mausoleum and 'votive' pits, it also played an important role during the Early Anglo-Saxon period as a cemetery. The commanding position of the site, overlooking a prehistoric ritual landscape in one direction and the Fens in the other, would have led to its reuse by emerging elite families as they sought to legitimise their position by identifying themselves with the local ancestors.

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An Anglo-Saxon settlement at Cherry Orton Road, Orton Waterville, Peterborough

James Wright

Excavations close to the parish church of Orton Waterville revealed Anglo-Saxon settlement remains dating from the 7th/8th century to the 11th/12th century. These mainly comprised enclosure ditches of various phases, pits, post-holes, and one possible sunken-featured building. Some hand-made pottery, though undecorated and undiagnostic in form, may pre-date the 7th century.

This short article summarises the excavation results and their significance. Full details, with specialist contributions on the finds and environmental remains, can be found in the archive report (Wessex Archaeology 2004).

Introduction

Following field evaluation which indicated that the site of a proposed housing development at Cherry Orton Road, Orton Waterville, Peterborough contained Saxon and medieval features (AOC 2003), Wessex Archaeology undertook an archaeological excavation in 2003. The site (centred TL 1568 9627) covered c.0.25ha to the north of St Mary's parish church (Fig. 1). Underlying solid geology comprises either Cornbrash or Great Oolite Series, overlain by Pleistocene drift deposits of Fen and Valley Gravels (BGS 1971). The site lies on a gravel terrace at c.16m OD, approximately 1km south of the present River Nene and 400m from the floodplain.

Archaeological background

There are few known finds or findspots recorded in the Peterborough City Council Historic Environment Record (PCC HER) from the immediate vicinity, but prehistoric and Roman archaeological remains in the Nene valley are well documented. The area is also rich in Anglo-Saxon cemeteries and other remains. In Peterborough (*Medehamstede*) a rich monastic site was founded in the mid-7th century and controlled much of the surrounding area until it was sacked by the Danes in 870. Seventh-century masonry survives beneath the present minster. At Orton Hall Farm, just

over 1km to the southeast of the site, there is evidence for continuity of settlement from the Roman to the early Saxon periods (Mackreth 1996), and a possible Saxon village was noted in the 1930s during gravel extraction in Orton Hall Park (PCC HER 01808c). Mid- and late Saxon features have been identified at Botolph Bridge (Kemp and Spoerry 2002). An early Saxon cemetery was recently excavated at Alwalton less than 2km to the west (HAT 1999) and there were finds of Anglo-Saxon burials at Woodston Hall (2.5km to the northeast) between the early 19th and early 20th century (PCC HER 0716).

No distinction is made between Orton Waterville and Orton Longueville in Domesday, and only one church is recorded. By the end of the 12th century the parish had been divided and there were two churches. *Orton* may derive from 'TŪN on the slope'; *Orton Longueville* is thought to be named after Longueville, near Bayeux, and *Orton Waterville* is presumed also to be named after a town in France (Ekwall 1959, 351). St Mary's church, Orton Waterville, retains some 12th century fabric (Salzman 1938), and the churchyard wall forms the southern boundary to the excavation site. Several 17th and 18th century cottages lay along Cherry Orton Road to the west, but the site itself appears to have remained as open ground, probably backlands, and Ordnance Survey and other maps show no buildings here.

Anglo-Saxon activity

A very small quantity of undiagnostic worked flint of presumed prehistoric origin and two sherds of Romano-British pottery, all redeposited in later features, were recovered, but otherwise there was no evidence for land use before the Anglo-Saxon period.

The earliest features (Phases 1a and 1b) comprise an arrangement of ditches, probably reflecting an enclosure and related field system. These have been assigned to the early to mid-Saxon period and provide evidence for the development of rural settlement beginning in probably the 7th/8th century and con-



Figure 1. Site location plan, showing excavation area and all features.

tinuing, within the excavated area, until the 11th or possibly 12th century (Figure 2). Phase 1a was represented by ditch 4 (the southeast, right-angled corner of an enclosure), pit 192 within this enclosure, ditch 1 to the south, post-hole cluster 258 and post-hole line 170. Phase 1b saw remodelling of the enclosure, with ditch 3 perhaps extending it to the south and ditch 2 replacing ditch 1. Subrectangular pit 94, possibly a sunken-featured building, and pit 203 have also been assigned to this phase, though it is possible that both belong to Phase 1a.

The precise chronological sequence remains uncertain, partly a reflection of the small quantity of datable finds (in this case exclusively pottery), and partly the difficulty in closely dating this undiagnostic material. This applies particularly to the early to mid-Saxon pottery, with the potentially earliest elements (organic-, igneous- and sandstone-tempered wares; 4, 26 and 20 sherds respectively) perhaps of pre-7th century date and representing 45% of the period assemblage (111 sherds). However, no features can certainly be assigned to this date, and the pottery may represent residual material from settlement in the vicinity (but beyond the limit of excavation), perhaps reflecting a shift of activity. The recently excavated cemetery, of probable 6th century date, at Alwalton (HAT 1999) may have been associated with this postulated settlement.

The 0.25ha excavated at Cherry Orton Road provides only a 'keyhole' view of the layout and development of the settlement, and one might compare this with the site recently excavated at Godmanchester (Gibson 2003), almost ten times as large as that at Cherry Orton Road. Even there, only part of the 6th – 7th century settlement was exposed and at least two alternative sequences of settlement development are put forward (*ibid.* 2003, fig. 42). Similarly, the proposed sequence at Cherry Orton Road might be reinterpreted, although the late Saxon phase seems to be fairly clearly defined. Despite this caveat, the nature of the ditches in particular suggests that they formed part of a system of rectilinear boundaries representing enclosures, fields and trackways that were subject to subsequent modification. Such ditches indicate development from the late 6th century onwards, with boundary features becoming of increasing significance, particularly in the 7th and 8th centuries (Reynolds 2003, 98). Their layout at Cherry Orton Road suggests that the focus of settlement lay northwest of the site in both phases.

A possible sunken-featured building and two pits provide some evidence for settlement in the early to mid-Saxon period, with small quantities of pottery and animal bone from the pits, but only one sherd and a fragment of animal bone from the sunken-featured building. This paucity of material is not unusual in this period. For example, the early Saxon settlement at Godmanchester produced only 50% of the pottery at Cherry Orton Road in terms of early to mid-Saxon sherds per 100m² of the site, with between six and 358 sherds recovered from the six buildings (Gibson 2003).

Identification of feature 94 as a sunken-featured building is somewhat equivocal as it was rather small. It measured just 2.3m by 2.1m and was 0.2m deep with steep sides and a flat base, and contained a single homogeneous fill. Furthermore, there were no associated post-holes. However, other examples without post-holes have been recorded and it would fall within West's Type-D classification (West 1985, 114), although with square rather than rounded corners. Two groups of early to mid-Saxon post-holes, as well as a late Saxon group, probably reflect fences or similar, rather than buildings.

Late Saxon/medieval development (Phase 2) appears to comprise modifications to the existing layout of ditches rather than a wholesale replacement as has been suggested at, for example, Little Paxton, where the settlement is dated to the 9th – 11th centuries (Reynolds 2003, 115; cf Addyman 1969). The attribution of features to this phase (10th – 11th century) at Cherry Orton Road is based largely on the presence of varying quantities of late Saxon pottery. More than 76% of the period total (103 sherds) comprises St Neots ware (65 sherds) and wheelthrown Thetford ware (13 sherds) assigned to the 10th – 11th and 11th – 12th centuries respectively. There is some indication at Cherry Orton Road for an enclosed settlement, extending northwest of the site, represented by partial re-cutting of ditch 4, ditch 5, and re-cutting of the northern part of ditch 3. The latter and ditch 130 may have formed the south end of a trackway, although little of the overall layout was exposed. No structural remains were identified within the limited area exposed, but hearth 243 might indicate the location of a building and post-hole group 6 a fence line, with pits 106, 167, 195, 246 and 260 perhaps also reflecting settlement.

Artefacts

Finds from the early/mid to late Saxon phases are, excluding pottery, limited to a few nails, a knife, a bone skate and lava fragments probably from a quern, though such a restricted assemblage is not unexpected from a rural settlement of this nature. The range of variation in the early to mid-Saxon pottery fabrics is also limited, but indicates that several sources could be represented. The most common types contain sub-angular quartz, but calcareous wares (tempered with shelly or oolitic limestone) are present in smaller quantities, as are fabrics containing sugary sandstone of a type known in Lincolnshire, or coarse sandstone typical of the Lower Carboniferous strata of Derbyshire and the Pennines. There are also fabrics with igneous-derived, granitic inclusions, possibly from the Charnwood Forest area of Leicestershire (Williams and Vince 1997). The presence of a relatively large proportion of St Neots and Thetford wares has been noted above, and there is a single sherd of unglazed Stamford ware.

Animal bones

The enclosure arrangements are likely to reflect stock control, and though the small assemblage of animal

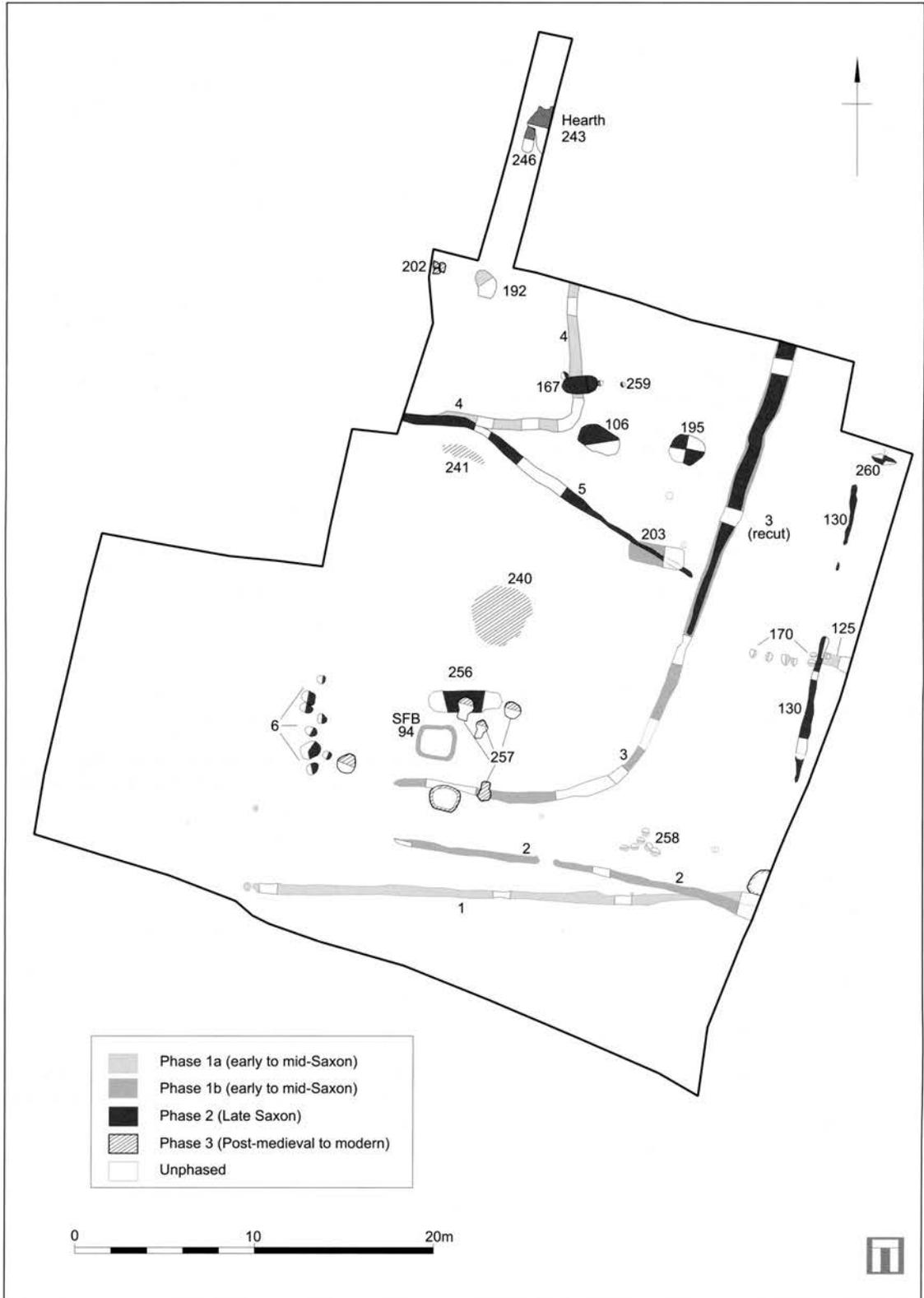


Figure 2. Phase plan, all features.

bone provides little information it does indicate that the common domesticates were exploited, probably mainly for their milk as well as for meat. Animal sizes are of a similar range to those at West Stow (Crabtree 1990) and, among the 51 identified bones, cattle and sheep/goat (though no positive identifications of goat) were most common and fairly equally represented, with fewer horse, dog and pig bones.

Plant remains

Charred plant remains reflect exploitation of both clayey (in the floodplain?) and sandy soils, though the soils may generally have been of low fertility. Grains of free-threshing wheat (*Triticum aestivum sensu lato*) were by far the most common, barley (*Hordeum vulgare*) less so and rye (*Secale cereale*) relatively infrequent. A glume base and spikelet fork of hulled wheat (*Triticum dicoccum/spelta*) provides a further hint that this crop may have been reintroduced in the Anglo-Saxon period. Several probable or possible grains of leguminous crops were also recovered, most identified as broad bean (*Vicia faba*) or pea (*Pisum sativum*). Grains of oats (*Avena* sp.) were common, although it was not possible to say if these represent the wild or cultivated variety. Seeds of wild species, mainly common arable weeds, were abundant compared with many mid- and late Saxon sites in East Anglia where remains consist predominately of cereals and large grass seeds. Overall, the available evidence suggests that the earlier stages of crop processing had been carried out before the crops were put into store. The small quantity of charcoal with a high ratio of wood from the hawthorn/ *Sorbus* group may reflect dependence on scrub or marginal woodland for firewood.

Medieval activity

There were no medieval features and only a single sherd of pot, of 13th – 14th century date, probably reflecting a settlement shift. This postulated shift might coincide with the division of the parish into Orton Waterville and Orton Longueville by the end of the 12th century, and settlement in Orton Waterville may have subsequently focused around the church. Cherry Orton Road is likely to have been a medieval development, and the few post-medieval remains, including post-hole structure 257, limestone pad 202 and metalled surfaces 240 and 241, probably reflect backland activity associated with buildings along the street frontage.

Conclusion

Excavation at Cherry Orton Road, Orton Waterville has revealed a sequence of mid to late Saxon rural settlement probably spanning the 7th/8th – 10th/11th century with hints of both earlier and later activity. Subsequent evaluation of land south of the site recorded a sparse distribution of pits and gullies and

just two sherds of early/mid and late Saxon pottery (Upson Smith 2004). This has been interpreted as representing activity peripheral to the site under discussion, and provides additional confirmation that the main focus of Anglo-Saxon settlement lay further northwest. Despite the small area investigated at Cherry Orton Road, it is possible to discern evidence for the increasing significance of boundaries and a probable later, medieval shift towards the parish church. Similar sequences are encountered in other village centres, clearly demonstrated for example at Cottenham (Mortimer 2000). The 'clear need to research rural settlement patterns and their origin' (Wade 1997, 52) is a challenge which is being taken up, at Cherry Orton Road and elsewhere, by taking the opportunity to investigate vacant plots within villages before they are infilled with modern development.

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Landscape History, Observation and Explanation: the missing houses in Cambridgeshire villages

Christopher Taylor

The plans of a group of South Cambridgeshire villages (Little Shelford, Whittlesford, Harston, Sawston, Pampisford, Knapwell, Swaffham Bulbeck and Balsham) are analysed in an attempt to explain gaps where houses formerly must have stood. The conclusion is that 12th-century lords or their servants may have removed the houses and relocated the inhabitants in new planned settlements as part of a policy of estate improvement. This hypothesis is considered in the context of both the wider picture of medieval village development and the methodology of landscape history.

Introduction

One of the problems, exacerbated by age, of being an old-fashioned historian who tries to understand the landscape is that, while one can usually observe what has happened in the past, it is much more difficult to find out why, when and by whom it was done. That is, one can often see the results of human action in the landscape, but not always discover or understand the economic, social, political, symbolic or just plain idiosyncratic reasons behind them. This is particularly true when dealing with medieval and earlier settlements and their landscapes.

For me, with a life-long interest in villages, this difficulty continues to be a major frustration. Nearly everything I have observed about nucleated villages during some fifty-odd years looking at their siting, forms, origins, expansion, mobility, decline and abandonment, has almost always run up against these problems. Of course I have put forward various reasons, dates and names for what I have seen. But while usually I have been confident about my observations, interpretations continue to be elusive. In this paper I want to present another set of observations on some Cambridgeshire villages (Fig. 1), that result from a method of research that I feel fairly sure of, that of analytical fieldwork. But, as usual, the deductions from these observations remain uncertain. Yet the deductions have to be made. Otherwise the history of the landscape would be the history of a dead world.

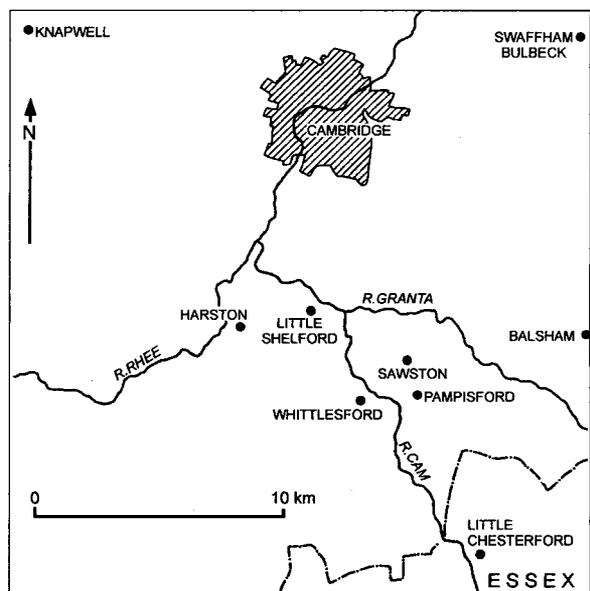


Figure 1. Villages discussed in the text.

Whittlesford (Fig. 2)

I begin with the Cambridgeshire village that I have spent more time studying than any other and, probably as a direct result, the one that I understand least, Whittlesford (Taylor 1989a). There are many unexplained features of its landscape, but the concern of this paper is perhaps the most obvious one. As the plan of Whittlesford makes clear, the main street of the village runs south-west to north-east, heading for a ford across the River Cam that gave the settlement part of its name (Reaney 1943, 98). But, until the 1950s when the modern expansion of the village began, the dwellings along its High Street stopped some 500m short of the site of the ford. The only ancient features overlooking the ford were the medieval parish church and a moated site. There is no doubt that the moat surrounded the house of the principal manor of Whittlesford, certainly from the early 16th century

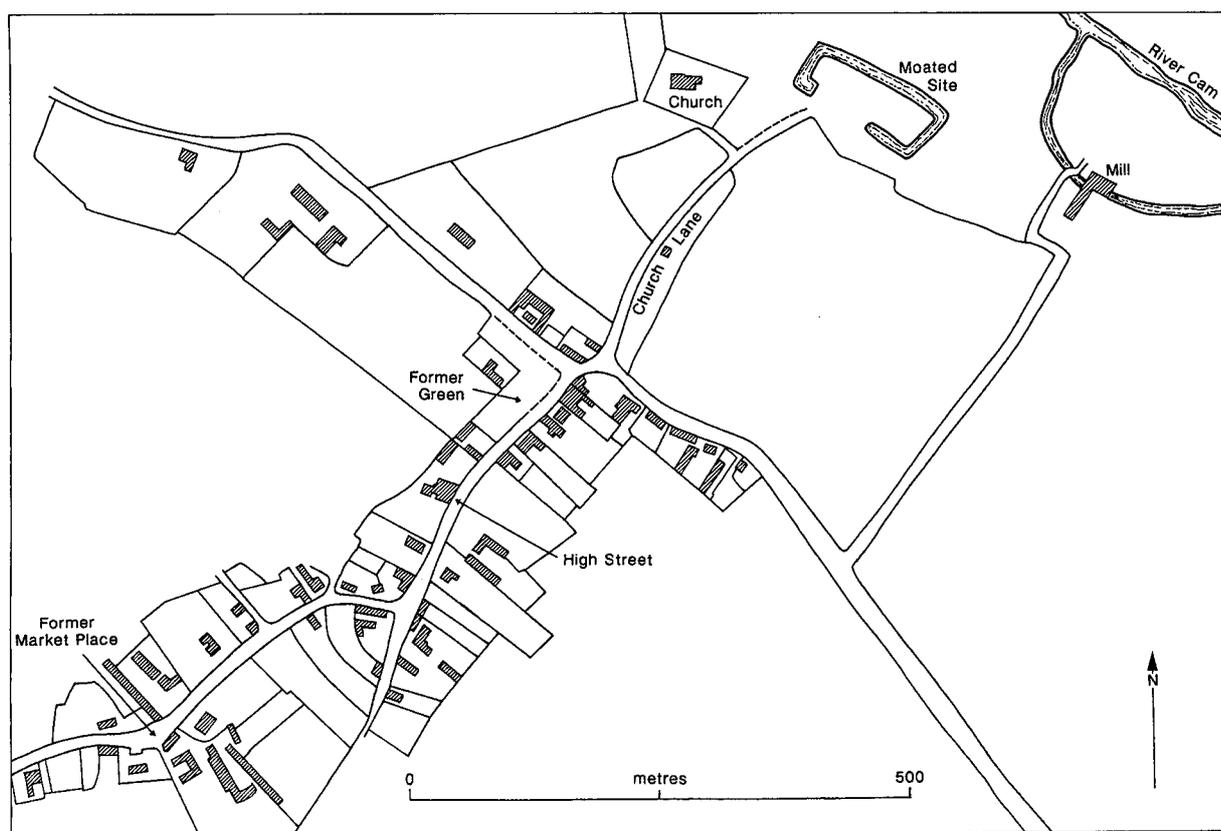


Figure 2. Whittlesford, based on 19th-century Ordnance Survey maps and the 1815 Enclosure Map.

and, presumably, from at least the 12th century (VCH 1978, 265–6). But, apart from one dwelling of 18th-century date, the Church Lane that linked the north-eastern end of High Street to the church and manor house site was devoid of all buildings and had been from at least the early 19th century (CRO P171/26/2). This feature, with the parish church and the site of the remains of a hall or manor house lying somewhat detached from the built-up area of a village, is a not unknown one. And, of course, such a situation has been interpreted in various ways. One, and perhaps the most obvious, is that it could be the result of late emparking that leaves the manor house, often rebuilt as a country mansion, and the parish church, alone in parkland with a new replacement village some distance away beyond the park. In Cambridgeshire, Wimpole and Chippenham are post-medieval examples (RCHME 1968 210–12, Wimpole (15); VCH 2002, 372–3) while Somersham is medieval in date (Taylor 1989b). Another explanation for the occurrence of a gap between the church, manor house and the village is that there has been a falling population, resulting in shrinkage of the settlement and thus a reduction in the length of the village street. Longstowe is a Cambridgeshire example, its numerous gaps being the result of a major decline in the 14th century (Taylor 1973, 136–8), although 16th-century imparking created the largest gap of all (VCH 1973, 120, 122).

A further reason for a major gap between a manor

house and the existing village is that the latter has drifted to or has been deliberately relocated on a nearby road that has grown in importance. Again, this phenomenon is recorded in Cambridgeshire, the best example being at Caxton which apparently moved, or was moved, in the 13th century (Taylor 1973, 227–8; 1978, 128–9; 1982, 23–5). Yet one more reason, also the result of drift, has been recognised in Norfolk, where settlements have migrated from their early sites to the edges of adjacent greens and commons, leaving behind the church and a manor farm (Wade-Martins 1980).

However, Whittlesford does not fit any of these scenarios. There is no documentary evidence of village decline or shrinkage, in fact quite the reverse (VCH 1978, 263). There is no indication of imparking, at least not in the area under discussion, and what there is dates from the 18th century (VCH 1978, 264, 266), and there is certainly nothing that might be interpreted as drift or movement. There is simply nothing more than a 350m long gap between the last house in the village, a 14th-century structure, and the moated site. Yet the place-name and the alignment of Church Lane, continuing the High Street, both suggest that the village did once extend to the moated site and perhaps beyond to the ford and that the gap is not an original feature of the village plan. The situation is made more complex by the fact that Church Lane itself is now a dead-end, although its former continu-

ation can be traced on the eastern side of the River Cam, in Sawston parish. That is, any explanation of the situation has to take account of both the missing houses and the blocking of the original and surely the most convenient cross-river route. So, the general questions already noted are now specific here, when, by whom and why. None of these questions are susceptible to easy answers.

There are three pieces of evidence that might answer the question 'when'. The first is archaeological. Fieldwalking, watching briefs on housing development, and information from house owners over many years have produced material that indicates Roman occupation of the whole area around the church and beyond, with evidence for more restricted occupation along Church Lane from the later Saxon period to about 1200. This suggests that Church Lane was indeed the site of a two-row settlement, but for only a short time, in the 11th and 12th centuries. However, these dates can only be approximate, for archaeological material recovered in this unsystematic way has its limitations. This particularly applies to the beginnings of occupation, which could well be earlier.

Documentary evidence for the date of the creation of the gap in the settlement is even more limited. All that is certain is that by 1400 the lord of the manor at Whittlesford had extensive closes around his manor house, some of which were pasture and some of which, 32 acres, were arable. Not all the pasture was farmed in hand, some of it being leased (VCH 1978, 268–9). The implication is that by then this part of the village had gone. The third piece of evidence is even more unsatisfactory and lies in the form of the existing village. That section of the present High Street, immediately south-west of the Church Lane gap, has the remnants of a regular arrangement associated with a neat former L-shaped green (Taylor 1989a, 223–5). The plan form of this part of the village might therefore mean that it is of late Saxon or early 12th-century date as has been suggested for elsewhere (Brown & Foard 1998; Taylor 2002, 55–7). Whatever its date this plan must be before the subsequent expansion of the village south-westwards, for much of this later development was apparently in existence by 1206 when a new 'market green' was created within it (Taylor 1982, 25; VCH 1978, 268).

This very limited evidence suggests an approximate date for the creation of the Church Lane gap, the closing of the cross-river road and the laying out of closes in the area. It has to be before the late 14th century and was presumably effected by the removal of existing dwellings along the lane. A 12th-century date seems the most likely, perhaps associated with creation of a new, regular and possibly planned settlement, just to the south-west. The approximate date for this replacement lies within the tenure of the de Tony family at Whittlesford who held the principal manor from the early 12th century until the early 13th century. It is unlikely, however, that the de Tonys were directly involved in the process, as they were non-resident lords. The work was thus probably carried out by their bailiff or estate manager at Whittlesford.

The final question, why, can only be guessed at. It can hardly have been for the creation of parkland, for none is recorded at this date and only agricultural closes existed by 1400. The possibility that it was to create an impressive approach, as at Somersham for the bishops of Ely, seems unlikely (Taylor 1989b). Nor was the village relocated to a better site or to a more important route. The new settlement was in a much worse position than the old one, being set up along the strip of very poorly drained, permanently wet ground below the outcrop of the Melbourn Rock, in sharp contrast to the dry gravel river terrace on which its presumed predecessor along Church Lane lay (Geological Survey 1964). And not only was it arranged along the same routeway as its predecessor, merely a little further to the south-west, this route had been closed off at its north-eastern end. The most likely reason for the creation of these closes around the manor house is that they were indeed for agricultural use, perhaps in connection with improved estate management. This analysis of a minor feature at an obscure Cambridgeshire village would be of little interest if it was unique. But it is not and there are other examples nearby.

Little Shelford (Fig. 3)

Little Shelford lies immediately north of Whittlesford, on the same side of the River Cam. It too takes its name from a crossing of the Cam, 'the shallow ford' (Reaney 1943, 87), that its principal street approaches from the south-west. But, as at Whittlesford, the properties along what is now Church Street do not extend down to the river. In contrast to Great Shelford on the opposite side of the river, where late medieval buildings still lie less than fifty metres from the river, the older houses of Little Shelford lie some 250m away from it, with the parish church at their north-eastern end. Between the church and the river there is no evidence of pre 17th-century occupation apart from the manor house or Hall. This, although rebuilt in the 18th century, retains traces of its surrounding medieval moat. Again, as at Whittlesford and elsewhere, there is no reason to suppose that the village did not once occupy the land between the church and the river along the continuation north-east of the present Church Lane. An early village here would mean that the parish church, recorded in Domesday Book as a minster (Rumble 1981, 5.26), would have lain at the south-western end of this village, a position that might indicate that it was later. So much for observation – what of interpretation?

The date of the establishment of the minster church at Little Shelford is not known. It certainly existed in 970 but Oosthuizen (2001, 60) has argued convincingly for it to date from before 870. Oosthuizen, at least partly to explain the gap that she too observed, has also suggested that the minster precinct might have extended further north-east towards the river. While this is possible, the hypothesis put forward here, that the village formerly lay in this area, seems

more likely, if only because almost all villages in south Cambridgeshire that lie at river crossings are so, or were so, positioned. And the site of the modern Rectory, next to the church and with a curved eastern boundary, seems a more likely location for the extension of the precinct.

As at Whittlesford, the date of the creation of this gap is difficult to ascertain. By 1279 there were, apparently, no houses between the church and the river, for some at least of the meadows and several pastures that belonged to the demesne of the manor probably lay in the area, as perhaps did the enclosed meadows recorded in 1521 (VCH 1982, 222–3). More helpful is the layout of the surviving village along Church Street. This has a neat two-row regular arrangement more obvious on the Enclosure Map than now (CRO Q/RDc 24) and perhaps deliberately laid out. It also has the remains of a back lane, converted into a rope-walk in the 18th century, behind the properties on the north-western side (VCH 1982, 224).

However, the most important feature of this part of Little Shelford is the shape of its long external boundaries. That on the north-western side has a markedly reversed S-curve, while that on the south-east is C-curved and echoes further field boundaries and crofts to the south-east again. Such village boundaries are usually interpreted as the result of the associated settlement being laid over existing open field strips, and there can be little doubt that this is what happened here. That is, the regular area of Church Street must be a secondary feature created on former arable land. This in turn would strengthen the argument that the earlier village lay closer to the river, around the hall or manor house. And, as at Whittlesford, it might indicate a 12th-century date for the change. This would place it during the tenure of the de Scaler family who held Little Shelford from before 1086 until the early 13th century. But, like the de Tonys at Whittlesford, the de Scalers were non-resident lords and thus the removal of the village and its replacement must have been carried out by their servants.

It is possible, however, that these changes were earlier. Little Shelford parish was part of a large, probably pre-Danish estate that included the parishes of Great Shelford, Harston, Newton, Hauxton and Thriplow and possibly even extended to the whole of what later became Thriplow Hundred. It was this estate that the minster church at Little Shelford served. In the 10th century this, by then fragmented, estate passed in stages to the abbey at Ely, which seems to have reconstituted and reorganised it. This process included the establishment of daughter churches in its component villages, as at Hauxton soon after 870 (Hart 1992, 46; 1995; VCH 1982, 152, 196, 223, 239; Oosthuizen 2001, 60–1). The reorganisation could also have involved

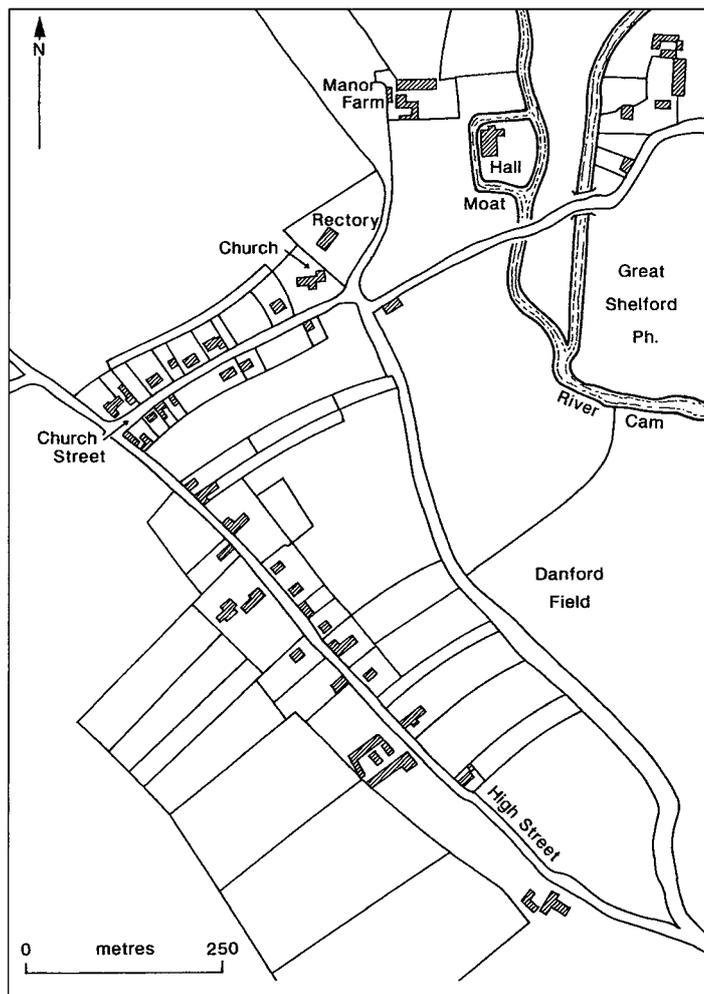


Figure 3. Little Shelford, based on 19th-century Ordnance Survey maps and the 1815 Enclosure Map.

the re-planning of Little Shelford village. Certainly, of the other nine villages in Thriplow Hundred, all but one has regular elements in their surviving plans.

If the thesis put forward here is accepted then further suggestions based on observation of the rest of the village can be made. The church at Little Shelford stands in the north-western corner of a crossroads. The south-west to north-east route leads to the river crossing and the south-east to north-west route is the river-edge road that runs from Newport in Essex through Littlebury, Ickleton, Duxford and Whittlesford to Little Shelford. It perhaps once continued north-westwards to Hauxton. But now, and certainly since the early 19th century, this road north-west of the crossroads has extended only as far as the Hall and Manor Farm and has provided access to the extensive closes further north (CRO Q/RDc 24; OS 1836). If, as at Whittlesford, this road was closed off when the manorial closes were laid out, it would explain the layout of the rest of Little Shelford. The present High Street, a road that in contrast to Church Street was never a compact settlement closely built up, consisted of a scattered line of dwellings. This road leaves the

presumed older river-edge route from Whittlesford, south of the village, runs north-westwards across the extreme south-western end of Church Street and continues to Hauxton. This may be interpreted as a later route to Hauxton, after the river-edge route had been closed. To judge from the surviving buildings along it, this had taken place by the 16th century at the latest, but more convincingly might be connected to the large increase in the population of Little Shelford between 1086 and 1279. This in turn would suggest that the removal and replacement of the north-eastern part of the village near the river was post-Conquest in date (VCH 1982, 220).

More significantly, many of the long narrow croft plots behind the larger properties on the north-eastern side of High Street that extend, or extended, to the Whittlesford road, are markedly C-curved, echoing the south-eastern boundary of the Church Street block. This presumably means that this area south-east of Church Street was once open field arable, perhaps part of the former Danford Field, and that the properties on the north-eastern side of the street were laid out over these fields.

Harston (Fig. 4)

The next village is more complicated. The parish of Harston lies immediately west of Little Shelford and most of its medieval arable land and meadow were

intercommoned with that parish (VCH 1982, 186-7). The village falls into two clear parts. One, the northern section, now High Street, lies along the road running north-east to Cambridge. Until the late 18th century settlement was confined to the west side of this road, the east being occupied by a large area of common created by poor drainage and known as The Moor. The south and western part of Harston lay along a roughly south-east to north-west road leading down to a crossing of the River Rhee. The present main Cambridge to Royston road dog-legs across this road, suggesting that it was once less important than the latter.

Before modern infill the road leading to the river, Church Street, had few buildings along it and the same situation pertained in the late 18th century (CRO Q/RDc 3). At that time and until the mid-19th century there was a much more complicated pattern of roads and lanes there. Church Street itself terminated short of the river crossing. Just east of that was a sharp bend where its continuation, another lane, ran southwards around the Manor House and on to the Mill, where the then river crossing lay. This north to south road was closed up, the existing road cut past the church and a new river crossing established there in 1851 as part of a late emparking around the Manor House (VCH 1973, 228). However, the south-east to north-west alignment of the main Church Street indicates that, prior to the diversion across the river at the Mill, it must have crossed the river near the church.

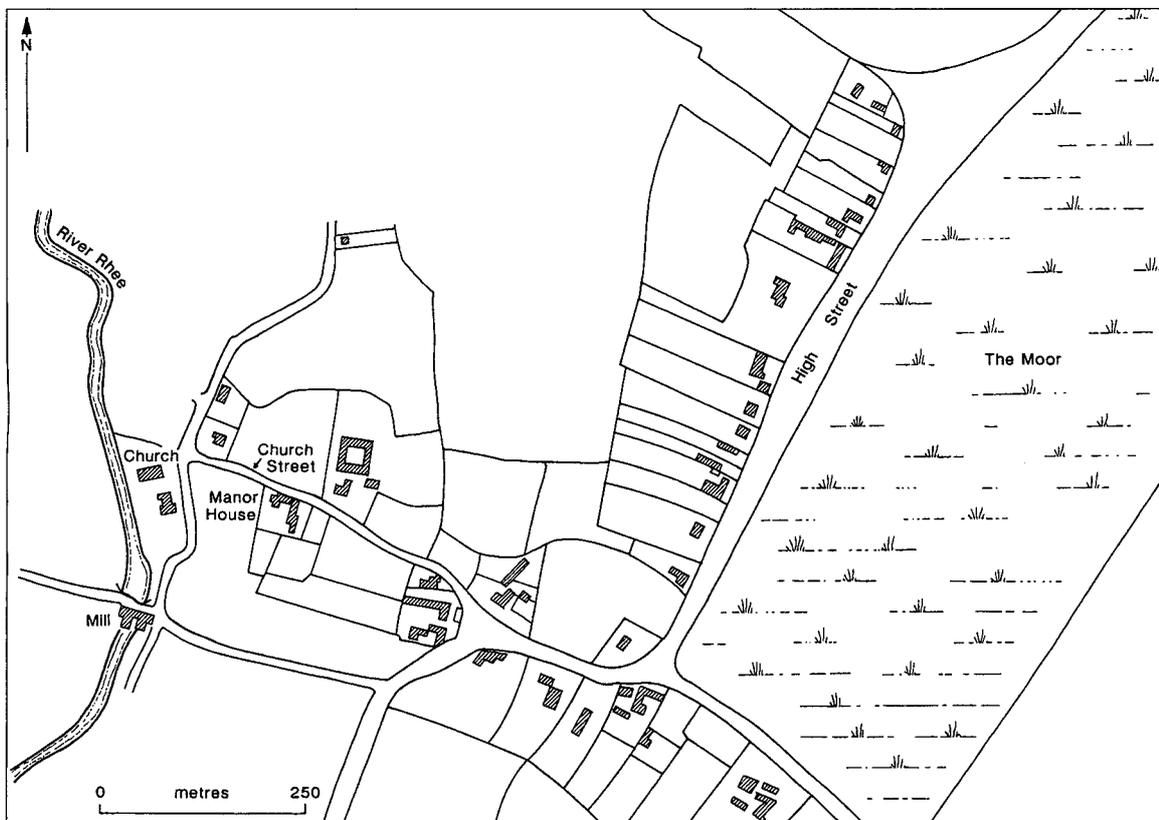
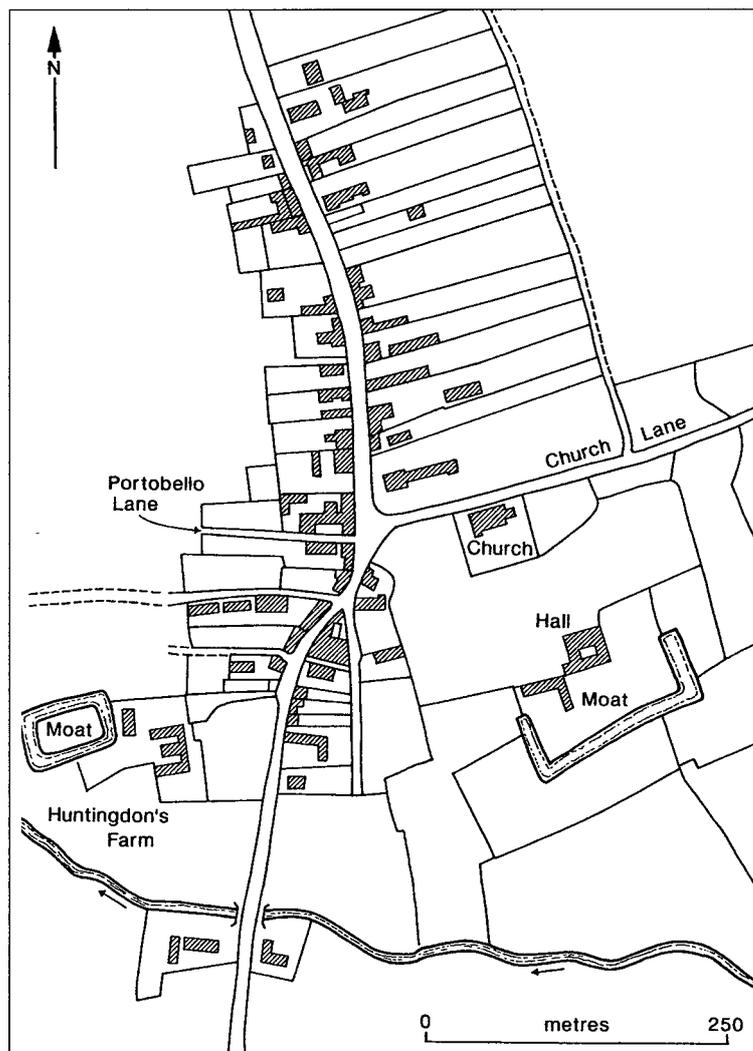


Figure 4. Harston, based on 19th-century Ordnance Survey maps, an estate map of c. 1795 and the Enclosure Map of c. 1800.

This was subsequently blocked and the crossing moved south to the Mill.

In addition to this complicated road system, the area around and to the east of the Church, Manor House and Mill was, until the 19th century, largely occupied by 'ancient manorial closes' that extended to some 55 acres in 1800 (VCH 1982, 178, 185). The exact date of the creation of all these closes is not known, but certainly by the late 14th century and perhaps much earlier the bulk of the village lay further north-east along the north-western side of the then broad road to Cambridge. As at Little Shelford, the C-shaped curves of some of the property boundaries at the southern end of this part of the village indicate that the tofts and crofts there were laid out on pre-existing open field strips (VCH 1982, 186). As before, all the foregoing is reasonably certain. The difficulties emerge with answering the inevitable questions. Harston, like Little Shelford, was a member of the pre-Conquest estate that belonged to Ely Abbey. Thus creation of closes around the church, closing up the river crossing and the possible relocation of Harston village north-west along the Cambridge road might also have occurred in the 10th century. But a 12th-century date is also likely, again during a period with non-resident lords (VCH 1982, 180).



Sawston (Fig. 5)

Sawston village is different from the preceding three, both in the complexity of its form and in the increased difficulty of interpretation. It lies immediately east of Whittlesford on the east side of the River Cam. It is perhaps one of the most physically complicated medieval villages in Cambridgeshire. Its apparent polyfocal medieval arrangement has been partially destroyed and much altered by major 19th and 20th-century industrial, commercial and domestic development. The result is that much of the older pattern can only be reconstructed from 19th-century and later maps (VCH 1978, 246-8). Nevertheless the same picture of reasonably clear observation and then more difficult interpretation is again the problem.

As at Little Shelford, Harston and Whittlesford, before this development the parish church and the formerly moated Sawston Hall to its south-east stood alongside what was once the main street, now Church Lane. Again as at Whittlesford and Little Shelford this street ran east to west to a river crossing, this one leading to Whittlesford itself. In addition to the Hall gardens, there were a number of closes in the area and the gardens themselves are mainly 18th-century

Figure 5. Sawston, based on 19th-century Ordnance Survey maps and the 1811 Enclosure Map.

and later. The latter replaced other closes, all of which seem to have been agricultural in function.

The dating of these closes is difficult. In a 1581 survey of the principal manor of Pyrat's that was centred on Sawston Hall, ten small pasture closes of between half and 5½ acres are listed as adjoining the manor house, itself then with six acres of gardens. These closes have been identified as all lying to the south of Church Lane and to the south and east of the Hall (Teversham 1942, 21; 1947, 45, 47; VCH 1978, 254). Though not certainly recorded before this date, they may be the 'Lords closes' referred to in 1349 and 1413 (Teversham 1947, 4, 6). There has been no systematic archaeological work in the Church Lane area to determine whether dwellings did once lie along it. Casual examination of building foundations on a new housing estate in the 1960s, on the north side, and then at the east end of the church, led to the discovery of a few sherds of Anglo-Norman wares, but this cannot be regarded as conclusive evidence.

