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BAILE HILL, YORK

*By* P. V. Addyman and J. Priestley

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THE ROYAL ARCHAEOLOGICAL INSTITUTE

## Baile Hill, York:

### A report on the Institute's Excavations

By P. V. ADDYMAN and J. PRIESTLEY

*Baile Hill, traditionally one of the two castles put up by William the Conqueror at York by 1069, was excavated as part of the Institute's research project into the origins of the castle in England. The site was chosen because the castle was built, destroyed and twice rebuilt by 1070, is well documented, and had gone out of use by the fourteenth century.*

*The limited excavations revealed twelfth-century structures on the motte top. There were post-holes, perhaps representing a palisade round the perimeter; within there was a mortar floor, and near the centre there was a clay-floored rectangular structure indicated by narrow trenches for foundation beams. A large and deep pit at the corner of the rectangular structure perhaps represented a turret encapsulated within the mound. Extensive irregular sinkage indicated earlier structures beneath, but these could not be excavated. Above the structures was an occupation layer, and above that a layer of limestones, perhaps introduced to level the mound after the castle had been abandoned. Above this, thick layers of soil may represent the heightening of the mound to take a documented Civil War battery.*

*Excavations at the foot of the motte revealed steps in the face of the mound, perhaps wood-faced and possibly representing an original means of access to the summit. There was a trench at the foot, possibly for a timber kerb, and there was a narrow berm between mound and encircling ditch. The mound was constructed in horizontal layers over Roman features and an old ground surface containing Anglo-Scandinavian pottery. The encircling ditch, of which only the lips were located, was some 21 m wide and is estimated to have been about 12 m deep. There were some suggestions that it may have been crossed by an horizontal bridge, but again full excavation was not possible. Parts of the bailey near Baile Hill proved to have been extensively disturbed by air-raid shelters and earlier scarping, and no early structures survived.*

*Occupation layers on the motte top produced a good series of twelfth-century objects and pottery including gritty and splashed wares. There was a small quantity of Anglo-Scandinavian pottery from pre-motte deposits. Late medieval arrowheads peppered the mound, giving material evidence of its documented contemporary use as a butt.*

#### INTRODUCTION

The Old Baile and its motte Baile Hill (SE 60265126; Fig. 1) lie at the south corner of the walled city of York. The walls run along two sides of the former bailey and climb the flanks of the motte itself before plunging down a formerly abrupt river cliff to meet the river Ouse some 50 m away. The motte, now a tree-covered grassy mound (Pl. VIA), still towers above the river and faces a companion motte under Clifford's tower across the Ouse, though its bailey, ditches and immediate environs have given way to

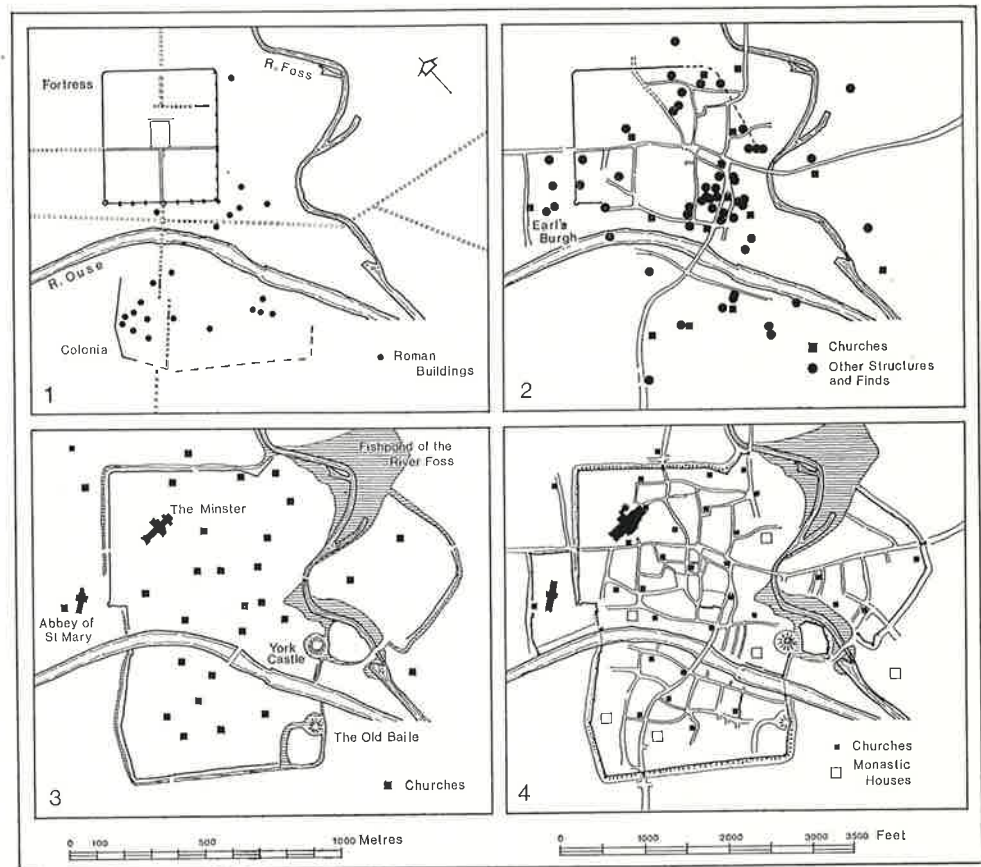


Fig. 1. York

1: Roman fortress and colonia; 2: the Anglo-Scandinavian town;  
3: the two Norman castles; 4: the late medieval walled city

the asphalt and traffic fumes of Bishopgate Street, Cromwell Road and various terraces of late nineteenth-century houses (Fig. 2). The castle may have stood within the site of the Roman *colonia* and the Anglo-Scandinavian city, though this is by no means so certain.

