

Settlement and Monasticism at Ripon, North Yorkshire, From the 7th to 11th Centuries A.D.

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Archaeological investigations of a number of small sites, combined with information provided by antiquarian writers, indicate the existence of a number of churches and/or cemeteries in the vicinity of Ripon Cathedral. In two cases these demonstrably originate in the 8th century or earlier, and in the other, less well documented instances an early origin seems likely. It is suggested that these sites are early ecclesiastical nuclei associated with the known 7th-century monastery at Ripon, and a tentative reconstruction of the original monastic enclosure is proposed on the basis of archaeological, antiquarian and cartographic evidence.

In spite of its comparatively well-documented early history, the market town of Ripon, North Yorkshire, has seen little archaeological research. However, since 1955 a series of small, previously unpublished excavations to the N. and E. of the church of St Peter and St Wilfrid (Ripon Cathedral) have produced evidence for pre-Conquest settlement. The results of these investigations are reported here. They comprise the excavation of a cemetery on Ailcy Hill, c. 200 m E. of the Minster, which recovered a substantial assemblage of iron chest or coffin fittings, and excavations on two other sites to the N. of the cathedral, which produced fragments of pre-Conquest stone sculpture and antler combs (some with comb cases), and a garnet and amber inlaid cloisonné gold roundel of 7th-century date. This evidence is considered in the light of available antiquarian and historical sources and the wider associations of the material, and synthesized to suggest the disposition and character of early, probably monastic, settlement in Ripon. All the stratigraphic analyses presented here are by Mark Whyman, with broader interpretations and supporting statements representing a collaborative effort by both authors. It is intended that the archives and the bulk of the finds from these

excavations will be deposited with the Harrogate Museums and Art Gallery Service, in the Royal Pump Room Museum, Harrogate, although selected items may be retained by the Dean and Chapter of Ripon Cathedral for display.

Ripon lies on the western flank of the Vale of York, *c.* 33 kms NW. of York itself. The town is situated on the eastern edge of the outcrop of Lower Magnesian limestone which runs N.–S. between the Vale and the Pennines. Glaciation and subsequent meltwater action have been instrumental in determining the drift geology and landforms of the area. Ripon's medieval market place, which remains the core of the modern town, is sited on a low escarpment *c.* 45 m above sea level; the medieval church of St Peter and St Wilfrid stands on an eastward-projecting spur of this ridge, and is visible from a distance of several kilometres to the SE. To the S. the land falls away steeply to the R. Skell, which meanders eastwards to its confluence with the R. Ure some 1.25 kms distant (Fig. 1). To the E. and N. the ground descends more gradually to the banks of the Ure itself, whilst to the W. it rises towards the higher Pennine moorland.

The vicinity of Ripon is rich in surviving archaeological features, especially ceremonial and funerary monuments of the Neolithic and Bronze Age. Little detailed research in the locality has been published, however, and the archaeological fieldwork which has been carried out has been on a limited scale.¹ The concentration of monumental features, notably henges and round barrows, establishes the area as one of importance in the prehistoric settlement pattern of the region. The possibility that this visible legacy influenced the choice of Ripon as a centre of religious and secular power at a later date merits serious consideration. However, it may simply have been the fertility of this well-drained belt of land, between the wet Vale of York and the exposed Pennine moorlands, which determined its significance to both prehistoric and early medieval populations.²

HISTORICAL BACKGROUND

Antiquarian and archaeological interest in Ripon itself has largely been prompted by its associations with the powerful 7th-century churchman St Wilfrid. The *Vita sancti Wilfrithi* by Stephen the priest, sometimes but perhaps wrongly equated with Aedde,³ records that Wilfrid was given *coenobium Inhrypis cum terra xxx mansionum* ('the monastery at Ripon together with 30 hides of land').⁴ Bede's *Vita Sancti Cuthberti* and *Ecclesiastical History*⁵ between them amplify this account, with the information that King Alhfrith of Deira had originally granted the site to Abbot Eata of Melrose, but that his community preferred to abandon the site rather than renounce their Irish-derived customs of worship. Thus Alhfrith was able to grant the site of their monastery to other monks to dwell in (*locus monasterii . . . aliis ad incolendum monachis datus*).⁶ The grant is described in the *Ecclesiastical History* as *monasterium xl familiarum in loco qui dicitur Inhrypum* ('a monastery of 40 hides in the place called *Inhrypum*'). Wilfrid then constructed 'a church built of dressed stones, supported with columns and complete with side aisles' a few years later.⁷ The construction of the stone crypt within Ripon Minster so closely resembles that at Hexham, stated by Stephen as having been built by Wilfrid, that the Ripon

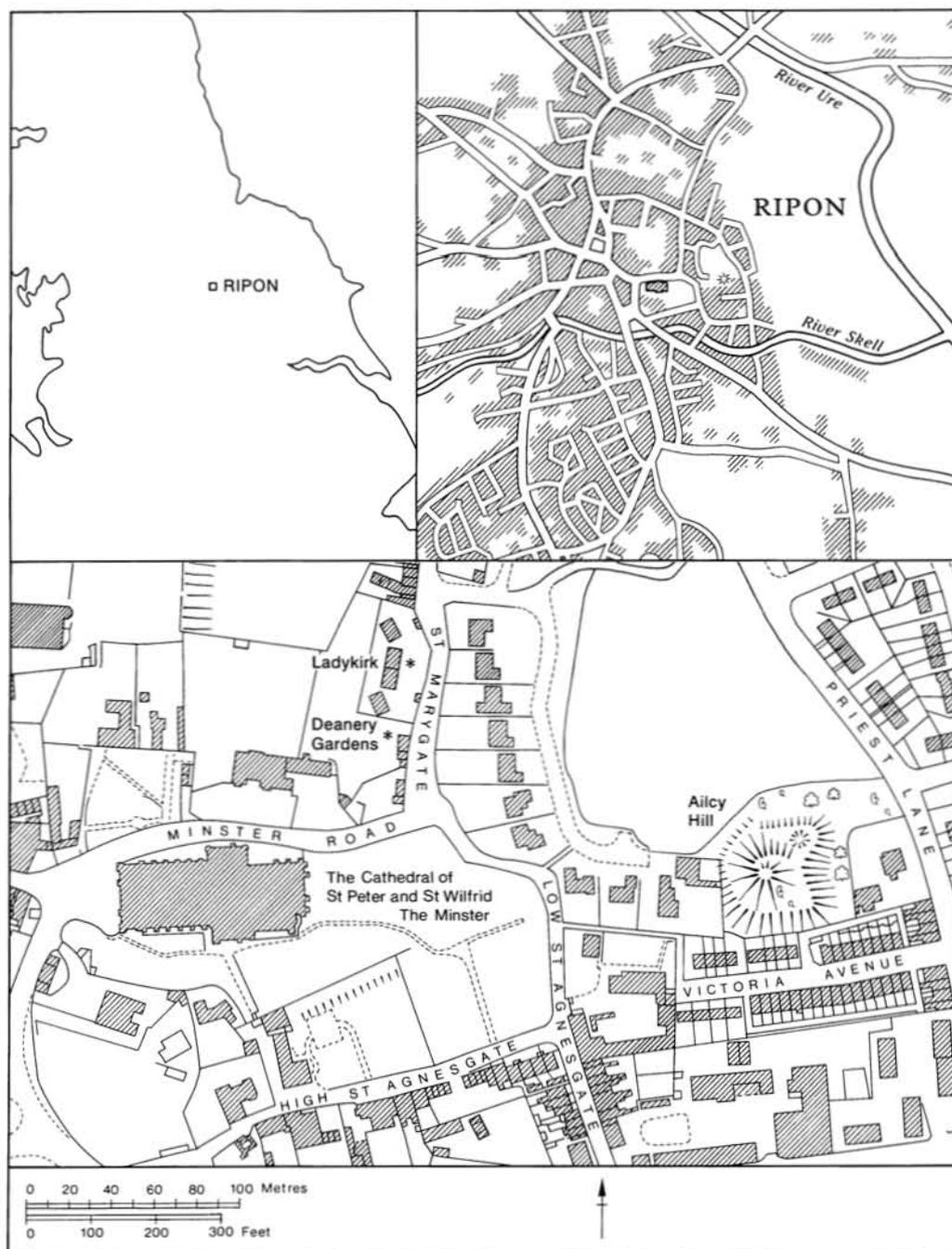


FIG. 1

Ripon, North Yorkshire; location of sites discussed in the text

example is itself accepted as a survival of Wilfrid's church.⁸ Nineteenth- and early 20th-century antiquarian research, and more recent architectural and archaeological investigations, have for the most part attempted the identification of structures and features known or thought to have been associated with this early monastic presence.⁹

The dating of these episodes is uncertain. Traditionally, the donation to Eata has been placed shortly before 660, the re-allocation to Wilfrid *c.* 660, and the building of Wilfrid's church *c.* 671–78. These dates reflect the relative positioning of events by Bede and Stephen, with the 'Synod of Whitby' in 664 providing a fixed point. It could be, however, that it was the decision taken at Whitby which forced Eata's withdrawal and left the site for Wilfrid, and that Wilfrid began building his monastic buildings, including the church, before 671–78.

The keen interest of 19th-century antiquarians (notably the local wine merchant J. R. Walbran¹⁰) in Ripon's origins and early history has not been translated into a concerted programme of archaeological research in the modern era. In 1955 A. Paget-Baggs, on behalf of the Ministry of Works, excavated on a site NE. of the former Old Deanery Hotel and uncovered the foundations of a two-celled church and associated cemetery. In 1974, on the other side of St Marygate, what appears to be more of this same cemetery was revealed in an excavation by P. Mayes on behalf of the Department of the Environment (DoE). At the same time, Mayes recorded a sequence of late medieval structures on Low St Agnesgate. 1977 saw further DoE investigation, directed by D. Greenhaugh, this time in the Deanery Gardens, immediately S. of Paget-Baggs's site. The archives from these unpublished excavations were made available to York Archaeological Trust in 1992. The present authors carried out the excavation of the Ailcy Hill cemetery in 1986 and 1987 (Fig. 1).

AILCY HILL

Ailcy Hill is an isolated, tree-covered mound standing *c.* 200 m E. of Ripon Cathedral (Fig. 1), relatively inconspicuous when viewed from the W. (i.e. from the cathedral and the town), but highly visible from the east, especially near the confluence of the rivers Ure and Skell. As it survives today, the hill rises *c.* 11 m above the surrounding land surface, with a maximum diameter at its base of *c.* 60 m. Although these measurements probably reflect its original height and extent fairly accurately, its western, southern and eastern flanks have been largely destroyed by 18th-century quarrying. If any stretches of the lower slopes on these sides survived this, they were subsequently truncated by the levelling of the surrounding area for the construction of housing in the course of this century. Only on the northern flank of the hill is it likely that the original ground surface survives to any great extent, and there too there are indications of quarrying, albeit less extensive (Fig. 2). Its current, asymmetrical, profile is almost certainly not, therefore, a true reflection of its original form.

The earliest surviving record of the hill is from 1228, when it was called *Elueshov, -howe*.¹¹

Dr Gillian Fellows Jensen writes:

The early forms *Elueshov*, *-howe* certainly point to Scandinavian *haugr* (Middle English *howe*) as the generic. OE *hoh* in its dative form *hohe* would fit the forms but it is generally agreed that the OE word is never used of a tumulus and presumably not of a natural feature that might be mistaken for a tumulus. The specific would seem to be OE *elf* 'elf' in the genitive singular. It was not unusual for grave-mounds to be associated with the supernatural beings such as elves but it is rather odd to have a genitive singular here and not a plural *elfe*, *elve*, or a stem-form *elf*. There seems no reason to associate the name with King Aelle if the early forms are to be relied upon. The rather odd later development of the name, of course, would fit derivation either from *Elues-* or from *Aelles-* (with secondary genitive *-es*).

There is no further mention of the hill until Leland, who visited Ripon in the 1530s or early 1540s, referring to it as a 'great hille of yerth', and noting its name as *Ilshow Hille*.¹² To Camden in 1586 it was *Helsey Hill*; the second edition of his *Britannia*, of 1637, called it *Hilshow*, and in 1650 the adjacent area was *Halsey Ings*.¹³ After the discovery of coins in 1695 (see below) there is an increase both in the number and variety of the name forms. To Thoresby, in 1715, it was *Alice-Hill* or *Alla's hil*;¹⁴ otherwise it was *Alea Hill* or *Hillshaw*¹⁵ (1731), *Hillshaw-Hill*¹⁶ (1733), *Ella's* or *Alla's Hill*, 'commonly called *Ellshaw* or *Ailcey Hill*'¹⁷ (1806). W. Farrer remarked that, during several years of residence, he had never heard it called anything but *Ails's Hill*;¹⁸ a century later, Allcroft reported that it was pronounced *Ailsa*.¹⁹ On the Ordnance Survey Map of 1984 it is Ailey Hill, but present local custom prefers the form 'Ailcy' or 'Ailcey'.

The discoveries made at Ailcy Hill in 1695 are known through the records of the Leeds antiquary Ralph Thoresby FRS. His diary reference of 17 June 1695 refers to 'some old Saxon coins lately found at Ripon',²⁰ whilst the catalogue of his own collection, published in 1713 and re-issued in 1715, specifies that the coins were found at a '... Place ... now called *Alice-Hill*, no doubt from *Alla's Hill* ...'.²¹ Linney, in referring to the 1695 find at Ailcy Hill, records that 'in later times many coins have been found here; but through carelessness, or ignorance of their value, all are dispersed or lost'.²² By 1862 Walbran is a little more precise in referring to their discovery as 'within memory'.²³ Gravel digging had ceased by 1826, but several further 9th-century Northumbrian *styca*s were discovered at Ailcy Hill in 1846.²⁴

The hoard obtained by Thoresby has been considered, insofar as the records allow, by Pirie, who categorizes it as a considerable number of coins, the earliest being of Eanred and the latest of Osberht. It was probably buried in the mid 860s,²⁵ at the time when Osberht was contesting the Northumbrian throne with Aelle, and the Vikings invaded Northumbria. Although no coins of Aelle were found,²⁶ it is probable that the coins of Aelle's rival Osberht, coupled with the human bones, account for the increase in place-name variants such as 'Alla's Hill' which emphasize the Aelle connection.

It was Thoresby who, in 1715, first referred to human bones at Ailcy Hill, found 1 ft. (c. 0.30 m) below the surface.²⁷ In 1804 Pennant recorded that he had seen at Ripon 'two vast artificial mounts; the work either of the *Saxons* or the *Danes*. In one we daily found numbers of human bones, it being the common burial place

at the time of the plague, which raged here in 1666'.²⁸ Gough, writing in 1806, gave more details, reporting 'human skeletons laid in regular order, greatly decayed, discernible from the top to the bottom of the hill'.²⁹ Whether the skeletons had been seen in 1695 when the coins were discovered, or subsequently, is not clear. In 1806, Farrer noted that the hill was 'from base to apex composed wholly of sand, gravel and human bones',³⁰ whilst in 1822 Thomas Langdale drew attention to a vast number of human bones found by digging, with whole skeletons discovered within the last 30 years.³¹

Bishop Lucius Smith, who as Archdeacon of Ripon and Canon Residentiary of Ripon Cathedral presumably had opportunities to gain evidence at first hand, reported in 1914 that 'Ailcy Hill . . . is filled with human bones and skulls, and some of the skulls found there have been cut or broken by the blow of a sharp weapon'.³² Excavation during summer evenings in 1936, directed by B. (Benny) W. J. Kent FSA, involved the digging of three or four trenches, each *c.* 2 m long, across the hill, at distances said to be *c.* 3 m, 6 m and 9 m from its base. They apparently revealed many skeletons and dispersed bones at a depth of 6–8 in. (0.15–0.20 m) but no associated artefacts.³³

Leland was the first to propose a specific function for Ailcy Hill, identifying it as a 'great fortress of the Britons time'.³⁴ Camden, by contrast, reported a tradition that it was 'cast up, as they say, by the Danes', an explanation accepted without elaboration by both Thoresby and Salmon.³⁵ Gent considered the material making up the hill to be debris from a 10th-century or later ecclesiastical building campaign.³⁶ One of Farrer's suggestions combined previous views by suggesting that the mound was 'rubbish from a monastery here ruined in contests of Saxons and Danes'; the alternative, which he preferred, was that it was 'a repository for the dead . . . who fell in some dreadful conflict near this place'.³⁷

These explanations reflect strands of 17th- and 18th-century antiquarian opinion, which held that Romans and Danes (but not Britons) were the builders of earthen forts, and that tumuli covered mass burials of ancient, anonymous battles.³⁸ Procter and Vickers, writing in 1839, were more precise in their attribution: 'Hinguar . . . met Ella at Ripon . . . Ailcy Hill . . . is supposed to cover the remains of those who fell on that day of carnage'.³⁹ By contrast, Allcroft, in 1908, asserted that there was no reasonable doubt that the hill was a Norman castle-mound, explaining the bones away as the result of clearance from the Minster or its chancel house.⁴⁰ Four years later, however, Armitage did not see fit to include it in her list of mottes.⁴¹

EXCAVATIONS, 1986/87

The conflicting opinions, and the attendant uncertainty about the date and character of the site on Ailcy Hill — indeed, whether the hill itself was a natural feature — were clearly at odds with its status as a Scheduled Ancient Monument. As a result, an archaeological excavation was organized in 1986, initiated and supported by the Ripon 1100 Festival Committee.⁴² Permission to excavate having been obtained from the Dean and Chapter of Ripon Cathedral and English Heritage (H.B.M.C.(E.)), a three-week season, directed and supervised by the

authors of this paper, with a staff of up to 15 volunteers, was conducted in late July and August. Work was resumed on a comparable scale at a similar time the following year, in this case funded by English Heritage.

The 1986 excavations comprised six areas, between *c.* 8 m² and *c.* 28 m², located on parts of the hill which were thought likely to have been favoured for early settlement or burial. This effectively meant level areas of ground on the summit, flanks and at the base (Fig. 2, Areas 1–6). For the 1987 season evidence of the nature of strata on the site was available, and awareness of the potential complexity of its topography had increased. As a result, in addition to the completion of the excavation of Area 1, longer, narrower areas, for the most part laid out radially to the summit, were excavated (Fig. 2, Areas 7–16). In both seasons, the locations of trenches had to take account of, and avoid, areas occupied by trees and particularly dense undergrowth.

The 1987 strategy was implemented primarily in order to establish the surviving limits of the cemetery identified in 1986. Such an excavation format was inappropriate for the actual 'lifting' of skeletons, owing to their usually partial exposure within the limits of the excavated areas. For this reason, of the trenches in which *in situ* inhumations were encountered, only in Areas 1 and 2 were deposits excavated to the natural strata of the hill itself. In all other areas where burials were found, the skeletons were cleaned, photographed and recorded, but not lifted from the ground.

Over most of the site the mantle of deposits covering the horizontally bedded strata of the hill was extremely shallow, rarely exceeding *c.* 0.40 m. The only exceptions to this rule were found in areas where quarrying debris — i.e. disturbed and re-deposited natural strata — had been used to infill quarry pits, and on the northern half of the summit, where a sequence of cemetery soil, quarrying debris, and a make-up layer associated with a 19th-century landscaping of Ailcy Hill resulted in a maximum deposit depth of *c.* 1.20 m (Fig. 4). Elsewhere on the hill, the usual sequence comprised (in order of excavation);

— a shallow topsoil (<50 mm)

— a layer of small cobbles and pebbles, varying in depth from <50 mm to *c.* 200 mm according to its location on the hill

— an orange-brown sand/silt layer, up to *c.* 300 mm in depth, containing intact, partially intact and re-deposited human skeletal remains.

Where relevant, the precise characteristics of the sequences on different parts of the hill are reported in the individual discussions of the excavated areas.

The last of the three layers described above — what may be termed the 'burial deposit' — comprised the original soil mantle of Ailcy Hill, into which numerous graves had been cut. Within this soil individual grave cuts could not be distinguished because of the repeated re-working of the deposit, the result of continuous burial over an extended period and, subsequently, extensive root action, probably exacerbated by the activities of burrowing animals. This layer was only completely excavated on the summit, in Areas 1 and 2.

In the absence of identifiable grave cuts, excavation proceeded through the removal of shallow (*c.* 100 mm) spits of soil. When intact or partially intact

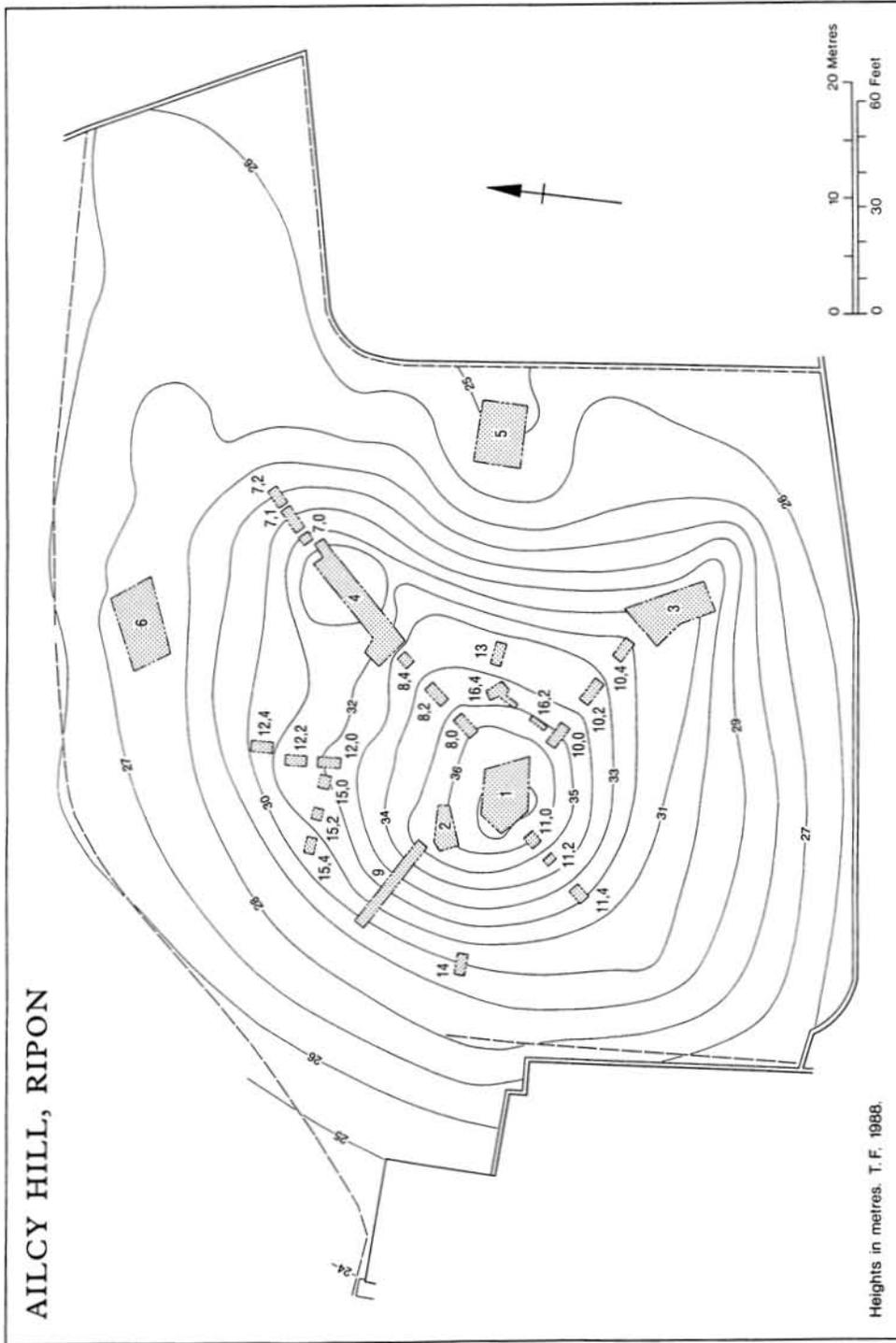


FIG. 2
Ailcy Hill, Ripon; excavated areas

inhumations were encountered, the skeletons were cleaned and recorded by vertical rectified photography. The same procedure was employed for substantial groups of disarticulated human bone. The term 'charnel' has been employed for this material throughout the report, referring very largely to disturbed bone deliberately replaced within the grave which disturbed it. It is clear, however, that a proportion of the material included under this heading will have been unconsciously incorporated in grave backfills, rather than deliberately reburied. Smaller, more restricted groups of this type were recorded by means of a sketch plan drawn on the back of the context recording card, which also included the position of two points whose location had been established by direct measurement.

No facilities were available on site for the processing, printing and plotting of photographs. This, and the lack of detectable grave cuts, meant that accurate plans of the positions of inhumations were not available to the excavators as work proceeded. Consequently, it was not possible to establish the sequence of burials through the recognition of superposition and intercutting until after the excavation had been completed. The significance of the groups of charnel, many of which showed clear signs of deliberate deposition, was thus not fully appreciated whilst the excavation was in progress.

In order to determine the layout and sequence of the burials in Areas 1 and 2, the rectified photographs of articulated skeletons and charnel groups, and the sketched plans of the remainder of the charnel groups, were plotted on base plans at a common scale (1:10). This allowed the stratigraphic and spatial positions of the burials relative to one another to be established. It also indicated that many of the charnel groups were spatially associated with intact or partially intact inhumations. In one case — that of skeleton 1073 and charnel group 1076 — this had been apparent on site (Fig. 16,d), but the master plan indicated that such associations were widespread. Furthermore, the frequent survival of intact long bones and complete skull orbits amongst the disarticulated material confirmed that it had been reburied immediately after its disturbance, and had not remained for long above the ground, where it would have been prone to breakage, deterioration and dispersal.

The positions of the charnel groups, and the arrangement of the bones within them, resulted from their deposition in the bases, along the sides, or in the backfills of those graves which had disturbed earlier burials. In many cases it was apparent that the charnel groups had been arranged within graves with some deliberation. Extending this principle to the instances where charnel groups were *not* associated with intact inhumations, it can be argued that such groups indicated the positions of graves from which the original *in situ* skeleton had been removed by subsequent truncation. This interpretation gains support from the fact that all instances of 'unassociated' charnel groups occur in the southern half of Area 1, where subsequent extreme attrition caused by various agencies is independently attested.⁴³

Pursuing this method of stratigraphic analysis, contexts comprising skeletal material were assigned to *context groups*, which in most cases represented the contents of single graves. These groups were subsequently ordered into *phases*, grouping individual graves on the basis of alignment, spatial arrangement or other

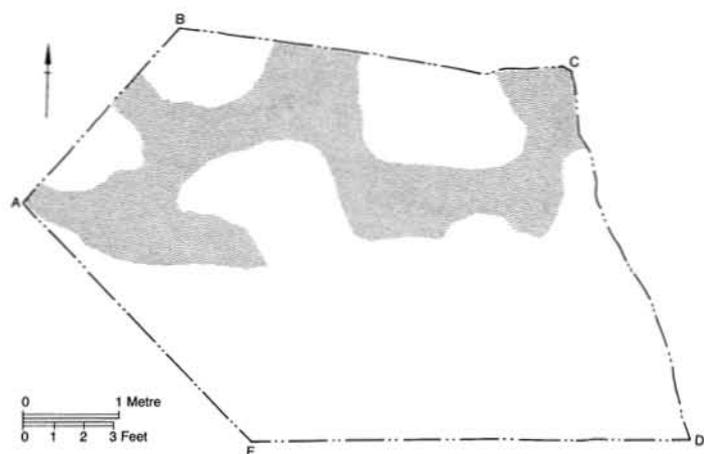


FIG. 3
Ailcy Hill, Ripon, Area 1;
extent of quarrying debris
1012

common characteristics, and separating phases through (where possible) stratigraphic superposition and the recognizable intercutting of graves. In a number of cases inhumations owe their phase attribution to intrinsic or contextual characteristics, such as alignment, body position or spatial relationship with other burials, rather than to directly observable stratigraphic succession. Nevertheless, it has been possible to establish a coherent and internally consistent interpretation of the changing pattern and organization of burial on the site.

THE CEMETERY PHASES

Areas 1 and 2

Areas 1 and 2 are described and discussed together, as they were located within 3 m of one another on the summit of Ailcy Hill, and it has therefore been possible to correlate the sequences of burial from the two excavated areas with some confidence. Area 1, located on what is now the summit, was laid out as an irregular polygon with a total area of *c.* 20 m². Area 2, situated nearby on the NW. slope, began as a rectangle measuring 3.2 × 1.0 m, but was subsequently extended on its southern and western sides to form an irregular polygon measuring *c.* 6.5 m² (Fig. 5).

In both areas the burial horizon (1010, 1042; 2003) was sealed beneath a deposit of cobbles and pebbles (1012; 2002) up to *c.* 0.40 m thick. In places, the weight of this material had caused it to become embedded in the surface of the underlying burial deposit, sometimes resulting in the incorporation of skeletal material and iron coffin fittings within the cobble layer. Whilst 2002 completely covered Area 2, in Area 1 context 1012 and the underlying burial deposit 1042 had been punctured by a series of intrusive features (1014, 1016, 1017; see Fig. 3). 1014 was a substantial recent disturbance; 1016 and 1017 marked voids created by the 'grubbing out' of the root systems of small trees or bushes. Furthermore, the surface of most of the southern half of Area 1 had been severely truncated, either as a result of similar activity or attrition resulting from quarrying operations, or a combination of both (Fig. 3).

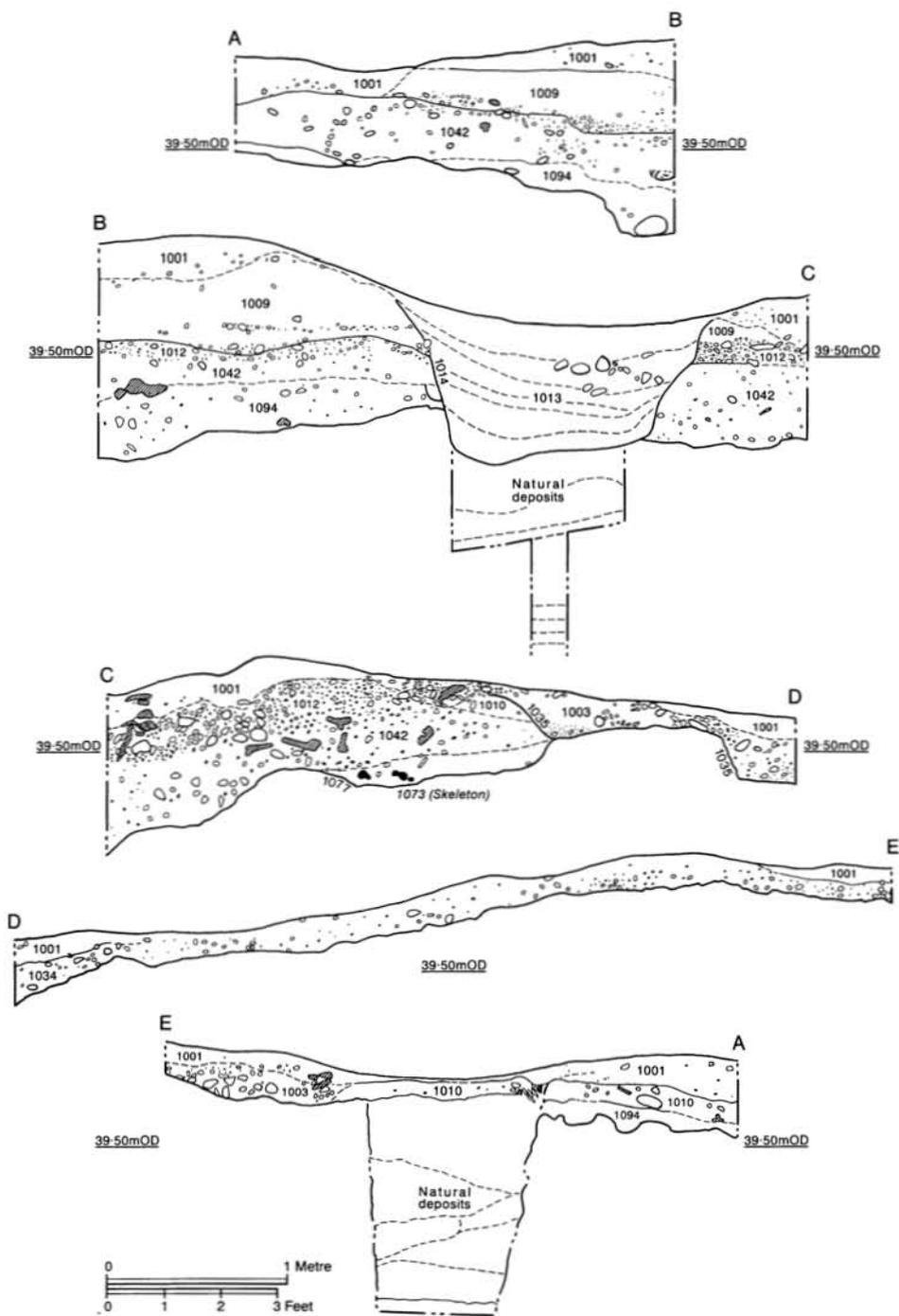


FIG. 4

Ailcy Hill, Ripon, Area 1; sections

Only the burial phases from Areas 1 and 2 are detailed and discussed in this section, the post-burial phases being considered in more detail later in the report. In many cases the attribution of burials to a particular phase depends on their stratigraphic and spatial relationship with graves of Phase 2, as this is the most coherent in terms of alignment, spacing and burial characteristics.

Geology and pre-burial deposits (Phase 0)

The geology of Ailcy Hill was specifically investigated at two points within Area 1, as well as being exposed in section in the course of excavation in Areas 4 and 9 (Fig. 2). In Area 1, excavation into natural deposits to a depth of over 1 m (Fig. 4, B–C, E–A) revealed strata ranging from ultra-fine sand, through coarse sands and gravels to pebbles and large cobbles. These layers ranged in thickness from less than 40 mm to over 0.50 m. They clearly represent water-lain deposits, the variations in coarseness reflecting different rates of flow of meltwater on the edge of a glacier. The deposits are very similar to the natural strata encountered in the course of excavations in Wilfrid's crypt in Ripon Cathedral.⁴⁴

A layer of reddish orange-brown sandy silt (1086, 1094), restricted to the western half of Area 1, represents the pre-burial soil mantle of the hill. Above this, and elsewhere in Area 1, the layer had been heavily disturbed and reworked by the digging of graves. Where this had occurred, the incorporation into the deposit of large quantities of human bone and frequent pebbles and cobbles (upcast from graves which cut into the gravels of the hill itself), caused it to be identified as a separate context, the 'burial deposit' (1010, 1042; Fig. 4). The occasional small fragments of bone recovered from 1086 and 1094 were probably introduced into that layer through the actions of tree roots and animal burrows.

Phases 1a/b

The earliest *in situ* burials on Ailcy Hill comprise seven partially intact skeletons in Area 1, six aligned W–E. (i.e. with heads to west) and one E–W. These inhumations — 1015, 1026, 1037, 1064, 1080, 1082 and 1095 — have been attributed to Phase 1b because of the stratigraphic relationships between 1080 and the Phase 2 burial 1074, and between 1082 and the Phase 2 burial 1065. The common alignment of 1015, 1026 and 1064 with 1080, that of 1095 and 1037 with 1082, and the spacing of all of these burials relative to one another, indicate that they belong to the same phase (Fig. 6). In Area 2, burials 2010, 2012 and 2023 have been included in this phase because of their alignment, and, in the case of 2010, as a result of its clearly having been disturbed by the Phase 2 burial 2006 (Figs. 5, 7). The varying alignments of 1037/1082/1095 and 1015/1026/1064/1080 reflect a slight change in the direction of slope on the N. side of the summit of the hill. The mean orientation of these graves is 271.8°, with a standard deviation of 7.79°.

