

# The Anglian monastery and medieval priory of Coldingham: *Urbs Coludi* revisited

Simon Stronach\*

with contributions by J Franklin, M Hastie, D Henderson, P Wagner and J Carrott

## ABSTRACT

*An excavation was undertaken in the north of Abbey Yards Field, adjacent to Coldingham Priory, the Scottish Borders. Three ditches crossed the area on the same alignment and one was wood-lined. Radiocarbon dating indicated that this boundary had been created in the 7th or early 8th century AD. Several patches of midden were preserved within adjacent hollows in the subsoil. Finds were scarce but a similarly dated fragment of antler comb and an assemblage of pre-medieval animal bone were recovered from the fills and midden. Bede referred to an *Urbs Coludi* as the location of a monastery and nunnery presided over by St Æbbe in the mid-7th century. The location of this foundation has been identified as Kirk Hill, situated on the coast to the north of Coldingham. The evidence is reviewed and it is concluded that Coldingham is as likely a location for the ecclesiastical site, with Kirk Hill a contemporary secular fort. There may have been some form of continuing settlement at the site, as suggested by later medieval historians, before the founding of a new church by Edgar King of Scots at the very end of the 11th century. By the middle of the 12th century this had developed into a priory dependent on Durham. The edge of the church graveyard was identified, with several industrial features immediately outside. A second late medieval phase of cemetery was also excavated. It is suggested that the edge of the graveyard was an area used to bury marginalized members of society, with ill health and disability commonly evident among the skeletons. Animal bone associated with the industrial features indicated that activities such as production of glue or tallow and tanning were undertaken in the vicinity.*

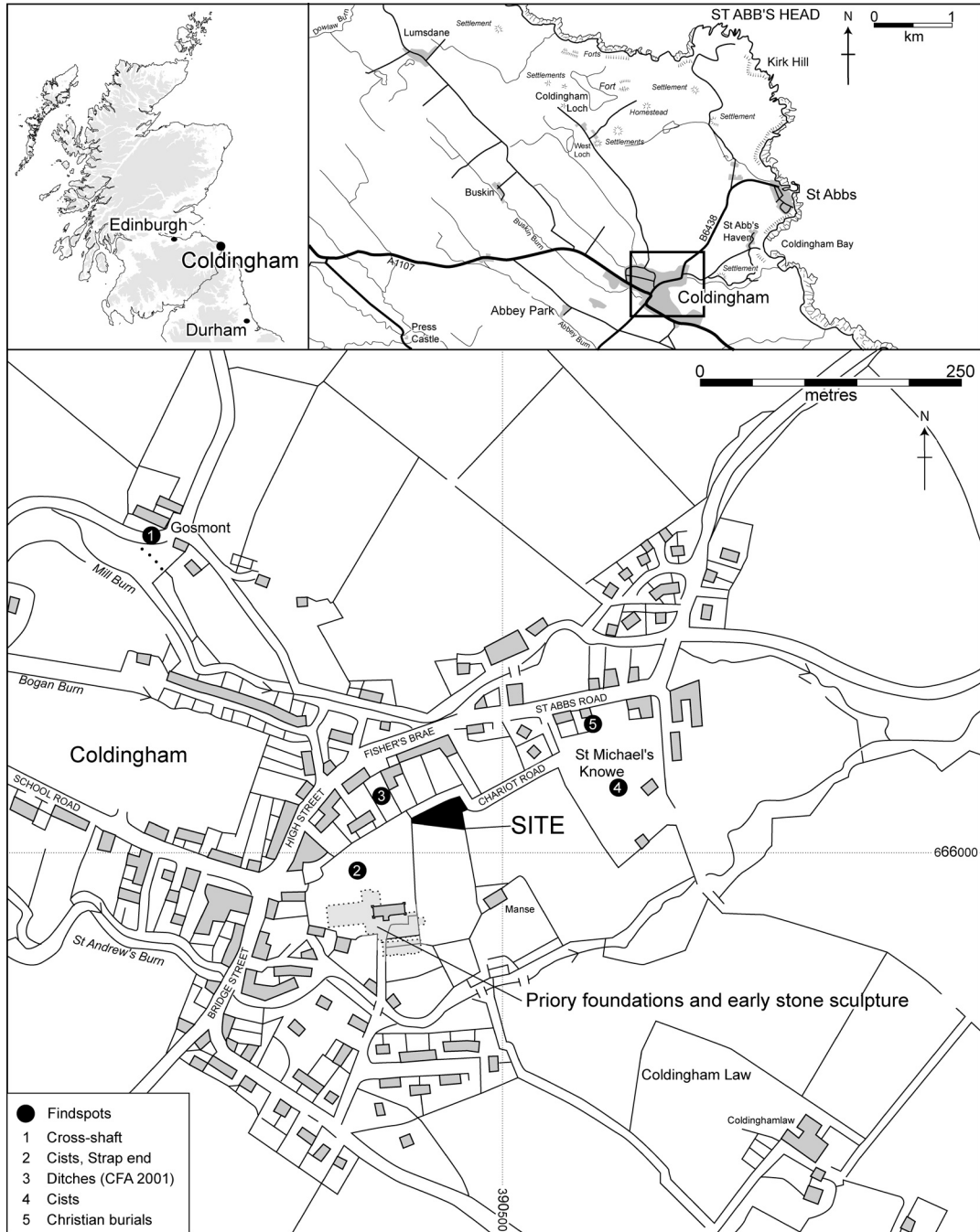
## INTRODUCTION

A proposal by Scottish Borders Council to extend an existing graveyard prompted an archaeological evaluation and subsequent excavation within Abbey Yards Field, Coldingham (illus 1, NGR: NT 9042 6604) during July and August 2000. Scottish Borders Council Archaeology Service prepared a specification for the work.

Coldingham lies in a secluded location within a valley formed by the Bogan, Hill and St Andrews burns. The waters enclose the town

and meet on its eastern side. Together they form Milldown burn, which reaches the sea around 1km from the town at the sandy shores of Coldingham Bay. The site occupied the northern part of Abbey Yards Field, which was lying fallow during the excavation. The field was skirted on the north and east by a public footpath, with the parish graveyard to the west. The southern boundary of the excavated area followed the path of an overhead electricity supply. Around 90m to the south-west was the ruinous claustral range of Coldingham Priory,

\* Headland Archaeology, 13 Jane Street, Edinburgh EH6 5HE



ILLUS 1 Site location

which extends south from the current parish church.

## HISTORICAL BACKGROUND

Bede referred to a double foundation at *Urbs Coludi* headed by the Abbess Æbbe, which was certainly in existence by the AD 660s (*HE* IV.19; Cowan & Easson 1976, 47). We are told the foundation burnt down following Æbbe's death, and most of the inhabitants left (*HE* IV.19–25). The precise date of the fire is not known, but it is thought to have occurred around the 680s (Cowan & Easson 1976, 47; Alcock et al 1986, 264).

In the 12th century, Symeon of Durham referred to a list compiled in AD 854, which included Coldingham among the possessions of the See of Lindisfarne (Anderson 1908, 60). Anderson (*ibid*, 61) also included a translation of a 14th-century document, which tells of a Danish raiding party ravaging Scotland in AD 870 and torching a nunnery at Coldingham. Symeon further recorded that the relics of Æbbe were transferred from Coldingham to Durham around 1022 (*ibid*, 39). The Benedictine community of Symeon replaced a congregation of secular priests at Durham in 1083, and a charter in the name of Edgar King of Scots written around 1098 recorded the donation of the Shire of Coldingham to them (Cowan & Easson 1976, 55–6; Piper 1998, 302). Initially a church was built, and Edgar was present at its dedication around 1100 (Cowan & Easson 1976, 55–6). Monks were sent to manage the estate, and a priory had been established by 1147 (Cowan & Easson 1976, 55–6).

Around 1188 it was recorded that one Henry, a 'simple' lay-person, had been compelled to build an oratory dedicated to Æbbe following a dream (Bartlett 2003, 29–31). The record contains a quite detailed geographical description of the oratory's location and it seems very likely to have been nearby Kirk Hill (*illus* 1). The link between Æbbe and Kirk Hill was strengthened

when the monks of Coldingham rebuilt the oratory as a more substantial structure (*ibid*).

The nationality of the monks made them vulnerable and, in the middle of 1462, Durham was deprived in favour of Dunfermline (Cowan & Easson 1976, 55–6). Coldingham was burned in 1532 and 1542 by English forces, and in 1544/5 it was garrisoned by the English and besieged by the Scots (*ibid*). No new monks entered the priory from this time and, in 1551/2, it was said that 'the priorie has bene wastit . . . and kirk brint and distroyit' (*ibid*, 58). The priory was erected into a temporal lordship in the opening decade of the 17th century and its ignominious decline was completed in 1648 when Cromwell blew up the remaining buildings (*ibid*). The historical record does not specify whether the medieval priory and Anglian foundation of Æbbe shared the same location or not.

## THE ANGLIAN MONASTERY OF ÆBBE: PROBLEMS OF IDENTIFICATION

The commentator who provided Coldingham's entry for the First Statistical Account regarded the medieval priory and Anglian foundation as geographically synonymous (*Stat Acct* 1791–9, 46). This was a view shared by some later commentators (Wood 1904) but the coastal promontory of St Abb's Head had been suggested as an alternative location as early as 1845 (*Stat Acct* 1845, 281). This exposed spot contains the remains of a defensive wall and structural foundations, which were identified as elements of the nunnery by Crawford (1934, 202–4). Alcock et al (1986, 262) tested this view during reconnaissance excavations in 1980, and established that the remains were of a late medieval building rather than the nunnery, and they turned their attention to the adjacent Kirk Hill (*illus* 1). This prominent landmark had been the location of a chapel dedicated to St Æbbe from at least 1372 (Ferguson 1892, 116), although it seems almost certain that this was the same location as the oratory built by 'simple'

Henry in the 12th century (Bartlett 2003, 29–31). Hogg (1945, 172–3) had identified Kirk Hill as a likely location for the nunnery in 1945. Alcock et al (1986, 271–2) excavated a trench across the defences and established that the landward side had been protected by a palisade, which had burnt down, and subsequently by a bank. The site had been protected by another palisade, with no stratigraphic connection to the other defences. A series of three radiocarbon dates from wood charcoal thought to have been associated with the burnt palisade allowed a range no slimmer than the second half of the first millennium AD (Pashmore, pers comm). Alcock et al (1986, 276) interpreted the protective bank as the vallum of Æbbe's foundation. The description of a visit by St Cuthbert given in Bede's *Life*, which contains the line '(he) went down to the sea, above whose shores the monastery was built' was taken as corroborating this cliff-top location (ibid, 264).

Alcock et al's results have established a new orthodoxy, with Kirk Hill the site of the Anglian foundation. However, previous archaeological finds and the results reported here suggest we should reconsider the site of Coldingham itself.

## ARCHAEOLOGICAL BACKGROUND

The landscape around Coldingham has ample evidence of prehistoric activity by way of chance finds, although most sites designated as such have not been investigated through excavation. Several settlements survive as upstanding monuments on the slopes around Coldingham Loch to the north (illus 1). In the Vale of Coldingham itself a probable settlement has been identified adjacent to the Milldown stream immediately east of the town (Conolly 2003). A geophysical survey was undertaken in 1999 and encountered anomalies with the appearance of prehistoric enclosed settlement within the excavated area and the rest of Abbey Yards Field (Johnson 1999). In the preceding year, a geophysical survey in the field to the east of the manse (illus 1) recorded a fairly

large subcircular enclosure, also interpreted as prehistoric (Glendinning 1998a; 1998b).