If the closes around the Church and Hall were created by removal of settlement along Church Lane, is

there any evidence for a new settlement elsewhere? Certainly, unlike at Whittlesford and Little Shelford, no settlement was created at the eastern end of the lane further from the river. This area was once part of the open fields of Sawston, but was enclosed before 1390 (Teversham 1942, 95; VCH 1978, 254). Nor was a new settlement laid out along the continuation westwards of Church Lane, leading to the river crossing (now Portobello Lane). Within two hundred metres the land slopes down into a wide marshy embayment of the River Cam flood plain that even today prevents development.

Thus, if a replacement settlement was created it would have had to have been along the north to south river-edge road from Cambridge to Saffron Walden that crosses the end of Church Lane at a small green. And this is precisely where such a possible settlement can be seen. Or rather there are two possible new settlements. The first lies just south of the south-western end of Church Lane and comprises a rectangular two-row block of very small plots with a former open space in the south-western corner. The present main north to south street cuts obliquely across this block and was presumably later. The other possible settlement is a much larger single-row arrangement with long crofts, again along the north to south road but north of the west end of Church Lane. Either settlement might be considered as a possible replacement for the earlier Church Lane area. However, the fact that the manor house and moated site of one of the small Sawston medieval manors, Huntingdons, adjoins the south-western corner of the southern settlement block makes it likely that this block originally belonged to that manor and not to Pyratts, the principal one. Further, although both the agricultural land and the tenanted dwellings of all four medieval manors at Sawston were eventually mixed together, it seems as if most of the northern settlement block always belonged to the Pyratts manor. Tofts twenty feet wide are recorded there in 1461 and other tenements in 1437 (Teversham 1947, 5, 7). A reference to Townsend, the traditional name for this northern part of the village, in 1360 gives it an earlier date. There is another possible reference of 1250 to 1280 whereby half a messuage or croft, somewhere at the northern end of the village, is granted, with permission for it to be built on (Teversham 1942, 80, 89). If this messuage was indeed in the Townsend area, which seems possible, it might explain the regular variation in the original widths of the crofts there as they survived until the 19th century (OS 1885). That is, by the later 13th century the original plots of this settlement were already being split, perhaps to accommodate a rising population (VCH 1978, 246).

So, again, creation of closes around a medieval manor house by removal of the associated settlement and its relocation on a new site, seems possible at Sawston, and again a 12th-century date is most likely. This would put it in the time of the Pirot or Pyratt family who held the manor between 1086 and 1324 (Teversham 1942, 30–1). Unlike at

Whittlesford, Harston and Little Shelford the Pirotts seem to have been resident lords at least during some of their tenure.

Pampisford (Fig. 6)

Pampisford parish lies immediately south of Sawston and on the opposite, eastern, side of the River Cam to Whittlesford. The probable origin of the village as a late 11th-century planned single-row settlement has been discussed elsewhere (Taylor 2002). What concerns us in this paper is that, certainly by 1799 when the first cartographic representation of the village was made, the site of the principal medieval manor house, now Manor Farm, stood alone and quite separate from the rest of the village (CRO Q/RDz 63). And in the 250m long gap between the Manor Farm and the village there are slight settlement remains that indicate that the village once extended to within at least 80m of the Manor House. That is, alterations to the layout of Pampisford, almost identical to those at Whittlesford and similar to those at Sawston and Little Shelford, seem to have occurred. Unfortunately there is no evidence for when these changes took place. The former settlement area belonged to the lord of the manor in 1799 which might suggest that it had been manorial demesne for some time. But, apart from the physical similarity with its neighbours, nothing can be said about the origins of this gap. Only its position, close to four other examples of the same phenomenon, may be significant.

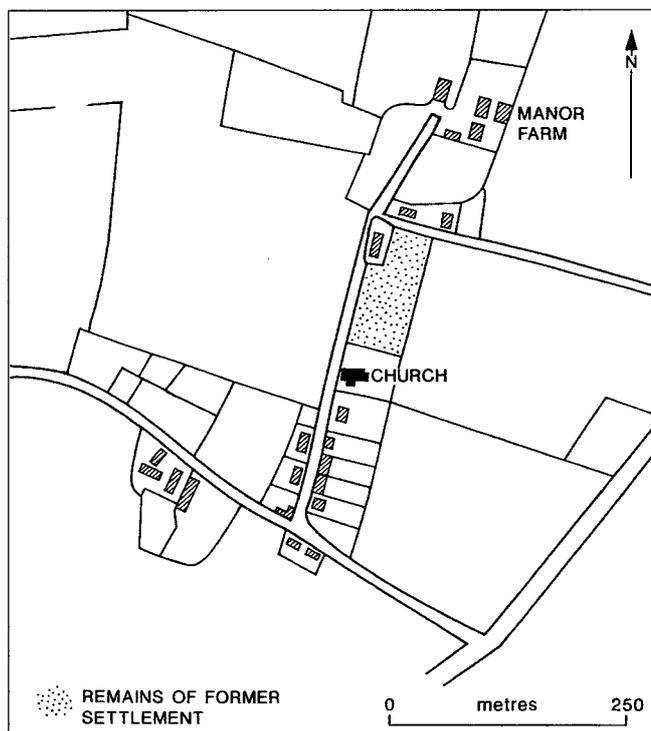


Figure 6. Pampisford, based on 19th-century Ordnance Survey maps and the 1799 Enclosure Map.

Knapwell, Swaffham Bulbeck, Balsham and beyond (Figs 7–11)

At five adjacent parishes in south Cambridgeshire, observation has produced evidence for similar apparent changes. The explanation and dates for these changes are less certain and have required some involved deduction, and not a little guesswork and imagination. The next stage is to look beyond the immediate area and to see if both the observable features and the possible interpretation can be replicated. And, of course, it can be. There are other villages in south Cambridgeshire that appear to have similar layouts to those at Whittlesford, Little Shelford, Sawston, Pampisford and Harston.

One is Knapwell (Figs 7, 8 and 9), where the church, the site of the manor house that survived until the late 18th century and the earthwork remains of possible former houses and crofts lie on either side of the former road from Elsworth to Boxworth. The present village, however, lies to the south along the road to Bourn (RCHME 1968, Knapwell (10)). If the existing village is the result of later deliberate relocation, and it certainly has the fragmentary remains of a regular two-row plan, this relocation must have taken place before the 15th century when the massive shrinkage

that left so many gaps along the main street took place (VCH 1989, 332–4).

As well as the type of village plan discussed so far, a different type of layout has been noted that may be related, albeit with a slightly different interpretation. This is where the ‘gap’ is not at one end of the village, but in the centre, leaving the site of the manor house and sometimes the parish church standing alone within a group of ancient closes. An example of this type of village is Swaffham Bulbeck (Fig. 10). There, at the northern end of the main part of the village, are extensive old closes around the principal manorial site, now Lordship Farm, its moats and its chapel. The modern road skirts these closes in a series of right-angle bends, but to the north the alignment of the main street is continued by the two-row settlement of Commercial End. Although the latter is usually thought of as a former inland port of the 17th to 19th century, its medieval name, recorded from the late 14th century, was Newnham Street or End. This suggests that it was a subsequent addition, perhaps a replacement after the north-eastern part of the original village was cleared for the enlargement of the manorial closes. The fact that the northern exit road of Newnham is blocked by the site of the Benedictine Nunnery of Swaffham Bulbeck, founded by 1187, may



Figure 7. Knapwell Church from the air in 1956, showing the site of the manor house and the outlines of house plots and ridge and furrow on a lane leading to the stream. Crown Copyright, Ministry of Defence.

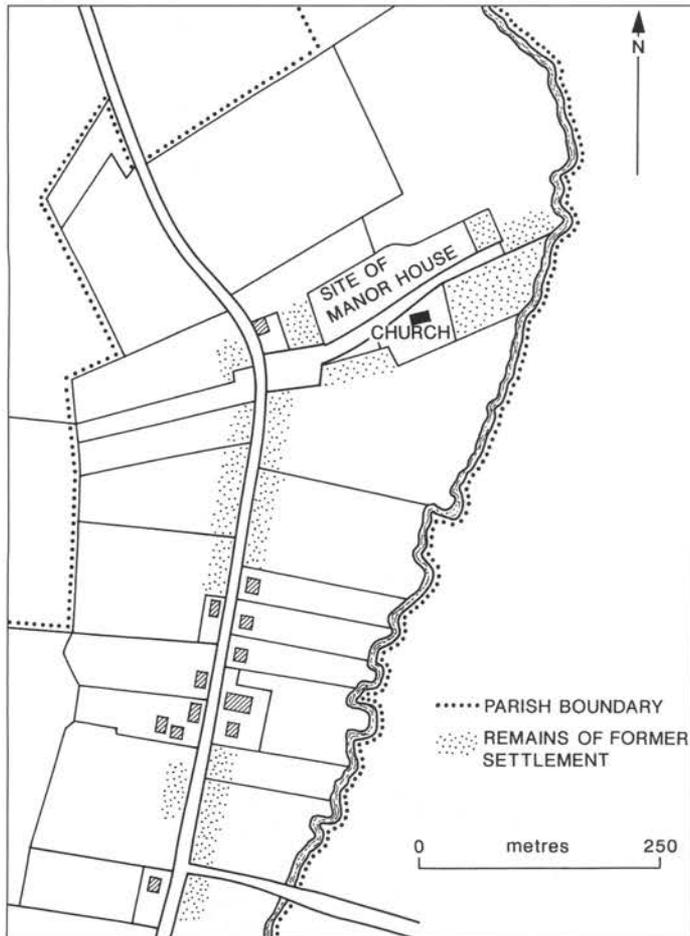


Figure 8. Knapwell, based on 19th-century Ordnance Survey maps and the 1776 Enclosure Map.



Figure 9. Knapwell Church seen across the fields from the present village. Twentieth-century housing has filled some of the gaps shown in Fig. 8.

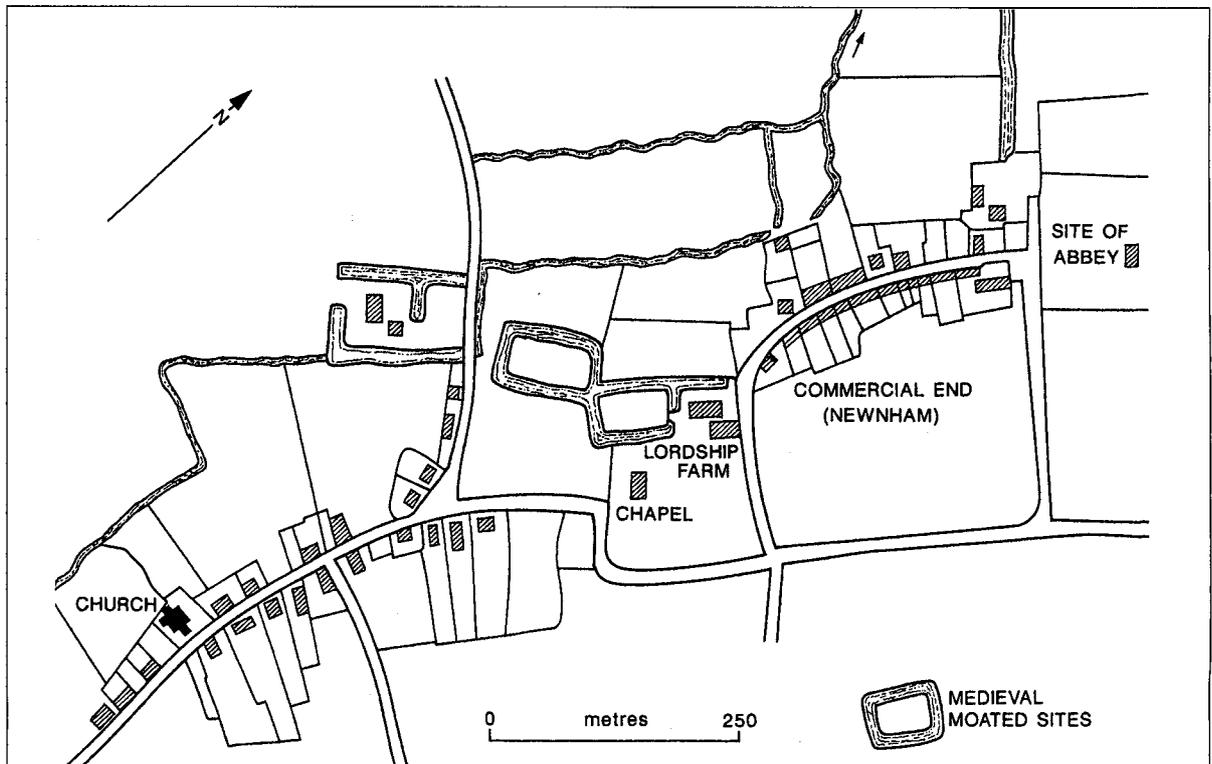


Figure 10. Swaffham Bulbeck, based on 19th-century Ordnance Survey maps, the 1801 Enclosure Map and RCHME 1972 fig. 85.

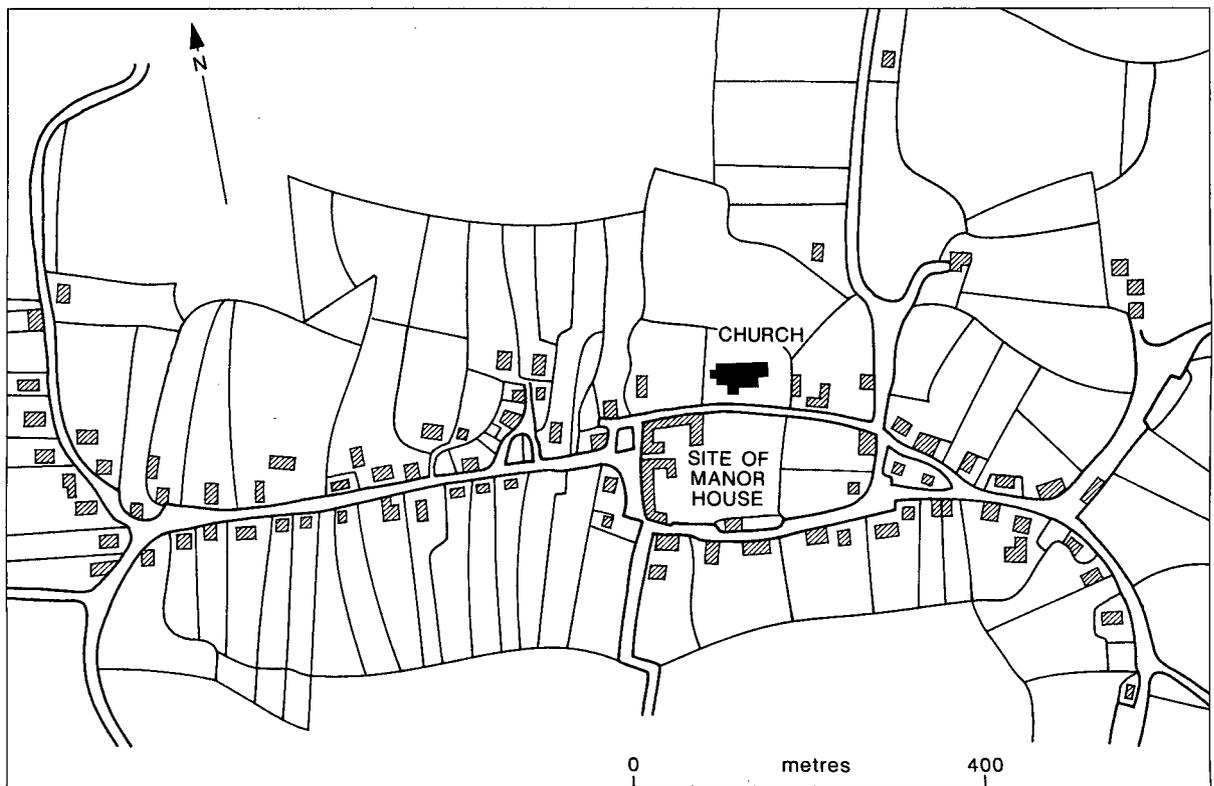


Figure 11. Balsham, based on 19th-century Ordnance Survey maps and the 1617 Estate Map.

indicate an early to mid 12th-century date for it. The principal manor was held by the de Bolbec family who were non-resident lords from before 1086 until 1197 (RCHME 1972, Swaffham Bulbeck (2), (3), (17), (78), 108–9; VCH 2002, 248–50, 252).

Another village with a superficially similar plan is Balsham (Fig. 11). The village has a very complicated arrangement with more than a hint that it was once polyfocal. But its most obvious feature now, already depicted on the earliest map of Balsham of 1617 (VCH 1978, 127; see also CRO Q/RDz 8), is the large central open area containing the site of the former manor house and the parish church that the village streets appear to be diverted around. This area, together with remains of two small former greens, one at each end, seems to break up the overall linear plan of the village. There is no certain evidence for the creation of this 'gap' beyond its existence by the early 17th century. However the ruinous nature of the manor house in 1356 and the fact that it was only rarely visited in the 14th century by the Bishops of Ely, who had held the manor since 1109, suggests that any major change to the area was before 1300. The fact that Balsham had belonged to Ely from the mid-11th century might also be relevant (VCH 1978, 129). Whether the gap at Balsham was originally at the centre of the village, or whether all or part of the village east of the gap was a replacement for the lost houses there, is of course, unknown.

Outside Cambridgeshire similar examples of villages with the same features have been observed at various places although the documentary background has not been researched. In north Essex, Little Chesterford has an area of empty closes around the Church and the Manor Farm that stands alongside the presumed north to south through road, while the apparently later village is a two-row regular block to the east, opposite to the situation at Sawston (Taylor forthcoming). Further away, at least four Northamptonshire villages also have similar arrangements if not explanations. All would be worth investigation (RCHME 1981, Marston Trussel (6), (7), Lilbourne (2), (3), (4); 1982 Evenley (6), Helmdon (4)). In Lincolnshire, detailed field examination of two villages in East Lindsey, Rand and Holton, in the early 1980s led to the recognition of similar layouts and to the same tentative explanations as have been reached here (Everson *et al* 1991, 241, 29–30, 32, Rand (1), (2)).

Conclusion

Three conclusions may be reached from the foregoing discussion, one factual, the other two philosophical. The first is that the tentative interpretation of an observable feature in many Cambridgeshire villages and elsewhere is that, in some cases, the existence of enclosed land around church and manor house, when associated with regular, perhaps planned, blocks of settlement nearby and perhaps with road closures, might be the result of medieval estate management and agricultural improvement. More specifically, the

new closes may have been intended to enlarge the area of land in severalty, close to the manorial farmstead, to achieve more efficient demesne farming. Pre-existing houses seem to have been cleared to create these closes, and their inhabitants re-housed in new planned 'estate' villages. These changes are most likely to have taken place in the 12th century.

The second conclusion is that, although such interpretations are possibly correct, their very simplicity carries pitfalls which require further consideration. For, explaining an observable feature in the terms described here is to contradict all that we experience in the real world, where few features ever stem from a single cause. Yet monocausal explanations have dominated this paper as they do much writing on landscape history. It seems to me to be much more satisfactory and probably more correct, even though much more difficult to prove, to at least suggest multi-causal explanations for features even if we cannot assign weighting to these.

For example, at both Sawston and at Harston relocation of the villages might have been due as much to the growth of a major urban area, Cambridge, and to the development of its accompanying road system as to local agricultural improvements. At Knapwell the increasing importance of the north to south road across the parish as the east to west one declined may also have contributed to the change in alignment of the village. Likewise the interpretation here of the impact of lords and their servants, particularly in creating replacement settlements, may be only partly correct. The importance of the medieval village community in changing whole landscapes is still not appreciated enough despite Professor Dyer's treatises (Lewis *et al* 1997, 204–10).

The third conclusion relates to the problem that was explained at the beginning of this paper. It has been mainly concerned with the minutiae of the landscape, an approach for which good friends and colleagues have often criticised me. The methodology is partly the result of a professional life that was primarily, and inevitably, concerned with the details of archaeological remains. But it also reflects a firmly held belief that only by working from the specific to the general, and thus drawing any conclusions from a reasonable database, can we be sure (in so far as we ever can be) that we are pushing back the boundaries of scholarship. By observing and identifying individual features in the landscape we can advance from one possible instance, as here at Whittlesford, to other neighbouring examples and thence to the wider world. For even if we do not have convincing answers for an observed feature at any one place, when such a feature is repeated elsewhere it becomes important. That is, uniqueness in landscape history is of little value. The commonplace is much more significant and only by studying it can we really advance our chosen subject.

However, my fears expressed at the beginning of this paper persist although I believe that my approach is as good as any – and perhaps better than most. In the end all landscape historians could do well to

remember two important statements. I think it was Simon Schama who once said: 'Historians are ... forever chasing shadows, painfully aware of their inability to reconstruct a dead world'. Quite. But through observation of the landscape its history can at least be partly resurrected. The second was written by the ultimate non-historian, Giles Coren, in *The Times*, 16 October 2004. 'The thing about history [is that] it just gives more pleasure and lasts a lot longer when you use a bit of imagination'.

This paper was first read at a Medieval Settlement Research Group conference held at Wolfson College in April 2005. It was intended to be an exemplar for more wide-ranging work. However, because of its local content it is published here in the journal in the hope that it may be of interest to Cambridgeshire historians.

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Conservation of early 17th Century allegorical wall paintings in St John's College, Cambridge

Tobit Curteis

In 1924 two wall paintings were discovered in a small room in Second Court of St John's College, Cambridge. Stylistic and art historical information indicates that the paintings are more or less contemporary with the building of Second Court at the turn of the 17th century. Although the subject matter was originally thought to be associated with a poem by Dryden, the current study has demonstrated that the paintings are in fact an allegory of the Five Senses, using animal imagery, a subject not uncommon in the decorative arts in this period. Analysis of the original materials and painting techniques showed that the paintings were relatively sophisticated with a wide range of pigments employed.

The paintings suffered considerable mechanical damage during uncovering and following their discovery they were treated with a layer of beeswax, a common practice at the time. The coating subsequently became dark and cloudy, obscuring much of the detail. In addition, the hair plaster substrate on which the paintings were executed had become detached from the lath structure of the wall and was vulnerable to further damage. In 2003, a programme of remedial treatment was undertaken to stabilise the paintings, to prevent further deterioration and to improve their visibility. The conservation programme not only enabled the paintings to be treated, but it also provided the opportunity for a detailed technical and art historical study.

The building

The Second Court of St John's College was built between 1598 and 1602, immediately to the west of First Court and in place of Metcalfe's Court which was offset to the southwest. (RCHM 1959, 196) The court was constructed of red and yellow brick, with Northamptonshire stone dressings and a Collyweston slate roof. The original internal walls appear to have been of a timber construction with lath and plaster, although many are now covered with 18th century panelling. The original agreement with the builders of 1598 states that

'all the roomes of this building shalbe plaistered ouerhead with good reed lime and hare and the particions

shalbe well plaistered betwixt euery fellows chamber on both sides of the same to be double latched with good lath lyme and hare as also all other places wher plaisteringe is needfull, and all that is playstered shalbe well whited over.' (Willis & Clark 1886, 252)

The wall paintings

The paintings are situated in a small room, entered through a moulded timber doorway, on the east side of room K4, in the south west corner of Second Court (Fig. 1). The walls of the small study or closet have the structural timbers exposed and are rendered, with the paintings occupying the upper part of the north and west walls above the central horizontal rail. On the west wall is a large landscape scene with animals and birds and a small townscape on the north end (Plate 2). In the centre of the painting is a stag sitting with a group of musical instruments including a drum, a trumpet and a viol. To the left is a large standing bird, now very disfigured, which appears to be an eagle or other large raptor. Below are a standing grey dog, and a seated animal with a large hump, believed to be a tortoise, while in the top left corner is a sun complete with radiating rays and a face. The left hand edge of the painting is hidden behind modern panelling. The whole scene is surrounded by a green frame with a black border, which extends onto the timbers above and below the painting.

The painting on the smaller north wall is also framed in green, but unlike the west wall, it is split into two pictorial panels with a green frame between them. On the left side is a chained ape with a basket of fruit set within a landscape of foliage and trees, while on the right side is a curious green church with black outlines and details, also set in a landscape (Plate 3). Due to damage on the north side it is not possible to tell if other significant details were present.

The location of the paintings on the upper part of the walls in a small study such as this has well documented parallels. The late 16th century wall paintings in the north range of Hill Hall in Essex are similarly

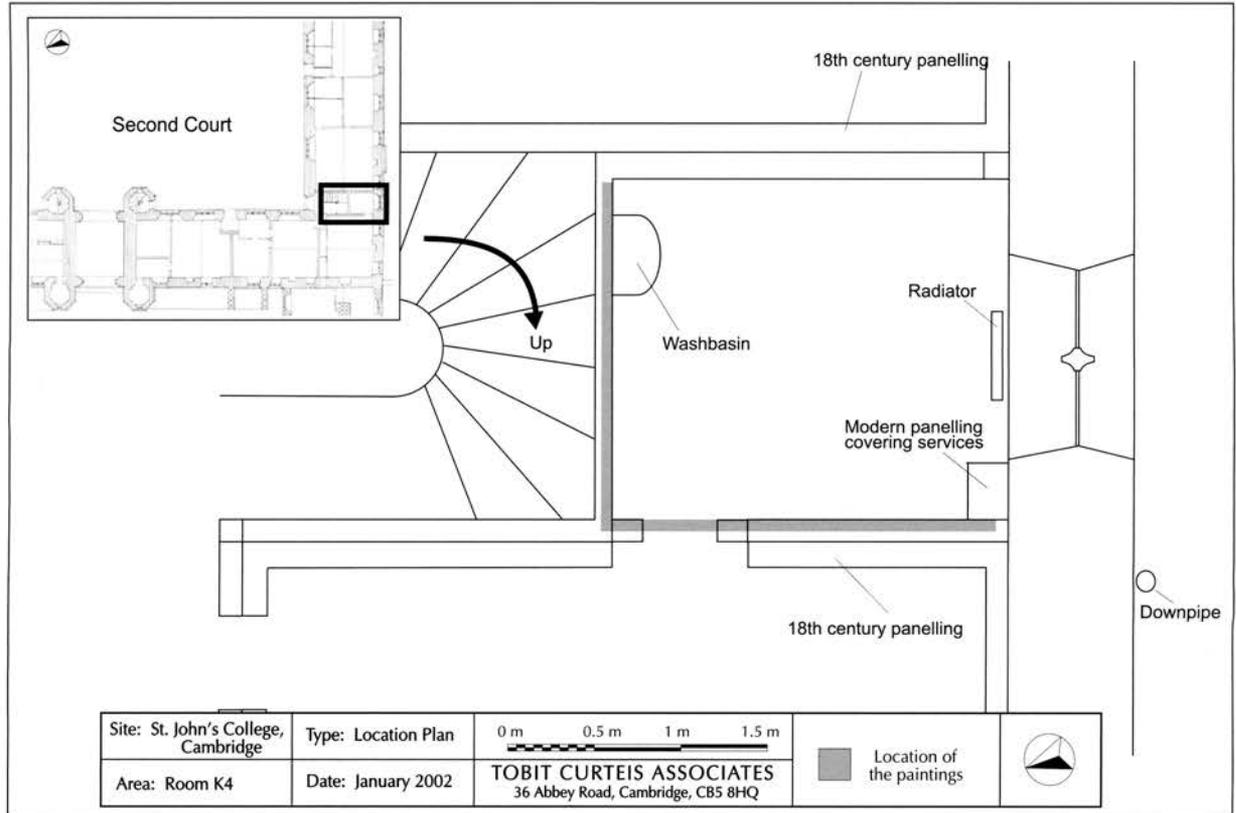


Figure 1. Plan of the room (Tobit Curteis Associates 2006)

located, as are the more famous examples in Wolsey's Closet in Hampton Court Palace of c.1537. In both of these examples it is probable that the lower part of the wall would have been decorated with panelling (in Wolsey's Closet the panelling remains in place). However in the case of the St John's paintings, it is possible that the lower wall would have been plainly painted.

Iconographic interpretation

Following their discovery in 1924 an article was published suggesting that the paintings were an interpretation of 'The Hind and the Panther', a theological fable by Dryden, published in 1687. (Anon, 1926) This interpretation relies on the fact that the paintings post-dated the poem and were in fact carried out in the period 1688–1690 when the rooms 'may have been inhabited' by one Matthew Prior, fellow of St John's, who had written a parody of this fable. The interpretation itself also requires a considerable leap of faith in seeing the stag (rather than a hind of the title) as representing the Catholic Church, while the curious humped tortoise, described rather imaginatively in the article as a 'spotted panther', represents the Anglican Church.¹

However, an examination of the evidence for dating and the use of contemporary iconography suggests a more straightforward explanation. Prof EW

Tristram of the Royal College of Art (and one of the leading wall painting experts of his time) examined the paintings immediately after their discovery and dated them on stylistic grounds to c.1600, in other words contemporary with the building of Second Court. This dating is supported by the fact that the paintings are partially framed by the original timbers which had been painted green. Other green painted timbers were discovered in a room on the east end of the south range of Second Court, as well as fictive green timbers painted on hair plaster on the opposite wall (Tobit Curteis Associates, 1993). Technical evidence indicated that both the real green painted timbers and the fictive timbers were part of the original decorative scheme, and records suggest that this form of decoration extended throughout the whole court.²

With regard to the iconography, the painting is almost certainly an allegorical representation of the Five Senses, a subject which, with the rise of humanism, was not uncommon in both the decorative and fine arts (Wells-Cole, 2000). In depictions of the Senses where animals are employed, the ape (sometimes eating fruit) represents Taste, as shown in one of the wall paintings in the Great Staircase at Knole of c. 1605–8 (Figs 2 & 3) the stag with musical instruments, Hearing, as shown in an engraving by Pieter de Iode, (Figs 4 & 5) the eagle, Sight, the dog, Smell and the tortoise (sometimes accompanied by a pecking bird), Touch. Recorded examples of the Five Senses in wall paintings of a similar date include the



Fig. 2. Detail of the ape on the north wall (Tobit Curteis Associates 2006).



Fig. 3. Allegory of taste in the Great Staircase at Knole. (Tobit Curteis Associates 2006).



Figure 4. Detail of the stag on the west wall (Tobit Curteis Associates 2006).



Figure 5. Allegory of Hearing by Pieter de Iode. (©V&A Images/Victoria and Albert Museum)

Great Staircase at Knoles of c.1608, the Pillar Parlour in Bolsover Castle c.1620, and at Thurnalls House, Melbourn, Herts of 1635. (Croft-Murray, 1962, 212) The one element which does not fit within the Senses interpretation is the church on the east side of the wall. It is possible that the damage to the lower part of the scene hides details which would make its inclusion possible. However, given that it is separated from the adjacent painting by a heavy border, it appears more probable that it is part of a separate series of paintings which extended onto the east wall and have since been lost.

Original materials and technique

The original render consists of a single thick layer of lime-rich hair plaster applied over laths. On the north wall, the plaster has been applied in two stages with the right hand side having been applied once the left was dry. Analysis of the paint layers showed that they had been applied over a preparatory layer of white limewash, with a second limewash ground tinted with ochres, visible in some areas.³ The palette of pigments was reasonably extensive and included red and yellow ochre, red lead, orpiment, indigo, lime white, vermilion, terra verte and carbon black. In general, the layer structure was relatively simple with a

background colour over which a detail was painted, resulting in, at most, three pigment layers. Shading and gradation of colours was achieved by pigment mixing rather than overlaying layers. Although no medium analysis was undertaken, it was clear that an organic medium would have been employed, but no varnish or other original coating was observed.

Previous interventions

The paintings were discovered in 1924 during the removal of old wallpaper (Anon, 1925), at which time considerable mechanical damage appears to have occurred. EW Tristram, the leading authority on wall paintings at the time, was consulted as to their treatment and it appears likely that he recommended the use of a beeswax 'preservative' treatment in common with most other wall paintings which he examined at this period (Curteis, 1991). Watercolour copies of the paintings were made by Mrs Agatha Hall Shore, the wife of the junior bursar, and were deposited at the Victoria and Albert Museum.⁴ (Plate 4)

Two types of repairs were observed on the paintings, both of which appeared to have been made using Plaster of Paris and pre-date the application of the wax coating. The most extensive repairs are likely to have been made at the time when the paintings were discovered and have been crudely painted in an unsuccessful attempt to disguise them. No retouching or other treatment appeared to have taken place.

In the middle of the painting on the left side of the north wall were three modern, cleaning tests.

Condition before conservation

Large areas of the wall paintings were found to be in relatively good condition. Most of the hair plaster substrate was coherent and while slight delamination was identified in some sections, in most areas the plaster was firmly attached to the laths below. The exception to this was at the base of both paintings, where there was a significant level of delamination. As the plaster contained a large proportion of hair, the delamination had caused fractures, but not complete collapse. Hairline cracks were observed on the plaster on both walls, but in particular on the west, where the angle of the cracks suggested that they resulted from early structural movement. Most of the losses to the substrate appeared to relate to mechanical damage inflicted during or before the uncovering. There were numerous nail holes (and in some cases nails) suggesting that at some stage a covering was attached over the surface of the painting.

Because of the presence of the wax coating, cohesion and adhesion of the paint layer was reasonably good. In some exceptional areas flaking was observed, but this was very limited. However, the loss of the paint layer due to early deterioration or damage during uncovering was significant and in some areas the painting is unreadable.

In general the pigments remained in good condition, but there were a small number of instances where the original materials appeared to have deteriorated. In a number of areas the green paint layers had changed in appearance as a result of the deterioration of the pigment. The green frames were found to be a relatively unusual combination of indigo and orpiment, rather than a more common copper green. Deterioration of the medium had caused the paint layer to become less saturated, so that in some areas the layer appeared blue-grey, while in other areas it appeared green. Indigo is photosensitive and subject to fading, and it is probable that in some sections the blue component had deteriorated making the layer appear more yellow. The same pigment mixture was used on the timber beams, although in this case, the darkening is due to overpainting and later varnishing. In a number of areas on the red grapes on the west wall, dark patches had occurred as a result of the chemical alteration of the photosensitive pigment vermilion. The most disfiguring feature was the coating of beeswax, which gave a dull grey appearance to the surface as a whole. Although the wax was relatively thin, in some sections it had accumulated in areas of damage causing large cracked pools to form.

As is typically the case in paintings in a domestic setting, there were a number of areas of damage associated with modern services or cabling. On the far right of the north wall was an area of blackening around the line of an electrical cable (now removed) which appeared to have smouldered or burnt. More seriously, in the centre of the west wall, was a yellow painted line with a number of screw holes running through the middle of the stag. A photograph of the paintings taken in 1924 showed what appears to be a cable duct running across the painting in this area.

Conservation treatment

The aims of the treatment programme were to repair and stabilise the painting (both the paint layer and the substrate), and to remove and replace unstable or potentially damaging historic repairs. Damaged plaster was repaired using a lime and sand mortar and unstable areas were re-adhered with a lime based grout. The wax coating was reduced using a gelled solvent mixture, in order to increase the visibility of the painting and to reduce subsequent accumulation of dirt particles (Plate 5). New repairs were reintegrated, but no retouching or reconstruction of lost areas of the original painting was undertaken. Wherever possible, materials were compatible with the original, and new materials were only added when absolutely essential (Tobit Curteis Associates, 2003).

Throughout the programme a detailed graphic and photographic record was kept in order to record the condition of all areas before treatment and the specific treatments applied to the different sections of the paintings (Plate 6).

Long term conservation and conclusions

It was clear from the condition survey that the most significant causes of deterioration were historic. The recent conservation treatment was successful in stabilising the paintings and thus reducing their vulnerability to inadvertent mechanical damage. In addition, improvement in their appearance means that they are more likely to be noticed and appreciated by those using the room. However, despite the treatment, wall paintings of this type are delicate and remain vulnerable to both mechanical and environmental damage.

The best form of conservation is preventative, rather than interventive. Therefore, in this case, as in so many others, it is essential that those who are living and working in the vicinity of the paintings know of their presence and understand their vulnerabilities. As these paintings are located in an institution where the value of conservation is understood they are less at risk than many similar paintings in a less controlled environment. Nevertheless, periodic monitoring of their condition is a prerequisite of successful long term conservation.

Although there have been some encouraging developments in recent years, the *corpus* of knowledge on the technical nature of English domestic wall paintings is limited. Therefore, the opportunity to study the original materials and techniques of paintings such as these, during the course of a programme of conservation, is important not just for the individual project, but for the development of the field as a whole. The iconography of domestic wall paintings is also little studied and so the chance to identify an unusual iconographic scheme such as this is equally welcome.

Acknowledgements

I am most grateful to the Master, Fellows and Scholars of St John's College, Cambridge for commissioning the conservation project and to Malcolm Underwood, Deborah Howard and Stan Moorehouse for information regarding the historical and art historical background. I am also grateful to the Conservation of Wall Paintings Department at the Courtauld Institute of Art, for allowing access to material in the National Survey of Medieval Wall Painting, and to the Victoria and Albert Museum for allowing me to examine the original watercolours. Finally I would like to thank the conservators, Heather Little, Rachel Witt and Anna Kendrew who worked with me on the project.

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Endnotes

- 1 The sex of the deer is explained by saying that the expression looks rather like that in an engraving of Dryden and that therefore the deer is Dryden.
- 2 'The 18th-century panelling in the upper Tower Room facing into Second Court was removed by the college staff. It revealed a stud and plaster partition on the west side with the plaster painted green. The plastered brickwork on the south side had been painted with similar green lines to simulate stud work...' *Diary of Second Court Restoration 1957–1964*. 19th October 1959.
- 3 Paint analysis was undertaken using optical microscopy and microchemical tests. Cross sections were mounted in clear polyester resin and examined at magnifications of up to x300. Dispersions were mounted in Cargille Meltmount and examined at magnifications of up to x400.
- 4 The watercolours are catalogued as E936, 937–1924, and are available in the Print Room.



Plate 2. The wall painting on the west wall, after conservation (Tobit Curteis Associates 2006).



Plate 3. The wall painting on the north wall, after conservation (Tobit Curteis Associates 2006).



Plate 4. Watercolour of the painting on the west wall by Agatha Hall Shore (©V&A Images/Victoria and Albert Museum).



Plate 5. Detail of the ape during the treatment of the wax layer. The area on the left has had the wax layer removed. (Tobit Curteis Associates 2006).

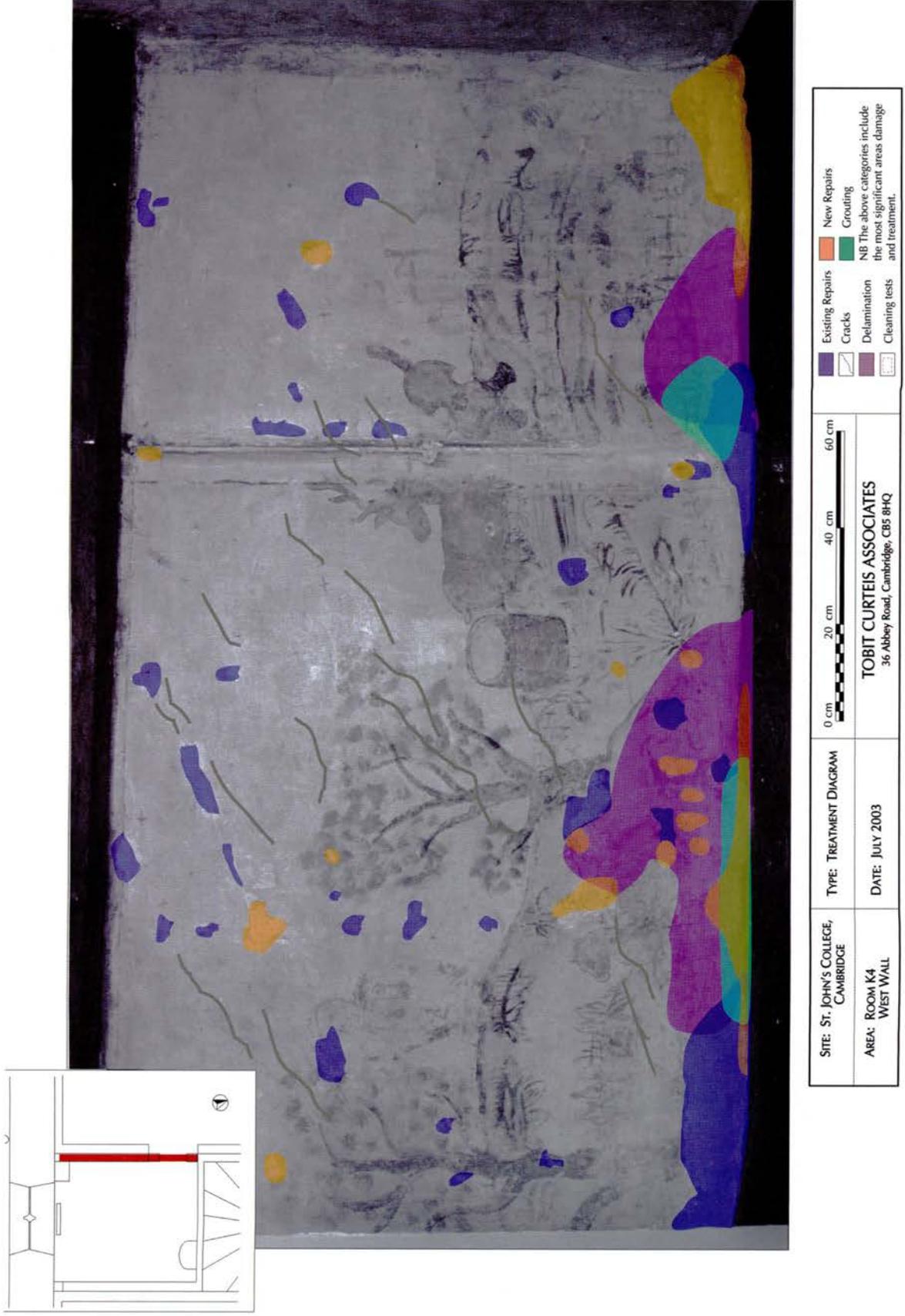


Plate 6. Part of the graphic documentation for the conservation treatment (Tobit Curteis Associates 2006).

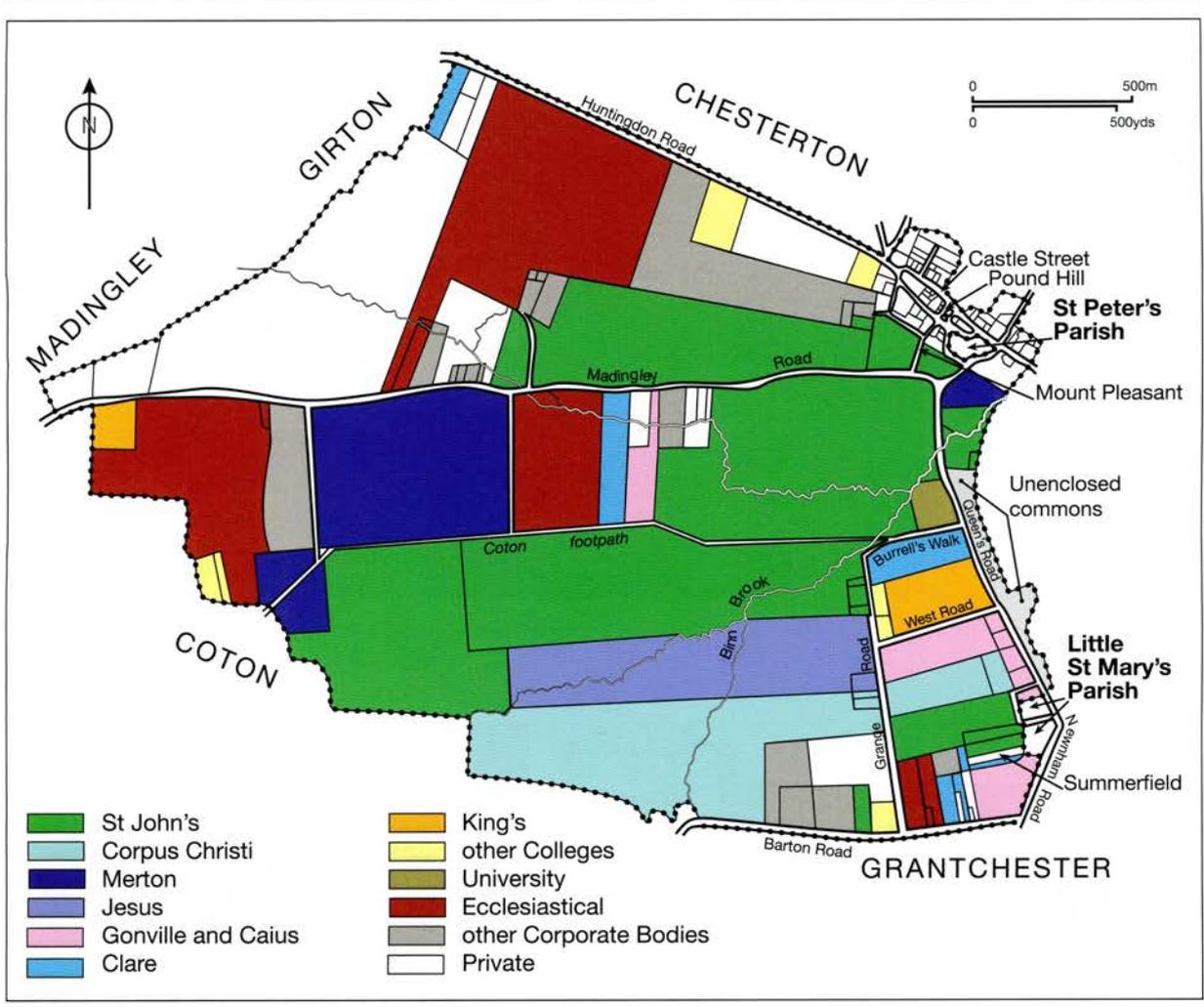


Plate 7. The ownership pattern following Enclosure of St Giles Parish, 1805.