Additionally, however, there are discernible traces of an earlier episode of burial, although no *in situ* inhumations can be identified. Firstly, the graves of 1015, 1026, 1095 and 2010 contained disarticulated human bone, representing the remains of at least four, two, four and four individuals respectively, indicating that these graves had disturbed earlier burials.

In Area 1 there are also indications of two possibly N–S. aligned graves. The first is represented by 1084, a shallow, square-ended feature cut *c.* 150 mm into the natural gravels on the summit of the hill, and overlain by the Phase 1b burial 1026. It is suggested that 1084 originally extended further northwards, having been truncated by the Phase 2 grave 1073 (Figs. 6, 8) and the modern intrusive feature 1014. The western end of 1014, a shallower element which forms a 'ledge' at a level higher than the base of the feature (Fig. 4), may indicate the position of the southern end of such a grave. As 1014 was a very recent intrusion (perhaps dug within the last 20 years), it is possible that the lower legs

were 'chased' and removed by the excavator of the pit, in search of accompanying grave-goods. Some of the bones from charnel group 1055, attributed to the grave of Phase 2 burial 1073, but extending beyond the northern edge of that feature (Fig. 8), may in fact have been contained within the grave which 1084 is thought to represent.

Two metres W. of 1084 are traces of a second possible N-S. aligned burial. At the western end of the grave of the Phase 2 burial 1043 (Fig. 8), a pair of tibiae and a fragment of a left fibula were found, laid side-by-side on a roughly N-S. alignment (1067; Fig. 6). The left tibia may be in its original position, the right tibia — presumably originally located *c.* 300–400 mm to the E. — having been laid alongside the *in situ* lower left leg when this skeleton was disturbed by the digging of the grave for 1043. The burial deposit immediately to the S. of 1067 was subsequently removed by the intrusive feature 1016, a void left by the deliberate removal of the root system of a bush or small tree. The upper legs and torso of the proposed N-S. aligned burial would have been dragged out of the ground by such an operation. Some support for this theory is provided by the existence of a 'bulge', *c.* 0.60 m wide, projecting southwards from the southern edge of 1017. The dimensions and southerly extent of this 'bulge' correspond well with those of 1084. It may perhaps be identified as the head end of the grave, from which the skull and upper body were removed by the uprooting operation represented by 1016.

The indications of a primary N-S. burial phase are equivocal, but sufficient to merit attention, and have therefore been included on Fig. 6, with the *in situ* Phase 1b burials. The original disposition of the burials of Phase 1a is unknown, but some possible parallels are suggested in the subsequent discussion.

It is clear that the *in situ* Phase 1 burials represent only a fraction of the cemetery's original population in this phase, many skeletons having been removed completely as a result of subsequent grave-digging or more recent disturbance (Fig. 6). However, many skeletons originally buried in Phase 1 are represented as disarticulated bone in the graves of Phase 2 burials. This material has been used in conjunction with the *in situ* burials in considering the demographic characteristics of the Phase 1 cemetery.

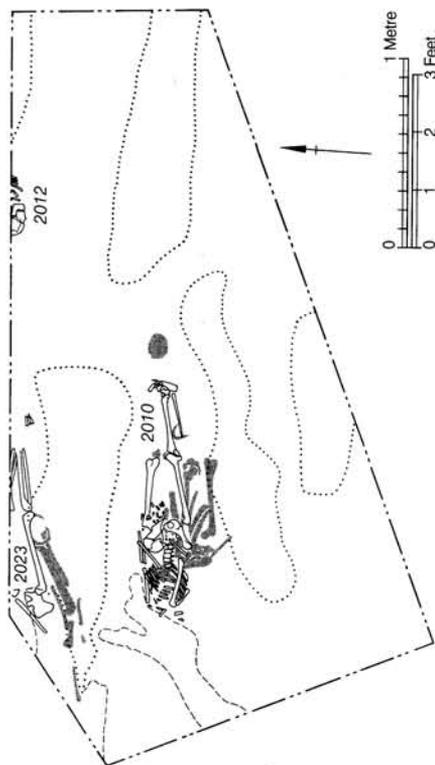
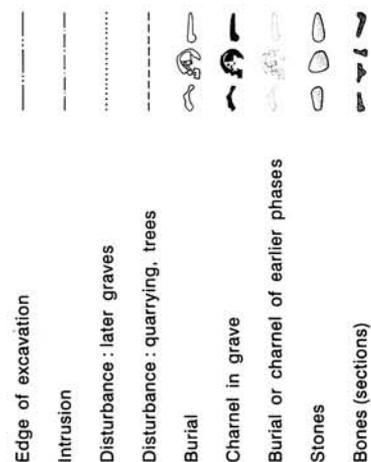


FIG. 5
Ailcy Hill, Ripon, Area 2; Phase 1 burials

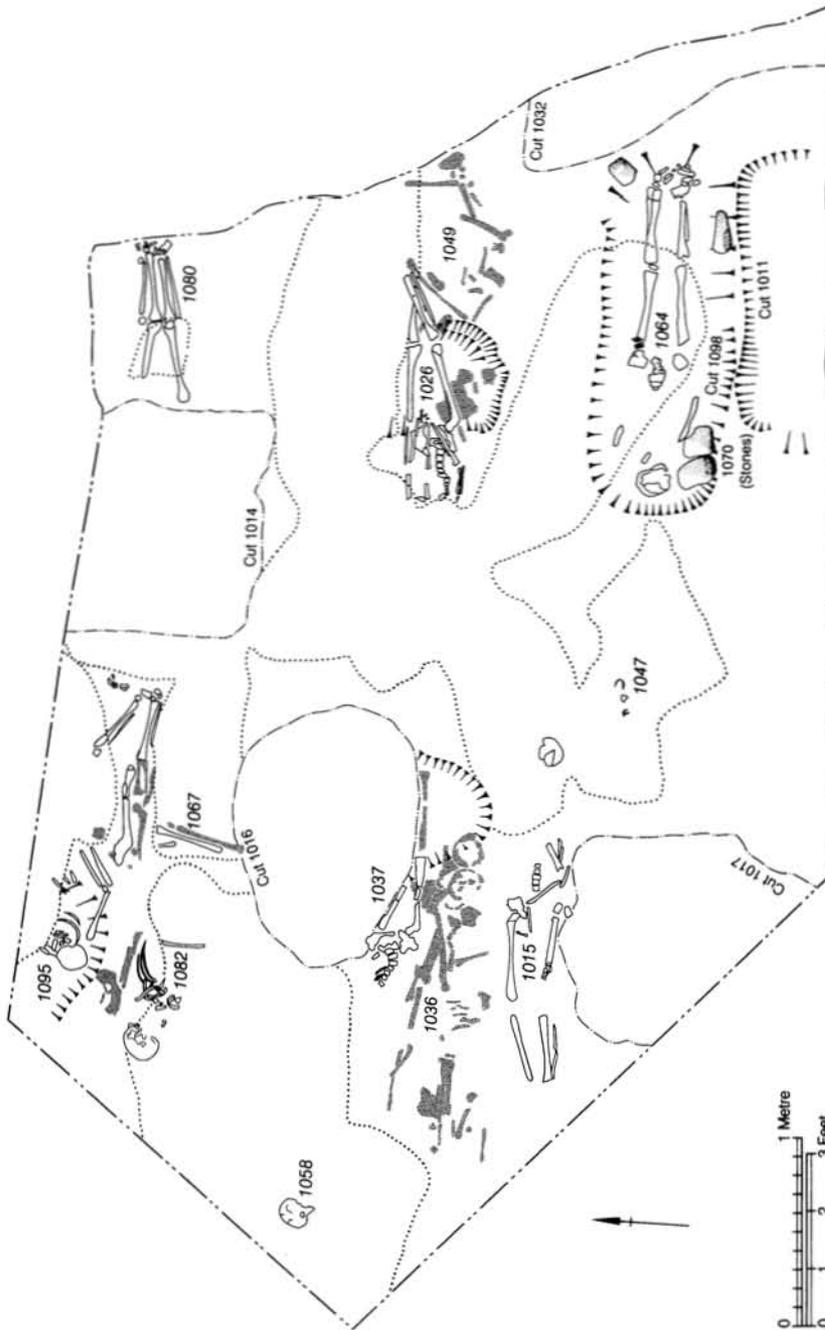


FIG. 6
Ailey Hill, Ripon, Area 1; Phase 1 burials

Phase 2

The bulk of the human skeletal material from Areas 1 and 2, a total of eleven articulated skeletons plus charnel groups, has been attributed to Phase 2. Twenty-nine discrete groups of disarticulated bone, apparently incorporated within the graves of these burials, belong to this phase in terms of their place within the depositional sequence, but Phase 2 is their *secondary* context. Information about the demographic or pathological characteristics of the population represented by this disarticulated bone relates to its *primary* context, the Phase 1 cemetery.

The mean orientation of the Phase 2 graves is 280° , with a standard deviation of 1.63° . The allocation of some burials to Phase 2 on the grounds of their orientation is questionable, because of the very partial survival of some of the skeletons, and the fact that some graves are represented only by groups of charnel which reflect the Phase 2 alignment. The attribution to this phase of burials 1043, 1045, 1065, 1073, 2006 and 2008 is, however, unequivocal, on the strength of their alignment, spacing and other characteristics. In terms of the certainty of their association, these may be regarded as the 'core' burials of Phase 2 (Figs. 7, 8). Four characteristics are immediately obvious; consistency of alignment, closeness of spacing, the huge amount of disturbance of earlier graves caused by this new arrangement, and the occurrence (in at least four cases and possibly in as many as nine) of inhumations in iron-fitted wooden chests or coffins. Unlike the Phase 1 graves, the alignments of the Phase 2 burials do not consistently follow the contours of the hill (compare Figs. 6 and 8).

Phases 3a/3b

Seven *in situ* inhumations have been attributed to the third phase of burial. Three of these (1048, 1051 and 2005; Phase 3a) appear to have been inserted into the spaces within the rows of Phase 2 burials. Their alignments vary between 255° and 281° . A further four (1019, 1022, 1023 and 1044; Phase 3b), whose alignments range from 254° to 258° , either overlie or cut Phase 2 burials, or are aligned with graves that do. The divergent axes of the Phase 3a inhumations may reflect the constraints imposed by existing (and presumably marked) graves, the Phase 3a burials having been laid out within the interstices of the Phase 2 cemetery, 'squeezed' into the last available spaces. The orientation of the Phase 3b burials perhaps indicates the subsequent 'fossilization' of one such alignment (Fig. 10); 1051 may in fact have been among the last of the 3a burials, establishing the alignment employed for the graves of Phase 3b.

Discussion of Phase 3a must be qualified by the assertion that the 'phase' need not have uniformly post-dated Phase 2 across the whole site. 2005, for example, may have been buried as 'infill' within the Phase 2 row structure *before*

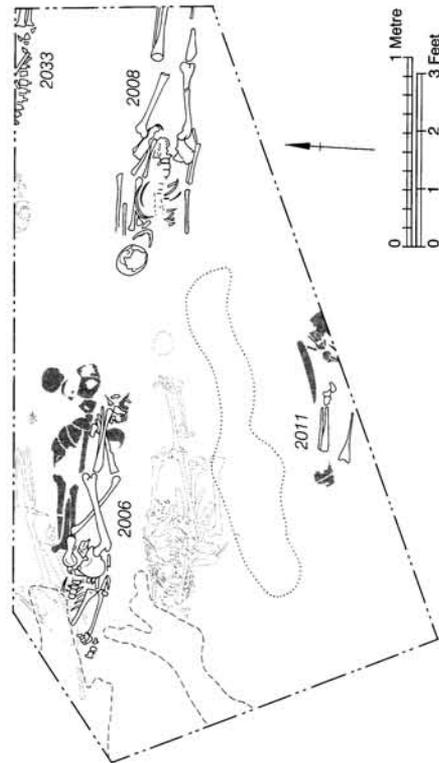


FIG. 7
Ailcy Hill, Ripon, Area 2; Phase 2 burials

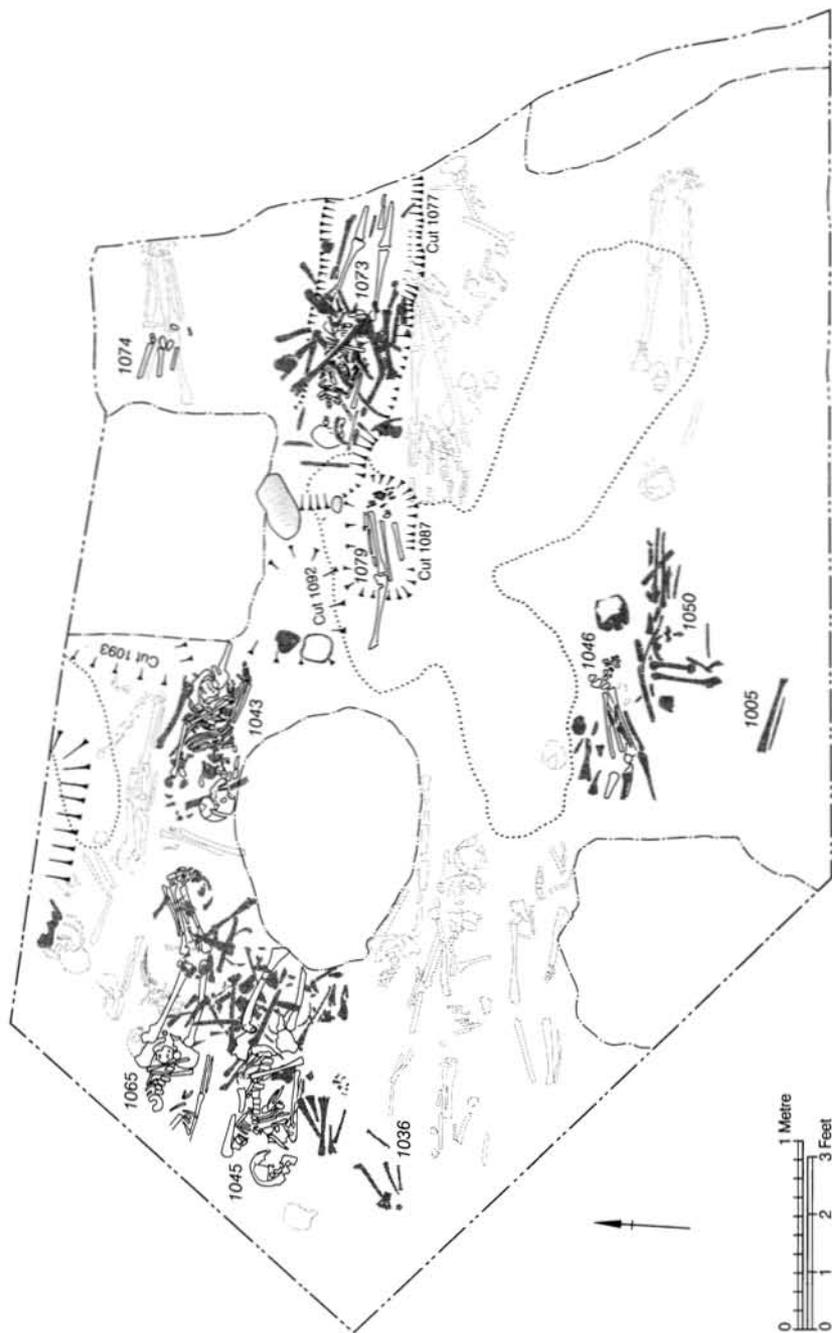


FIG. 8
Ailey Hill, Ripon, Area 1; Phase 2 burials

any of the Phase 3 burials in Area 1 were interred; indeed, whilst that row structure was being extended and added to elsewhere in the cemetery. Of the four burials attributed to Phase 3b, three — 1023, 1022 and 1019 (Fig. 15) — were buried at the same time in the same grave, which clearly cut into and largely removed the underlying Phase 2 skeleton 1079. The fourth burial, *c.* 2.0 m to the N. on the same alignment, was the grave of a juvenile, 1044. The unusual nature of the Phase 3b inhumations — an instance of multiple burial, and other characteristics detailed further below, and their stratigraphic position and alignment relative to Phase 2, suggest a distinct final episode of burial on the site.

Areas 8, 4, 7 and 9

Areas 8, 4 and 7 were three long trenches (1.0 m in width, expanding to 3.20 m at the SW. end of Area 4), laid out end-to-end on a NW–SE. aligned axis, and extending from near the summit of the hill to its base (Fig. 2). Within each trench, ‘segments’ of up to *c.* 2.15 m in length were excavated until *in situ* burials were encountered, the areas between these segments being left untouched (Fig. 11). Area 9, of similar width, extended downslope from the NW. quarter of the summit; this trench was excavated to natural (which for the most part was immediately below the topsoil, at a depth of *c.* 0.20 m) over most of its length (Fig. 2).

Articulated *in situ* inhumations were revealed in Areas 8,0, 8,2 and 8,4 (Fig. 11; Pl. II,B); at the NE. limit of Area 4 (Fig. 11); in Area 7,0 (Fig. 11); and at the SE. limit of Area 9 (Fig. 12). None of these burials were removed from the ground, so no demographic or palaeopathological data relating to them are available, although it is all but certain that 8208 (Fig. 11) and 9005 (Fig. 12) are the burials of juveniles.

Attributing the burials in these Areas to the phases established in Areas 1 and 2 is problematic. The alignments of 8007, 8004, 8208, 8405 and 8406 are (as far as can be established on the basis of the incomplete exposure of all of these skeletons) closest to those of the Phase 1 burials 1064, 1080 and 2010 (Fig. 13). The burial represented by the skull 8005 clearly truncated 8004, and may therefore belong to Phase 2. However, the extrapolation of phasing on the basis of alignment on a steeply sloping hilltop site such as this is of questionable value; burial alignments may well have been ‘deflected’ due to the tendency for interment on an axis perpendicular to the direction of slope. Thus the phasing of these burials must be regarded as tentative, and for more remote inhumations, such as 4010 and 7009 (Fig. 11), it is questionable whether such an approach can be employed at all. The iron lock and hasp (SF567, Figs. 21 and 25) accompanying 7009 may link it to Phase 2 or 3a as defined in Areas 1 and 2. Similarly, the presence of a lock plate SF454 in association with burial 8405 may suggest that it belongs to Phase 2 or later, in contradiction of the attribution made on the basis of

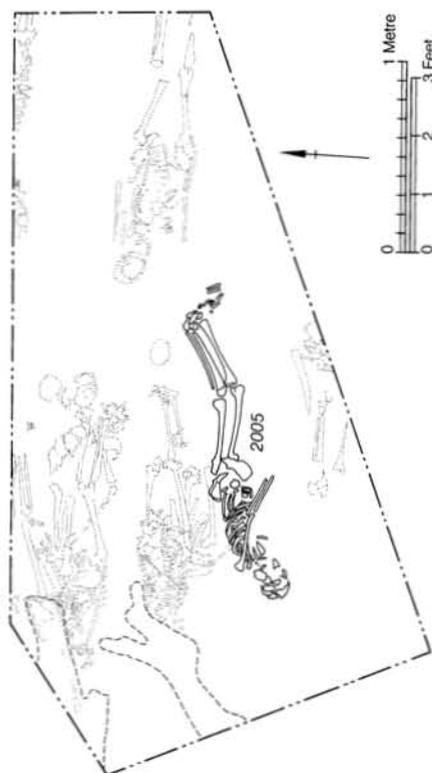


FIG. 9
Ailley Hill, Ripon, Area 2; Phase 3 burials

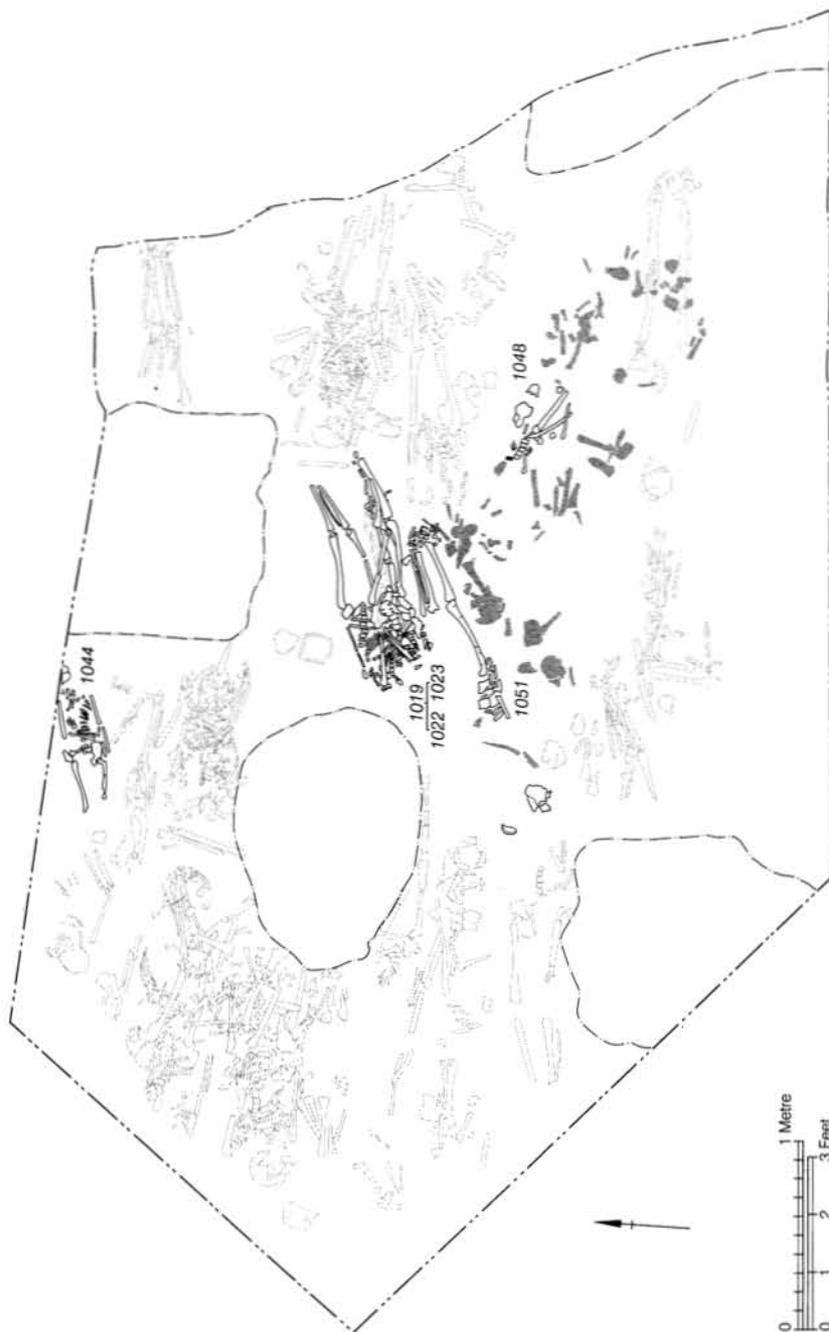


FIG. 10
Ailcy Hill, Ripon, Area 1; Phase 3 burials

its alignment. It is clear that the extrapolation of phases across the site on the basis of alignment is fraught with uncertainty when the excavated area is so limited.

As in Areas 1 and 2, a number of the burials identified were accompanied by quantities of charnel (Fig. 11; Pl. II). At the SW. end of Area 4, removal of topsoil revealed an extensive layer of cobbles (4007) similar to 1012. Although not excavated, embedded in the surface of this deposit were considerable numbers of long bones and iron fittings which, when plotted (Fig. 11), clearly indicate the positions of burials. It seems probable that, as in Area 1, the weight of the cobble layer caused it to sink into the underlying deposit and become intermixed with the bones and iron fittings in the cemetery soil.

9005 (Fig. 12), located only *c.* 3.0 m N. of Area 2, seems most likely to belong to Phase 3 on the strength of its alignment (Fig. 13); the reservations expressed above obviously apply.

Areas 12 and 15

Area 12 comprised three excavated segments of a linear trench whose long axis conformed with the direction of slope, on the N. side of the hill. The trench was 1.0 m wide, and each excavated segment *c.* 2.0 m in length. Burials were encountered in Areas 12,0 (12005, probably representing the remains of three *in situ* inhumations) and 12,2 (12205) at depths of between 150 mm and 200 mm below the surface, but were absent from Area 12,4, which was offset to the E. of the other excavated segments (Figs. 12, 13).

Area 15, a linear trench 1.0 m wide aligned obliquely across the contours of the hill, was also excavated in three segments, varying between 1.0 m and 1.30 m in length (Fig. 13). The only burial found in this area was in the easternmost segment, 15,4 (15403; Fig. 12).

A characteristic of the human bone from Areas 12 and 15 was its extremely poor state of preservation in comparison with the material from other trenches on Ailcy Hill. Whether this was the result of localized differences in soil chemistry, or more pervasive root action, or a combination of these and other factors is uncertain. However, in spite of this poor preservation, sufficient traces survived to indicate a density of burial on this quarter of the hill at least equal to that found elsewhere.

Samples of bone were taken from five burials, and submitted to the Radiocarbon Dating Research Unit at the Queen's University of Belfast, where they were measured in 1989 (Table 1).

TABLE 1
RADIOCARBON DATES

<i>Laboratory Identification</i>	<i>Context No.</i>	<i>Radiocarbon Age (BP)</i>	<i>Calibrated Date Range (at 95% confidence)</i>
UB-3149	1044	1143 ± 43	780-990 cal A.D.
UB-3150	1045	1281 ± 35	660-810 cal A.D.
UB-3151	1064	1427 ± 35	560-660 cal A.D.
UB-3152	2005	1267 ± 36	660-860 cal A.D.
UP-3153	2006	1236 ± 35	680-880 cal A.D.

The calibrated date ranges have been calculated using the maximum intercept method of Stuiver and Reimer, and are quoted in the form recommended by Mook, with end points rounded outwards to 10 years. These ranges are presented by phase in Fig. 16. The calibration dataset employed is that published by Stuiver and Pearson.⁴⁵

CATALOGUE OF GRAVES FROM AREAS 1 AND 2

The catalogue describes each burial in Areas 1 and 2, including the characteristics of each individual as evidenced by his/her skeleton, any indications

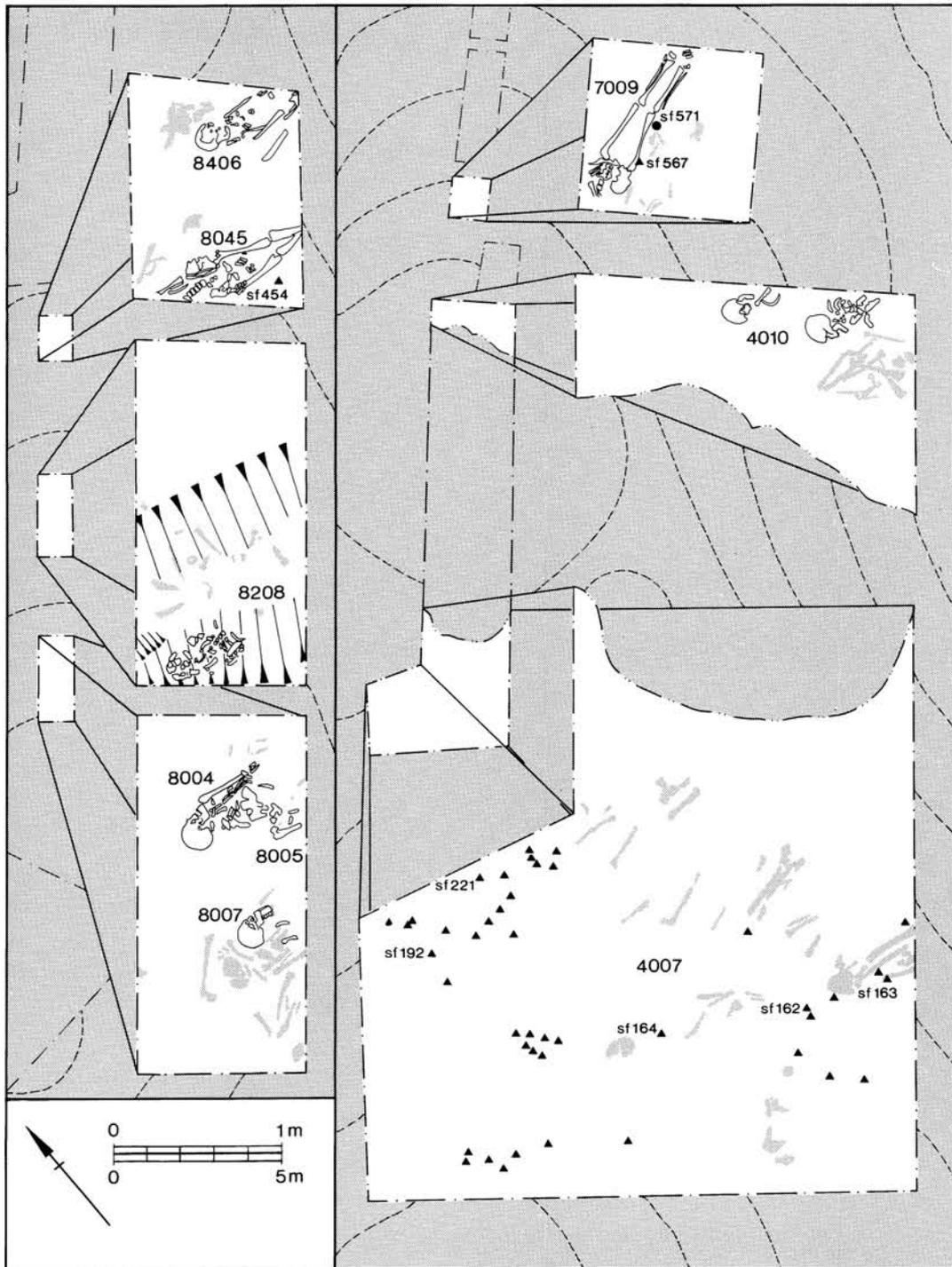


FIG. 11
Ailcy Hill, Ripon; Areas 8, 4 and 7, burials

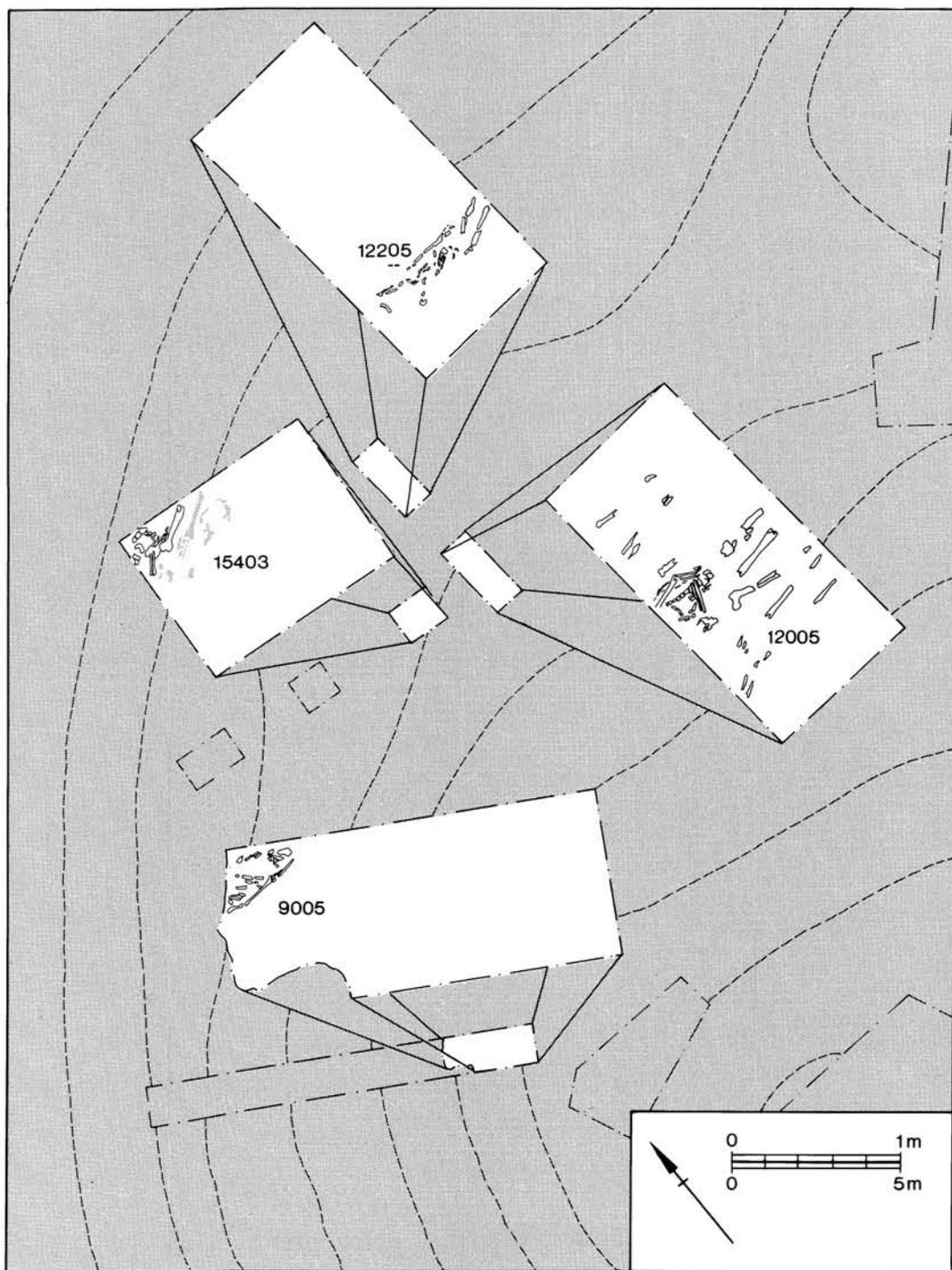


FIG. 12

Ailcy Hill, Ripon, Areas 9, 12 and 15; burials

of burial containers, accompanying artefacts, and the minimum number of individuals represented by disarticulated human bone within each grave. Where possible, information about the stature, age-at-death and sex of the persons represented as charnel has been included, and possible links between elements of charnel groups and associated, earlier, truncated burials are cited.

Phase 1a

1067: charnel group comprising right and left *tibiae* and left fibula, with left tibia perhaps *in situ*; possible survival of N-S. aligned burial?

Phase 1b

1011: E-W. aligned linear cut, extending beyond the S. limit of the excavation, *c.* 1.50 m in length, with a minimum width of *c.* 0.40 m, *c.* 250 mm deep; largely filled with loose dark loam, the base of the feature nevertheless contained much more compacted, orange-brown clayey silt, interpreted as the original backfill of the grave where it had not been removed by quarrying; the length of the cut suggests that this may have been the grave of a juvenile.

1015: extended supine inhumation, E-W. aligned; male, early 20s, stature *c.* 1.75 m (5ft. 9in.); bones poorly preserved and heavily abraded, legs and fragmentary arms, pelvis and spinal column surviving. Charnel from at least three adults and one juvenile was incorporated within the grave backfill; two of the adults were males, with statures (respectively) of *c.* 1.80 m (5ft. 11in.) and *c.* 1.75 m (5ft. 9in.); the third could have been male or female, with a stature of *c.* 1.56 m (5ft. 1½in.) if male, or *c.* 1.52 m (5ft. 0in.) if female; the second male burial died in his early 20s. Indications of ages at death in the early 30s and ?40+ were obtained from skeletal components which could not be specifically related to the other individuals; the juvenile was probably <13 at death.