The modern parish church occupies the original choir of the cruciform priory church (Cruden 1986, 136–7). In 1855 it was recorded in architect's notes that restoration work had exposed earlier buildings, which were assumed to relate to the nunnery (RCAHMS NT96NW 11.00). Several seasons of excavation around the standing church and priory ruins were undertaken during the 1960s and 1970s (Thomson 1968; 1971; 1973; Clarke 1969; Elliot & Thomson 1970; Noble 1971; 1973a; 1973b; 1973c; 1976a; 1976b; 1976c). These uncovered foundations and floor levels relating to the cloister, chapterhouse and refectory (illus 1), many of which were consolidated and remain visible, as does a well located in the middle of the cloister garth. The excavations did not extend through the floors and surfaces associated with the priory buildings. They also exposed part of a graveyard, within Abbey Yards Field to the east of the church (Noble 1973a; 1973b; 1973c). All the bodies were aligned east/west and the earliest phase of cemetery was interpreted as civil or lay, with both sexes and children; one of the burials was in a cist (Noble 1973c). Beneath the interments were features cut into the subsoil, which were not investigated. Along with medieval pottery and objects were two pieces of stone sculpture thought to date from the 8th to 10th century: one an incised cross rebuilt into the refectory walls (Thomson 1971, 209–11; 1975), the other perhaps bearing the word *Abbatissa* (Noble 1973c, 176–9).

A fragment of stone cross-shaft with interlaced work on all four sides was recovered from the wall of a farmhouse in a field called God's Mount, reported to be part of Coldingham Hill (Stuart 1867, 63) and likely to be modern Gosmount (illus 1.1; RCAHMS NT96NW 8). A cast bronze strap-end was found in the parish graveyard (illus 1.2; Glen 1878, 569; RCAHMS NT96NW 16). Both of these are thought to be of Anglian origin, and the cross-shaft has been compared to other examples falling between

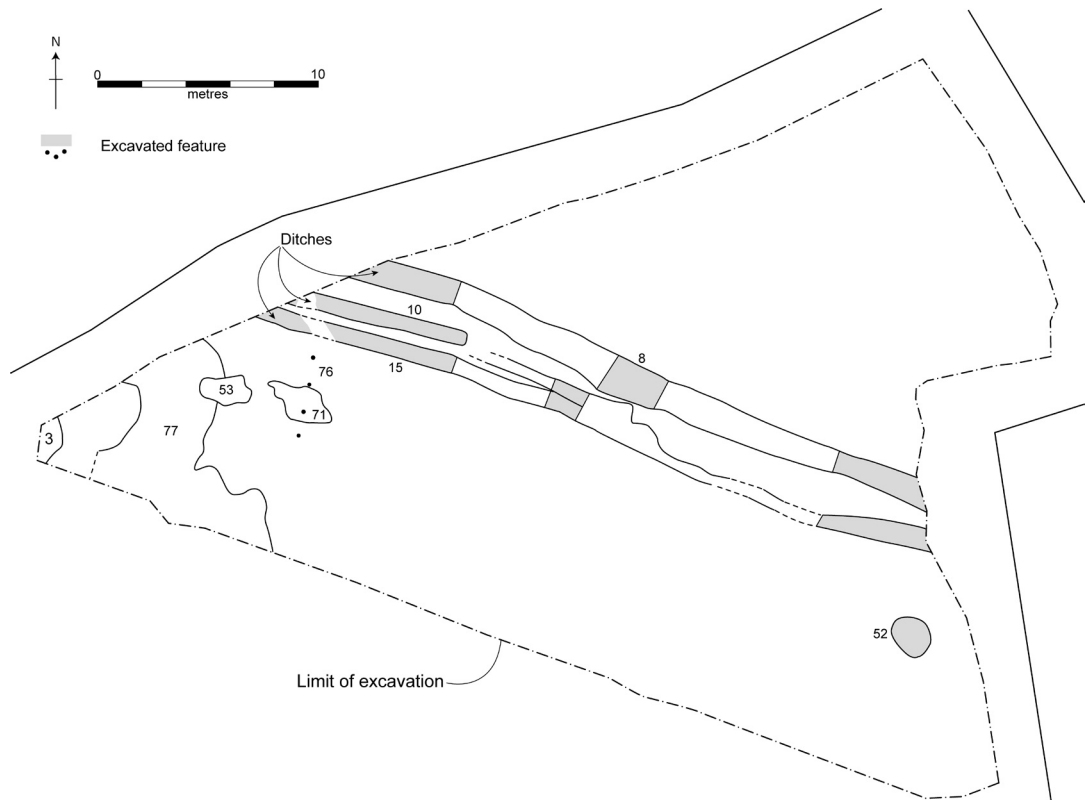
the mid 8th to 10th century by Cramp (1984, no 1437, plate 267). A hoard of Roman and early Northumbrian coins (RCAHMS NT96NW 28) has been recorded as found in the neighbourhood of Coldingham.

Recently, a housing development on the south side of Fisher's Brae was archaeologically monitored (Mudie 2001). A substantial ditch was recorded crossing the site broadly on an east/west alignment and pre-dating the extant property boundaries (illus 1.3). Unfortunately no finds were recovered from either this feature or a similarly aligned smaller ditch to the south.

Early reports (Wood 1887; Craw 1923) describe finds of east/west aligned cist burials in the churchyard to the north of the parish church and 'British graves', usually taken to mean

cists, in the field around St Michael's Knowe to the east (illus 1.4). It was noted by Wood (1904, 129) that, in contrast to those around it, this field contained many white quartz pebbles, often associated with Christian burials. A modern excavation was carried out after human remains were exposed during house construction immediately north of St Michael's Knowe (illus 1.5; Dent 1994). This recorded Christian burials of children and adults, and one inhumation was aligned west/east.

The chance finds of early stone sculpture and a strap-end suggest that modern Coldingham overlies an Anglian site. If the Christian graves discovered around St Michael's Knowe were not part of a medieval graveyard, they seem likely to have been associated with it, and imply the presence of an ecclesiastical foundation.



ILLUS 2 Phase 1 features

## METHODOLOGY

The excavated area was stripped of topsoil using a mechanical excavator under archaeological supervision. The area was then cleaned and all further excavation was by hand. A watching brief was maintained on the excavation of settings for a new fence and a service trench to the south of the excavated area in March 2002.

## RESULTS

Subsoil was composed of light grey sandy clay in the west of the area. This sloped down to the east and south, where it graded into a light brown clay loam. Both of these strata were thought to be glacial



ILLUS 3 Ditch 008 showing preserved wood

in origin. Whilst both were poorly draining, this was most marked with the sandy clay subsoil, and led to the formation of a peat deposit in the north-west of the area. This deposit was excavated by hand and found to contain frequent wood and other organic remains. No anthropomorphic material, for example charcoal, was noted and analysis of samples confirmed it to be natural in origin (Hastie, below).

## PHASE 1: EARLY CHRISTIAN BOUNDARIES AND REMNANT MIDDEN (ILLUS 2)

Three truncated ditches filled with dark silty clay were clearly apparent following the topsoil strip. They all sloped gently from north-west to south-east and the largest (context 008, illus 3) was 1.4m wide and up to 0.55m deep. The base was waterlogged and several pieces of wood were preserved. These appeared to have been deliberately laid as a simple lining formed from moderately sized branches pushed into the base and side. The wood used was willow (*Salix* sp; Hastie, below) and in places this had decayed into a primary fill comprising peat. Radiocarbon dating of the timber returned a calibrated range of AD 620–780 (Table 1, context 101). A sample of the peat showed good organic preservation, with seeds, fruits, mosses and insect remains surviving (context 100; see Hastie, below; Wagner & Carrott, below). The insect remains were indicative of foul and wet conditions within the ditch, and the foul component may have been from animal dung. There were neither indications for running water nor species synonymous with human populations. The plant assemblage would be commonly found on the unstable banks of a damp water course or ditch. The upper fill contained occasional patches of redeposited subsoil, charcoal flecks, some daub, iron slag and animal bone. This may represent deliberate backfill by pushing bank material back into the ditch, when a much shallower cut (context 010), with a width of 0.8m and a depth of 0.17m, was dug immediately to the south. This ditch mirrored the orientation of its larger neighbour and was post-dated by a ditch (context 015) in the south-east. It had no stratigraphic relationship with the larger boundary to the north but it is tempting to view it as an intermediate between the two. No primary silting was evident in Ditch 010, perhaps suggesting deliberate backfilling with the homogenous fill, which contained animal bone. The ditch did not continue as far as those on either side, although it is possible that this reflects archaeological survival rather than an unfinished boundary. Ditch 015 had a depth of only 0.22m and the primary dark silt contained 20 lumps of iron slag. It was sealed by grey-brown silty clay containing a

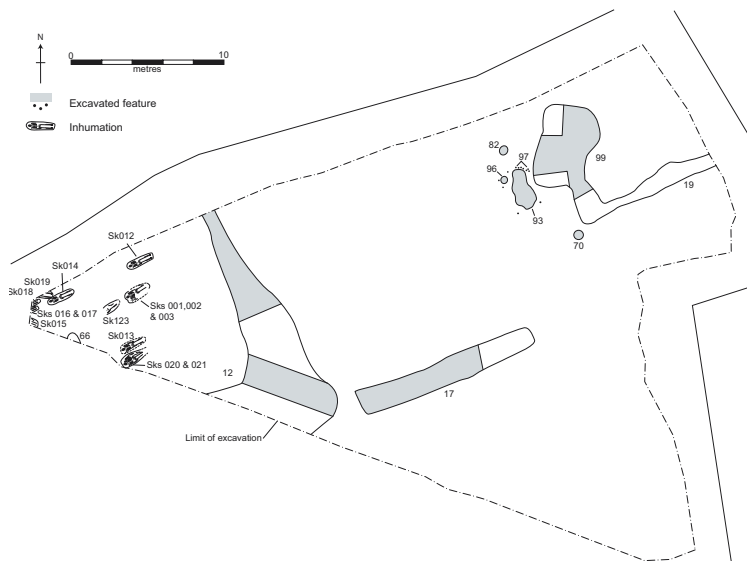
TABLE 1  
Radiocarbon dates

| Sample             | Context      | Material                                  | Radiocarbon age BP | $\delta^{13}\text{C}$ rel. PDB | Calibrated age ranges – 2-sigma |
|--------------------|--------------|---|--------------------|--------------------------------|---------------------------------|
| AA-47773 (GU-9761) | Ditch 101    | Waterlogged wood:<br><i>Salix</i> sp (cf) | 1330 ± 45          | -26.8‰ <sub>00</sub>           | AD 620–780                      |
| AA-48042 (GU-9770) | Skeleton 014 | Human bone: left tibia<br>distal shaft    | 990 ± 50           | -18.3‰ <sub>00</sub>           | AD 900–920<br>AD 960–1190       |
| AA-48442 (GU-9891) | Skeleton 011 | Human bone: right<br>humerus shaft        | 580 ± 55           | -19.4‰ <sub>00</sub>           | AD 1290–1440                    |
| AA-48443 (GU-9892) | Skeleton 025 | Human bone: left<br>humerus shaft         | 430 ± 50           | -20.5‰ <sub>00</sub>           | AD 1400–1530<br>AD 1550–1640    |

very small, abraded sherd of medieval pottery dating to the 14th to 16th century and a fragment of human bone (context 016; see Franklin, below; Henderson, below). Although these finds may be intrusive it is equally likely that this secondary fill was deposited some time after the ditch had silted and fallen out of use, but remained a recognizable gully.