Huntingdonshire Bell Frames

Robert Walker

This paper sets out the findings of a survey of bell frames in the county of Huntingdonshire. From that survey observations are made about the evolution of frames, and in particular the 17th century developments for which Huntingdonshire provides a number of dated and documented examples. The paper identifies those frames which should, in the context of current knowledge, be conserved. The paper includes a gazetteer intended to guide more detailed surveys in the future. The gazetteer uses the system of codes for plan form and truss type evolved by Christopher Pickford (Pickford C 1993), which should allow this survey to contribute to wider, regional and national surveys.

The Survey

A general introduction to bell frames can be found in the survey of frames in the (pre-1974) county of Cambridgeshire published in PCAS 90 (Walker, R 2002).

Most of the survey was undertaken between 1996 and 2002 when pressure for change in the belfries of the Ely Diocese was strong. At that time the National Lottery Fund set aside money to assist the repair and replacement of rings of bells. The survey was intended to inform judgements about proposals to alter, destroy or abandon old bell frames. The author visited all of the timber frames described in the gazetteer below, and measured, photographed and drew them. It is not a complete joint-by-joint, feature-by-feature record, but should indicate the proper foci for more detailed work and dendrochronological dating. Copies of the author's survey notes and photographs are deposited at the Cambridgeshire County Record Office.

There are a number of striking differences between belfries of Huntingdonshire and Cambridgeshire. The tentative dating of frames in Cambridgeshire was greatly assisted by comprehensive surveys of bells in the 16th, 18th and 19th centuries. The survey of church goods in the time of Edward VI is incomplete in Huntingdonshire, and we are denied a comprehensive account of the numbers, and sometimes weights, of bells in every church. The incom-

plete Huntingdonshire survey is nevertheless of great importance (Lomas C 1906). Later, in the middle of the 18th century, William Cole visited almost every Cambridgeshire church and, in many, recorded the numbers of bells and, sometimes, the inscriptions on them. Huntingdonshire churches had no such assiduous recorder in the middle of the 18th century, but the accounts of the visitations of the archdeacons and their instructions at a number of points in the century are useful, and more extensive than similar surviving Ely diocesan records (these are given in the Victoria County History accounts of churches and were not examined at source). Finally, towards the end of the 19th century the first comprehensive surveys of bells were published. In Cambridgeshire bells were surveyed by Rev JJ Raven (1869 and 1882), and, in Huntingdonshire, in 1899, by Rev TMN Owen. In this respect, Huntingdonshire has the benefit of a survey of bells which is thorough, accurate and an example to all campanologists.

Huntingdonshire is fortunate in having a great richness of surviving church records, particularly in the Huntingdonshire County Record Office. This survey was made easier by the accessibility of these records, by the help of those who keep them and by the thoroughness of the three volumes of the Victoria County History for Huntingdonshire which bring together dispersed material.

In recent years the Huntingdonshire Church Bell Restoration Society has undertaken work in the county's towers. The author had help from Chris Higgins of that society. Christopher Pickford (who has led the work on the recording of frames nationally) had made detailed surveys of the frames at Buckden and Great Gransden (see the Gazetteer), and the author is grateful for his advice on the development of this paper. (That advice was given a long time ago, before the author moved to Scotland, and inaccuracies and informalities are his responsibility alone.)

One of the more curious aspects of a study of Huntingdonshire is found in the pages of the *Archaeological Journal*, 1984 and 1992. These record a debate about the extent of the rebuilding of

Huntingdonshire churches, and particularly their towers, in the late 16th and early 17th centuries. The earlier article, by Andrew Woodger (Woodger A 1984), advanced the theory that many towers were rebuilt or altered in the decades around 1600 to advance the pursuit of bell ringing. Woodger suggested that these works were executed in a mixed style which represented a revival of Decorated and Perpendicular styles and, furthermore, that a detail of newel staircases in the form of a notch at the junction of step and newel is indicative of the so-called 'Mixed Gothic' period. The later paper by GW Bernard (Bernard G 1992) suggested that these claims were, at least, overstated in terms of the evidence advanced.

This survey has not set out to comment on these two positions but it would be difficult, during a comprehensive survey of towers, to avoid seeing evidence which has some bearing on the debate. Huntingdonshire appears to be a county marked out by substantial investment in church fabric, including bells, in the 17th century. This is in contrast to Cambridgeshire where adaptation of old bell frames or simply putting up with old kit are the observed reality. For some reason, perhaps that the two old counties were in different dioceses, or in different social and economic landscapes, there is more evidence of 17th century alterations in Huntingdonshire belfries. The author has long suspected, but never seen a quantified analysis, that this is the case for church fabric as a whole. Woodger noted the significant number of roofs with 17th century dates in Huntingdonshire, and, if we were looking for an obvious example and comparison, there is nothing in Cambridgeshire's churches to compare with the 17th century woodwork in the locality of the Giddings and Leighton Bromswold.

From Table 1 it can be seen that 76% of Huntingdonshire frames before about 1700 are of 17th century date. In Cambridgeshire the figure is 28%. The fact that the pattern of modern replacement is similar in both surveys, with 57% of all frames being modern in both, suggests that there is a real difference in the 17th century rather than different patterns of survival. There is, of course, uncertainty about the dating of 17th century frames. In Huntingdonshire, the emergence of a distinctive style around 1630 (see the detailed account of the evolution of frames below) and the presence of a number of dated frames means that the Huntingdonshire survey has a relatively high level of reliability. In Cambridgeshire, the 17th century 'Huntingdonshire style' is only seen in two places (Haslingfield and Cambridge St Benet), but it

is possible that there was a greater level of work in the 17th century which is concealed by the use of the forms and traditions of earlier centuries. The frame at Sutton in Cambridgeshire, for example, could reasonably be dated to the 16th century by its form and the correspondence of the number of pits with the number of bells in 1552, but has been dated to about 1620 by dendrochronology.

Terms Used in the Following Descriptions.

A *pit truss* forms the side of a pit containing a single bell.

An *end truss* closes the ends of a row of pits.

A *great truss* is continuous across the sides of more than one bell pit or the sides and ends of more than one pit.

An *A truss* is formed by two braces running from the sill to the head of the truss. They converge at the head and may be straight, curved or elbowed. No so-called A trusses have a horizontal bar like the letter.

A *brace* is a member joining two horizontal or vertical members of a truss. In an A truss they go between sill and head; in a king post truss they go between the sill and the post (and may also be joined to the head).

Corner braces go from an end post to a sill or a head.

A *jack brace* joins a brace and another member of a truss, normally the head or the sill.

The King Post and X Braced Frames.

There are difficulties in proposing a chronology for king post frames in Huntingdonshire because the 1552 inventories are incomplete, and there are no dated examples before 1620 (Offord Cluny). The king posts are illustrated in Figures 1, 2 and 3 and arranged in a tentative order of date.

1a Stilton

The Stilton frame was, no doubt, the frame holding three bells in 1705 (see Gazetteer), but can be reasonably confidently dated before the 17th century by its form. It is possibly contemporary with the surviving bell by Mellours of Nottingham, a founder active in the 16th century. Single bells are not a reliable dating method, but there are other features which support an early date. The frame is of three pits (almost all early frames are of three or four pits); the trusses are very tall; the elbowed braces meet the king post well below the head of the frame; the trusses have posts with jowls and they sit on a very thin sub-sill.

1b Orton Longueville

Table 1. The numbers and relative proportions of pre-Reformation, 17th Century and modern bell frames in Cambridgeshire and Huntingdonshire.

	Huntingdonshire	Cambridgeshire
Pre-Reformation frames (number).	7	41
Pre-Reformation frames as a % of all pre-1700 frames.	24%	72%
17th century frames (number).	23	16
17th century frames as a % of all pre-1700 frames.	76%	28%
Post 17th century frames (number)	42	88
Post 17th century frames as a % of all frames.	57%	57

A single old truss remains incorporated into a later frame. There is a 15th century bell. The truss is of the simplest form of a king post with curved braces and it is tall in relation to its width.

1c Little Paxton

The frame was originally of three pits. The trusses are relatively tall and heavily built. The king post is shaped to give greater contact with the head and the curved braces are unusually wide. In addition, there are straight end posts and corner braces between the posts and the head. This frame has similarities with that at Parson Drove in Cambridgeshire (Walker R 2002 p86) which was confidently given a pre-17th century date. A beam at the lowest level of the grillage is signed *IOHN ANGELL 1771*. These lower timbers pass through the tower walls and are wedged externally, and appear to be a later attempt at strengthening the tower. Structural problems persisted, and the frame is now derelict.

1d King's Ripton

This frame is similar to Little Paxton but more lightly built. In this case the three pits correspond with the *iii* bells in the 1552 Survey (Lomas C 1906 p3) and may be one in date with the surviving bells of c1500. A distinguishing feature is the way the king post is notched so that the braces are housed in. The pit trusses are of king post form with end posts and corner bracing.

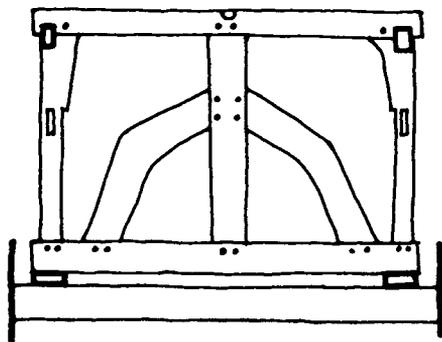
The end trusses have jowled posts and curved down bracing. The end truss heads are halved over the heads of the pit trusses and jointed to the jowl of the end posts. Small assembly marks are found in these positions.

2a Abbotsley

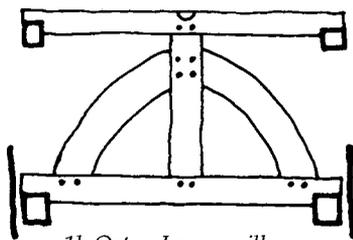
A four pit oak frame altered to add a fifth bell. The trusses are exceptionally tall (almost 5ft at maximum), which suggests an early date. The pit trusses are of king post form with curved braces and short jack braces from the main braces to the head. There are square end posts. These features suggest similarities with frames such as Whaddon in Cambridgeshire which may date from the 16th century (Walker R 2002 p86).

2b Covington

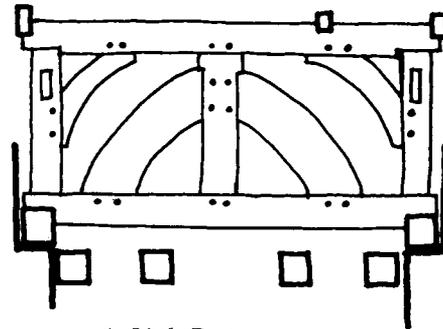
Two king post trusses survive in a three pit (four truss) frame. The king post truss illustrated here was probably reconstructed in 1710 when a bell by Henry Penn was installed. At that time the other two trusses in the frame were installed, and their appearance, with straight braces and double jack braces, clearly dates them to 1710, ie at the end of the 17th century developments described below. Both types share the moulded thickening of the head illustrated.



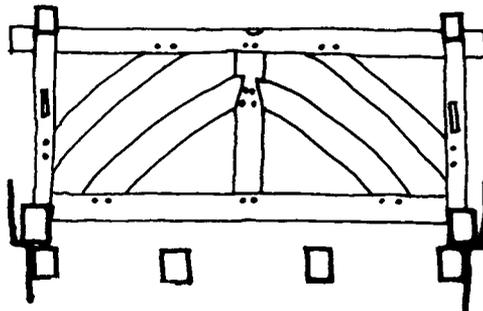
1a Stilton



1b Orton Longueville



1c Little Paxton



1d King's Ripton



Figure 1. King Post frames

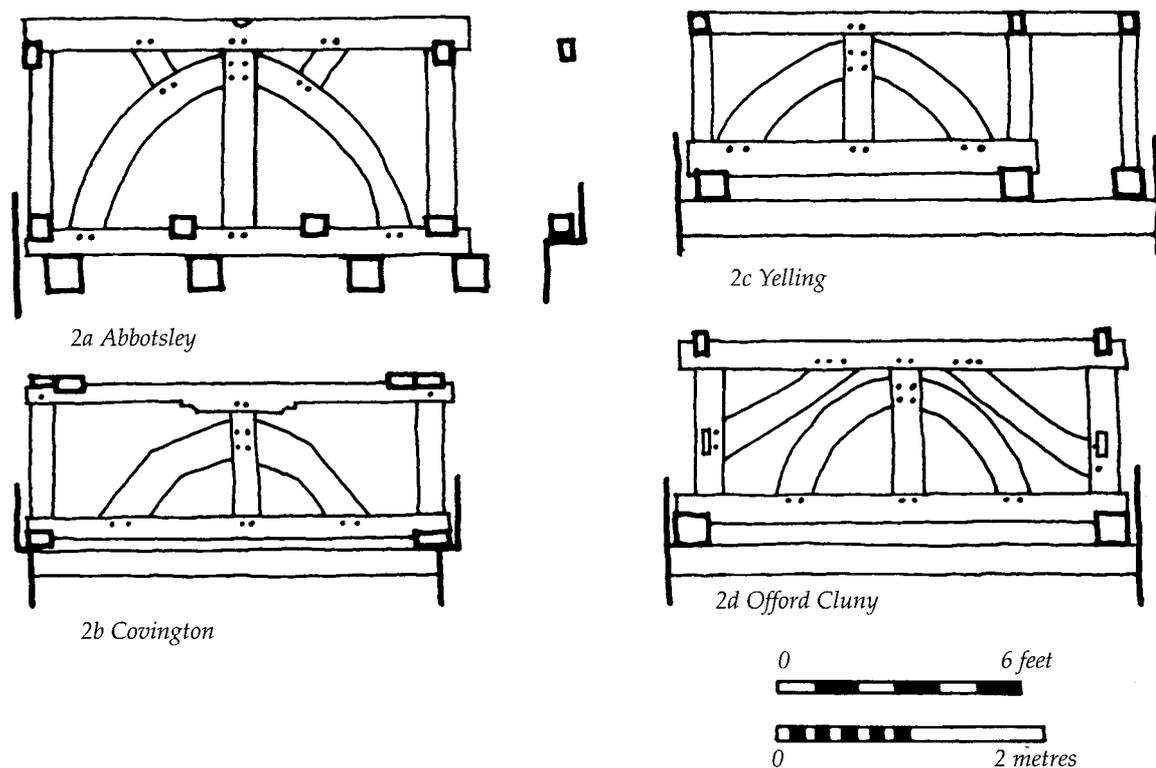


Figure 2. King Post frames

2c Yelling

The Yelling frame has also been greatly altered. The truss illustrated was probably part of a three pit frame which was later reconstructed and augmented to form a four pit frame.

2d Offord Cluny

The frame bears the initials and date, *WE ET 1620*. That date is on a head member and is accompanied by cyma mouldings to indentations which allow the mouths of the bells to pass. The uppermost member is, of course, the most easily replaced element of a frame, but it is not inconceivable that the trusses (which have similarities to Little Paxton and King's Ripton above) are wholly of that date, and represent the last flowering of the king post tradition less than 20 years before the dated examples of the new style at Great Staughton and Buckden (see below).

3a Offord Darcy

For the visitor to the upper reaches of church towers the discovery of a two storey oak frame is a reward and relief after time spent among the modern cast iron machines. The frame at Offord Darcy yields the additional pleasure of bearing the same cyma moulding described immediately above at Offord Cluny; making a connection and a dated one at that! The king post form appears here in the lower pit trusses and in two ties in the end trusses. The cyma moulding is a reliable dating feature to around 1620, as at Offord Cluny.

3b Easton

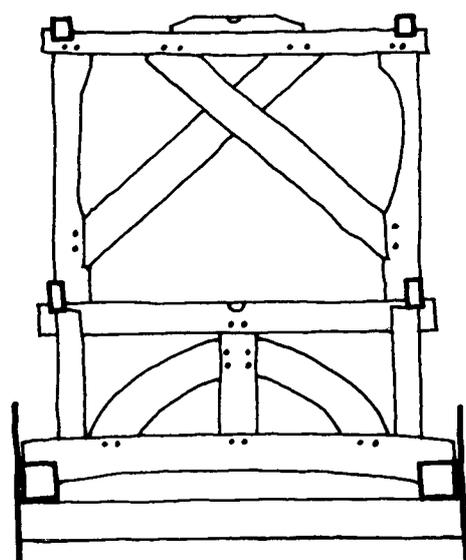
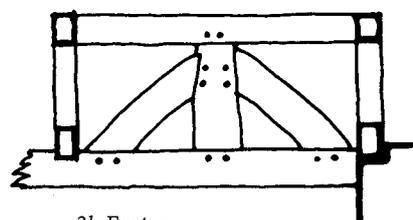
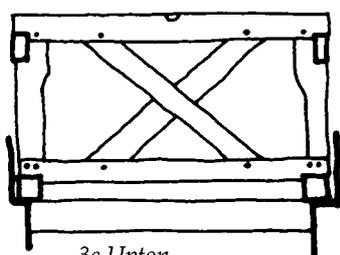
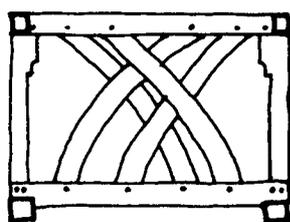
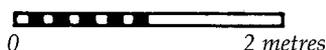
The Easton frame is unusual. It is set diagonally and has one pit formed with king post pit trusses and end trusses of simple A frames. Three other pits are formed as satellites to this pit with the outer bearings of the bells on trestles. There were four bells in 1552, but it is unlikely that this frame is of early date. It is possible that the king post pit trusses are of 16th century date, but the whole frame is otherwise re-made.

3c Upton

The three trusses forming two pits have been repaired and added to, but the original form is coherent. The trusses have X braces and posts with jowls. It is possible that they are medieval, since there were two bells here in the 1552 survey, but they are of modest height, and the X is a form which appears to be far less in tune with medieval carpentry than the king post or the scissor brace.

3d Woodhurst

There are two truss forms with double intersecting X braces: Fig 3d and Plate 8. The outer trusses have curved braces (and look about as close to the scissor braced tradition as anything in Huntingdonshire) and the inner have straight braces. This is a unique truss form in Huntingdonshire. One example was found in Cambridgeshire at Hauxton (Walker R 2002 p97), which may date from the installation of three bells in 1666. It has straight braces but lacks the end posts with jowls which are found at Woodhurst. The

3a *Offord Darcy*3b *Easton*3c *Upton*3d *Woodhurst*

bell dates at Woodhurst are also all of the 17th century and the RCHM dates the turret to the early part of that century.

Seventeenth century development of trusses with heavy braces

The 17th century frames with wide, straight braces are not an evolution but a departure. They are so different from the frames of the king post tradition, described above, that they must have been designed (one might say invented) for their special purpose of withstanding dynamic forces. The king post tradition is clearly related to the carpentry tradition of timber framed buildings. It is easy to imagine that the first bell frames, as we know them, were the work of the village carpenters who built the local houses, barns and roofs in ways and by rules which changed little in a lifespan. Architectural fashion had changed it is true, but carpentry remained essentially Gothic underneath the dressing of style.

In the early decades of the 17th century, the period of most interest in this survey, the old tradition was being challenged. The new architecture of buildings such as the Whitehall Banqueting House (1620) demanded (or was facilitated by) a different approach to carpentry; and engineers and industrialists, as well as architects, set new problems of form and purpose. There have always been rules of thumb, craftsmen like them, but at this time the thumbs were being re-invented. That wider context of a changing carpentry tradition coincided with a time of growing interest in change ringing. It is obvious that the more that ringing was practised the more the old tall frames would have been found wanting in strength and stability. Clearly, change ringing was advanced by the meeting of the changing demands of ringing and the changing approach to carpentry seen in the adoption of new forms and methods.

It is unlikely that the wide braced A frame was invented in Huntingdonshire. That first frame of the new style is more probably to be found at a cathedral or great city church where change ringers and highly skilled carpenters came together. It is also possible that it emanated from bell founders because solid frames, capable of taking larger numbers of heavier bells, would have been good for business. The foundries of Watts and Newcombe in Leicester were active during the early years of the century, and there is a Watts bell associated with the early 'modern' frame at Hail Weston. There are also two Watts bells of 1633 at Great Staughton (4b below) which may be the first Huntingdonshire frame in the fully developed new style.

Huntingdonshire clearly shows a development of frames through the 17th century which culminates in the low, double jack braced form which became the normal pattern throughout the 18th and 19th centuries, and continued in use, in the few cases where timber was used for frames, into the 20th..

Figure 3. King Post and X-braced frames

The development of frames may be summarized:

c.1600–1630 The introduction of the wide brace at Conington. Both A and V bracing in combination with posts. No jack braces.

1635/8 The addition of single jack braces rising vertically from low down the wide A braces.

1658 Double jack braces to head and sill from wide A braces.

post-1658 Frames retain double jack braces but become generally lighter and lower.

The following list is set out in probable date order.

4a Hail Weston

The Hail Weston tower is timber framed and generally given a 16th century date. The three bells hang in a frame of three parallel pits. The pit trusses are A form with slightly concavely curved braces. Parallel, straighter and thinner brace are fixed either side of the A and there are end posts. One of the bells, from the Watts foundry in Leicester, is dated 1589. If it is accepted that this frame has a 16th century date and if that date is one with the 1585 bell then this frame clearly represents a first step towards the new style. The parallel braces are, in effect, a split form of the wide A brace, and must have been formed with the same intention of increasing the area of timber support in contact with the head and sill, and therefore the number of pegs.

4b Conington

The Conington frame was built for five bells on a scale far greater than any of the surviving frames of the earlier tradition. The church was rebuilt in one long campaign, and the tower may have been finished as late as 1638 when work was done on the pinnacles, although there is doubt about whether this work was for their building or their repair (VCH Hunts III p149 suggests this was a repair. Woodger A 1984 p278 suggests that this work marks the completion of the tower). Woodger suggests that the belfry was reached at an earlier date because the belfry lights are similar to those installed at Cambridge St Mary the Great in c1598. Lack of a William Cole visit is acutely missed. It would be very interesting to know the number and text of inscriptions on the bells, which were all replaced in the 19th century.

It is tempting to select from these uncertain facts a date for the bell frame of about 1590–1600. If that were so the frame would be a precursor of the dated frames of the 1630s described below, and its particular features, or lack of them, could be construed as the characteristics of a prototype. The oak frame has a similar character of scale and mass to the frames of 1638. The simple and stout A frames in the pits are obvious relations, but there are no jack braces and the end trusses and great trusses have posts and V braces

which are not seen in any of the later frames.

4c Great Staughton

This frame was built for five bells and must post date the *iiij* bells of 1552 and pre-date the five bells already in existence by 1711 (see Gazetteer). There are two dated bells of 1633 by Watts of Leicester which probably date the frame, given that it is so close in style to Brampton of 1635 and Buckden of 1637 (below). The particular features of the trusses are the heavy braces, and the jack braces which spring from low down the A braces and stand almost vertical. Small, neat assembly marks are seen on every brace.

4d Brampton

The tower at Brampton is dated 1635. The frame is so similar to the Buckden frame below that it is probably the work of the same carpenters. The four bells were hung on a hollow square plan and the form of the pit and great trusses with their vertical jack braces (all carefully marked with assembly marks) are obvious common features.

4e Buckden

The dates of Conington, Great Staughton and Brampton are inferred, but the date of Buckden is certain because the churchwardens' accounts of 1637 survive. These are set out in detail in the gazetteer below. The certain dating of this frame tends to confirm the dates (all within a four year period of 1633 to 1637) of the frames above because they are so similar in detail.

The frame is massively built (Plates 2 and 3) and relatively tall, with the bells arranged on the hollow square plan. In all of the details of the trusses this frame is very similar to Brampton.

5a Chesterton

The pit truss illustrated has all of the features of the Buckden group of frames but on a much smaller scale; the frame is for only three bells of modest size. One of the bells is dated 1621, which raises the possibility that this is an earlier example of the new style.

5b Great Gransden

Dated 1658. The oak frame is set diagonally (see Ramsey and Eynesbury below). The pit trusses are of the simplest A form but the great trusses are of A form with the braces widely spaced and jack braces to head and sill. This appears to be the first example in the County of the doubling of jack braces, an evolution which was to become commonplace in later frames. Pickford suggests that the frame may be the work of John Baxter of Laxton, who worked at Buckden in 1660 (Pickford C 1994). The initials and date 'IB 1660' appear as graffiti on the masonry. The survival of three bells by Eldridge of Chertsey which are dated 1658, with the frame, suggest that this frame may have been built to the founder's specification. This would support suggestion, made above, that the new style of frames emanated from the foundries.

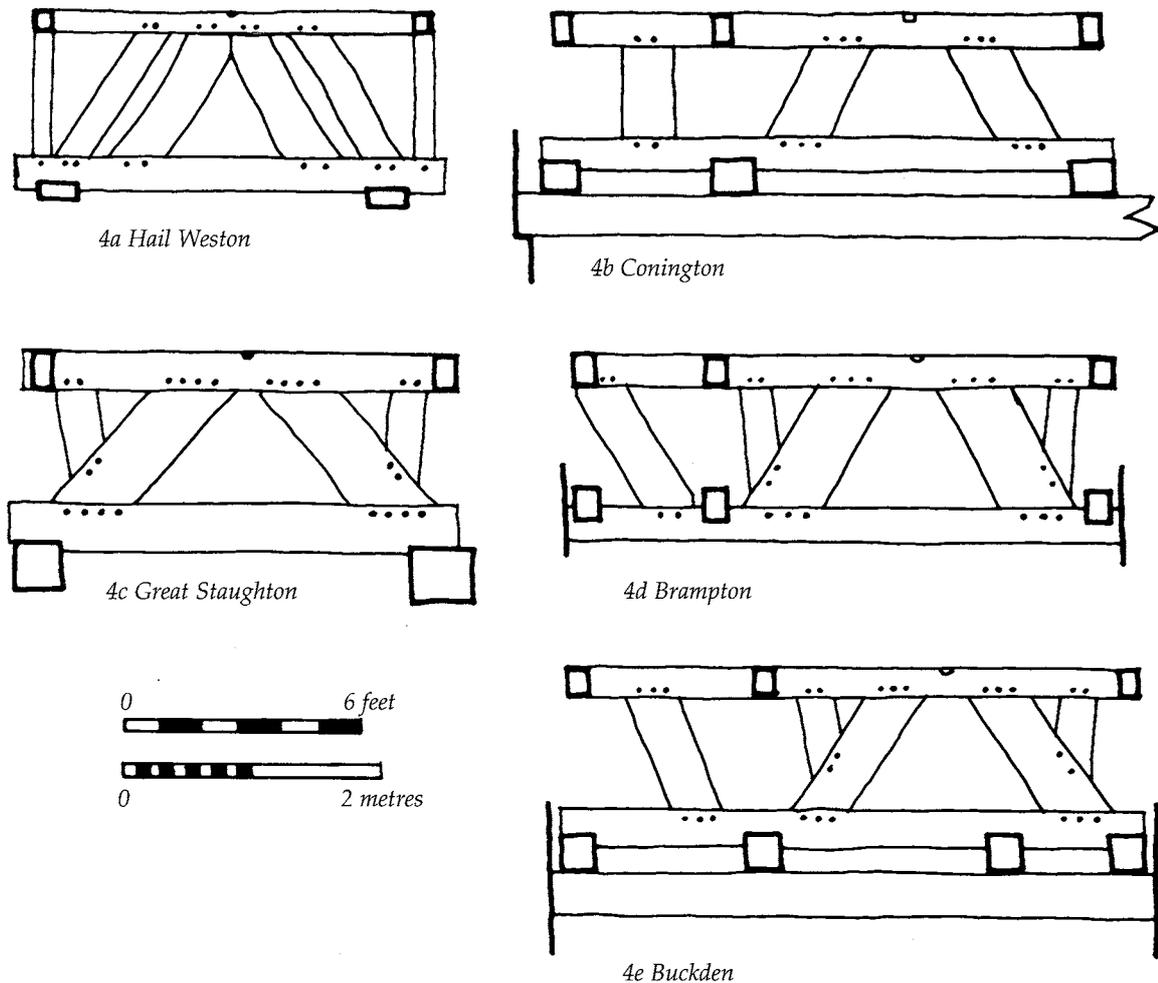


Figure 4. 17th century developments

5c Little Stukeley

Dated 1659. A small oak frame of four pits of hollow square form. The pit trusses of simple A form and the great trusses of A/ form with an almost vertical jack brace to the unpaired brace only. The frame was repaired by Day of Ipswich in 1887 but appears essentially as originally built.

6a Farcet

Dated 1668. This very modest three pit oak frame has end trusses with the double jack bracing first referred to at Great Gransden above. The pit trusses are of simple A form with heavy braces. The outer two trusses are canted in at their heads so that the sills avoid the heavy braces of the end trusses.

6b Ramsey

Dated 1672 and inscribed, 1672 *NEVILL JONES THOMAS WALLIS*. Six bell oak frame set diagonally, but probably held only five bells until the recasting of the old five in 1810. The pit trusses have the mas-

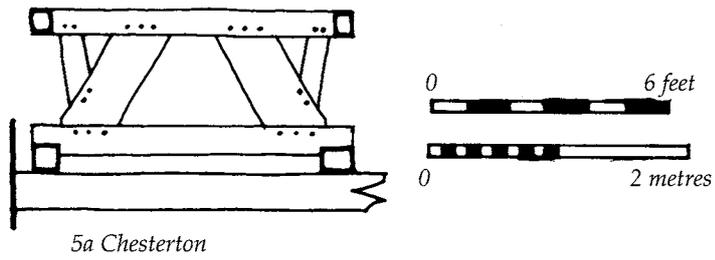
sive A braces of earlier 17th century frames, but with single jack braces rising from relatively high up the A braces at an angle well off the vertical. The great trusses however have double jack braces in common with Great Gransden.

6c Ellington

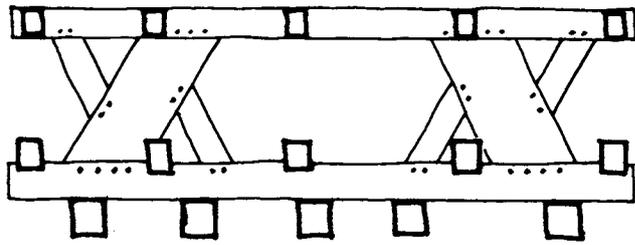
The frame has elements similar to Ramsey. The simple A trusses have heavy braces but only one has a jack brace and that rises from relatively high up the A braces at an angle well off the vertical. Two of the great trusses take a form with massive A braces with upper jack braces similar to Ramsey.

6d Eynesbury

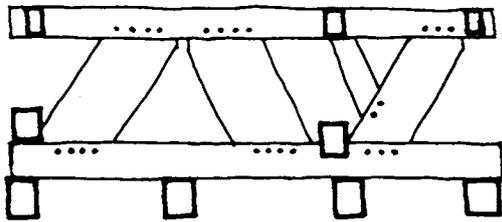
The tower is dated 1688. The oak six bell frame is set diagonally. The trusses are A form with double jack bracing throughout. The A braces are significantly lighter than the examples described above and may represent evolution away from the massive braces of earlier work in the cause of efficiency and econ-



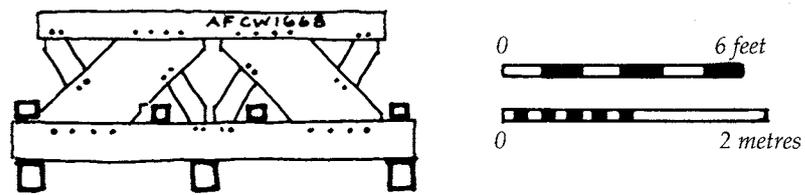
5a Chesterton



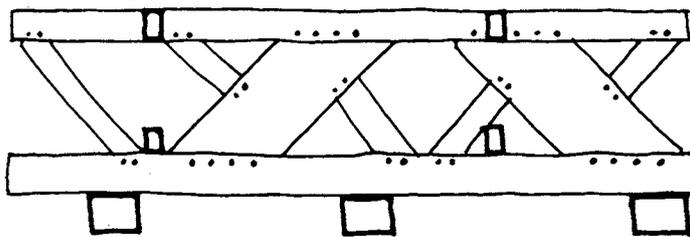
5b Great Gransden



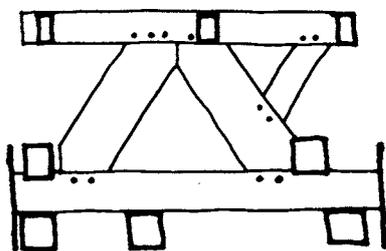
5c Little Stukely



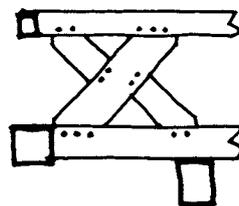
6a Farcet



6b Ramsey



6c Ellington



6d Eynesbury

Figure 5. 17th century developments

Figure 6. Later 17th century developments

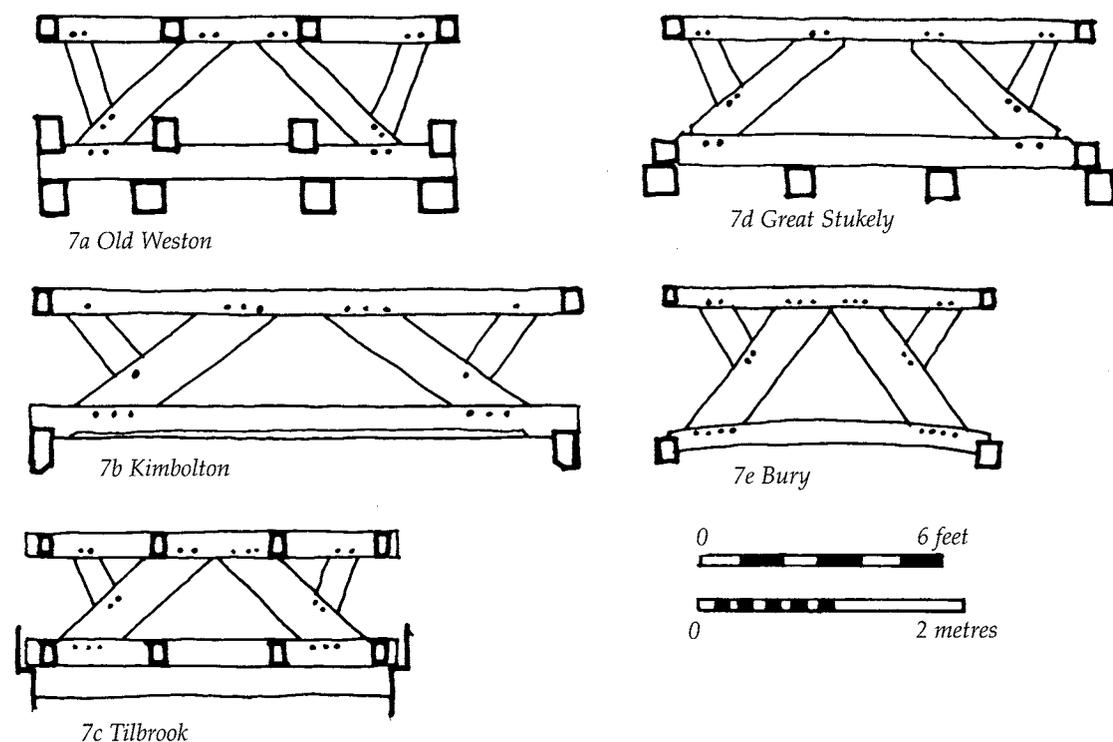


Figure 7. 17th century forms with lighter bracing

omy. It should however also be considered that the Eynesbury bells are lighter than most of the examples given above, and a lighter frame should not be unexpected when carpenters are being credited with a degree of calculation.

7a–e Trusses with Lighter Braces: Old Weston, Kimbolton, Tilbrook, Great Stukeley, Bury

The frames in this group are very similar and take the form of those of the mid to late 17th century described above. They have trusses of A form with upper jack braces at an angle well off the vertical. They are however of much lighter construction and appear to be an extrapolation of the lightening of braces which appeared at Eynesbury in 1688. This is to some extent explained by the fact that these frames are of modest scale, for three or four relatively light bells, but there are examples above of small frames with heavy bracing. This group has yielded no reliable documentary evidence of construction date, and bell dates are scattered and relate entirely to single bells.

If the massively braced frames of the 17th century are joined to the flimsy frames of the 19th by a line of progression (or decline) then that line is clearly one of ever lighter framing and more economical use of timber. The lighter frames in this group are probably on that line and span the later years of the 17th century and at least the first half of the 18th century.

The frames at Graffham and Abbots Ripton might

be attached to the end of this series. At Graffham the A trusses have extremely thin jack braces and at Abbots Ripton they are dispensed with altogether.

The Eighteenth Century

8a Somersham

Dated 1782. Oak frame with simple A trusses. All of the timber members are thin compared to A trusses of the previous century. It is likely that the frame was reassembled in 1902 and, at that time, provided with a good deal of iron reinforcement.

8b Bluntisham

A very flimsy frame with simple A trusses with a mixture of straight and curved braces. The frame was built for five bells which dates it between the iij bells of 1552 and the 5 in Owen's survey.

The Eatons of Titchmarsh and other modern frame makers

Titchmarsh is in Northamptonshire, close to the western border of Huntingdonshire. The Eatons built a number of frames in the county between 1845 and 1885. They were prolific, and appear to have worked throughout the East Midlands, for example at Langtoft in Lincolnshire where John Eaton carried out work in 1860 (Ketteringham J 2000 p298) and Annesley in Nottinghamshire where John Eaton worked in 1876. (George Dawson, Erratum to *The Church Bells of*

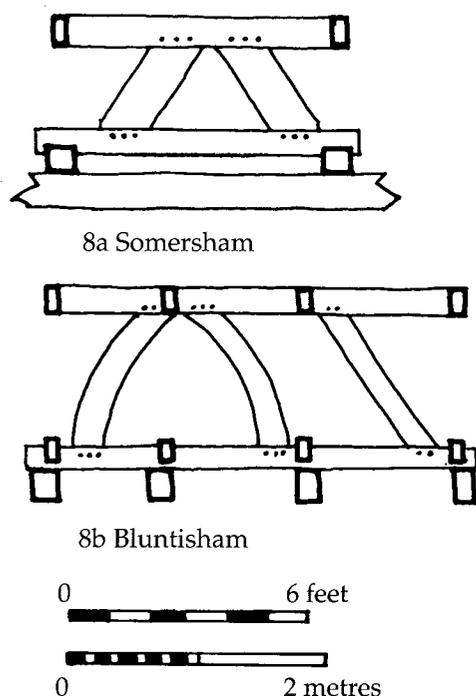


Figure 8. 18th century frames

Nottinghamshire, accessed via the Internet. Their complete frames in Huntingdonshire are as follows, but it is likely that this is a small part of their total work which included repair and rehanging as well as new frames:

1845	John Eaton	Brington
1861	John Eaton	Molesworth
1862	John Eaton	Catworth
1876	George Eaton	Alconbury
1880	George Eaton	Keyston
1885	George Eaton	Buckworth

The Cambridgeshire survey found no complete frames by the Eatons. That may be considered to be Cambridgeshire's good luck since their work is generally flimsy. At Catworth, John Eaton hollowed out the masonry of the tower to an alarming extent to make room for his frame, and it is significant that none of their frames supports thriving ringing today. In general their work continues the earlier tradition of A frames with single or double jack braces. Plate 4 illustrates the Keyston frame.

Three modern frames are of interest. At Waresley there is an early example (1857) of a cast iron frame, possibly Taylor's first. There are two composite frames made in 1902; at Leighton Bromswold by Barwell of Birmingham, and at Water Newton by Carrs of Smethwick.

Gazetteer of Huntingdonshire Bell Frames

The contents of the brackets at the beginning of the descriptions are as follows:

First row: (bell dates).

The second row shows the numbers or bells in (1552 inventory)(18th century from various sources) (Owens survey of 1899). 'NG' means that the number of bells in the church is not given or has not been found in the inventories/sources.

The third row is dimensions in feet and inches (north-south, east-west) (height of frame). Imperial measurements are used because they are the units which applied when the frames were made.

The fourth row shows the codes in C Pickford's national system of recording: (plan code) (truss code).

* indicates frames which the author considers to merit preservation based on current knowledge and understanding.

Abbotsley*

(c1450, 1575, 1653, 1748)

(NG)(NG)(5)

(12/4, 13/6)(4/11)

(4.3, 5.3)(5.D).

(c.1450, 1575, 1653, 1748)

(NG)(NG)(5)

(12/4, 13/6)(4/11)

(4.3, 5.3)(5.D).

An oak frame with the bells arranged anticlockwise. The trusses are exceptionally tall (almost 5ft at maximum), which suggests an early date (Fig. 1). The pit trusses are of king post form with curved braces and short jack braces from the main braces to the head. There are square end posts. These features suggest similarities with frames such as Whaddon in Cambridgeshire and a date in the 16th century.

The frame was originally a four bell frame to which an additional pit was added on the south side, probably in 1748. In that year the repair of the treble was ordered by the Archdeacon of Huntingdon and Joseph Eayre subsequently recast that bell (VCH Hunts, Vol. II, p259, fn. 64). The fifth is also by Eayre, and dated 1748, and may have been an additional bell requiring an extension to the frame. Its inscription is, however, in the style of Norris and may therefore be a recasting of a 17th century bell, in which case the fifth pit would predate 1748

Abbots Ripton*

(c1400, c1550, 1622, 1671, 1875)

(ijj + s)(NG)(3)

(11/4, 11/6)(3/6)

(4.2)(6.A).

Oak frame probably of the 17th century; perhaps of 1671 when Norris provided the second bell. Four pits arranged round a central hollow square, one of which appears to have never contained a bell. Pit trusses and great trusses of simple A form with relatively light braces and posts where the frame heads intersect on plan.

Alconbury

(1673, C18, 1812, 1876)

(NG)(5)(6)

(13/0, 13/9)(3/4)

(6.9) (6.A and 6.L)

Timber frame by George Eaton of Titchmarsh dated 1876.

Simple A and V trusses with end posts, small Roman assembly marks and vertical tie rods. The east great truss inscribed *J. H. POTTLE* and one of the foundations *IRO*.

Alwalton
(1661, 1672, 1722)
(NG)(NG)(5)
(12/2, 11/0)
(5.4)(8.3.C.e)

Iron H trusses on a steel grillage by John Taylor & Co. of Loughborough. Completed 1904. The parish records contain an estimate of August 1902 in the sum of £150 from John Taylor & Co. of Loughborough. It is on sumptuous letter paper with an engraving of the Foundry. A traced construction drawing of the frame is attached to the letter (CRO2716/6/8)

Owen (Owen, T p64) and the RCHM record that the old frame was inscribed in two places:

On the top: H + K. 1790.

On the side: WI. MI. IO. CH {} CHWA 1674.

The 1790 inscription refers to Henry Knighton who was warden at that date.

Barham

Western bell cote added in c1850 (VCH Hunts III, p11).
(truss 9.A).

Bluntisham
(1632, 1716, 1717, 1801, 1832, 1910)
(ij)(NG)(5)
(12/6, 10/5)(3/10)
(5.V or 6.6)(6.A)

Tall and flimsy oak frame for five or six bells. The pit trusses of A form with thin curved braces. The great trusses of AA form and A \ form. In the latter the \ is straight. The frame is post C16, since there were only three bells in 1552 and five bells would be unusual, but is not like the distinctive group of 17th century frames in the county. This perhaps suggests an 18th century date associated with bells of 1716 and 1717.

This frame was never good for ringing. It damaged the tower and when the ring was augmented in 1912 the bells were hung dead (that is fixed in place and unable to swing).

New frame installed lower in the tower in 2004.

Brampton*
(c1500, 1600, 1619, 1630, 1741, 1934, 1910)
(v)(NG)(5)
(13/10, 13/9)(3/10)
(4.2 altered to 6.unclassified)(6.B).
Tower dated 1635.