1026: extended supine inhumation, arms laid across left side of pelvis, W-E. aligned, probably male, post-mid 20s, stature *c.* 1.70m (5ft. 7in.); bones poorly preserved, legs, pelvis and spinal column survive, skull, upper arms, ribs and feet absent. Charnel derived from at least one adult (mid/late 30s) and one juvenile (<13 years) was incorporated in the grave backfill.

1037: extended supine inhumation, W-E. aligned, probable male, early 20s (<24), stature *c.* 1.68 m (5ft. 6in.); bones fair/well preserved, upper legs, pelvis and lower- and middle-vertebrae surviving. Charnel derived from at least one adult was incorporated within the grave backfill.

1047: ?extended supine inhumation, E-W. aligned; (?possible) male, *c.* three months; fragments of skull, a few vertebrae and rib fragments, left scapula and clavicle apparently survive *in situ*.

1064: extended supine inhumation, W-E. aligned; male, 35-40, stature *c.* 1.75 m (5ft. 9in.); bones fair/poorly preserved, legs/feet and fragmentary pelvis, lower vertebrae, upper right arm and skull surviving; frontal bone of skull scarred with osteolytic lesions, possibly indicative of metastatic carcinoma. Tilted stone slabs (1070) lining the S. edge of the grave cut (1098) may represent the remains of a 'cist': layer of compact orange clay (1097) *beneath* the burial may be deliberate lining of the grave, or the result of 'replacement' of a decayed wooden board by clay sediments. Inhumation was accompanied by iron knife and double-tongued buckle (Fig. 17) on left-hand side of body, near waist (Fig. 14); radiocarbon determination of 560-660 cal A.D. (UB-3151, 1427 ± 35 BP); Figs. 16, 17; Pl. III, B.

1080: extended supine inhumation, W-E. aligned; male, post-mid 20s, stature *c.* 1.80 m (5ft. 11in.); bones well preserved, legs/feet surviving.

1082: supine inhumation, W-E. aligned; male, mid-late 30s, stature unknown; skull, mandible, cervical vertebrae, clavicles, rib fragments, parts of left scapula, humerus and ulna surviving.

1095: extended inhumation, laid on left side with head facing N., W-E. aligned, male, post-mid 20s, stature *c.* 1.76 m (5ft. 9in.); bones poorly preserved, left arm, cervical and thoracic vertebrae and left femur absent, ribcage disturbed. Charnel deriving from at least three adults and one juvenile was laid against the S. edge of the grave cut, which was recognized where it cut into the natural surface of the hill to a depth of *c.* 150 mm.

2010: extended supine inhumation, W-E. aligned, upper body laid on left side; probable male, ?14/15-17 years, stature *c.* 1.59 m (5ft. 3in.); survival complete apart from lower left leg and cervical vertebrae, hands and skull fragmented. Charnel derived from at least four adults, three probably male, was incorporated in the grave backfill: of these, one, from which virtually all the major bones (lower legs excepted) could be identified was *c.* 1.76 m (5ft. 9in.) tall, and died in his early/mid 30s: a second died in his early /mid 20s, and a third individual (sex indeterminate) had a *metopic* frontal (skull) bone, which may indicate a familial relationship with an individual represented in the charnel in the grave of the Phase 2 burial 2006.

2012: ?extended inhumation, skull (facing S.), ribs and upper vertebrae intact in the excavated area. Not removed from the ground.

2023: extended supine inhumation, W-E. aligned; male, post-mid 20s, stature *c.* 1.75 m (5ft. 9in.); legs, fragmented pelvis, lumbar vertebrae and right ulna surviving.

Phase 2

1005: small deposit of disarticulated bone, comprising two tibiae.

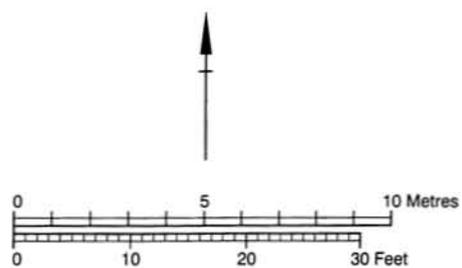
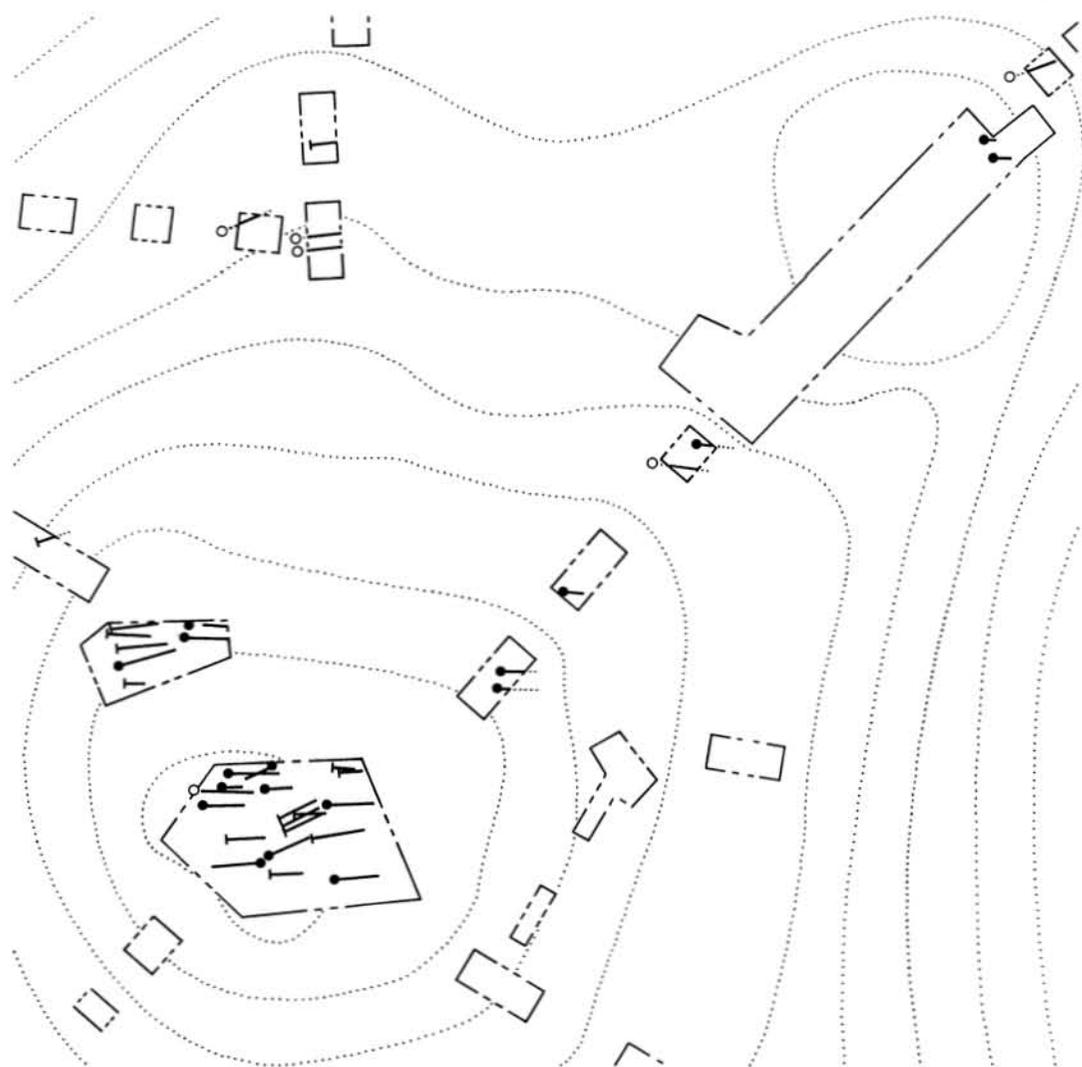
1043: extended supine inhumation, W-E. aligned, male, late 30s/early 40s, stature *c.* 1.69 m (5ft. 6½in.); bones fair/well preserved, skeleton virtually complete from skull to pelvis, legs absent; two unhealed cuts from sharp-edged instrument to frontal and parietal bones; row of eight Fe nails and one corner bracket aligned N-S. *c.* 200mm W. of skull, and Fe lock (SF369; Fig. 14) immediately E. of lower ribcage, indicate burial in wooden chest/coffin, constructed of radial surface oak boards 24 mm+ in thickness. Charnel derived from at least three adults, including a possible female, and one juvenile, was incorporated in grave backfill; Figs. 16, 18; Pl. III, A.

1045: extended supine inhumation, W-E. aligned, male, 35-40, stature *c.* 1.85 m (6ft. 0½in.); bones fair/well preserved, skeleton largely intact except for lower legs; a lock plate (SF267), hinge straps (SFs381, 383), a hasp (SF382), three corner brackets (including SF520) and 24 nails and staples laid over and around the body (Fig. 14) indicate burial in a wooden chest/coffin, constructed of radial and tangential surfaced oak boards 22 mm+ in thickness. Charnel derived from at least five adults and two juveniles was incorporated in the grave backfill (the arrangement of this material suggests that 1045 and 1065, immediately adjacent to the N., may have been buried at the same time in a 'double' grave); radiocarbon determination of 660-810 cal A.D. (UB-3150, 1281 ± 35 BP); Figs. 14, 19, 20.

1046: extended supine inhumation, slightly flexed at the knees, W-E. aligned, male, post-mid 20s, stature *c.* 1.81 m (5ft. 11in.); bones fair/well preserved, only lower legs (including distal ends of femurs) and feet surviving.

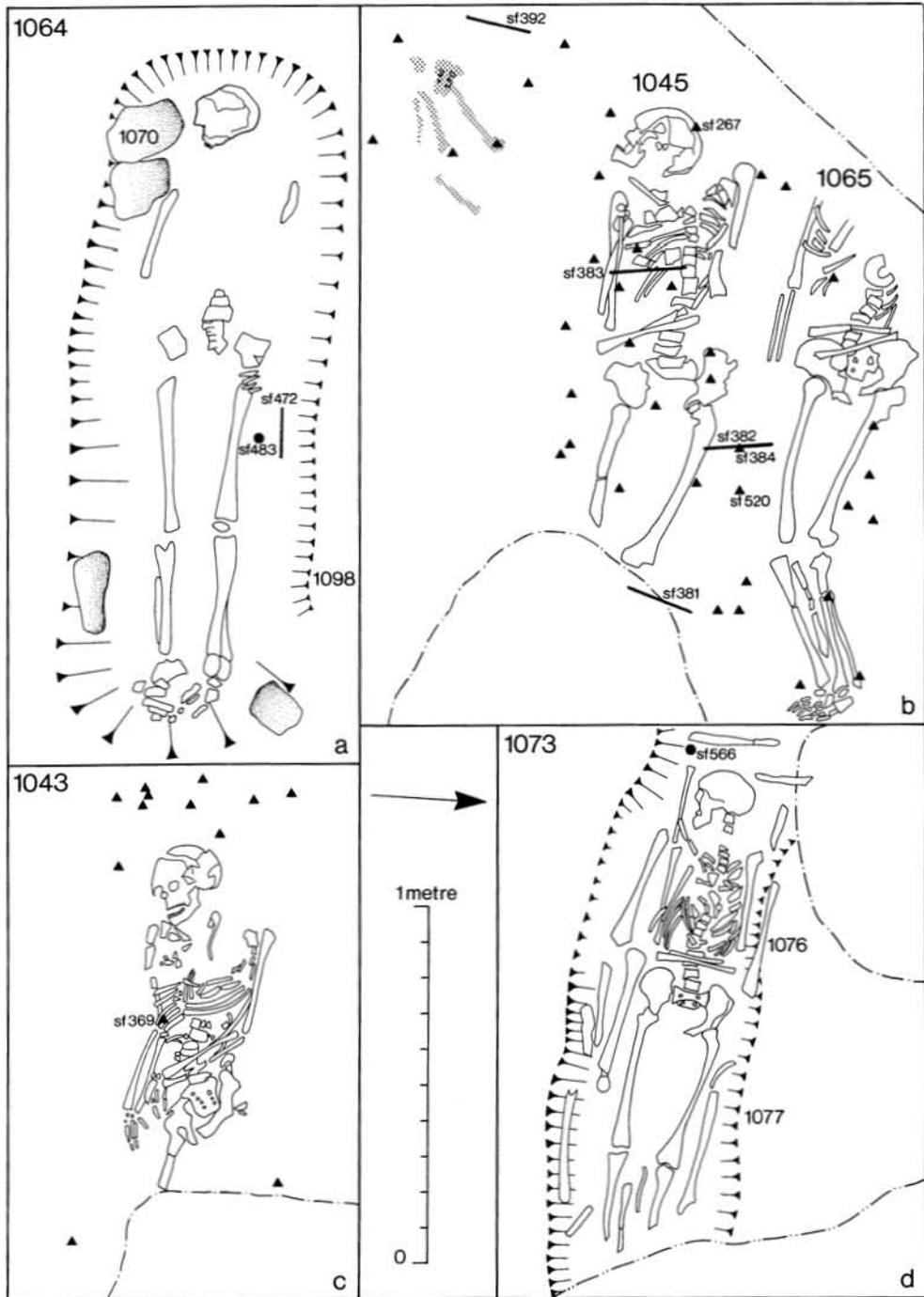
1050: charnel deposit which (with 1006) derives from at least four adults; the variation in bone sizes *may* suggest a combination of males and females; no remains survived of the body whose grave disturbed these burials.

1065: extended supine inhumation, slightly flexed at the knees, lower left arm laid across pelvis; W-E. aligned, male, 19-20, stature *c.* 1.78 m (5ft. 10in.); bones very well preserved, body complete apart from skull, upper vertebrae and scapulae, which lay beyond the limits of the excavated area; an E-W. row of nails immediately to the N. of the skeleton indicates burial in a wooden chest/coffin (a similar row of fittings immediately to the S. may be associated with either 1065 or 1045; Fig. 14), constructed of radial surfaced oak boards



- Burials : skull surviving
- Burials : truncated (bar represents missing skull)
- Burials : inferred (outside excavated areas)

FIG. 13
Ailcy Hill, Ripon; burials



- ▲ iron nails & chest fittings
- other objects
- larger iron objects

FIG. 14

Ailcy Hill, Ripon, Area 1; burials and associated artefacts

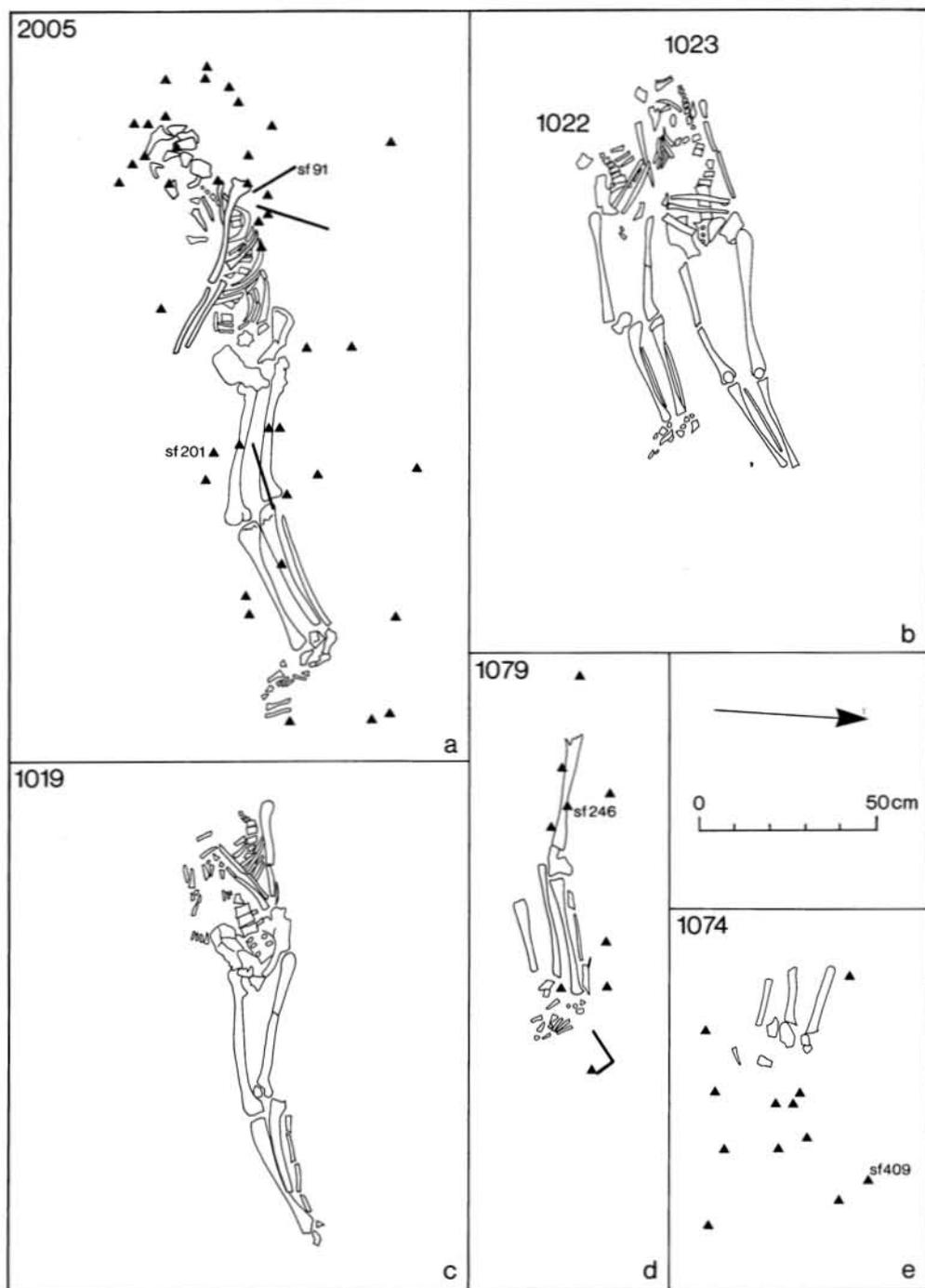
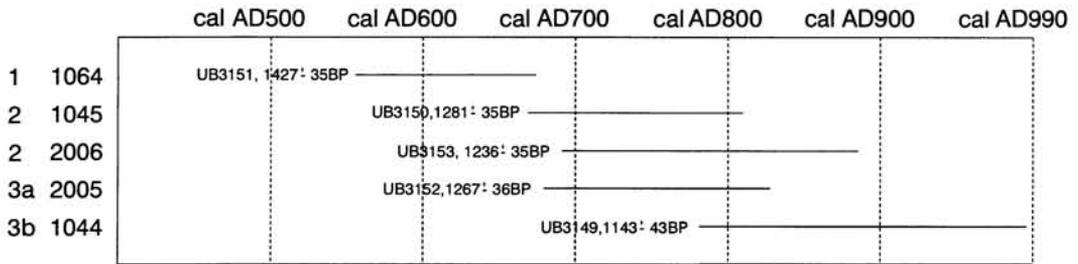


FIG. 15

Aily Hill, Ripon, Areas 1 and 2; burials and associated artefacts



Expressed in calendar years to 2 sigma

FIG. 16

Ailcy Hill, Ripon; radiocarbon determinations

with possible oak dowels. Charnel derived from at least five adults and two juveniles was incorporated in the grave backfill (the arrangement of this material suggests that 1045 and 1065, immediately adjacent to the N., may have been buried at the same time in a 'double grave'); Fig. 14.

1073: extended supine inhumation, head facing S., lower left arm laid across upper abdomen, right arm flexed to right shoulder; W-E. aligned, male, 30-35, stature *c.* 1.70 m (5ft. 7in.); bones very well preserved, entire skeleton surviving, but the lower legs and feet were not recovered as they extended beyond the limit of the excavated area. Charnel derived from at least three adults and two juveniles was incorporated into the grave backfill, and many of the long bones (1076) had been arranged around the sides of the grave cut (1077), 'framing' the burial; a pierced, copper alloy sheet mount (SF566), recovered from near the skull of 1073, may well have been disturbed from an earlier burial, rather than forming part of an object deliberately deposited with 1073; Fig. 14.

1074: ?extended supine inhumation, W-E. aligned, probable male, post-mid 20s; bones fair/well preserved, only lower legs and feet surviving; the shallow feature 1093, *c.* 1.60 m to the W., may be the remainder of the head end of the grave which contained this burial; a cluster of iron nails and fittings around the feet, including a stapled hasp and key (SF409), indicate burial in a wooden chest or coffin.

1079: extended supine inhumation, knees slightly flexed, W-E. aligned, probable male, post-mid 20s, stature *c.* 1.71 m (5ft. 7in.); bones fairly well preserved, left leg/foot and lower right leg and partial foot surviving; possible trauma of left tibia, as fibula is distorted; part of the grave cut (1087) was recognizable as a result of having been cut into the natural surface of the hill to a depth of *c.* 100 mm.

1092: a shallow cut into natural gravel, measuring *c.* 0.60 × 0.50 m with a maximum depth of *c.* 150 mm; roughly oval, with its long axis aligned E-W. and a straight W. edge, the feature is interpreted as the surviving E. end of a grave cut, the only part of the feature to have penetrated the natural deposits; its alignment and position (relative to 1043) have led to its attribution to Phase 2; the backfill (1090) contained substantial fragments from two adult skulls (1081).

1100: E-W. aligned linear cut, N. edge beyond the edge of excavation, identified over a length of *c.* 1.10 m and *c.* 0.10 m in depth. Interpreted as a Phase 2 grave cut, because of its alignment and the fact that it cuts the Phase 1 burial 1095.

2006: extended prone inhumation, legs crossed above knees and at ankles, arms laid parallel, behind (above) spine, forearms in front of (below) left side of pelvis, indications suggestive of the body having been bound when buried; W-E. aligned, male, mid/late 40s, stature *c.* 1.71 m (5ft. 7in.); bones fair/well preserved, most of skeleton surviving *in situ*, apart from some facial bones and parts of the left foot. Charnel derived from at least four adult males, with statures ranging from *c.* 1.69 m (5ft. 6½in.) to *c.* 1.76 m (5ft. 9in.); the ages

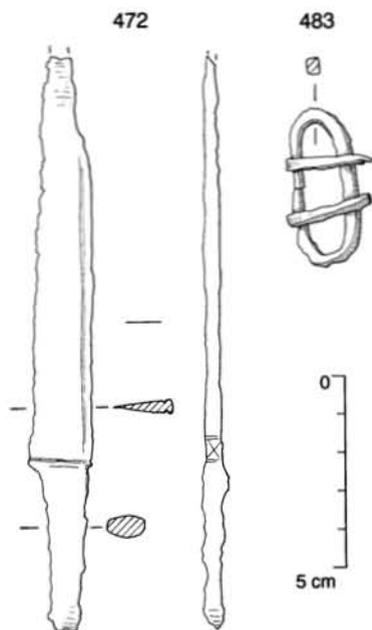


FIG. 17
Ailcy Hill, Ripon; grave group 1064

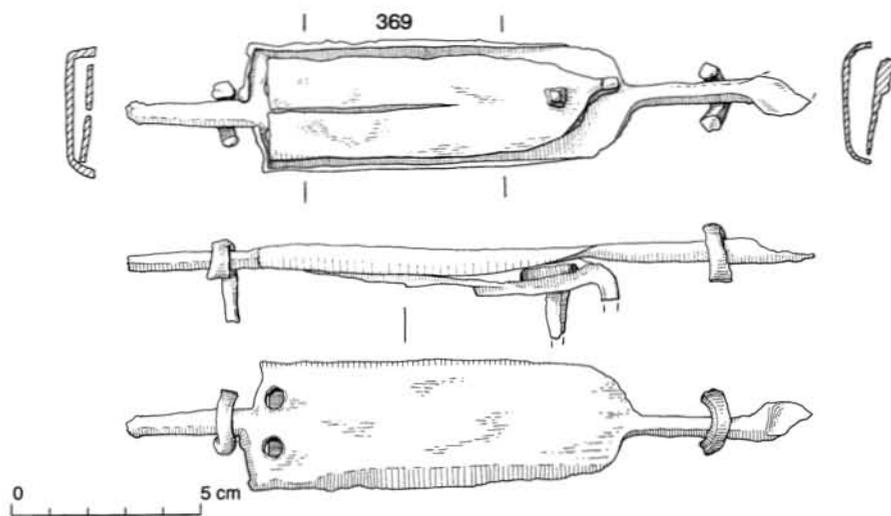


FIG. 18
Ailcy Hill, Ripon; grave group 1043

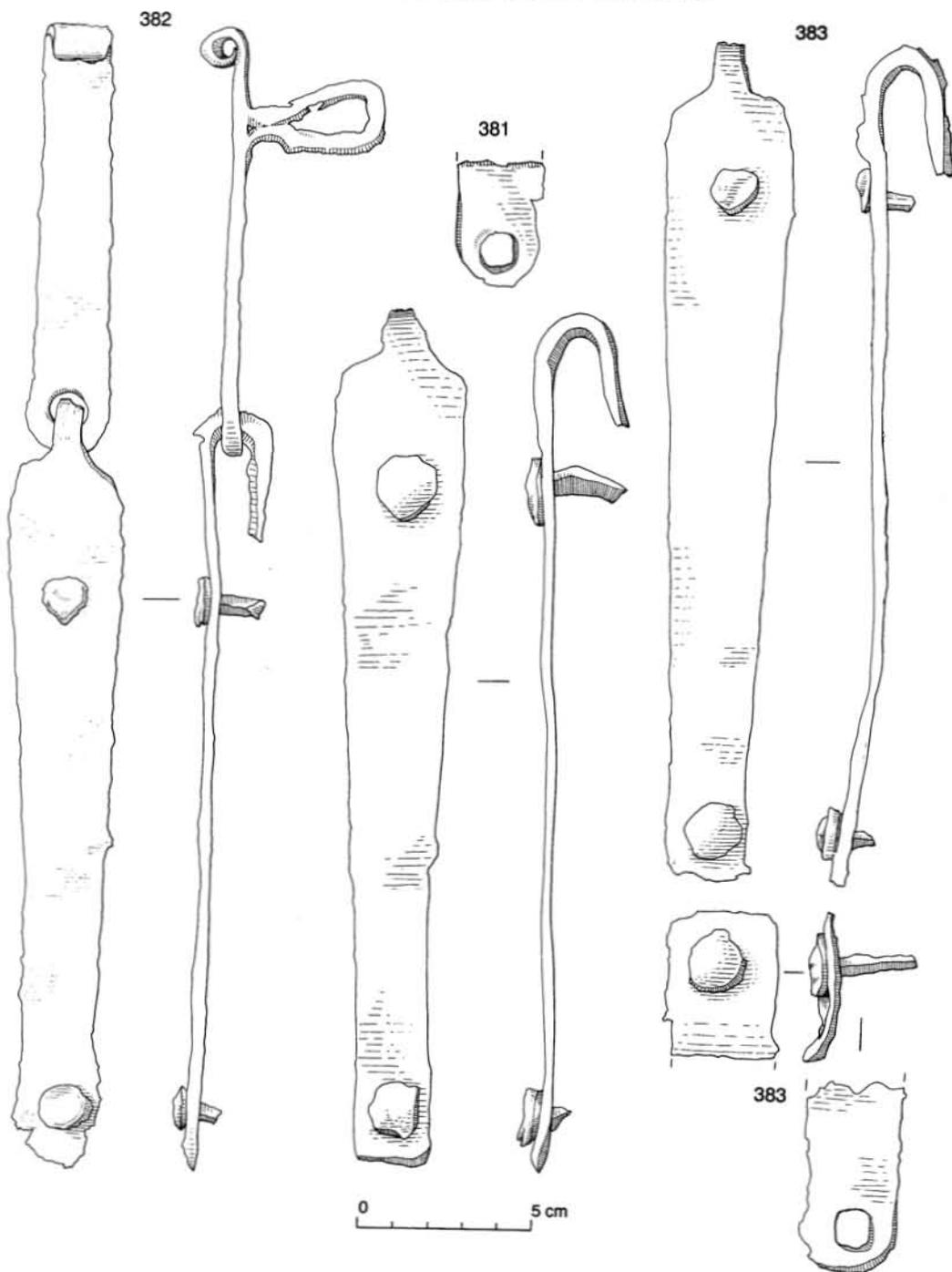


FIG. 19
Ailcy Hill, Ripon; grave group 1045, hinges

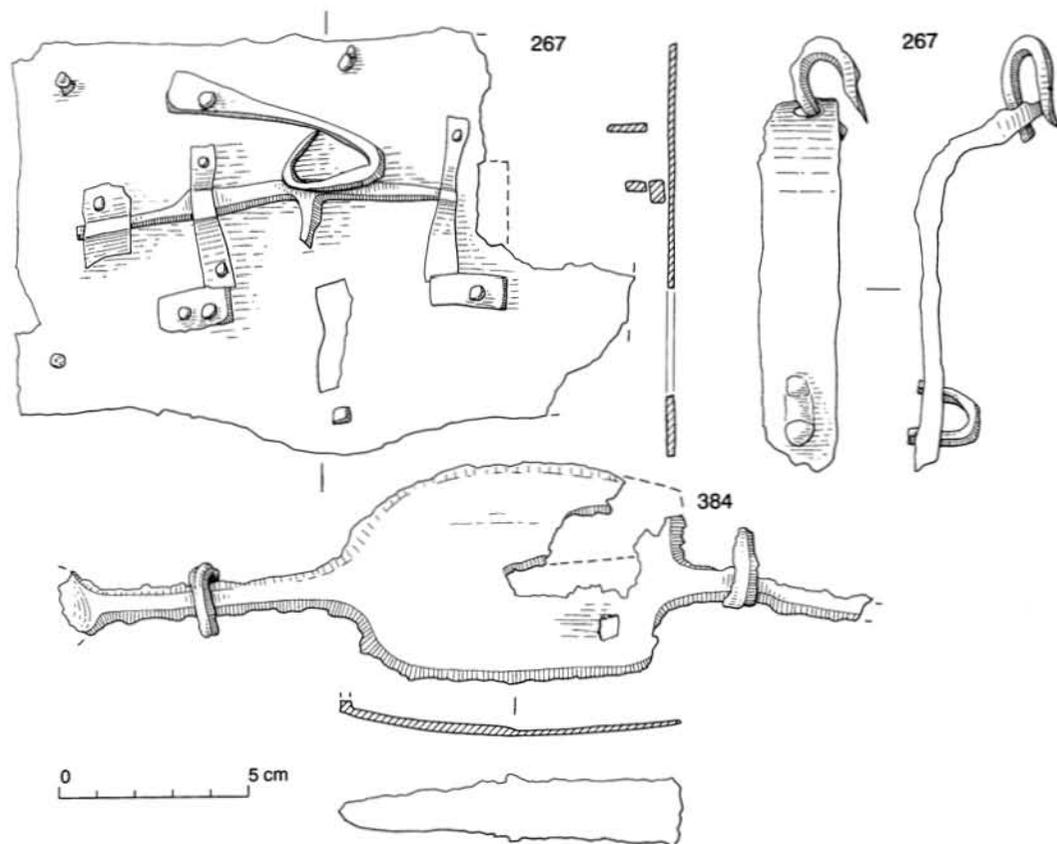


FIG. 20

Ailcy Hill, Ripon; grave group 1045, locks

at death of three of these (based on pelvic remains articulate with femora) would appear to have been mid 20s/early 30s, early 30s, and late 30s/mid 40s; a *metopic* frontal bone from a skull fragment may be indicative of a familial relationship with an individual represented in the charnel contained within the grave of the Phase 1 burial 2010; radiocarbon determination of 680–880 cal A.D. (UB-3153, 1236 ± 35 BP).

2008: extended supine inhumation, arms laid at sides, W–E. aligned, sex indeterminate, 25–35, stature *c.* 1.63 m (5ft. 4in.), bones fair/poorly preserved, skeleton virtually complete apart from feet (beyond excavated area) and thoracic vertebrae.

2011: ?extended inhumation, W–E. aligned, male, post-mid 20s, stature *c.* 1.71 m (5ft. 7in.), bone preservation fair, only lower legs and feet (partially) surviving; charnel derived from at least two adults, one male with a stature of *c.* 1.80 m (5ft. 11in.), was incorporated within the grave backfill.

2033: ?extended inhumation, surviving as spinal column and upper legs in the N. section of the excavation, and not removed from the ground.

Phase 3a

1048: ?extended inhumation, NW–SE. aligned, male, mid/late 30s, stature *c.* 1.77 m (5ft. 10in.), bones fair/poorly preserved, only fragmented pelvis, lumbar/thoracic

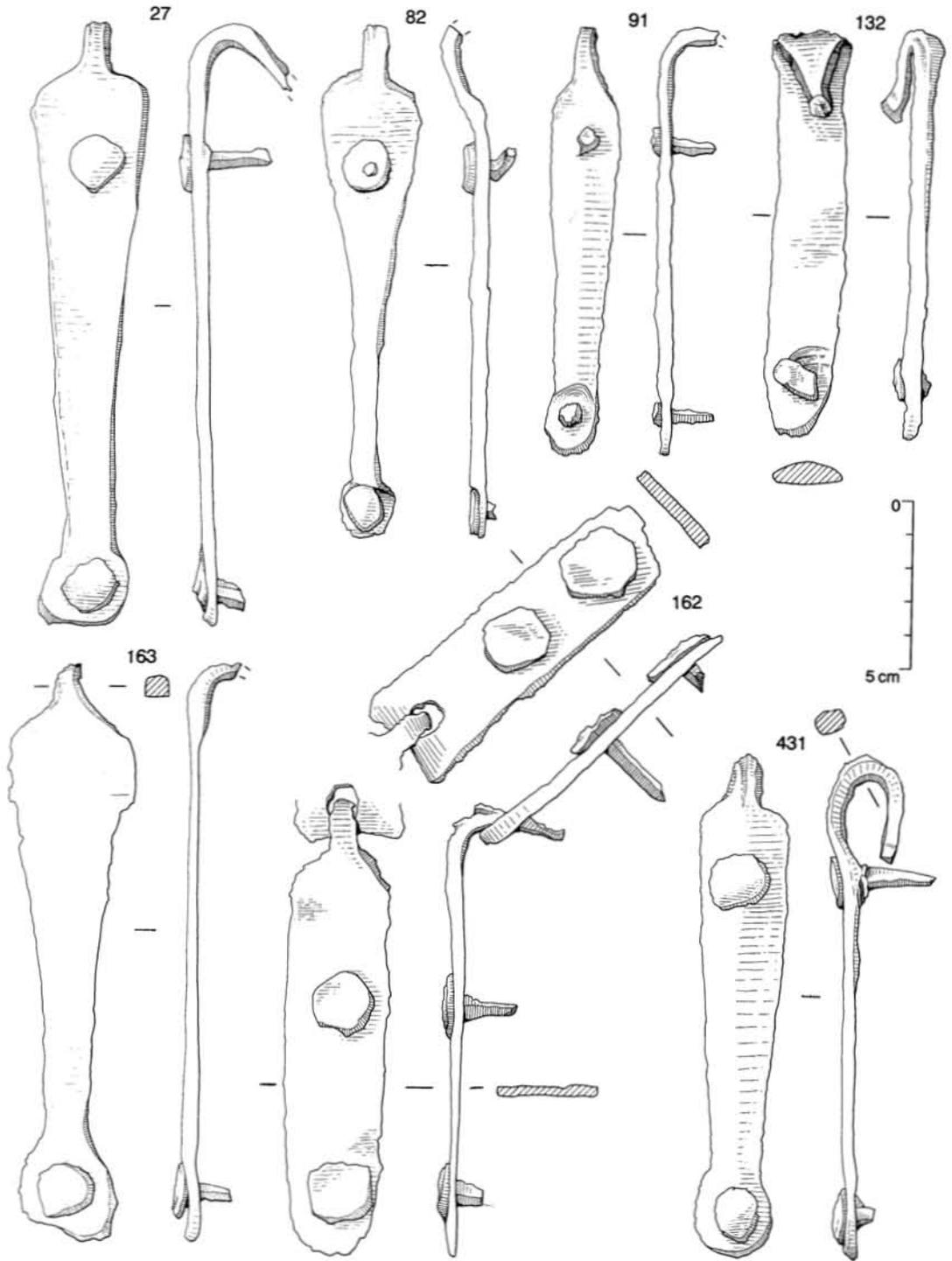


FIG. 21

Ailcy Hill, Ripon; hinge straps

vertebrae, left femur and rib fragments survive. Charnel derived from at least four adults and one juvenile was incorporated within the grave backfill: one male died aged early/mid 40s, a second in his early 20s; one possible female mid/late 30s; the stature of one of the adult males was *c.* 1.80 m (5ft. 11in.); the distribution of the charnel around 1048 defines the edge of the grave cut.