A line of four stake-holes (context 076), spaced roughly 1.2m apart, was located to the south of, and roughly at right angles to, Ditch 015. One clearly had been inserted through deposit (context

071), while another was apparent beneath it. This deposit was one of four patches of dark silty clay (contexts 003, 053, 071 & 077) preserved within hollows in the underlying subsoil. They all contained moderate amounts of stone, animal bone, ash and charcoal flecks, while deposit 077 also contained disarticulated human bone. A fragment of decorated double-sided antler comb was recovered from deposit 053, and probably dates to the 7th or 8th century (illus 9; Franklin, below). The lack of pottery from these deposits strongly suggested an early date.



ILLUS 4 Phase 2 features

Furthermore, analysis of both the size of the animal bone and butchery marks indicated a pre-medieval date (Henderson, below). The animal bone seems most likely to have accumulated here as midden (ibid). The disarticulated human bone in context 077 is likely to have derived from Phase 2 cemetery activity and this deposit may be disturbed. However it does seem likely, together with the other patches, to be remnants of early midden preserved below the level of ploughing because of hollows in the subsoil. A large unabraded sherd of pre-12th-century pottery was found within the backfill of the graves for Skeletons 020 & 021 (Phase 2), and it is probable that it came from deposit 077 (illus 8; Franklin, below).

Also probably attributable to this phase, given the absence of pottery, is a large pit (context 052) located near the south-east corner of the excavated area. It was deliberately backfilled with stone and dark silty clay with frequent animal bone, rare charcoal and iron slag. The pit was excavated into an area of gravel-rich subsoil and seems best interpreted as a disposal pit deliberately excavated into the best draining part of site.

#### PHASE 2: MEDIEVAL CEMETERY AND PRIORY PRECINCT (ILLUS 4)

A total of 24 inhumations were located within the excavated area. Initially these were divided into two groups on the basis of alignment, one predominantly NE/SW, the other east/west. However, radiocarbon dating of three skeletons established that difference in orientation was not a reliable method of dividing them into phases. Two NE/SW aligned skeletons (014 & 025) were variously dated to the periods 10th to 12th century and 15th to 17th century; Skeleton 011, aligned east/west was radiocarbon-dated to the period AD 1290–1440 (Table 1). Skeletons 025 & 011 could have been broadly contemporary; Skeleton 014 on the other hand seemed to belong in an earlier phase. The latter was part of a cluster in the western part of site, bounded by a large cut feature. In addition to occupying a defined area the skeletons in this cluster all shared a NE/SW orientation and were therefore assigned an early phase. They consisted of one middle-aged female (Skeleton 012), with the remainder likely to be male (Henderson, below). The ages ranged from sub-adult to old adult. Two



ILLUS 5 Double inhumation (Skeletons 020 & 021)



young males were interred together (Skeletons 020 & 021, *illus 5*). A north to south sub-rectangular cut (context 066), interpreted as a charnel pit, was found to contain rubble, disarticulated human bone and roughly half of a saddle quern. Saddle querns went out of use after the introduction of rotary querns and are likely to be prehistoric (Franklin, *below*). The grave backfills also contained disarticulated human bone and it would seem that this cemetery was used quite intensively (Henderson, *below*). All of the burials were extended supine and as a whole did not extend significantly below the level of subsoil. As a result ploughing had severely damaged some, probably resulting in the complete disarticulation of others. Where not plough truncated, preservation of bones was fairly good for skeletons in this phase (Henderson, *below*).

The skeletons respected the boundary formed by a shallow channel (context 012), which emerged from the northern baulk and truncated the earlier ditches. It was wider and deeper to the south, where an evaluation sondage was machine-excavated and established that the feature had a depth of 0.5m. The fill was dark brown silty clay with occasional stone, rare charcoal, animal bone, disarticulated human bone and pottery dating from the 14th to 16th century. It also contained a spindle whorl made from a late medieval potsherd, probably broken during manufacture (Franklin, *below*). The sides and base were very disturbed by bioturbation and weathering, and there was no primary silt accumulation. The sondage quickly filled with water and was submerged for the duration of the excavation. To the east another linear feature (context 017) had filled with silty clay containing frequent stone, occasional animal bone and one sherd of 13th- to 15th-century pottery. The feature had a rounded profile and sloped from south-west to north-east, where it terminated within a patch of gravel in the subsoil. The stratigraphic connection to context 012 had unfortunately been removed by a ceramic field drain, but the features shared an orientation, which suggested they were contemporary.

Further east was a large sub-rectangular pit (099; *illus 6*) extending 0.5m below the level of subsoil. It had a distinctive shape with a depression in the south-west corner and a flat ledge in the east. The deeper part filled with ground-water fairly quickly and although the stepped area retained rainwater it was above the water table at the time of excavation. All the sides of the pit had weathered and the surface of the ledge or step was disturbed, possibly due to trampling. The pit had primarily filled with a dark grey silty clay



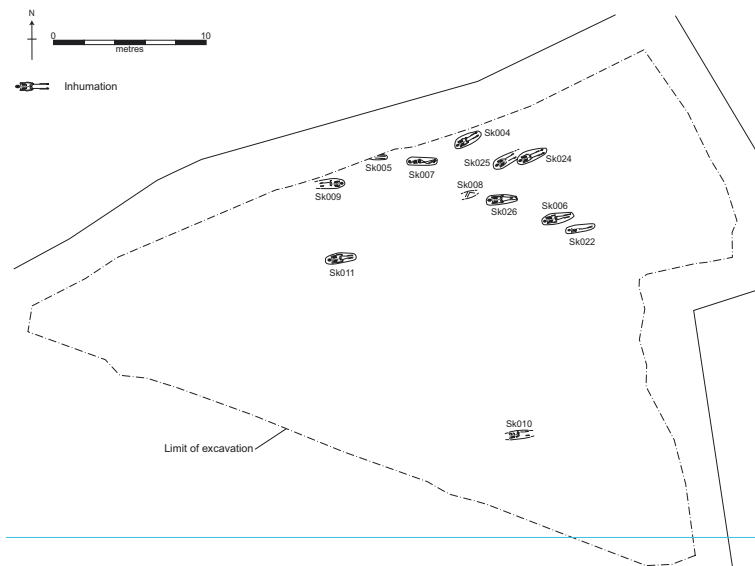
ILLUS 6 Feature 099, looking toward the parish church

(context 098) with frequent animal bone, charcoal and occasional small stones. It also contained half of a small decorated stone spindle whorl dated to the 14th–16th century and some scraps of lead (Franklin, *below*). As with the ceramic whorl noted above, the stone whorl had broken during manufacture, and it seems very likely these were being produced near to the excavated area. The primary fill was sealed by clayey silt (018), also contained within a gully (019), which entered the feature from the south. The gully was extremely truncated, with only 0.05m surviving below the level of subsoil and sloped toward the larger cut. It emerged from the east baulk and ran for some 9m until turning a right angle and entering the pit. The fill contained several sherds of pottery dating from the 15th–16th century (context 018; Franklin, *below*).

Near the right angle of the gully, a small oval pit base (context 070) contained silty clay with occasional charcoal, stone and animal bone. A stake had been thrust into the bottom of the feature. A shallow irregular pit (093) comprised a subcircular depression in the south with a step to the north. It had filled with silty clay (092) with occasional stone, charcoal and animal bone. It also contained a small stone ball likely to date to the Iron Age (Franklin, *below*) and thought to be residual. The pit was surrounded on all sides by stake-holes, although these were mostly concentrated to the north. Two larger post-holes (082 & 096) were recorded nearby.

### PHASE 3: LATE MEDIEVAL CEMETERY (ILLUS 7)

The late medieval cemetery of Phase 3 lay to the north-east of the earlier cemetery, beyond the Phase 2 boundary feature. Two of the skeletons were radiocarbon-dated: Skeleton 011 to between AD 1290



ILLUS 7 Phase 3 features

and 1440, and Skeleton 025 to between AD 1400 and 1640 (Table 1). Several of the graves cut into features associated with the previous phase, such as Pit 093 (Skeleton 026) and Channel 019 (Skeleton 022). The graves were more widely spaced than in the earlier cemetery, indicating less intensive use, as confirmed by the smaller amount of disarticulated human bone associated with the grave fills (Henderson, below). Being in the drier, eastern part of the site, the burials were not as well preserved as the earlier ones. A thinner covering of topsoil had also led to more plough damage. Four were identified as definitely female, one male. All but one of the burials were extended supine. The exception was Skeleton 007, which had the left leg twisted over the right and flexed at the knee; the skull was also to the right. This was a middle-aged female who may have suffered from some debility, and her twisted position in the grave may reflect the nature of this condition (Henderson, below). Skeleton 009 was aligned with the head to the east; in Christian cemeteries this is often interpreted as indicating the burial of a priest, but here the individual was rated as probably female. A piece of lead scrap was found near the right hand of Skeleton 026. Wood scraps were noted around Skeleton 005, possibly derived from a coffin; however, no iron nails were recovered from the site and it seems more likely that the bodies were buried in shrouds. A possible iron shroud pin was found

beside Skeleton 025 (Franklin, below). A lead spindle whorl, with moulded decoration on both sides, was found beside the left arm of a young female (Skeleton 004, illus 9 below). Only a few similar examples have previously been found in securely dated contexts; they appear to be late medieval or 14th–16th century in date (Franklin, below).

## THE HUMAN REMAINS

### David Henderson

The articulated remains from the excavations were analysed to establish the demographic structure of the sample and were examined for pathological data; the non-articulated remains were also analysed, and the limited results obtained are incorporated in the discussions under the appropriate headings.

### PRESERVATION AND TAPHONOMY

In general, the preservation of the articulated remains was poor but varied with location. The preservation was markedly better in the western, wetter part of the excavated area, where the Phase 2 burials were located.

In nearly all the inhumations the skeletons, even those classed as well-preserved, were extensively

broken. In many cases, the post-mortem damage appeared to have been caused by ploughing. The skeletal areas nearest the surface were often most damaged, or missing altogether.

### BURIAL PRACTICE

With two exceptions, all inhumations were buried in the normal Christian, extended supine position with heads to the west. There appeared to be no consistent difference in the positioning of the hands between the two phases of burial. In both cases the arms were either positioned by the sides or with the hands crossed over the pelvic area. One inhumation, from Phase 2, appeared to be a double interment, with Skeletons 020 & 021 occupying a single grave-cut. These individuals were a sub-adult of between 20 and 24 years of age and a young adult around 30 years old; both were male.

The two atypical burials came from Phase 3. In one case (Skeleton 009), the individual was interred with the head at the east end of the grave, sometimes interpreted as a 'priest's burial'. In this case, however, the individual is probably female, although poor preservation of the pelvis makes this attribution uncertain. She may have been placed head eastwards by mistake, if buried in a bulky shroud or in a rectangular coffin. The second anomalous inhumation was Skeleton 007, a middle-aged female (35–45 years old) who was buried with her left leg twisted over and flexed at the knee to rest on her right leg, and with her head turned to face right. While it is possible that her position is a result of accidental movement of the body during transportation to the graveyard or during interment, certain features (discussed below) suggest that her posture was the result of a pathological condition.