A four pit, hollow square plan (see Fig. 4d), oak frame of heavy construction. The great trusses of \A form and the pit trusses of A form. In each case there are jack braces which spring from the bottom of the heavy A braces (Fig 4d). The frame has common features other 17th century frames such as the dated Buckden frame of 1637 (see Figs 4c and 4e) and it is possible that it dates to 1635, when the tower was rebuilt. A fifth bell was added which required the treble to be set diagonally in the hollow square, possibly in 1741. In 1962 a new treble was hung in a pit cut into the southwest corner and framed with metal sections. The Sanctus bell hangs at the northeast corner at the end of the pit of the 5th.

Brington*
(1845)
(iii)(1796:4 – VCH Hunts III p21)(4)
(8/10, 8/10)(2/3)
(4.2)(6.B)

A four pit, hollow square plan, oak frame inscribed:

JONATHAN LEWIN
CHURCHWARDEN
JOHN EATON FECIT
TITCHMARSH 1845

Great trusses of AX form and pit trusses of A form. In each case the A has jack braces. This frame is considered worthy of conservation as a complete installation of one date. The bells are by Mears of Whitechapel and the frame by a member of a local dynasty of hangers.

Broughton
(1616, 1624, 1661, 1748, 1902)
(NG)(NG)(4)
(13/8, 7/1)
(4.1)(8.3.C.e)

Iron frame of 1902 by John Taylor & Co of Loughborough with the four bells hung side by side. Trusses of H form.

Buckden (Plates 9 and 10)
*Upper Frame**
(1510, 1627, 1654, 1779)
(vj)(1709:5 – Pickford, C 1994a)(5)
(14/3, 14/8)(4/3)
(4.2 to 6.unclassified)(6.B)

The churchwardens' accounts (CRO 2661/5) record that a new bell frame was built in 1637. This frame survives in remarkably good condition but no longer carries the bells. It is an oak frame of majestic scale with four pits on the hollow square plan. This may be an unusual case of bells being reduced in number between the 16th and 17th centuries. The great trusses are of \A form with heavy main braces and almost vertical jack braces springing from low down (Fig. 4e and Fig 11). The pit trusses are of A form with jack braces. John Crane and Rowland Longland were engaged in 1634 to carry out extensive repairs to the old frame:

*Spent upon John Crane when he
came to peruse the bells viijd
Laid out for a planke to John xxd
Twigdin
Laid out to John Crane for foure
daies worke viis
Laid out to Rowland Longland for
foure daies worke to helpe Crane
about the belles vs iiijd
Laid out for wood for the belles ijs jd*

There are numerous sums for *ironworke*, wheels and hanging in the same year, and payments to masons who came to view the tower. All this suggests that the old frame was beginning to cause serious concerns. In the following year further work was required:

*Layd out to John Langland for
frameworke and nayles and wood 2s 6d*

In addition further sums of 5s 6d and 2s 8d were spent with Langland and John Smyth. In 1636 work began on the new frame:

*It laid out to Robert Jaym for
making of a bill for ye Bellman js
It laid out to ye Bellhanger for
ernist js*

*It laid out when ye man cam to
 take ye worke about the Belles
 & when we had bargened* *iiijs iiijd*
*It laid out when ye men brought
 the bell frames* *xs vid*
It laid out for wrighting *ijs*
 In 1637 the work was brought to a conclusion:
*Spent when the belframes were
 brought* 0-3-0
*for helpe to drawe up the timber
 & to enter it* 0-4-6
In drinke for the workemen 0-1-0
*To willi Lawrence for worke
 aboute the steeple when the bells
 were hunge* 0-6-8
For lime about the same work 0-3-4
*To Rob^t Parnell for Carrying the
 brasses to Stamforde with his
 expences* 0-6-6
*For castinge the brasses & for
 new mettle* 2-2-10
*For a horse to John Lawmant &
 his expences* 0-5-4
*To Thom Parnell for drillinge 2
 hooles in the second bell & for
 fittinge the boottes* 0-7-0
*For putting a piece of timber over
 the steple* 0-1-8
*Spent when the bells were first
 Runge* 0-3-0
given to the bellhangers man 0-2-0
*To Thom Parnell for the
 belframes* 38-0-0
*To James Tawyer for Ironworke
 about the bells* 5-11-4
*To John Longlande for Ironworke
 about the beles* 6-11-6
*To John Longland for fitinge of
 ould Ironworke and for spikes for
 the bells* 0-10-0
*Spent when the workemen went
 away* 0-3-0
For Oyle for the bells 0-0-9
*To the Ringers when My lord
 [The Bishop of Lincoln] came at
 Whitsontide* 0-3-4
*For a piece of timber to lye over
 the steple to drawe up the frames
 & bells* 0-3-4

The Parnells have not been associated with other frames, but it is possible that they built the frame at Brampton, two years earlier. The two frames are of similar plan form, share the characteristic broad main braces and the almost vertical jack braces springing from far down on the main braces.

There may be a connection with the Norris foundry in Stamford. Robert Parnell took the brasses (bearings) to be recast there, probably to the Norris foundry, but this does not firmly place these able carpenters in that town.

A fifth bell was inserted diagonally across the central square possibly for either the bell cast by Arnold or Taylor in 1779. In 1930 the bells were rehung and the bell in the centre set to swing E-W.

Lower Frame

Iron frame of 1997. Standard low side trusses by the Whitechapel Bell Foundry assembled by Whites of

Appleton
(plan 6.1)(truss 8.3.A.h).

Buckworth
(1526, c1590, 1884, 1885)
(*iiij + s*)(4 – VCH Hunts III p25)(5)
(11/8, 11/5)(2/9)
(5.3)(6.B and 6.B + half of 6.D)
Wooden frame of 1885 inscribed:
WILLIAM SISMAN
CHURCHWARDEN 1885
G. EATON FECIT
and:
H W MOSTYN
RECTOR.

The four smaller bells side by side in pit trusses of A form with jack braces. End and great truss similar but with offset X braces to one side (i.e. AX).

Bury*
(c1390, 1700, 1700)
(*ij*)(NG)(3)
(8/0, 9/11)(3/9)
(3.1)(6.B)

Oak frame of three parallel pits. The pit trusses are of A form with jack braces (Fig 7e) but of various weights, some of which are flimsy, and with a mixture of straight and curved A braces. There were three bells in 1552, but it is unlikely that the trusses are that old. They are more likely to be part of a restoration which included a new bell by Charles Newman in 1700.

The frame is supported on modern steelwork.

Bythorn* (Plate 11)
(1620, 1674, 1682, 1711)
(*ij + s*)(NG)(4)
(7/9, 7/9)(9/9)
(2)(6.S unclassified)

Two tier oak frame. Lower pit trusses of simple A form with wide braces. The upper truss is formed by an X frame with a post rising from the intersection of the X to the head (Fig. 10). The ends trusses at upper level have curved braces from the centre post down to an intermediate sill. Probably 17th century date. This frame is similar to the frame at Little Downham in Cambridgeshire which was dated 1659 or earlier on bell dates, but the small number of two tier frames, and the consequent difficulty of comparison make the date uncertain.

Caldecote
Modern stone bell cote at west end with two niches.
(truss 9.A)
Church converted to a house and bells removed.

Catworth
(1585, C17, 1863)
(NG)(1709: 4)(4)
(10/0, 10/0)(3/6)
(4.7)(6.B).

Wooden frame of 1862 by John Eaton of Titchmarsh. The frame is a very tight fit in the tower and masonry has been scooped out to a startling degree. Four pit, hollow square plan frame with metal bars at the outer ends of the pits. The central square very small. Pit trusses of simple A form with jack braces.

Chesterton*

(1450, c15, 1621)
 (NG)(1712: 3 + s - VCH Hunts III p143)(3)
 (8/0, 10/8)(2/10)
 (3.1)(6.B)

Oak frame with three parallel pits. Simple pit trusses of A form with almost vertical jack braces (Fig. 5a) springing from low down the main braces. Large assembly marks. Similar to Brampton and Buckden and therefore probably early 17th century, perhaps 1621 with the Norris bell. End truss similar but the main braces slightly curved and set far apart.

Colne

(1607, 1654, 1700)
 (NG)(NG)(4)
 (truss 1.D)

Tower rebuilt in 1895 following a spectacular collapse. The bells are hung dead.

Conington*

(1827, 1834)
 (NG)(1709:4 VCH Hunts III p150)(6)
 (13/8, 15/9)(3/7)

(Plan type 5.3 but full width pit added across the ends of the parallel pits, plan type now 6.1)(6.A)

Oak frame of impressive scale with massively wide braces in all trusses (Fig. 4b). Probably built 1600; see discussion above. Pit trusses of simple A form without jack braces. Great and end trusses with A or V arrangements with one or more wide posts. See Figs. 4 and 5 for comparison with similar frames.

Adapted in 1834 to fit two bells into the large pit on the west side.

Covington*

(1585, 1710, 1841)
 (NG)(1709:3 - VCH Hunts III p41)(3)
 (9/9, 9/9)(3/4)
 (3.1)(5.A, 6D)

An oak frame with three parallel pits formed by trusses of two distinctively different types. The outer trusses of king post form with curved braces and rather thin sills (Fig. 2b), whilst the inner two are have A braces with jack braces to the head and sill forming a pair of Xs. Both types have end posts and both share an unusual (for Hunts and Cambs) detail in the form of a moulded thickening of the head below the bell bearing. It is likely that this is a 16th century frame rebuilt in 1710 when the treble was recast.

Denton

(C16, 1671)
 (NG)(1709: 2 - VCH Hunts III, p. 154)(2)

Church in ruins. Possible remains of the wooden frame, which held two bells in 1936 (VCH Hunts III, p. 154), but access appears too risky. How could this ruination happen in less than half a century of the modern age?

Diddington

(1688, 1748, 1865)
 (NG)(NG)(3)
 (7/6, 9/10)(3/2)
 (3.3)(5.A)

Wooden frame probably of 1865, at which time Mears and Stainbank recast the second bell. Trusses of king post form

with straight braces.

Easton*

(C16, 1718, 1821)
 (iiij + S)(NG)(4)
 (11/6, 11/0)(3/3)
 (4.3)(5.A, 6.A, 3A)

A four pit frame which is set diagonally in the cramped space of a small tower. The frame, which is of oak, appears to be of 17th century date with trusses of simple A form and king post form, but the assembly is unique in this survey (Fig. 3b). The frame is three pits wide (SW to NE) with the central pit formed by king post trusses with end posts. The outer trusses are simple braced posts with the bells bearing directly into the tops of the posts. At the NW end of the central pit there is an A truss and a pit is formed beyond that again with a simple braced post.

Ellington*

(C15, 1699, 1788)
 (iiij + S)(NG)(4)
 (10/2, 12/0)(3/10)
 (4.3)(6.A, 6B)

Fine 17th century oak frame. Pit trusses of A form with heavy straight braces (some of which have a very slight elbowed curve on the intrados). End and great truss of A/ form (Fig. 6c) and A form with jack braces. A simple but very pleasing example.

Elton

(1631, 1746, 1864)
 (NG)(1708: 5 - VCH Hunts III, p. 164)(5)
 (14/0) (12/6)
 (6.1)(8.3.A.h)

Iron low side frame after 1896 by John Taylor & Co of Loughborough. Taylor & Co gave an estimate dated 31 March 1896 for strengthening the old frame and recasting the cracked fourth bell (CRO 2668/6/6), but the project appears to have been expanded to include a whole new frame. There is a vacant pit.

Eynesbury*

(1810)
 (NG)(NG)(6)
 (16/6)(16/6)
 (6.12)(6.A, 6D)

Oak frame set diagonally with the ring arranged anticlockwise. Clearly in the Huntingdonshire tradition of simple A trusses with broad straight braces, but includes trusses with jack braces to both sill and head (Fig. 6a). Probably dates from the reconstruction of the tower in 1688.

Farcet*

(1621, 1673, 1854)
 (NG)(NG)(3)
 (6/0, 7/9)(2/8)
 (3.1)(6.A, 6D)

Small oak frame inscribed AF CW 1668. Simple form with three parallel pits. The pit trusses of A form with broad, straight braces. The outer trusses are unique in that they lean inwards at the top so that the sills can sit outside the feet of the end truss braces (see Fig. 6a). The end trusses of A form with broad straight braces and jack braces to head and sill; see Eynesbury above.

The bells were hung for swing chiming in 1976 when two I

beams were placed below the foundations of the old frame.

Fenstanton

(1603, 1620, 1636, 1771, 1991)
(NG)(5 in 1724 - VCH Hunts II, p.284) (5)
(plan 6.1)(8.3.C.e)

Iron H frames by John Taylor & Co of Loughborough, installed shortly before Owen's survey in 1899.

Fletton

(c.1550, 1590, 1620, 1953)
(NG)(NG)(3)
(Plan upper: two parallel pits)
(Plan lower: 4.3)
(truss 8.3.A.h)

Iron frame by John Taylor & Co. of Loughborough dedicated on 19 March 1953. In two tiers with two pits over four.

Folkesworth

Single bell of 1936 by Gillett and Johnston in a western bell cote erected in 1850.
(9.A)

Glatton

(1595, 1736, 1863)
(NG)(1709: 4, 1778: 4 - VCH Hunts III, p.181)(4)
(Plan 4.1)(Truss 8.3.C.e)

Iron Frame of 1904 by John Taylor & Co of Loughborough. Standard H trusses (CRO 4684/6. The old frame was sold for 15 shillings. Taylors were paid £127 for the new frame.)

Godmanchester

(1794,1870)
(NG)(NG)(8)
(Plan 8.1)(truss 8.3.A.h)

Iron frame by John Taylor & Co of Loughborough installed in 1953.

Owen (Owen, T 1899 p86) describes the old frame as being substantial with the treble and second raised above the others. This frame was a replacement or reconstruction carried out by George Thackray in 1870 (CRO 2703/5/11). That work was not up to the job and an architect's report on the bells in 1902 found that '*When the bells are rung the frames oscillate very considerably. The bells should no longer be rung.*' (CRO 3915)

Grafham*

(C15, C16)
(ij + S)(1724: 3 VCH Hunts III, p.65)(3)
(10/0, 10/0)(3/5)
(3.3)(6B and 6 unclassified)

Wooden frame probably c1700 with a narrow empty 'pit' between the two parallel pits. Great trusses of A form with jack braces, and pit trusses of asymmetrical form with one raking brace with a jack brace and one internal post.

Great Gidding

(1670, 1756, 1839, 1873)
(NG)(NG)(5)
(11/1, 10/2)(2/11)
(5.1)(6.A)

Wooden frame of 1873 by John Taylor & Co of Loughborough. Pit trusses of A form, great and end trusses of VV and AA form.

Great Gransden

*Upper frame**
(1658, 1767, 1854, 1883, 1895)
(NG)(NG)(6)
(16/0, 15/3)(3/10)
(6.12)(6.A, 6D)

Dated 1658. Oak frame set diagonally (Fig. 5b). Great trusses of A form with the braces widely spaced and jack braces to head and sill. The pit trusses of simple A form. The main braces are of massive scale in each case.

Pickford (Pickford, C 1994) suggests that the frame may be the work of John Baxter of Laxton (who worked at Buckden in 1660). The initials and date 'IB 1660' appear on the masonry.

Lower frame

New frame installed in 2000.

Great Paxton

(c.1400, 1721, 1756, 1758, 1896)
(NG)(NG)(5)
(9/8, 13/1)(2/10)
(5.1)(6.A)

Timber frame of 1896 by Mears and Stainbank, of Whitechapel. Simple A trusses. Gallows ends to the tenor pits.

Great Staughton*

(1420, 1600, 1633, 1787, 1919)
(iii)(1711: 5)(5)
(15/2, 16/3)(3/8)
(5.3 altered to 6.1)(6.B)

Majestic oak five bell frame, probably of 1633 when at least two bells were provided. Pit trusses of A form with jack braces springing from low down on the heavy A braces (Fig. 4c). Great trusses of similar form.

A sixth pit was added in steel sections by Alfred Bowell of Ipswich c1900.

Great Stukeley*

(c,1590, 1626, 1635, 1797)
(NG)(NG)(4)
(10/6, 11/5)(3/2)
(4.3)(6.B, unclassified)

17th century oak frame (possibly of 1626 or 1635) which appears from empty mortices in the tenor pit to have been reassembled. The smaller pit trusses of A form with jack braces. So too the pit trusses of the tenor pit which lies across the north ends of the three small pits, and the end truss at the south side of the three small pits. The great trusses to east and west of /A form with a jack brace at each end (Fig. 7d). The braces are not particularly wide but they have the full thickness of the head.

Haddon

(c1450, 1568, 1900)
(NG)(NG)(3)
(not measured)
(3.1)(8.3.A.h)

Iron frame by John Taylor & Co of Loughborough installed in 1900.

Hail Weston* (Figure 9)

(1589, 1655, 1884)
(NG)(1709: 3 - VCH Hunts II, p.307)(3)
(10/0, 11/10)(3/8)
(3.1)(6.F variant).

The whole tower might be considered to be a bell frame, this being the only timber framed tower in the County. The three bells hang in a frame of three parallel pits. The pit trusses are of A form with slightly concavely curved braces. Parallel, straighter and thinner brace are fixed either side of the A (see Fig. 4a) and there are end posts. The end trusses consist of irregular X bracing between the end posts of the pit trusses and a head member. The pit truss heads are tenoned into this head and further connected with a unique arrangement of notched battens (see Fig. 4a).

The frame, as the tower, has been repaired and probably reassembled a number of times. It probably predates 1709 and might well be of a time with the 1589 bell by Watts.

Hamerton

(1628, 1706, 1728, 1854)

(NG)(1709: 4 - VCH Hunts III, p69)(4)

(10/1)(12/7)(2/8)

(6.1)(6.A)

Timber frame installed in 1933 by John Taylor & Co of Loughborough. Great trusses of simple AA form and pit trusses of simple A form. Steel connections and tension bracing.

Hartford

(1796, 1950)

(v + S)(NG)(6)

(11/6, 10/3)

(6.1)(8.1.A.b)

An unusual single grillage of RSJs installed by Warner of Cripplegate in 1895.

Hemingford Abbots

(1754, 1897)

(NG)(NG)(6)

(approx. 12/0 square)

(6.1)(8.3.C.e)

Frame by John Taylor & Co of Loughborough installed in 1897. Iron H trusses.

Hemingford Grey

(1724, 1988)

(NG)(NG)(6)

(approx. 13/0 square)

(8.3)(8.3.A.m)

Frame by Eayre and Smith installed in 1988 when the ring augmented to 8.

Hilton

(1604, 1637, 1744, 1767, 1898, 1987)

(NG)(NG)(4)

(no plan class)(8.3.C.e and 8.3.A.h).

Iron H frames of 1898 by John Taylor & Co of Loughborough. In 1987 the frame was rearranged by Taylor and Co and the bells increased in number to six. The third bell sits in a low-sided iron frame on top of the H frames.

Holme

(1670, 1885)

(NG)(1709: 2)(2)

(9.A)

A western masonry bell cote with two niches. Church rebuilt in 1862.

Holywell

(1625, 1915.)

(iij greate belles + s + ijhande belles)(NG)(4)

(Not surveyed)

(8.3.C.e)

Five pit frame of 1915 with iron H trusses by John Taylor and Co of Loughborough. Altered to take a sixth bell. (CRO HP44/6/4/1 and HP44/18/3/14 includes correspondence with Taylors about a suspicion that the new frame was harming the tower, following a similar suggestion at Hemingford Abbots. Taylors' letter refers to 'the old four bell frame of 1625' - pity there is no drawing of that.)

Houghton

(c1590, 1662, 1967)

(iij + S)(NG)(6)

(Not surveyed)

(plan unclassified)(8.3.C.e, 8.3.A.h)

Two tier frame by the Whitechapel Bell Foundry installed in 1967. Iron H trusses below with two bells in iron low side frames above.

Huntingdon All Saints

(1606, 1616, 1904)

(NG)(NG)(4)

(9/6, 10/6)(2/8)

(6.4)(8.3.A.e)

Iron plate frame installed by the Whitechapel Bell Foundry in 1904. The pits all have gallows ends.

Huntingdon St Mary

(C15, 1659, 1737, 1876)

(iij + S)(1607:4, 1824: 5)(8)

(15/0, 14/3)(3/6)

(8.3)(6.A)

Timber frame with steel connections and rods installed by John Taylor & Co of Loughborough in 1876. Trusses of simple A, AA and VV form. Remains of the foundations of an older frame survive below the Taylor frame.

Keyston (Plate 12)

(1592, 1733, 1743)

(iij + S)(1709: 5)(5)

(12/7, 14/11)(2/10)

(5.6)(6.B)

Timber frame with steel tie rods by George Eaton of Titchmarsh installed c.1880 (Fig. 9). The frame is set diagonally with the tenor in the centre. Pit trusses of A form with jack braces. Great trusses of A \ form, each brace with a jack brace.

Kimbolton

(1571, 1634, 1660, 1702, 1713)

(v)(1709: 5 - VCH Hunts III, p84)(5)

Upper frame:

(13/0)(approx. 3/0)

(no plan class)(6.B)

A singular arrangement with a single pit formed by two timber trusses spanning E-W right across the tower. These are of a stretched A form with jack braces (Fig. 7b). The supporting beams have chamfers with ogee stops.

Lower frame:

Iron frame by John Taylor & Co of Loughborough installed in 1964.

(6.14)(8.3.A.h)

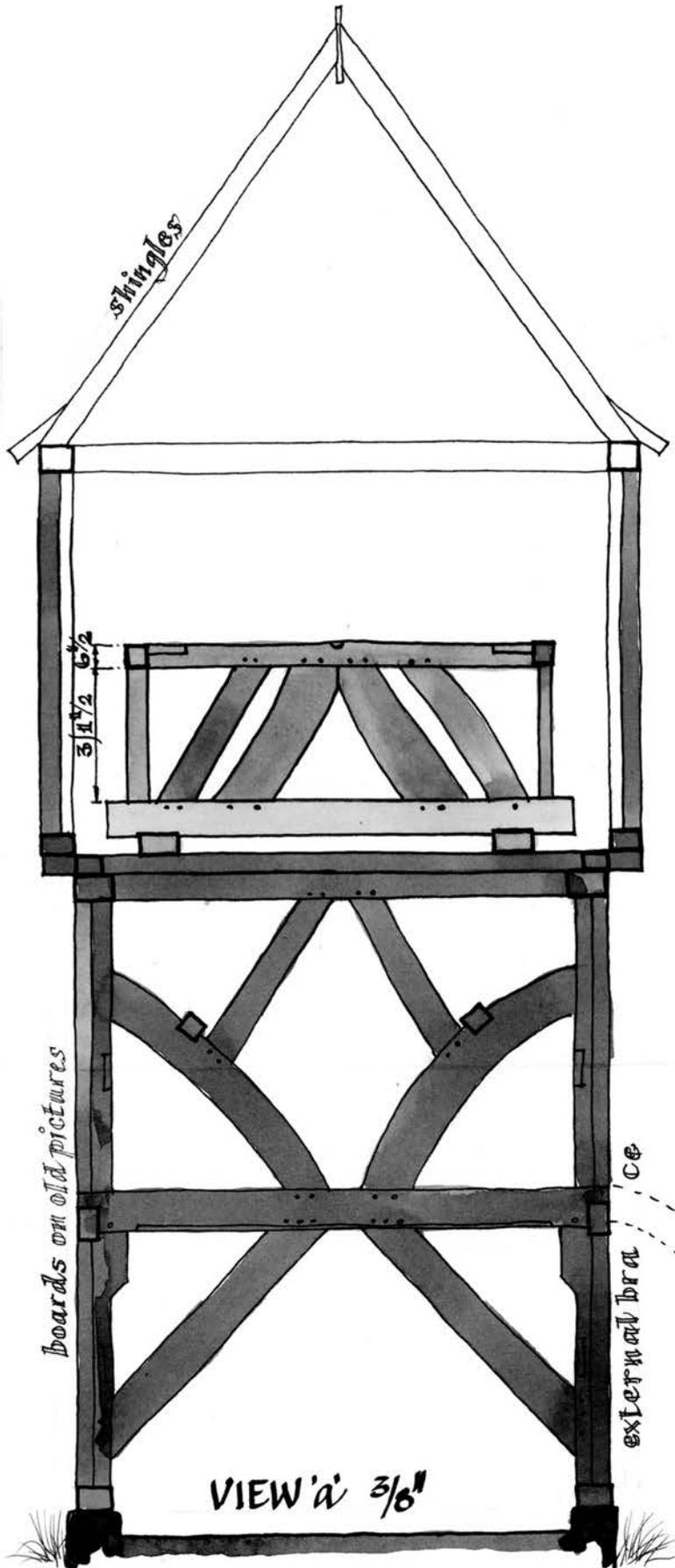


Figure 9. Hail Weston: The bell frame shown in position in the detached, timber belfry.

Prior to 1964 there was a four bell oak frame dated 1619 (VCH III, p84). Unfortunately no record appears to have been made of this frame when it was destroyed.

King's Ripton*

(c.1500)
(ijj + S)(NG)(2)
(10/10, 10/4)(4/3)
(3.1)(5.H)

Oak frame with three parallel pits which appears to date from c1500 with the surviving bells. The pit trusses of king post form with end posts and corner bracing. The end trusses have jowled posts and curved down bracing (Fig. 1d). The head is halved over the heads of the pit trusses and jointed to the jowl of the end posts. Small assembly marks are found in these positions. The bells are now hung for swing chiming on two RSJs below the old frame. (truss 1.A)

Leighton Bromswold

(1641, 1720)
(iiij + S)(NG)(5)
(14/7,11/11)(3/3)
(6.1)(7.C.d)

Composite iron and timber frame by James Barwell of Birmingham installed in 1902. (Built with a vacant pit for a possible new treble.)

Little Gidding

Western stone bell cote over façade dated 1714.
(9.A)

Little Paxton*

(1610, 1669, 1713, 1791)
(NG)(NG)(4)
(10/9, 12/1)(4/3)
(3.1 to 4.4)(5.H)

Oak three pit frame altered to take a fourth bell. The original frame probably pre-17th century judging by the pit trusses which are of king post form with end posts and corner braces (Fig. 1c). There are however two distinctly different interpretations of the form as illustrated in Fig. 1c. The end trusses are formed into three bays by the end posts of the pit trusses. In the outer bays there is curved X bracing except in SW corner where the extra pit was added. That pit has a truss with doubled straight corner bracing in the top corners. A beam at the lowest level of the grillage is signed *JOHN ANGELL 1771*. These lower timbers pass through the tower walls and are wedged externally. The frame is derelict.

Little Raveley

(9.D)
Two empty recesses in the west wall. There was a single bell of 1771 in Owen's survey.
Church now converted to a house.

Little Stukeley*

(c1590, 1607, 1759, 1899)
(NG)(NG)(4)
(11/3, 11/6)(3/4)
(4.2)(6.A)

Dated 1659. Oak frame of four pits arranged around a hollow square (Fig. 5c). Pit trusses of simple form with massive A braces. Great trusses of A/ form; the / with a jack brace springing from low down. Inscribed *R.O. I.G CW 1659* on the

north side of the hollow square.

There is a further inscription below that noted above *W. Pye 1887*

The frame repaired and altered by Day of Eye in 1891. They replaced the north and south great trusses with A/ braces with double jack braces.
(truss 6.D)

Molesworth

(1636, 1710, 1861)
(NG)(1709: 3)(3)
(7/2, 8/2)(2/6)
(3.1)(6.B)

Timber frame by John Eaton of Titchmarsh installed in 1861. Pit trusses of flimsy A form with jack braces. End trusses of A \ form; the \ with a jack brace.

Morborne

(1614, 1712)
(NG)(NG)(2)
Not a shred of timber survives in the brick tower of c1600. The four bell frame noted by Owen (Owen, T 1899 p106) has been removed without consent or record.

Offord Cluny*

(1624, 1630, 1842)
(NG)(NG)(4)
(11/2, 10/6)(3/8)
(3.1)(5.H)

Dated 1620. Frame of three parallel pits of king post form with end posts and corner bracing (Fig 2d). The end trusses have jowled and moulded end posts and upward curving top corner braces in the outer bays. The heads of the trusses are distinguished by careful mouldings to the indents designed to allow the bells mouths to pass.

Treble set in a rough trestle at the south end of the central pit.

Offord Darcy*

(1618, 1620, 1676)
(NG)(1724: 4 - VCH Hunts II, p327)(3)
(9/0, 8/7)(9/11)
(unclassified)(6.S.4)

Magnificent two tier oak frame for four bells. Lower pit trusses of king post form; upper trusses of X form (Fig. 3a). The end trusses are of king post form at both levels. The principal posts are not continuous and the upper parts are carefully shaped. The central parts of the lower truss heads are thickened and moulded with a cyma moulding very similar to that used at Offord Cluny on a frame dated 1620. Given the bell dates here, 1620 would appear to be a possible date for this frame too.

Oldhurst

(1630, 1705)
(ij)(NG)(2)
(9.D)

Two modern recesses in the 13th century west wall (VCH Hunts II, p183. Prior to 1868 there was a wooden bell turret on the roof).

Old Weston*

(C16, 1612)
(ijj)(NG)(4)
(10/3, 10/6)(2/6)

(4.3)(6.B)

Oak frame probably of the 17th century. The pit trusses of A form with jack braces springing from low down (Fig 7a). The braces have the same thickness as the heads. The western great truss of \A form with jack braces to the A and the truss between the three parallel pit ends and the perpendicular pit of the treble of stretched A form with jack braces. The end truss has two raking braces but takes no symmetrical form.

Orton Longueville*

(C15)

(NG)(NG)(1 + s)

(3/7, 8/0)(3/8)

(single pit)(5A)

Modern frame using an old king post truss (Fig. 1b). This truss, judging by its height, probably pre-dates the 17th century.

Orton Waterville*

(1606, 1650, 1755)

(NG)(1709: 4 - VCH Hunts III, p201)(4)

(10/2, 10/5)(3/8)

(4.3)(6.A)

Oak frame probably pre-dating the 1709 account of four bells. The pit trusses of simple A form with slightly curved braces. The end truss with a horizontal mid rail butted and tennoned into the posts.

Pidley*

(1675)

(NG)(NG)(3)

(9/5, 10/4)(4/5)

(3.1)(6.A, 6.H)

Church rebuilt in 1864 but the old frame appears to have been reused along with the three bells by Christopher Gray. The oak three pit frame appears to be contemporary with them or earlier. It is exceptionally tall and has pit trusses of simple A form with curved braces and of X form. The end trusses are of A form with straight braces.

Pondersbridge

Built 1869. Single bell in a turret at the northwest corner of the nave.

(9.B)

Ramsey*

(1810)

(only one handebell and ij sacring belles)(before 1672: 4, 1672-1810: 5 - VCH Hunts II, p197)(6)

(15/9, 15/6)(3/6)

(6.12)(6.B)

Tower rebuilt in 1672 and a new frame provided at that date. The frame is dated and inscribed, 1672 NEVILL JONES THOMAS WALLIS (Fig. 6b). It is a six bell frame set diagonally, but probably held only five bells until the recasting on the old five in 1810. The 'new' treble sits in a modern frame within the old tenor pit. The pit and great trusses are all based on an A form with massively wide braces and jack braces. The great trusses are extended to one side with a relatively flimsy single brace.

Ramsey St Mary

(1858)

dimensions (9/9, 9/10)(4/1)

(3.1)(5.A)

Church built 1858. The frame of that date also, given that the Mears bell is also dated thus. Three pit frame of softwood with king post pit trusses with straight braces. The end truss has an X at the end of each pit.

St Ives

(1723, 1796, 1930)

(NG)(NG)(8)

(approx. 13/0 square)(2/6)

(8.3)(6.A)

Timber frame with metal X plate bracing across some pits and steel ties. Installed in 1931 by the Whitechapel Bell Foundry. All trusses based on multiples of a simple A form. The old ring was demolished when an RAF plane felled the spire in 1919 (CRO HP72/5/6 and HP72/6/1/7). (CRO HP72/8/1/3 records that 'the bell wheels and frames were smashed, the bells were thrown on the floor of the belfry.')

St Neots

(1753, 1832, 1984)

(NG)(NG)(8)

(Not surveyed)

(No plan code)(8.3.A.h)

Eight bell iron frame of 1919 by John Taylor & Co of Loughborough which was altered and extended in 1984 to carry ten bells.

Sawtry

Church built 1881. Single bell in an elaborate western stone bell cote.

(9.A)

Sibson cum Stibbington

(1848)

(NG)(1707: 3)(2)

(9.F)

Single bell hung in an iron gibbet at the east end of the nave.

On the west wall of the north transept a projecting beam which probably held a sanctus bell. (VCH Hunts III, p221; the old tower is illustrated. It was pulled down in 1848 and a timber bell turret with a tiled broach spire placed over the nave. This turret was removed about thirty years ago.)

Somersham

(1782)

(iiij + S)(1712: 5 - VCH Hunts II, p229)(6)

(12/6, 11/3)(2/10)

(6.6)(6.A)

Dated 1782 and contemporary with the Edward Arnold bells. Much ironwork added in 1902 when the bells were re-hung by John Taylor & Co of Loughborough. Pit and great trusses based on simple A and AA forms.

Southoe

(1794, 1828)

(NG)(1709: 4 - VCH Hunts II, p353)(4)

(9/0, 9/9)(1/9)

(5.1)(6.A)

Timber frame of 1829. Five pits. The pit trusses very low and of simple A form. The great trusses and end truss of VV and A/ form.

CRO HP78/5/1. The churchwardens accounts for 1829 record:

Rbt Painter for materials for bell frames

8.12.1

<i>Richard Hayes for sawing the oak beams</i>	19.0	Toseland
<i>Mr Joyce</i>	20.6.0	(1840)
<i>Mr Peach bellhanger</i>	4.0.6	(NG)(NG)(1)
		(9.A)
Spaldwick		Single bell in a western stone bell cote built in 1873.
(1635, 1921)		
(iii + S)(NG)(5)		Upton*
(approx 10/0, 12/0)(approx 2/0)		(1671, 1778)
(6.1)(8.2.C.b)		(ij)(1707: 2)(2)
Iron and steel frame by Alfred Bowell of Ipswich installed in 1921.		(7/8, 6/5)(3/7)
		(two parallel pits)(6.H)
		Oak frame of two parallel pits. The pit trusses of X form with jowled end posts. The frame is possibly of 1671 but it may be the frame which held the 'ij' bells in the 16th century inventory of church goods. The X form is relatively unusual and therefore difficult to date, but the presence of jowls on the posts would be consistent with the 16th century.
Stanground		Upwood
(1588, 1617, 1622, 1832, 1935)		(C16, 1615, 1709)
(NG)(1709: 4)(4)		(NG)(NG)(3)
(10/7, 11/2)(2/9)		(Not surveyed)
(5.1)(6.A)(8.3.A.h)		Tower rebuilt in 1890. The bells hung anti-clockwise in a new wooden frame of simple A trusses.
Five bells in a timber frame of simple A trusses with iron ties by the Whitechapel Bell Foundry. The treble in a single pit above made of standard iron frames by Gillett and Johnston and installed in 1948.		(There were probably three bells in 1552 since the inventory records that the middle bell had been sold (Lomas, C 1906 p31)).
Steeple Gidding		Warboys
(C15, 1748)		(1765)
(NG)(1708: 3 - VCH Hunts III, p59)(3)		(NG)(NG)(5)
(6/6, 5/11)(2/6)		(Not surveyed)
(no plan code)(6A)		(truss 6A)
Owen found the frame to be <i>much decayed</i> (Owen T 1899 p84). In 1899 the tower was restored and a two pit oak frame installed. The three bells are hung dead with 1 and 2 sharing a pit. The trusses are simple A frames with iron reinforcement.		In 1765 Joseph Eayre cast five bells and provided a six bell frame at a cost of £25 (Owen, T 1899 p140). A new oak frame was provided c1930 (VCH Hunts II, p246). Simple A frames with iron reinforcements.
Stilton*		Waresley*
(C16, 1639)		(1857)
(NG)(1709: 3)(2, pits for 3)		(Church rebuilt 1857)
(11/7, 9/9)(5/11)		(Not measured)
(3.1)(5.A)		(no plan code)(8.3.C)
Important three pit frame of exceptional height. The trusses of king post type with jowled end posts and a mixture of curved and elbowed braces (Fig. 1a). The frame probably contemporary with the 16th century bell by Mellours of Nottingham.		Early iron frame by John Taylor & Co of Loughborough. The three bells hang in two tiers; the treble above 2 and 3. The trusses are tall castings of X form supported on oak timbers.
Stow Longa		Water Newton
(1440)		(C14, C15, 1667)
(ij + S)(NG)(1)		(NG)(NG)(3)
(3/6, 11/6)(3/6)		Composite iron and wood frame of three parallel pits installed in 1902 by Charles Carr of Smethwick. The heads and sills wood with iron A frames and cylindrical end posts.
(unclassified)(5.T but with braces to king post too)		(3.1)(7.B.b)
A single pit. King post trusses with end posts and corner bracing in the bottom corner. This frame probably after 1820 when two bells were removed from the medieval ring of three (VCH Hunts III, p103).		Winwick
Tilbrook*		(1590, 1716, 1756, 1864)(iii)(1709: 5 - VCH Hunts III, p124)(5)
(1625, 1682, 1763)		(10/7, 9/10)(2/6)
(NG)(NG)(1883: 3 - North, T 1883 p 199)		Wooden frame with iron connections and ties installed in 1864 by John Taylor & Co of Loughborough. Pit trusses of simple A form and great trusses of V/ form.
(8/8, 7/6)(2/8)		(5.1)(6.A)
(3.2)(6.A, 6.B)		
Oak frame with three parallel pits. The pit trusses of simple A form, the end trusses of A form with jack braces (Fig. 7c). The frame was probably made in 1682 when a new bell was installed.		

Wistow

(1628, 1658, 1756, 1905)

(ijj + S + ijh)(NG)(4)

(11/7, 8/0)(2/6)

(4.unclassified)(7.C.d)

Composite iron and timber frame by James Barwell of Birmingham installed in 1905.

Woodhurst*

(1621, 1624, 1695)

(NG)(NG)(3)

(6/10, 10/2)(4/3)

(3.1)(6.R)

Oak frame of three parallel pits housed within a timber framed turret. There are two truss forms with double intersecting X braces. The outer trusses have curved braces and the inner have straight braces (Fig. 3d and Fig 12) This is a unique truss form in Huntingdonshire. One example was found in Cambridgeshire at Hauxton (Walker R 2002 p97), which may date from the installation of three bells in 1666. It has straight braces but lacks the end posts with jowls which are found at Woodhurst. The bell dates here are also all of the 17th century and the RCHM dates the turret to the early part of that century (RCHM p 296).

Woodston

(1608, 1636, 1749, 1914)

(NG)(NG)(3)

(Not measured)

(3.1 two tiers)(8.3.A.m and 8.3.C.e)

Two tier iron frame of 1914 by Gillett and Johnston of Croydon. H frames on lower tier and low A frames above.

Wood Walton

Redundant church which was rebuilt in 1859. The tower is now inaccessible. The four pit frame with the ring of bells arranged anti-clockwise dates from the rebuilding of the church.

Woolley

Demolished

Wyton

Tower built in 1866. Nothing of the bell installation remains in the church which is being converted to a house.

Yaxley

(1721, 1881, 1931)

(NG)(1709: 4)(6)

(14/0, 11/1)(2/8)

(6.1)(6.A)

Wooden frame with iron tie rods installed in 1931 by Gillett and Johnston of Croydon. The pit trusses of A form and the great and end trusses of AA form.

Yelling*

(1666, 1700, 1739)

(NG)(NG)(4)

(10/2, 10/9)(3/2)

(4.3)(5.A)

Oak frame probably of 1666 or earlier but much rebuilt. King post trusses to pit, great and end trusses but of a variety of builds (Fig. 2c).

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I am grateful to Oliver Rackham for pointing out that the bell frame at the church of St Botolph, Cambridge is made of oak, not chestnut.

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Plate 8. (left) The frame at Woodhurst, Huntingdonshire.

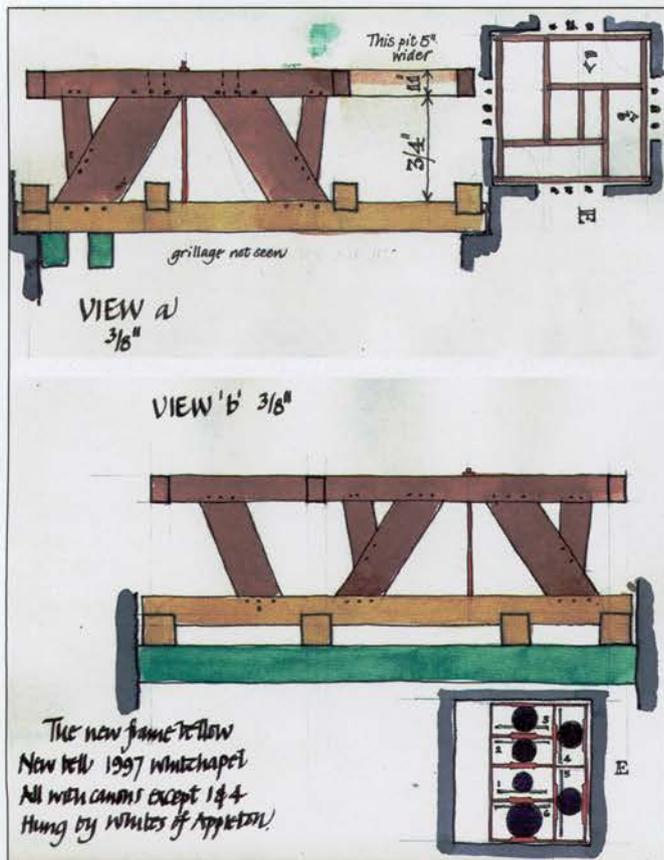


Plate 9. Plan of the bells and frames at Buckden, Huntingdonshire from the author's survey book.

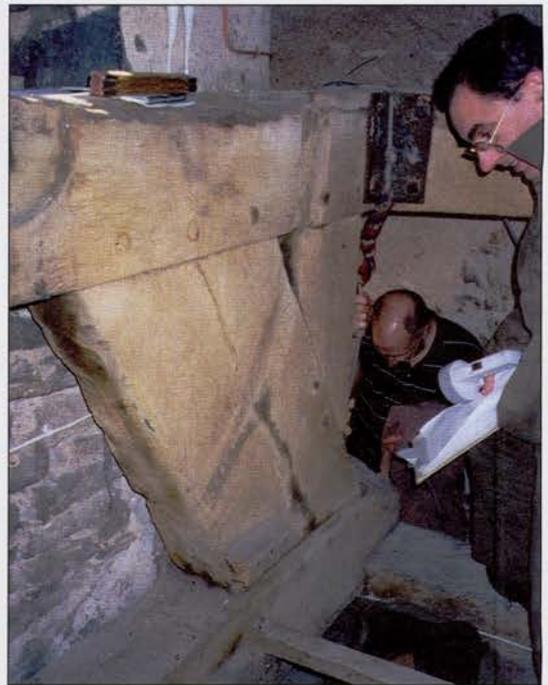


Plate 10. Inspection of the frame at Buckden, Huntingdonshire.

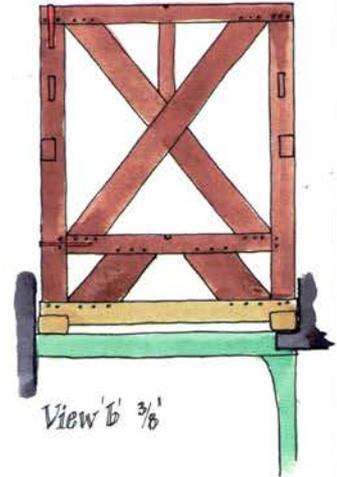
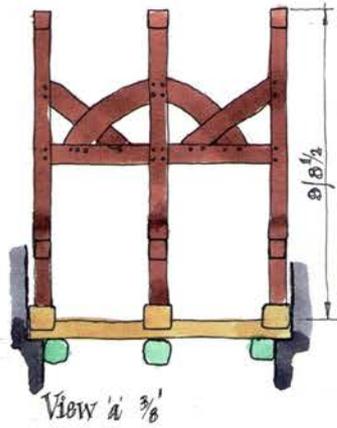
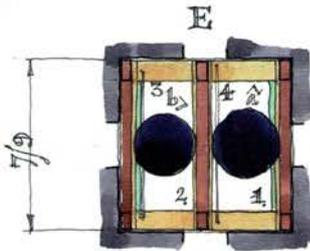
4.60 BYTHORN St. Lawrence 15/5/99
 Visit for DAC. The 1 chimeable, 2 out on top
 of the frame. Others derelict. Photos 9.2,
 11j + 5

All the bells retain their crans,
 finally re-hung by John Eston

4.61

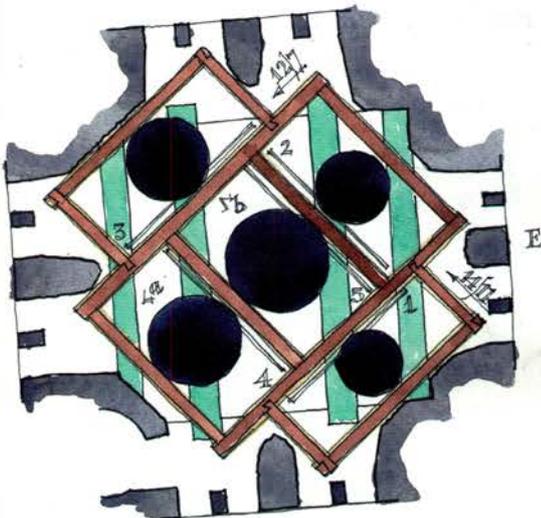
Now as Open.