2005: extended inhumation, laid on right side, facing S., W-E. aligned, probable male, 16-18, stature *c.* 1.69 m (5ft. 6½in.), bones fair/well preserved, entire skeleton survives apart from right hand; nails and iron fittings around the head and lower body (including hinge strap SF91 and corner brackets SF102 and SF201) indicate burial in a chest or coffin constructed of radial surfaced oak boards up to 33 mm in thickness: the distribution of nails suggests extensive repairs to the head end of the chest, originally of dowelled or pegged construction, and the location of the lock and hinges on the same side of the grave (Fig. 13) may suggest that the chest was buried on its side, the back board laid on the base of the grave cut — this would accord with the body position; radiocarbon determination of 660-830 cal A.D. (UB-3152, 1267 ± 36 BP); Fig. 13.

1051: extended inhumation, W-E. aligned, probable male, post-mid 20s, stature *c.* 1.69 m (5ft. 6½in.), bones fair/well preserved, right leg and foot, right half of pelvis, lower right arm and lower left leg and foot surviving; charnel derived from at least two adults and one juvenile was incorporated within the grave backfill: one of the adults may have been older than average, the second possibly female; the juvenile bones indicate an age of 10-12 years.

Phase 3b

1019: extended inhumation, laid on right side, left arm flexed to right shoulder, ankles overlapping; W-E. aligned, probable male, mid-late 30s, stature *c.* 1.70 m (5ft. 7in.), bones fair/well preserved, skull and parts of upper and right side of body and right foot absent; Fig. 13.

1022: extended inhumation, left arm laid across pelvis, W-E. aligned probable male <15, stature *c.* 1.49 m (4ft. 10½in.), bone preservation fair, upper body and right arm absent; Fig. 13.

1023: extended inhumation, lower left arm laid across abdomen, W-E. aligned, probable male, early 20s/24, stature *c.* 1.68 m (5ft. 6in.), bones well preserved, skeleton survives near-intact, except for upper skull and left fibula/foot; charnel derived from one adult, possibly a female; Fig. 13.

1044: extended inhumation, lower right arm laid across abdomen, E-W. aligned, probable male, 14-15, stature *c.* 1.42 m (4ft. 8in.), bones fair/poorly preserved, lower left leg, left hand and upper part of skull absent; fusion of lumbar vertebrae indicates possible spinal tuberculosis; radiocarbon determination of 780-990 cal A.D. (UB-3149, 1143 ± 43 BP); Pl. III, c.

THE FINDS

ANALYSIS OF HUMAN SKELETAL MATERIAL *By* J. LANGSTON

All of the excavated human bone from the site was studied, comprising *in situ* skeletons from Areas 1 and 2, and deposits of disarticulated bone from these and other areas. The disarticulated bone was studied in the groups defined by the excavators, which in most cases represented the contents of individual graves, and the Minimum Number of Individuals (MNI) represented as charnel within each grave was calculated, most frequently on the basis of long bone end counts. In addition to the usual palaeodemographic and palaeopathological data, elements of these groups were compared with incomplete *in situ* burials nearby in an attempt to

relate disturbed bones to the individual from which they derived. It was only rarely possible to make such specific links with any confidence.

The condition of the bones was generally good, although those from the earliest numbered contexts, closest to the surface, were in a poorer state and had suffered abrasion and mechanical damage. The bones from the *in situ* burials were in many cases well preserved, with complete long-bones and undamaged articular surfaces. Among the juvenile and sub-adult burials epiphyses were found. Unfortunately many skulls had suffered pressure-damage and were fragmented, although in some cases reconstruction was possible. Metrical analysis was conducted following the methods described by Bass and by Brothwell, with *in vivo* stature elements calculated using formulae developed by Trotter and Gleser.⁴⁶ Sexing and ageing techniques were those described by Brothwell, Krogman, Lovejoy *et al.*, Meindl *et al.*, Russell *et al.*, Schutkowski, Ubelaker, and Webb and Suchey.⁴⁷

Age at death calculation is most accurate in children with regard to dental eruption and development, and use has been made of charts compiled by Ubelaker.⁴⁸ Epiphyseal evidence in adolescents and sub-adults was quantified using data from Bass, Brothwell, Warwick and Williams, and Webb and Suchey.⁴⁹ Estimation of the age of adults is more difficult, and factors analysed included the degree of attrition in molar teeth, the development of certain bones, the pubic symphysis, the sternal end of the fourth rib, and the auricular surface.⁵⁰ In no skeleton were all of these methods applicable, as all had loss or damage to particular bones.

Problems also occurred with sexing some individuals, as diagnostic bones showing sexual dimorphism (principally the pelvis and skull) were absent or damaged. Morphology of other bones was also examined, and the stature calculations presented by Trotter and Gleser used,⁵¹ it being assumed that an individual of 1.70 m or over was likely to be male.

The report presented here includes only that demographic and palaeopathological evidence of significance in the interpretation of the excavated sample. Hence stature calculations, listed in the grave catalogue, are not discussed; dental characteristics, and the few insignificant non-metrical traits, were identified but are not discussed; cranial indices were not calculated because of poor survival of the relevant bones. The usefulness of such data is severely compromised by the small size of the excavated sample, with only 27 articulated skeletons recovered. Conclusions concerning sex, age-at-death and arthropathies have been presented by phase, in order to identify possible change in the demographic structure of the sample through time. The MNI calculations for Phase 1, and the numbers of males, females, adults, juveniles and infants represented there, include data based on both *in situ* Phase 1 burials, and on the disarticulated remains of skeletons originally buried in that phase but only surviving as charnel within Phase 2 graves. Since disturbance of burials of Phase 2 and Phase 3 by later grave-digging is negligible, the equivalent figures for these phases only employ data from *in situ* inhumations. The figures from Areas 1 and 2 have been combined for presentation here, but in calculating the MNIs the two excavated areas were felt to be sufficiently far apart to allow separate calculations.

All other data are discussed in terms of the entire excavated population from Areas 1 and 2, with no attempt to quantify by phase, as the numbers of cases in which the relevant attributes are identifiable is too low to allow meaningful comparisons to be made. The full report on the study of the human bones from Ailcy Hill, of which the following represent selected extracts, is held with the excavation archive.

Demographic Structure

Ten of the *in situ* inhumations from Areas 1 and 2, one (unexcavated) an adult whose sex is unknown, have been attributed to Phase 1. Of these, seven are adult males, one a juvenile aged between 14–17 years, and one a neonate aged *c.* three months. Additionally, however, a minimum of 66 individuals who must have been buried in Phase 1a or 1b were represented as disarticulated bone in graves of Phases 1b, 2 and 3. These represented a minimum of 55 adults, 9 juveniles, and 2 infants. Although distinguishing between male and female in disarticulated bone assemblages is problematic, a number of bones displaying apparent female characteristics, including elements of the pelvis and skull, were identified. Elsewhere on the hill probable female bones, representing at least two individuals, were present in charnel from Area 4. It is clear that, at least in Phase 1, burial on the hill was not an exclusively male preserve.

Amongst the disarticulated bone groups in Area 1 which could be attributed to particular graves, at least seven juveniles were identified, of whom two were aged 15 years or less, and a further three less than 13 years. No juveniles were identified amongst the attributable charnel from Area 2, although it should be noted that Area 2 covered an area less than 35% that of Area 1, and may therefore be less representative. 1047 is the partially intact burial of an infant; in addition, the bone assemblages from quarrying-related contexts 1003 and 1012 contained infant bones; in no case, however, did these replicate the surviving bones of 1047, and it may be that they derive from the same individual. From the burial horizon 1042, bones belonging to a child less than five years of age were identified. The equivalent deposit from Area 2, 2003, contained three unfused basi-occiput bones. This particular bone fuses to the adjacent ones in the skull base after the sixth year.⁵² Unfortunately it is impossible to be more precise, because to give an accurate age at death the shape and development of the basi-occiput has to be compared with that of the occipital condyles, which in this case were not present. Size differences suggest two younger and one older child, indicating burials of at least two infants and one younger juvenile less than six years of age. A toothless mandible and maxilla, suggesting an individual aged 45+, came from a charnel group from Area 2, emphasizing the demographic diversity of Phase 1.

The skeletal material from the *in situ* Phase 1 burials, and the disarticulated bone ultimately deriving from 1a and 1b, thus indicates the presence of adults of both sexes, as well as children. This is in marked contrast to the Phase 2 cemetery in which, of a total of ten burials, nine were definitely identified as those of adult males, ranging in age from 19–20 to 40+ years; the tenth, 2008, was an adult (25–35) but could not be positively identified as male or female. Of the eight inhumations attributed to Phase 3 (representing only six separate burial events), five were identified as adult males and three as juveniles (one aged 16–18 years, the other two less than 15 years old). The possible significance and implications of these apparent changes are further considered below.

Pathology

There was little evidence of congenital abnormalities amongst the *in situ* bones. Five instances of fused vertebrae were noted in the disarticulated bone groups, one mid-thoracic and four examples of fused C2–3 found in Areas 1 (2 examples), 2 and 8. Two skull fragments from Area 2 showed retention of the metopic suture.

Arthropathies and degenerative disease

Eleven of the *in situ* burials have evidence of degenerative changes in the spinal vertebrae, in 10 instances at lower thoracic or lumbar level and in one at cervical level. Most observed changes were mild, with minor proliferative lipping of articular surfaces and minor osteophytosis of the vertebral body, but in three individuals the traces were more severe. In the case of 1019, two adjacent mid-thoracic vertebrae had areas of eburnation on the right and left articular facets. 1048 also showed eburnation and severe osteophytosis affecting three lumbar vertebrae, and 2006 displayed severe porosity of the cervical vertebral bodies (C₅₋₇).

Eleven individuals also show degeneration in the articular surfaces of the major joints, with mild to moderate changes occurring most frequently in the weight-bearing joints of the lower limbs (hip, knee, ankle and foot). Degenerative changes were also noted in the upper limbs, but these were minor and evidenced only as very slight lipping around articular margins, except in the right wrist of 2006 where there was an area of eburnation on the distal ulna.

The fact that severe degenerative joint disease is only observed in one individual may be due to the relative 'youthfulness' of the group, or may possibly be a reflection of a gentler lifestyle. However, there is considerably more evidence of advanced arthritic change amongst the disarticulated material, where eburnation of articular surfaces was demonstrated in vertebrae from cervical, thoracic and lumbar levels, a mandibular condyle, distal radius and ulna, proximal tibia, femoral head and condyles, and acetabulum, indicating severe change in all regions of the spine, the jaw, wrists, knees and hips.

Other evidence of joint disease was provided by 2010 (a sub-adult of *c.* 15–17 years whose dental age was in excess of its skeletal age), where both right and left medial femoral condyles are affected by osteochondritis dessicans. This condition results from an impaired blood supply to the sub-chondral bone, causing necrosis of a discrete area which then separates from the main joint surface, producing a small pit or deficit which may affect articular movement. This example is interesting because in one condyle a hollow remains where bone has been lost, whilst in the other the pit has 'filled in' where a bony loose body spontaneously re-attached.⁵³

Trauma

Six individuals carried traces of minor trauma affecting the lower leg. The left fibula of 1079 is of abnormal and distorted shape, especially at the proximal end, as a result of major stresses on the bone after growth was complete. It is possible that they relate to stresses following an injury/fracture to the left tibia, but unfortunately this did not survive. Minor periosteal reactions are evident in the distal fibulae (medial side) of 1019, 1051, 1074, 1080 and 2006. In the case of 1074 this affects both legs, although the reaction in the right is more marked, whilst in the other four only the right bone is affected. Minor periostitis is probably associated with repeated minor stress affecting the lower leg, perhaps related to occupation or lifestyle.

Schmorl's nodes were found in the lower thoracic/lumbar vertebrae of five individuals (1019, 1023, 1043, 1045 and 1065). These traumatic lesions are formed in adolescence, created when the intervertebral disc is subjected to stress (e.g. carrying a heavy load), and ruptures so that the *nucleus pulposus* protrudes and presses against adjacent vertebral bodies. As the bone is still plastic in adolescence it yields to the pressure, and forms a small pit in the vertebral body known as a Schmorl's node.⁵⁴ Their presence probably indicates a heavy workload commencing early in life.

The most serious trauma evidenced amongst the burials was suffered by 1043 (male, late 30s), whose skull displayed two unhealed cuts from a sharp-edged weapon across the frontal and parietal bones (Pl. III, A). The individual definitely died very shortly after receiving these injuries, but whether it was these or another wound to soft tissues which was the actual cause of death is unknown.

Infection and disease

The bones of four individuals from the *in situ* burials showed evidence of infection or disease.

The frontal bone of 1064 (male, aged 35–40 years) has numerous small holes with a ‘punched out’ appearance (Pl. III, B). These osteolytic lesions are irregularly-shaped, with an average diameter of *c.* 5 mm, and pass across the bone between the inner and outer tables. Radiological examination revealed no zone of peripheral sclerosis on any of the lesions, and the X-rays revealed more lesions in the skull than are visible to the naked eye. They do not have the appearance of post-mortem abrasion and erosion, and are therefore assumed to be due to some pathological process.

Osteolytic lesions occur in the reticuloendothelioses (eosinophilic granuloma, Hand-Schuller-Christians disease, and Letter-Siwe disease), infective processes such as tuberculosis and treponemal disease, severe osteomalacia, multiple myeloma and metastatic carcinoma.⁵⁵ However, the reticuloendothelioses are primarily diseases of childhood and are frequently fatal.⁵⁶ Similarly, the distribution of the lesions is not characteristic of tubercular or treponemal infection.

Multiple myeloma or myelomatosis is a neoplastic proliferation of plasma cells, usually confined to the bone marrow and therefore most usually found in bones containing haemopoietic marrow (vertebrae, ribs, skull and pelvis). In advanced cases of the disease the proximal humerus and proximal femur may also be involved when yellow marrow is converted to red marrow in an attempt to alleviate anaemia.⁵⁷ The lytic lesions begin in the bone marrow and move out to the cortex, causing perforation. However, the lesions are generally more widespread and tend to affect the whole of the cranial vault, vertebrae and pelvis; even in the early stages a number of bones are still affected, but with fewer lesions. In 1064 the skeleton of the torso and pelvis is very poorly preserved, but in the skull the lesions are only present in the frontal bone, and X-rays did not show the classic ‘pepper-pot’ appearance.

The most likely diagnosis is one of metastatic carcinoma (Dr K. Manchester, *pers. comm.*, following examination of the bones in 1988).⁵⁸ Bones are the most frequent site of secondary spread, and Steinbock notes that two-thirds of all malignant neoplasms metastasize to the skeleton.⁵⁹ The tumours most commonly associated with secondary deposits in bone are those of breast, thyroid, bronchus, kidney, gut/stomach and prostate.⁶⁰ Since metastases from prostatic cancers are typically osteosclerotic this would seem an unlikely possibility in this case, as is breast cancer, although the disease is not unknown in males. Osteolytic lesions produced from a primary malignancy of lung, kidney, thyroid, or gastro-intestinal tract are possible explanations, but cannot be confirmed.

The cranial vault of 1095 (male adult in later maturity) was found to be noticeably heavier and thicker than others in this series. The bone showed deep impressions of the middle meningeal vessels on the inner surface, and fragment of the parietal bone showed thickness of up to 10 mm, with the loss of the normal distinction between inner and outer tables, and diploë. Possible differential diagnoses include Paget’s disease, porotic hyperostosis, infection and fibrous dysplasia. The changes are not characteristic of Paget’s disease (osteitis deformans). This condition does cause massive thickening of the cranium, but there is usually multiple bone involvement, which was not found here (although Anderson notes that in 10% of cases only a single bone is affected). In addition, the raised osteoblastic and osteoclastic activity causes a diminished density of the cortex (which loses the normal, compact appearance), together with a marked coarsening of the trabeculae, producing a mosaic structure. X-ray analysis of the vault showed uniform bony thickening and a loss of normal bone architecture.

Similarly, although porotic hyperostosis also causes skull thickening (due to marrow proliferation in response to anaemia) and loss of the integrity of the inner and outer tables, the trabeculae take on a coarse, granular pattern.⁶¹ There is also frequently pitting or disintegration of the outer surface of the skull bones which was not observed in this specimen.

Whilst infection may cause thickening of bone, the structure is coarse and irregular, as is generally also the case with fibrous dysplasia. Here bone is expanded due to erosion of the original cortex by growing fibro-osseous bone and the formation of sub-periosteal new bone. The outer bone surface is usually smooth, but the tissue is usually a mass of coarse trabeculae with cyst-like areas. However, it has been noted that lesions in the skull and jaw tend to be more densely bony, and may appear radiologically as areas of increased density due to production of small abnormal trabeculae. In addition, fibrous dysplasia may be found in only a single bone, with the rest of the skeleton unaffected. Since none of these conditions seem to exactly fit the features noted in the 1095, the exact cause of the thickening remains elusive.

Burial 1044, a juvenile, aged *c.* 14–15 years and possibly male, showed spinal pathology involving the lumbar vertebrae. L1 and L2 were fused across the facet joints (Pl. III, c), probably as a result of the destructive loss of the vertebral bodies at this level. Reassembly of the spinal column demonstrated that this individual suffered from a severe kyphosis and a scoliosis to the right. The differential diagnosis for such an abnormality is extensive with spinal tuberculosis, pyogenic osteomyelitis, actinomycosis and brucellosis all being possible explanations.

Actinomycosis is most often found in the jaw, or in the soft tissues of the lung and gut. Although brucellosis is found in the spine it is characterized by abundant reactive bone growth, which was not present here. This new growth is also a feature found in osteomyelitis, which makes the condition unlikely in this case, as does the fact that this infection generally involves the extensive destruction of several vertebrae. Spinal tuberculosis thus seems to be the most likely diagnosis, both in terms of probability (being the most frequently noted of these conditions), and also on pathological grounds — destruction is evident in L1 and L2, and spinal tuberculosis found commonly around the thoraco-lumbar junction, initially spreading from the kidney. Generally only two adjacent vertebrae are involved, which collapse anteriorly, causing a subsequent angular kyphosis. All of these features were seen in this specimen, where the typical destruction of the vertebral bodies with the sparing of the transverse and spinous processes was noted. It is also well known that spinal tuberculosis usually begins in early childhood.

The sufferer in this case would have had a hunched lower back, with the spine twisted to the right-hand side. Evidence of severe enamel hypoplasia may suggest that the disease was contracted very early in the sufferer's life, as this condition — the pitting and striation of dental enamel — is thought in some cases to be caused by high temperatures suffered in infantile fevers.⁶² A probable lumbar vertebra from the 'cemetery deposit' 2003 showed lateral collapse of the vertebral body, with severe osteophytosis visible, and may indicate another case of spinal tuberculosis.

Mild cribra orbitalia was observed in two individuals (2008 and 2005). This is a condition related to dietary iron deficiency where bone (principally in the skull) responds by proliferation in an attempt to increase the red blood cell count, visible as strainer-like perforations in the orbits.

Summary

The sample of burials excavated from Ailcy Hill is a small one, and insights into the character and physical condition of the communities buried there consequently restricted, although a few individual instances — a probable case of spinal tuberculosis, a possible metastatic carcinoma and a possible sufferer from Paget's disease — merit comment. There were several instances of minor trauma. One individual had obviously been the victim of violence and sustained a weapon injury to the skull which was unhealed. The degree of degenerative change suffered by the *in situ* burials was on the whole very light; this may reflect a less arduous life,

but may also be related to the fact that the individuals are relatively young, the oldest being under 50 years old at death. By contrast, the skeletal remains represented as charnel exhibit much more evidence of degenerative change. That the great bulk of this material derives ultimately from Phase 1 burials may indicate a significant change in the buried population between Phases 1 and 2. This possibility is explored further in the discussion section below.

THE IRONWORK *By* P. J. OTTAWAY

Ailcy Hill produced *c.* 650 iron objects of which *c.* 500 are nails. About half of the objects came from contexts associated with the human burials on the site and the other half from contexts known or presumed to be later. Apart from the nails, the majority of the iron objects from the site were chest fittings, including hinge straps, corner brackets, hasps and locks. As there was little evidence for post-cemetery activity on the hill, it is assumed that objects found in the later contexts, resulting from post-medieval quarrying and landscaping, derived for the most part from earlier deposits associated with the burial ground. With only a few exceptions, the ironwork from the site can thus be considered as an assemblage belonging to the period of the cemetery's use. In many cases the extremely disturbed nature of the deposits hampered the association of fittings with particular burials. The instances where this was possible are indicated on Figs. 14 and 15. Enough evidence survives to indicate that some of the bodies had been buried in chests reused as coffins, and some probably had purpose-built coffins.

The Ailcy Hill cemetery was in use from at least the first half of the 7th century until the 9th or even the 10th century, and is thus broadly contemporary with other cemeteries which have produced examples of burials in iron-bound chests. These span a range of contexts; monastic (Dacre,⁶³ Monkwearmouth,⁶⁴ Repton,⁶⁵), episcopal (Carlisle,⁶⁶ Winchester,⁶⁷ York⁶⁸) and secular (Garton Slack,⁶⁹ Hereford,⁷⁰ Pontefract,⁷¹ Thwing⁷²). The dating of the objects and of the chest burial custom is discussed later in this report. The full catalogue of the ironwork from Ailcy Hill is held in the excavation archive.

The Chest or Coffin Fittings

Nails

The site produced nearly 400 nails or nail fragments as single finds and a further 100 or so remained *in situ* in various fittings. Although only 221 of the single finds came from cemetery-related contexts, it is likely that, apart from a few obviously modern specimens, the vast majority of nails from post-cemetery contexts had been derived from the cemetery. This is suggested by the fact that the range, and average length and average width of head dimensions (see below) are the same for nails from cemetery-related contexts as for those from post-cemetery contexts. It may also be noted that while many nails are broken, few have shanks which appear curved or distorted as one would expect if they had been discarded after being deliberately withdrawn from wooden objects. It is likely, therefore, that the Ailcy Hill nails gradually became dissociated from the coffins and chests as the wood rotted away.

The nails are, for the most part, very similar in form. They have shanks of rectangular cross-section which taper to a wedge-shaped tip. The heads are usually, but not always,

centred on the shanks and are roughly flat and rounded, although there are a few with rectangular heads including those in corner bracket SF509. In addition, there are six nails with non-ferrous plating (four from cemetery-related contexts). The plating metal has not been analysed, but the X-radiographs suggest it is probably a tin or a tin-lead alloy.

The average length of nails which survive unbroken is 50 mm and the average width of head is 18 mm. These data may be set alongside a survey of over 2000 mid 9th to mid 11th-century nails from 16–22 Coppergate, York,⁷³ a number of which were still *in situ* in hinge and other probable chest or door fittings. The average length was 52 mm and 65% of those which survived complete were between 30 mm and 65 mm long. In northern Europe as a whole the vast majority of nails in surviving and reconstructed wooden objects, principally chests, of the period are also in the same length range.⁷⁴ In conclusion, it appears that the function of the vast majority of the nails from Ailcy Hill would have been to hold the burial containers together. While these probably included purpose-built coffins and re-used chests, the evidence from Thwing, where relatively few nails were associated with chest-burial graves, is that the chests were not nailed together, but that nails were primarily used to hold fittings in place.

The plated nails presumably had some decorative as well as purely utilitarian function, but it is not clear what this was. At Dacre there is an example of a chest hinge strap which was held in place with plated nails, but none of the nails still set in fittings at Ailcy Hill was plated. It is possible, however, that, along with the small plated hasp (SF459, Fig. 23), the plated nails from Ailcy Hill came from caskets which had served as items of grave furniture. Examples of such objects with plated nails and fittings are not known in England, but have been recorded in 9th- to 10th-century burials in Scandinavia, including those from the Danish sites of Sønder Onsild and Fyrkat.⁷⁵

The plating of iron objects, including nails, with tin appears to be a development of the 8th century.⁷⁶ No examples appear to be earlier, but tin-plated iron objects occur among finds from Thwing, occupied in the 8th and early 9th century, and from contexts with the same date range at 46–54 Fishergate, York.⁷⁷ By the later 9th and 10th centuries the plating of iron appears to be widespread, largely for decorative purposes, but also for prevention of corrosion. As far as nails are concerned, Anglo-Scandinavian contexts at 16–22 Coppergate, York produced 37 tin-plated specimens.⁷⁸ Although the number of plated nails from Ailcy Hill is small, they must, in view of the evidence outlined here, be considered of some importance for the dating of the cemetery.

Staples

There are nine staples recorded as single finds, eight rectangular and one U-shaped. In addition there are four U-shaped examples linked to hasps which would have attached them to chest lids. Several small looped staples come from the locks with sprung sliding bolts. It is likely that the staples recorded as single finds had also been used to secure fittings to the burial chests.

Hinge Straps

There are 32 hinge straps or fragments of straps. The hinges all employed the same simple method of operation which is demonstrated by two linked pairs (SFs 382 and 394; Figs. 19 and 24). One strap, which may be referred to as Component A, was curved over at the head to form a loop. This was linked to an eye at the head of the second strap, Component B. Component A straps were fixed to the lid of the chest and Component B straps to the back. It may be noted that at Ailcy Hill the eye of the Component B straps is always formed in the same way by drawing out the head of the strap, looping it around and welding the tip back on to the strap. This results in a much stronger eye than would be possible by the punching of a hole in the head of the strap which can cause the metal to split.

There are seventeen Component A straps and fifteen Component B straps. In addition to the two linked pairs, five other Component A and Component B straps were found together and originally had probably formed pairs.

Although mechanically simple, the hinge straps are by no means formally homogeneous. The simplest form of strap has straight parallel sides and there are six examples, three of Component A and three of Component B. The strap base may be rounded off (SFs 132 and 162; Fig. 21) or straight (SF478B; Fig. 24).

In the most common form of strap, of which there are seven of Component A and five of Component B, the body narrows towards the base where there is a rounded, pierced terminal. Below the head the sides of the strap may be straight or slightly concave (e.g. SF91 and SF163; Fig. 21). Alternatively, the strap sides may be sinuous in that the upper and widest part of the strap may have convex sides which then become concave as it narrows towards the base (e.g. SF431; Fig. 21). In several cases (e.g. SF82; Fig. 21) there is a definite step at the base of the strap before the terminal which is thus thinner than the body. Three examples of straps with the rounded terminal (SF91, SF394, SF431; Figs. 21 and 24) also have an upper surface which is not flat as is usual, but slopes up slightly from each side to a central ridge. Strap SF159 (Component B; Fig. 25) is unique in having a tip which was recurved to stand proud of the chest back. SF159 also has a convex upper surface.

Strap bodies may narrow to the base without coming to a distinct terminal. Their ends can be straight (SF383A; Fig. 19, SF392B) or, alternatively, the strap may widen slightly in the base area to give strength around a nail hole (SF381A, SF382; Fig. 19). Finally, there are two examples of straps (SF113B, SF332B; Fig. 24) which are curved over at the base and tapered to a point which was hammered into the chest in lieu of using a nail for attachment.

Straps are usually pierced twice for nails, once near the head and once at the base, in a terminal if present. Exceptions are SF113b and SF332b (Fig. 24) with the pointed tips, and SF394 (Fig. 24), which, in addition to a hole at the base, have not one but two holes at the head, one on each side of the strap.

Where determinable, the form of the straps in the seven pairs is, surprisingly perhaps, not always the same. On the one hand, SF162a and SF162b (Fig. 21) both have parallel sides, and 394a and 394b (Fig. 24) both narrow to a rounded terminal. On the other hand, however, SF392a narrows to a rounded terminal and 392b narrows to a straight base, whilst SF478a narrows to a rounded terminal and 478b has parallel sides (Fig. 24).

In addition to variations in form, there is considerable variation in the size of the straps. The longest is SF381a at 246 mm (Fig. 19), whilst the shortest is SF162b at 100 mm (Fig. 21); SF394a has the greatest maximum width at 40 mm (Fig. 24), whilst SF332b has the narrowest at 16 mm (Fig. 24). Component A straps are on average longer and wider than Component B straps. In the assemblage as a whole there is some degree of correlation between length and width. Linked hinge straps of the form described above appear to have been universally used for chests in the post-Roman period from at least as early as the 7th century. An example of a hinge of this date with parallel-sided straps comes from the royal site at Yeavinger.⁷⁹ 8th- to 10th-century examples have been recorded in some numbers largely because of their occurrence in cemeteries containing chest burials. It was not until after the Norman Conquest that chests began to have hinge straps which articulated about a central pin.

All the strap forms found at Ailcy Hill are well known in the other cemeteries cited, but the commonest is, as at Ailcy Hill, that in which the main body narrows to the base where there is a rounded, pierced terminal. Other formal features such as faces which slope up to a central ridge, the step before the terminal and paired nail holes at the head of the strap are also known in small numbers elsewhere.

Corner Brackets

There are fifteen L-shaped brackets and another ten single bracket arms. These objects were presumably used to strengthen the corners or bases of the chests. As in the

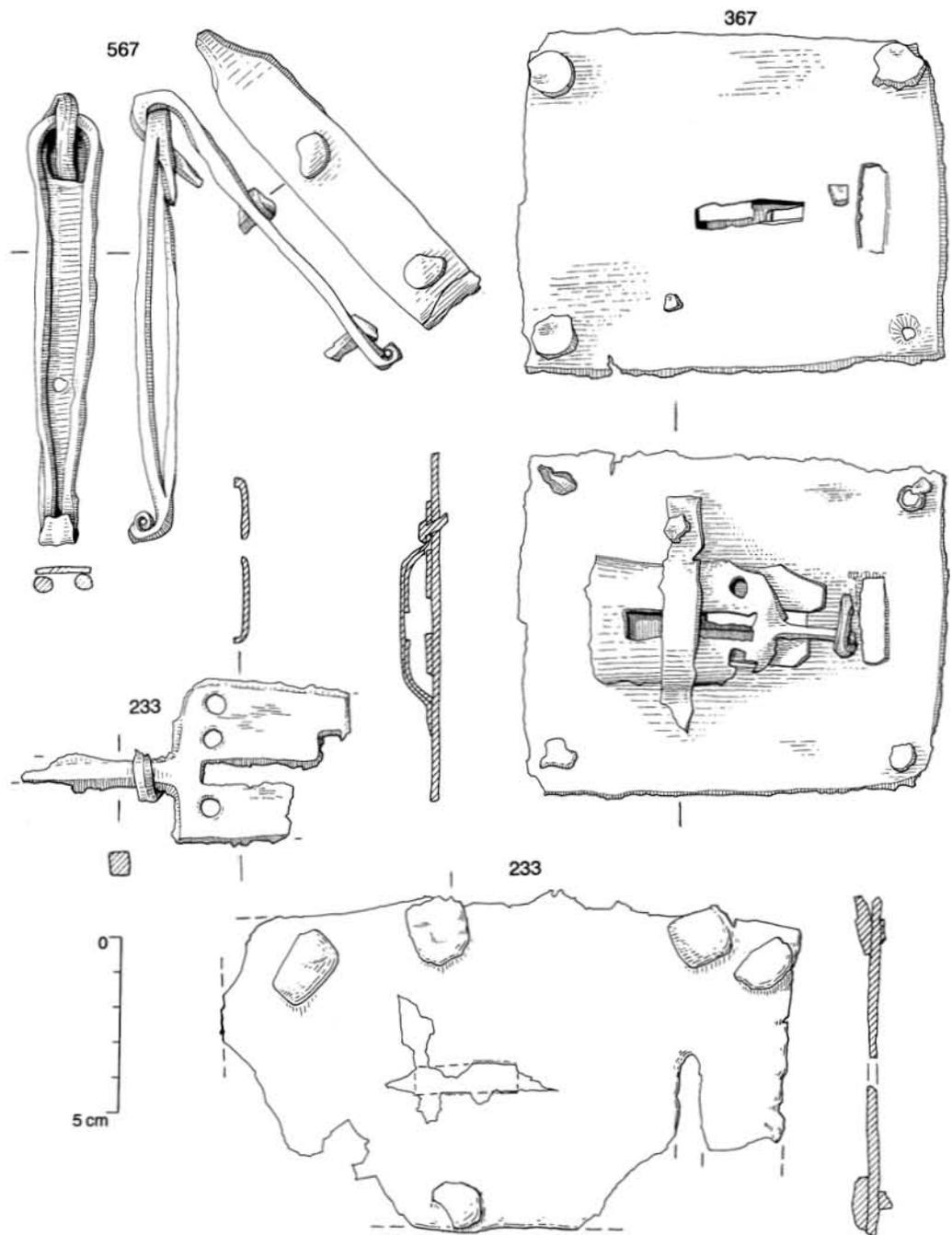


FIG. 22
Ailcy Hill, Ripon; hasps and locks

case of hinge straps, however, a simple practical function is combined with a considerable diversity of form.

The simplest brackets, of which there are two examples (SF236, Fig. 23, and SF282), have arms with straight parallel sides and straight ends. A variation is exhibited by the arms of SF201 and one arm of SF520 (Fig. 23), which have rounded ends.

The remainder of the corner brackets have distinct terminals. The largest group (five examples) have arms with straight, parallel sides and rounded, pierced terminals. In addition, one arm of SF266 (Fig. 24) has this form, but it may represent an alteration since the terminal has been made by crudely welding on an extra piece of iron rather than forging it out of the main body of the bracket. Rounded, pierced terminals can also be seen on the arms of SF122 which widen slightly away from the corner and on those of SF298 and SF364 (Fig. 24) which narrow slightly. SF258 has arms with oval terminals and a definite step at the end of each arm so that the terminals are thinner than the rest of the bracket (Fig. 24).

Rather more elaborately formed corner bracket arms are those with concave sides. There are three examples, SFs 325, 339 (Fig. 24) and 50; the first two are unusual in having outer faces which slope up slightly to a central ridge. In addition, SF339 has small rectangular cuts taken out of each side at its corner. More elaborate again are bracket arms manufactured with sinuous S-shaped sides. There are three examples SFs 329, 365 (Fig. 23) and 372; the first two of these also have arms whose outer faces slope up slightly to a central ridge. Finally, SF402 (Fig. 23) is unique in having arms which are spirally twisted before coming to the terminal.

As well as varying in form, the objects also vary in size. The longest arm measures 100 mm (SF365) while the shortest measures 36 mm. Widths vary from 13 mm to 34 mm. The brackets with more elaborate forms are amongst the largest.