Of the non-articulated remains, most of the material derived from contexts associated with Phase 2 graves, and from a charnel pit (066), also assigned to Phase 2. It seems that the Phase 2 cemetery was much more heavily used than the later cemetery, with several intercutting graves and more disturbed bone in the grave fills, phenomena missing from the Phase 3 graves.

### METHODOLOGY

Age at death of the individuals was determined by examination of dental development and abrasion (Brothwell 1981), and where appropriate by examination of the surface of the pubic symphyses

(Brooks & Suchey 1990) and the auricular surface of the ilium (Lovejoy et al 1985). Gender was assessed by examining the form of the skull and the pelvis, with more weight given to pelvic morphology (Workshop of European Archaeologists 1980). Too few measurements of limb-bone ends or tooth dimensions were available to use these factors to attempt to separate the sexes metrically. Stature was reconstructed using the standard regression formulae from longbone lengths of Trotter & Gleser (*in* Bass 1987). Skeletal measurements were taken as per Cross & Bruce (1989) and indices were calculated using the formulae in Bass (1987). Non-metric traits were recorded from those in Brothwell (1981, 93–100). All bones were examined for pathological lesions and, where possible, these were classified according to cause. Texts used to assist these diagnoses include: Aufderheide & Rodriguez Martin (1998), Roberts & Manchester (1995) and Rogers & Waldron (1995). All joint surfaces were examined for degenerative changes. These changes include osteophytes (bony projections) around the joint margins and porosity followed by eburnation ('ivory polish') of the bone of the joint surface. Degeneration was graded following the scheme of Sager (*in* Brothwell 1981, 150).

### RESULTS

#### *Demography*

A total of 24 *in situ* inhumations was recovered. One of these (Skeleton 015, Phase 3), recorded as a single burial, was determined to have derived from two individuals, and as it proved impossible to establish from plans and photographs which individual was *in situ* and which disturbed, or indeed if the grave-cut had contained a double interment, both sets of bones were recorded with the non-articulated remains. Conversely, two skeleton numbers (002 & 003) were allocated to a single individual, whose grave had been disturbed by the subsequent intrusion of the grave of Skeleton 001 (all Phase 2). Non-articulated bone deriving from a minimum of a further four individuals (based on the most commonly occurring skeletal element – the distal end of the right tibia) was recorded.

#### *Sex and age at death*

Of the *in situ* inhumations, it was possible confidently to assign a gender to six of ten Phase 2 skeletons, and to five of the thirteen Phase 3 skeletons. In addition, three Phase 2 and two Phase 3 skeletons were assigned a probable or possible gender (Table 2).

TABLE 2  
Age and sex distribution

| Number         | Preservation | Sex | Age | Stature |
|----------------|--------------|-----|-----|---------|
| <b>Phase 2</b> |              |     |     |         |
| Sk001          | Good         | M   | YA  | 1.71m   |
| Sk002          | Good         | ??F | MA  |         |
| Sk012          | Fair         | F   | MA  |         |
| Sk013          | Good         | M   | OA  | 1.61m   |
| Sk014          | Good         | ?M  | YA  | 1.66m   |
| Sk017          | Fair         | ?   | AD  |         |
| Sk018          | Good/fair    | ??M | AD  |         |
| Sk020          | Poor/fair    | M   | YA  | 1.70m   |
| Sk021          | Fair         | M   | SA  |         |
| Sk023          | Good         | M   | OA  | 1.70m   |
| <b>Phase 3</b> |              |     |     |         |
| Sk004          | Fair         | F   | YA  |         |
| Sk005          | Poor         | ?   | AD  |         |
| Sk006          | Very poor    | ?   | SA  |         |
| Sk007          | Fair         | F   | MA  |         |
| Sk008          | Very poor    | ?   | AD  |         |
| Sk009          | Poor         | ?F  | MA  |         |
| Sk010          | Poor         | ?   | AD  |         |
| Sk011          | Good         | M   | OA  | 1.65m   |
| Sk019          | Fair         | ?   | AD  |         |
| Sk022          | Very poor    | ?   | MA  |         |
| Sk024          | Poor         | F   | OA  |         |
| Sk025          | Poor         | F   | OA  |         |
| Sk026          | Very poor    | ??F | SA  |         |

Age-categories: SA: sub-adult, 17–25 years old; YA: young adult, 25–35 years old; MA: middle adult, 35–45 years old; OA: old adult, over 45 years old; AD: adult.

Only one definite and one possible female were associated with the Phase 2 cemetery, in contrast to five definite, one probable and one possible male. This situation is somewhat reversed in the Phase 3 cemetery with four definite, one probable and one possible female, and only one definite male. Given the low numbers of inhumations in each phase, these biases may not be statistically significant. However, it should be noted that the one male (Skeleton 011) in the Phase 3 cemetery is somewhat isolated spatially. This is not the case for the females in Phase 2.

Some methods of estimating age at death in adults are now thought to be less accurate than was previously supposed (Molleson 1995; Mays 1998, 49–66). Tooth-wear analysis (as outlined by Brothwell 1981, 72) seems to be reliable for British skeletons at least to medieval times and this method was favoured here, where possible.

No evidence was found of any individual under the age of 17 or 18 years at death. Two individuals from Phase 2, and four from Phase 3, could not be aged more precisely than 'adult'. The age-categories used in Table 2 are SA: sub-adult, 17–25 years old; YA: young adult, 25–35 years old; MA: middle adult, 35–45 years old; OA: old adult, over 45 years old.

### Stature and body build

Height estimates were obtained for six adult males. Male average height was 1.672m (5ft 5.75in), with a range from 1.61m to 1.71m (5ft 3.5in to 5ft 7.5in). For the Phase 2 burials only, mean stature was 1.676m. The male average is low relative to other Scottish medieval sites (Roberts 1999, 6).

The bones of three of the males from Phase 2 were markedly robust (Skeletons 001, 013 & 018); in particular, the origin of the *soleus* muscle of Skeleton 018 was very well marked. This muscle acts to bend the foot downwards at the ankle joint (flexion) and its development may indicate habitual actions such as extensive walking over rough ground or horse-riding using stirrups. In contrast, another three of the males from Phase 2 (Skeletons 020, 021 & 023) were very gracile in the form of their femurs, with poorly defined *lineae asperae*, the ridge at the back of the bone where the muscles associated with moving the leg outward from the midline and straightening of the knee are attached. This perhaps suggests a more sedentary lifestyle for these individuals. In the Phase 3 individuals, Skeleton 009 (the probable female buried with head to the east) also had very rounded, gracile femurs; Skeleton 011, a male in the OA category, was very robust in form.

### Lower limb shape

Flattening of the femur and tibia (platymeria and platycnemia) are commonly reported findings from among pre-industrial populations. In both cases it is suggested (Brothwell 1981, 89) that the flattened shape of the bone is a biomechanical response to the stress produced on the leg by a more robust lifestyle (for example, long-distance walking on rough ground).

It was possible to calculate the meric indices of 14 individuals, 12 of whom had platymeric femurs. The site average index was 76.55. One of the individuals with normally rounded femurs (Skeleton 020) has already been noted above for poorly developed *lineae asperae*. The other non-platymeric individual was a YA female (Skeleton 004) with rickets.

The cnic indices were calculated for 11 individuals, of which one (Skeleton 014, probable male YA) was platycnemic, and seven were eurycnemic (rounded tibiae). This high proportion of unusually rounded tibiae is uncommon in Early Christian and medieval material.

### *Metrical data*

Because of the broken and eroded nature of much of the material, it was not possible to take measurements of many of the post-cranial bones; in no case was a full set of measurements available from a single skeleton, and seven individuals had no measurable long-bones at all. The fragmentary nature of the skulls provided even sparser material, only nine crania provided any measurements (of which four were from Phase 3), and only that of Skeleton 020 was sufficiently intact to provide a cranial index (index = 70, long-headed). A full list of measurements taken is available in the archive.

### *Non-metric variation*

This section concerns traits and developmental anomalies of the skeleton, which can be recorded as present or absent. Many of the traits appear to have a purely genetic basis, while the expression of others is influenced by environmental factors.

**Cranial traits** Ossicles in the lambdoid suture (right side, 6/7 Phase 2, 3/3 Phase 3), supra-orbital foramen (left side, 3/5 whole site), frontal notch (left side, 2/4 whole site), extra-sutural mastoid foramen (right side, 3/6 whole site). It has been suggested that the supra-orbital notch and ossicles in the lambdoid suture are both variations that occur more frequently in populations under nutritional stress (Bocquet-Appel 1984). The metopic suture was absent in all of the nine frontal bones examined.

**Post-cranial traits** The most commonly recorded traits for this site occurred in the ankle, where two of three right tibiae in Phase 2 showed lateral squatting facets and two of five left calcanei showed discrete anterior facets. It is thought that lateral tibial squatting facets arise in individuals who habitually adopt a squatting posture, and is a frequently occurring variant in pre-industrial populations. Of less frequently occurring variants, the first lumbar vertebra of Skeleton 012 (Phase 2, female MA) was lumbarized, that is, had not fused to the sacrum, and this vertebra

also articulated with the ilium at accessory facets. In Skeleton 009 (Phase 3, ?female MA), the arches of the first and second sacral elements had remained un-united, although the fifth lumbar vertebra had fused in the mid-line (*spina bifida occulta*). This is a minor case of *spina bifida* and was almost certainly symptomless.

## PATHOLOGY

### *Degenerative joint disease and spinal joint disease (DJD and SJD)*

#### **Degenerative joint disease** (DJD or osteoarthritis)

One of the most common findings reported from archaeological populations. The condition will normally manifest itself in the living as joint pain, although there is often no correlation between the severity of the degenerative changes and the severity of the pain experienced. Its prevalence generally increases with age as one of the contributory factors in its appearance seems to be simple wear and tear. It can also appear following a traumatic injury (secondary DJD). The spinal form of the disease is even more common than that of the appendicular skeleton, and consists of the same degenerative changes to the spinal joints as well as Schmörl's nodes. These latter are formed by a herniation of the material of the spinal discs into the bodies of the adjacent vertebrae, forming pits or troughs in the joint surface. Schmörl's nodes are formed when the spine is placed under excessive compression loads, such as in a fall onto the feet or in heavy lifting, and occur mostly in younger adults and adolescents, when the spinal discs contain a more fluid material.

The fragmented nature of the material, especially in the Phase 3 assemblage, limited the number of joint surfaces available for examination in any one skeleton, and nine skeletons had fewer than two joints available for examination. It is clear, however, that relatively few individuals suffered severe osteoarthritis lesions. Of the four individuals in the OA category for whom more than half the joint surfaces were available, only one showed any medium or severe joint degeneration. Altogether, four out of the 24 individuals examined in the excavated population showed degenerative changes to their joints (excluding the spine, discussed below) at Sager's grade II or III. Skeleton 002 (Phase 2, ?female MA) had arthritis in the left ankle; Skeleton 011 (Phase 3, male OA) showed joint changes at the right clavicle (both ends), the left shoulder and elbow,

and both hips; Skeleton 012 (Phase 2, female MA) was affected at the first knuckle of the right thumb; and Skeleton 019 (Phase 3, A) was arthritic in the right ankle, probable as a result of unusual stresses caused by bowing of the tibia due to rickets.