1. Henry Bagley 1682
2. Henry Penn 1711
3. Toby Norris 1620
4. Thomas Norris 1674

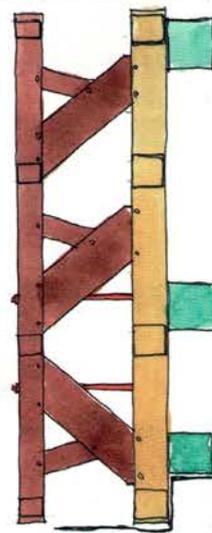


No notch

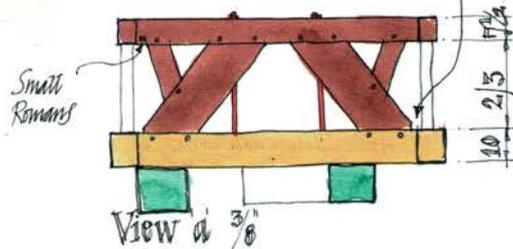
Plate 11. Plan of the bells and frames at Bythorn, Huntingdonshire from the author's survey book.



Unringable but last peel ring as recently
 as 1988
 In the chamber below the bells are old chiming
 ball hammers.



All brusses of
 similar depth.
 No floor
 No notch
 Slides 11,796-801



Small
 Rows

Plate 12. Plan of the bells and frames at Keyston, Huntingdonshire from the author's survey book.

Changes in the landscape of west Cambridge after Enclosure

1805–1870

Philomena Guillebaud

In the first 65 years after enclosure, the parish of St Giles saw little building, but transformation of the eastern part of an almost wholly arable landscape into pastures, pleasure gardens, nurseries and playing fields. This was in sharp contrast to the equivalent parish on the other side of town, St Andrew the Less, where enclosure was quickly followed by extensive housing development and rapid population rise. In St Giles fewer than a dozen 'gentlemen's residences' were erected, most of them on the periphery of the parish, while a moderate number of solid working class houses were built in the earlier populated areas of Castle Hill, Pound Hill and Newnham, again on the edges of the parish, and an unknown number of impermanent rural dwellings whose exact locations can only be conjectured. All but one of the colleges refrained from granting building leases, other corporate owners followed their lead and, since by 1870 most land in private ownership in the more accessible parts of the parish had been built on, further housing development had to await a change in college attitudes. This article explores development of the parish of St Giles in the first post-enclosure period and the roles played by some Cambridge colleges. The emphasis is on the colleges because it is they rather than the University which had the resources and hence the power to influence that development.

Introduction

The ancient Borough of Cambridge had three components: the town itself and its two great open fields, the West (sometime called Cambridge) Fields and the East or Barnwell Fields. In the first decade of the 19th century, each of the parishes encompassing the respective Fields was enclosed under Parliamentary Act.

The enclosure of the Parish of St Giles, the West Fields of Cambridge, was made official in May 1805. The background, process and immediate outcome of that enclosure have been the subject of a previous article (Guillebaud, P 2005). In considering subsequent changes, several periods may be distinguished: 1805 to 1870, a period of considerable agricultural change but very limited and peripheral housing development;

1870 to 1914, when several new colleges and seminaries, new roads and many substantial residences were built; 1919 to 1939, less academic building but expanding housing development, and 1945 to the present, with another spurt of academic building and conversion but more limited house construction.

The area of the parish was 1361 acres. Of the 16 Cambridge colleges in existence when enclosure was complete, four owned no land in St Giles, five owned less than 10 acres apiece, the University owned under six acres (deriving mostly from small benefactions in the 13th century), and the major players were St John's (410 acres), Corpus Christi or Benet College with 115 acres, Jesus, Gonville and Caius, Clare, King's, Trinity Hall – and Merton College, Oxford, the third largest landholder, with 105 acres. Although 40% was not in college or University hands (the Diocese of Ely held 12% and one private landowner, Sir Charles Cotton, 10%) the academic community had the controlling voice.

The evolution of St Giles must be seen in the context of what was occurring in the parish of St Andrew the Less (henceforth referred to by its more common name of Barnwell), whose enclosure was begun in 1807 and completed in 1811. The area of each parish was roughly the same, but the outcome of the enclosure process was markedly different. By 1831, the population of Barnwell had grown from 250 in 1801 to 6650, while that of St Giles had increased from 900 to only 1900. By 1871 the contrast was even greater: the former had reached nearly 16,000, the latter had remained almost static at less than 2500 (Fig. 1).

The contrast is largely explained by the different pattern of land-ownership, as shown in the table below, and the varying attitudes to development shown by different categories of owners.

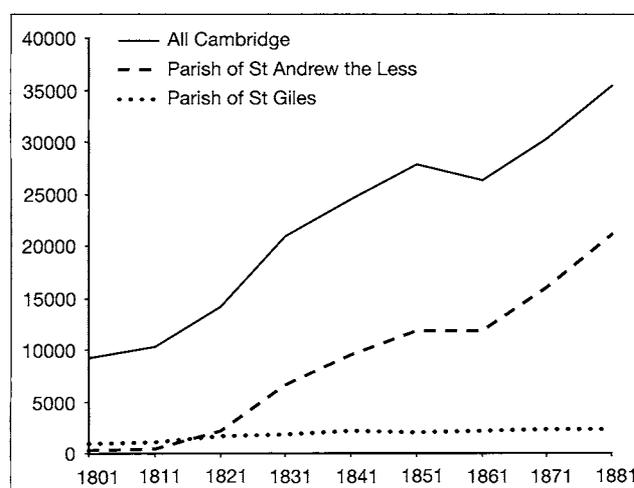


Figure 1. Population growth in two Cambridge parishes and in the town as a whole. Source: census data.

Whereas in St Giles colleges and University far outweighed other categories, in Barnwell they were second to private individuals.

Table 1. Land Ownership (% of total acreage) after Enclosure, Parishes of St Giles (1805) and St Andrew the Less or Barnwell (1811). Source: the Enclosure Awards for each parish.

Category of owner	St Giles	St Andrew the Less (Barnwell)
Colleges and University	60	42
Ecclesiastical bodies	15	1
Other corporate bodies	10	7
Private individuals	15	50
Total	100	100

These different patterns of ownership can be traced to the 16th century. In the later Middle Ages there had existed in Cambridge two dominant monastic entities: the Hospital of St John the Evangelist within the town but just on the border of the West Fields and the Priory of Barnwell in the East Fields, both beneficiaries of years of pious donations of land by citizens of Cambridge and its environs. At the time of enclosure the largest single landowner in each parish was the lay successor of its principal monastic house: in St Giles, St John's College, with 30% of the acreage, and in Barnwell, Mr Thomas Panton, with 33% of the acreage.

By the beginning of the 16th century, the town hospital of St John was dissolved and its endowment transferred to St John's, the new academic institution founded in 1511 by Lady Margaret Beaufort, mother of Henry VII. The foundation of this new college was accompanied by a further burst of benefactions, so that the college was briefly the richest in the University until the foundation of Trinity College by Henry VIII

in 1546. When Henry dissolved the monasteries, the patrimony of the Hospital had already passed into lay hands and was untouched, whereas the property of the Priory of Barnwell was seized and sold to private individuals, much of it coming eventually into the hands of the said Thomas Panton.

The early impact of enclosure in St Giles's Parish until 1870

Land-holding and land use

The commanding position of the colleges in the parish of St Giles in terms of acreage was a reality long before enclosure, and it would be difficult to demonstrate that the Commissioners of Enclosure bent the rules in their favour. But when we come to consider location rather than acreage, the matter is very different. Whether it was public knowledge at the time is unknown, but in 1803 the Syndicate established by the University to deal with such aspects of the enclosure as interested it produced the following document, whose proposals are germane to an understanding of what happened later (CUL, UA Minutes VI 1, p 135).

At a meeting of Syndics for St Giles Inclosure held on 5th day of July it was resolved to make the following proposals to the Commissioners for the said Inclosure.

1. That in the Allotment, the Fencing, and the general Distribution of Land lying contiguous to the Turnpike Road [Queen's Road] which bounds the Public Walks behind the Colleges from the corner of Mr Wilkins's Orchard at the end of the Croaches [a small piece of land abutting Queen's Road on the east opposite the end of West Road which had once belonged to the Hostel of the Holy Cross (cruces) hence Croaches] to the corner of the field opposite to the entrance of Bell Lane [Northampton Street] care be taken to avoid, as much as possible, whatever may diminish the present Beauty of the Walks; and to contribute, as far as it can conveniently be done, to the future improvement of those Walks.
2. That in order to prevent any inconvenience which might arise from the erection of Dwelling-houses or other Buildings, no Land lying contiguous to the above-mentioned Road be allotted to Private Individuals, but that it be allotted, in part to the University, in part to such Colleges as have Property in the said Field; regard being had to the situation of each College.
3. That the Allotments along the said Road be as deep as the several Properties will admit.
4. That the Land which is to be allotted to the University be behind Trinity College.

Examination of Plate 7 shows that the Commissioners obliged the Syndics in every respect. Their response to the first item was to exclude from the process of enclosure such small remnants of the water meadows lying between the river and Queen's Road as had not already been absorbed into college gardens, thereby safeguarding the 'public walks' so much esteemed by the academics. Much larger areas of common land, including Midsummer, Coldhams and Sturbridge Commons, were excluded from enclosure in Barnwell,

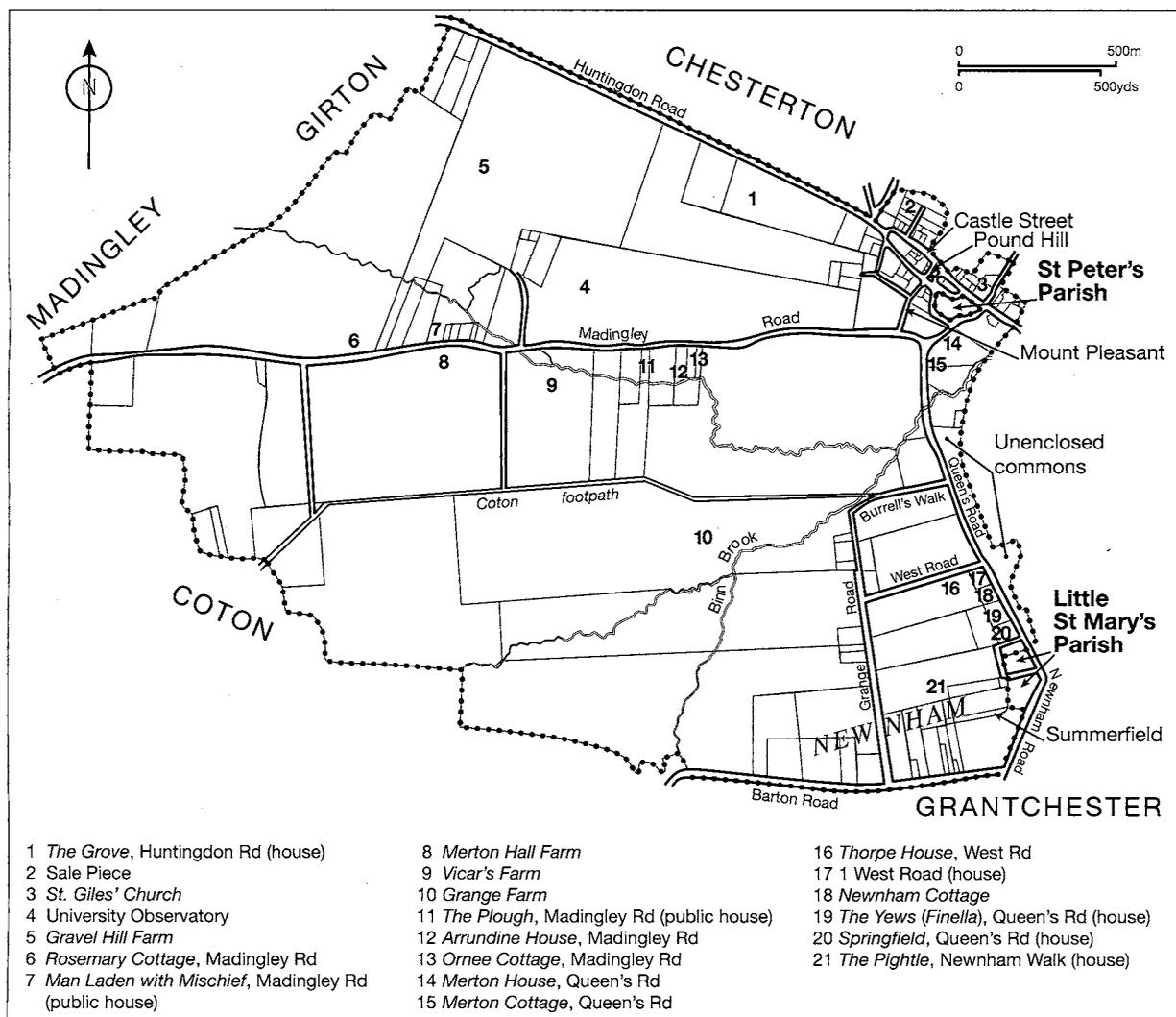


Figure 2. Parish of St Giles: places referred to in the text. Parish boundaries as at the time of the Enclosure Award of 1805.

Modern name of road

- Madingley Road
- Northampton Street
- Lady Margaret Road
- Queen's Road
- West Road
- Newnham Road
- Barton Road
- Grange Road

Former name (where different)

- St Neot's Turnpike
- Bell Lane
- Bandyleg Walk
- Arrington Road
- New Road, Green's Road
- Arrington Turnpike
- Arrington Turnpike
- Long Balk, House in the Fields Road, Parallelogram Road

but there were no equivalent commons in St Giles.

Plate 7 shows that by obtaining the Commissioners' acquiescence to the second and third items in the above list, those colleges whose ancient grounds were clustered along the west side of the town largely succeeding in creating a 'cordon sanitaire' insulating themselves from any change in the proximate landscape of which they did not approve, specifically house-building. As the case of Barnwell makes clear, the colleges – and the University as a whole – were not necessarily opposed to development of any kind, but in St Giles they were determined to control what, where and when development took place. Nevertheless, even in St Giles this control was not total, because one college, Gonville and Caius, possessor of a strategically located 'old enclosure' unaffected by the activities of the Enclosure Commissioners (see Guillebaud 2005, p 195), refused to toe the general line, as will be shown later.

Agreement to the fourth proposal, as has been explained in Guillebaud 2005, p 196 made possible location of Trinity Fellows' Garden immediately opposite that college's back gate.

While it is not the intention in this article to refer, except in the most general terms, to the situation in Barnwell, which has been well described by Peter Bryan (1999), what happened in St Giles cannot be understood without reference to Barnwell. In the latter not only did private individuals own half the acreage enclosed but there was no great tithe-owner like the Bishop of Ely nor a clearly predominant college – though the colleges involved were much the same in each parish. In Barnwell the private owners were sufficiently powerful to block any college monopoly of land closest to the town, and the pattern of land distribution after enclosure showed far more intermingling of private and corporate ownership in Barnwell than in St Giles. The determination of the town to prevent a repetition of what happened in St Giles is illustrated by the public hearings conducted in June 1806 about the proposed Barnwell enclosure when resolutions were passed objecting not only to the enclosure itself but to 'the election of Commissioners, known Agents of the large Proprietors' as being 'contrary to a standing order of the House of Commons, and objectionable on that ground.' (Cambridge Chronicle and Journal, 21 and 28 June 1806) The two Commissioners objected to, William Custance and Joseph Truslove, had been two of the three Commissioners for the enclosure of St Giles as well as of a number of villages near Cambridge with considerable college ownership. The town's objections were ignored in the final selection of the Commissioners, but the private owners clearly had the clout to deny the colleges the privileged position they had enjoyed in St Giles.

As described by Bryan, private owners in Barnwell wasted no time in embarking on housing development after enclosure, since the old town was bursting at the seams. The colleges followed suit somewhat later, entering cautiously into a type of investment with which they were unfamiliar, and tending to build housing aimed at a wealthier clientele than

the private landowners. Proportionately more college-built than privately-built housing survives in Barnwell to this day, quite a bit of the latter being torn down in the 20th century as slums. Censuses of the 19th century show that most of the almost unbroken climb in the town's population is accounted for by Barnwell parish, while a number of inner parishes showed a net loss. Arrival of the railway in 1845, with its station in Barnwell, was of course a contributory factor.

Barnwell provided a ready outlet for college experimentation in new kinds of investment, and house construction there took much of the pressure off the town, allowing the more conservative elements of the colleges to preserve in St Giles the rural setting with which they were familiar. But even here, significant changes were taking place. A parish map of 1831/2, evidently prepared for the purpose of administering the land tax, shows that almost all the eastern part of St Giles, ie closest to the town, had been converted from arable to pasture by that date. The map presents difficulties of comparison with that which accompanied the Enclosure Award of 1805: there are some new or changed boundaries, the entire plot numbering system has been changed, and whereas the older map showed names of owners and only rarely occupants, the newer one shows only occupants, and in the 25 years separating the two many changes of tenancies had occurred. What makes the later map interesting is that it shows land-use, giving three main categories, arable, 'grass' and woods, while orchards/nursery gardens and yards are also distinguished by use of colour or hatching. (Fig. 3).

Predictably, the category of woods is negligible, largely confined to a band of trees along the western extremity of Madingley Road and, somewhat surprisingly, the newly planted but evidently thick band of trees encircling Trinity Fellows' Garden. The interest lies in the shift from arable to pasture. That there should have been such a shift in that 25 year period is hardly surprising: in the agricultural depression after the end of the Napoleonic wars, grain prices dropped more sharply than those for animal products. Moreover, as already noted, the population of the town rose steadily, and was matched by a marked increase in the University population. Thus a growing demand for meat and dairy products could have been expected to lead to expansion of pasture in those areas closest to the town – particularly since St Giles was notoriously short of pasture (Hall and Ravensdale 1976, 28 *et seq*)

While the 1831 map shows pasture concentrated in the eastern sector near the town, it will be noticed that there are two patches of pasture at the northern and western extremities. These were probably holding pastures where slaughter cattle were rested and watered before the last leg of the drive into the town, and there was doubtless a third on the Barton Road, beyond the parish boundary.

Estimating how much pasture there was before enclosure is hard. As an obligatory part of the preparations for the process, the Commissioners' surveyor

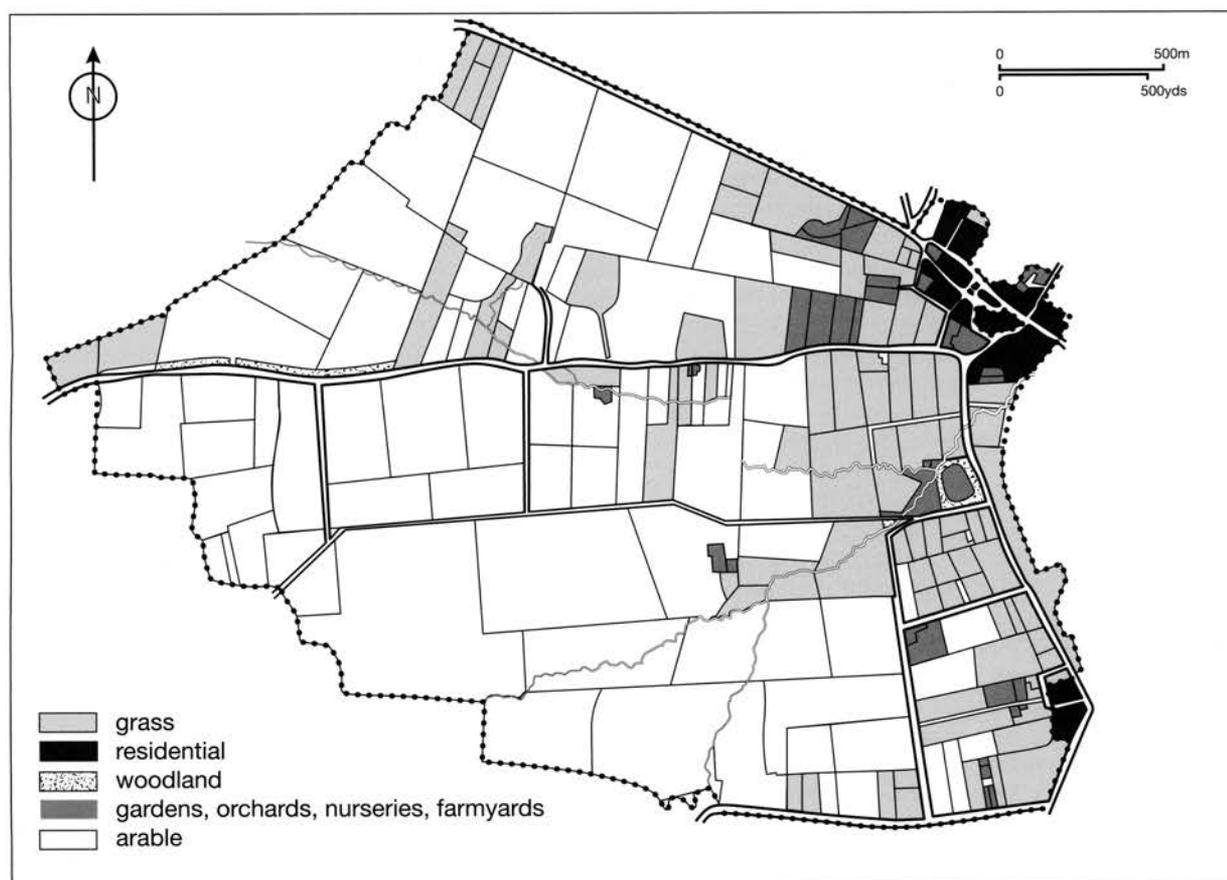


Figure 3. Parish of St Giles: land use in 1832. Boundaries from the Parish Map of 1832.

drew up a map reflecting the *status quo ante*. The map, in bad condition, exists in the County Record Office, but the key or reference guide is missing. There are over 400 numbered plots or strips, but ownership is not identified. Some areas are marked in faded pink or green; comparison with later maps shows that the pink areas, all relatively small, are old enclosures specifically excluded from the activities of the Commissioners, and which may or may not have been pasture. As for the green areas, found on either side of each of the three small watercourses which intersect the parish, along the parish boundaries particularly to the north, along some of the major balks or ancient tracks, and notably on either side of the eastern end of Madingley Road, it seems clear that these represent more or less permanent pasture. At a rough guess, green areas might amount to about 10% of the acreage.

When the Commissioners came to work out how much land to assign in compensation to former tithe owners, their decision was supposedly governed by a formula which had become standard by the early 19th century: tithe owners were to receive an acreage corresponding to 20% of arable plus 8% of pasture. In the present instance, they received 20.5% of the acreage, but since both the largest tithe owners possessed some land in the parish before enclosure there is no way of distinguishing how much of their allot-

ments was attributable to that factor and how much to tithe compensation. Certainly it sheds no light on the vexed question of how much pasture there actually was.

Examination of the leases issued by St John's immediately at the end or even before the end of the enclosure process makes it evident that there was some pasture, though measurement remains impossible. Before enclosure, St John's holdings in St Giles had been organised in five farms, with separate tenants and homesteads, although their lands were dispersed among the open fields. These farms were known as the Newnham lands (including some in Grantchester), St John's Barns (also known as Grange Farm), the Great Barn Farm, the Harlston lands and the Morris lands, the names of the last two recording acquisitions from important Cambridge families in 13th and 14th centuries. From an administrative point of view, the system was less than efficient: strips attached to each farm were scattered and intermingled over the great fields and it is arguable that one of the reasons that St John's pushed for enclosure was the desire to achieve a more manageable structure on its own properties.

After enclosure, the five-farm picture vanishes: Newnham Farm, a small unit, continues with the same tenant (Thomas Whittred about whom more later) as does Grange Farm, (much the largest unit

containing over 200 acres) though with a change of tenant, but the other three disappear, being replaced by 20 new individual tenancies, totalling 174 acres or over 40% of St John's land holding in St Giles. These tenancies are identified by the name of the tenant and the precise acreage, but unfortunately the leases give no direct information about location. Because of the existence of a contemporary plan detailing the areas covered by Grange Farm, we know that most if not all of these new units were in the northeast part of St John's holdings, ie nearest the town, that the majority were in the angle between the present Queen's and Madingley Roads, that some abutted upon the Coton footpath and that a few were north of Madingley Road. In size, they ranged from 2 to 46 acres. Three of them are identified as 'garden ground', i.e. market or nursery gardens, and their tenants are identified as gardeners.

It is notable that the above areas broadly coincide with the areas marked in green on the draft pre-enclosure map, ie having a predominance of pasture. With the exception of the three gardens and two other tenancies, the remaining 15 leases are for land described as 'arable and grass' and all contain the clause, after statement of the amount of yearly rental, 'and paying in like manner a further yearly Rent in the proportion of £10 of lawful money to an acre for every parcel of grass land which shall at any time be plowed broken up or converted into tillage during the said term'. In relation to the level of annual rent for the each unit, £10 per acre was so high as to be clearly meant as a penalty payment, and the clause confirms not only that there was some pasture but that it was precious.

The occupations of almost all the tenants are identified, and only one is described as a farmer. Apart from the three gardeners already mentioned, there are two cooks, a butcher, a grocer, a merchant, an upholsterer, a bricklayer, a surgeon, a breeches maker, a college porter, an innkeeper, a coach master – and three stable keepers. It was to stable keepers that the two largest leases, of 46 and 33 acres respectively, were granted, and each of their leases, while omitting the penalty clause referred to above, obliges the tenant to convert a specified acreage of land into pasture within ten years of the start of the lease. In the case of the 46-acre lease, the tenant had within that period 'to lay down for pasture with 10 lbs of red clover and 6 lbs of Dutch clover to every statute acre' 17 acres fenced off from the rest of his land, while the tenant with the 33-acre lease had to convert 7 acres in the same fashion.

This leaves little doubt that lack of horse pasture was a major concern. Nor was St John's alone in this: King's College, which acquired at enclosure a 16-acre site immediately opposite its back gate, made the initial choice, after reserving part as the Provost's private garden and paddock, to divide the rest into small lots and rent them to its Fellows for their horses. Nowadays this area is divided between the Fellows' Garden and the grounds of King's College Choir School.

Reverting to St John's leases, all 20 of the new leases

(though back-dated to Michaelmas 1803) were issued either in June or September 1804, ie shortly after the Enclosure Commissioners had authorised landowners to take possession of their new lands, and before the enclosure was officially complete. The meticulous care with which these leases are drafted suggests that they are the outcome of a carefully pre-determined strategy – of which no other evidence has so far been found in the college records.

If the need for pasture was the dominant motive, this provides no obvious explanation for creating 20 new units, 16 of which were less than 10 acres in extent. Perhaps it made easier the process of substituting rack rent for the almost universal practice of beneficial leases. The latter yielded a fixed or very slowly increasing customary rent, usually payable partly in money and partly in wheat and malt, where the full or true value of the lease was recouped by periodic 'fines' or lump sums payable to the landlord on the occasion of renewal of the lease, a system open to abuse by either party. Under rack rent, a property was leased at an annual rent reflecting its true value, the normal practice of the present day. All these new leases were rack rents. Or perhaps the smaller units gave the college greater flexibility in their land-use policy. Or did willingness to grant such leases reflect recognition of vestiges of the once-strong ties between the citizenry and the fields? In the absence of contemporary evidence one can only speculate.

As for Grange Farm, which as mentioned was the largest unit of St John's holdings in St Giles, a new lease was not issued until 1806, although the tenant, Thomas Attwood, had been in charge of the farm at least since 1804, as shown by the Rental Books. In this instance, the new lease required the tenant within the first seven years of the lease to convert 64 acres, or almost one-third of the farm, into pasture, the precise areas being marked on an attached plan. He was granted a beneficial lease, and it was not until 1812, when there was another change of tenant, that this was replaced by a rack rent.

The other colleges (including Merton College, Oxford) were slower to promote the conservation or expansion of pasture – at least as far as can be gathered from the wordings of their first leases issued after enclosure. Moreover none of them chose to make enclosure the occasion, at least initially, of altering their tenancy arrangements. Each assigned its whole entitlement, no matter where located (and in some cases not limited to lands in the Parish of St Giles) to the single tenant in charge of its lands before enclosure, and the Enclosure Award and accompanying map would seem to show that this was intentional rather than the result of inertia. However St John's, having planned (from the evidence of the enclosure map) to entrust an 80-acre site near the Coton boundary to a previous tenant, James Cock, later changed its mind and incorporated that area into its large Grange Farm under a new tenant.

Aside from St John's, the Cambridge colleges with the largest shares in the acreage of St Giles, as well as the Bishop of Ely, entrusted their farms in their en-

tirety to one of three individuals, Thomas Whittred, mentioned above, William Anderson and Jacob Smith who appear to have been professional farm managers on a large scale. Even St John's employed two of them: the one tenancy which St John's did not change at the time of enclosure was that of the Newnham Farm, initially held by Whittred and later by Anderson. On the other hand, Merton College Oxford, the third largest collegiate landowner, used none of them.

Whittred, the son of an Alderman, was a man of substance. Before enclosure, he had farmed the tithes both of the Bishop of Ely and Jesus College in St Giles, was tenant of all the land there owned by Benet College (Corpus Christi) as well as of St John's Farm in Newnham, and owned property in other parishes. Evidence is conflicting about his ownership of land in St Giles: a Land Tax table for that parish in 1798 in the County Record Office shows him liable as proprietor for £5.2.0 on an unidentified property, but he does not appear as an owner in the Enclosure Award. However that document shows him as tenant of record for lands totalling almost 350 acres, or more than a quarter of the parish.

William Anderson, like his father of the same name before him, farmed Mortimer's Manor for Gonville and Caius College. The Manor included lands in Barnwell Parish and elsewhere as well as land in Newnham and Newnham Mill. The son married one of the daughters of Thomas Whittred, and succeeded his father-in-law in several of his tenancies, notably the Benet lands (1811), Jesus lands (1812) and St John's Newnham farm (1817). However Whittred retained the tenancy of the lands assigned to the Bishop of Ely until 1824 (at or shortly before his death).

Jacob Smith was a landowner in his own right in St Giles, allotted 33 acres at enclosure, the second largest private owner after Sir Charles Cotton. Both before and after enclosure and until 1813 he farmed Clare Hall's estate known as Castle End Farm, which included 32 acres in St Giles and further land in Chesterton.

Perhaps because of the continuity of tenancy, some of the colleges took their time in issuing new leases, Benet College (Corpus Christi) not issuing theirs until 1814. This lease contains a unique feature: 13 acres in the Newnham area out of the more than 100 acres covered by the lease may be withdrawn if the College should decide to relocate itself across the river. No other college seems to have entertained such a radical idea.

Although none of these initial leases contain wording similar to those cited in St John's leases about preserving pasture, some later ones do, and the parish map of 1831 shows that by then almost all land close to the town, regardless of ownership, had been converted to pasture.

Since there is no doubt that the promotion of pasture was a deliberate policy, it is astonishing that it should be impossible to identify the individuals behind that policy. One might reasonably expect that the Master and/or Senior Bursar of St John's were the moving spirits. The Master from 1789 to 1815 was

William Craven, who had previously been Bursar and also, until 1795, Professor of Arabic. His obituary pays tribute to his amiable Christian character but says nothing whatever about any contributions he might have made to the college's agricultural policies. In the period of his mastership there were eight Senior Bursars, none of whom have left any evidence of interest in agricultural policy. The college's Conclusion Books shed no light on the matter, nor does Sir Henry Howard's book on St John's College finances (Howard 1935). The archives of other colleges have been no more fruitful.

One little-known feature of west Cambridge is the former existence of over a hundred small detached leisure gardens, of the kind found nowadays on the outskirts of certain Dutch or German cities. These were not allotments for growing vegetables, but small plots, usually fenced or hedged and often with a summer house or similar feature, where the town dweller could escape to relax among flowers and fruit trees (Cambridgeshire Gardens Trust Newsletter May 2004). As the cited publication explains, seven groups of such gardens have been found in west Cambridge, the earliest shown clearly if schematically on Baker's 1830 map of Cambridge as a mixture of orchards and grass plots surrounded by agricultural land on the north side of Madingley Road close to the present northern end of Grange Road. The 1888 Ordnance Survey map shows 15 well-established gardens at that location, while nearby to the northeast, another group of six gardens is shown, though the date when these latter were developed is not known. The third group is well documented: the gardens were established in 1841 on the former and now derelict site of Grange Farm homestead. At his wife's suggestion William Whewell, Master of Trinity, leased the ground from St John's to establish gardens for the benefit of Trinity College servants, but after his death in 1866 St John's took the lease back and used the facilities for its own servants until the sale of the site to Westminster College. The next three sites are found along Grange Road, one dating from the 1850s and the other two, of uncertain dates of foundation, on land allocated at the time of enclosure to two town churches in lieu of tithe. The last site is in Grantchester. All were eventually built upon, but one garden from the last of the sites to be sold (in 1925) still survives, with its summerhouse intact.

1858 was an important turning point in the development of this landscape: not only was it the year in which the Universities and College Estates Act was passed, permitting these bodies to offer 99-year building leases in place of the earlier limit of 40 years, which gave an impetus to the subsequent development of residential building in the area, but it was also the year when St John's laid out the first college playing field.

Until the latter half of the 19th century, the principal forms of exercise in the University were walking, riding and shooting; real tennis, played on a walled court, remained popular and some colleges maintained their courts as an integral part of their

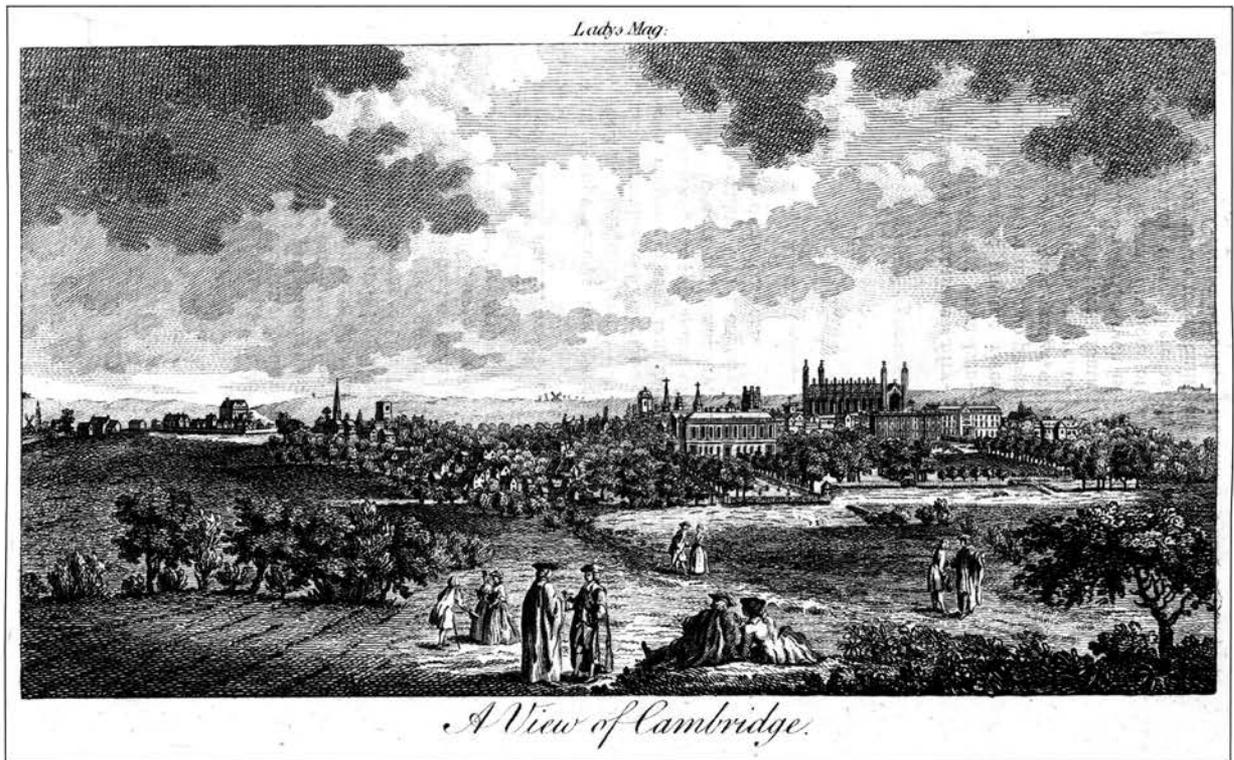


Figure 4. A view of West Cambridge in 1750, showing the unhedged pre-Enclosure landscape. From the Ladies Magazine, courtesy of the Cambridgeshire Collection.

buildings until relatively recent times, but none of these activities required an open playing field. When interest in cricket arose, college games were played on Parker's Piece, often with several games going on at once, and the first purpose-built cricket field in Cambridge owes its existence to a private individual, FP Fenner, who in 1848 leased land from Gonville and Caius College in the former Barnwell Fields and laid out a field which he leased to the University cricket club and various college clubs. As Fenner's, it exists to this day, but when cricket became even more popular, it could not meet the demands of the colleges.

St John's playing field was laid out in the angle between the present Queen's Road and Madingley Road, but occupied a considerably smaller area than its present playing field. Two years later in 1860 Trinity, not to be outdone, for the same purpose rented and subsequently bought from St John's 16 acres of land which had been part of Grange Farm and lay west of what became Grange Road. The lease, like subsequent ones signed with other colleges, contained the provision that the lessee undertook not to break up or convert into tillage any of the land involved. Three other colleges, Emmanuel, Pembroke and Peterhouse joined forces in 1873 to rent a plot directly east of the Trinity ground, then followed Magdalene in 1878, Christ's together with Sidney in 1884 and Trinity Hall in 1892. All these rented from St John's but several other colleges which at the time of enclosure had been allocated land conveniently located in west Cambridge (Gonville and Caius, Corpus, King's

and Clare) laid out fields on their own territories. The Ordnance Survey map of 1888 shows the area south of Madingley Road and nearest to the town almost entirely covered by playing fields and gardens, including the Fellows' Gardens of Trinity, Clare, King's, Corpus and Gonville and Caius. The band of pasture land was therefore pushed further west.

Buildings

Under the system of open-field agriculture as practiced in Cambridge, farmsteads were on the periphery of the fields and sometimes in the town itself. Thus the farmstead of Benet's (Corpus Christi's) main farm was for long at the George Inn in Bridge Street, while several farmsteads were located on Pound Hill. Newnham contained the homestead for part of the Benet lands in the West Fields, and next door the farmstead for St John's lands in Newnham. Not surprisingly, one consequence of enclosure was the move of some of these farmsteads to the newly consolidated holdings. Perhaps the first was Grange Farm, which was transferred in 1827 from its medieval site at the north corner of Madingley Road and Northampton Street, where it was known as St John's Barns, to a more central location which has since become the site of the University Athletics Centre. Baker's 1830 map shows Gravel Hill Farm, homestead for the Bishop of Ely's holdings, north of Madingley Road and Church (St Giles Vicarage) Farm south of it. Merton Hall Farm also south of the same road was built around 1850, being transferred from beside the

Hall in Northampton Street.

The first non-farm building to penetrate the fields was the University Observatory (Plate 13), built in 1822/3 on a site off Madingley Road bought from St John's College far enough from town to escape smoke pollution and on an eminence chosen such that the tower of Grantchester Church was lined up on the meridian to the south.

As for houses, Maitland (1898,120), after defining the pre-enclosure boundaries of the West Fields, claims to have found three houses there. The enclosure map shows only one: Newnham Cottage, on Queen's Road, built by William Wilkins Senior in 1799 on land leased from Gonville and Caius. Efforts to locate the other two have failed.

The fact that house building after enclosure was so heavily concentrated in the former Barnwell Fields did not mean that there was none in St Giles, but for the first 65 years after 1805 almost all of it took place on the small amount of land in the ownership of private individuals.

While 15% of the acreage of St Giles was allotted to private individuals, 10% was owned by Admiral Sir Charles Cotton, Lord of the Manor of Madingley, who died in 1812. He was succeeded by his son St Vincent Cotton, a colourful gambler who by the 1850s had dissipated his property and become a professional coachman to make ends meet. Those who subsequently owned his land in St Giles, all located in the extreme northwest of the parish near the Madingley boundary, saw no market for housing, and virtually

all of it remains agricultural land to this day. So it is the remaining 5% of land in private hands which saw most of the housing development up to 1870; by that date the only significant pieces of property in private hands (other than Cotton's former land) which remained undeveloped were an 11-acre site near the southern end of Grange Road, eventually developed as Selwyn Gardens in the mid-1880s, and Jacob Smith's 15-acre plot on Madingley Road beyond the Observatory, now the site of Conduit Head and Lansdowne Roads, built in the 20th century.

As described elsewhere (Guillebaud 2005) the Enclosure Commissioners in St Giles awarded small allotments to persons entitled to compensation in lieu of the abolished rights of common, and wherever possible they selected locations for these allotments convenient for the owners. Since most of the eligible commoners lived in the northeastern corner of the parish, the area of the old Roman town north of the Great Bridge, the allotments they received, with few exceptions, were either in Sail Piece, a previously undeveloped 6-acre piece of arable land at the top of Castle Hill, or were scattered among the existing houses on Pound Hill. Given the shortage of building land in the town and the fact that these plots were too small to be viable agricultural units, it is not surprising that within a short space of time almost all had been converted into houses and gardens. In the parish map of 1831, Sail Piece shows about 15 small houses, several detached gardens, a timber-yard and only one acre still in cultivation, while the situation is



Figure 5. A mid-19th century view of the Cambridge Observatory (after a painting by R B Harraden). Courtesy of the Cambridgeshire Collection.

similar on Pound Hill.

As mentioned above, the second largest private landowner in St Giles was Jacob Smith, also one of the three professional farm managers. His 33-acre allotment of land at enclosure comprised three pieces (of 16, 15 and 3 acres) and by 1811 he had sold his 15-acre piece on the south side of Huntingdon Road (Fig. 3) to William Custance, one of the three Commissioners for the enclosure of St Giles, who built there in 1812/13 the substantial house known as the Grove, now owned by Fitzwilliam College (Thompson 1989 and AGH 1990). Moreover by the time of his death in 1814, Smith had sold half of the 16-acre piece north of Madingley Road, also to Custance, and that half was eventually bought by Trinity College in 1854. It was adjacent to the head of the Trinity-owned conduit built in the middle ages to supply clean water to the Franciscan monastery and which later fed the fountain in the middle of Trinity Great Court. But some time before 1842 a 'beer house' called the 'Man Laden with Mischief' (Hopkin, 1997) came into existence on the southeastern corner of this lot on Madingley Road and was duly licensed in 1844. According to an article in the Cambridge Evening News of 19 October 1984, this house remained in existence until just before the Second World War, when it burned down. In 1851 a second public house, the Plough and Harrow (later the Churchill, later still a McDonalds restaurant, demolished in 2005) was licensed. The latter was half a mile nearer town than the Man Laden with Mischief, near the track leading south to Grange Farm. The only other new pubs in the period in question were in the built-up area of Castle and Pound Hills, whereas these two were the first out in the open country.

The existence of two new pubs raises the question of where their customers came from. Some presumably were travellers to or from Cambridge, but even granted that pubs in the early 19th century were often very small affairs doing their own brewing on the premises, there must have been some local demand to justify their existence.

Prior to 1840 we possess three useful maps of St Giles (the enclosure map of 1804/5, Baker's map of 1830 and the parish map of 1831/2) but no census data. From 1841 on, we have the decennial censuses, but no useful map until the Ordnance Survey of 1888. Although the enclosure map shows buildings, none are to be seen on or near Madingley Road. The two maps from the 1830s show the Observatory, Grange Farm in its new location and two other farms, Gravel Hill Farm and Clunch (Church) Farm, one north and the other south of the road, and some structures connected with the municipal gravel pits. However there are also a few small unidentified rectangles along the road. When we look at the 1841 census, we find the Observatory and the three farms, but enumerated under Madingley Road there are also a further 9 'dwellings', some containing more than one 'household.' The total population (including the Observatory and the 3 farms) is 63. If we look only at the 9 undocumented 'dwellings', their population is 33 including 9 children below the age of 14; the occupations of the

household heads are gardener (4), carpenter (3) and agricultural labourer (2).

In other words, we have a not-insignificant population, half of them living in dwellings whose precise locations are unknown and which have not survived to the present day.

The 1851 census data show a net increase of four or five dwellings over 1841 and a rise in total population to just over 100, mainly accounted for by increased family size. But there are problems of comparability and various anomalies. The Observatory and its staff are clearly identified in both censuses and Grange Farm can be identified because the name of the farmer is known from other sources, but the two other farms, Gravel Hill and Chalk (later Vicarage) Farm are named only in the 1841 census. In 1851, the head of one household is listed as 'Farm Bailiff of 220 acres/12 labs' and it is assumed that this is Gravel Hill Farm, owned by the Diocese of Ely, but the third farm is not identifiable.