SF164 (Fig. 24) is unique amongst the corner brackets because the wider faces of its arms are in the same plane rather than, as is usually the case, at 90° to one another. It may have been fitted to the upper or lower edge of a chest rather than its sides.

Corner brackets of the Anglo-Saxon period are relatively common finds and all the forms recorded at Ailcy Hill, except for that represented by SF164, have been recorded in the Dacre, Repton and Thwing cemeteries. The form with arms narrowing to rounded, pierced terminals was also found in the grave at Garton Slack.⁸⁰

Stapled Hasps

There are five stapled hasps and two probable but incomplete specimens, SFs 388 and 459 (Fig. 23). A stapled hasp is an elongated strap, attached at one end to the lid of a chest, with a staple fixed to it at the other to pass through a slot in the chest face where it would engage with a lock bolt. The stapled hasp should be distinguished from hasps with loops or slots which fitted over a staple projecting from the chest or other object and were held in place by a padlock or linch pin.

Three of the stapled hasps from Ailcy Hill, SFs 388, 409 and 575 (Fig. 23), have two arms at 90° to each other, implying a chest with a flat lid. A fourth, SF267 (Fig. 20), has arms at *c.* 45° to each other, which might imply a lid with a curved or triangular cross-section. It is probable, however, that the hasp was bent out of shape subsequent to burial. The forms of these four hasps are in other respects very similar. The upper arms have attachment eyes formed, like the eyes at the heads of Component B hinge straps, by the drawing out and looping around of the iron. Staples were used for attachment except for SF409, which employed a collar (Fig. 23). The lower arms, which are always the longer, have parallel sides to a point near their bases. From here, SF409 narrows to a tip which is bent outwards, whilst SF575 widens slightly before narrowing to a tip in the form of a small looped terminal. The base of SF388 is missing. There remain three stapled hasps, SFs 382, 459 and 567 (Figs. 19, 23 and 22), which are flat. SFs 382 and 567 (the latter associated with a lock; see below) were linked to straps similar to the Component A hinge straps

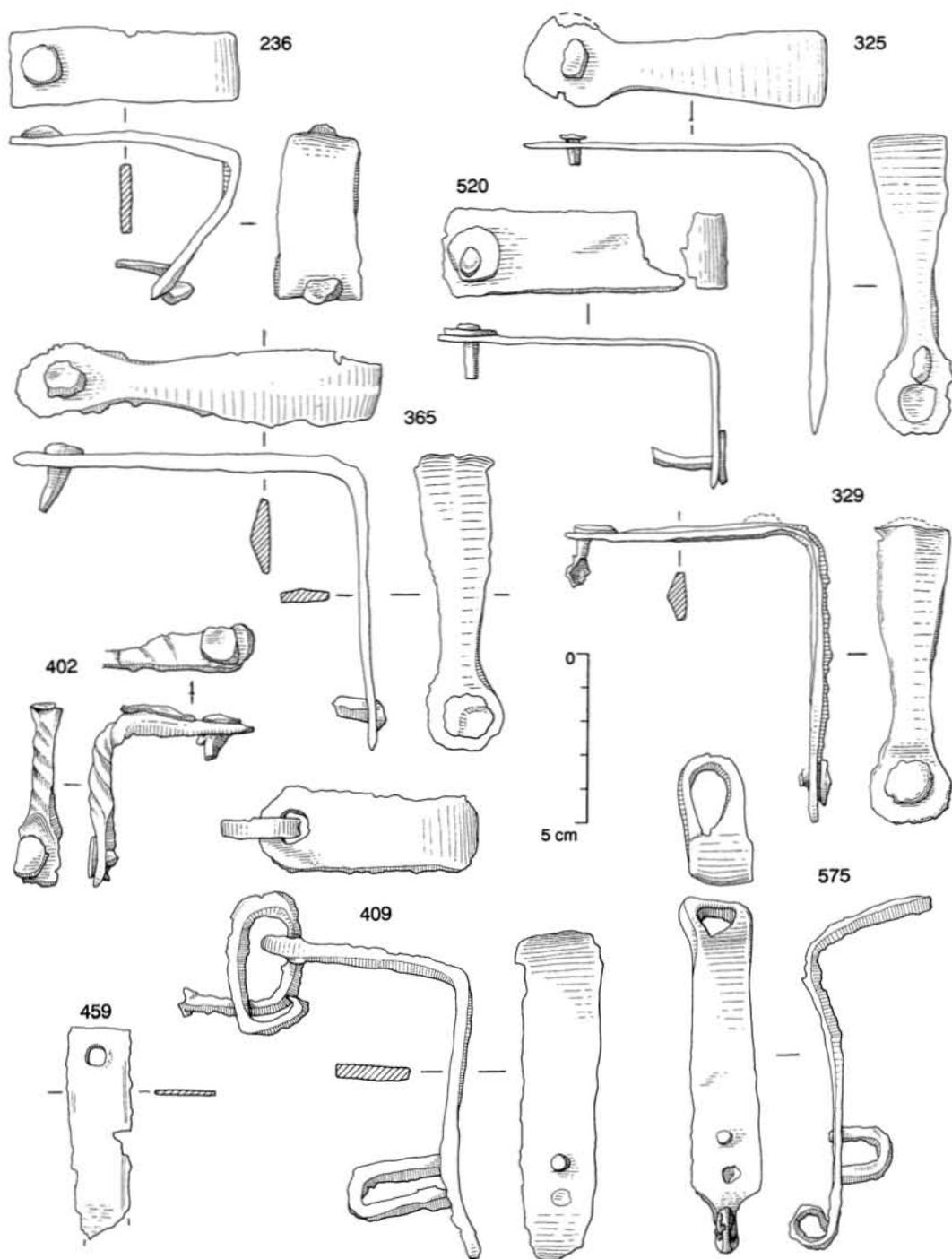


FIG. 23

Ailcy Hill, Ripon; corner straps and hasps

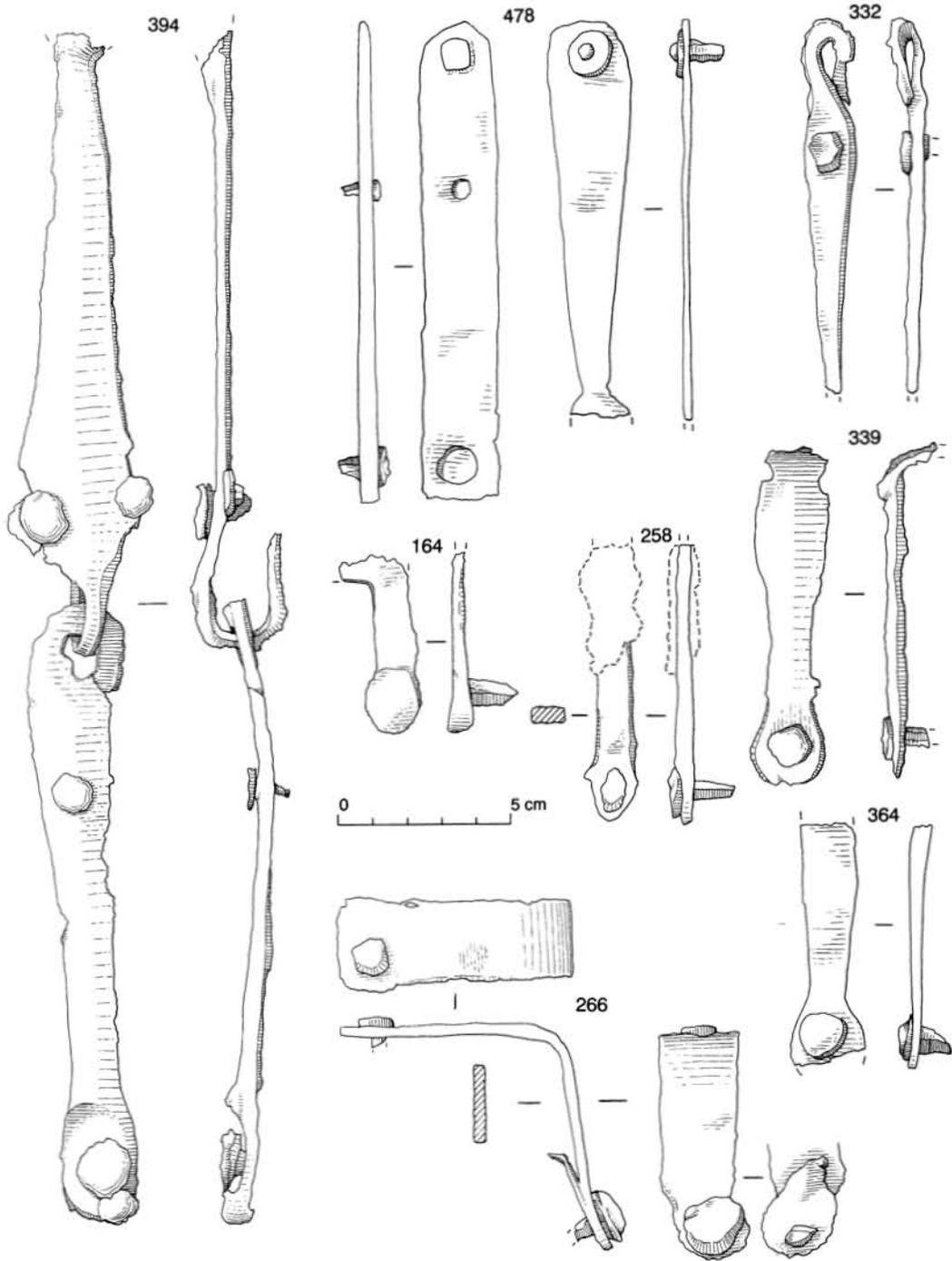


FIG. 24
Ailcy Hill, Ripon; hinge straps and corner brackets

which were fixed to the chest lids. The strap from SF382 narrows to a rounded base, whilst that from SF567 is parallel-sided and has a recurved tip. The hasp of SF382 is a parallel-sided strap with a base recurved to form a looped terminal; the fixed staple is pear-shaped rather than the usual U-shape. The hasp from SF567 is an altogether more complex object. It consists, firstly, of a strap with a link at the head, formed in the usual manner by drawing out and looping around. The body narrows to the base, where it is recurved to form a looped terminal. Secondly, a spirally twisted strip runs around the face of the object, welded to its head and base.

SF459 has a staple linked to the head, narrowing to the base which is now missing. Its identity as a stapled hasp, whilst likely, is not certain. It is the only object from the site, other than six of the nails (see above), to be plated with non-ferrous metal. In view of its relatively small size, it is possible, as noted above, that SF459 was originally a box rather than a chest fitting and may, as in the case of the plated nails, be from an item of grave furnishing.

No stapled hasps from Britain or elsewhere in northern Europe appear to be earlier than the 8th century. Prior to this hasps used with sliding lock bolts had a loop or pierced terminal at the end. The examples from Ailcy Hill have close parallels in 8th- to 10th-century contexts, including four from the Thwing cemetery and one from a 10th-century context at 16-22 Coppergate, York.⁸¹ The use of spirally twisted strips for stapled hasps, seen on SF567, as opposed to hasps with loops or slots, is most uncommon, although there is an example, albeit of different form, from Thwing.

Other Straps

In addition to the fittings already discussed, there are fifteen additional straps, some of which are probably fragments of hinges, hasps or corner brackets. SFs 130, 283 and 383 (Fig. 19) fall into this category. SFs 168 and 221 (Fig. 25) may be corner bracket arms, but are pierced twice, a feature not seen on any of the complete corner brackets from the site. The same reservation applies to the incomplete straps SF191 and SF246 (Fig. 25), which are also pierced twice and have concave sides. Although larger, SF300 was apparently of similar form. SF12 (Fig. 25) is an incomplete strap with a rounded end which is too long to be a corner bracket.

SF159 (Fig. 25) is a complete strap with a looped terminal at one end which resembles those on stapled hasp SF382 (Fig. 19) and the strap linked to stapled hasp SF567 (Fig. 22). Finally, there are three straps with rounded terminals at each end (SFs 192, 196; Fig. 25 and 225) which are clearly complete. Their function is uncertain, but one possibility is that they strengthened the sides or lids of chests. In addition to these straps, there are also twelve incomplete pieces of plate which are clearly pierced for attachment and may have been part of lock plates, bindings or other fittings.

Locks

Two types of chest lock were represented in the Ailcy Hill cemetery. In the first a sliding bolt was held in place by springs, and in the second by a tumbler.

Locks with sliding bolt and springs

There are two virtually complete locks of the first type (SFs 233 and 367; Fig. 22), comprising a lock plate and a bolt and spring mechanism. The lock plate of SF367 is rectangular; that of SF233 has a convex top. In both cases, when viewed from the front, the hasp hole is to the right of the key hole. SF233 has the usual form of bolt, consisting of a central plate with an arm projecting from the head and base. The bolt was held in place on the inner face of the chest by small U-shaped staples which survive corroded to the arms. SF367 has a most unusual bolt which has no arm at the base; it must have been

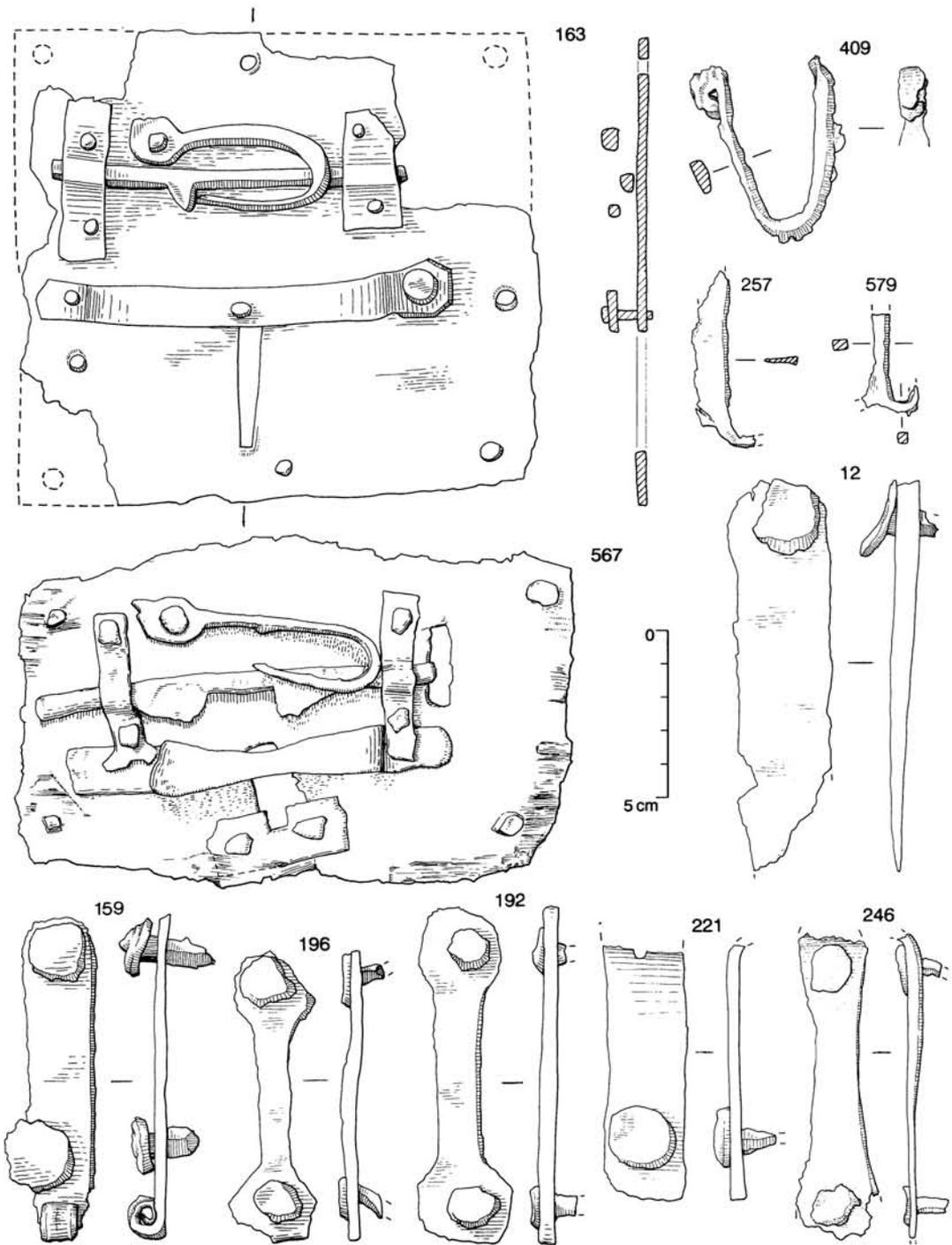


FIG. 25
Ailcy Hill, Ripon; locks and straps

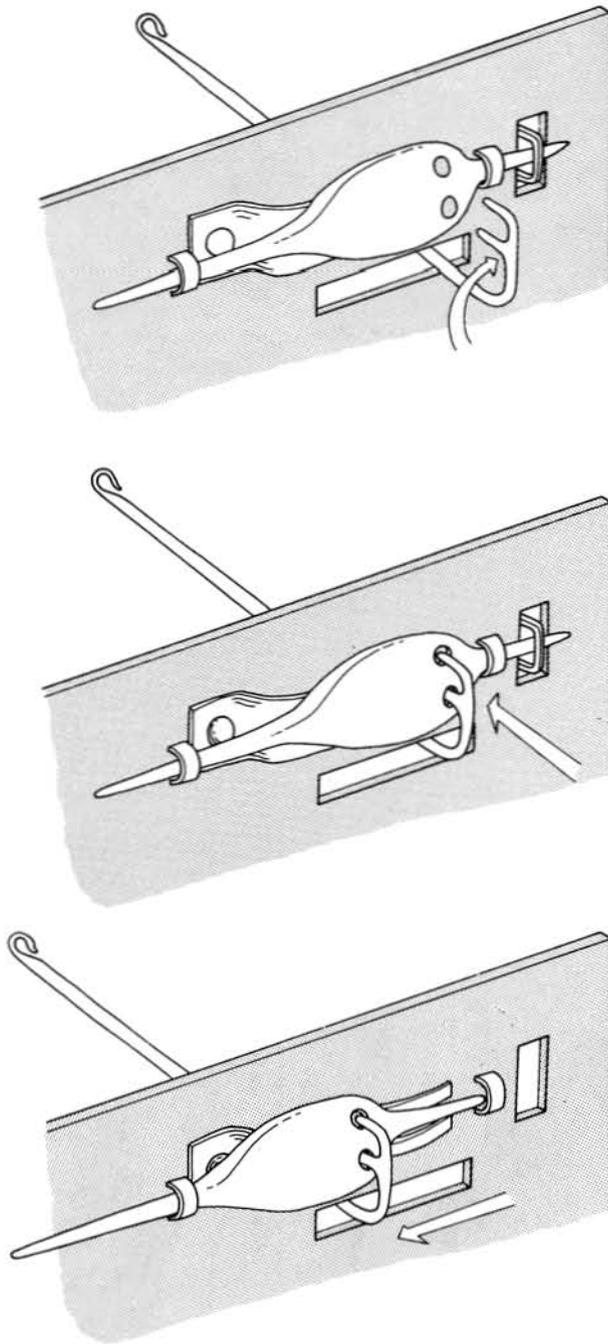


FIG. 26

Reconstruction of a lock with sliding bolt and spring mechanism

omitted for reasons of space within the lock case, but extra provision had then to be made to keep the bolt in place and two small straps were added. The way in which sprung sliding bolt locks worked is shown in Fig. 26. When locked, the leaf springs, which were attached at one end to the chest or lock plate, pressed against the curved-over head of the central plate. The arm projecting from its head engaged in the staple of the stapled hasp holding the lid closed. To unlock, a key, sometimes known as a 'slide key',⁸² was inserted through the chest key hole and twisted through 90° so that the teeth engaged in the holes at the head of the central plate. Once engaged, the key was pulled back slightly to release the springs and the bolt could be slid along to free the hasp. As elsewhere, there are two variants in the form of lock bolts with springs at Ailcy Hill. In the most common, to be found in locks SF233 and SF367 (Fig. 22), and represented by three other bolts (SFs 114, 177 and 384; Fig. 20), there is a central slot, which implies a key with a T-shaped bit (e.g. SF579, Fig. 25) which passed through that slot when inserted through the key hole. There are, however, two examples from the site — SFs 369 (Fig. 18) and 454 — of bolts without a central slot, which, as shown in Fig. 26, implies a key with an L-shaped bit and a key hole set below the bolt. Two holes for the teeth of the key bit are usual, but the bolt of lock SF233 has three (Fig. 22). An unusual feature of three of the bolts (SFs 118, 369 and 384; Figs. 18 and 20) is that the arm projecting from the base of the central plate has a flattened and rounded terminal. This was presumably intended to prevent the arm slipping or being forced out of the staple holding it in place.

The chests from which locks SF233 and SF367 come would have a housing cut out of the front to accommodate the plate and mechanism. However, this need not have been the case in the chests from which lock bolts SF114, SF369 and SF384 derive, as the surviving springs have wood remains on the curved-over ends, showing that they were fixed to the chest itself rather than to an iron lock plate. The chests in these cases need only have had a key hole and hasp slot cut in the front.

The origin of the lock with a sprung sliding bolt may lie in the Roman period; there is a possible example of such a bolt of this date from Lakenheath, Suffolk.⁸³ Slide keys (as defined by Ottaway⁸⁴) are numerous in Roman contexts, but can be used with other types of lock. Early post-Roman examples of the locks under discussion here come from caskets found in pagan Anglo-Saxon burials at, for example, Gilton, Kent, Chamberlain's Barn (Leighton Buzzard) and Buckland, Dover.⁸⁵ A brass specimen was found at Sibertswold Down, Kent.⁸⁶ Both the central slot and non-slotted form occur among the examples cited.

The largest collection of 8th- to 9th-century locks with sprung sliding bolts comes from the Thwing cemetery, where nineteen were found, of slotted and non-slotted form, all associated with chest burials. Thwing produced only one lock plate, however, and it was much smaller than those from Ailcy Hill, being merely a protective surround to a key hole. In addition to the Thwing locks, it may be noted that the coffin from the grave at Garton Slack had a non-slotted bolt, and that a slotted bolt came from a chest burial at Pontefract (Grave 608).⁸⁷ Five bolts were found at Dacre, of which one was securely stratified in a chest burial dating to the 8th or 9th century. Two locks with sprung sliding bolts were found on chests used as coffins in the Anglo-Scandinavian cemetery at York Minster,⁸⁸ but although two (unslotted) examples come from 10th-century contexts at 16–22 Coppergate, York,⁸⁹ the sprung sliding lock is, it seems, particularly characteristic of the 7th to 9th centuries in England and had probably become obsolete before the end of the 10th century.

Locks with Tumblers

Three complete locks in which the bolt was controlled by a tumbler (SFs 163, 267 and 567; Figs. 20 and 25) were found along with one incomplete specimen (SF581). When locked, the bolt engaged in the staple of the stapled hasp and was held in place by the tumbler which rested against a notch at the top of the bolt (Fig. 27). To unlock, a key with a hollow stem was passed through the key hole and fitted over a spindle, made from a thin

iron strip, which projected from the frame at the back of the lock, extending to within 10–15 mm of the lock plate. The sides of the frame could have borne simple wards over which ward cuts in the key bit had to pass, but corrosion has obscured the evidence for this in the Ailcy Hill examples. On turning, the key bit pushed against a projection on the lower edge of the bolt. (There are usually two projections, but SF267 only has one.) At the same time, the bit pushed up the tumbler and released it from the notch, allowing the bolt to be drawn back.

Lock plate SF163 is rectangular, but SF567 has a convex top, whilst SF267 has a convex projection from the base to provide more space for the key hole. SF567 is also of interest because it is a second example of an object from the site (the first is corner bracket SF266) which has been crudely altered or repaired. The size and shape of the key hole has been changed by nailing on, rather than welding, a small plate to the lock plate's inner face.

The only other example of a lock with a tumbler and bolt of the type described here which is likely to be contemporary with those from Ailcy Hill comes from a chest in a burial at Pontefract (Grave 588). This has a radiocarbon date centring on the late 7th century.⁹⁰ Whilst the lock type may have its origins in the 7th or early 8th century, the evidence for its use is greater from the late 9th century onwards. Two chests with tumbler locks were found in Anglo-Scandinavian graves at York Minster; 16–22 Coppergate, York, produced 41 keys and twelve bolts, and there is a small wooden lock case with bolt, tumbler and spindle from an Anglo-Scandinavian context at 6–8 Pavement, York.⁹¹

Keys

In spite of the numerous locks and lock parts from the site, only one key and one possible key were found at Ailcy Hill. SF579 (Fig. 25) is a slide key,⁹² suitable for locks with sprung sliding bolts of the central slot form, with a T-shaped bit. SF409 (Fig. 25) is probably the stem of another slide key suitable for locks with sprung bolts, although it is also possible that it came from a barrel padlock key. SF579 was found in a topsoil deposit and SF409 in a cemetery-related layer, but both keys may have been grave goods; two examples of slide keys in chest burials at Thwing have been interpreted in this way.

Other Iron Objects

Knives

In its original form, SF472 (Fig. 17) probably had what is often known as an 'angle-back' blade.⁹³ The back is straight to a point *c.* two-thirds of its length from the shoulder and then slopes down to the tip, albeit in a somewhat irregular manner, probably as a result of damage during use. Examples of knives with angle-back blades are known in 7th-century contexts in England, becoming common in those of the 8th century. The form remained current until, perhaps, the early 11th century after which it gradually became obsolete.⁹⁴ An interesting feature of SF472 is that on the back of the blade, near the shoulder, there is an inscribed St Andrew's cross flanked by two pairs of transverse grooves. Inscribed lines or notches on the top of blades are known on knives in the 8th–10th centuries, especially on those with the angle-back form, but there are earlier examples and it may be noted that an identical pattern to that on SF472 has been recorded on a 5th-century knife found in a grave at Ejsbøl in Denmark.⁹⁵ The grooves which appear at the top of the blade face of 472 can also be paralleled on knives as early as the 5th–6th centuries, but are more common on knives of the 8th to 10th centuries and are again particularly frequent on knives with angle-backs.⁹⁶ SF472 accompanied burial 1064, a skeleton from which a radiocarbon date of 560–660 cal A.D. (UB-3151, 1427 ± 35 BP) was obtained and would thus appear to belong to the earlier stage of this continuum.

SF207 is an incomplete object, but appears to be a very small knife blade with a short stub of tang. It comes from a cemetery-related deposit, and may have been associated with the burial 1019.

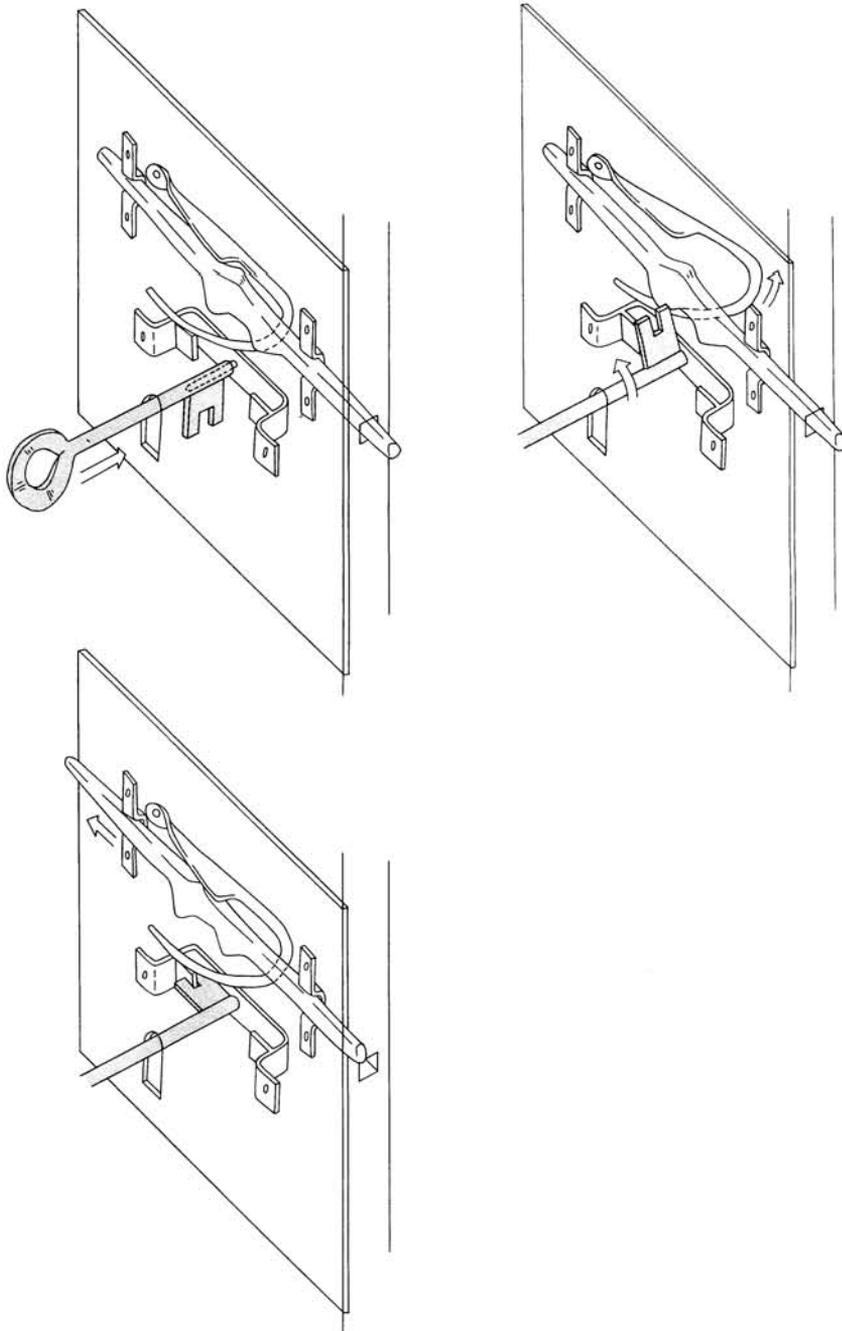


FIG. 27
Reconstruction of a lock with tumbler mechanism

Buckle

SF483 (Fig. 17) is an iron buckle which, with the knife SF472, accompanied burial 1064. The frame is oval and there are two tongues. Buckles of this type have been discussed by Geake, who lists ten examples from English burials of the 7th or early 8th centuries. An example probably of similar date was found in a non-funerary context at Shakenoak Farm, Oxon.⁹⁷

The Ironwork and Chest Burials From Ailcy Hill: Conclusions

The effects of post-burial disturbance make it impossible to establish the exact number of chest burials on Ailcy Hill. Furthermore, the lack of any preserved wood, except as mineralized remains on the iron fittings, renders it difficult to reconstruct any individual chest accurately (see the report on mineralized wood remains by J. Watson, below).

The degree of disturbance on the summit of Ailcy Hill means that the association of fittings with individual burials is often ambiguous and in many cases impossible. The only instances of anything like a complete set of coffin fittings come from burials 1045 (Figs. 14, 19, 20) and 2005 (Fig. 15). 1045 was associated with two sets of hinge straps, a corner bracket, and a lock and two hasps. The presence of a second hasp implies the existence of a second lock. The interpretation is qualified by the fact that 1045 and 1065 were buried very close together (Fig. 16), and it is possible that some fittings may inadvertently have been ascribed to the wrong burial. No parallel for double locks can be found in any of the other cemeteries referenced. Skeleton 2005 (Fig. 15) was associated with four hinge straps, a corner bracket, a lock bolt and a possible lock plate.

It is probable that the Ailcy Hill chests were, for the most part, oblong boxes with flat lids. The corners were strengthened by brackets and on occasions, perhaps, by other straps such as SFs 159, 192, 196 and 225. The lids would have been attached by hinges and secured by stapled hasps and locks. The hinges probably occurred in pairs (although Thwing produced a chest with three sets) which would suggest that Ailcy Hill had a minimum of eight chest burials. A variant in the usual lid inventory is indicated by SFs 382 and 567 (Figs. 19 and 22), which included hasps which had been fitted to the chest lid by a strap indistinguishable from the Component A hinge straps. The function of the nails in burial chests was probably to hold the fittings in place, the timber boards being jointed together, a suggestion which has been confirmed in at least one instance by examination of mineralized wood remains on the iron fittings. The majority of the 500 nails from Ailcy Hill may, however, have been used for purpose-built coffins held together with nails, the nail length data suggesting an average thickness of wood of *c.* 25 mm.

In the virtual absence of any other artefacts, any refinement of the date-span of the Ailcy Hill chest burials provided by radiocarbon determination depends firstly on the form of the iron fittings and other iron objects from the site, and secondly on the dating of the custom of chest burial itself. All the fittings appear to be of types and forms which were current between the late 7th and 10th centuries. Minor differences between Ailcy Hill and the other cemeteries referred to in terms of hinge, corner bracket, lock and hasp form probably reflect the preferences of local smiths rather than typological developments over time.

The earliest examples of the custom of chest burial in England are probably Romano-British. Hinge straps were, for example, found in two graves of that period from Cirencester.⁹⁸ The re-appearance of the custom of chest burial in the post-Roman period is hard to date in the absence of diagnostic associated artefacts, but the Garton Slack burial is of some interest in this regard. It comes from a cemetery of unfurnished inhumations located adjacent to, but distinctly separate from, a cemetery of furnished inhumations. The implication of this arrangement may be that the furnished inhumations belong to the later years of paganism and the unfurnished inhumations, including the chest burial, to the earliest years of Christianity in east Yorkshire, perhaps the mid to later 7th century. A late 7th-century date is also suggested by radiocarbon for one of two graves with burial chests

from Pontefract. For both artefactual and contextual reasons the Dacre, Monkwearmouth and Thwing graves are probably 8th or early 9th century while those from Repton, Hereford, Winchester and York Minster are probably late 9th or 10th century.

The presence of plated nails and a plated fitting, probably a hasp, suggest that parts, at least, of the Ailcy Hill cemetery must be later than *c.* A.D. 700. As noted above, tin-plated iron objects do not appear to occur in earlier contexts, but become common in the 8th and 9th centuries.

An important difference between the Repton cemetery and those at Ailcy Hill, Dacre and Thwing is that at Repton the chests have no locks. They have hasps of the looped or slotted rather than stapled type which would have required a padlock to secure, although no padlock was found. The Hereford chest, dated to the 10th century, had a slotted hasp, as did the Winchester chests, except for one which is probably late 9th century, where a lock and stapled hasp was found.⁹⁹ The York Minster burials with locks are probably late 9th or 10th century. None the less, it may be suggested that the presence of locks is a reason for attributing to the Ailcy Hill chest burials a similar date range to those in the cemeteries at Dacre and Thwing. On this basis the chest burials at Ailcy Hill are unlikely to be later than the first half of the 9th century. Taking all the ironwork evidence into consideration, it is suggested that the Ailcy Hill chest burials probably date between *c.* A.D. 700 and *c.* A.D. 850.

The majority of chest burials in England appear to come from the northern half of the country. The custom is not confined to England, however, and examples are known at Whithorn, Scotland, and elsewhere in northern Europe, including Dunum in Friesland and in Denmark at Forlev, Fyrkat and Lejre.¹⁰⁰ The Dunum burial is 8th or 9th century and the others are probably 9th to 10th century. Although there is no evidence that chest burial was an alien custom introduced to England from elsewhere, it is clear that it was never widespread and it is unknown in many mid to late Anglo-Saxon cemeteries. Where the custom does occur, chest burials often appear, as at Dacre, Monkwearmouth, Thwing, Winchester and York Minster, to be concentrated in certain locations within their cemeteries or, as at Repton and Ripon, in a discrete cemetery within a sacred site with other burial areas. These factors, when considered with the status of the sites themselves as either monastic cemeteries (Dacre, Monkwearmouth, Repton), or cathedral cemeteries (Carlisle, Winchester, York Minster) or a cemetery attached to a centre of political authority (Thwing) suggests that the chest burial custom was reserved for people of distinct status. What this status was is hard to ascertain, but it is, perhaps, most likely to have been related to high rank rather than, for example, ethnic or other social affiliations.