In Skeleton 013 (Phase 2, male OA), the talus and calcaneus of both ankles were fused together (ankylosed), the navicular facet of the left talus had florid bony out-growths (periarticular exostosis) and some of the lower thoracic vertebrae showed osteophytosis with some apparently unaffected vertebrae. This suite of symptoms suggests a possible diagnosis of Reiter's syndrome, a sero-negative reactive arthropathy (a class of diseases similar to rheumatoid arthritis). The affected individual may have experienced pain and restricted movement. As with rheumatoid arthritis, it is unclear what triggers the syndrome, although infection of the urinary tract with chlamydia has been implicated (Rogers & Waldron 1995, 73–7; Aufderheide & Rodriguez-Martin 1998, 104).

**Spinal joint disease (SJD)** Osteoarthritic changes in the spine were noted, where possible. Poor preservation of many skeletons prevented much meaningful analysis; only one or two vertebrae from any position in the spine were recorded for each age group. Two individuals were affected with moderate or severe degeneration of the spine: in Skeleton 004 (Phase 3, female YA) all the cervical vertebrae showed degeneration; Skeleton 012 (Phase 2, female MA) showed degeneration of the whole spinal column especially from the fifth thoracic vertebra downwards. The presence of Schmorl's nodes was common, especially in the load-bearing areas of the spine between the fifth thoracic and fourth lumbar vertebrae; for example, four of five tenth thoracic vertebrae were affected, but only one of eight fourth thoracic vertebrae. Lateral spondylarthrosis, degenerative changes of the articular facets of the vertebrae, was not seen in any individual.

### *Deficiency diseases*

Evidence of iron-deficiency anaemia is seen in skeletal remains in the form of pitting in the roof of the eye-sockets (*cribra orbitalia*) and/or thickening and pitting of the outer layer of the cranial bones, especially the parietals and the occipital (porotic hyperostosis). Many factors appear to contribute to the condition, the most important being a lack of absorbable iron in the diet and a heavy infestation with gut parasites.

The deficiency is most common in childhood, in archaeological populations, but the lesions may remain in evidence on the skull into adulthood.

Including the non-articulated material, two of five individuals examined showed the lesions of *cribra orbitalia*. In addition, one of seven Phase 3 individuals and six of ten Phase 2 individuals displayed porotic hyperostosis. In Phase 2, one individual also showed *cribra orbitalia* and two had no lesions in the eye-socket.

Another deficiency disease evident in the population under study was vitamin D deficiency (rickets). Vitamin D is essential for the mineralization of bone tissue, and its lack, whether through limited amounts in the diet or particularly through lack of exposure of the skin to sunlight, can cause bowing of the weight-bearing bones of the skeleton. Three of the Phase 3 population (Skeleton 004, female YA; Skeleton 019, A; Skeleton 024, female OA) showed the bowed legs typical of the condition as did a femur from context 042 (Phase 2). A further possible case of a deficiency disease was noted on the tibiae of Skeleton 023 (Phase 2, male OA) where the shafts of both bones showed poorly defined patches of well-resolved new-bone growth. These may have been caused by sub-periosteal bleeding, which can occur when the periosteal membrane covering the bones is weakened by scurvy (vitamin C deficiency). However, these lesions may have been traumatic in origin. The teeth and ribs were not available for study and the diagnosis must be tentative at best (Aufderheide & Rodriguez-Martin 1998, 310–14). One thoracic vertebra, found in unarticulated material (from charnel pit 066, Phase 2), was wedge-shaped, with the anterior part of the body collapsed. This may have been the result of osteoporosis.

### *Childhood morbidity*

Some evidence of childhood ill-health may be preserved in the adult skeleton in the form of furrows and pits in the enamel of the teeth (hypoplastic lines) whose position reflects the state of development of the permanent tooth when the episode of illness or nutritional stress occurred and hence the age of the individual at that time. Three of 12 complete or partial dentitions examined from both the in situ and non-articulated material showed no hypoplastic lines. Most affected dentitions showed two or three hypoplastic lines, though the teeth of Skeleton 025 (Phase 3, female OA) showed at least six episodes of illness between the ages of 1 and 13 years old.

Taken as a whole, the most commonly occurring ages at which hypoplastic lines formed were 1.5 to 2 years of age, with another diffuse peak at 5 to 6 years. It is probable that the lines which were formed at 18 months to 2 years of age were caused by the nutritional stress which can occur during the switch to solid foods at weaning, while the peak at 5 to 6 years of age may reflect the occurrence of 'childhood infectious diseases' passed on from child to child as individuals become more independent of their parents and begin to interact more with their peers.

As was noted above, the presence of ossicles in the lambdoid sutures of the skull may also reflect childhood nutritional stress; Skeleton 004 (Phase 3, female YA) showed very florid lambdoid ossicles, as well as four severe hypoplastic lines in her teeth corresponding to incidents between the ages of birth and 3 years old.

### *Trauma*

**Fractures** Only one bone fracture was recorded from the material, a 'clay-shoveller's' fracture of the seventh cervical vertebra of Skeleton 011 (Phase 3, male OA). This term describes a fracture where the action of the trapezius and rhomboid muscles of the neck and shoulder can avulse (tear off) part of the spine of the seventh cervical and/or the first thoracic vertebrae. As the name suggests, the fracture occurs when performing actions that place excessive strain on the upper arms and shoulders. Skeleton 011 was notable for his well-marked muscle attachments and was arthritic in the shoulders and elbow.

**Soft-tissue injury** Injury and infection in overlying tissue can sometimes involve an underlying bone; the periosteum (the membrane surrounding a bone) may become involved, laying down additional reactive bone tissue onto the bone surface (periostitis), or the bone itself may become involved, leading to osteomyelitis, a much more serious infection which may lead to pus formation in the marrow cavity and death of the bone tissue. Even today this infection is difficult to treat, and in the past would almost certainly have led to death. Schmörl's nodes (discussed under spinal joint disease above) are also traumatic soft tissue injuries in origin.

Periostitis is commonly seen on the front of the tibia, where the bone is covered only by the skin, and is more exposed to injury from knocks and grazes. The incidence of tibial periostitis was surprisingly low from this site; only three of 19 left tibiae showed

evidence of the condition. In the St Giles, Edinburgh, medieval sample (Henderson 1998) the rate of tibial periostitis was 27.3%. One of the finger bones (a right second proximal phalanx) of Skeleton 001 (Phase 2, male YA) showed an irregular bony lump on the palmar surface, apparently an ossified haematoma. This may have been the result of a crushing injury to the finger.

The left hip of Skeleton 025 (Phase 3, female OA) showed evidence of osteomyelitis, specifically septic arthritis. The right hip was unaffected. Unfortunately this part of the skeleton was badly preserved and quite broken, but both the femur head and the hip-socket of the ilium showed eburnation of the joint surface and erosive destruction of the bone. The deep position of the hip joint makes a direct injury to the bone unlikely. Another possible cause is infection with tuberculosis, which can sometimes cause destruction of joints. Unfortunately not enough material from the vertebral column survived to ascertain if the other common sites of tuberculosis infection were affected.

### *Neoplastic disease*

Neoplastic diseases are those involving cancerous growths, whether malignant or benign. One possible example was recorded in Skeleton 025 (Phase 3, female OA) where two objects were noted within the bone of the maxilla, just to either side of the midline. Although composed of enamel and dentine, and in one case with a possible layer of cementum on the outside, neither object was organized into a proper tooth-like shape. Probably these objects are median dentigerous follicular cysts, benign tumours of the tissues that give rise to the developing teeth (Hillson 1994, 320–2; Aufderheide & Rodriguez-Martin 1998, 40). A similar structure is described in material from Aberdeen's Carmelite priory (Cross & Bruce 1989, 140).

### *Other*

On excavation, it was noted that Skeleton 007 (Phase 3, female MA) was buried in an anomalous position, with the left leg twisted over the right and the head facing south. She appears to have eaten only very soft food not requiring chewing, such as pap or gruel, for some time before her death, allowing calculus to form on the biting surfaces of her molars. If her body position was not a coincidental accident of the burial process, it is possible that the posture was due to some form of paralysis, or perhaps some condition such as

cerebral palsy, and had been habitual in life. Although the skeleton was fragmentary, it was noted that the femurs were unmarked by muscle scars, while the right anterior–inferior iliac spine of the pelvis was strongly marked by the muscle (*rectus femoris*) involved in flexing the hip.

### Dentition

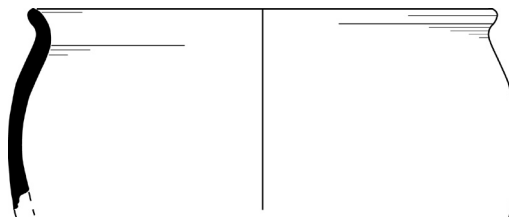
A total of 12 inhumations had surviving teeth or jaws, 220 teeth or tooth-positions were available for examination. Of these positions, five third molars were unerupted or unformed, and 17 teeth had been lost post-mortem. Ten of the whole or partial dentitions showed caries cavities or teeth lost ante-mortem. In total, 35 of the extant teeth (18.8%) were carious, and a further 12 teeth (5.58%) had definitely been lost ante-mortem. Other medieval Scottish sites consistently report levels of caries at around 6% (Roberts 1999, 18).

This high rate of dental disease started early in life; two of three dentitions from sub-adult (under 25 years) individuals were already carious. In the under-35s as a whole (SA and YA), seven of 11 lower second molars were carious, and a further second molar had been lost ante-mortem. Skeleton 025 (Phase 3, female OA) had 15 teeth lost ante-mortem or carious. A full analysis of dental disease is available in the archive.

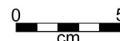
### CONCLUSIONS

The skeletal remains from the Abbey Yards Field provided some insight into the medieval population during the graveyard's two phases of use. The Phase 2 males were generally shorter than many contemporaries, and the population appears generally to have suffered from relatively poor nutrition, with six of ten skulls examined showing signs of anaemia. Two of the males (Skeletons 020 & 021, YA and SA, respectively) were interred in a single grave.

The preservation of the material from Phase 3 was considerably poorer than that of Phase 2. These individuals also suffered poor nutrition, but here it was characterized by rickets and perhaps also by the increased frequency and severity of enamel hypoplasia. Of these, a middle-aged female (Skeleton 007) may have suffered from some debility where she could only eat soft foods, her twisted position in the grave may reflect the nature of this condition. Three females (Skeletons 004, 024 & 025) will have encountered mobility problems (two due to rachitic bowing of the legs, the other due to septic arthritis of



1: Pottery fragment



ILLUS 8 Pottery fragment

the left hip). The anomalous orientation of Skeleton 009 is puzzling, as inhumations with the head pointed east in Christian cemeteries are often interpreted as burials of priests, but here the individual was rated as probably female. Not much of the pelvis survived, however, so the attribution of sex is open to question.

### THE FINDS

Julie Franklin

### THE POTTERY

Apart from three sherds from modern features, the small pottery assemblage was all of medieval or earlier date. The two most unusual sherds (Cats 1 & 2) have much in common with Anglo-Saxon pottery. Both are unglazed, of a hard, fired gritty micaceous fabric. Though their provenance could not be established directly, both have features of fabric, form and finish in common with pre-Conquest pottery found further south. As pre-12th-century pottery is extremely rare in Scotland, they must be assumed to be imported until proven otherwise (by further discoveries, thin section or other scientific analyses). Mica inclusions are found in the medieval sherds from the site, but also in clays from the Whitby area, north-east Scotland and a number of other places.