The censuses of 1861 and 1871 show further gradual growth of population on or close to Madingley Road and continued dominance of farm labourers and gardeners among the occupations, although carpenters are now less numerous and shepherds are a new category. Other occupations represented are mason, nurseryman, publican, coachman (one of each in 1851). One major drawback of all the censuses is the lack of location data other than 'Madingley Road'. From maps and other sources we know the locations of the farms, the Observatory, the two pubs and two gentry houses which will be mentioned below, but precisely where the dwellings of the majority of the population we have been describing stood remains unknown.

Only in the case of the Plough and Harrow does the licensee identify himself as 'publican'. The license of the Man laden with Mischief changed hands in 1851, and neither the first licensee, Rowell, nor the second, Chapman, gives his occupation as publican, the first being 'gardener' and second 'coachman in family'. Running a pub could evidently be a part-time occupation.

In the course of the 1850s two substantial houses were built on privately owned land on the south side of Madingley Road, between the Plough and Harrow and the access track to Grange Farm (later Wilberforce Road). One, variously known as Arrundine Cottage/ House/ Villa, began as a two-storeyed, two-bay house and was later added to both horizontally and vertically. As 35 Madingley Road it still stands today, while its two-storeyed neighbour to the east, named Ornee Cottage though hardly a cottage since a sale notice of 1901 describes it as having eight rooms, was pulled down in the 1960s when a row of maisonettes was built along Wilberforce Road on the site of the house and its garden. Curiously, nothing appears to be known about just when these houses were built, and by whom. According to the 1861 census data, Arrundine Cottage was occupied by John Ballard, aged 53, described as 'proprietor of houses and land', and Ornee Cottage by John Hodson, 64, retired farmer. Not until 1885 was another 'gentleman's residence'

put up on Madingley Road (Alfred Marshall's house, 6 Madingley Road, now part of Lucy Cavendish College.)

Madingley Road, two miles long from the northern corner of the Backs to the parish boundary with Coton, was only one of three turnpike roads leading westwards out of Cambridge, but it constituted the central spine of the parish and perhaps for that reason experienced more development than the two others (the Huntingdon and Barton Roads) judging from census data. However there was also some limited development along the Backs, and in Newnham.

It will be recalled that at the request of the Vice-Chancellor the Commissioners of Enclosure had awarded all the land available for enclosure immediately west of what became Queen's Road to colleges, to prevent building by private developers. With one exception, those colleges refrained from offering building leases for over 60 years, the exception being Gonville and Caius. The latter owned, *inter alia*, a strip of old enclosed land of almost 6 acres adjoining Queen's Road on the west and known as Butcher's Closes, which extended south from the modern West Road into what is now the Caius Fellows' Garden on the south side of Sidgwick Avenue. Old enclosed land was excluded from the activities of the Commissioners of Enclosure, and remained intact in the hands of the original owner. Already in 1799, the college had granted a building lease on one acre of this land to William Wilkins Sr, architect and father of the more famous William Wilkins Jr, designer of numerous distinguished buildings in Cambridge and elsewhere, and between 1836 and 1867 it proceeded to grant a further three leases which between them took up all of the western side of Queen's Road between West Road and what would become Sidgwick Avenue.

In the meantime, from 1835 on, it also developed the southern side of West Road, on land allotted to it at enclosure, with a mixture of building leases and nurseries – and produced another instance of ephemeral houses: some time before 1819, at a time when the land in question was being farmed by William Anderson, four (or perhaps five) cottages were put up at the western end of what eventually became West Road where it met the undeveloped Grange Road. These, together with their small gardens, were leased by Caius in 1819 to the Rev Joseph Powell, for what purpose is unknown. On Baker's map, by which time the land around them had become Stittle's Nursery, they show as 'Powell's Buildings', and the parish map of 1831 lists the names of four occupants. But a new lease of 1835 of nearly 5 acres to Henry Green, nurseryman, refers to the inclusion in that lease of the site 'whereon lately stood four several cottages with the garden ground thereto attached.' And the cottages are gone, with as little explanation for their disappearance as for their original erection.

Reverting to Queen's Road, Merton College Oxford granted two building leases in 1817 and 1819, for the construction of Merton Cottage and Merton House respectively, at the northern end of Queen's Road where

it approaches Northampton Street. Both were built on previously enclosed land belonging to that college, hence excluded from the activities of the Enclosure Commissioners, and perhaps Merton, like Caius, did not feel obliged to cater to the University's expressed wish to discourage building along Queen's Road.

Newnham has always been somewhat of an anomaly. From ancient times it had been a satellite of Cambridge, as witness the fact that it had no church of its own until the late 19th century but was divided between three town parishes, St Botolph, Little St Mary and St Giles, as well as Grantchester. Leases, which normally identify properties by parish, tend to refer to 'Newnham' as though it were somehow outside the parish system, and it differs from the rest of the area discussed by its long-standing populated area, much of it not in St Giles, and by its complicated chequerboard of ownership of small plots, many of them old enclosures involving a number of colleges as well as private owners.

Mention has been made of St John's Newnham Farm, whose homestead abutted Newnham Road. Having granted the lessee of the farm, Thomas Whittred, a new lease in 1804, five years later St John's allowed him to pull down the old farmhouse and erect a new and larger one, which over subsequent decades metamorphosed into a substantial private dwelling known at Newnham House, later sold to Corpus Christi. The adjacent Corpus Christi homestead later also underwent transformation and is now Ashton House.

It was also in Newnham that St John's in 1864 granted its first 99-year lease in St Giles, to a Fellow of the college, Professor George Liveing. In this as in so many other respects Newnham was an exception to the rule, in this instance to that college's reluctance to grant building leases in west Cambridge. Liveing's house, the Pightle on Newnham Walk, now belongs to Newnham College.

Two other developments in Newnham both begun in the 1860s must be mentioned: Summerfield, a row of artisan cottages on private land immediately north of Caius's playing field, and Newnham Terrace, not in St Giles but immediately across the parish boundary on Newnham Road (or the Arrington Turnpike as it was then), middle-class terrace housing of a type usually found in a more urban setting. But in St Giles itself over the course of the first 65 years after enclosure fewer than a dozen substantial residences (not counting farm houses or public houses) were built, almost all either on private land or land belong to Gonville and Caius College. The other corporate owners (Ely Diocese, Storey's Charity, Cambridge Corporation and other lesser entities) followed the example of the majority of colleges and refrained from granting building leases.

After 1870 it is possible to detect a subtle shift in attitude, as is shown by a growing number of approaches to colleges from individuals inquiring about the availability of building leases in west Cambridge. One of the less well-endowed colleges, Corpus Christi, granted two building leases in 1871, Caius another

in 1872 and by 1873 we find Miss Clough, the future Principal of Newnham College, writing to the Bursar of St Johns inquiring about the availability of land on Madingley Road belonging to that college 'which I believe it is intended to lease out for building.' This foreshadows the building boom up to the First World War, which saw the erection of Newnham College, Ridley Hall, Selwyn College and several other institutions subsequently linked to the University, as well as many private houses, the construction of new roads and the improvement of existing ones.

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Maps

- Map (undated draft made by William Collisson, Surveyor to the Commissioners of Enclosure) showing pre-enclosure boundaries of properties in the Parish of St Giles, Cambridge with later post-enclosure alterations. CRO map 124/P35
- Map 'Plan of the Parish of St Giles in the Town and County of Cambridge made on the Inclosure 1804' CRO map Q/RDc6
- Baker, RG 'New Map of the University and Town of Cambridge 1830' Cambridgeshire Records Society 1999
- Map of Property in the Parish of St Giles in Cambridge with the names of the present Occupiers 1832. CRO map 124/P36 with reference book dated 1831 P29/28/2
- Ordnance Survey Map 1888, sheets 40.13, 40.14, 41.1

Archaeological Note: Romano-British buildings at Tunbridge Lane, Bottisham TL 5453 6095

Andrew Pearson and Leonora O'Brien

Illustrations by Tansy Collins

Small intercutting rubbish pits and a linear ditch all dating to the 2nd century AD were succeeded during the 2nd and 3rd centuries by two or three small buildings and large cobbled surfaces comprising local flint pebbles in a clay silt matrix.

Structure 1 was a rectangular building (3.1 x 2.1 x 0.2m). Timber beams were placed against the sides of the cut (three of them being identified as apparent beam slots during excavation), and a further two (also apparent as beam slots) placed as cross-beams approximately 1.8m apart. The spaces between the beams were then filled with chalk (probably the material initially quarried out) which was rammed into place, to secure the beams and form Floor L2167. A large, sub-square, stone-lined central hearth (F2086) was positioned between the two cross-beams; its lining included fragments of tile and Mayen lava quern and showed signs of burning.

Structure 2 was represented by a subrectangular (5.7 x 2.8 x 0.28m) cut (F2144). The remains of a rammed floor surface (L2150) were present, but no evidence remained of wooden beams, as seen in Structure 1, or other structural components. F2144 had been backfilled with a sandy silt deposit (L2145) which contained finds including 2nd to 4th century pottery as well as significant quantities of Purbeck marble, a fragment of burnt millstone grit and *opus signinum*.

A third possible 2nd to 4th century structure was represented by two large rectilinear pits (F2092 and F2096); these were aligned parallel to Structure 1 and contained 2nd to 4th century pottery, but had shallow, concave profiles and no surviving evidence of a floor. Four postholes may have formed a post-built superstructure over the pits; one of these, F2062, contained chalk packing as well as large quantities of *opus signinum*, tile, daub and a cobble with mortar adhering to its surface. Alternatively, the postholes could represent part of a small pen or enclosure.

The site was reorganised in the 3rd to early 4th century when the buildings and cobbled surfaces fell out of use, and a series of ditches and several rubbish pits were cut. Several episodes of ditch cutting

in the 3rd or early 4th century are considered likely, but stratigraphic evidence has allowed only one subdivision, recognising an earlier and a later episode, to be made. Earlier ditches formed two sides of an enclosure around Structure 2, and a broken ditch ran parallel to one side of that enclosure. It is possible that these ditches were open while the two buildings were functional, only becoming filled with silty deposits and general debris when the buildings fell out of use. The main element of the later set of ditches was substantial right-angled Ditch F2003. Datable pottery recovered from the fills of this ditch suggest that it was cut in around AD 200 and remained open until the end of Roman activity at this site, being finally filled in the later 3rd and 4th centuries.

In the southern part of the site, all archaeological features were sealed by a dark black abandonment layer (L2007), dated by its pottery content to AD 300–370. Other finds including tile and animal bone, worked Purbeck marble and a large iron knife blade were recovered from this layer.

Discussion

The presence of small buildings, rubbish pits and boundary ditches is consistent with the periphery of an occupied area. Finds of Purbeck marble, *opus signinum*, wall plaster and a large tile assemblage (including *tegula*, *imbrex* and box-flue fragments), all in unabraded condition, suggest a fairly wealthy dwelling nearby. The finds assemblages concur, showing the site to have been receiving goods from local, regional and extra-regional sources. Existence of a substantial building agrees with the wider evidence of settlement on the southeast fen edge, which argues for the present site being an individual farmstead (*fundus*) or villa, rather than a village or part of an imperial estate. If the occupation as a whole is dated to the mid to late 2nd century AD, the site would correspond with established ideas about the large-scale development of the fens, which is generally accepted to have taken place from the Hadrianic period on-

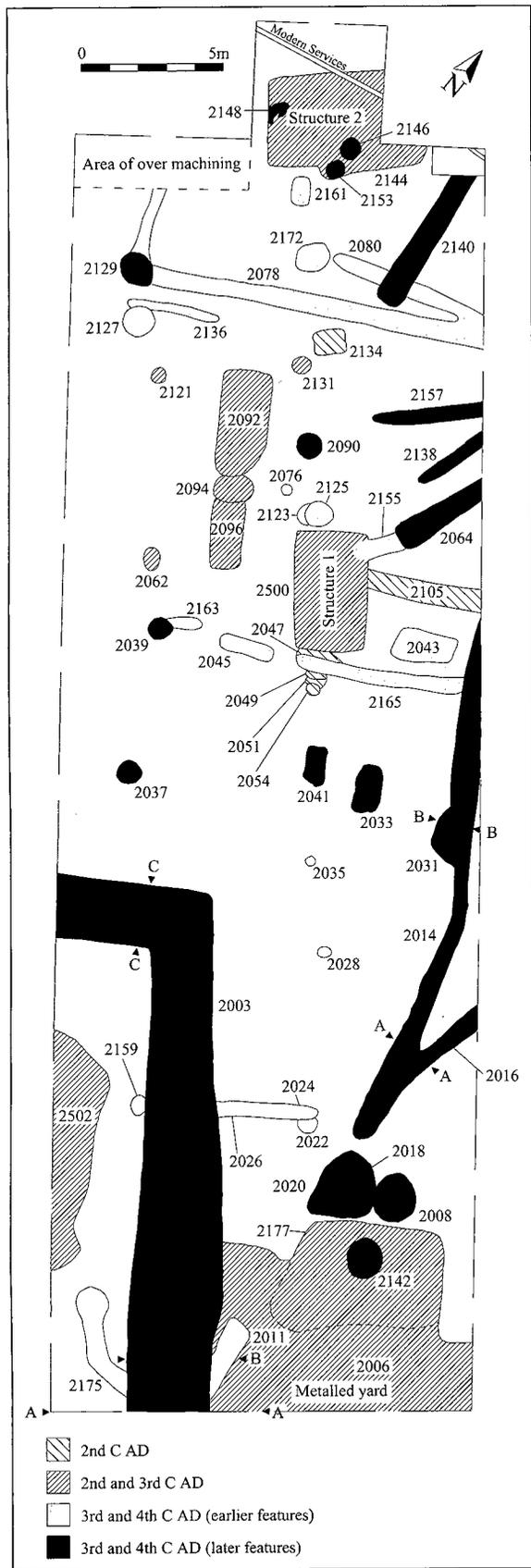


Figure 1. Phased site plan

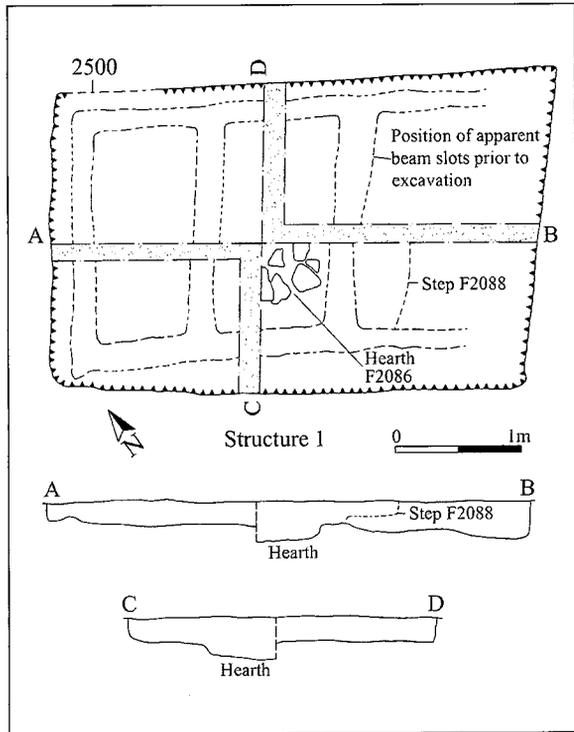


Figure 2. Structure 1, detailed plan and sections.

wards (Salway 1970; Frere 1987, 268).

There is no evidence for the use of masonry in construction of the buildings. Any roofed building would probably have been of wattle and daub, perhaps with a low turf sill wall. In support of this hypothesis it can be noted that daub was recovered from the fills of Structures 1 and 2, as well as other features on the site, although never in great quantities. The roofs would have been of pitched thatch, resting on the outer walls. The buildings are of such small size that comparable examples do not seem to be specifically discussed (see for example Morris 1979). Small rectangular agricultural buildings are described as an 'all purpose shell' (Morris 1979, 66), and there is little to suggest a precise function except to say that they are too small to be dwellings. The presence of a hearth in Structure 1 indicates that it was not used for storage, and may suggest an industrial function though a building of this size is unlikely to have been a smithy and no slag was recovered during excavation. The lack of loomweight fragments also seems to rule out wool production in this part of the settlement.

The change in land use in the later 3rd century remains unexplained; future work in the area should determine whether or not this change part of a fundamental reorganisation on a wider scale (cf Mackreth 1996). It is evident, however, that the land remained a peripheral part of the settlement, with features representing the drainage/livestock enclosures and the disposal of domestic waste; features lay mainly outside the area enclosed by the large right-angled ditch. It is also not clear whether the abandonment of this site, as represented by L2007, relates to abandonment of the wider settlement, or whether it merely represents another reorganisation of land use.

Acknowledgements

The excavations were undertaken by Hertfordshire Archaeological Trust (HAT, now Archaeological Solutions Ltd) in 2000 in advance of the development of the site. HAT would like to thank the doctors of the new surgery, in particular Dr M Towriss, for their co-operation and funding of the archaeological investigations. The fieldwork was undertaken by Guy Seddon. A full account and discussion of the features and finds revealed by the excavation can be found in the site Archive Report (Pearson and McDonald, 2001).

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Archaeological Note: Medieval land reclamation and subsequent occupation on High Street, Ramsey TL 2870 8506

Kate Nicholson

Illustrations by Caroline George

Medieval fen edge deposits and 12th to 13th century land reclamation

The lowest stratigraphic layers encountered were typical fen edge deposits comprising alternating bands of highly organic mud, inorganic alluvial silt clay and intermediate humic silt clay. This sequence indicates that until the 12th to 13th century, the area was subject to flooding and extended periods of inundation during which stagnant water conditions prevailed (Fryer in Nicholson 2005). Such conditions are consistent with the 'muddy depths' described in the 12th century Ramsey Chronicle (quoted by Darby 1940, 113). However finds including pottery (12th to 13th century), animal bone and an iron nail indicate human activity in the vicinity while the later of these deposits were forming.

The earliest archaeological features were linear ditch F1162 and its recut, F1114, both perpendicular to the line of High Street, suggesting that they marked plot boundaries as well as having a drainage function. However, continuing fen edge conditions are indicated by the alluvial lower fills of F1162 and the gleyed clays and organic muds in F1114.

After the filling in of Ditch F1114, but still in the 12th to 13th century, several deposits of sandy or clayey silt, some with a domestic waste component, were dumped, sealing both the fen deposits and the ditches. A layer of soil was also dumped into Trench AS2. It is thought that this dumping was carried out to raise the ground surface above the fen and so provide a consolidated dry surface for building, following the failure of drainage ditches to achieve this. The dumping of sandy silt on top of fen deposits in the 12th to 14th century has also been attested at Ramsey Garden Centre (O'Brien and Crank 2002), though this comprised only a single, thin deposit. Canalisation of the Great Whyte watercourse, c.70m east of the site, in the 13th century (Page *et al* 1926, 189) may have been part of the same reclamation initiative, aimed at consolidating the area west of the existing settlement (around the Abbey) prior to the construction of la White (Great Whyte), the market place and *Brigstrate*

(High Street) (Page *et al* 1926, 189). A previous archaeological evaluation has attested the laying out of plot boundaries off Great Whyte between 1250 and 1500 (Cooper 2003).

Until the time of Henry VIII, attempts at fen drainage and land reclamation were mainly on a small scale, though accounts of larger medieval drainage and reclamation projects do exist (HC 1629; Darby 1940, 43, 52). In the Ramsey area there is documentary evidence dating to 1196 indicating that fen improvement was undertaken on at least one occasion (Darby 1940, 48). There are several known accounts of land being reclaimed through being 'built up' or 'raised from the marsh' in conjunction with the containment of a watercourse in the medieval period (Darby 1940, 44 and 48–53).

Repeated construction and levelling in the medieval and post medieval periods

The episode of land reclamation was followed before the end of the 13th century by construction of Structures 1 and 2. These were attested only by their floors which were of clay (Structure 2) or clay and chalk (Structure 1). During the 13th to 14th century ditches were cut through the floors of both structures, indicating their disuse. Their abandonment may have been due to continuing or repeated wet conditions, as indicated by the post-depositional waterlogging of L1081 and mineralization of L1148. Structure 3 was subsequently built just south of where Structure 2 had stood. It was attested by a mortar floor and two walls: one of limestone and one, whose course could not be determined in plan, of mortared limestone and flint clasts.

Disuse of Structure 3 by the 14th century is indicated by a dumped deposit overlying its remains and elsewhere. As the reclamation process (at least in the east of the site) seems to have been complete by this point, it is suggested that this episode of dumping was intended to level the ground surface, rather than to raise it. In the eastern part of the site this episode

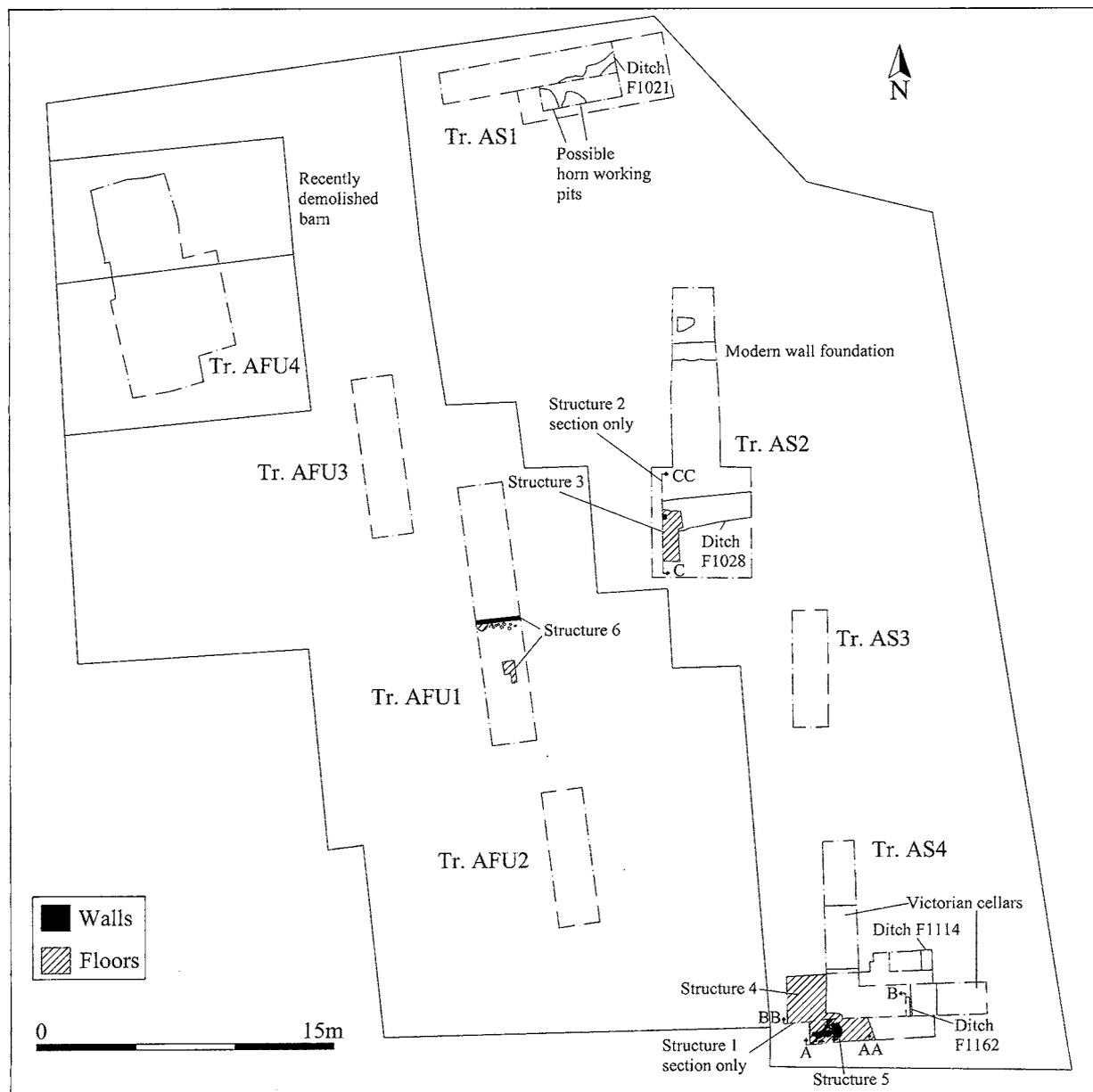


Figure 1. Site plan

of levelling was followed by the deposition of compact orange clay (L1012). A cobbled surface overlying a gleyed clay deposit and overlain by compacted sand and gravel is tentatively interpreted as an effort at land consolidation.

Two shallow pits cut in the 14th century are tentatively suggested as pits used for the soaking required for processing horn. Horn cores (goat, cattle and sheep), some with saw marks consistent with the removal of the upper part for the horn for manufacture of small items such as handles, were recovered from several contexts at the site, though not from the pits themselves (Phillips in Nicholson 2005). Antler fragments, including possible debris/offcuts from antler working and a worn antler point which may have been a simple tool, were also recovered (Phillips

in Nicholson 2005; Crummy in Nicholson 2005).

Structure 4 was built on the newly consolidated ground surface in the 14th or 15th century. It comprised an internal wall of roughly hewn limestone and sandy yellow mortar dividing two rooms one, with a mortar floor the other with two successive clay floors laid later in its use. In the 15th to 16th century, following the disuse of Structure 4, a layer of dark grey silty clay was dumped across the eastern part of the site, presumably for the purpose of levelling.

Structure 5 was built after the deposition of this layer, on approximately the same site which Structure 4 had occupied. It was attested by a clay floor and a wall of roughly hewn limestone, possibly with integral post pads indicating a timber frame set on the low limestone wall. A hearth was located at the east-

ern end of the wall but its relationship to the building is not clear. Structure 6 is the first building on the western part of the site. It was attested by a mortar floor and a wall of roughly faced limestone bonded with sticky silty clay. Both Structures 5 and 6 are dated by their stratigraphic relationships only, implying that they post date the 15th to 16th century. The dates of the overlying dumped deposits are not clear, with that sealing Structure 6 containing a sherd of 19th century bone china, but the equivalent deposit sealing Structure 5 being of 16th to 17th century date; the 19th century sherds are thought to be intrusive.

Building on the site continued into modern times, with two large Victorian cellars and a further wall foundation trench. A barn dated by cartographic evidence to at least 1824 was recently demolished.

Construction and demolition

As indicated above, the six structures were minimally represented by their floors and fragmentary remains of their walls (Structures 3–6 only). The walls were generally of roughly hewn, mortar bonded limestone and stood only a maximum of two courses high (the exception being the five-course, clay bonded wall of Structure 6). The lack of extensive rubble deposits associated with the buildings implies that they were deliberately demolished and their materials reused, rather than being left to decay, with the site being levelled between each episode of building. The similar, near street front, locations of Structures 1, 4 and 5 (as well as the two Victorian cellars) suggest deliberate rebuilding in the same location, implying that demolition, levelling and rebuilding took place in quick succession; the coincidence in location of Structures 2 and 3 may have similar implications.

The excavated medieval and post medieval features are thought to represent domestic buildings and backyard activity. The pottery assemblage includes cooking pots and curfews, and is dominated by table wares (Thompson in Nicholson 2005), whilst the small finds assemblage includes knives, honestones and a probable ear scoop (Crummy in Nicholson 2005). The presence of oyster shell at the site, and the composition of the environmental samples and animal bone assemblages are consistent with the disposal of domestic waste (Fryer in Nicholson 2005; Phillips in Nicholson 2005).

The only industrial activity is horn and antler working (see above). Small scale, part time horn working at Bedford has been taken as an indication that the town was only partly urbanised, and that the raw materials for the craft were acquired at its markets and fairs (Grant 1984, 180). The same could be true of Ramsey, which was a small town with a primarily agricultural economic base but a more fluid population than a village (De Windt 1990). The environmental evidence suggests that, although cereal crops were grown locally, a consumer economy was in operation in this part of the town and production and processing took place elsewhere (Fryer in Nicholson 2005). The finds assemblage included only a few items imported from more than 50km away (Norwegian ragstone hones, a single sherd of Hertfordshire ware and an enamelled buckle, possibly from Limoges) (Crummy in Nicholson 2005; Thompson in Nicholson 2005). The buckle may have been from a book strap, and so possibly associated with Ramsey Abbey; the other imported items are not unusual finds for a site in this area and were probably available locally.

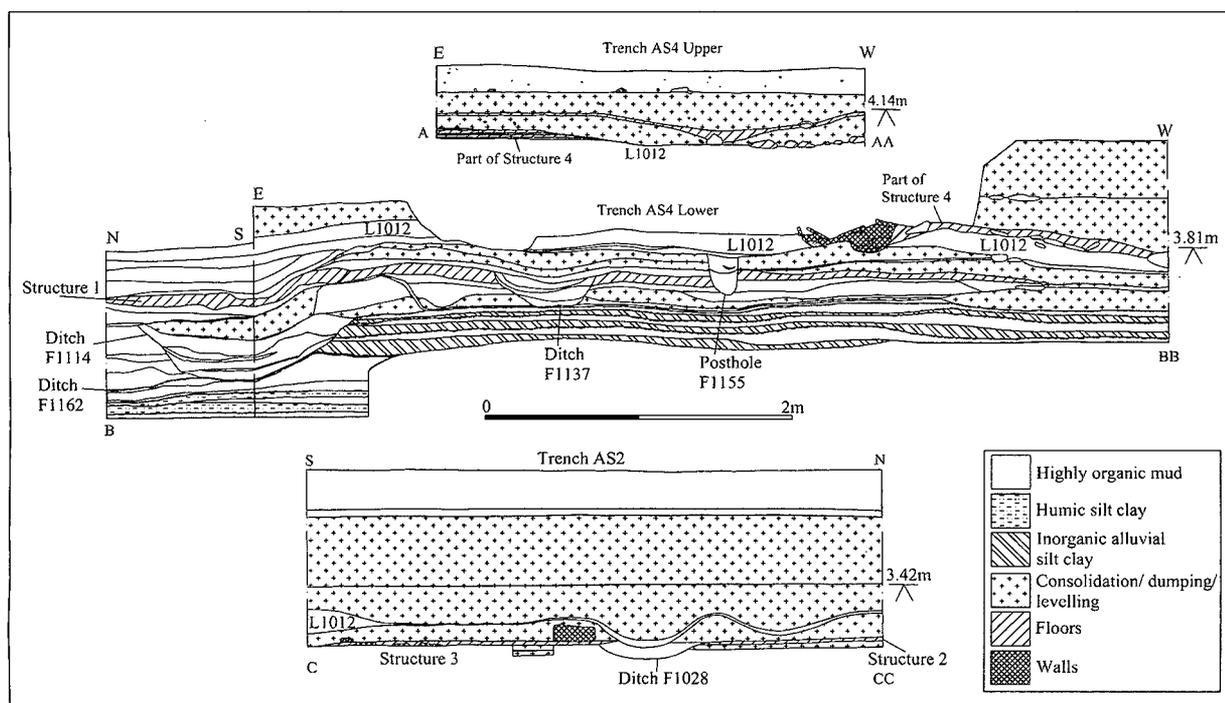


Figure 2. Sections showing the sequence of consolidation and construction.

Conclusions

The line of the medieval fen edge around Ramsey was largely unconfirmed in 1992, when the Fenland Survey for the area was published (Hall 1992, fig 25). This investigation, along with others which have taken place in Ramsey since that date, has attested 12th to 13th century fen-edge conditions closer to the presumed area of the original settlement than had previously been suspected. Reclamation of land in this part of Ramsey was achieved by dumping to raise the ground surface above the fen in conjunction with canalisation of a nearby watercourse; this is consistent with documentary account of medieval land reclamation techniques.

The six buildings constructed at the site between the 12th and 16th centuries were apparently of similar construction, with floors of mortar, clay or chalk, thatched roofs and walls of roughly hewn limestone or timber framing set on limestone footings. These materials are typical of standing buildings of the early post-medieval period in other Fenland villages (Parker and Pye 1976, 152 and 159–60). The site appears to have been primarily domestic. The findings are consistent with DeWindt's (1990) hypothesis of Ramsey as being socially town-like in the medieval and post-medieval periods, despite its small size.

Acknowledgements

The archaeological investigations were carried out by Archaeological Solutions Ltd (AS) and Cambridgeshire County Council Archaeological Field Unit (CCC AFU) on the north side of High Street, Ramsey, Cambridgeshire in 2004, funded by Exchange Developments Ltd and Richard Hyde and City Renovations. This report presents the combined significant findings of the investigations; a full account is given in the site Archive Report (Nicholson 2005), and full descriptions of all features and finds are included in the site Interim Reports (Wotherspoon *et al* 2004, Atkins 2004a, Atkins 2004b). AS would like to thank CCC AFU, particularly Rob Atkins, for information on their investigations. AS fieldwork was conducted by Cheryl Ross and Iain Williamson

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Archaeological Note: Animal carcasses in a Roman ditch, West End, Haddenham, TL 4613 7552

Carina Phillips and Alexandra Grassam

Illustrations by Kathren Henry

Evaluation of the site (Crank and Pearson 2000) had demonstrated several Roman ditches, and the excavation expanded on this. Field boundary and drainage ditches were revealed, representing several phases of land division and enclosure from the 2nd to 4th centuries. The ditches are thought to have delineated stock enclosures, probably used in winter when the lower lying fenland pastures were inundated. Finds represent domestic refuse, probably deposited through manuring or midden spreading. It is not thought that settlement was located nearby. The most significant feature revealed by the investigation was the mass burial of eight cattle and six horses in ditch F2169, and this report focuses on this feature.

Ditch F2169 was at least 15m long, extending beyond the limit of investigation. In addition to articulated remains of cattle and horses it contained a few sherds of pottery (datable only as 'Roman'), a fragment of possible human bone (too abraded for definite identification) and fired clay/daub. The size of the ditch and paucity of other finds suggests that it was specifically dug to contain the animals and was backfilled soon after their burial. Dating of the cattle and horse deposit was by radiocarbon dating of two samples of animal bone (horse SK6 and cattle SK7) (see Beta Analytic Inc/O'Brien in Grassam 2005). Both samples provided a radiocarbon date range of 40 to 230 cal. AD (1900 to 1720 cal. BP) which suggests that they were deposited either in the very late Iron Age, or in the early to mid Romano-British period.

Animal burials

Six articulated horses and eight articulated cattle were present in the ditch. Some disarticulated bones and teeth of these species were also present (see a, b, c, d on Fig. 1). It is unclear whether these bones and teeth are disarticulated parts from a nearby skeleton, or single burials of their own, or disarticulated bone that was included in the ditch fill. Completeness of the remains varied, eight were substantially complete. Partial skeletons were most frequently those of imma-

ture animals. It is likely that survival biases contributed to the incompleteness of the immature remains. Absence of butchery evidence suggests that skinning and disarticulation did not take place. It is therefore probable that these animals were buried as whole carcasses.

The horses and cattle remains lay on the base of the ditch. All but two (horse SK 1 and horse SK6) were facing southwest, therefore in nose-to-tail positions. All except horse SK1 and cattle SK12 had their backs facing the southeastern edge of the ditch. The majority of the animals stretched across the width of the ditch, although young animals seem to have been buried under or in the space near to an adult animal. The position of the animals in the ditch suggests that horses were concentrated to the northeastern end of the ditch, while a majority of the cattle were placed at the southwest. The position of the skull of cattle SK7, found resting on the back of horse SK8 suggests that the animals were placed in the ditch starting from the southwestern end of the feature (see Fig. 1).

The animals were of various ages (ages follow Silver 1969, Hambleton 1999 and Farbenfabriken 1994). Of the six articulated horses, four were adults, one was immature and one was neonatal. The eight articulated cattle comprised of three older adults (5 years or older), four young adults (1½–2½ years) and one foetus. Of the old adult cattle (old adult and senile following Hambleton 1999), a probable bull was identified (SK 14), pathological changes suggest it may have been a working animal. The vertebral pathology of this animal suggests it carried out an activity in which it was made to pull its neck to one side, such as the pulling of a grinding wheel. The old cattle would not have provided prime meat and are likely to have been primarily used for breeding and traction. Some younger horse and cattle were also present including cattle of prime meat age (c.1½ to 3½ years). Of particular significance is the cattle foetus (SK4) recovered with the remains of an adult horse (SK2), a foal (SK3) and a young horse (SK5).

Size could be estimated for three adult cattle and two adult horses (following Matolcsi 1970; von den

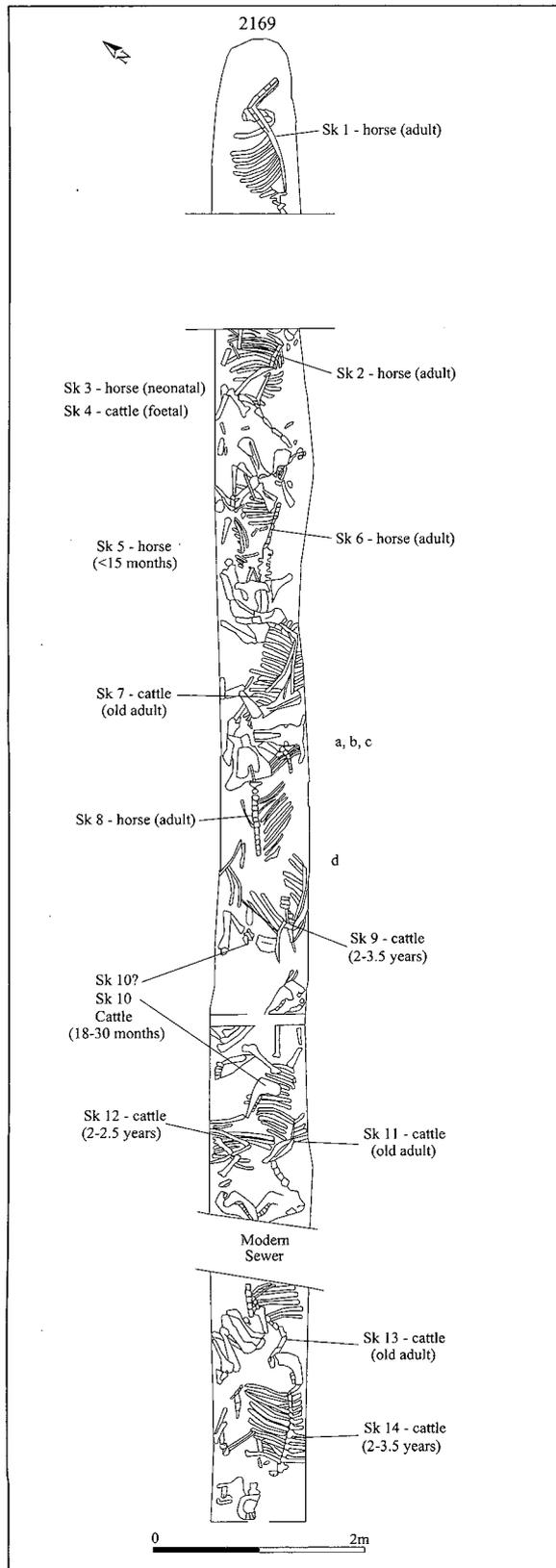


Figure 1. Detail of F2169. *a, b, c and d* indicate the approximate location of disarticulated bone. Sk3 (probable newborn foal), sk4 (foetal calf) and sk5 (foal) were not identified during planning, but their approximate locations are marked.

Driesch & Bosseneck 1974). The three cattle skeletons were similar in size, ranging from 123 to 128cm; the horses had withers heights of 137cm/13 hands and 145cm/14 hands. Comparison to the statistics for modern animals of old breeds of similar heights suggests the cattle are likely to have weighed approximately 450–550 kg, and the horses 350–450kg (Samraus 1992).

Black staining with associated erosion was evident on some mandible and foot bones. The staining was caused by the presence of iron oxide in a wet environment (R Jones pers comm). The fact that it has only occurred on the foot bones and mandibles could indicate that the lower leg and feet were buried lower in the ground in a more waterlogged environment. The other possibility is that the burials were covered by skins or hides, which rotted and attacked the foot bones. The feet/ankles and mandibles are less fleshy than other areas of the body and consequently are likely to rot to the bone more quickly and be affected by the putrefaction fluids from the skins. Burning was evident on only the distal radius of cattle SK10, indicating that this bone had been close to a fire at some point. The disarticulated remains in this context prevent further assertion as to the extent of burning. It cannot be ascertained whether the animal was buried as a complete skeleton.

Discussion

The remains represent the burial of a number of horse and cattle carcasses in a single event. The ditch was probably dug specifically for their burial. After positioning in the ditch, the carcasses may then have been covered in skins or hides before subsequent refill. The weight of adult animals suggests they were close to the ditch before slaughter.

Various scenarios have been considered to attempt to explain the burial of these animals. Disease is one possibility resulting either in natural death or in view of their size, slaughter. Another interpretation is the slaughter of these animals in an aggressive act by an opposing community, perhaps explaining the absence of butchery. However, this does not explain the ordered manner in which these animals were buried: the nose-to-tail arrangement of some of the animals and deliberate patterning of the deposit.

The purpose-dug linear ditch, simultaneous burial of numerous complete carcasses, and ordered manner of burial suggests that there was intention and planning. The deliberate deposition of whole or part of animals is recorded at many Iron Age and Roman sites. Iron Age examples include Danebury, Hampshire (Grant 1984), Ashville, Oxfordshire (Wait 1985) and Cadbury Castle, Somerset (Alcock 1972). Ritual deposition has also been recorded in the Roman period at cemeteries, (eg the eastern cemetery in London (Barber & Bowsher 2000), at villas (eg Keston, Kent (Philp *et al* 1999)) and at shrines (eg Upper Delphs, Haddenham, Cambs (Evans 1984)). The deposits range from a single skull to articulated bones and

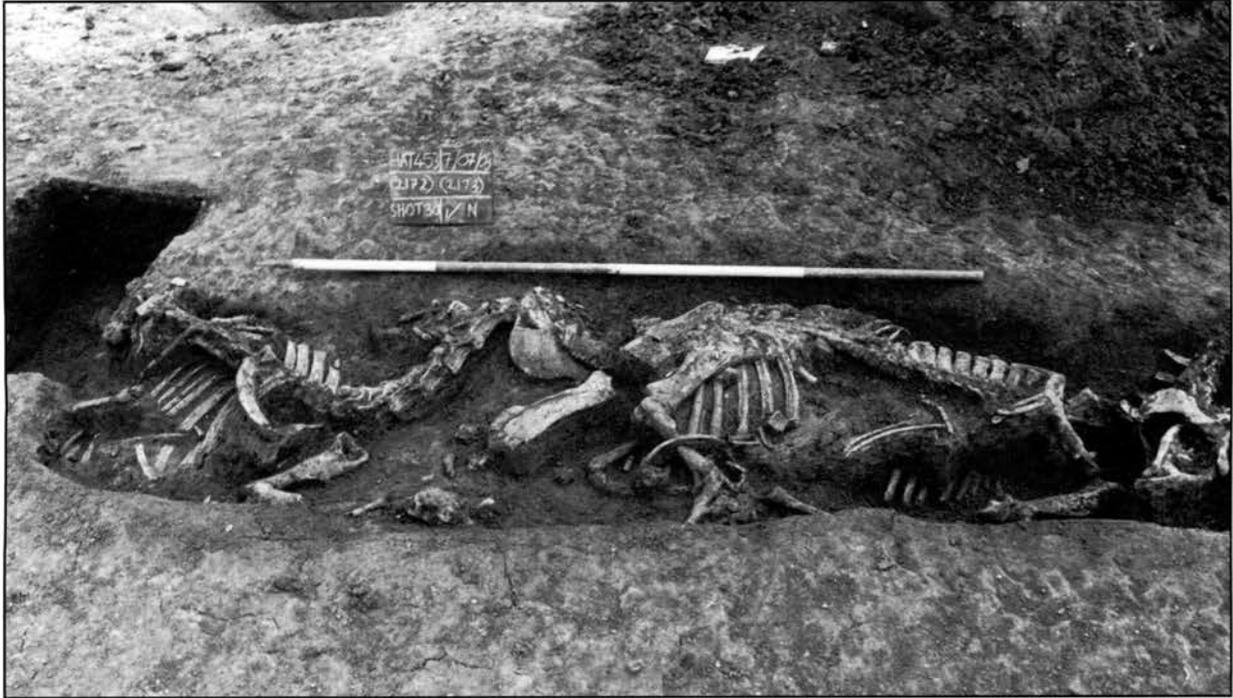


Figure 2. Horse skeletons sk2 and sk6 in ditch F2169.

whole carcasses, and vary from single deposits in a pit to multiple deposits. The definition, classification and identification of a 'ritual' or 'special deposit' have been discussed by many authors (eg Wait 1985; Hill 1995). The careful burial of complete carcasses without butchery for meat or skins fits well with some of the criteria.