THE CONSTRUCTION OF THE CHESTS/COFFINS *By* JACQUI WATSON

Fittings associated with four burials — 1043 (Fig. 14), 1045, 1065 (Fig. 14) and 2005 (Fig. 15) — were examined for traces of mineralized wood to identify wood species and the constructional details of the coffins. Wood was not preserved on all the ironwork, and was absent from the corner brackets in these groups, which might have indicated the type of joints used. Wood preserved on several of the nails indicates that the sides were mainly held together with wooden pegs or dowels. All of the coffins represented seem to have been made from radial surface boards, probably employing radially split timber as discussed by Darrah.¹⁰¹

The fittings from burial 2005 provided the most information on the original construction of these chests.¹⁰² In this example the original dowelled sides appear to have been reinforced with iron nails. The dowels were made from mature oak rather than branch or juvenile wood. Most of the nails with wood remains had been positioned directly over the dowels or pegs, as in the case of SF111 (Fig. 28). The individual boards could be up to 33 mm thick in places, whereas at the joints the same boards had been reduced to 10 mm in thickness. This suggests that the edges were rebated, and it is most likely that the corners were rebated butt joints, of a type discussed by Milne.¹⁰³ Nails from burial 1043

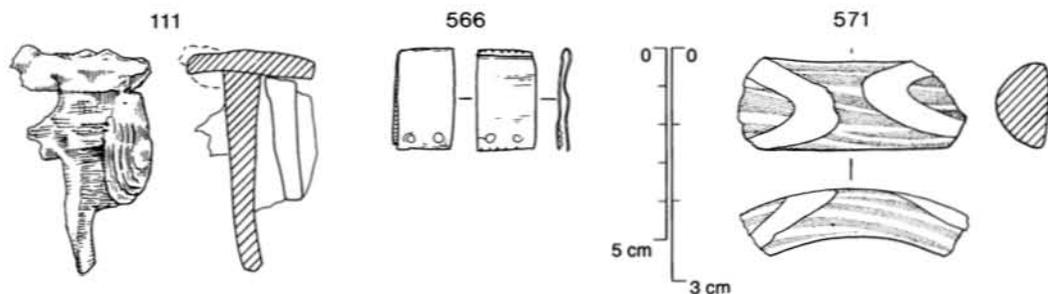


FIG. 28

Ailcy Hill, Ripon; iron nail (111) with the shape of a wooden dowel preserved in corrosion products; copper alloy strap-binding (566); fragment of glass bangle (571)

suggest that this chest was also originally a dowelled construction which had been reinforced for some reason.

The chest associated with 1045 appears to have been made from less uniform boards than the other three, as the front under the lock plate had a tangential surface, with other fittings indicating that the other sides are likely to have had radial surfaces. Since few fittings were found associated with 1065, the constructional details of this chest could not be identified.

Overall, the similarity of the chest-fittings themselves to those found at Thwing, East Riding of Yorkshire, suggest that the woodworking and constructional techniques are likely to have been similar,¹⁰⁴ but insufficient evidence survives from Ailcy Hill for this certainly to have been the case.

FRAGMENT OF A GLASS BANGLE *By* DR J. PRICE (Fig. 28)

SF571 is a fragment of a D-sectioned bangle, of which 56° of circumference survive. The fragment is 11.3–11.8 mm in height, 6–6.4 mm thick, and 29.4 mm long. The object of which it was part had an internal diameter of 54 mm. It has a blue-green ground with streaks of dark blue and 10 thin opaque trails marvered flush with the outside surface, overlaid by two thick opaque yellow curving marvered trails. The glass is very bubbly and dull, with some wear on one broken edge. A few complete and fragmentary glass bangles are known in Anglo-Saxon burial contexts in SE. England.¹⁰⁵ These bangles were produced either in the late Roman or early post-Roman period, and they are very different in colour, form and decoration from the Ailcy Hill fragment.

Although no exactly similar pieces are known, the form, colour and decoration of the Ailcy Hill example are comparable with bangle fragments dating from the later 1st and early 2nd centuries A.D., which have been recorded in large numbers in northern England and lowland Scotland, and in smaller quantities in southern Britain. These bangles were first studied by Kilbride-Jones, who classified them in three groups, Types 1–3, with ten sub-divisions in Type 3.¹⁰⁶ This classification has been retained and modified in later studies by Stevenson, Price and others.¹⁰⁷

The D-shaped section is a feature of Type 2 bangles, which always have a translucent ground colour and one or more unmarvered, horizontal twisted cords on the outside surface, and it also occurs among the versions of Type 3 bangles which have translucent ground colours (Type 3, F–J).

The use of blue/green glass mixed with dark blue glass to create the effect of dark blue for the ground colour is a feature of these bangles in northern Britain. Narrow, more or less horizontal trails, marvered flush with the outside surface, also occur on some examples. Stevenson has noted three;¹⁰⁸ from Hownam Rings, Borders,¹⁰⁹ Stony Rigg,

Ingleby Greenhow, North Yorkshire¹¹⁰ and Walkington, near Beverley, East Riding of Yorkshire. Other examples are known from Holme-on-Spalding Moor, East Riding of Yorkshire, Rudston, North Yorkshire and South Cave, East Riding of Yorkshire, and from Annetwell Street, Carlisle.¹¹¹ With the exception of the Hownam Rings fragment, however, the trails on these fragments are not opaque white, but either opaque blue or dark blue and white or yellow/brown and white twisted together.

The bangles with narrow marvered trails appear to be closely related to Type 2 bangles,¹¹² but opaque yellow curved trails do not occur on Type 2 bangles. This decorative element on Ailcy Hill fragment provides a link with the Type 3, C, G, H and J bangles which have opaque yellow curving trails or 'pot-hooks', and overall the piece appears to be a variant of Type 3 I/J.

Fragments of Type 2 and Type 3 bangle types are known in at least two other Anglo-Saxon burials in Yorkshire and County Durham. An Anglian grave at West Heslerton in North Yorkshire produced a fragment of dark brown bangle with opaque white curving trails or 'pot-hooks', which may have been contained in a purse with several other items.¹¹³ Another, a fragment of a dark blue and white unmarvered twisted cords arranged in a herringbone pattern at the centre, was found in Grave 44 in the Anglo-Saxon cemetery at Norton, County Durham.¹¹⁴ This fragment was very worn, the broken ends had been shaped to straight edges and the piece was enclosed in a silver binding. There is no doubt that both these pieces were deposited deliberately with the burials, presumably as treasured personal items.

The status of the Ailcy Hill fragment is much less certain. There is little doubt that it was produced in the last quarter of the 1st century or the early 2nd century A.D., and so is a residual find in Grave 7009. The date of this burial makes it unlikely that grave-goods would have accompanied the body, but the bangle fragment may have been redeposited from an earlier burial with grave-goods, or have been incorporated in the fill of Grave 7009 by chance.

OBJECT OF COPPER ALLOY *By* N. S. H. ROGERS (Fig. 28)

SF566 is a folded sheet of copper alloy, broken at the fold, which has two rivet holes through both thicknesses at the other end. The material around which the strip was folded has left no trace, but it seems most likely that this is a strap-end binding, used to prevent the end of a leather strap from fraying. Such simple objects have frequently been found on Anglo-Saxon sites, as at North Elmham, Norfolk; examples recovered from the 5th- and 6th-century cemeteries at Sewerby, Yorkshire and Norton, Cleveland,¹¹⁵ were interpreted as repairs for wooden bowls. In this case the lack of wood remains, and the narrow gap between the plates tend to suggest that a strap binding is a more plausible function for this particular example. Objects of this type are also found in later, medieval contexts.¹¹⁶

QUARRYING

The excavations produced plentiful evidence for the quarrying of the hill referred to in the writings of Ripon antiquarians. In Areas 9, 14, 11, 10, 3, 5 and 6 (reading anti-clockwise from the NW. quarter of the hill; Fig. 2), the original ground surface had been either completely destroyed, or buried under debris. In Areas 9 and 11 the sides of the hill had been effectively scoured, exposing naturally derived slopewash at a depth of less than 200 mm below topsoil. Larger cobbles had rolled down the slope, accumulating to form a 'fan' around the foot of the hill; a similar accumulation was revealed in Area 14.

Excavation in Area 10,2 revealed undisturbed natural strata at a depth of *c.* 1.60 m, beneath a series of dumps of cobbles in a sandy matrix. Each of these contexts produced

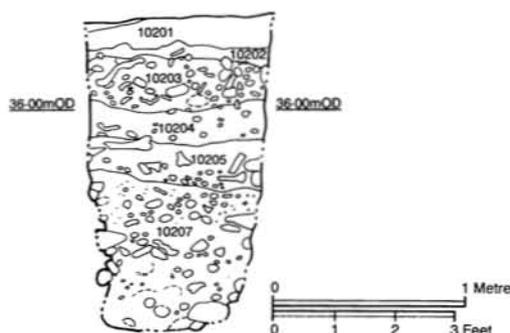


FIG. 29

Ailcy Hill, Ripon, Area 10, 2; SE. facing section

significant quantities of disarticulated human bone (Fig. 29), and represent the backfilling of a quarry pit, the near-vertical E. edge of which was identified close to the SW. extremity of Area 16,2. The narrowness of this area precluded excavation of the cut below a depth of *c.* 0.20 m. Excavation in Area 3 encountered a homogeneous layer of large cobbles in a matrix of loose sandy loam, to a depth of *c.* 1.80 m below topsoil, at which point excavation ceased; the layer contained infrequent small fragments of human bone. It seems likely, therefore, that the 'spur' on which Area 3 was sited (Fig. 2) actually represents a spoilheap, probably the result of the quarrying operations evidenced in Area 10. Around the base of the hill, in Areas 5 and 6, the excavation of features and deposits associated with 19th-century landscaping revealed dumps of cobbles and sand derived from quarrying; these were excavated to a depth of *c.* 1.50 m and *c.* 0.80 m respectively. Area 4 was laid out across a depression (Fig. 2) which proved to mark the site of a discrete feature *c.* 6.50 m across, and this too is best explained as a quarry pit.

On the summit of the hill, a layer of cobbles sealed the original burial horizon over much of Area 1 (1012; Fig. 4) and all of Area 2 (2002). This material has also been interpreted as quarry debris, derived from operations on what would appear to have been the original summit, a few metres to the S. These layers produced 52 iron nails and fittings, and significant quantities of human bone, clearly indicating that they had accumulated after and as a result of extensive disturbance of the cemetery (although some of the iron objects were almost certainly incorporated into these layers as a result of subsidence of the quarrying debris into the underlying burial deposit). A single sherd of medieval or post-medieval grit-tempered pottery provides a *terminus post quem* for the deposition of the debris. The references made by successive Ripon antiquaries to the quarrying of the hill suggest that such extractive operations occurred from the later 17th to the early 19th century, and Sheahan specifies that the W. side of the hill was used as a gravel pit until the enclosure of Ripon common in 1826.¹¹⁷

Combining the detailed information from the excavated areas with the modern topography of the hill (Fig. 2), it can be argued that the whole of the SW. flank of the hill (from immediately NE. of Area 9, anti-clockwise to Areas 10 and 3), has been removed from the summit down to at least the 30 m contour, and possibly all the way to the base of the hill. The steepness of the slope below the 33 m contour on the E. flank is indicative of this being a quarry face, whilst even the N. and NE. flanks, where the relatively shallow slope preserves the contours of the original ground surface, appear to have been quarried below the 30 m contour, causing a sharp break in slope at this point.

In considering the burial sequence from Area 1, it is of particular importance to note that an uncertain proportion of the original summit of the hill has been removed by quarrying. The highest point of natural strata occurs close to the SW. corner of Area 1 (Fig. 5, D-E); positing a roughly symmetrical original profile (appropriate for a peri-glacial feature such as this one, comprising loose, roughly horizontally bedded strata), it can be

suggested that the original summit could have been twice or even three times as extensive as the surviving area.

19TH-CENTURY LANDSCAPING

Until the early 19th century, the area known as Ripon Common extended to, and may have included, Ailcy Hill. At the enclosure of 1826, however, the hill was purchased by Prebendary George Allanson.¹¹⁸ Probable traces of boundary features around its base were found in the excavation of Areas 5 and 6. In Area 5, three parallel, N–S. aligned rows of post-holes up to *c.* 300 mm in depth would appear to represent successive fence lines; these features were cut into quarrying debris, and contained 19th-century pottery. Hard against the S. edge of Area 6, an E–W. aligned robbing trench (minimum width *c.* 0.40 m, maximum depth *c.* 0.30 m) with an *in situ* cobble footing is best interpreted as a boundary wall. Whilst claiming neither of these as having any necessary association with the *original* enclosure of Ailcy Hill, this, or perhaps more likely a subsequent episode, would provide an appropriate context.

In the N. half of Area 6, running parallel to the wall previously described, a gravel surface *c.* 1.40 m wide would seem to have formed the surface of a deliberately laid pathway. The continuing line of this pathway could be traced around the NE. and SE. flanks of the hill, rising obliquely across the S. slopes, and was evident as a shallow, saucer-profiled cut or depression *c.* 0.80–1.00 m wide in Areas 10,4 and 13, as a noticeable terrace of similar width in Area 8,2 (the cutting of this feature having truncated the skeleton 8208 — see Fig. 11), and as an E–W. aligned depression *c.* 0.80 m wide and *c.* 250 mm deep in the surface of 2002 in Area 2.

Ailcy Hill thus bears clear traces of a deliberately created pathway, spiralling anti-clockwise from base to summit; the 1856 Ordnance Survey map shows this feature clearly.¹¹⁹ It seems to have formed a part of a deliberate remodelling of the hill, which also involved increasing the area of level ground on the summit through the dumping of considerable quantities of clean silty sand. This material (1009), which contained a single sherd of 19th-century pottery, sealed a void left by the uprooting of small trees or shrubs (1016; Fig. 10), and brought the ground level over the hill-top almost up to that of the outcropping natural in the SW. quarter of Area 1 (Fig. 4).

That this evidence indicates a deliberate episode of ‘beautification’ of the hill, the creation of a recreational amenity, can hardly be doubted, particularly in the light of Fairburn’s observation of *c.* 1862 that the ‘. . . hill is now enclosed and covered with grass and shrubs. On the top is a garden seat, overshadowed by trees, where the cool of the summer’s eve might be quietly spent, unconscious of the heap of decayed mortality beneath, unless it be betrayed by a bone bleaching at our feet’.¹²⁰ Exactly when the requisite earth-moving was carried out is uncertain, but it must surely have taken place between the enclosure of the hill in the early 1820s, and the work of the Ordnance Survey prior to 1856. It can thus be considered as the creation of a stylized ‘Romantic’ landscape of the type growing in popularity in that period.¹²¹

DISCUSSION

Ailcy Hill’s likely origin in the peri-glacial deposition of sands and gravels on the fringes of a retreating glacier has already been noted. Extensive post-medieval quarrying has, however, made the original form of the hill difficult to establish. Its surviving profile suggests that it may originally have been an isolated, conical mound, as indeed is shown on Langdale’s map of 1818 (Fig. 35). This may, however, underestimate the extent of the quarrying of the hill, which had apparently all but ceased by this date;¹²² the surviving hill may be only a fragment

of the original, raising the possibility that it once had a 'whaleback' profile, rather than the cone-shaped appearance of today.

Although the earliest *in situ* burials on Ailcy Hill are laid out in rows and aligned W-E., the presence of charnel in these graves, and the slight indications of possible N-S. aligned burials, suggest an earlier phase of the cemetery. The apparent concentrations of several individuals represented as charnel in a handful of the Phase 1b and 2 graves (notably those of 2006, 1045/1065 and 1073; Figs. 7 and 8) may hint at a clustered and uneven distribution of these burials, contrasting with the regular spacing and rows of the later phases.

N-S. aligned burials likely to be broadly contemporary with the suggested examples from Ailcy Hill have been found in large numbers in the 6th- and early 7th-century cemetery at Norton, Cleveland, where this is the prevailing orientation.¹²³ However, the distinctive topographic location of the Ailcy Hill burials invites parallels with cemeteries of the 6th and 7th centuries A.D. which are associated with prehistoric barrows, or with other prominent landscape features of natural origin.

Meaney¹²⁴ has noted the phenomenon of early Anglo-Saxon secondary burials in prehistoric barrows as a particularly frequent occurrence in Wiltshire, the Peak District and the Yorkshire Wolds. The Yorkshire examples include substantial cemeteries apparently used by whole communities, as distinct from the single interments characteristic of the other two locales. Locally prominent natural features also attracted burials, such as the cemetery of furnished inhumations on the brow of a natural knoll at Seamer.¹²⁵ Specific examples of the re-use of barrows in east Yorkshire include that of Rudston I,¹²⁶ a barrow 30.5 m in diameter and 2.75 m high, where several unfurnished bodies were found supine, laid in parallel; Barrow X of the Painsthorpe Wold Group, near Uncleby,¹²⁷ with over 70 secondary Anglian burials inserted into its flanks; and Barrow C38 at Kelleythorpe, Driffield,¹²⁸ in which c. 50 secondary Anglo-Saxon burials were interred, mostly laid radially around the centre of the barrow with heads innermost.

Many of the burials from Norton, Painsthorpe Wold, Kelleythorpe and Seamer, all conventionally dated to the 6th and/or 7th centuries, were accompanied by a range of weapons, knives, brooches and other items. In contrast, artefacts are all but absent from Ailcy Hill; apart from the knife and buckle (SFs 472 and 483; Fig. 17) accompanying the Phase 1b burial 1064, the only candidates are a copper alloy sheet strap binding (SF566; Fig. 28) from the grave of 1073 (Fig. 14), and a glass bangle fragment (SF571; Fig. 28) from the grave of 7009 (Fig. 11). Although found in Phase 2 graves, it is by no means clear that the strap binding and bangle fragment were deliberately included with these burials; it seems more likely that they were disturbed from earlier contexts. Additionally, a tiny sherd (<2g) of organic-tempered pottery was recovered from the modern soil cover on the summit, and a similarly-sized handmade sherd with leached-out calcareous inclusions found in 1009, a context associated with the 19th-century landscaping of the hill. Given that the only dated example of the Phase 1b burials, 1064, is highly unlikely to be later than 660 cal A.D. (UB-3151), the proposed N-S. burials, and the skeletons represented by charnel in the Phase 1b graves, would appear to

be broadly contemporary with the sites mentioned above. However, the near-absence of grave-goods, certainly in the quantities obtaining on the other sites, marks the earliest burials at Ailcy Hill as distinct from these examples.

The absence of evidence for burial provision in the 5th and 6th centuries over much of the 'non-English' areas of Northumbria is well known. It has been suggested that this results from cemeteries of this period invariably being encumbered by later churchyards.¹²⁹ The evidence for pre 7th-century burial on Ailcy Hill, apparently lacking the accompanying grave-goods characteristic of contemporary 'Anglo-Saxon' cemeteries, may suggest that it was the site of one of these elusive burial grounds.

The first phase of the cemetery represented by *in situ* burials was laid out in W-E./E-W. aligned rows conforming to the contours of the hill (Figs. 5 and 6). These included only one furnished inhumation; the grave of 1064 (Fig. 14) contained a knife and double-tongued iron buckle (SFs 472 and 483, Fig. 17). A radiocarbon determination of 560–660 cal A.D. (UB-3151) from bone from this skeleton may be augmented by the consideration of parallels for the buckle; double-tongued examples have, it has been argued, 'a narrow date-range . . . centring on the second half of the 7th century', and in any event are unlikely to pre-date c. A.D. 600.¹³⁰ All other burials attributed to this phase are unaccompanied. Such characteristics place this burial episode within what is frequently referred to as the 'Final Phase', a term used to denote burial grounds lacking the range and quantity of grave-goods found in cemeteries of the 5th and 6th centuries, and often taken to represent an intermediate, post-pagan phase of burial ante-dating widespread interment in churchyards. The causal factors often invoked to explain these changes, in particular changes in religious belief, have been called increasingly into question, as indeed has the identification of the 'Final Phase' as a single uniform phenomenon.¹³¹ Nevertheless, it is clear that the Phase 1 burials from Ailcy Hill need to be considered in the light of these developments, whatever their precise nature and cause.¹³²

Local parallels for such burial arrangements include the group of four burials, with few if any accompanying objects, found during gravel digging on Howe Hill, Carthorpe,¹³³ a natural ridge c. 135 m in length, 15 m wide and 2.40 m high. The possibility that the original form of Ailcy Hill differed substantially from that surviving today is relevant in this instance. A better documented example of an Anglian burial ground utilizing a slope comes from Belle Vue House, astride a ridge of glacial moraine c. 1.8 km E. of York. Here, excavations recovered 38 articulated inhumations, probably a continuation of the cemetery found in the 1840s below an adjacent Civil War earthwork, Lamel Hill.¹³⁴ The Belle Vue House burials, usually supine but occasionally flexed, occupied the upper two of a series of terraces. Aligned approximately E-W., and parallel to the slope, one burial was accompanied by a knife and a buckle, whilst a child's grave contained two iron strips of a type recorded at Lamel Hill. These have been interpreted as coffin fittings, a characteristic which provides a link with Phase 2 at Ailcy Hill.

Before detailing the later development of the cemetery on Ailcy Hill, the reasons for the selection of the site for burial in the first place merit consideration.

Carver has suggested, in the context of what may be royal barrow burials at Sutton Hoo, Suffolk, that barrow burial was a defiant pagan reaction to the new Christian church.¹³⁵ This theme has been developed by Van de Noort, who suggests that, c. 550–750, barrow construction was favoured by local élites in the face of the new phenomenon of Christian graves in monumental churches, articulating the opposition of marginalized aristocratic pagans to a changing ideological world, and promoting these ideas through an active use of the past as represented by prehistoric burial mounds.¹³⁶ In contrast, Morris has queried the concept that 7th- and 8th century use of barrows must automatically be equated with paganism, suggesting instead that ‘ostentatious burial, whether under a mound or in a church, was a proclamation of status’.¹³⁷ Although these commentators’ primary concern has been with burials *below* mounds, some of these concepts may also be relevant to secondary burials on the summit or flanks.

There are several alternative and perhaps complementary reasons why Ailcy Hill might have begun to be used as a burial ground in the 6th/7th century. A remnant British population, whether or not nominally Christian, may have utilized the hill, perhaps believing it to be a burial mound, as a visible statement of a claim to territory and inheritance. Equally, an intrusive Anglian population may have employed the same strategy.¹³⁸ These suggestions are strengthened when considered in the light of the frequency of substantial prehistoric monuments in the landscape around Ripon; in such a context the possibility that Ailcy Hill was perceived in the 6th and 7th centuries as a large, pre-eminent sepulchral site appears all the more plausible.

The earlier phases of the Ailcy Hill cemetery need be regarded as nothing more than the burial ground of a local community. None of the evidence available from Phase 1 demands association with an elevated ecclesiastical or secular institution. Langston reports that the skeletons represented as charnel in graves of Phases 1b and 2 include those of men, women and children, their ages ranging from a few months to over 45 years. This contrasts with the *in situ* burials of Phase 2, nine out of ten of which are adult males, the tenth being an adult of indeterminate sex. It is possible that a similar contrast exists between burials of Phase 1a and Phase 1b; all nine of the *in situ* 1b burials are adult (or in one case, 2010, near-adult) males.

These apparent patterns are of the greatest interest. A shift from the use of the site for burial of people of both sexes and all ages, to its restriction to that of adult males, could be seen as indicating the adoption of the site for use by a monastic institution. Such a development between Phases 1 and 2 could be accounted for by the well-documented existence of an important monastic establishment nearby, as the date range attributed to the Phase 2 burials, on the basis of both radiocarbon dates and their accompanying iron chest fittings, comfortably post-dates Wilfrid’s foundation of the 670s. However, it has recently been suggested that a British (i.e. post-Roman/pre-Anglo-Saxon) Christian community existed at Ripon, pre-dating the original grant to Eata.¹³⁹ The radiocarbon date from burial 1064 (560–660 cal A.D., UB-3151) makes it highly likely that the Phase 1 cemetery was in use before the establishment of the earliest documented monastery, and if the burials of Phase 1b *do* represent a shift to all-male burial on Ailcy Hill, the existence of such an early

TABLE 2
AGE STRUCTURE OF THE POPULATION

Phase	No. Adults (MNI)	Factor	No. Juveniles/ Infants (MNI)	Factor Difference	
1	57	0.792	12	0.857	0.065
2	10	0.139	0	0.000	0.139
3	5	0.069	2	0.143	0.074
TOTALS	72	1.000	14	1.000	

The K-S formula (@ 0.05 significance level) = $1.36 \sqrt{\frac{72 + 14}{72 \times 14}} = 0.397$

community may account for the phenomenon. However, the acceptance of these hypotheses is dependent on the demonstration of the relevant patterns within the burial data as being significant.

Unfortunately, statistical testing of the suggested variation between Phases 1a and 1b is not possible, as it cannot be determined whether disarticulated bones from Phase 2 graves are derived from Phase 1a or 1b burials. However, it can be stated with some confidence that such bones must have derived from either Phase 1a or Phase 1b. It is therefore possible to compare the samples of burials from Phases 1a/1b, 2 and 3 to see whether that from Phase 2 differs significantly from the sample from the burial ground as a whole. If this is the case, it can be claimed that Phase 2 represents a variation in the use of the cemetery which requires explanation.

The method used here to test the significance of the observed pattern is the *Kolmogorov-Smirnov* (K-S) test.¹⁴⁰

The minimum difference required for the observed variation to be statistically significant = 0.397 (Table 2). The maximum difference observed (that for Phase 2) = 0.139. Therefore the *null hypothesis* cannot be rejected at the 0.05 significance level; the observed variation is accommodated within the variation which might be expected of the sample as a whole.

The apparent differences in demographic characteristics between burials of Phases 1 and 2 cannot, therefore, be demonstrated as being significant. Two observations regarding the character of the data need to be made. Firstly, in all cases the data available for each phase can only be expressed as *minimum* numbers of individuals. It is possible that the *actual* number of individuals in any category may have exceeded these figures, and statistics based on these figures (were they knowable) may have reached a different conclusion. Secondly, it may be that significant variations between Phases 1a, 1b and 2 have been masked by the simple comparison between Phases 1a/1b and 2. However, in both cases these shortcomings result from the limitations of the available archaeological data; within these constraints, no weight can be placed on the apparent observed differences between Phases 1 and 2. Similarly, the relatively slight incidence of severe degenerative change and advanced osteoarthritis identified amongst the *in situ* burials, in contrast with its greater severity and more widespread occurrence within the disarticulated bone groups deriving ultimately from Phases 1a and 1b, whilst perhaps hinting at

a change in the age range and/or lifestyle of those buried in the cemetery, cannot be assumed to be statistically significant.

Historical sources imply that the community of monks who held Ripon prior to Alhfrith's grant to Wilfrid of *c.* A.D. 661 were not in possession of the site for more than a few years, and it is likely that the use of Ailcy Hill as a burial ground pre-dates Alhfrith's initial grant.¹⁴¹ The lack of historical or archaeological information concerning the character of earlier settlement means that the context of the earliest phase is unknown, although the broad demographic base of at least Phase 1a suggests a local population using the hill as their burial ground. In considering the possible context for the Phase 1b burials, regularly laid out in W-E. aligned rows, it should be noted that whilst no evidence was found to suggest any structure associated with the Ailcy Hill cemetery, the fact that as much as *c.* 50% of the summit may have been removed by quarrying means that there could originally have been sufficient space for a small chapel or oratory there, an observation also relevant to consideration of later burial episodes on the site.

The burials of Phase 2 form an extremely coherent group in terms of alignment, spacing, and the fact that a number of the skeletons were buried in iron-bound chests or coffins. The alignment reflects that of the Phase 1 burials on the W. half of the summit, which in turn conforms to the natural contours of the hill. However, in Phase 2 the orientation is maintained across the E. half of the summit, rather than having been modified in accordance with direction of slope (compare Figs. 6 and 8). The burials are clearly laid out with no consideration for preceding arrangements, as witnessed by the large quantities of disarticulated human bone found within the Phase 2 graves (Fig. 8). It is also possible that they were arranged in 'strings', two or three abreast, rather than in rows; this is an arrangement known from a small number of broadly contemporary cemeteries,¹⁴² and is suggested on the plan of Area 1, although the effect may be the fortuitous result of post-cemetery disturbance.

Ottaway notes the monastic or episcopal associations of many, although not all, of the cemeteries in which chest-burials have been found, and proposes a date-range of *c.* A.D. 700-850 for the Ailcy Hill examples on the basis of the precise characteristics of the fittings. Radiocarbon dates of 660-810 cal A.D. (UB-3150, 1281 ± 35 BP; burial 1045) and 680-880 cal A.D. (UB-3153, 1236 ± 35 BP; burial 2006) from this phase (the former from one of the chest burials) comfortably accommodate such a range. This dating indicates that at the time of their burial a major Anglo-Saxon ecclesiastical community flourished in the immediate vicinity, and it seems inconceivable that Ailcy Hill remained outside ecclesiastical control and influence at this time. Yet the role of Ailcy Hill in burial provision for the monastery is unclear. It is unlikely that the site, *c.* 200 m from Wilfrid's church, was an integral part of the cemetery which it must be assumed developed around that building. It would thus appear to have constituted a separate burial ground, and the strong possibility of a polyfocal monastic settlement, discussed below, is clearly significant.

Again, the extent of the later destruction of Ailcy Hill through quarrying compromises our understanding of the context of this phase of the cemetery,

particularly regarding the crucial question of the possible presence of a church on the site. The balance of the evidence may oppose this suggestion, as no traces of building materials were identified in the excavation of the summit of Ailcy Hill, in a local context where another possible site of early monastic buildings, in Deanery Gardens (for which see below), has produced large amounts of rubble and mortar. Timber construction is possible, however, and need have left no surviving traces.

All of the excavated examples of burials from this phase were adult males. At least one (1043) had been killed violently, having died after, and possibly as a direct result of, receiving two blows to the face from a sharp-edged weapon which cut into the frontal and parietal bones. There are indications that some of the graves were dug at the same time, the distribution of charnel above and below 1045 and 1065 suggesting that the two were laid in the same, broad, grave cut (Fig. 8). Although the recurring association of chest burials with high status ecclesiastical sites is notable, other examples where this is not the case, such as Thwing and Garton, do occur. The latter is of particular interest, as it includes a single burial within a chest, associated with, although set apart from, a 'string' of graves cut into the line of an earlier ditch. The suggestion that the Ailcy Hill Phase 2 burials were also arranged in 'strings', along what was originally a more linear feature than that now in evidence, has already been made. Phase 2 may, therefore, comprise secular burials, possibly of high status, rather than ecclesiastical personnel. The extent to which a distinction between ecclesiastical and high status secular burial is a meaningful one may, however, be questioned. Bullough has also pointed out that coffin burial, at least in 7th-century Northumbria, need not have been an indication of superior status.¹⁴³

The latest phase of the cemetery, Phase 3, has been defined in terms of burials whose alignments are notably divergent from those of Phase 2. The sub-division into two sub-phases, 3a and 3b, distinguishes those which appear to have been deliberately placed in the interstices of the Phase 2 cemetery layout (3a), and those which truncate Phase 2 burials, or share a common alignment with those that do (3b). The former can be seen as a direct continuation of Phase 2, filling in available spaces, and is likely to be broadly contemporary with that phase; thus 2005 continues the tradition of chest-burial from Phase 2 (Fig. 11), and the date-range established for this burial, 660–830 cal A.D. (UB-3152, 1267 ± 36 BP), is close to that of the samples from Phase 2 burials (Fig. 15). By contrast, 3b burials, whilst apparently buried on the same alignment as their 3a predecessors (compare the alignments of 1019/1022/1023 with that of 1051; Fig. 10), in at least one case truncated a burial of Phase 2 (cf. 1019/1022/1023 and 1079; Figs. 8 and 10).

The burials attributed to Phase 3b, which include four inhumations but only two separate burial events, are distinctive. Three of them, 1023, 1022 and 1019, appear to have been buried together in a single grave (Fig. 10); two, 1022 and 1023, laid side-by-side (Fig. 15), the third, 1019 (Fig. 15), on top of them. The other burial, 1044, is a juvenile, 14–15 years of age, who suffered from spinal tuberculosis. This individual appears to have been ill from an early age, and had a pronounced distortion of the lower back, which would have been hunched and twisted to the right side. A radiocarbon date from this burial of 780–990 cal A.D. (UB-3149,

1143 ± 43 BP) overlaps with those from Phases 2 and 3a, but extends much later than any other from the site (Fig. 16). There is therefore a possibility that this burial, and 1023, 1022 and 1019, which share its alignment, are considerably later than others on the hill. This, and the distinctive character of the Phase 3b burials, suggests that they represent a separate final episode in the use of the cemetery. One possible explanation is that Ailcy Hill was used at this later date as a burial-place for 'outsiders', those whose status within society was such as to exclude them from churchyard burial.

Three apparently distinct phases of burial can therefore be identified at Ailcy Hill, which seem to indicate significant changes in the role of the site between the 6th/7th and 9th/10th centuries. A prominently located cemetery of the 7th, and possibly the 6th century, used to bury a population drawn from a broad demographic base, underwent a shift in the pattern of burial in the 7th century. Initially this may have seen a change from relatively disorderly and possibly clustered inhumations, including some oriented N-S., to the arrangement of burials in regular, W-E. aligned rows. Subsequent interments on a similar alignment, apparently of 8th- and/or 9th-century date, caused massive disturbance of the earlier phases of the cemetery. A number of these, all of the excavated examples of which were male, were buried in iron-bound wooden chests or coffins. It seems that this phase of the cemetery was associated in some way with the documented monastic community nearby. In the 9th or possibly 10th century a small number of burials were interred, perhaps after a period of abandonment, whose distinctive character suggests that by then burial on the site was restricted to specific sections of the community, possibly with no directly monastic associations.

Burial over such an extended period can be paralleled at Southworth Hall Farm, Winwick, Cheshire, where 809 graves ranging in date from the 5th to the 11th centuries have been excavated on the site of a Bronze Age barrow.¹⁴⁴ The excavators estimate that this cemetery may have contained up to c. 1200 burials. If the density of burials on the summit of Ailcy Hill is typical of the hill as a whole, as it appears to be, the surviving N. slope alone could contain c. 400 *in situ* skeletons, not taking into account those represented only as disarticulated bone. The original population buried on the hill could easily have been five times this number.