One sherd (Cat 1, illus 8) was from the backfill over Skeletons 020 & 021 (Phase 2) and was probably residual, having derived from the soil through which the grave was cut. It was from a handmade sagging globular cooking pot. Similar pots were produced in many areas during the Middle Saxon period (AD 650–850), and in some places continue into medieval times. Many of these industries were small and localized and are not well understood, not least

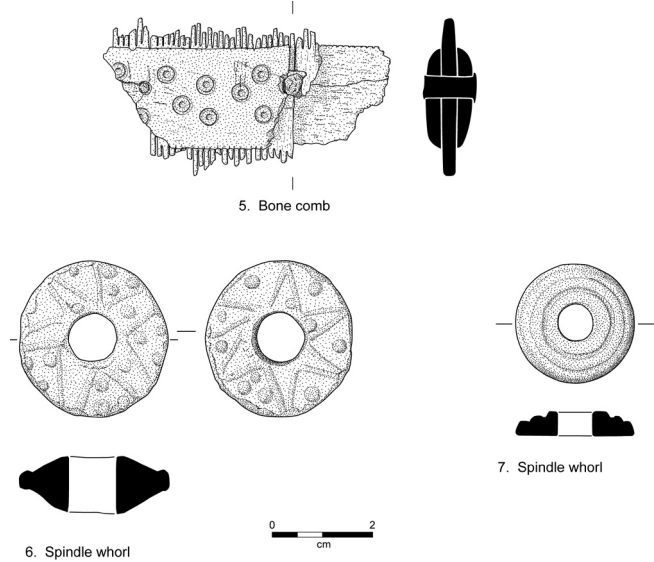


because the pottery can be mistaken for Iron Age material (Hurst 1976). A date of 10th or 11th century has been suggested for this sherd (G Haggarty & D Hall, pers comm) but it may well be a few centuries earlier.

The other sherd (Cat 2, not illustrated) was retrieved from topsoil during a watching brief immediately south of the excavated area. It appears to be from a spouted pitcher, with a strap handle junctioned directly onto the rim. This form has been found as early as the Middle Saxon period in south-east England, and is more widespread on later Saxo-Norman sites. The black surfaces of the sherd appear to be an intentional effect of the firing, a feature found in Torksey-type and some Whitby-type wares. Torksey-type wares are distributed in Lincolnshire and Yorkshire, and may have originated in Northumbria. A date range of early 10th to mid-12th century has been suggested (Hurst 1976, 326). Fine Whitby-type has a similar but slightly earlier range. The coarse gritty micaceous fabric does not match either of these types, but it seems likely that this sherd is broadly contemporary, possibly 10th or 11th century, and produced somewhere along the eastern seaboard.

The 14 medieval sherds were mostly found in Phase 2 features. They are all locally made, mostly of the typical medieval White Gritty fabric. A majority represent jugs, as is typical of later medieval assemblages. These include one well-made thumbled base, copying popular imported wares from Yorkshire. Three green-glazed sherds are of possible Northern English origin (G Haggarty & D Hall, pers comm). The medieval wares are tentatively dated to the 14th and 15th centuries.

- 1 Globular cooking pot rim (illus 8). Hand-made, coarse gritty micaceous fabric, with pimply surface and occasional voids from burnt out vegetal temper, black core, with dark grey to buff surfaces, hard-fired, heavily sooted on exterior. Context 54; Small Find no 3; Phase 2.
- 2 Rim-and-ridged strap handle probably from a spouted pitcher (not illustrated). Probably wheel-thrown, coarse gritty micaceous fabric, pale grey fabric, with uniform but flaking black surfaces. Context 150; Topsoil.



ILLUS 9 Small finds

## SMALL FINDS

### Stone

Apart from a spindle whorl (Cat 7, illus 9), which is dealt with below, two stone objects were recovered during the excavations. A small, round stone ball, roughly 45mm in diameter, with visible peck marks was found within the backfill of Cut 093 (Phase 2), and roughly half of a saddle quern was found within the backfill of Cut 066 (Phase 2). Both of these stone objects are of probable Iron Age origin. Saddle querns went out of use after the introduction of more efficient rotary querns by the Romans. However, old style querns were still used for specialist purposes after this.

Stone balls were used as gun shot in the later medieval period, and as sling shot in earlier medieval trebuchets. However, the Coldingham ball is very small for shot. Small stone balls are found in large numbers on Iron Age sites (Cool 1982, 95). These average about 30mm in diameter and, due to the domestic midden context in which some are found and the time involved in producing them, are interpreted as pieces for a game such as boules, rather than as ammunition. They have been found at a number of hillforts in south-east Scotland and are dated (ibid) to between the fifth and third centuries BC. However, a number of other finds, including two from nearby Fast Castle (diameter *c* 37mm and *c* 42mm), suggest they continue

up to the first century BC or later (Hunter 2001, 170). This ball was found in a medieval feature, but could have been picked up anywhere in the area and brought to the site as a curiosity. However, the size of the quern fragment suggests that it was not transported far and, taken together, the artefacts may indicate Iron Age settlement in the immediate vicinity.

- 3 Saddle quern broken across middle and down one side (not illustrated). Uneven but smooth base, roughly flat, pitted top side, little wear over peck marks. Grey fine-grained igneous stone. Length 275+ mm, width c 280mm, height 100mm. Context 65; Phase 2.
- 4 Stone ball (not illustrated). Near perfectly round ball of grey micaceous sandstone, well made, small peck marks visible on surface. Diameter 43–45mm (1.7–1.8in). Context 92; Phase 2.

#### *Antler comb*

The piece of comb was found in midden material preserved in a dip in subsoil. It is unfortunately missing both end plates, which could have aided identification, and the decoration is of a simple type, used from the Iron Age to the medieval period. Similar decorated double-sided composite combs are known from up and down the East Coast, from the Northern Isles to Eastern England. It falls into Curle's (1982, 56) Dark Age B type, found in Norse levels at the Brough of Birsay, Orkney. This corresponds to Foster's (1990, 162) Group 6, distributed mainly in Orkney and Caithness. A similar comb was found at the Saxon monastery of Whitby (Peers & Raleigh Radford 1943, 70). Nearer to home, it has analogies in Fife and Edinburgh. A similar shaped comb with more elaborate ring and dot decoration was found in a midden near Largo Bay, Fife (Munro 1901, 286), while a nearly identical, though coarser toothed comb was found during excavations at Edinburgh Castle (Clark 1997, 147, illus 127:1). As the site's location would imply, the Coldingham comb is influenced more by Anglo-Saxon designs than by Norse, Pictish or Irish examples and probably dates to the seventh or eighth century (A Smith, pers comm).

- 5 Antler comb (illus 9). Piece from middle of double-sided composite comb. Flat side plates secured by two iron rivets, decorated with ring and dot motifs. One side blackened and split, possibly burnt. Length 57+ mm, width 30+ mm, fine teeth 9/cm on both sides. Context 53; Small Find no 2; Phase 1.

#### *Spindle whorls*

One spindle whorl (Cat 6) was made of lead, with moulded decoration on both sides. Whorls are more commonly made of stone or ceramic, but lead examples are known and were probably a great deal more common than the archaeological record suggests. In part this may be due to the value of the metal and the consequent recycling of objects. Many lead finds come from metal detectorists, and a number of lead bi-conical whorls with similar decoration have been found by them in recent years, from Ballinbriech Castle, Balmerino Abbey and Lindores Abbey, all in east Fife (Cox & King 1997, 201) and from Airth, north of Falkirk (Bailey 1999, 10). None of these is from datable contexts but associated finds seem to point to the later medieval period. The three whorls from Ballinbriech are associated with 14th- and 15th-century finds, while the two from Balmerino Abbey were associated with 15th- and 16th-century coins.

However, the context for the Coldingham whorl is more unusual. It was found beside the left arm of a young Christian adult female (Skeleton 004) of probable late medieval date. Although grave goods are unusual in Christian graves, the burial of a woman with her spindle may be understandable. Girls were taught to spin at a very early age and most women would have spent most of their spare time in the pursuit. The spindle whorl would therefore have been one of their most familiar possessions (Egan 1998, 255). Possibly this particularly well-made and decorated whorl was a treasured piece, placed in the grave for sentimental reasons.

In terms of weight, the whorl is relatively heavy at 42g. The majority of whorls are under 34g, though two examples from a study of 37 found in Northampton were over 40g (Oakley & Hall 1979, 288, nos 1 & 30). There it was suggested that heavier whorls were needed for plying two or more yarns. In London, lead whorls of 38.5g and 77.5g were found and it is suggested that heavier whorls were more common in the later medieval period to cope with thicker yarns (Egan 1998, 261).

The other two whorls (Cats 7 & 8) are also probably of late medieval date, not least Cat 8, which was made from a late medieval potsherd. Both were found in cuts dating to Phase 2 and both appear to have broken during manufacture. This suggests that spindle whorls were being made as part of the industries undertaken close to the excavated area. The stone whorl is probably split along a bedding plane, at the point of the last incised ring.

The pottery whorl is broken across the middle over the central hole. In any kind of holed object, such as buttons or whorls, the hole is made first into the roughed-out shape before the edges are finished. This is partly to aid in the trimming process, providing a central axis on which to turn the piece, and partly because this is the point at which it is most likely to break, as appears to have happened here. Potsherds were used to make whorls throughout the medieval period, and as late as the 18th century in some areas (Melton 1999). Stone whorls with concentric rings have been found on a number of medieval sites in south-east Scotland (eg Caldwell 1996, 644, nos 77–8; Cox 1997, 755, no 118; 2001, 67, no 14), and have been generally associated with 14th- to 16th-century finds.

- 6 Lead spindle whorl (illus 9). Bi-conical whorl, with moulded decoration of raised radial lines and dots, forming star pattern around central hole. Diameter 30–31mm, depth 11mm, hole diameter 10mm, weight 42g. Small Find no 1; Skeleton 004, beside left radius; Phase 3.
- 7 Stone spindle whorl (illus 9). Piece from one side of a decorated whorl, incised with three concentric rings. Split along incised line. A little abraded, post-breakage. Fine grey mudstone. Diameter 24+mm, depth 5+mm, hole diameter 7mm. Context 98; Small Find no 6; Phase 2.
- 8 Potsherd spindle whorl (not illustrated). Unfinished broken whorl rough out. Hole drilled through from both sides, edges roughly chipped. Local greyware, olive-green glazed, thick sherd, possibly from a base or lower wall (14th- to 16th-century fabric type). Length 22+mm, width 30mm, depth 12mm, hole diameter 6mm. Context 103; Phase 2.

### *Iron (not illustrated)*

A possible pin shaft (Cat 9) was from the fill around a Phase 2 burial of an old woman. It may have been originally associated with the body as a pin to secure clothing or a shroud. The L-shaped object could be a pintle, part of a simple form of hinge.

- 9 Pin shaft? Thin length of iron, too thin for a nail shaft, possibly a pin/buckle pin or similar. Length 41mm, width 4mm. Context 87; Small Find no 5; Skeleton 025, from fill around burial; Phase 2.
- 10 Pivot? L-shaped object, long pointed shaft, with sharp corner, and short arm. Length 89mm, width 20mm, thickness c 5mm. Context 3; Phase 1.

## THE FAUNAL REMAINS

D Henderson

### RESULTS

A small amount of animal bone was recovered from Phases 1 and 2, and as most derived from the eastern, drier, part of site it was poorly preserved. This affected the amount of analyses possible; substantive results are summarized below.