Burial of a foetal calf in association with a neonatal foal and adult horse supports the suggestion of a ritual or special deposit. The use of foetal and neonatal remains in deliberate burials is common. Various examples were found at Iron Age Danebury (Cunliffe 1995). At Romano-British Shiptonthorpe, East Yorkshire there were a number of examples of foetal and neonate calf burials, one of these, a foetal calf, was associated with the burial of a human infant. The most comparable example is the burial of a foetal sheep/goat situated between the ribcage and hind limb of a mature cow at Bronze Age Old Sarum (Powell *et al* 2005:267).

If this is a votive offering, the number of animals suggests an exceptionally large contribution. The death of so many animals, of varied ages, at the same time would have been a great loss to the community. It is possible that the deposit consisted of animals contributed from different family units to provide a 'sacrifice' for one large ceremony. This may explain the presence of two cattle side by side, indicating they were a single offering from a group.

There must have been an extraordinary event or circumstances to justify sacrifice of so many animals at once. Local environmental degradation is a possibility, reducing available grazing land and thus stimulating both votive behaviour and reduc-

tion of herd size. Excavations at nearby middle Iron Age settlements at Upper Delphs revealed increasing water levels towards the end of this period (Evans & Serjeantson 1988; White 1997) causing settlements to be abandoned. Except for the high ground on which the site rests, the area then remained under fen conditions until the 17th century.

The slaughter and burial of these animals must represent a significant event in the lives of the fenland people. While special animal deposits are not unusual at Iron Age or Roman sites, Haddenham is currently the only example of deliberate burial of horse and cattle in a purpose-built linear ditch.

Acknowledgements

The excavations were carried out in 2003 by Hertfordshire Archaeological Trust (HAT; now Archaeological Solutions Ltd), funded by AMA Developments in advance of residential redevelopment. The excavation was directed by Nick Crank. Discussion of all results can be found in the Archive Report (Grassam 2005) and full details of features are given in the Interim Report (Crank and O'Brien 2003). Carina Phillips would like to thank Roger Jones for his advice on the analysis of the animal bone.

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Fieldwork in Cambridgeshire 2005

Sarah Poppy, Elizabeth Popescu and James Drummond-Murray

The work outlined below was conducted for a variety of reasons, including development control derived projects, emergency recording and research. All reports cited are available in the County Sites and Monuments Record, Cambridge, for public consultation.

Abbreviations:

AS	Archaeological Solutions, previously Hertfordshire Archaeological Trust
CCC AFU	Cambridgeshire County Council Archaeological Field Unit
CGMS	CGMS Consulting
BUFAU	Birmingham University Field Archaeology Unit
CAU	Cambridge Archaeological Unit
NA	Northamptonshire Archaeology

Abbotsley, Lion Farm, High Street (2004)

TL 2304 5650 (AS Report 1710)

D Eddisford, L O'Brien and P Thompson

A desk-based assessment demonstrated that the site lies within the historic core of the village, with historic maps showing buildings and boundary features. Medieval features included a cobbled surface, a large boundary ditch and two smaller ditches. The boundary ditch had been recut. Finds dated mostly to the 10th/12th centuries.

Babraham, Babraham Institute MRC site

TL 5092 5081 (CAU 691)

C Swaysland

Evaluation revealed late Roman remains comprising boundary ditches, a wall foundation and probable beam slot. The wall, plus finds of roof tiles and box flue, suggests a villa/farmstead in the vicinity. A burnt area with charred cereal grains overlying the wall foundation suggested a structure used for drying or storing grain. A cluster of pits, a substantial ditch and two large ponds were identified. One contained a high concentration of Roman finds, the second a piece of Ipswich ware and a pottery spindle whorl. A ditch was identified as 12th/13th century in date, part of a field system noted in previous fieldwork.

Bartlow, Geophysical survey, Bartlow Hills

TL 5864 4490

H Eckardt, T Astin and S Hay

Topographic survey clearly showed the location of the two smaller barrows. Profiles of the four surviving barrows were produced and compared to profiles from 1832 and 1916. Magnetometer and resistivity surveys of the flat areas surrounding the mounds revealed anomalies, the majority thought to be modern. 3D electrical resistance tomography showed that the three southern barrows had a vertical high resistance feature at the centre of each barrow, evidence of collapse or subsidence, or possibly infilling of antiquarian shafts. These three barrows demonstrated a marginal raised resistance feature a few metres in from the edge of each of the mounds, suggesting revetment structures. The fourth northern barrow demonstrated a central high resistance feature but lacked evidence for revetment features.

Bartlow, Former Saffron Walden branch railway line (2004)

TL 5839 4485 (Essex County Council Report)

A Garwood

Assessment on the disused Audley End to Saffron Walden to Bartlow Junction branch railway line (opened 1865–6, closed 1964) identified related archaeological, structural and building remains and presented recommendations for future management.

Bluntisham, 6 Rectory Road

TL 3689 7453 (NA Report summary)

A Burrow and A Mudd

Excavation revealed ditches, pits and postholes spanning Bronze Age to late Iron Age/Roman periods. A large oval pit contained Beaker pottery. Late Iron Age and Roman remains consisted of ditches thought to be enclosures or field boundaries. One pit contained a crouched burial. Numerous postholes included clusters suggestive of post-built structures. One posthole produced a good assemblage of Gallo-Belgic pottery.

Bottisham, Tunbridge Lane (2000)

TL 5454 6095 (AS Report 1837)

A Pearson

Excavations appear to have been on the periphery of a large Roman settlement. During the early to mid Roman period the site had a metalled yard surface and at least one building used for industrial purposes. From the 3rd century AD onwards the buildings were demolished and rubbish pits and ditches were dug, including one that cut through the metalled yard. Finds of *opus signinum* mortar, wall plaster, Purbeck marble and abundant roof tile indicated a high status building in the immediate vicinity.

Bourn, Childerley, Dry Drayton, Elsworth, Knapwell, A428 Improvement Scheme

TL 3363 6019 (Albion Archaeology Report 2005/44)

J Abrams

Following geophysical and fieldwalking survey, evaluation identified ten areas of archaeological significance, Iron Age enclosures and associated features. A post-medieval moat at Childerley Gate was confirmed, and a Roman enclosure complex was recorded.

Bourn, Church of St Mary and St Helen (2004)

TL 3244 5637

Q Carroll

During works to re-lay flooring at the east end of the nave a limestone coffin with the lid missing was located. The shape of the coffin conforms to a date of c.1250–1350. The Victoria County History records that the floor was lowered during the restoration of 1875–8, and it is likely that the removal of the lid and disturbance of burial layers occurred at this time. The coffin was left *in situ*.

Burwell, Nos 36–42 Newmarket Road

TL 5917 6646 (CCC AFU Report 850)

G Bailey

Evaluation exposed pits and postholes of Late Bronze Age to Middle Iron Age date. One pit produced fragmented human skeletal remains and a pierced pine martin mandible, perhaps used as a pendant. Locally sourced flintwork was typically Iron Age in character. A probable quern stone in one posthole had been re-used as a post pad.

Cambourne, Phase 4 and 5 spine sewer, storm water drain and temporary haul road (2003)

TL 3248 5906 (Wessex Archaeology Report 45975.02)

J Wright

A ditch 2m wide contained Roman and Saxon pottery, animal bone, mollusc and charcoal fragments, and another contained half of a probable Roman pot. A third undated ditch is thought to be part of the field system. The artefactual evidence suggests settlement activity in the vicinity.

Cambourne, The Fields (2003–4)

TL 3305 5948 (Wessex Archaeology Report 45973.03)

R Every

Four phases of field system were identified, spanning

the early/middle Iron Age through to medieval periods. The Late Iron Age and Roman systems may have been short-lived farmsteads, but geophysical survey failed to provide conclusive evidence.

Cambridge and Great Shelford, Aerial photographic assessment, Addenbrooke's Hospital Area (2002)

TL 4675 5475 (Air Photo Services Report)

R Palmer

Aerial photographic assessment revealed two ring ditches and a spread of ditch features including enclosures and field systems. The features tend to follow a similar alignment, although there is no obvious cohesive system to them. Headlands and slight traces of ridge and furrow were recorded.

Cambridge, 1–23 Barnwell Road, Cambridge

TL 4795 5926 (AS Report 1882)

A Grassam, J Williams and P Weston

Excavation revealed two graves, a ditch and a pit. A small number of prehistoric and later finds were recovered from the features, but were likely to be residual. The graves were aligned from east to west but with insufficient evidence to suggest a specific date. The burials appeared isolated, and were clearly not part of a larger cemetery.

Cambridge, Barnwell Road

TL 4790 5928 (CCC AFU Report 802)

S Kenney

Evaluation revealed one burial, undated but likely to date to the Iron Age or Romano-British period, and an undated pit.

Cambridge, Kings Hedges Primary School

TL 5456 2615 (CCC AFU Report 837)

R Clarke

An undated but probably prehistoric ditch, a Romano-British pit and contemporary ditch were identified, probably associated with the villa excavated in the 1960s and reinvestigated in 1994, when the eastern end of the main villa building, gravelled surface and numerous ditches were recorded.

Cambridge, Sunnyside House, Chesterton Lane (2003)

TL 4469 5921 (CAU Report 562)

J Wills

The northern area had been quarried and landscaped, removing archaeological remains except a small ditch. Residual Roman pottery was recovered. The southern area was less disturbed, but the ground level had been raised by post-medieval dumping and landscaping. Remains are thought to represent agricultural activity or dumping/hill wash from Roman defences.

Cambridge, Cloister Court, Jesus College

TL 4520 5890 (CAU Report 660)

LT Harkel

Remains of two clunch walls and a plastered wall with associated clunch floor were revealed. The level of the floor and the absence of brick in the fabric of the walls suggest these were part of the original nunnery build-

ings. The wall fabric is similar to the 12th century wall previously exposed in the Chapter House.

Cambridge, Master's Lodge Lobby, Jesus College

TL 4521 5888 (CAU Report 690)

A Hall

A sondage revealed heavily truncated deposits and a possible floor/floor bedding of an early college date.

Cambridge, Fen Court, Peterhouse

TL 4478 5792 (CAU Report 680)

C Swaysland

Layers of post-medieval dumping post-dated construction of the nearby college boundary in the early 16th century. A large deposit of Collyweston tiles indicated demolition of a roof in the 17th or 18th century.

Cambridge, St Edmund's College

TL 4414 5923 (CAU Report 661)

LT Harkel

Several ditches were identified, two of which contained single sherds of Roman pottery and oyster shell. Their orientation suggests a Roman date.

Cambridge Newnham Croft, Primary School

TL 4447 5730 (CCC AFU Report 811)

R Mortimer

Evaluation exposed a shallow undated ditch. Finds from the topsoil comprised Romano-British pottery and 17th to 20th century material.

Cambridge, Trinity Hall Playing Fields (2004)

TL 4381 5948 (CAU Report 594)

J Wills

Archaeological remains spanned Roman to post-medieval periods. The Roman ditches are thought to represent the southwestern continuation of the New Hall Roman road. No metallurgy was found, suggesting this may have been more of a track than a road.

Cambridge, Clay Farm and Glebe Farm, Trumpington

TL 4454 5406 (CAU Interim Report)

D Mackay, G Appleby and C Evans

Evaluation revealed evidence for a dispersed early Roman agricultural landscape and four sites. One settlement of Early to early Middle Iron Age was superseded by a Late Iron Age settlement enclosure. Elsewhere, a scatter of Early Iron Age features suggest a second open settlement. A large Roman site consisted of interlinked rectilinear enclosures, dating to the 1st to 3rd centuries AD, and a concentration of features suggest the margin of a Roman settlement.

Chatteris, Block Fen, Meadlands

TL 4424 8425 (AS Report 1811)

P Weston and J Williams

Features contained sparse finds of animal bone and struck flint, with one pit containing late Neolithic/early Bronze Age pottery, thought to come from one vessel. An undated pit was found near the preserved barrow.

Christchurch, Church Road

TL 4914 9648 (CCC AFU Report 844)

G Bailey

A roddon had been incorporated into a Romano-British field system, with associated ditches providing functions of both water management and driveway boundaries, enabling access to 'cells' within the field system and perhaps a link into a wider system of droves.

Christchurch, Coldham Estate Windfarm

TF 4580 0065 (PreConstruct Archaeology Report)

J Kitch

Three linear ditches contained Romano-British finds. An augur survey demonstrated the presence of a marine palaeochannel in the 1st millennium BC.

Colne, The Camp Ground, Colne Fen (2001-2)

TL 3772 7835 (CAU Report 654)

R Regan, C Evans and L Webley

Excavations over 5.14ha revealed evidence spanning the Neolithic to Roman periods. Early Neolithic worked flint was found in later features. Late Neolithic/Early Bronze Age settlement related activity consisted of a burnt pit, possibly a hearth or cooking pit, four postholes, and two further pits containing a loom weight and grooved ware sherds. Two cremation pits and three crouched inhumations were tentatively dated to the earlier Bronze Age. One inhumation may have been associated with a small C-shaped ring ditch on a promontory overlooking the valley. After the ring ditch was backfilled it became a focus for burial activity, with 13 definite and 11 possible cremation pits. Six cremations were accompanied by Deverel Rimbury urns, and a burnt arrowhead and perforated dog's tooth were found amongst cremated material. A number of ditch alignments form a coaxial field system, perhaps dating to the Late Bronze Age. Two enclosure complexes formed the focus for Middle and Late Iron Age activity. One of a series of pits along the edge of the enclosure complex contained a complete horse burial. A large eaves drip gully, recut at least three times, was connected to the enclosures. Further unenclosed structures included a square structure, suggested to be a Late Iron Age shrine. A third D-shaped enclosure had at least two structures outside the enclosure entrance and two wells connected to the enclosure by a ditch. Pits and postholes associated with the enclosure entrance suggested a possible gateway; two of the pits contained 'head and hoof' animal bone deposits.

The Roman period saw a dramatic increase in activity. The earliest phase consisted of a track and enclosures or compounds, some containing structures. A major change occurred at the end of the 2nd century AD, with the establishment of a new road which became the focus of rectilinear enclosures. This arrangement was more formalised in the later 3rd century and continued in use until the end of the 4th century. Enclosures on the eastern side of the road contained a granary complex, large rectangular building and regular square structures. Floor surfaces survived in one

structure, and a padlock and key were found together. Formal arrangements suggest this sector was the settlement's civic administrative quarter. A high quality sculptural panel depicting Jupiter was discovered. Fifty-two structures were recorded, demonstrating a variety of types and construction techniques. Timber was the primary building material, with stone and tile used as pads and packing materials. Only 11 of the buildings were obviously residential units, the others being ancillary or specialist structures.

Croydon, All Saint's Church

TL31544961 (Archaeological Services and Consultancy Report 707/CAS/1)

K Semmelmann

A building recording survey and watching brief was carried out during the restoration of the nave roof. The main frame of the roof was found to be suffering significant cracking, and the building has suffered from extensive lateral movement, partly due to removal of original tie beams. An attempt to halt the spread took place in the 18th century, and several restoration projects have slowed deterioration of the fabric.

Diddington, Little Paxton quarry extension (2004)

TL 1943 6528 (BUFAU Report 1229)

K Colls

Remains dating from the late Iron Age to early Roman period were identified, comprising enclosures, discrete pits and postholes, suggesting possible domestic activity, with probable field systems. A late Iron Age square enclosure was identified. A small number of Romano-British and medieval features were also encountered.

Elsworth, 2–8 Paddock Row

TL 3172 6372 (AS Report 1946)

T Woolhouse and I Cameron

Several pits and gullies of early medieval date were found and a possible medieval post and beam built structure was identified.

Ely, Dendrochronological study of the monastic buildings, Ely Cathedral (2001)

TL 5409 8010 (English Heritage Centre for Archaeology Report 74/2004)

AJ Arnold, RE Howard, RR Laxton, CD Litton and WG Simpson

In the Prior's Complex, dates obtained range from 1187 for the North Building of the West Range, to the early 17th century for the roof of the Queen's Hall. In the Infirmary Complex the earliest roof is the Painted Chamber of Walsingham House, dated 1328/9. The latest is that of the eastern half of Powcher's Hall, dated to the early 17th century. The South Building of the West Range and the Canonry Hall roof are both earlier than previously believed (1478 and 1616/8 respectively). Timber came from various woodland sources in the south/southeast of England, with the exception of the timber-framed wing of Priory House which is from a more westerly source.

Ely, Dendrochronological study of timbers from the Ely Cathedral (2003)

TL 5412 8025 (English Heritage Centre for Archaeology Report 19/2005)

AJ Arnold, RE Howard and CD Litton

A systematic survey and sampling of timbers from the roofs of Ely Cathedral provided 9 datable chronologies out of 252 samples. The earliest material, felled in the mid 11th century, is found in the west tower turrets. Two slightly later timbers, felled in the early 12th century, are found in the nave roof. Both probably represent reused Romanesque material. The majority of the timbers in the nave roof were felled between 1290 and 1301, with one dating to 1343–58. The latest nave material dates to the mid to late 18th century. The Lady Chapel has material with an estimated felling date 1297 to 1332, and 1318–53. A further timber has an estimated felling date in the range 1341–71, others being felled in 1726. The south transept roof contains material that has a felling date of *c.*1425/26.

Ely, Fenland Pine Premises, 57 Broad Street (2004)

TL 5427 7979 (AS Report 1510)

N Crank, K Doyle, A Grassam, K Nicholson and L O'Brien

Evaluation revealed features dating from the 12th to 15th centuries, comprising ditches, a possible pond, a pathway and evidence of two phases of buildings fronting Broad Street. Some earlier 10th – 13th century pottery was recovered, but it is thought this land remained too wet for occupation until the medieval period. Substantial foundation trenches with limestone and clunch wall footings were recorded.

Ely, Witchford Road (2002)

TL 5322 7962 (NA Report)

S Carlyle

Evaluation revealed a spread of disarticulated human bone, as well as shallow, ephemeral features. The human remains were undated and may derive from ploughed out graves or charnel. Post-medieval features included a former field boundary, a 17th century pit and a pair of 19th century ditches.

Ely, Survey of stone walls (1994–2003)

Ely and District Archaeological Society

A survey of stone walls in Ely has been underway since 1994. This volume reports on the walls recorded in the southern sector of Ely.

Ely, City Golf Course

TL 5349 7923 (CCC AFU Report 829)

R Mortimer

A scatter of Neolithic surface flint and parts of a medieval Ely ware vessel were recovered.

Fenstanton, Land adjacent to the Old Chapel (2004)

TL 3193 6872 (AS Report 1810)

K Nicolson

Excavation revealed two phases of Romano-British activity, mid 2nd to mid/late 3rd century and mid/late 3rd to 4th century, as well as sparse features dat-

ing from the early medieval and modern periods. The earlier Romano-British phases comprised a set of four evenly spaced, perpendicular field ditches as well as several small and one larger pit, which extended beneath the water table. In the later Romano-British phases two linear slots and six postholes suggest a rectangular timber building measuring c.7.5m x 6.5m. A partial dog burial of Roman date was also found.

Fenstanton, Church Farm (2002)

TL 3229 6869 (NA Report)

S Carlyle and A Chapman

Linear, curvilinear and circular cropmarks were investigated. Pits containing Middle Neolithic and Beaker pottery were found, together with a Late Bronze Age/Early Iron Age circular enclosure with a possible entrance. A linear driveway, possible hearth, isolated small pits, postholes and slots were identified, but no firm evidence for structures was recovered.

Fenstanton, Balancing Pond, Church Farm (2002)

TL 3269 6879 (NA/CGMS Report)

DJ Leigh and A Chapman

Several pits contained waterlogged deposits, cut by a linear ditch system of Roman date. Parallel, closely spaced linear slots were identified, together with a metalled surface and a pit. These are thought to be medieval, perhaps for some industrial/agricultural process adjacent to the stream.

Fenstanton, Churchyard and retaining wall, Church Lane (2002)

TL 3204 6873 (CGMS Report)

M Dawson

A watching brief during underpinning of the retaining wall of St Peter and St Paul's church and the demolition of adjacent farm buildings revealed remains of Roman, medieval and post-medieval date.

Fulbourn, Barleyfields

TL 5205 5638 (CCC AFU Report 842)

G Bailey and P Sperry

Remains found date from prehistory through to the present day, although most dated to the medieval period, particularly the 13th to 14th centuries. Some features produced butchered bone.

Glinton, Manor House

TF 1563 0605 (CCC AFU Report 795)

S Cooper

Evaluation recorded medieval and post-medieval features, including ditches and postholes.

Godmanchester, Church of St Mary

TL 2454 7070

A Baggs

Excavations along the east and west walls of the south porch revealed the makeup of the building's foundations. The lowest level was unconsolidated rubble, above which was 150mm of reused limestone blocks. A chamfered plinth of old and new stones rested on this, providing the base for ashlar and brick walls. The

whole porch dates from the late medieval period.

Godmanchester, 5 Oakleigh Crescent (2003)

K Gdaniec

A possible ditch and surface deposit contained occasional Roman pottery, animal bone and shell. Little building material was recovered.

Godmanchester, Wigmore Farm

TL 2456 6965 (AS Report 1888)

K Doyle, A Ginns and A Grassam

Prehistoric activity included a possible later Iron Age enclosure and Late Bronze Age struck flint. Roman pottery and building material were recorded. Gravel pits and ditches of post-medieval date were identified, largely confirming an earlier geophysical survey.

Great Abington, 109 High Street (2004)

TL 5321 4865

Structural remains in the rear of 109 High Street were recorded and researched. It is concluded that the remains consist of two brick cesspit/laundry features, part of former outhouses of houses fronting the High Street dating between c.1800 and c.1804, when the outhouses are shown on the Pre Enclosure Award Map.

Great Abington, 109 High Street and Abington Hall Estate (2004)

TL 5321 4865

T Way

Research concluded that a wall on the Abington estate does not predate 1801/3. There is evidence for improvements to the estate in 1816–18, the 1820s and 1866–1870s, and it likely that construction of the wall corresponds to one of these episodes.

Great Wilbraham, Rookery Farm (2004)

TL 5370 5670

C Conneller

Following the discovery of two flint penknife points in 2002, a type diagnostic of the Final Upper Palaeolithic, further excavations revealed a small lithic scatter within a heavily bioturbated buried soil. The flint assemblage consisted largely of local raw materials, and contained a small number of tools comprising two penknife point fragments, a truncated blade and a Magdalenian backed blade, together with numerous flakes and blades characteristic of the Upper Palaeolithic. Six bone fragments included a dog's tooth, although it is uncertain if these are contemporary with the lithics. The site is interpreted as a small short-term occupation site taking advantage of water and a source of raw material.

Great Wilbraham, Rookery Farm (2000–4)

TL 5380 5684

J Cawse, P Morris, R Scarle and W Hughes

Fieldwalking revealed a concentration of pottery and ceramic building material and a resistivity survey showed linear features. Magnetometry located more linear features and possible enclosure boundaries. Excavations revealed further pottery, building mate-

rial and iron slag, and the course of Fleam Dyke.

Haddenham, West End (2003)

TL 4613 7554 (AS Report 1809)

A Grassam

Intercutting enclosure ditches and a few pits contained a large quantity of Roman pottery and animal bone. A ditch contained remains of over 18 cattle and horses, most of them arranged nose-to-tail, radiocarbon dated to AD 40 to 230 (1900 to 1720 cal. BP). The deposit was cut by a mid/late 3rd century ditch and probably dates to the later Iron Age/early Roman period.

Haslingfield, Well House Meadow

TL 4043 5226 (CCC AFU Report 814)

A watching brief in advance of the translocation of a local bakehouse (c.1800) as part of a Local Heritage Initiative scheme revealed an 11th or 12th century boundary ditch as well as five 13th to early 14th century pits. The boundary ditch ran perpendicular to Broad Lane, implying that the adjacent road dates from this period. Domestic waste from most features indicates that the site was probably within a backplot. The area was abandoned in the mid 14th century and then ploughed. Documentary and cartographic evidence records that the site formed part of the parkland of Haslingfield Hall by 1541.

Hatley, St Denis' Church

TL 2852 5051 (Archaeological Services and Consultancy Report 717/EHC/1)

K Semmelmann

A historic building investigation focused on the restoration by William Butterfield in 1873. The restoration was found to be more extensive than originally envisaged, with the nave roof being completely rebuilt although the chancel windows were not replaced. The analysis also examined how Butterfield's restoration work fits within the ethos of the Victorian High Church Movement.

Hilton, High Street (2004)

TL 2909 6642 (AS Report 1528)

J Grant, J Williams and N Crank

Evaluation identified well-preserved earthwork remains of medieval ridge and furrow and sparse features of pre-medieval date, comprising a ditch of probable Iron Age date, an undated posthole and an undated pit.

Histon, Landbeach and Waterbeach, Histon to Waterbeach electricity cable (2003)

TL 4562 6569 (CAU Report 692)

A Dickens, R Patten and C Swaysland

Remains dating to the Iron Age and Roman periods were located and two concentrations of Romano-British activity corresponded to cropmark sites.

Huntingdon, Hartford Road

TL 240 716 (CCC AFU)

R Mortimer

Excavation immediately north of St Mary's Church in the centre of medieval Huntingdon revealed deeply stratified archaeological remains (up to c.3.50m deep). The earliest occupation dated to the late 10th or 11th century and consisted of possible post-pits, large quarries and cess pits. Activity dating from the 12th to early 15th centuries included wells and quarries, cess pits, small kilns or ovens and a series of large, square pits, some wood-lined. The large quantities of finds included pottery spanning the Late Saxon to medieval transition. Animal, bird and fish bone was particularly well preserved. The large charred plant macrofossil assemblage included lentils, peas, flax, grapes and the earliest known record of garlic in the region. Substantial quantities of metalworking waste indicate that a smith was working principally with iron but also with copper and lead.

Huntingdon, Nos 11–12 High Street

TL 2413 7155 (CCC AFU Report 815)

R Clarke

The earliest deposits identified probably date from the Norman/post-Conquest period. These appear to be the fills of a large feature, which may have been levelled off or deliberately infilled in the 12th or early 13th century. A thick layer containing 13th century pottery, animal bone and other occupation debris was sealed by remnants of a cobbled surface and truncated by ?early post-medieval postholes. Artefacts and ecofacts are characteristic of domestic rubbish disposal, providing evidence for small scale (secondary) butchery, cooking and crop-processing.

Huntingdon, Mill Common

TL 5235 2716 (CCC AFU Report 823)

R Mortimer

An excavation investigated an earthwork bank and ditch known as the Bar Dyke, which is thought to be of medieval origin, ridge and furrow and the location of a WW1 Royal Flying Corps training camp. Archaeological features included prehistoric ditches, medieval pits and ridge and furrow. Bar Dyke measured 12m wide and nearly 2.5m deep, its scale suggesting that this phase may date from the Civil War, part of the western defences of the town. Pre-dating it was a ditch, 5m wide and c.1m deep, which is likely to be medieval and may represent the dyke or lane mentioned as Bar Dyke in 14th century documents.

Huntingdon, Model Laundry Site

TL 2432 7177 (CCC AFU Report 828)

R Clarke

The earliest remains were a small assemblage of flints characteristic of Mesolithic or Early Neolithic technology. A probable Romano-British ditch was truncated by ditches or channels which may date between the Romano-British and Late Saxon periods. An existing natural channel was deliberately recut and/or managed, probably in the Romano-British period. The

main channels had been largely infilled by the Saxo-Norman period, when encroachment of occupation northwards is indicated by pits and ditches. Such activity continued into the medieval period, with evidence for butchery and tanning, and domestic waste from a variety of features and deposits including cess and rubbish pits. Alluvial deposits indicate medieval flooding. During the later medieval and post-medieval periods this area reverted to pasture, confirming cartographic and documentary sources. In the late 19th century, the Model Laundry was constructed.

Huntingdon, Royal Oak Passage

TL 2367 7186 (CCC AFU Report 830)

S Hickling

A prehistoric ditch parallel with the modern High Street (Ermine Street) was very similar in form, alignment and position to another example found at Walden House. Evaluation also produced a significant quantity of medieval remains, consisting of pits and postholes typical of urban backyard activity. There was no evidence of settlement fronting onto Royal Oak Passage; rather, it appears to have been oriented on the High Street. Post-medieval activity comprised pits and postholes overlain by thick 18th century garden soil.

Huntingdon, Walden House

TL 2372 71808 (CCC AFU)

R Clarke

The earliest finds were two Neolithic leaf-shaped arrowheads in a Bronze Age ditch. Small quantities of Romano-British and Anglo-Saxon pottery were recovered, although the main period of occupation spanned the mid 12th to mid 14th centuries when the town was at its most prosperous. A range of features characteristic of urban settlement included dense zones of pitting and quarrying in addition to wells, postholes, cobbled surfaces and ditched property boundaries. Ovens may have been associated with brewing rather than baking. Evidence of urban contraction in the later medieval period was represented by an extensive cultivation or levelling layer and generally lower levels of activity, supporting documentary evidence. Large fragments of reused architectural stone may have come from one of Huntingdon's 'lost' medieval churches. One significant discovery was a late 18th to 19th century tannery close to George Street. The plank and brick-built pits are the remains of the only documented tannery in Huntingdon, first registered in 1811 and owned by the Maile family; it had gone out of business by 1877.

Huntingdon, Watersmeet, Mill Common (2003)

TL 2398 7135 (AS Report 1780)

K Nicolson

See this volume.

Impington, Impington Lane, Unwins Depot

TL 4432 6351 (CCC AFU Report 834)

S Cooper

Evaluation identified only limited evidence of medieval field boundaries and quarrying.

Isleham, The Temple

TL 6305 7386

M Taylor and S Nelson

A concentration of finds comprising Roman tesserae, wall plaster, ceramic building material and pottery, and some Iron Age pottery was recorded during field-walking.

Kennett, Fieldwalking survey, Kennett Hall Farm (2002)

TL 6954 6863 (CAU Report 492)

M Redding and A Dickens

Fieldwalking over 43ha recovered artefacts spanning the Early Mesolithic to post-Medieval periods. The flint assemblage indicates transient activity, with only one possible working area or habitation site. Limited amounts of Roman pottery was recovered, and very little medieval material. A concentration of post-medieval building material is attributed to 'Houndell', a farmstead demolished in the mid 19th century.

Kimbolton, St Andrew's Church (2004)

TL 0992 6786 (Heritage Network Report 258)

K Semmelmann and H Ashworth

Only 19th century heating works and undated wall foundations were noted during repair works.

Linton, Linton Village College

TL 55547 46984 (CCC AFU Report 736)

R Clarke

Excavations revealed thick colluvium containing pottery and worked flint of varying date and condition. Prehistoric features included Late Neolithic pits containing significant quantities of worked flint in association with Grooved Ware and animal bone, an Early Bronze Age ring-ditch and an isolated contracted (crouched) burial. A notable concentration of Middle Iron Age pits, many of which produced evidence of metalworking and craft working, and associated post-hole structures were identified. A network of Roman ditches and small enclosures was superimposed on a Late Iron Age/Romano-British ditched trackway with metalling.

Little Paxton, Little Paxton Quarry

TL 1950 6370 (CCC AFU Report 849)

S Hickling

Evaluation identified agricultural land with successive phases of field systems. The earliest is a pre-medieval enclosed system on a different alignment to later fields and may be prehistoric in origin. A medieval(?) open field probably formed part of a southern field belonging to Boughton.

Little Paxton, Aerial photographic assessment, Island Site Reinforcement Main

TL 1904 6189 (Archaeological Project Services Report 2005/8)

R Palmer

Aerial photographic assessment identified a ring ditch, ditched enclosures and traces of medieval cultivation.

Longstanton, Balancing Pond

TL 3877 6809 (NA Report 05/129)

C Walker

Evaluation revealed shallow gullies sealed by alluvium, a large post-medieval ditch, and tree holes.

Longstanton, Home Farm

TL 3923 6665 (BUFAU Report)

K Bain

Excavation through alluvium revealed several ditches of probable medieval date and shallow undated features consisting of three linear gullies, two pits and a posthole, of possible Iron Age date.

Longstanton and Oakington and Westwick, Longstanton/Northstowe proposed new settlement

TL 4093 6649 and TL 3846 6429 (CAU Interim Report)

Further evaluation revealed a high density of Iron Age and Roman settlements and associated field systems. Initial ordnance disposal surveys discovered unexploded bombs, resulting in evacuation of the area. An enclosure complex produced mid to late Iron Age pottery, and an extensive Roman settlement and possible associated field system were identified. A Roman structure with a hypocaust and evidence for Middle to Late Iron Age enclosures were recorded.

Longstanton, Striplands Farm

TL 3937 6737 (CAU Report 703)

R Patten and C Evans

Excavations revealed remains dating from the Late Bronze Age to Saxo-Norman periods. Late Bronze Age/Early Iron Age pits and wells were investigated, the latter containing worked and unworked wood including two axe hafts, the remains of five log ladders and timber wattling. Posthole clusters included a four-poster structure and a possible roundhouse. A few short linear features were also dated to this period, suggested to be part of a Late Bronze Age/Early Iron Age field system. Lithics also provided evidence for a Neolithic/Early Bronze Age presence. Narrow Roman enclosures were recorded, with evidence for internal linear divisions, and there was localised clay extraction in the corner of one enclosure. The southern area was dominated by Saxo-Norman remains, consisting of quarry pits and successive phases of boundary ditches containing large quantities of pottery and animal bone suggestive of settlement back plot activity. A large Saxo-Norman pit-well contained three animal skulls and wattle revetments. After the well was abandoned wooden objects consisting of a wheel felloe, a card-side rail top and an animal yoke, were discarded into it.

March, 9 Church Street (2004)

TL 4147 9531 (AS Report 1808)

A Grassam

A pit containing Iron Age pottery and a post-medieval quarry pit were excavated. Other features contained a small quantity of finds, probably residual, dating from the Late Iron Age to the early medieval period.

March, Whitemoor Sidings (2003–4)

TL 4148 9863 (Archaeological Project Services Report 34/04)

RV Hall

Three areas of surviving archaeological remains were investigated. The first, dating to the Early Bronze Age, was characterised by shallow ditches, pits and postholes. A second featured large pits, postholes and gullies, indicative of Late Bronze Age settlement, and the third was a field system of probable Roman date.

Maxey, 19 West End Road

TF 1257 0830 (CCC AFU Report 819)

S Hickling

Excavation produced evidence of medieval occupation and development from the 12th century onwards. Pits, quarries, postholes, boundary ditches, stone walls and a step well were found, generally representing backyard activity relating to plots fronting onto West End Road. Building types developed from the earliest (12th century) timber constructions, through dry-stone dwarf walls presumably supporting wooden box frames, to the wholly stone and mortar construction of extant 19 West End Road (c.1700). The main north to south property boundary lay equidistant from modern property boundaries, both of which were c.40m (2 chains) away: many other modern property boundaries in the village have been found to be at similar distances apart indicating an element of planning which may have commenced in the Norman period.

Melbourn, Back Lane

TL 3793 4402 (Archaeological Services and Consultancy Report 732/MBL/02)

N Wilson and T Hawtin

Evaluation revealed a circular well and an irregular pit, which produced domestic pottery of 11th and 12th century date. Other pits and ditches were possibly prehistoric. Two phases of peat formation were recorded, separated by colluvial deposits, interpreted as evidence of former river channels. Samples from the peat revealed seeds, pollen and snails. A date of 9300 BP has been suggested for the formation of the lower peat, and results of radiocarbon dating are awaited.

Melbourn, New cemetery site, Water Lane

TL 3854 4388 (Archaeological Solutions Report 1731)

K Doyle and C Hallybone

Evaluation revealed evidence of prehistoric activity comprising a small undated pit, three shallow undated ditches and a large pit containing prehistoric pottery.

Oakington and Westwick, Coles Lane

TL 4118 6470 (Wessex Archaeology Report 58720.03)

C Barton and R Thorpe

Remains dating from Roman to medieval periods comprised a sequence of enclosures with associated features, thought to have been used for woodland and stock management.

Papworth Everard, Balancing Pond, Land North and South of Farm Lane, and at Stirling Way (2004)

TL 2938 6275 (AS Report 1721)

J Williamson

Sparse archaeological features comprised an undated meandering ditch, a gully and a small elongated pit, together with a post-medieval ditch. No artefacts were retrieved from the palaeosol, which is thought to have been a woodland soil of late glacial to early Holocene date. A large channel running north to south cut the palaeosol, and a series of undated ditches were aligned parallel to the channel.

Parson Drove, Land to the rear of the Butcher's Arms (2003)

TF 3746 0848 (Wessex Archaeology Report 53911.03)

P Andrews

See this volume

Peterborough, Longthorpe, St Botolph's Church

TL 1631 9838 (CCC AFU Report 784)

S Hickling

A watching brief recorded two phases of chancel construction. The chapel is documented as belonging to Peterborough Abbey c.1189 and was taken down and rebuilt on a new site at the insistence of Sir William of Thorpe in c.1262–1273. The fabric of the present building is believed to be 13th century.

Peterborough, Vicarage Farm Road

TL 2096 9940 (CCC AFU Report 853)

Evaluation uncovered dense stratified archaeological remains. There were at least four phases of settlement from the Middle Iron Age to Early Roman period (4th or 3rd century BC until the 2nd century AD) comprising several structures, at least one of which was within a ring gully. The remaining postholes may have been associated with angular ditches or slots. Other features included enclosure ditches, pits and a parallel ditch. There was secondary evidence for copper alloy working in the vicinity.

Peterborough to Whittlesey Reinforcement Main

TL 1913 9588 to TL 2351 9585 (CCC AFU Reports 791, 822 and 835)

S Kenney

Evaluation revealed ditches, pits and postholes on an area of higher ground, dating to the Romano-British and Iron Age or Anglo-Saxon periods. There was evidence of environmental change in the vicinity.

Ramsey, 50–52 High Street and Mews Close (2004)

TL 2871 8506 (AS Report 1547)

M Wotherspoon and C Ross

Evaluation revealed four ditches and one posthole containing domestic pottery of 11th to 14th century date, together with animal bones, iron nails and shell.

Ramsey, 50–52 High Street (2004)

TL 2870 8506 (AS Report 1762)

K Nicolson

This part of Ramsey was not developed until the late

12th or early 13th century, prior to which it was prone to flooding. At this time the ground level was raised to form a consolidated surface. By the end of the 14th century the whole area had been built up to form a dry land surface. Between the late 12th/13th and 15th/16th centuries five buildings were constructed. Structural remains were minimal, comprising floors of mortar, clay or chalk, and low walls of roughly faced limestone. Post pads were recorded on top of a wall, indicative of timber framing, and remains of saw-sedge nutlets suggested thatched roofs. The only evidence of industry is sawn horn cores. Occupation continued, with construction of a barn in the 18th century, and further buildings, including a public house, in the 19th century.

Ramsey, 96–98 Great Whyte

TL 2855 8543 (CCC AFU Report 824)

S Cooper

Evaluation demonstrated medieval and post-medieval activity relating to land reclamation of the fen edge. Of particular interest was metalworking on the site, while a group of medieval lead weights emphasises the local importance of fishing.

St Ives, 5 West Street/Rear of 28 The Broadway (2004)

TL 3124 7143 (AS Report 1713)

A Grassam and D Eddisford

A desk-based assessment demonstrated that this site is within the historic core of the town, with a high potential for medieval and post-medieval remains. Cartographic evidence suggests the site was originally a rear plot for a property that fronted onto The Broadway. Evaluation revealed a high density of archaeological features cutting a layer of alluvium/flood deposits. The remains comprised three medieval pits, three ditches, suggested to be boundary ditches, and a possible hearth. Only a small quantity of diagnostic pottery was recovered, but this indicates a 12th – 15th century date for this activity.

St Neots, Bushmead Road, Eaton Socon

TL 1641 5931 (Wessex Archaeology Report 61320.01)

M Dinwiddy

Evaluation revealed a substantial Middle Iron Age ditch, which may form part of an Iron Age enclosure settlement previously recorded north of the site. Undated ditches and a single posthole were also identified.

St Neots, Colmworth Business Park, Eaton Socon (2004)

TL 1708 5800 (CAU Report 668)

C Swaysland

Area excavation revealed Early Neolithic pits containing frequent pottery, flint and carbonised hazelnut shells and grain cereals were revealed, together with a Romano-British ditch and remains of a probable cultivation system.

St Neots, 42 Market Square (2004)

TL 1828 6019

Q Carroll

A site visit was carried out when renovation work at 42 Market Square uncovered several fragments of moulded stone incorporated into the west wall of the structure. The fragments are limestone, and include columns, mouldings and tracery. The majority date from the 14th or 15th centuries, although the cylindrical columns may be earlier. It is noted that major rebuilding was undertaken at St Neots Priory in the 15th century, and that this stone was probably looted from there, just as the town bridge was built of reused priory stone in 1617.

St Neots, 42 Market Square (2004)

TL 1828 6019

P Aitkens

A buildings survey was undertaken in advance of renovation work. The house dates back to c.1600, but reused smoke-blackened timbers suggest a kitchen or open hall before construction of the present building.

St Neots, Rear of 46 Market Square (2004)

TL 1830 6018 (AS Report 1725)

J Williams and L O'Brien

The market square was laid out in the early 12th century on a site adjoining the priory precinct. By the later medieval period tenements had begun to encroach upon the square. The southern side of Market Square has been raised artificially by approximately 1.25m from its medieval level and similar attempts to mitigate flooding from the river characterise properties to the south. Evaluation revealed medieval and post-medieval activity. The earliest remains date to the 12th – 14th centuries and consist of a surface and pits, followed by levelling layers. Late medieval remains comprise a ditch, postholes and two cobbled areas, including a possible malting oven, with a large ditch and pit above. Finally a 17th or 18th century brick lined well was recorded. From at least 1772, 46 Market Square was the Queen's Head Inn, and it is possible that the malting oven may have been associated with a late medieval precursor to the inn.

St Neots, St Neots Golf Club

TL 1817 6172 (NA Report 05/108)

A Foard-Colby

Undated features included pits, ditches and postholes. Residual Neolithic/Bronze Age flints were recovered from modern features.

St Neots, Community College

TL 1814 5888 (CCC AFU Report 827)

S Cooper

Evaluation revealed a large number of undated features including ditches and pits of possible prehistoric or Romano-British origin. Undated ditches may relate to a possible driveway which formed part of the larger Romano-British pastoral/agricultural landscape.

St Neots, Love's Farm

TL 201 606 (CCC AFU)

M Hinman

This major project permitted a detailed examination of the later prehistoric and Roman agricultural landscape. While tree clearance datable to the Early Neolithic period was evident, it was not until the Late Iron Age that settlement was established. During the 1st century BC sheltered east-facing hollows were selected for roundhouses surrounded by large enclosures that controlled drainage and livestock. The settlement lay within a regular grid, bounded by a major east to west routeway previously identified as a possible Roman road (Margary, route 231). Another road exiting the site preserved parts of the metalled surface and wheel ruts. Large gravel quarries were exploited to surface this road. For the next 500 years successive generations improved drainage, grew new crops (including vines?) and managed livestock, as well as adding new enclosures, buildings, roads and monuments. The site began to revert to open pasture towards the end of the Roman period. Evidence of an Early Saxon presence was detected along the western boundary of the site and included careful placement of red deer antlers within ditches and as a capping deposit within a 5th century well. These antlers were found in association with handmade pottery and Niedemendig lava. It is now possible to trace boundaries within the site back to the Late Iron Age and to identify a regular pattern that extended over several parishes.

Sawston, Police Station

TL 4855 4982 (CCC AFU Report 831)

R Mortimer

Evaluation exposed three elements of a large Bronze Age field or enclosure system. The ditches contained very large quantities of struck flint in their upper fills.

Sawston, Borough Hill (2001)

TL47124957 (John Samuels Archaeological Consultants Report 685/03/09)

Evaluation to investigate the hillfort defences and a discrete rectangular enclosure identified by geophysical survey revealed a sequence of three large ditches, commencing with the middle ditch. This ditch was sealed by upcast from excavation of an outer ditch, the bank of which was cut by a third ditch. Both ditches had begun to silt up in the Iron Age, but their upper parts remained open until the medieval or post-medieval periods. By the late 18th century neither the ditches nor banks were significant landscape features marked on contemporary maps. Evidence for domestic occupation in the form of animal bones and pottery of Early to Late Iron Age date was found within the enclosed area. No conclusive dating evidence was recovered from the rectangular enclosure, which may be a small prehistoric farmstead or settlement. Traces of an undated burial were also recovered from the plough soil.

Sawston, Fieldwalking survey, Dernford Farm (2003)

TL 4688 5108 (AS Report 1447)

J Grant and P Weston

Fieldwalking revealed a general scatter of struck flint. Late prehistoric pottery and a Roman sherd were recovered. A metal detector survey was also undertaken.

Sawston, Geophysical survey, Dernford Farm (2003)

TL 4689 5100 (Stratascan Report)

DJ Sabin

Anomalies likely to represent archaeological features are interpreted as small enclosures and a pit cluster.

Sawston, Lynton Way

TL 4945 4973 (AS Report 1878)

T Woolhouse, I Williamson and P Harris

Evaluation revealed a large boundary ditch containing Iron Age pottery. The ditch cut an earlier pit and was truncated by a later ditch. A further undated pit was tentatively identified.