LADYKIRK/ST MARYGATE

The earliest and most instructive reference to the location of an ancient church on the plot of land to the N. of St Marygate (Fig. 1) is the account of John Leland, who stated that

The Old Abbay of Ripon stode wher now is a Chapelle of our Lady in a Botom one close distant by . . . from the new Minstre. One Marmaduke [Huby]. . . Abbate of Fountaines, a man familiar with Salvage Archebisshop of York, obtained this Chapelle of hym . . . and pullid down the Est End of it, a pece of exceding auncient Wark, and buildid a fair pece of new Werk with squarid Stones for it, leving the Weste Ende of very old Werk standing . . . One thing I much notid, that was 3. Crossis standing in a row at the Est Ende of the Chapelle Garth. They were thinges antiquissimi operis.¹⁴⁵

Medieval records indicate that a chantry was founded on the site on 15 February 1392,¹⁴⁶ and a reference of 1478 indicates that, by that date at least, the chapel had a nave and quire.¹⁴⁷

It would seem that by 1733 no remains of the church were visible, as it is not mentioned in Thomas Gent's *History* of that year. In 1842 the antiquary John Tuting made a measured survey of the site, identifying the church as a level platform measuring *c.* 25.00 m (83 ft.) × 11.50 m, and Walbran subsequently observed that 'the foundations and outline of the Saxon monastery might still be traced'. Tuting's account is of particular interest as it refers to an 'antique font' being used as a cistern towards the S. boundary of the site; this cannot have been associated with the Ladykirk as a dependent church and, if Tuting's identification as a font was correct, may relate to an earlier ecclesiastical episode on the site. In 1860 he annotated the survey, recording that the site was to be obscured by adding soil and reducing the whole to one level.¹⁴⁸

Excavations conducted on the site by A. Paget-Baggs in 1955 for the Ancient Monuments Inspectorate of the then Ministry of Works revealed the stone foundations of a two-celled structure, its long axis aligned E–W. A cluster of graves within the smaller, eastern cell, a further row outside and to the E. of the building, and a scatter of burials within and to the S. of the larger, western chamber were similarly aligned (Fig. 30).¹⁴⁹ There can be little doubt that this structure is the Ladykirk.

The excavator stated that the church had been built 'on a small gravel hill to the east of . . . (a swallow- or sink-hole) . . . the land falling away from the site on all sides . . .', and that subsequent activities, including gardening, ' . . . had removed the summit of the hill and had destroyed all stratigraphy down to the level of the remaining foundations of the church . . .', to the extent that ' . . . it would be unsafe to assume that there had never been any burials in the western part of the chancel'.¹⁵⁰ He defined two phases of burial on the basis of grave alignment, assigning five burials aligned N. of true E–W. (*c.* 262°) to the earlier phase, and the remainder (*c.* 275°–280°) to the later. Three of the earlier burials appear to have been truncated by the E. wall of the chancel (Fig. 30). Four of the later burials, all reported as being within the S. half of the chancel, contained complete or fragmentary bone combs, and two fragments of carved stone crosses were recovered from within the same part of the building. The latter were not *in situ*, and could not be related directly to any of the graves.

In 1974, a small excavation on the other side of St Marygate, *c.* 12 m to the W. of and directly opposite the site of the Ladykirk, was carried out by Mr P. A. Mayes of the West Yorkshire Metropolitan County Archaeology Unit (Fig. 30). This revealed eight intact or partially intact W–E. aligned skeletons *c.* 0.50 m below the modern ground surface. No datable material associated with these inhumations was recovered, and no demographic or palaeopathological data for either the Ladykirk or the St Marygate burials was available to the current authors. The relationship between the burials on either side of St Marygate is uncertain, although it seems likely that they originally formed part of the same burial ground.

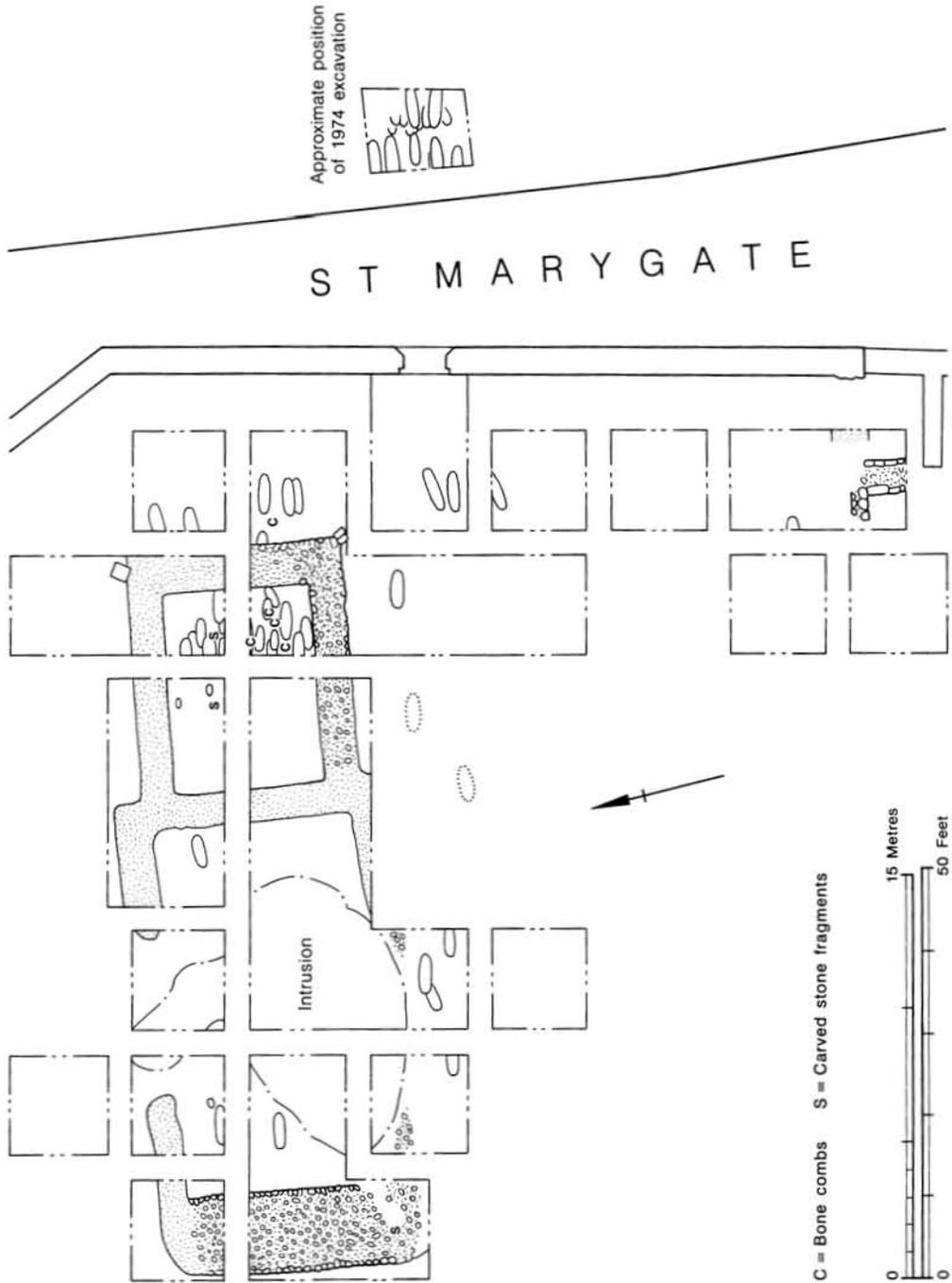


FIG. 30
Ripon, Ladykirk and St Marygate excavations

COMBS AND COMB CASES *By* A. MACGREGOR (Fig. 31)

The four combs and two comb cases (Fig. 31) are of typical Anglo-Scandinavian type, and are datable to the period from around the late 9th to the mid 11th century. Long combs of the type represented by No. 1 and by the fragmentary No. 4 are common at this time; the curving profile and upswept end-plates can be paralleled in the British Isles at Dublin and York,¹⁵¹ and amongst unpublished examples from Thetford. On the Continent examples can be found from the Viking Age settlement at Hedeby, Schleswig-Holstein, and from early levels at Lund in Sweden.¹⁵² Several of these examples feature a central decorative field of lozenges formed by bands of saw-cut lines; a side-plate with this same feature comes from late 9th- or 10th-century levels at Jarlshof, Shetland.¹⁵³ A number of combs from late 9th- to mid 11th-century levels at Coppergate, York, feature repeated lozenges formed by double lines as on No. 2.

The shorter combs with straight ends (Nos. 2 and 3) belong to the latter part of the proposed date range. Comparable examples may be noted from the Links of Skaill, Orkney, and two more from York,¹⁵⁴ each found with a comb case, and others without cases from Birka in Sweden.¹⁵⁵

One of the York comb cases, and another example found at Lincoln and incorporating a runic inscription, feature angular projecting end-plates as occur on the Ripon comb cases (Nos. 5 and 6) and on others from early levels at Lund,¹⁵⁶ confirming their contemporaneity with the combs. Neither of the cases appears to have been made for any of the combs found in the excavation, since the side-plates of case and comb together should form a symmetrical arrangement of three bars,¹⁵⁷ and the peg-holes drilled in the uppermost pair of side-plates of the case should correspond with those drilled in the end-plates of the comb. No such match can be made between any of the items listed here, yet the comb No. 2 was found sheathed in case No. 5. Whether they were used together before being deposited is unknown.

Catalogue

1. Single-sided composite comb of antler with iron rivets, plano-convex side-plates marked by longitudinal striations from the shaping process; a central field on each side-plate is marked out by bands of multiple saw cuts enclosing a central lozenge filled with vertical saw cuts, flanked above and below with half lozenges filled with chevrons formed by double saw cuts. A series of nicks from the sawing of the teeth have been extended decoratively on to the bottom of one end of one side-plate and on to the opposite end of the other side-plate. The intact end-plate extends beyond the side-plates, sweeping up to form a terminal peak. A badly eroded end-plate of similar form and with fragments of side-plates riveted to it probably represents the missing end of this comb. Length of main principal fragment: 155 mm.
2. Single-sided composite comb of antler with iron rivets. Flattened plano-convex side-plates ornamented with bands of multiple saw cuts at either end and with continuous lozenges formed by double saw cuts. Both side-plates are marked in the central region of the lower edge by nicks from the sawing of the teeth. Straight end-plates, one of them drilled with a hole of 2.5 mm diameter. Length: 93 mm.
3. Single-sided composite comb of antler with iron rivets, one of them incorporating a textile impression in its corrosion products. Plano-convex side-plates, straight end-plates, one of them drilled with a hole of 2.5 mm diameter. Length: 90 mm.
4. Single-sided comb; side-plate fragment only, with part of an iron-stained rivet hole. The plate has been cut from an antler tine and is of flattened plano-convex section; the surface is marked by longitudinal striations from the shaping process, particularly along the lower edge where there are also nicks from the sawing of the teeth; ornamented with a band of multiple saw cuts. Length: 42 mm.
5. Case for a single-sided comb, made of antler with iron rivets. The two pairs of side-plates have a flattened plano-convex section and are ornamented on their upper and lower edges with repeatedly intersecting double saw cuts; the uppermost pair are drilled at one end with a hole of 2.5 mm diameter. The surviving end-plate terminates in an angular projection. Length: 112 mm.
6. Case for a single-sided comb, made of antler with iron rivets. The two pairs of side-plates are triangular in section, and each is ornamented with an incised border line on the upper and lower margin, a pair of incised lines along the central apex, and a band of multiple saw cuts at either end; the uppermost pair are drilled at either end with holes of *c.* 3.5 mm diameter. The surviving end-plate terminates with a blunted angular projection, and is drilled with a suspension-hole of 2.5 mm diameter. Length: 124 mm.

SCULPTURE FRAGMENTS

Three pieces of pre-Conquest sculpture are listed in Paget-Bagg's notes. In addition to the two reported here, there is a record of 'Another small corner of an arm with

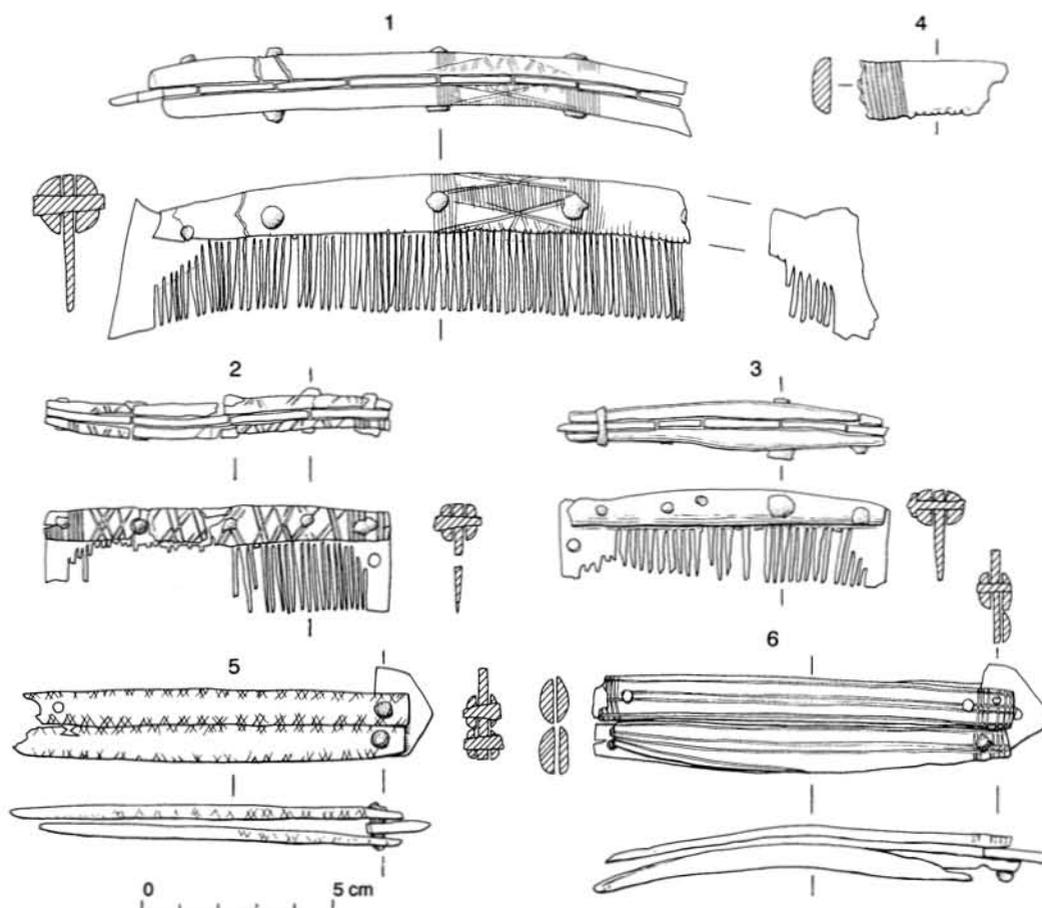


FIG. 31

Ladykirk, Ripon; antler combs and cases

strapwork. This might be another piece [of the one reported above, i.e. No. 2] but the intertwining of the decoration is rather more open and I think it unlikely'. This piece has not been located.¹⁵⁸

CATALOGUE *By* DR D. TWEDDLE

1. (Pl. IV, A, B) A fragment of gritstone, 115 mm high, 90 mm wide and 110 mm thick, which formed the lower arm of a free-armed Anglian cross-head. Only the lower left-hand corner of the arm survives. It is dressed flat below, with a broken dowel hole for fixing to the shaft, and is roughly broken to the rear and to the right where the break is diagonal. The arm was originally square-ended and parallel-sided before tapering inwards towards the centre.

Face A has a broad plain lower zone, partially broken away to the left, but which appears to have linked with the plain roll moulding framing the arms to the left. Inside this frame is a row of abutting pellets returning to flank the lower plain zone. The field contained by the row of pellets is plain. *Faces B* and *C* are lost. *Face D* is decorated in a similar manner to *Face A*.

This fragment is from a head of the form A10 as defined by Cramp,¹⁵⁹ probably originally undecorated apart from the pelleted framing and a central feature. Such cross

heads are comparatively rare. The best parallel is with the late 8th-century Acca's cross at Hexham, where again the head has a pelleted frame, but the fields are not plain, having instead a row of axial pellets.¹⁶⁰ Apart from Acca's cross, the best parallels for the Ripon piece are provided by two cross-shaft fragments from St Mary Bishophill Junior, York, which have pelleted frames but plain fields.¹⁶¹ An 8th- or 9th-century date might be appropriate for these pieces, and a similar date would suit the Ripon fragment. The known links between Ripon, Hexham and York render these parallels more useful than might otherwise be the case.

2. (Pl. IV, c, d) A fragment of gritstone, 140 mm high, 112 mm wide and 70 mm thick, which formed part of a free-armed Anglian cross-head. The piece is a corner fragment of the lower arm, broken roughly vertically to the left and to the rear and horizontally above. The underside is dressed flat. The head stands on a base consisting of a pair of roll mouldings above which the arm tapers in a shallow concavity.

On *Face A* the lower arm has a plain roll moulding below and to the right. The field thus delimited is decorated with an eight-strand interlace belonging to pattern group A as defined by Adcock.¹⁶² *Face B* is framed in a similar manner. The remains of a probable interlace strand in the left-hand corner suggests that this face was also interlace decorated. *Faces C* and *D* are lost.

This fragment is difficult to reconstruct or to date, but it again probably belongs with the cross heads of the general form A10. In this form the ends of the arms were squared and the arms parallel-sided before tapering inwards. The zone of mouldings here would thus represent the parallel-sided element of the lower arm. As noted above, the form A10 is represented in Ripon. However, the use of multiple mouldings in this way is very difficult to parallel in stone sculpture, the only obvious example being Acca's cross at Hexham, where the head sits on a zone made up of three mouldings, the median moulding being pelleted.¹⁶³ Acca's cross is conventionally dated to the early 8th century, but a late 8th-century date is preferable. A similar date might be tentatively suggested for the Ripon piece. Again, in view of the close links between Ripon and Hexham, this evidence might be given more weight than would otherwise be the case.

3. (Pl. IV, e) A fragmentary impost block, of gritstone, 200 mm long, 70 mm wide and 65 mm thick, the piece is dressed flat above and is roughly broken to the left, right and below. There is an upper moulding of square section, below which and abutting it is a cabled moulding with a Z-twist. Below that the plain face curves back and down.

The fragment could be interpreted as the lower end of a cross arm, similar in form to no. 2; however, this piece is comparatively large for a cross-head, and the mouldings shallow, yielding rather different proportions from those found on the cross-head. For these reasons an interpretation as part of an impost block is preferred, although the evidence is admittedly weak. Sculptured imposts occur relatively frequently in Anglo-Saxon architecture,¹⁶⁴ and cabling was one of the commonest forms of decoration, occurring at Breamore, Hants., Walkern and Little Munden, Herts., Daglingworth, Glos., and Dartford, Kent.¹⁶⁵ The lack of examples from northern England probably relates more to the lack of surviving arches than an absence of the use of cable-moulded imposts.

If this is an impost, then the use of a cabled moulding suggests a very late pre-Conquest date, or even one in the early post-Conquest period. All of the imposts noted above are of probable late 10th- or 11th-century dates.

DISCUSSION

Interpretation of the Ladykirk and St Marygate sites is hampered by the paucity of surviving records of the excavations. Only one burial from the Ladykirk chancel contained any datable object which appears to have been deliberately buried with the corpse; the excavator states that '... grave 27 retained a comb in its case, still *in situ*, resting on the chest of the skeleton'. This would appear to refer to comb 2 and case 5 dated, with the other examples (which were recovered from

grave backfills, and did not have so definite an association with the occupants of the graves in which they were found), to the period from the late 9th to early 11th centuries. Unfortunately, the excavation records do not allow the specific identification of 'grave 27'.

Burials accompanied only by combs are unusual in English early medieval contexts, although there is at least one other instance; Burial 63, a female, at St Patrick's, Heysham, Lancs.¹⁶⁶ The presence of a comb as a grave-good is interpreted there as an indication of 'wavering pagans'; an alternative explanation of the Ripon group might be that they represent priests, accompanied by liturgical equipment, although this is a speculation not supported by other, unequivocal examples.

The positioning of the burials with combs within the chancel provides a strong indication that they are broadly contemporary with it. However, these burials are not part of the earliest phase of the cemetery, which is represented by graves which are cut by the E. wall of the chancel. Whether these earlier inhumations were associated with a church is uncertain; although Paget-Baggs reports no traces of a structure earlier than that represented by the stone foundations (which are themselves hardly diagnostic of date), the surviving records of the excavation are insufficiently detailed to establish this beyond doubt, and the extensive disturbance on the site may have destroyed any traces of an earlier building. The excavator proposed that the chancel was an addition to an originally single-celled structure; if this is the case, it may account for the presence of unstratified fragments of carved stone crosses in the area of the chancel, the eastward extension of the church having disturbed earlier graves and their stone grave-markers. By analogy with many surviving examples,¹⁶⁷ it is possible that these stones were then incorporated into the walls of the chancel, a proposition supported by their bearing traces of 'whitewash' — probably lime mortar — on some of their surfaces. This interpretation would also allow the earlier phase of burials to be contemporary with a stone church, the single-celled structure which became the nave after the later modification.

In his discussion of the church, Paget-Baggs draws attention to the massive thickness — *c.* 3.1 m — of the W. wall of the nave. He suggested two possible explanations for this feature: that the wide footings had supported a 'clasped' porch or tower, or that its thickness contained a stairway giving access to a gallery at first-floor level. In either case, it is worth noting Leland's observation that Abbot Huby's reconstruction of the chapel '[left] the Weste Ende of very old Werk standing . . .'.¹⁶⁸ The 1955 excavations suggest that a church and cemetery existed on the site by the early 11th century, and that both *may* have been in existence by the late 8th, but do not allow a detailed account of the development of ecclesiastical provision on the site.

DEANERY GARDENS

In 1977 an area of *c.* 225 m² was excavated in the Deanery Gardens, *c.* 60 m S. of the site of the Ladykirk (Fig. 1; Fig. 32). The work was directed by

D. Greenhaugh on behalf of the DoE, in response to a redevelopment proposal. Although the great majority of excavated deposits and features were associated with activity of the 11th–13th centuries and later,¹⁶⁹ a small suite of contexts in the NW. corner of the excavation may be of pre-Conquest origin. Additionally, three extended, supine inhumations (115, 122, 123), widely scattered across the excavated area, merit attention in the context of the Ladykirk and its associated cemetery (Fig. 32). No data regarding the dating, sex, age-at-death or pathology of these burials are available, but all would appear to be adult. All three graves were shallow, and in each case the grave fill consisted of clean, re-deposited, natural indicating that they had not been cut through the overlying, darker layers of 11th century or later date. They may therefore be broadly contemporary with the burials found within and around the Ladykirk; 115 may indeed be regarded as an outlier of that cemetery, as Fig. 30 indicates isolated graves at least *c.* 20 m S. of the church. At the S. extremity of the Deanery Gardens excavations, 122 and 123 would, if anything, seem likely to be outliers of an undated but possibly early phase of the cemetery associated with the Minster.

The location of the possibly pre-Conquest deposits, which survived over an area of *c.* 15 m², is indicated on Figs. 32 and 33. They are distinguishable from the overlying horizons both in terms of their character as sediments, and due to the fact that the overlying layers uniformly contained large quantities of 12th- to 13th-century pottery; the deposits under discussion were, by contrast, completely aceramic. The only datable object recovered from these layers was a gold, garnet and amber roundel, known as 'the Ripon Jewel', which is discussed in detail below.

The earliest excavated deposit in the sequence is 155, variously described as a pink- or orange-brown clayey soil with gravel. This has been interpreted as a natural, periglacially derived sediment, a view strengthened by the fact that immediately beneath 155 is a layer described as 'pink-brown clayey sand with gravel', which was identified by the excavator as natural. 7.0 m to the E., an outcropping layer (99/166; Fig. 33), described as 'cobbles in grey-brown sandy soil', is seen here as the disturbed upper surface of a ridge of coarse peri-glacial debris of similar origin. It is suggested that 155 and the layer beneath it accumulated in the lee of this ridge, probably (although excavation did not reach a depth which would allow confirmation) overlying 99/166 as it dips towards the W. This interpretation accords well with the geomorphology reported by Paget-Baggs on the site of the Ladykirk.

Layer 155 is reported as having charcoal on its surface; thus it would appear to have once formed a ground surface. The surface morphology of the deposit is interesting; the S.-facing section (Fig. 33) shows a shallow depression A¹⁷⁰ (*c.* 0.80 m wide and *c.* 150 mm deep). This may be mirrored in the E.-facing section by the very shallow depression B; although no plan of the surface of 155 was available, it can be proposed that these features, identified in section, represent a shallow linear gully extending across the NW. corner of the site. To the NW. of this feature, the surface of 155 would seem to have dipped to form a shallow hollow, C, with maximum dimensions within the excavated area of *c.* 1.30 m × 1.50 m and a maximum depth of *c.* 120 mm. It is probable that the SE. limit of this feature broadly corresponded with the line of the later cut D (Fig. 32).

Interpretation of these slight traces is difficult, but they clearly indicate activity of some kind. It is possible that C may have been some form of 'working hollow' (perhaps created inadvertently as a result of erosion caused by continuous or repeated use of the same location), with the feature represented by A and B a shallow 'drip-gully', the result of

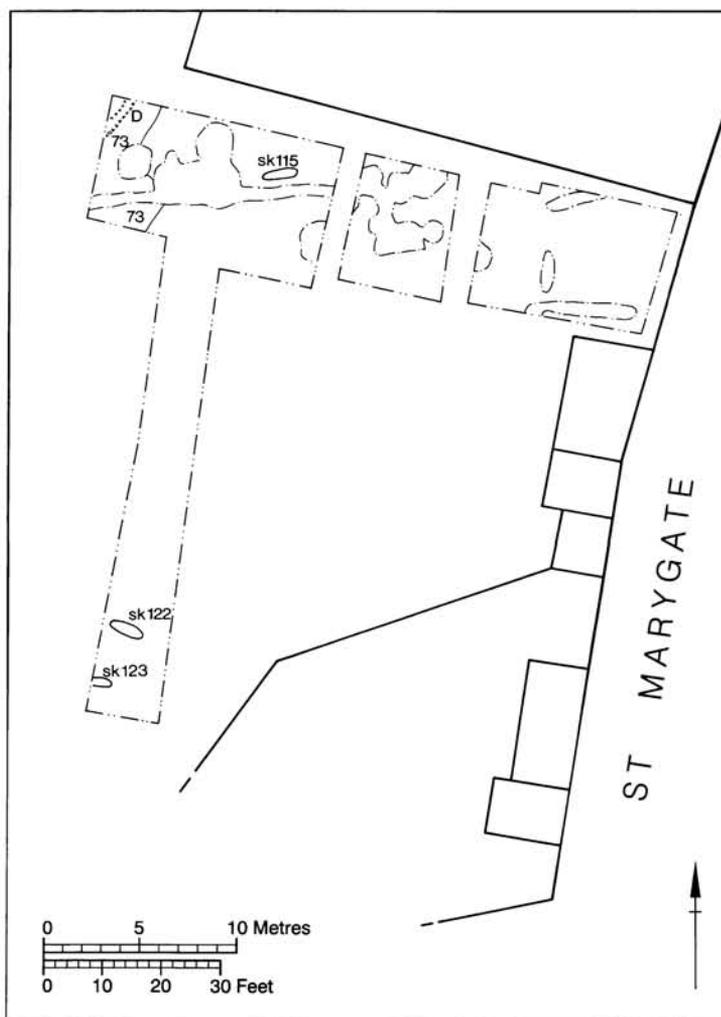


FIG. 32

Deanery Gardens, Ripon; excavated areas

rainwater dripping off the eaves of a light structure covering the hollow. It should be emphasized that no traces of the structure required to support such a roof were reported; however, examination of the surface profile of 155 between A and C (Fig. 33) suggests that in this area, where traces of such a structure might be expected, subsequent truncation may have removed the upper level of the deposit.

The next activity in this area saw the infilling of A and C, the former with 141, 'grey-brown sandy soil with charcoal and gravel', the latter with 142, variously described as 'loose gravel, mortar and yellow-brown chalky clay' and 'yellow-brown mortar mixed with small gravel'. Layer 169, 'brown sandy soil with flecks of mortar' bears a similar description to 141, and has the same relationship to B as 141 has to A. The character of 142 suggests the deliberate levelling of hollow C, possibly also involving the truncation of 155 immediately to the E. of the hollow. 141 and 169 may have accumulated in A and B

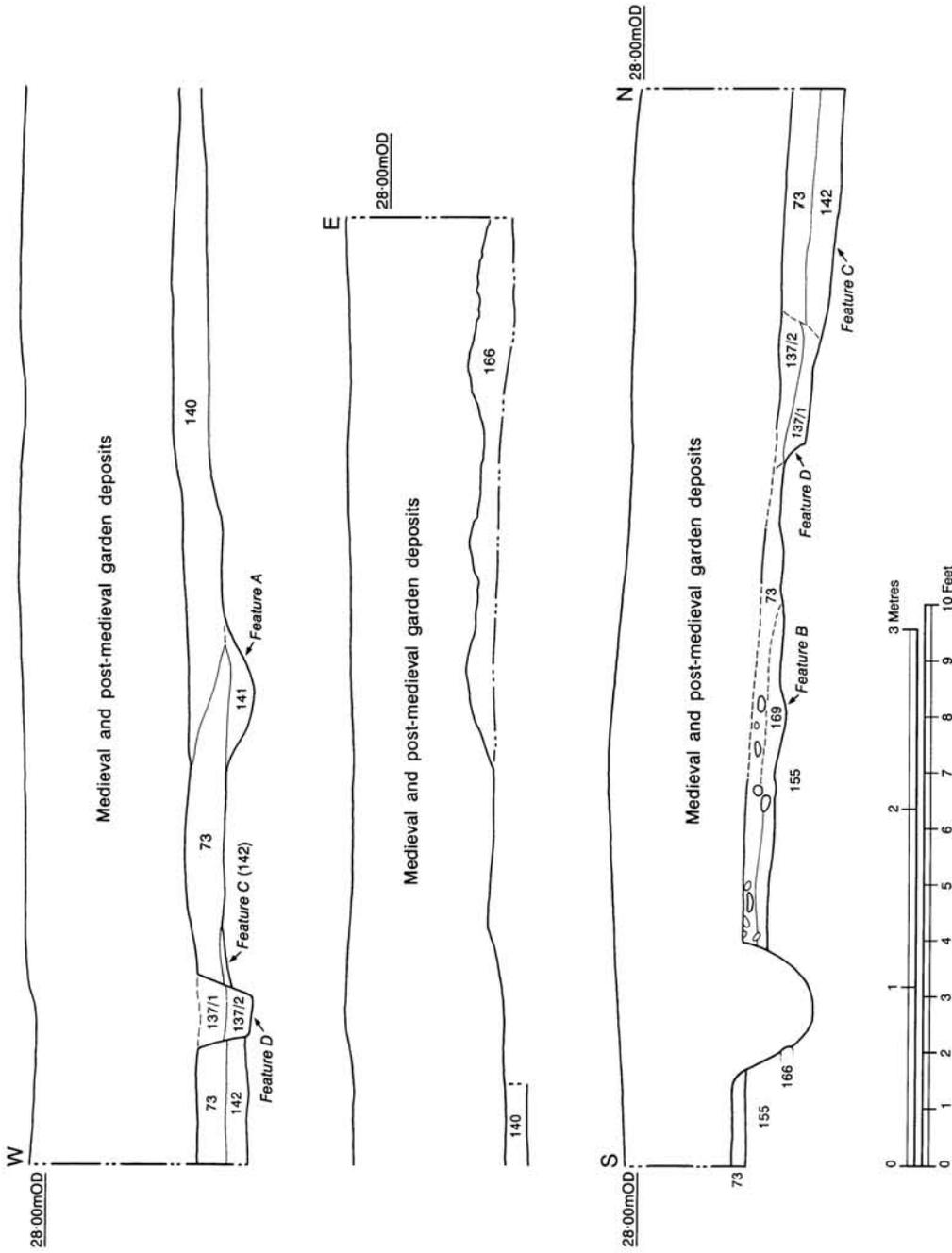


FIG. 33

Deanery Gardens, Ripon; Area B sections, showing features and deposits which comprised the context of the 'Ripon Jewel'

respectively in the course of associated activities. However, their characteristics contrast markedly with 142, and it is possible that they derive from subsequent occupation prior to the deposition of 73. Layer 169 is described as having charcoal at the base of the deposit; this seems likely to equate with that reported as being on the surface of 155.

The probable context for the deposition of 142 is a construction episode, which may also have involved the excavation of feature D — a linear, slightly curving, steep-sided and flat-based cut *c.* 0.40–0.50 m wide and *c.* 300 mm deep. Extending over a length of *c.* 2.0 m within the excavation, it would appear to represent the wall-footing of a timber structure (Fig. 32). Although cut through the overlying deposit 73, it is argued here that the original feature was cut only through 142, and that the cut from the higher level represents the robbing of structural component(s) from the feature. The primary fill of D, 137/2, is described as ‘yellow-brown mortary soil with gravel’, strikingly similar to one of the descriptions of 142, suggesting that 137/2 represents original packing or bedding material within the construction cut.

The characteristics and function of the proposed structure, and the context of its construction, are unclear, and it must be emphasized that its stratigraphic position allows the possibility that D is a later feature altogether. However, it is worth noting, without attempting to draw detailed and specific parallels, the similarities in the form and scale of D to components of the post-in-trench built structures which formed part of the monastic complex at Hartlepool, Cleveland, dated to the 7th and 8th centuries A.D.¹⁷¹

The robbing of feature D cuts through layer 73, described variously as ‘grey-brown sandy soil with stone fragments, pebbles and mortar’ and ‘whiteish plaster or mortar, small gravel, limestone fragments with some grey-brown soil’. It was this layer in which the gold, garnet and amber roundel was found. The deposit covered a large area in the NW. part of the excavation, sealing 141, 142 and 169 (Figs. 32, 33); its description suggests demolition debris. The presence of ?plaster, mortar and limestone fragments indicate that the structure(s) from which the material derived was built at least partly of stone. The possible succession from timber to stone construction, or the contemporaneous use of such buildings, again recalls Hartlepool.¹⁷²

Above 73, all deposits contained late medieval pottery, and relate to episodes of deliberate dumping, construction and agriculture or horticulture. The upper fill of D, 137/1, bears close resemblance to these overlying deposits (although it contains no later finds), and thus seems likely to have subsided into or accumulated within that feature as a result of one of these later activities. The choice of one or the other of these options has implications for the length of time which elapsed between the robbing of D and the advent of subsequent activity on the site, but cannot be convincingly made on the basis of the available evidence.

Although the suite of deposits discussed here is restricted in extent, ephemeral in parts, and far from securely dated, its status as the immediate context of the ‘Ripon Jewel’ lends it considerable significance. In the absence of datable material indicating the contrary, the characteristics of these layers and features is consistent with their being broadly contemporary with the object itself. This has important implications in understanding the pattern of early monastic settlement in Ripon.

THE RIPON JEWEL *By* R. A. HALL, E. PATERSON¹⁷³ and C. MORTIMER¹⁷⁴

The Ripon Jewel (Frontispiece) is a gold cloisonné roundel, with a maximum diameter of 29 mm; the central void of 13–14 mm diameter leaves a 7–8 mm wide band for the applied decoration. The base is made from a gold sheet, 0.1 mm thick. There is no evidence in the form of wear, scars or rivet holes to indicate the former presence either of a pin or catchplate, or a suspension loop, to allow use as a brooch or a pendant; indeed there is nothing to show how the jewel articulated with its surrounds. The outer and inner collars have been constructed from 2–2.5 mm wide strips of gold, also 0.1 mm thick. Close beside the inner collar is a second strip of the same width and thickness; these two strips are separated by a ring of gold filigree set more or less flush with their upper edges. The filigree

is a 0.6–0.7 mm diameter cable, made up of three finely beaded strands, each 0.2 mm in diameter, which have been 'S'-twisted together. Cells to contain the inlays have been constructed in the space between the outer and inner collars, using the same thickness of gold sheet cut into 2–2.5 mm wide strips. Four approximately square cloisons, at equal spacings and filling the whole width of the object, each hold an amber inlay; together they form a prominent cruciform motif. These inlays measure 6–7 mm along each side; the thickness of Amber 4 is 1 mm. Slightly curved strips of gold sheet sub-divide the arcs between the square cloisons, creating narrow, sub-rectangular areas, 3–3.5 mm wide. Within each of the outer sub-divisions, cells of roughly equilateral triangular shape were created, with sides measuring *c.* 3 mm.