### *Species present (Table 3)*

As goat and sheep skeletons are very similar, all following references to ‘sheep’ must be understood to include the possibility of the presence of some goat. Items of cattle (524, 53.4% of identified bone) and sheep (319, 32.5%) made up the overwhelming majority of the identified bone. Of the other main

TABLE 3  
Number of individual specimens per phase

| Phase           | Cattle | Sheep | Pig | Horse | Cat | Fowl | Goose | Dog | Fish | NID  |
|-----------------|--------|-------|-----|-------|-----|------|-------|-----|------|------|
| 1 (Midden)      | 202    | 179   | 22  |       | 10  | 21   | 15    | 1   | 1    | 606  |
| 1 (Other)       | 74     | 30    | 10  |       | 1   | 3    | 2     |     |      | 254  |
| 2 (Pit cut 099) | 167    | 85    | 25  | 9     | 1   |      | 1     |     | 3    | 435  |
| 2 (Other)       | 81     | 25    | 10  | 1     | 1   |      |       | 1   |      | 627  |
| Total           | 524    | 319   | 67  | 10    | 13  | 24   | 18    | 2   | 4    | 1922 |

NID=non-identified bone fragments.

domesticates, pig, goose, chicken and horse were the next most common, although in much smaller numbers.

Few fish bones were recovered and there are very few species represented (salmon, haddock and halibut). It may be that poor preservation contributed to this finding. Cat and dog bones were recovered, and further evidence of dogs was seen in 57 gnawed bones.

### *Taphonomy and carcass utilization*

It was recognized that the anatomical distribution of the surviving bone may have been affected by post-depositional factors. An analysis was carried out to examine the relationship between the numbers of each skeletal element and the structural density of that part (Lyman 1994, 234–58). A strong positive correlation was found in Phase 1 and a less strong positive in Phase 2 thereby confirming a probable loss of some skeletal parts due to taphonomic factors.

The bones of the two main food-forming species were analysed to attempt to determine whether the assemblage derived from the ‘meatier’ parts of the carcass, or from the ‘waste’ parts. Cattle and sheep bones both showed a significant bias towards the meatier parts in Phase 2, while in Phase 1 only sheep remains showed this bias. It seems probable, therefore, that in both phases the site was receiving the remains of consumption, although the presence of cattle skull and toe bones suggest that some butchery waste was also present in Phase 1.

The presence of most of the horse bones from the site, as well as a bone from a cat’s paw, may relate to the production of leather. The very highly fragmented nature of the bones from feature 099 (Phase 2), especially the large joints of cattle and horse which had been chopped repeatedly and the presence of larger numbers of horse and cattle foot bones, may be related to some process to liberate the greatest possible proportion of the useful products of the carcass. Possible scenarios include making tallow or boiling body-parts for glue.

### *Butchery*

All bones were examined for marks of butchery. Those from the midden deposits of Phase 1 showed a lesser number of bisected vertebrae than is usual in medieval sites, suggesting an early date for these deposits. In Phase 2 the pattern of butchery common in Scottish medieval sites was observed.

### *Size and stature*

Relatively few bones were sufficiently preserved as to be available for measurement, especially among the cattle. In Phase 2, however, the measurements obtained fell within the normal range for Scottish livestock from the 12th to 15th century (see especially Henderson *in* Dixon 1986). In the Phase 1 middens, many of the animals were larger than in medieval sites, again suggesting an early date.

## THE PLANT REMAINS

Mhairi Hastie

### METHODS

Twenty-three samples were taken during the excavation, and an initial assessment was carried out on samples from five contexts considered representative of the larger assemblage. Ten litres from each was subjected to a system of flotation in a Siraf-style flotation tank. The floating debris was collected in a 250µm sieve and, once dry, scanned using a binocular microscope. Any material remaining in the flotation tank was wet-sieved through a 1mm mesh and air-dried. This was then sorted by eye and any material of archaeological significance removed. The assessment established that very few charred plant remains survived on the site. The remaining samples were wet-sieved as above and any archaeological material recovered and added to the relevant assemblages. The results of the assessment are summarized below. Additionally, during excavation, two samples were identified as being organic in character. A 0.5ml sub-sample of each was gently wet-sieved through both 500µm and 250µm sieves and scanned using a binocular microscope to assess organic preservation.

### RESULTS

Wood charcoal was present in very low concentrations in the assessed samples, only context 098 (Phase 2) contained a concentration. This was also the only context that contained cereal grains, namely: a small amount of barley, oat and one tentative rye. These have all been recorded from other medieval sites within Scotland (eg Boyd 1988). This sample also contained one small fragment of hazelnut shell.

Two contexts were identified as containing waterlogged remains. No anthropogenic material was present in one and it was interpreted as a naturally occurring peat deposit. The other (context 100, fill of ditch 008, Phase 1) showed good organic preservation with seeds, fruits, mosses and insect remains surviving (see Wagner & Carrott, below). The plant assemblage was dominated by seeds of rush, sedges and moss fragments. Small concentrations of stinging nettle and chickweed were also present. The seeds and fruits are primarily from plants specific to damp marshy areas, though the stinging nettle and chickweed are more indicative of disturbed nitrogen-rich ground. The assemblage would be commonly found on the unstable banks of dykes and ditches, the flora suggested being typical of banks of a damp water course or ditch.

## THE INSECT REMAINS

Pat Wagner & John Carrott

### METHODS

A subsample from context 100 was inspected in the laboratory and its lithology was recorded using a standard pro forma prior to processing, following the procedures of Kenward et al (1980; 1986), for recovery of plant and invertebrate macrofossils. The flot (of approximately 15ml) resulting from processing was examined for invertebrate macrofossils (aliquots of the flot were examined under a binocular microscope in a Petri dish and a working log recorded from each dish). The preservation of the material ranged from excellent to fragmentary with only a few eroded fragments.

### RESULTS

The insect remains recovered from the sample indicated foul and wet conditions within the ditch. Although the foul component may have been purely of plant origin it is also possible that this was from dung (as there were a number of *Aphodius* spp present and the staphylinid component was not rich). However, there was no indication as to what type of animal the dung may have derived from. There were no indications for running water nor remains that would be interpreted as directly indicating a human presence.

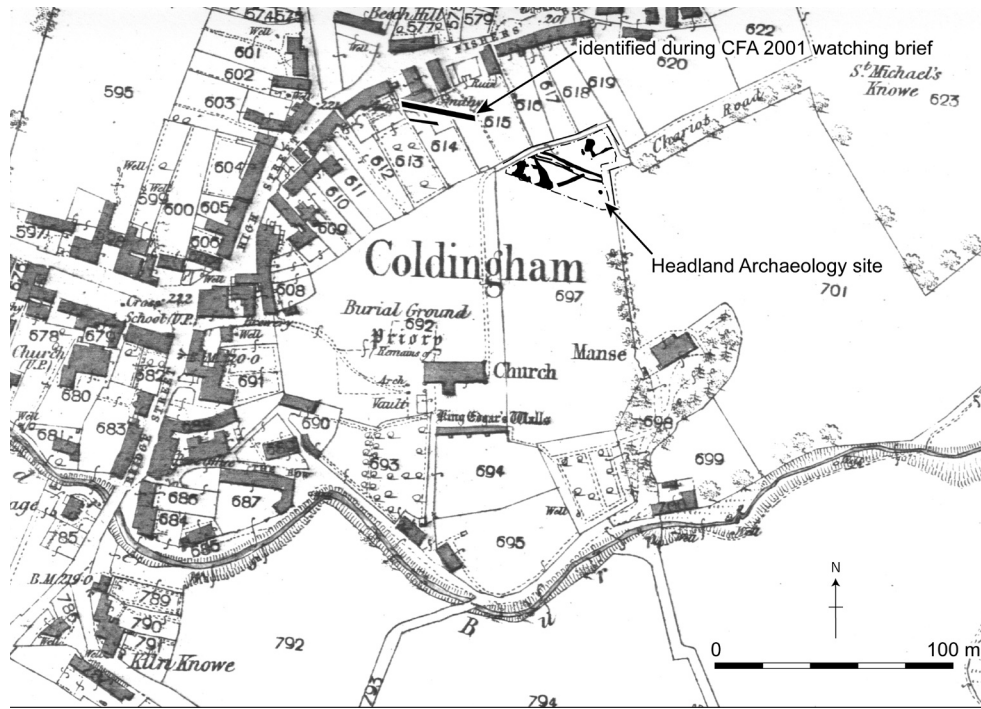
## DISCUSSION

### ANGLIAN FOUNDATION

The radiocarbon determination from the in situ wood lining of Ditch 008 (AD 620–780) provided strong evidence that a boundary ditch was first dug at Coldingham when it formed part of the Anglian kingdom of Northumbria. Within the excavated area the boundary was cut a further two times on a similar line, although neither was as well-defined or closely datable. There was a single sherd of later medieval pottery in the secondary fill of one, but this seems most likely to indicate that it remained a gully long after it had fallen out of use. When the results of this excavation and an earlier watching brief to the north-west (Mudie 2001) were compared it was apparent that two undated features recorded during the watching brief are almost certainly continuations of this boundary (illus 10).

The ditches contained ironworking waste and animal bone. Several remnant midden spreads survived to the west of the ditches and contained more animal bone, mainly derived from food waste rather than butchery. However, some on-site food processing was indicated by the presence of ‘waste bones’ and it would seem that the economy of the site included livestock rearing and ironworking. The size of the animals represented and the butchery marks evident on the bones both confirm that the ditches and deposits are likely to be pre-medieval in origin. A comb recovered from the midden deposits was thought likely to be roughly contemporary with the radiocarbon date of seventh or eighth century.

The excavated area did not contain characteristic features to aid in identifying the nature of the site during the first phase. The preserved insect remains from the most substantial ditch did not directly indicate a human presence, and it seems unlikely to have been immediately adjacent to domestic structures. The insect remains did suggest that animal dung may have accumulated in the ditch,



ILLUS 10 Excavated features in context

and this could reflect the coralling of livestock nearby.

The results of the excavation suggested the site was broadly contemporary with Bede's *Urbs Coludi*. Strong complementary evidence comes from the place-name 'Coldingham', which Nicolaisen (1976, 20–1) has suggested implies an Anglian settlement of the seventh century, more specifically between AD 625 and 675. Of key importance in understanding the nature of the site at this time is its relationship with the fortification on Kirk Hill and Æbbe's foundation. Alcock et al (1986, 274) interpreted Bede's latin term *Urbs Coludi*, and other early author's use of the Old English *burh*, as indicating that the monastery was sited within a fort. They concluded that Kirk Hill was the probable location, with a bank forming the vallum. The bank had replaced a burnt palisade, and a series of three radiocarbon dates from wood charcoal thought to have been associated with this produced a range covering the second half of

the first millenium AD (P Ashmore, pers comm). Despite the ambiguities presented by this dating, the entymological evidence suggested that a fort was contemporary with Æbbe's foundation. This must be synonymous with Kirk Hill rather than low-lying Coldingham, which is overlooked on two sides.