Sawtry, Black Horse Farm (2004)

TL 1770 8326 (AS Report 1659)

D Eddisford, L O'Brien and I Williamson

Evaluation revealed features of later prehistoric date, which had been sealed and preserved by later alluvial episodes. These included evidence for settlement, located on a raised sand island close to the fen edge. Ditches may correspond to more extensive enclosure and field systems. At least one, and possibly two ring ditches were recorded. Artefactual evidence of occupation was recovered, including pottery, daub, animal bone and burnt stone, dating mainly to the Iron Age with some evidence for early Roman activity.

Shepreth, 20 High Street (2004)

TL 3926 4773 (AS Report 1616)

P Thompson and J Grant

Evaluation revealed two medieval ditches and a layer containing Roman pottery. Undated and post-medieval features were identified.

Sibson-cum-Stibbington, Stibbington Education Centre

TL 0853 9864 (CCC AFU Report 825)

R Mortimer

A few abraded Romano-British pottery sherds were recovered from subsoil but there was no indication that pottery kilns or any other significant Romano-British remains lay within the immediate vicinity.

Sibson-cum-Stibbington, A1 Stibbington Junction Improvement (2003)

TL 0852 9833 (Network Archaeology Report 501)

J Sleep

A watching brief identified linear features with associated pits and postholes containing Early/Mid Iron Age pottery, animal bone and other artefacts, together with residual worked flints of Neolithic to Bronze Age date. A single sherd of Roman pottery was recovered, indicating the site had been abandoned by this date.

Soham, Land off Weatherall's Close

TL 5956 7379 (CCC AFU Report 841)

S Hickling

A ditch was probably part of a Late Bronze Age or Early Iron Age field system, its orientation differing from similar ditches found at surrounding sites. There was no evidence for the medieval core of Soham.

Somersham, Proposed new burial ground (2004)

TL 3591 7787 (AS Report 1633)

J Grant and J Williams

Evaluation revealed a large undated pit, a post-medieval ditch and an undated gully, together with unstratified finds of Roman and post-medieval date. A slight bank was recorded in the central part of the site, separating the lower-lying southern part of the site from higher ground to the north. A large pond is likely to have been one of the two ponds seen on the 1838 tithe map, associated with the medieval bishop's palace.

Sutton, 11a Lawn Lane

TL 4483 7881 (CCC AFU Report 839)

S Hickling

Evaluation produced medieval remains characterised as backyard activity. Late Saxon or Saxo-Norman features lay in the northern part of the site. A large quarry pit contained an important assemblage of high medieval pottery.

Sutton, Nos 8-10 The Row

TL 4426 7865 (CCC AFU Report 793)

Eleven early post-medieval quarry pits (16th to 17th centuries) would have supplied materials for house building and were eventually infilled with domestic waste. The western part of Sutton appears to have expanded in this period, since other quarry pits have been found 250m to the west behind the High Street.

Sutton, Bridge Farm

TL 3976 7650 (CAU Report 697)

D Garrow

Evaluation revealed sparse archaeological evidence. One pit and three ditches with associated banks were found, tentatively suggested to be Bronze Age in date. A sedimentary sequence for the area was established, with the earliest inundation occurring in the Late Neolithic/Early Bronze Age, followed by a series of peat, silt and alluvial deposits laid down from the Late Bronze Age onwards. The palaeochannel to the east of the investigation area was established as being of Late Iron Age or Roman date.

Sutton, 11 The Brook

TL 4459 7901 (AS Report 1765)

K Doyle and P Weston

Evaluation confirmed alluvial deposits close to the street frontage and following the course of 'The Brook'. Archaeological features of post-medieval date included boundary ditches and pits.

Sutton, North Fen, Sutton Gault

TL 4046 8137 (Oxford Archaeology Report)
E Glass and G Thacker

A few features were identified, including a large animal waterhole revetted by timber, a tree throw hole containing worked flints and Neolithic to Bronze Age pottery, and a large assemblage of worked flints, including a rare flint dagger.

Swaffham Prior, Green Head Road (2002)

TL 5704 6411 (CAU Report 520)
A Hall

The area had been extensively quarried for clunch. No *in situ* archaeological deposits were identified, although residual sherds of Roman and medieval pottery were recovered from backfill of the quarries.

The Stukeleys, Northbridge, land west of Ermine Street (2004)

TL 2229 7348 (Cotswold Archaeology Report 04181)
K Cullen

Bronze Age features were identified, comprising field systems and trackways. Several undated features, including a ring ditch identified during geophysics, may belong to the later Bronze Age. Evaluation confirmed the presence of a Roman ditched enclosure, which was found to have survived well and contained quantities of datable material. Evidence for Roman field systems was also identified.

Thriplow, Heathfields (2001)

TL 4540 4600 (AS Report 1745)
J Last

A total of 33kg of struck and burnt flint was recovered, along with some Neolithic and later pottery. The flint assemblage includes 2 Mesolithic flaked axes, as well as Neolithic and Bronze Age material. A few cut features of prehistoric date were revealed, along with evidence of wartime use of Duxford airfield.

Tilbrook, Chestnut Cottage, Station Road

TL 0791 6918 (AS Report 1868)

K Doyle, I Williamson and T Woolhouse
Evaluation revealed modern features and a gully containing a single sherd of 9th to 11th century pottery and a piece of ceramic building material.

Whittlesford, Church of SS Mary and Andrew

TL 4736 4859 (CCC AFU Report 792)
R Mortimer

Twenty-six burials were found, though there was no intrusive excavation and further underlying burials are likely to be present.

Whittlesey, Sir Harry Smith Community College

TL 2762 9738 (CCC AFU Report 812)
GD Bailey

Shallow ditches indicate the survival of a medieval field system. Pottery confirmed that these furrows were active in the late medieval period.

Whittlesey, Coates, 7 March Road

TL 53073 29782 (CCC AFU Report 852)
R Casa Hatton and D Hounsell

The earliest features recorded dated to the medieval period and were characterised by quarries, possible wells/water holes and field or plot boundaries. The later phase dated to the post-medieval/modern period and indicates an intensification of activity with progressive redefinition of boundaries.

Whittlesey, Land East of 9–17 Hallcroft Road (2004)

TL 2653 9729 (M & M Archaeological Services Report)

M & M Archaeological Services

Evaluation recorded activity from the 17th century onwards. The remains are likely to relate to past agricultural activity rather than settlement. No remains prior to the post-medieval periods were found.

Whittlesey, Aerial photographic assessment, Must Farm (2004)

TL 2278 9688 (Air Photo Services Report 2004/06)
R Palmer

Features included the extent of the World War II airfield and possible associated beacon, a group of linear features, small pens of probable post-medieval date, and a roddon.

Whittlesey, Timber Alignments, Must Farm

TL 2371 9683 (CAU Report 664)
C Evans and M Knight

An alignment of timber posts was recorded along the southern edge of Must Farm Quarry Pit. Subsequent visits recovered Late Bronze Age/Early Iron Age prehistory pottery, Neolithic flint work and a piece of copper alloy with an applied gold disc. Excavations revealed fourteen timber posts, one with sharp tool marks around a pointed base. The majority of the posts are on a northwest-southeast alignment, occurring in and paralleling the palaeochannel that runs across the southern part of Must Farm. Radiocarbon dating of two timber samples gave dates of 1120–810 cal. BC and 800–400 cal. BC, placing the construction of the alignment at the end of the Bronze Age or Early Iron Age.

Whittlesey, Must Farm

TL 2278 9688 (CAU Report 667)

C Evans, M Brudenell, M Knight and R Pattern

An oval barrow was initially visible as a dispersed gravel spread. A trench across the ditch and mound recovered sherds of Peterborough ware and worked flints from the upper ditch fills. The barrow appears to have been well-preserved, with no evidence that potential structures within the mound had been exposed or disturbed. Evidence for Late Neolithic/early Bronze Age settlement consisted of metallised gravel surfaces, posthole clusters and a bank/ditch. The bank is thought to be a continuation of a feature at Bradley Farm, a causeway that was constructed as the ground became wetter.

Willingham, 23 Green Street

TL 4085 7026 (CCC AFU Report 783)

S Hickling

Evaluation revealed a brief period of occupation in the 13th to 14th century, characterised by structural features at the street frontage and a ditch marking the rear of the plot. Occupation ceased after the 14th century until the 17th or 18th century when activity started again in the form of ditches, postholes and pits.

Wimblington, Land North of Bridge Lane

TL 4204 9316 (AS Report 1874)

T Woolhouse, A Munding and K Nicholson

Evaluation revealed plough furrows and boundary ditches, all thought to be of post-medieval date. A small quantity of residual medieval pottery was recovered, together with possible Iron Age and Roman sherds.

Wimblington, 3 Norfolk Street

TL 4147 9223 (Norfolk Archaeological Unit Report 1047)

G Emery

Evaluation revealed a ditch terminus containing burnt flint, possibly of Mesolithic date. Post-medieval and modern features consisted of 16th and 17th century waste pits, a dyke and drainage ditches.

Wimpole, St Andrew's Church

TL 33650 50998 (CCC AFU Report 838)

Monitoring recorded a substantial rubble layer associated with demolition of the former medieval church and erection of the new church in 1749. Medieval building materials, including a door jamb dated between 1275 and 1350 and late medieval floor tiles, were recovered from this layer as well as some 18th century artefacts. In the remainder of the churchyard was a post-medieval layer associated with burials.

Wisbech St Mary, The Willows, Church Road

TF 4225 0823 (CCC AFU Report 785)

S Hickling

Two post-medieval features comprised a possible roadside ditch and a pit towards the rear of the site. A peaty layer was encountered 1.5m below modern ground level. This is probably a similar deposit to that encountered elsewhere in the vicinity, dating to the Middle to Late Iron Age.

Wisbech, North Street

TL 4608 0986 (CCC AFU Report 847)

D Payne

Evaluation revealed an extensive sequence of episodic flooding (alluvial silts) during the post-medieval period, interspersed by layers of occupation, building footings and brick foundations.

Wisbech, 27 Hill Street (2004)

TF 4621 0975 (Archaeological Project Services Report 2/05)

NC Parker

A watching brief revealed post-medieval floor surfac-

es, a hearth and curved brick wall. Artefacts of medieval and post-medieval date were recovered.

Wisbech, Church of St Peter and St Paul (2004)

TF 4627 0954 (Archaeological Project Services Report 190/04)

SJ Malone

The investigations recorded the top of a brick vault, which had previously been disturbed and backfilled, and identified former graves under the paved area. Disarticulated human remains were evident across the area of investigation, although not in any great concentration, and no *in situ* burials or undisturbed archaeological deposits were encountered.

Wisbech, Geophysical survey, Church of St Peter and St Paul (2003)

TF 4627 0956 (Geophysical Surveys of Bradford Report 2003/104)

GSB Prospection

Various anomalies and features were suggestive of burial vaults, graves and foundations of the tower.

Witcham 30 Silver Street, Witcham

TL 4608 7998 (AS Report 1794)

P Weston and T Woolhouse

Excavation revealed ditches and three areas of cobbled flint surface, all dating from the 18th to 19th century. A lesser number of medieval features, consisting of a ditch and two pits were identified. Three undated postholes and a further ditch were likely to be medieval in date. The presence of domestic wares and waste material indicates medieval occupation in close proximity to site.

Yaxley, Geophysical survey, land northeast of Yaxley

TL 1902 9305 (Stratascan Report)

J Elks

Anomalies were identified which seem to define enclosures, and may indicate a former settlement.

Yaxley, The Broadway

TL 1907 9306 (NA Report 05/77)

E Taylor and E Chapman

Evaluation identified a focus of Iron Age and Roman settlement activity. The earliest evidence was a series of middle to late Iron Age linear ditches and a pit. A network of enclosures and associated field systems dated from the 2nd to 4th centuries. A grave cut with the skeleton of a young adult was found just beyond one of the enclosures. Remnant furrows were also found; a change of alignment in the pattern of the furrows may indicate that the Roman boundary ditch continued as a headland into the medieval period.

Desk based assessments were carried out for the following sites:

Cambridge, Addenbrooke's Environs
(CAU Report 497)

Cambridge, Land adjacent to Hills Road and Cherry Hinton Road
(MLM Environmental Report)

Cambridge, Whitlocks, High Street, Trumpington
(CAU Report 601)

Ely, Fenland Pine Premises, 57 Broad Street
(Hertfordshire Archaeological Trust Report 1320)

Farcet, Float Fish Farm
(AS Report 1749)

Kennett, Kennett Hall Farm
(AS Report 1895)

Little Paxton, Island Site Reinforcement Main
(Archaeological Services and Consultancy Report 658/LPI/01)

March, 92 Elm Road
TL 4199 9837 (AS Report 1882)

Peterborough and Whittlesey, Reinforcement Main
(CCC AFU Report 791)

Whittlesey, Must Farm
(CAU Report 613)

Whittlesey, Proposed Concrete Block Plant, Must Farm
(CAU Report 663)

Wimpole, The Timberyard, New Wimpole
(AS Report 1827)

The following investigations produced little or no archaeological evidence:

Boxworth, Land between Seagraves and 8 Farm Close (2004)
TL 3477 6413

Brinton and Molesworth, Land North of St Peter's Church
TL 07065 57836 (CCC AFU)

Burwell, Burwell Village School
TL 5881 6712 (CCC AFU Report 809)

Cambridge, Addenbrooke's Hospital Daycare Facility
TL 4617 5551 (CAU Report 684)

Cambridge, 41 Madingley Road
TL 4347 5911 (CCC AFU Report 820)

Cambridge, 15 Chaucer Road
TL 4492 5697 (CAU Report 659)

Cambridge, 25–32 Fallowfield, East Chesterton
TL 4686 6024 (AS Report 1788)

Cambridge, 110–113 Fallowfield, East Chesterton
TL 4692 6024 (AS Report 1832)

Cambridge, Chapel Court, Jesus College (2004)
TL 4524 5889 (CAU Report)

Cambridge, Logans Way and 68 St Andrews Road (2003)
TL 4625 5940 (CGMS Consulting Report)

Cambridge, 18 Long Road
TL 4639 5550 (Archaeological Services and Consultancy Report 640/CLR/03)

Cambridge, 26 Magrath Avenue
TL 4459 5933

Cambridge, Triangle Site, Station Road (2004)
TL 4594 5718 (Foundations Archaeology Report 360)

Cambridge, 3 Sylvester Road
TL 4364 5845 (CAU Report 678)

Cambridge, Nos 14–18 Victoria Avenue
TL 4531 5942 (CCC AFU Report 798)

Chatteris, 9 Bridge Street
TL 3905 8671 (CCC AFU Report 801)

Chatteris, Station Road Business Park
TL 3877 8605 (AS Report 1861)

Childerley, Childerley Hall Farm
TL 3543 6185 (CCC AFU Report 846)

Doddington, Newgate Street
TL 3979 9039 (CCC AFU Report 851)

Duxford, Moorfield Road
TL 4779 4651 (Essex County Council Report 1410)

Earith, Westview Marina
TL 3812 7476 (CCC AFU Report 813)

Elm, Clipson's Farm, Coldham Bank Road (2004)
TF 4352 0000 (Archaeological Project Services Report 198/04)

Elm, Guyhirn Bridge
TF 3973 0287 (Oxford Archaeology Report)

Ely, 16–18 Church Lane
TL 5388 8022 (AS Report 1938)

Fenstanton, The Rookery, Church Leys (2003)
TL 3204 6866 (NA Report)

Gamlingay, Plots 11 & 12 The Maltings, Church Street (2004)
TL 2399 5238 (AS Report 1554)

Spaldwick, Ellington Brook
TL 1272 7305 (Network Archaeology Report 511)

Girton, 2 Girton Road
TL 4270 6069 (CCC AFU Report 840)

Hilton, Earthwork survey, High Street (2004)
TL 2909 6642 (AS Report 1551)

Huntingdon, Ermine Street
TL 2341 7228 (Albion Archaeology Report 2006/2)

Leverington, Land off Sutton Road
TL 4510/1090 (CCC AFU Report 803)

Littleport, Littleport Primary School
TF5672 8690 (CCC AFU Report 797)

Little Paxton, Riversfield Mill (2003)
TL 1835 6213 (Wessex Archaeology Report 54046)

Littleport, Balancing Lagoon, Highfields Farm
TL 5544 8649 (Archaeological Project Services Report 176/05)

Littleport, Geophysical survey at Littleport Primary School
TL 5569 8685 (PreConstruct Geophysics Report)

Littleport, Geophysical survey at Wisbech Road
TL 5612 8731 (Stratascan Report)

March, A141 to Norwood Road
TL 4171 9806 to 4025 9759 (CCC AFU Report 818)

Mepal, Block Fen, Meadlands (2003)
TL 4449 8398 (AS Report 1436)

Orwell, Chapel Orchard
S Macaulay (CCC AFU)

Peterborough, Longthorpe, 338 Thorpe Road
TL 1620 9847 (CCC AFU Report 799)

Ramsey, 48 Newtown Road (2004)
TL 2879 8546 (AS Report 1529)

Ramsey, Abbey School
TL 529208 285139 (CCC AFU Report 826)

St Neots, Eaton Socon, Cycle Way Bridge
TL 517465 259027 (CCC AFU Report 808)

St Neots, 1 Priory Road
TL 1824 6050 (Heritage Network Report 290)

Shepreth, 20 High Street
TL 3924 4773 (AS Report 1863)

Stukeleys, Hinchinbroke Business Park
TL 2227 7267 (CCC AFU Report 789)

Obituaries

This past year CAS lost four long-standing supporters. All were eminent scholars and contributed, amongst other claims to fame, to church history and architecture on both the local and the international stage.

David Wilson

We are sorry to report that David Wilson died this August. David, a past president of CAS (1988–90) was an eminent Romanist and aerial photographer. He joined the Cambridge University Committee for Aerial Photography in 1965, and was Curator there from 1980 until his retirement. A full obituary will appear in the next *Proceedings*.

William Frend TD, MA, DPhil, DD, FSA 1916–2005

The Rev Prof William Hugh Cecil Frend's career began with a first in history at Oxford, followed by a scholarship to study the Early Church at Berlin and to explore antiquities in Tunisia and Algeria. In this time he became involved with French archaeologists in excavation of early Christian remains, leading to his first book *The Donatist Church: a movement in protest in Roman North Africa* (1952 and still, he was proud to say, in print). These travels were a good background for joining the War Office when war broke out, and his collection of photographs of North African dams and bridges were greeted as 'gold dust'. Later in the War he worked in psychological warfare, spending time in Italy where his job was to fabricate two rumours a day for inclusion in reports intended to be intercepted by the Germans. He gave radio broadcasts in Italy, and claimed that he was the first Allied officer to enter the Vatican in 1943. Some years later he helped draft the Tunisian constitution: he liked to quip that he was Father of the Tunisian Republic.

After the War, William was a research fellow at Nottingham and then at Gonville and Caius, before becoming a lecturer in divinity. As director of studies, he took Prince Charles and other undergraduates out on Sunday afternoons to excavate a Roman villa at Godmanchester (PCAS 61, 1968 and 73, 1978). Other rescue excavations at this time included rich Roman burials at Arbury (PCAS 49, 1955). As Professor of Ecclesiastical History and Dean of Divinity at Glasgow, he published several works, including *Martyrdom and Persecution in the Early Church* (1965), *The Rise of the Monophysite Movement* (1972), and *The Rise of Christianity* (1984). This last book covered the first six centuries of the Church and remains the most substantial work of its kind written by a British scholar for more than half a century. *The Archaeology of Early Christianity* came out in 1996. Archaeological work while at Glasgow included field work with the University of Michigan, at Carthage, where he helped to prevent an early baptistery from disappearing beneath a car park. He also excavated at Kasr Ibrim in Upper Egypt, with Jack Plumley. Going off on his own one day he investigated rubbish dumps outside the town walls, finding, amongst other treasures, the Latin text of part of an unknown 1st century BC poem by Cornelius Gallus, assumed to have been lost by a serving soldier.

Despite being a self-proclaimed heretic, after retirement he was ordained and for six years served as priest-in-charge at Barnwell, Northamptonshire, where he used the introduction this gave him to local landowners to discover and excavate a series of Roman sites, causing some trepidation amongst professional archaeologists. He later moved to Cambridgeshire where, throughout his late seventies and eighties, he kept up similar practices. He was a popular stand-in priest at Little Wilbraham, he befriended local metal detectors and thus recorded important new finds, and he dug many intriguing sites. These included Roman kilns at Penfold Farm, Milton (PCAS 86, 1997), and many years' work at Rookery Farm, Great Wilbraham (PCAS 81, 1992 for initial work), where there were significant finds of Palaeolithic, Neolithic, Bronze Age and Anglo-Saxon dates as well as his beloved Romans. Much of this work was in co-operation with the Cambridge Archaeology Field Group, for whom he was a long-standing Vice Chair, as well as with the County Council Archaeology Field Unit. Artefacts that he identified at this time included Roman Christian pieces, and this lasting interest resulted in the chapter he wrote on Roman Christianity for *An Atlas of Cambridgeshire and Huntingdonshire History* (T Kirby & S Oosthuizen 2000). He was always keen to publish his results, and those still outstanding will be prepared for future *Proceedings*. He was always a cheerful, amusing and very welcome friend to other local archaeologists, and is much missed from CAS activities.

Norman Pounds MA, PhD, FSA 1912-2006

Norman John Greville Pounds graduated with a first in history and geography at Fitzwilliam College, where GC Coulton was a favourite teacher and mentor, exciting a permanent interest in local history and parish churches. He became a master at Falmouth grammar school, acting as a firewatcher during the war, and wrote his PhD on the historical geography of Cornwall. A research fellowship at the London School of Economics followed. The LSE was evacuated to Cambridge, and in 1944 Norman returned to Fitzwilliam as a tutor; at the invitation of HC Darby he also composed the volume on Greece in the series of Admiralty handbooks for the allies' invading forces.

In 1950 he moved to a professorship at Indiana University, where he remained until retirement in 1977. Rapidly promoted, he was given the coveted title of 'distinguished professor' in 1959, and a year later was voted 'the most popular professor' on campus. He retained a house in Cambridge, where he returned each summer, and permanently on his retirement. During his long life Norman wrote more than thirty works on the history and geography of Europe from ancient times to the present. When told at 87 that he had leukaemia, he exclaimed: 'But I can't die yet: I've got another book to write.' In fact, he published three more and was working on another, still speeding through the University Library in his electric wheelchair. He was also teaching classes in the University of the Third Age and leading trips to survey churches.

One of his finest books was *A History of the English Parish* (2000), which revealed the Anglo-Saxon origins of the parish. In 2004 he explored the same themes in a local context in *Cambridgeshire: A History of Church and Parish*.

He served on CAS Council 1991/3, was a popular President 1992-4, and Vice President 1994-6.

Tony Baggs MA, FSA 1934-2006

Anthony Paget Baggs became enthusiastic about archaeological fieldwork as a schoolboy, and it was Grahame Clark who spotted his potential and helped him obtain admission to Peterhouse. During National Service he trained for the Royal Engineers and was sent to Malaya, where he acquired invaluable experience of surveying techniques. Returning to civilian life, Tony undertook a management course, but happily soon secured a post at Norwich Museum. His job was to curate technological collections, but he often recalled archaeological rescue situations where he was the one called out to cope. In 1963, he was appointed to the Cambridge office of the Royal Commission on Historical Monuments for England. Both the ethos and the practice of the Commission, as they were then, appealed to him. The way it recorded England, parish by parish, was founded on topography, indeed on his beloved map references; its fundamental philosophy combined archaeology with art history in a manner unusual even in 2006 in presenting an holistic view of the physical aspect of every community in the land. During his years with RCHME, Tony worked on the two volumes devoted to Cambridgeshire, West Cambridgeshire and North East Cambridgeshire, and also on the fieldwork for the Stamford volume, working particularly closely with the head of the Cambridge office, Denys Spittle.

In 1971 Tony transferred to the twin pillar of traditional recording, the Victoria County History, where he stayed for 27 years. Like RCHME, the VCH had evolved a closely prescribed format for its parish histories and a style which preferred objective description to individual emphasis. The brevity of the final text of Tony's accounts of buildings, perhaps just four or five lines, often concealed months of research. He also excelled in the patient analysis of complex sites. He was the first person, for instance, to establish the layout and surviving fabric of the medieval precinct of St Werburgh's Abbey, Chester (now the Cathedral). On the office side of things, Tony was a reluctant visitor to London but developed a warm rapport with the county editors, so forming a valuable link between the centre and the work out in the field.

After he married Mysia in 1973 Tony embraced with enthusiasm his wife's Polish connections and became one of the few English scholars of the time to appraise seriously Poland's post-medieval architectural history. Their house became a home from home for visiting scholars from Eastern Europe, something particularly valuable during the difficult years before the fall of the Wall.

After retirement he moved to Ely but set up the Cambridge Historic Buildings Group in the Department of Architecture, University of Cambridge, with Nicholas Ray. This involved a great amount of recording work in and around Cambridge, culminating shortly before his death with the complex task of analysing the chaos of the Robert Sayle site, comprising, according to Tony, over a hundred different roof structures. He also re-engaged vigorously with churches, becoming Diocesan Archaeologist for the Ely diocese and visiting at least a church a week. He continued to guide his Ramblers' Association walks at home and abroad, including both Greece and India.

Tony served on numerous councils and committees. He was Chair of the Society of Architectural History of Great Britain 1973-6, President of the Royal Archaeological Institute 1992, and long-serving member of the Ely Diocesan Advisory Committee and the Fabrics Committee for Peterborough Cathedral. He was closely involved with the work of Cambridge Preservation Society, particularly at Wandlebury, after being co-opted onto the CPS Council of Management in 1969, serving as Vice Chairman of the Society and Chair of Wandlebury Sub Committee.

Tony was a member of CAS Council and a distinguished President, 1976-8. He stayed involved in Society business and activities and was supportive in many ways, being especially invaluable as a reliable referee for all things related to buildings, for which your Editor is eternally grateful.

With thanks to obituaries published in the Telegraph, Guardian (Peter Searby), Independent (Thomas Cocke), SALON (Society of Antiquaries On-Line), and to John Alexander

Reviews

Anne Holton-Krayenbuhl, Tony Kirby, Alison Taylor

English Episcopal Acta 31, Ely 1109–1197

Nicholas Karn 2005

Oxford University Press (published for the British Academy), cxlix + 288 pp, £47.50

The 12th century was a formative period in the development of medieval Ely. A Benedictine abbey had been founded there c.970, a successor to St Etheldreda's foundation of c.673. By the time of the Norman Conquest, the abbey had acquired an extensive estate that fell under the control of the bishop of Ely following the establishment of the see in 1109; the abbey became a cathedral priory. The 12th century saw the early stages in the division of former abbey holdings between bishop and priory; documents recording this process are among those presented in this volume.

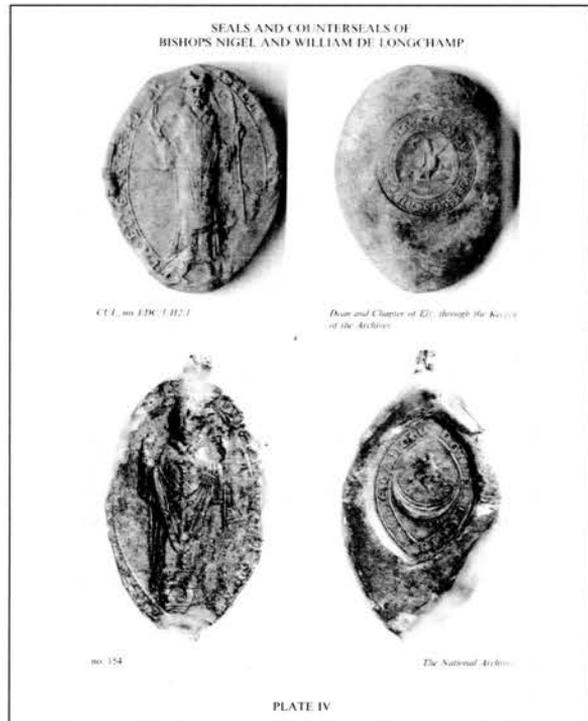
This edition of episcopal *acta*, or records of transactions and decrees, has an extensive introduction. This provides the background to the main part of the volume that consists of an edition of the documents produced in Latin by the 12th-century bishops' administrations. Five appendices conclude the volume.

In the introduction, Karn presents some of the reasons for the creation of the see of Ely, among the smallest in medieval England, and outlines the organisation of the diocese in the 12th century. This is followed by biographies of Hervey, Nigel, Geoffrey Ridel and William de Longchamp, the four bishops whose *acta* are the subject of this volume. All four bishops were involved in affairs of state and spent much of their time travelling around England and abroad; a summary of their movements is presented in Appendix I. The introduction continues with a section on the monks and the bishops, discussing the chronology of grants made to the monks in the decades following establishment of the see; there is an editorial oversight in the introductory paragraph (p. xc) where the author incorrectly states that St Etheldreda's monastery had been founded in the 6th century. The bishops' households are then described, much of the evidence deriving from witness lists. In the final part of the introduction, Karn explains his criteria for inclusion of documents; *acta* concerned with the bishops' secular and ecclesiastical administrations are included, as are those of

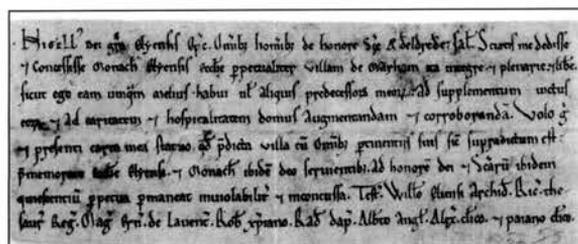
Bishops Nigel and William that illustrate the secular office of these bishops. The form of the documents is then analysed.

The edited *acta* comprise some 176 entries of which 147 are extant texts. These include later medieval copies of 12th-century originals. The remainder are quotations from other documents. The *acta* are grouped into four chapters, one for each bishop. Although the documents are in Latin, a summary of contents in English makes these accessible to the non-Latinist (but note an error of translation in no. 46 where *ad opus fratrum infirmorum* means 'for the use of infirm brethren', not 'for the work of...'). The edited text is followed by a commentary in English.

A large proportion of the *acta* is concerned with the priory at Ely, and the process of division of the former abbey estate between the monks and the bishops may be followed. Bishop Nigel's grant of named villas on the Isle of Ely and beyond, and of specified dues (no.



31), formed the basis of the medieval priory's estate; a similar grant attributed to Bishop Hervey (no. 6) is discussed and considered to be a forgery. Most *acta* contain single grants, often for a specific purpose. A few documents deal with holdings in Ely, including a reference to clearing the land around St Etheldreda's church to reduce the risk of fire (no. 65). Other *acta* deal with the religious houses at Thorney, Ramsey and further afield; there are also grants to named individuals or institutions. Among miscellaneous other topics is a letter of Bishop Nigel addressed to Henry II regarding the number of knights' fees on the estates of the bishop of Ely (no. 59).



Acta No. 40 of Bishop Nigel, from English Episcopal Acta 31, Ely 1109–1197.

Karn's edition of the episcopal *acta* for Ely is a valuable contribution to the study of medieval Ely, it also provides an illustration of 12th-century episcopal administration. This compilation of manuscripts drawn from a wide range of sources will be of use to those requiring an edition of the original texts. The non-specialist will find this a useful reference book. The text is clearly written; the introduction and the comments on the *acta* provide much new information on this significant period in the development of medieval Ely.

Anne Holton-Krayenbuhl

Cambridge and its Economic Region 1450–1560

John S Lee 2006

University of Hertfordshire Press, 256pp, £35.00 hardback, £18.99 paperback

What is the 'Cambridge region'? Today, a wide range of indicators, as diverse as travel-to-work/study/shop patterns, the circulation area of the *Cambridge Evening News* and the geographical distribution of the hardy band of Cambridge United supporters are easily available to economists and planners to illustrate the influence of the city on its hinterland, although each would undoubtedly show a somewhat different pattern. For historians and historical geographers the task is less easy. HC Darby and JA Steers, editing the two comprehensive British Association surveys of 1938 and 1965 respectively, got round the problem by ignoring it and giving their contributors freedom to define the 'region' as they wished. The one thing that is clear is that the impact of Cambridge on its county and beyond has varied over time and that the

'Cambridge region' of 2006 is very different to that of (say) 1806 or 1606.

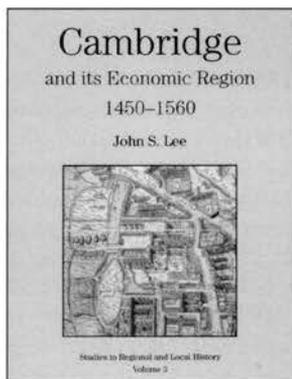
Dr Lee's work is an attempt at definition of the region in the 15th and 16th centuries, although his study extends chronologically well beyond these dates in both directions. He skilfully deploys an impressive range of national and local primary and secondary sources and his bibliography alone is a valuable contribution to regional studies. The reviewer's favourite ploy of 'spot the missing items' drew only one major blank: Donovan Purcell's *Cambridge Stone*, a surprising omission, perhaps, in view of the importance building materials play in his study.

This is a multi-layered book, but three themes dominate. The first, implicit in the title, is Cambridge's relationship with the world beyond its own boundaries, which through college accounts (Corpus, King's, St John's and Trinity are the most used) can be traced with a degree of certainty impossible for most other late medieval towns. As might be expected, Lynn and London were the town's most important trading partners, but there were links with many others, including Norwich, Salisbury and Winchester. Local commercial relations with places such as Cherry Hinton, Foxton and Whittlesford are also explored, although the suggestion in Chapter 1 that even relatively small towns like Cambridge could be important agents of change in the 'modernisation' of the countryside remains unproven (and probably unprovable, at least before the 18th century). What emerges is confirmation that rural Cambridgeshire was a relatively poor county (ranking 21 out of 33 nationally in 1515), but that this masked, then as now, major sub-regional differences: the river valleys south of the town prosperous, the western clay plateau and parts of the Fens less so.

The second theme is the late medieval 'urban crisis' long familiar to historians. There is general agreement that the 15th century did indeed mark a nadir in the fortunes of most English towns: but when did recovery start and how strong and sustained was it? The Cambridge evidence is far from clear-cut, and complicated both by the growing importance of the University and the Corporation's habit of pleading poverty throughout the 16th century whenever faced with new financial demands from central government. Nonetheless the lack of manufactures (47% of the occupied population were in service-based industries in the 16th century) seems to have helped the town avoid the depression that affected its neighbours in Suffolk, Essex and Norfolk and its attraction to immigrants, especially in skilled trades such as leather-working and building, would suggest a degree of dynamism throughout the period.

The third theme is the rise of the University. Emerging from the medieval hostels, the colleges (of which six were new in this period) gave the town an unusual economic profile: effectively, it contained the equivalent of several great aristocratic, ecclesiastical and gentry households. They varied greatly in wealth: King's had an annual net income of £1011 p.a. in 1546, Magdalene £44. Corpus, St John's and Jesus had extensive town property holdings, Magdalene none.

Town-gown relationships, Dr Ley suggests, were less-polarised in this period than later: he notes the close links between them in parish church rebuilding (especially Great St Mary's) and gild membership. However, other evidence he adduces – for example over market tolls – might suggest the contrary.



There remain unanswered questions. The role of Barnwell Priory remains elusive. The impact of the Reformation is not explored in any detail: the empty (ex-monastic) spaces on the Lyne map of 1574 suggest the urban crisis was far from resolved by that date, and what gaps were left in social welfare provision by the dissolution of the Friaries?

The illustrations, other than those drawn from documents of the time, are rather uninspiring and interpretation of the important maps in the scene-setting Chapter 2 ('Population and wealth') is made difficult by the absence of any key enabling individual rural parishes to be identified. And by restricting themselves in the south to the county boundary and in the north to a rather arbitrary line drawn from Ely to Sutton they perhaps serve to mask, rather than illuminate, the basic question of what the Cambridge region actually was at this time. What was happening, in terms of population and wealth, in such places as Littleport and Fenstanton?

The book is not an easy read. It shows its origins as a PhD thesis a little too clearly and lacks those sharp and sympathetic insights into the everyday lives of individuals that mark Margaret Spufford's *Contrasting Communities*. But it would be churlish to finish on such a note. Overall, Dr Ley's work must rank as one of the most important contributions to our knowledge of late medieval and early modern Cambridge of at least the past half-century, ranking with the RCHM's work on its topography and architecture and Nigel Goose's on its social structure. Furthermore it is handsomely produced and a tribute to the fledgling University of Hertfordshire Press.

It remains for others to carry the work forward: how has Cambridge's region been transformed by the agricultural, industrial and transport changes of later centuries? A theme for a future CAS Conference, perhaps?

Tony Kirby

***Liber Eliensis* A history of the Isle of Ely from the seventh century to the twelfth**

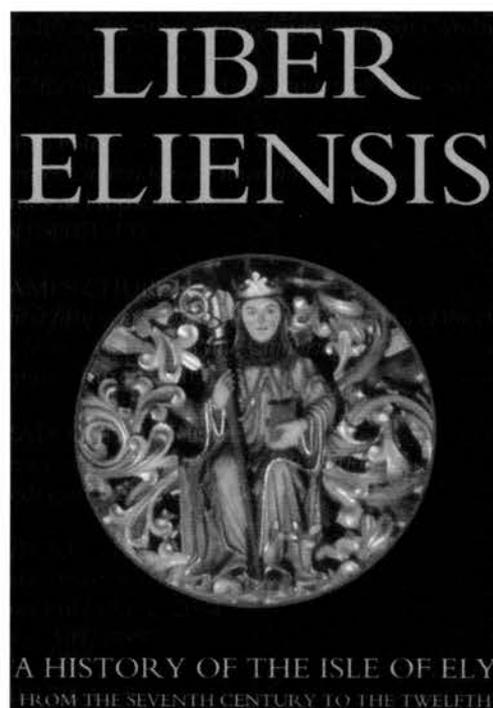
Translated by Janet Fairweather 2005

Boydell and Brewer 627 pp £30 pb

'for Ely...is magnificent in its wealth and its towns; equally praiseworthy for its woods, vineyards and waters, exceedingly rich in all fruit, livestock-breeding and crops...it is of the greatest beauty and renown, famous for its miracles, glorious for its relics. It is recognised as providing a satisfactory, peaceful dwelling place and... is guarded by a garrison of strong and warlike men'.

Here, tremendously to be welcomed, is the first English translation of the massive *Liber Eliensis*, a work that has been much quoted but one suspects little read even after the first printed edition in Latin was published by EO Blake in 1962.

Compiled towards the end of the 12th century, it aims to give the history of the monastery at Ely from its foundation by St Aethelthryth (more commonly known as Etheldreda) up to the compiler's own time, and much that is of interest to historians, archaeologists, ecclesiologists and art historians is included. Though some of the later parts in particular become a barely-concealed legal justification for the huge number of estates the monastery owned and over which many law-suits were waged, it includes data on social organisation, economics and the national and local government, some from eye-witness accounts even if embroidered by later hands. It includes entries that were lifted wholesale from other sources, local hagiographical works, a mixed bag of anecdotes, and Ely's own archives (these forming much of the rather tedious legal texts and wranglings). The latest local



event recorded was the death of Bishop Nigel in 1169, the exhausted author then extending his text to include the martyrdom of Thomas Becket in 1170.

As an historical work, the first of its three books concentrates on Aethelthryth herself and on the foundation and subsequent destruction of the monastery, much of it drawn from Bede's stories. There are dramatic accounts of attacks by Danes, when nuns were killed and the monastery and city looted and burned. Book II moves on to restoration of the abbey under Edgar, and subsequent bequests that allowed Ely to build up a massive estate. This includes interesting asides on urban origins and how legal settlements were made, including purchases and agreements 'in the place called Cambridge, in the presence of the better people of the district'. By the bridge at Cambridge is given as a specific place for settling disputes, and we hear that 'Cambridge, Norwich, Thetford and Ipswich were possessed of such great freedom and liberty that, if anyone bought land there, he did not require sureties'. In the 12th century there were Jews in Cambridge to whom Bishop Nigel pawned a cross and gospel book.

In the 10th century Abbot Byrtnoth rebuilt the church and the Abbey was enriched by Ealderman Byrtnoth who, in gratitude for hospitality denied at Ramsey, left estates in Cambridgeshire, Huntingdonshire, Suffolk and Essex to Ely when he died at Maldon soon afterwards. In the 11th century Cnut too became a friend to Ely, helping the Abbey set up a system of food-rents, whereby villages became responsible for feeding the monks and staff for one or two weeks, with lists of all the villages concerned. Of course we hear the tale of Cnut joining in singing which he heard on his boat as he approached Ely, and also how, when stopped from visiting Ely by snow and frost, he ventured over the frozen mere at Soham in a wagon.

After the Norman conquest there are dramatic accounts of Hereward's campaigns, including instructions to build the Aldreth causeway, the siege works of peat blocks, William's blockades, and details of how William ordered wood and ballast to be thrown in the marshes, covered with sheep skins, and filled with sand. Despite this, the army that tried to cross drowned. This is but the start of Williams's long campaign, its details compiled from varied sources. Plentiful details on Hereward include the account of how he disguised himself as a potter to spy on the king's stronghold at Brampton, an interesting insight into how lowly pots were traded by potters themselves, carrying them to households who might be interested in a purchase.

Important local details too are supplied about the civil war between Stephen and Matilda, the castles occupied and taken at Ely and Aldreth, siege engines, battles and royal visits. Other aspects of the Abbey's interests provide detail for the local historian. We hear for example of the creation and endowment of a religious house at Eynesbury (St Neots), the later expulsion of the monks under the Normans and their replacements from Bec, of the woman who was given Coveney where, with young girls, she did gold

embroidery and tapestry weaving for religious purposes, and how Chatteris nunnery was annexed by Bishop Hervey, complete with charters that even this Ely chronicler admits were highly advantageous to his abbey. Book III concentrates on charters etc, with lists of estates and sometimes the produce they sent to the monks: eels from the Isle parishes, salt from Terrington, timber from Bluntisham and Somersham, and 30,000 herrings from Dunwich in addition to normal farm produce. Local detail comes too with a spy's report to William, with a description of the Isle, the richness of its soil, loveliness of its fields and pastures, 'well-known for the hunting of wild animals, a productive breeding ground for farm animals and beasts of burden....equally praiseworthy for its woodlands and vineyards', and with a dream of an Exning farmer who was told by St Edmund to build a causeway to Ely. Following this, one monk measured out the land from Soham 'through trackless expanses of marshland', cutting a swathe through the reeds and building two bridges.

Not surprisingly, given the ecclesiastical background of the work, it is a particularly rich source on burials and reburials. We get the full account of Aethelthryth's first reinterment by her sister Seaxburh, with all the ceremonies of lifting, washing, re-clothing, wrapping, singing and festal dancing. In the 12th century we hear of the translation of bodies that had been buried 'deep down and long ago', all with unambiguous marks of identification. We also have the shameless story of how Abbot Byrtnoth, 'a pirate in the cause of the faith', lead a raid to steal the bones of St Wihtburh from her resting place at Dereham. This involved the Abbot entertaining the townspeople with 'convivial festivities', prising open the coffin to steal her body at night, and escaping by wagon and water pursued by a furious army of townspeople. St Wihtburh appears again in the text when she had to be translated when the church was rebuilt. Her body and clothes were still incorrupt, her cheeks rosy and her breasts upstanding.

As she states, the translator is a classical scholar, not a medieval historian, and so the numerous footnotes are mostly concerned with problems in the Latin text rather than providing more than minimal historical or archaeological background or critique, and the text is rather frustrating without such annotations. However, that would be another work which may be produced one day. As evident from accounts referred to above, a modest taste derived from its 627 pages, this is a work for historians and archaeologists to raid with gratitude, both to Janet Fairweather and to the patient monks who set down the texts compiled here.

Alison Taylor

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Jane Carr

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Abbreviations

AFU	Archaeological Field Unit, Cambridgeshire County Council
<i>Ant.</i>	<i>Antiquity</i>
<i>Antiq. J.</i>	<i>Antiquarians Journal</i>
<i>Arch. J.</i>	<i>Archaeological Journal</i>
BAR	British Archaeological Reports
BUFAU	Birmingham University Archaeological Field Unit
CAU	Cambridge Archaeological Unit
CBA	Council for British Archaeology
CCC Rpt	Cambridgeshire County Council Report by the Archaeological Field Unit
CRO	County Record Office, Cambridge
CUCAP	Cambridge University Committee for Aerial Photography
CUL	Cambridge University Library
CUP	Cambridge University Press
EAA	East Anglian Archaeology
HAT	Hertfordshire Archaeology
HMSO	Her Majesty's Stationery Office
HRO	County Record Office, Huntingdon
NMR	National Monuments Record, Swindon
OUP	Oxford University Press
PCAS	<i>Proceedings of the Cambridge Antiquarian Society</i>
PPS	<i>Proceedings of the Prehistoric Society</i>
PRO	Public Record Office
RCHME	Royal Commission on Historic Monuments (England)
SMR	Cambridgeshire Sites and Monuments Record
VCH	Victoria County History, Cambridgeshire
VCHH	Victoria County History, Hunt

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All articles should begin with a Summary. The main text of the Article should be followed by (as appropriate): Appendices; Glossary; Acknowledgements; Endnotes (if absolutely necessary); Bibliography; Acknowledgement of Grant.

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