Analysis¹⁷⁵ suggests that a low purity gold (24.5% Ag, 2% Cu) was used for the back plate, but a comparatively pure, more malleable, gold for the beaded wire (11.5% Ag, 2.5% Cu). The gold content of the cell walls is also relatively high but variable with silver compositions of 9.5–19.5% and copper of 1–2%.

Twenty-five of the 28 triangular cells still contain inlays (Fig. 34). Three different types of garnet, which vary in chemical composition and hence colour and appearance, are present. They are orange (orange pyrope), mauve (pyrope/almandine) and red (red pyrope), and were cut from plates 1 mm thick. Six of twelve gems examined have one very uniform and possibly wheel-cut edge, with two more uneven edges; the other six had three uneven 'grozed' edges. This suggests the possibility that all these gems were recycled from larger pieces and trimmed to fit the triangular cells. Some of the gems still retain their original position, flush with the top of the cells. The space between each garnet and the bottom of its cell was presumably packed originally with an adhesive paste/filler, but this has since decayed, leaving no visual evidence in the empty cells.

A thin metal foil, either gold- or silver-coloured, was inserted below each of the garnets except 3g, 4a, 4c and 4d (cells 2a, 2g and 4b were empty of all their original contents). There was also a foil below at least one of the amber inlays (Amber 4). The foils were made from thin metal sheet cut into roughly triangular shapes and folded up around the edges of the gems, thus helping to secure them. In two cases, only small scraps of metal had been used, not fully covering the back of the gems. Some of the fifteen foils examined had been stamped to produce a finely patterned surface of small square indentations which would have increased the lustre of the garnets.

Analysis confirmed the gold-coloured foils to be gold rich and the silver-coloured foils to be rich in silver. The silver-coloured foil 4e seemed to have an equal proportion of gold and silver. Small mercury peaks were detected for the foils under amber 4 and garnet 4e, suggesting the possibility of silver foils having originally been mercury gilded. The positioning of the two differently coloured foils does not appear to follow any pattern.

The original nature of the inlays in the inner sub-division of each arc is uncertain; these zones now contain a consolidated dark brown silty soil incorporating quartz grains. Assuming that this deposit is a direct residue of the original inlay, some possibilities, including white inlays such as shell or magnesite,¹⁷⁶ have been ruled out through analyses. These analyses also demonstrated the presence of a range of elements expected in a glass, and detected a non-crystalline silicate which could be glass. A lack of lead may indicate that the hypothetical glass inlays would have been made from a soda-lime-silica glass. However, it is not clear why a soda-lime-silica glass would have decayed so thoroughly, as it is usually well preserved in most types of burial context. If the deposit represents soil introduced after the Jewel's loss, a residue of some paste or filler material, or a mixture of both, then the alternative types of inlay noted above are possible. It would also be conceivable that gold filigree inlays occupied these zones, although such a juxtaposition would be unique in contemporary jewellery.

The cloisonné goldwork with garnets suggests that the jewel is a piece of Anglo-Saxon workmanship, although the combination of garnet and amber inlays is highly unusual, if not unique. Analysis of the gold fineness suggests the jewel was created after either the early or mid 7th century, depending upon which continental standard is applied.¹⁷⁷ The

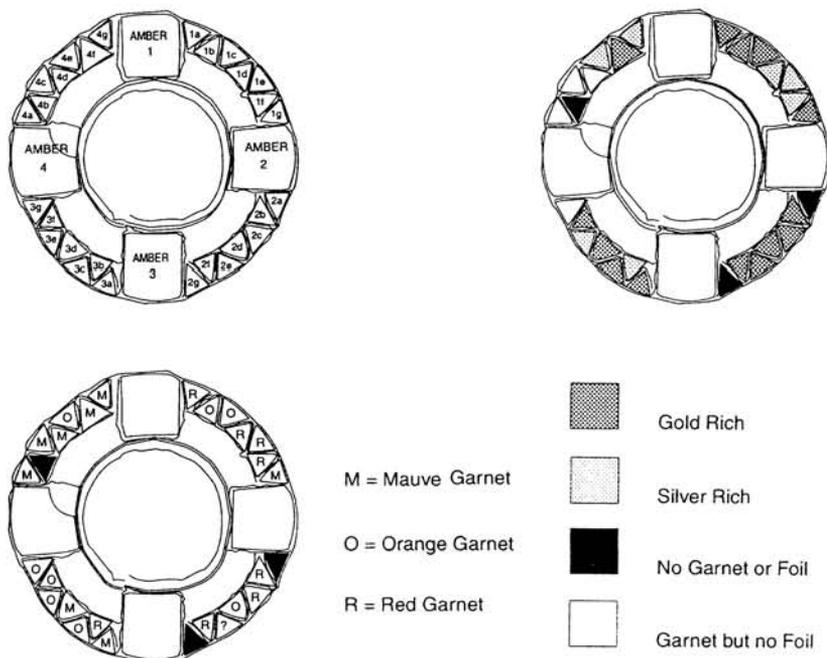


FIG. 34

The Ripon jewel; diagram illustrating the arrangement of foil, garnets and amber

Jewel's principal stylistic and technological comparanda — plated disc brooches and pendants — are also dated within the 7th century.

It must be assumed that the jewel is one component in a composite arrangement. A separately mounted stud presumably filled the centre of the jewel, held in place by a direct attachment to the background upon which the whole device was mounted. This background might have been a circular (or other) mounting with a border collar which held the jewel in place; alternatively, it is possible that a suitable mounting was fabricated as just one decorative element in some larger piece of metalwork.¹⁷⁸

It is suggested that the jewel may have been part of the embellishment of an ecclesiastical item such as a reliquary, cross, or book-binding. Given Bishop Wilfrid's reported commissioning of craftsmen working in gold and precious stones,¹⁷⁹ and the small but significant corpus of Northumbrian garnet cloisonné jewellery, exemplified by St Cuthbert's pectoral cross, the jewel may be a relic of the milieu of Wilfrid's monastery at Ripon.

GENERAL DISCUSSION

Knowledge of the pre-Conquest archaeology of Ripon is still sparse, the investigated sites suffering from their limited extents and the destructive effects of more recent activity. Nevertheless, combined with the observations of antiquarian writers and the topographic insights obtainable from early maps of the town, and

considered in the light of the documented early history of the monastic community, the information available allows a tentative reconstruction of the disposition of early ecclesiastical settlement.

Modern urban infilling and associated levelling operations have greatly obscured Ripon's natural topography. However, Thomas Langdale's map of 1818 (Fig. 35)¹⁸⁰ preserves a record of a series of sinuous, linear banks and isolated circular mounds on and at the base of the sloping ground to the E. of the market place. From their form and what is known of their constituent materials these appear to be glacial kames; banks and mounds of sand and gravel accumulating in holes in the ice on the shrinking flank of a glacier.¹⁸¹ By the time Langdale's map was drawn it is clear that quarrying had already severely reduced some of these features,¹⁸² a process which was to continue through the first half of the 19th century. Nevertheless, those illustrated by Langdale are substantial. All Hallows Hill is represented as a sinuous bank which defines a roughly semicircular area to the S.; the curving property boundary to the W. of the Court House suggests its southward continuation, which then appears to curve around to the E., terminating in the bluff on which the Minster stands. Ailcy Hill can be seen as an eastern outlier of this ridge. An equivalent mound probably existed due E. of All Hallows Hill, in the enclosure known as Scots' Monument Yard; Walbran refers to 'a mound of gravel' on the E. side of the House of Correction (Fig. 35), and this may be the second 'vast artificial mount' referred to by Pennant in 1804.¹⁸³ The site of this mound is indicated on Thomas Jefferys's plan of 1771.¹⁸⁴ By the time of the publication of the Ordnance Survey map of 1856, the feature would seem to have been largely reduced to a gravel pit, although the annotation of the map indicates that part of the mound survived (Fig. 36).

These natural features can be seen to define and partially enclose an irregularly shaped area of *c.* 10 hectares. Several authors have noted the predilection of early monastic communities for establishing themselves in topographically enclosed sites.¹⁸⁵ The close association of a known 7th-century monastic church with such an enclosure, and the documented existence of an ecclesiastical community which predated the construction of that church, encourages further and more detailed consideration.

Attention should first be drawn to the reciprocal curves of North St and Kirkgate (Fig. 36). Their correspondence suggests that the two streets originally formed part of a continuous thoroughfare, extending from the bluff on which the Minster stands and following the line of the curving ridge which descends towards the R. Ure to the NE. The Market Place can be seen to have been laid out obliquely across the line of this route, an operation which probably resulted in the slight 'deflection' of the S. end of North St and the NW. end of Kirkgate. It is probable that the market place in its present form was laid out by the end of the 13th century, and possibly earlier.¹⁸⁶ The North St/Kirkgate routeway can be seen to pre-date this development, reflecting the line of a natural feature which all but encloses the land between the rivers Ure and Skell.

Stocker has emphasized the number of 7th-century monastic foundations in insular and peninsular locations. He also notes that the concept of 'monastery' was

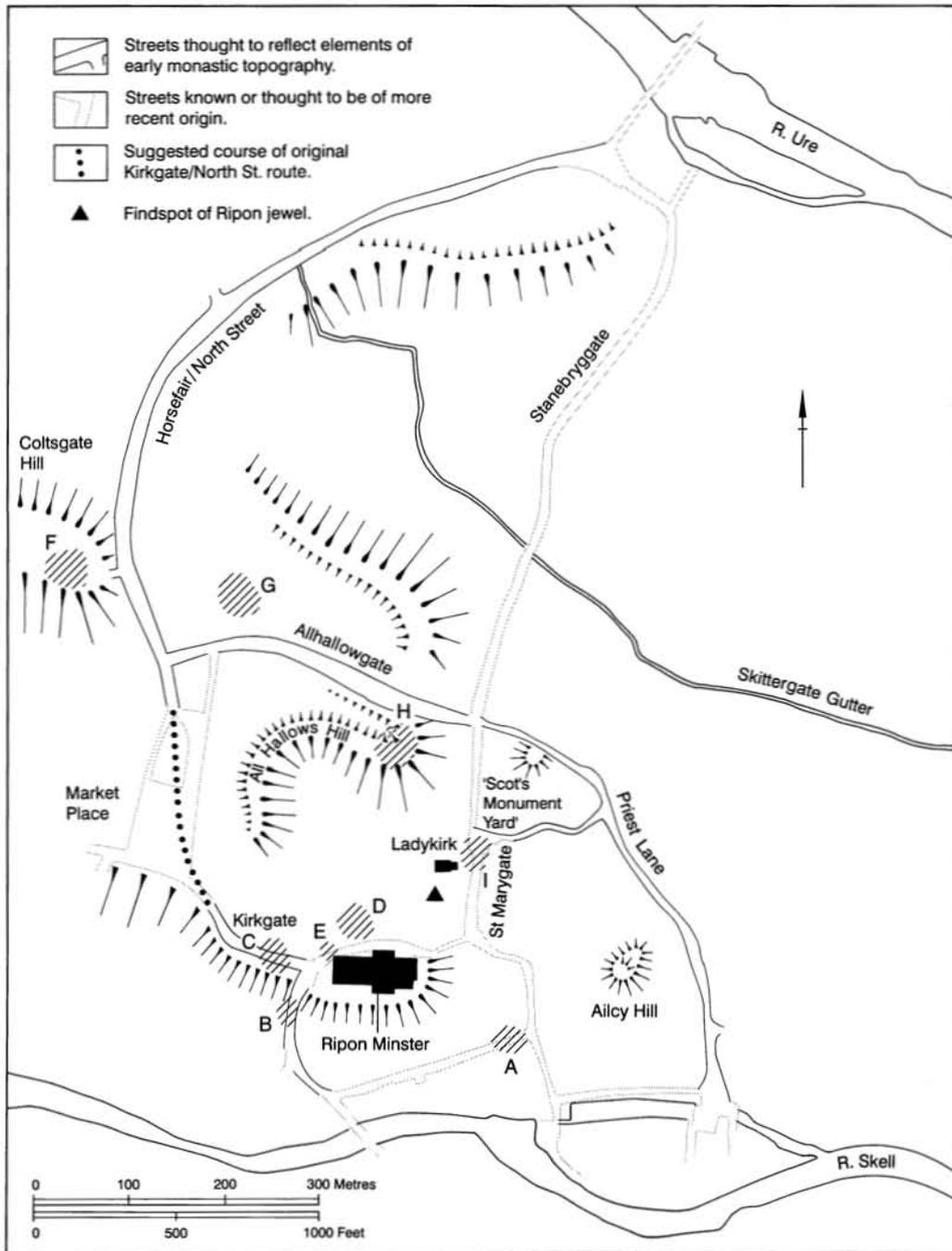


FIG. 36
Ripon; suggested early monastic topography

frequently understood in terms relating to such sites in their entirety, rather than simply to the core monastic buildings and associated settlement.¹⁸⁷ The North St/Kirkgate ridge, and the rivers Ure and Skell, create just such an enclave at Ripon (Figs. 1, 36), a context for an early monastic complex wholly in keeping with those identified at comparable sites.¹⁸⁸

The identification of a potential 'outer *vallum*' of the 7th-century monastic communities invites consideration of the location of their ecclesiastical nuclei. Two locations, apart from the site of Wilfrid's church, have drawn the particular attention of Ripon antiquarians, both of them closely associated with the complex of peri-glacial features previously discussed.

A Ripon tradition locates the site of the pre-Wilfridian monastery as *c.* 200 m NE. of the Minster, to the E. of St Marygate. The site is referred to in a number of antiquarian sources as 'Scott's Monument Yard' or 'Site of the Scotch Monastery', the first recorded instance being Thomas Gent's map of 1733, on which it is annotated, 'Where the Scots monastery was, now a hill . . . where foundation stones have been found'.¹⁸⁹ The tradition is unsubstantiated, although Walbran adds more detail in his record of the excavation of Early English architectural mouldings from the 'mound of gravel' (referred to above) on the site, indicating the existence of a (?church) building there as early as the 13th century.¹⁹⁰

Although there is insufficient evidence to identify 'Scott's Monument Yard' conclusively as an early monastic *locus*, it displays two interesting characteristics in addition to its traditional associations and the antiquarian discoveries there. Firstly, to the NE. the enclosure is bounded by Priest Lane, which continues its curving course SE. towards the R. Skell. Secondly, the shape of the enclosure is curious, forming as it does an irregular halved oval; this may simply have been determined by the documented existence, until the late 18th or early 19th century, of a sizeable gravel mound, which would have dictated the street pattern in the vicinity. The W. boundary of the enclosure is formed by St Marygate. This street appears to have cut through a cemetery (Fig. 30) apparently in use from the 8th to at least the 10th century, an observation supported by Tuting's reference to the discovery of skeletons *underneath* St Marygate (Fig. 36, I).¹⁹¹ St Marygate runs parallel with the Market Place, and the two may have been laid out at the same time — before the end of the 13th century, as noted above.

It is therefore possible that what was referred to in the 18th and 19th centuries as 'Scott's Monument Yard' is the truncated remnant of an enclosure which originally extended further to the W. Whilst its original full extent and form are unknown, and any comparisons consequently speculative, a possible parallel with the large oval churchyard at Bramham, West Yorks.,¹⁹² which has been proposed as the site of an early British ecclesiastical establishment, may be noted. There are therefore indications, albeit slight and ambiguous, that the associations of the site suggested by Ripon antiquarians are not wholly without substance. The earliest datable objects recovered from the site, however, are several 9th-century *styca*s, recorded by Walbran in 1876.¹⁹³

An alternative tradition concerning the site of Eata's monastery is expressed in the text recorded by Leland in the Ladykirk;

Inscriptio: in novo muro Capellae S. Mariae Ripioni.

S. Cuthbertus episcopus Lindisfarnensis hic fuit monachus. S. Eata archiepiscopus Ebor. hic fuit monachus.

*S. Wilfridus archiepiscopus Ebor. hic fuit monachus et 1 abbas . . .*¹⁹⁴

[inscription: in the new wall of the Chapel of St Mary, Ripon.]

St Cuthbert, bishop of Lindisfarne, was a monk here.

St Eata, archbishop of York, was a monk here.

St Wilfrid archbishop of York was a monk here and first abbot]

It is almost certain that this and other inscriptions within the church were the responsibility of Abbot Huby; similar inscriptions exist, or are recorded as having existed, at five other churches and chapels associated with him, and it is clear from the Ladykirk example that he believed he had acquired the site of both Wilfrid's monastery and its predecessor. Thus, in the early 16th century, no distinction was recognized, or at least acknowledged by Huby, between the sites of the two documented early monastic communities.

Although the site of Wilfrid's church is established beyond doubt by the existence of its crypt,¹⁹⁵ the disposition of its associated monastic complex is unclear. Whilst early 16th-century opinion favoured the vicinity of the Ladykirk, it should be remembered that this association was made over two centuries before the crypt beneath the Minster was recognized as a Wilfridian survival.¹⁹⁶ More recent observations nevertheless lend some support. The Ladykirk is located within the *enceinte* defined by All Hallows Hill and its related features (Fig. 36); close by, excavations in the Deanery Gardens revealed structures and associated deposits, identified as probably pre-Conquest and containing the 'Ripon Jewel'. No clear evidence for a 7th-century origin for the Ladykirk was recovered in the excavations of 1955, and that recorded in the Deanery Gardens falls some way short of what would be required to confirm the presence of monastic buildings of that date. However, topographic, archaeological and antiquarian observations would appear to converge in suggesting the area W. of St Marygate and S. of Allhallowgate as the likely location of at least a part of Wilfrid's monastery. The proposal is lent further support by the observation that the later medieval ecclesiastical precinct extended over just this area. It could be proposed that the laying out of St Marygate, Allhallowgate and the Market Place represented the regularization, within the framework of a grid of streets, of a monastic enclosure previously defined by the natural topography.

The evidence for widespread burial within the area suggested as the early monastic precinct must be taken into consideration. The Ailcy Hill and Ladykirk cemeteries have already been discussed in some detail, but many other burials have also been discovered to the N. and E. of the Minster. Most of the data has been uncovered by chance, and is known only through often rather imprecise antiquarian records; there is no clear evidence for the date of any of these inhumations. Skeletons have been recorded from St Agnesgate (Fig. 36, A), Bedern Bank (B), Kirkgate (C), and in the Joiners' Yard (now the Masons' Yard and the Old Deanery to the N. of the Minster (D)).¹⁹⁷ All of these are likely to have been associated with the Minster graveyard, as are the two found adjacent to coffin-shaped cists at a depth of *c.* 1.80 m beneath the NW. tower of that church (E). The

same cannot be said of two burials discovered in 1859 at the Wesleyan Chapel on Coltsgate Hill (F), another eminence of probable peri-glacial origin, *c.* 400 m to the NW.¹⁹⁸ More significant for this discussion is the evidence for a large number of burials from Allhallowgate and All Hallows Hill. Tuting records a skeleton in the garden of the Union Workhouse (G) at the north of that street, another one 14.0 m (46 ft.) away, and another found at 'the end' of All Hallows Hill in June 1848 which had an 'iron cross', 125 mm long and 39 mm across the arms, lying on its chest.¹⁹⁹ He also notes that many dozens more had been found at gravel pits in this vicinity (H), and Walbran reported that the graves appeared to continue westward, i.e. up the hill.²⁰⁰ The name 'All Hallows' may be indicative of the hill having had sacral associations, and possibly even suggests the existence of a church, as surmised by Leland,²⁰¹ who described the hill itself as '. . . lyke a kepe of a castel . . .', although no trace of such a structure has ever been recorded.

From the evidence presented above, it can be seen that five sites, within *c.* 200 m of one another, have produced evidence of medieval and/or pre-Conquest churches and/or cemeteries; the Minster itself (7th-century crypt), Ailcy Hill (?6th/7th–9th-century cemetery), Scott's Monument Yard (13th-century ?church and 9th-century stycas), All Hallows Hill (cemetery, undated) and the Ladykirk (?8th–10th-century cemetery and ?contemporary church). Moreover, at least four of these sites stood on peri-glacial mounds or ridges; the exception, the Ladykirk, is in fact described by its excavator as having been sited 'on a small gravel hill', although this seems to have been less prominent than the others.

In view of the observations that many early monastic communities comprised several scattered foci within their boundaries, that some of them could have served as detached chapels,²⁰² and that a religious community of any importance — as Ripon certainly was in the 7th century — would have had at least two and perhaps more churches,²⁰³ this clustering of churches and/or cemeteries is of the greatest interest. Numerous examples of polyfocal but non-axial monastic precincts, broadly contemporary with the foundation at Ripon, are known in both the British Isles and Merovingian France.²⁰⁴ Stephen's *Vita Wilfrithi* reports Wilfrid building churches dedicated to St Peter and to St Andrew, and there is other evidence that he built one dedicated to St Mary.²⁰⁵ It is usually believed²⁰⁶ that these named churches were all at Hexham, an interpretation which can be supported by reference to Prior Richard of Hexham's mid 12th-century *Historia*,²⁰⁷ which refers to three churches which had these names. It has been suggested that St Peter's was a small apsed building immediately E. of the main church at Hexham, although a recent study denies this attribution, at the same time pointing to circumstantial evidence that a church dedicated to St Mary had been erected at Hexham before Bede's death in 735.²⁰⁸ However, on the basis of their current dedications, Wilfrid's churches of St Peter and St Andrew could more obviously be equated with the two main churches of Ripon and Hexham, making the Ladykirk another possible candidate for the church of St Mary. Although none of the material from the Ladykirk can be dated to the 7th century, Leland's description and the discovery of cross-fragments do suggest that an 8th- to 9th-century graveyard occupied that vicinity.

Whether or not the Ladykirk can be equated with one of the churches referred to in Wilfrid's *Vita*, the indications of a number of probable ecclesiastical foci stand independently. In two instances — the site of the Minster and Ailcy Hill — evidence for the ecclesiastical or funereal use of the sites can be demonstrated from at least the 7th century; at the Ladykirk possibly from the 8th. The information available from the other two sites allows less precision, but that which does exist is strongly suggestive of an ecclesiastical presence, with slight indications that in the case of Scott's Monument Yard it may have originated before the 10th century. It can be suggested that each eminence was originally the site of a church, chapel, oratory and/or cemetery, and that the street pattern around Scott's Monument Yard, and the curving line of Bedern Bank to the W. of the Minster, preserve the limits of the original precincts of two of these nuclei. Furthermore, Priest Lane, which passes immediately to the E. of both Scott's Monument Yard and Ailcy Hill, may reflect the position of an enclosing feature, continuing westwards along the line of what is now Allhallowgate and, with All Hallows Hill and its southerly continuation, containing all of the sites under discussion. The significance of this area of land for the Ripon Chapter is emphasized in the Privileges of the Church of Ripon as they were defined in 1228; Ailcy Hill, All Hallows Hill and 'Prestelay' — probably Priest Lane — are cited as defining parts of the boundary of the Chapter's lands in the town.²⁰⁹

The origins of this configuration, its development and relationship with the documented monastic episodes at Ripon are, inevitably, unclear. The possible significance attributed to components of the peri-glacial landscape, in the light of the widespread occurrence of prehistoric tumuli in the locality, is apparent. Ailcy Hill, at least, was clearly used for burial before either Eata's or Wilfrid's monastery was established, and its use as a cemetery contemporaneous with the latter seems to indicate subsequent incorporation into the monastic milieu. The earlier use of the hill may have been significant in its selection; the attraction of pagan sites as locations at which to combat pagan devils directly has been commented on, and is a recurring theme in the early saints' lives.²¹⁰ The apparent demographic structure of the Phase 1b cemetery might suggest that such associations had drawn an ecclesiastical community to Ripon before the earliest documented foundation; however, in other respects the cemetery in this phase is unexceptional, and could simply be the burial ground of a local secular population. In either case, the principle of founding a monastery on the site of what may have been taken to be huge sepulchral monuments, redolent with associations of power, may have been the more significant counterpoint to confronting demons; the annexing of such a site by a Christian community, via a royal grant, would have firmly established claims of spiritual and temporal rights over landscape and people.

Divergent opinions have been expressed as to the significance of topographic locations of early monasteries such as that at Ripon. On the one hand they have been seen as being in 'topographically distinctive isolated positions . . . promontories or projecting spits of land between two rivers', on the other as 'prominent but not remote'.²¹¹ These characterizations are not incompatible, and the distinction

between 'prominent' and 'isolated' may in practice have been a matter of how the location was exploited by the monastic community. Thus the siting of Wilfrid's church on the highest, most visible, ridge should occasion no surprise, given our knowledge of his approach to his office. However, it was located on what has been suggested as having been the boundary of the monastic precinct. Although it is not known which, if any, of the proposed ecclesiastical nuclei were established or utilized by Eata's community, it is possible that its ethos and organization were different from that of its successor, employing the Kirkgate/North St ridge as a barrier to emphasize its isolation, rather than a platform to proclaim its eminence. Acceptance of the traditional associations of Eata's monastery with Scott's Monument Yard or the vicinity of the Ladykirk would certainly point to such a contrast.

The validity of these suggestions can only be determined in the light of more reliable data from at least four of the five sites discussed, a prerequisite for a detailed and accurate appreciation of the context and development of 7th-century monasticism at Ripon. The material assembled here, and the tentative conclusions drawn from it, provide indications as to where future archaeological work might be most profitably directed. The extent of survival of deposits on these sites is largely unknown, and the effects of gravel quarrying and building in the last two centuries would seem to have been intensely destructive. Nevertheless, the example of Deanery Gardens suggests that relevant stratification may survive in places. The identification and examination of such sites is essential if the tantalizing indications of early monasticism are to be expanded on, and the sequence and context of the development of the monastic institution understood.

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- ⁷⁶ P. J. Ottaway, *Anglo-Scandinavian Ironwork from 16-22 Coppergate, York, c. 850-1100* (unpublished D.Phil. thesis, University of York), 475-76.
- ⁷⁷ N. Rogers, *Anglian finds from 46-54 Fishergate, The Archaeology of York 17/8* (London, 1993).
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- ⁷⁹ B. Hope-Taylor, *Yeavering: an Anglo-British centre of early Northumbria* (London, 1977), fig. 90, 4-5.
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- ⁸¹ Ottaway, *op. cit.* note 73, 645-46, no. 3495.
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- ⁸³ W. H. Manning, *Catalogue of the Romano-British iron tools, fittings and weapons in the British Museum* (London, 1985), 95, pl. 42, 066.
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- ⁸⁶ Faussett, *op. cit.* in note 85, 133.
- ⁸⁷ Mortimer, *op. cit.* in note 69, p. 91, fig. 716; Wilmott, *op. cit.* in note 71.
- ⁸⁸ Kjøbye-Biddle, *op. cit.* in note 68, figs. 173, 177.
- ⁸⁹ Ottaway, *op. cit.* in note 73, nos. 3606-07.
- ⁹⁰ Wilmott, *op. cit.* in note 71.
- ⁹¹ Kjøbye-Biddle, *op. cit.* in note 68, figs. 176, 178; Ottaway, *op. cit.* in note 73, 657-60, 668-69; A. MacGregor, *Anglo-Scandinavian finds from Lloyds Bank, Pavement and other sites*, The Archaeology of York 17/3 (London, 1982), 82-83, fig. 42, 431; fig. 43.
- ⁹² As defined by Ottaway, *op. cit.* in note 73, 673-74.
- ⁹³ Back form 'A', as defined in Ottaway, *op. cit.* in note 73, 561.
- ⁹⁴ *Ibid.*, 562-65.
- ⁹⁵ M. Orsnes, 'Waffengraberfunde des 4-5. Jahrhundert nach Christus', *Nordiske Fortidsminder Serie B Bind II* (1988), Taf. 105.
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- ¹¹⁸ T. S. Gowland, 'Antiquities of Ripon and Riponshire', Yorks. Arch. Soc. Archives MS 881, vol. 21, 1.
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- ¹²² Sheahan, op. cit. in note 24.
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- ¹²⁴ A. Meaney, *A Gazetteer of Early Anglo-Saxon Burial Sites* (London, 1964), 18-19.
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- ¹²⁸ *Ibid.*, 275-83.
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- ¹⁴⁶ Cal. Pat. 15 Ric. II, p. 2, m. 13.
- ¹⁴⁷ J. T. Fowler, 'Ripon Chapter Acts', *Surtees Soc.*, 64 (1874), 182-83.
- ¹⁴⁸ Brotherton Library, University of Leeds, MS Ripon 58 f. 17^v and 18^r; Walbran, op. cit. in note 10, 23-24.
- ¹⁴⁹ Paget-Baggs also excavated small areas to the N. and S. of the area shown on Fig. 30, but as there is no report of anything other than modern garden features from these areas, and no detailed records, the published plan has been confined to that part of the site which produced information relevant to the theme of this article.
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- ¹⁵² W. D. Tempel, 'Unterschiede zwischen den Formen der Dreilagenkämme in Skandinavien und auf den Friesischen Wurtten vom 8. bis 10. Jahrhundert', *Archäologisches Korrespondenzblatt*, 2 (1972), 57-59, Taf. 8, 6; R. Blomqvist, 'Kammar från Lunds medeltid', *Kulturen* (1942), 133-62, Bild 8.
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- ¹⁵⁴ A. Grieg, 'Viking Antiquities in Scotland' in H. Shetelig (ed.), *Viking Antiquities in Great Britain and Ireland*, 2 (Oslo, 1940), 81, fig. 45; R. A. Hall, *The Viking Kingdom of York* (York, 1976), fig. 12; A. MacGregor, 'Industry', op. cit. in note 151, 11, fig. 29.

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- ¹⁶⁰ *Ibid.*, 174-76, pl. 167, nos. 896-97; pl. 168, nos. 898-99; pl. 169, nos. 900-03; W. G. Collingwood, *Northumbrian Crosses of the Pre-Norman Age* (London, 1927), fig. 38, p. 30.
- ¹⁶¹ L. P. Wenham et al., *St Mary Bishophill Junior and St Mary Castlegate*, fascicule 1 in P. V. Addyman (ed.), *The Archaeology of York, 8: Anglo-Scandinavian York*, 121; W. G. Collingwood, 'Anglian and Anglo-Danish Sculpture in York', *Yorkshire Archaeol. J.*, 19 (1909), 149-213, 207.
- ¹⁶² R. Cramp, op. cit. in note 159, fig. 34.
- ¹⁶³ *Ibid.*
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- ¹⁶⁵ *Ibid.*, vol. 1, 94-96; vol. 2, 628-30, fig. 319; D. Tweddle, *The British Academy Corpus of Anglo-Saxon Stone Sculpture, 4: South-East England* (London, forthcoming); Taylor and Taylor, op. cit. in note 8, vol. 1, 187-90, fig. 81; Tweddle op. cit. in this note.
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- ¹⁶⁸ Smith, op. cit. in note 145.
- ¹⁶⁹ See M. Whyman, 'Excavations in Deanery Gardens and Low St Agnesgate, Ripon, North Yorkshire', *Yorkshire Archaeol. J.*, 68 (forthcoming, 1997).
- ¹⁷⁰ In discussion of these deposits, the numbers used are those attributed by the excavator in the site archive; letter codes have been attributed to features as the original context records do not distinguish between the cut of a feature and its fill.
- ¹⁷¹ R. Daniels, 'The Anglo-Saxon Monastery at Church Close, Hartlepool, Cleveland', *Archaeol. J.*, 145 (1988), 158-210, e.g. fig. 22, 173.
- ¹⁷² *Ibid.*, 175-81, 204; although the authors have reservations about the arguments offered by Daniels for the 'replacement' of earth-fast posts by stone footings in the case of individual buildings, it is clear that at Hartlepool a phase of (at least partially) stone-built structures did succeed a wholly timber-built phase; compare figs. 2 (160) and 26 (176).
- ¹⁷³ York Archaeological Trust, Cromwell House, 13 Ogleforth, York, YO1 2JG.
- ¹⁷⁴ Ancient Monuments Laboratory, H.B.M.C.(E), 23 Savile Row, London, W1X 1AB; Erica Paterson has been responsible for conservation of the Jewel, and has contributed the descriptive elements of the text; Catherine Mortimer undertook the scientific analyses and wrote the associated sections of the text; Richard Hall is responsible for the discussion and has produced the integrated report in consultation with the other authors.
- ¹⁷⁵ C. Mortimer, *Technical Analysis of the Ripon Jewel*, Ancient Monuments Laboratory Report 3/96, 1996.
- ¹⁷⁶ S. La Niece, 'White Inlays in Anglo Saxon Jewellery', 235-46 in E. S. Slater and J. O. Tate (eds.), *Science and Archaeology Glasgow, 1987. Proceedings of a conference on the application of scientific techniques to archaeology*, Brit. Archaeol. Rep. British Ser. 196/1 (Oxford, 1988).
- ¹⁷⁷ Mortimer, op. cit. in note 175.
- ¹⁷⁸ A more detailed report on the Jewel will be published in the papers from The Golden Age of Northumbria Conference, held in July 1996, to be edited by J. Hawkes and S. Mills.
- ¹⁷⁹ Colgrave, op. cit. in note 4, 36.
- ¹⁸⁰ Langdale, op. cit. in note 31, 39.
- ¹⁸¹ See J. E. Hemingway, 'Geology and Topography of North-East Yorkshire', 4-14 in D. A. Spratt (ed.), *Prehistoric and Roman Archaeology of North-East Yorkshire*, C.B.A. Res. Rep. 87 (London, 1993), 10.
- ¹⁸² Sheahan, op. cit. in note 24.
- ¹⁸³ Cited in Hall, 'Antiquaries', op. cit. in note 9, 14; Pennant, op. cit. in note 28. The exploitation of these features as gravel quarries, and the observations made in the course of excavations, indicate the probable periglacial origin of all of these features.
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- ¹⁸⁷ Stocker, op. cit. in note 185, fig. 9.3, 105; 104, 108, 110.
- ¹⁸⁸ *Ibid.*, 106, with references.
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- ¹⁹⁰ J. R. Walbran, *The Shilling Guide to Ripon*, 8th ed (1862), 19–20.
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- ¹⁹⁴ Smith, op. cit. in note 12, vol. 5, 143.
- ¹⁹⁵ Taylor and Taylor, op. cit. in note 8, 517.
- ¹⁹⁶ Hall, 'Antiquaries', op. cit. in note 9, 19–20.
- ¹⁹⁷ Allcroft, op. cit. in note 19, 423, note 3; Tutting, op. cit. in note 191, 71.
- ¹⁹⁸ W. Harrison, *The Ripon Millenary* (Ripon, 1892), 188.
- ¹⁹⁹ Tutting, op. cit. in note 191, 11; the sketch of the 'iron cross' suggests that it may in fact have been a latch-lifter, although no precise parallels for its form have been identified.
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- ²⁰⁵ Colgrave, op. cit. in note 4, 122–23; M. Lapidge, 'Some remnants of Bede's lost *Liber Epigrammatum*', *Eng. Hist. Rev.*, 90 (1975), 798–820, p. 804.
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- ²⁰⁷ J. Raine, 'History of the Church at Hexham' in *idem* (ed.), *The Priory of Hexham*, Surtees Society, 44 (1864) and 46 (1865); vol. 44, 15.
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