In accepting this, we are led to the conclusion that we are dealing with contemporary sites. Superficially the two have much in common with the ecclesiastical centre at Whithorn (Dumfries and Galloway) and a coastal fortification nearby on the Isle of Whithorn (Hill 1997, 5). As Hill has pointed out, the monastery at Whithorn was constructed in a low-lying location, not readily visible from the coast, a short distance from a sheltered landing point at the Isle of Whithorn (ibid, 13). Sandy Coldingham Bay, a short walk from the priory (illus 1), would have been accessible to small boats capable of being beached. The promontory fort on the Isle

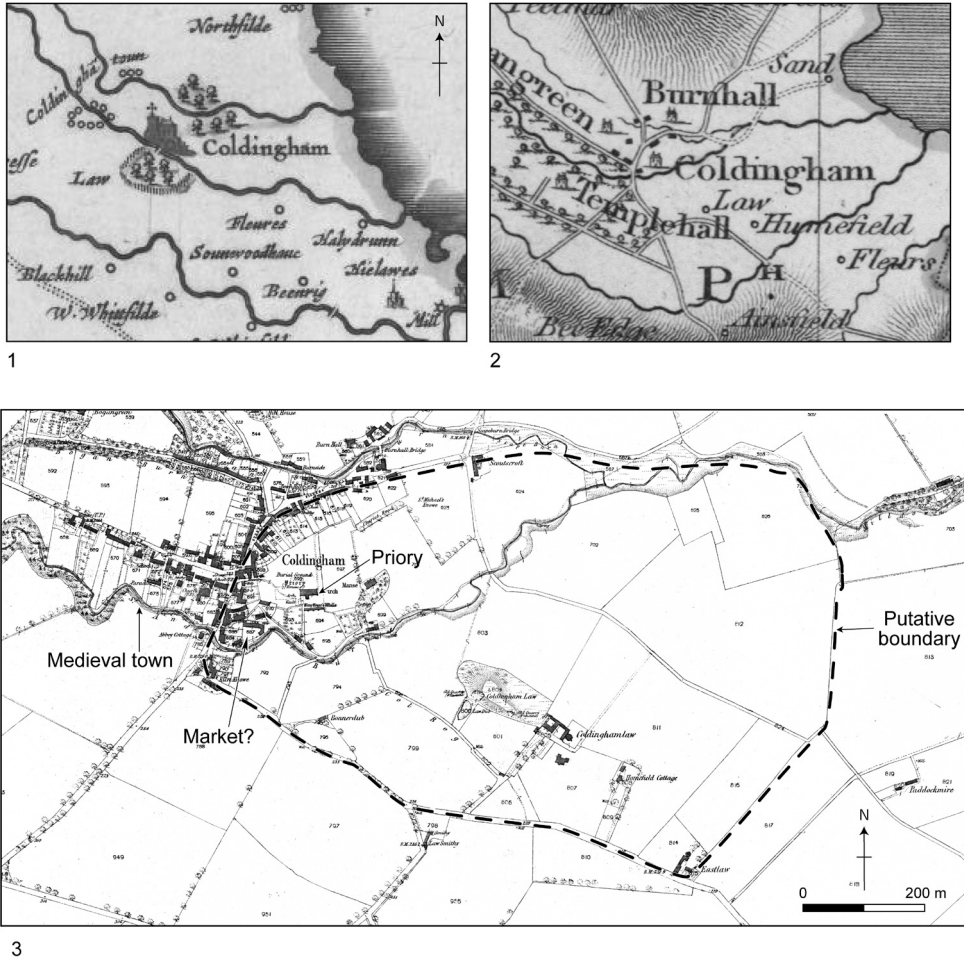
of Whithorn has not been conclusively dated; however, an Early Christian find has been attributed to it (RCAHMS NX43NE 8). The two Whithorn sites were commonly confused and evidence of close links survived into the medieval period (ibid, 5). Hill also suggested that the early ecclesiastical site of Kirkmadrine also conformed to this type, with an obscure religious site twinned with a coastal landing place (Hill 1997, 11). This model seems to contrast with Northumbrian foundations found further south, such as at Tynemouth, Hartlepool and Whitby, which occupy coastal headland sites (Cramp 1976).

Although the excavations failed to encounter any finds or features with a distinctly religious character, they did supply indirect evidence to suggest Coldingham is the more likely site of Æbbe's foundation, rather than Kirk Hill. A large feature bounded the Phase 2 burials, with industrial activity located on the other side. This boundary suggested that the graveyard was not part of one large cemetery stretching to the field containing St Michael's Knowe, where Christian and cist burials have been found in the past (see Background). Similarly, given the low density of graves in the Phase 3 graveyard, it seems unlikely that this stretched to the field. A 1344 reference quoted by Wood (1904, 129) concerning mowing for hay in the Garden of St Michael, which was part of the priory lands, confirms that the medieval monks did not use the field as a graveyard. Overall there seems to be enough evidence to suggest that an Early Christian cemetery may be focused on St Michael's Knowe. The excavated remains of several individuals have been recovered from this area; however, poor preservation meant they were not likely to have been suitable for radiocarbon dating, and they were re-buried (J Dent, pers comm). The fragments of Anglian sculpture found in or immediately around the village and the ironworking waste recovered during the excavations are both consistent with the interpretation that Coldingham was an early ecclesiastical site.

Cuthbert's documented visits to the monastery, which included nocturnal wanderings to the sea 'above whose shores the monastery was built' (Colgrave 1940, 191), do little to support either Kirk Hill or Coldingham as the location. The geographical information contained in this and other early descriptions appears to associate the monastery with a fort (*HE* IV.19; Colgrave 1927, 79; Colgrave 1940). Again it can be suggested that this does not exclude Coldingham as the site of the foundation. Bede and other early writers may not have distinguished between what could have been complementary elements within the centre of a Northumbrian estate. Bede's term *Urbs* may have implicitly suggested something larger and more complex than a fortification alone. Recent work by the author in Dunbar has suggested that this *Urbs Regis* may not solely consist of the excavated fort (Dennison et al, forthcoming). A reference in the 12th-century *Liber Eliensis* provides some support to the proposal that the fort and monastery were geographically distinct (H Powell, pers comm). It contains an account of a miracle in a place named *Coldeburci*, Æbbe is claimed to have fled to this location, a prominent hill-top, to avoid pursuers, and it is made clear that this hill-top was not the site of the monastery (ibid).

The association of Kirk Hill with the early foundation may have begun with the construction of an oratory there by 'simple' Henry following a holy visitation in the 12th century (Bartlett 2003, 29–31). It was only after several subsequent miracles that the monks became involved and rebuilt the structure, and it is apparently the remains of this chapel that survive on the site today.

The dating of the early pottery from the site, likely to have been imported from England, is problematic, although dates in the tenth to 11th century and the tenth to mid-12th century are suggested (Franklin, above). Although probably residual in context these large unabraded fragments are unlikely to have moved far following deposition. They are important as they



ILLUS 11 Old maps of Coldingham: (1) Blaeu 1654; (2) Thomson 1821; (3) Ordnance Survey 1858

suggest a degree of continuity at Coldingham, including contact with northern England, in an historically obscure period. Several Durham priory documents refer to Coldingham in the period between Bede's conflagration and the donation by King Edgar (see Background) but these were all written later, from the 12th century on. For this reason, and because they would have strengthened Durham's claim to the shire, they have been regarded as suspect. The dating of the pottery is probably too weak to reinforce the suggestion that some form of settlement continued at Coldingham. However,

the dating of stone sculpture fragments from around the town falls between the eighth and tenth centuries and the accumulated evidence suggests that we should not assume the site was abandoned because no contemporary references survive.

It is clearly apparent that at some point the Anglian boundary became redundant, as the later priory does not match its alignment. It has not been recognized before that the layout of the town does not reflect that of the priory either, and perhaps retains elements of the earlier foundation. The earliest map



(illus 11.1; Blaeu 1654), although lacking in detail, portrays three components forming Coldingham. These are the priory, the town to the west and a semi-circular enclosure to the south accompanied by the label 'Law'. This presumably refers to Coldingham Law, which is the name of both the distinctive hill to the south of town and the farmstead immediately south of that (illus 1). This boundary seems to have been respected by the road leading from Coldingham to Eyemouth (illus 11.2; Thomson 1821). On the first Ordnance Survey depiction (illus 11.3; Ordnance Survey 1858), the semi-circular boundary seems to have been respected elsewhere by the field boundaries and road lines shown in illus 11. To the north of the stream, the line continues in the form of High Street and Fisher's Brae, perhaps continuing as the road leading to Coldingham Bay. This putative boundary exhibits a different axis to that of the priory, and it may have originated as an earlier boundary. The area covered is roughly 50ha and presumably most of the enclosed fields would have been used for agriculture. The priory buildings lie within this putative boundary to the north of the St Andrew's burn. Taking the stream, and the rounded routes of High Street and Fisher's Brae as its limits, an inner precinct covering roughly 10ha can be proposed.

#### MEDIEVAL PRIORY

All the Phase 2 burials could post-date the founding of King Edgar's church in 1098 but the single date of AD 900–1190 leaves ample room for doubt. They seem to have occupied a graveyard that was intensively used, even though the exposed area was located at the edge. Analysis of the skeletal material suggested that the represented population was not well-nourished, with anaemia a particular problem, and was smaller than average. There was no indication that the excavated burials were within coffins, and the double interment certainly could not have been. Cists and stone coffins were discovered in earlier excavations to the

immediate east of the parish church and it seems likely that these interments occupied not only an outlying, but also a lower status part of the graveyard. For the poor in medieval society burial costs would be kept to a minimum, resulting in paupers' graves. Frugality may also explain the double interment of two male individuals, although there may have been a more sentimental explanation.

The large industrial features were last used in the later medieval period and seem likely to have functioned as part of the documented priory. As such they display a notable variation in alignment from the extant priory buildings (illus 10). They do mirror the orientation of the rounded line of High Street and Fisher's Brae, which as discussed above may have had an earlier genesis before being used as the medieval precinct boundary. As it retained water and could be accessed by a step, the large pit seems most likely to have been designed with a soaking function in mind. Although strong evidence of tanning was not found in the faunal remains, it seems likely that processing bone for glue or tallow was being undertaken in the vicinity. It seems sensible that noxious animal product-processing would be concentrated in one location and the most likely use of the pit remains as part of the tanning process. Two spindle whorls broken during manufacture were found in the backfill of these features and it seems likely that these were being made nearby (Franklin, above).

The later burials seem to have occupied a less intensively used graveyard, reflecting the priory's decline during the later medieval period. Again they would appear to be in an outlying area, and the high proportion of individuals with disabilities and frequent indicators of nutritional stress suggest that it retained a lower status.

With regard to the town, the earliest depictions (illus 11; Blaeu 1654) show the greater part of it to the west of the priory, not the north. This would suggest that the older part of Coldingham village consists of the plots stretching back from modern School Road, shown as Crossgate

on the first edition Ordnance Survey (illus 11.3). Although by the time of the latter survey only two recognizably medieval plots survived to the north of the road, the plots to the south were still relatively well preserved. The surviving plots to the north appear to have limited the length of those running off High Street, corroborating that they were primary. Although not specific as to location, a passage from the *Statistical Account* of 1791–9 suggests that some degree of desertion was apparent at that time:

It appears from old writings, and by parts of the foundations of old buildings, that several of the crofts about the town, now arable, had been anciently the sites of houses and gardens (*Stat Acct* 1791–9, 47).

Contraction of the town may have been a symptom of the troubled later history of the priory. Repopulation and development along Fisher's Brae and High Street would have followed dissolution of the priory, and the plots directly north of the excavated area are likely to occupy part of the former precinct.

There is a sub-triangular area between the priory and the town, which has not been divided into recognizably medieval plots and may be an area of relatively recent in-fill development. Although speculative, it can be suggested that this would have been a likely site for the town's market, located outside the priory gates (illus 11.3).

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#### ABBREVIATIONS

HE *Historia Ecclesiastica Gentis Anglorum* (*The Ecclesiastical History of the English People*), vol IV, see McClure & Collins 1999.

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