The *colonia* (Fig. 1) lay south-west of the Ouse, and for the most part north-west of the Old Baile. Excavations since the Royal Commission on Historical Monuments reviewed the evidence for the *colonia* in 1961 (RCHM 1962) have shown that *colonia* structures extend at least as far as the Friends Burial Ground, Cromwell Road, less than 50 m from the bailey defences (Addyman 1976a, 7), and the present excavations (p. 122, below) revealed a small late Roman pit, ostensibly of domestic origin, below Baile Hill itself. Moreover parts of a large late Roman house with mosaics have recently been uncovered some 200 m south-east of the castle in Clementhorpe (Addyman 1976b). Against this evidence for the former extent of the *colonia* must be set the discovery in

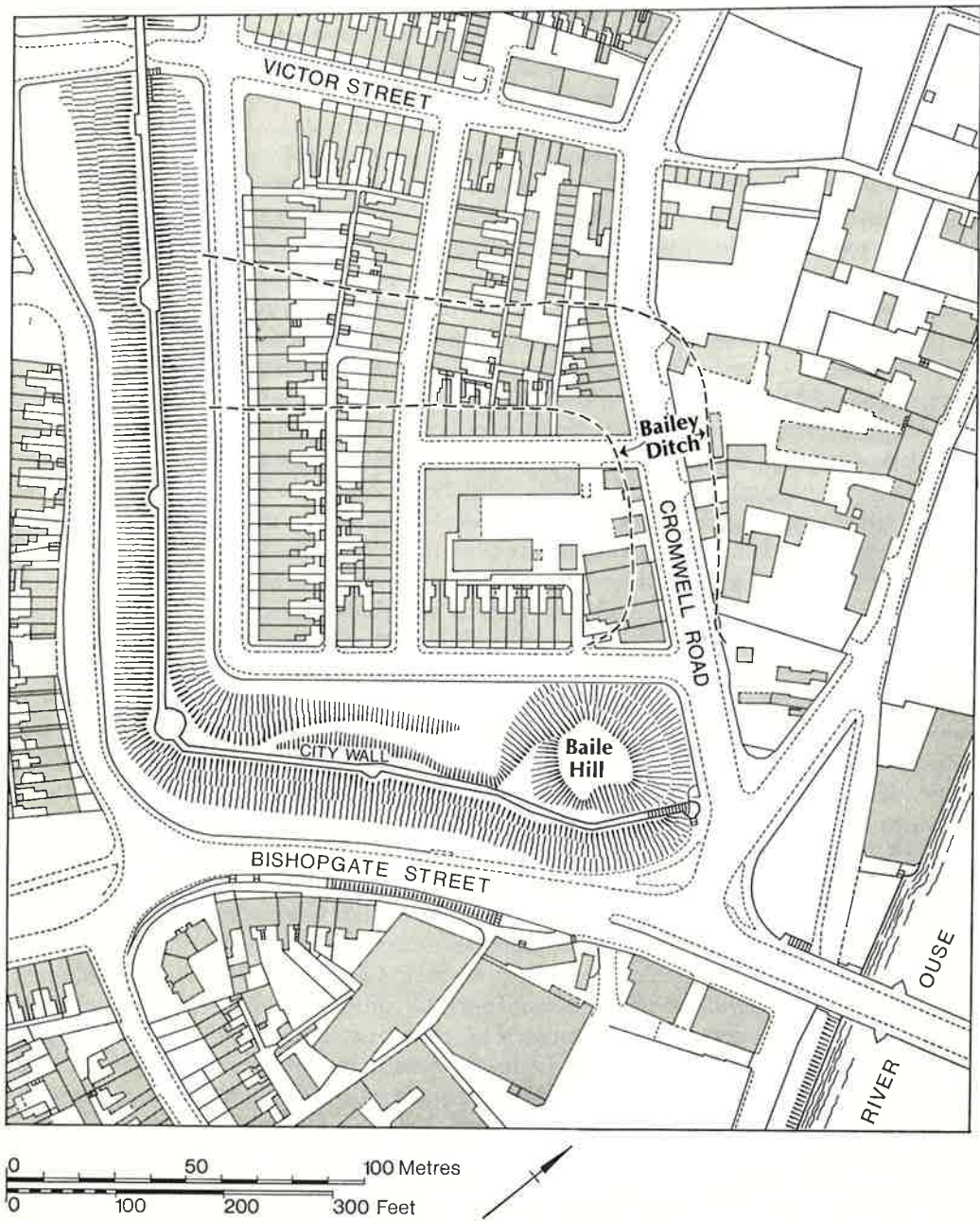


Fig. 2. Baile Hill and the site of the Old Baile, York

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the Old Baile in the nineteenth century of a small cemetery containing a cremation with associated grave goods and various tile tombs. These were made of tiles of the Sixth Legion and one contained the extended skeleton of a woman with a second brass of Trajan in her mouth (RCHM 1962, 107). Probably this cemetery antedates the development of the *colonia* in the late second and early third century and was subsequently incorporated within the town.

Whether the *colonia* had defences in this area is equally uncertain. A defensive wall apparently underlies the medieval rampart on the north-west side of the *colonia*. It is at least possible that this wall lies under the medieval wall throughout most of its circuit south-west of the Ouse. If so it probably took advantage of the defensive possibilities provided by a natural declivity down which Bishopgate Street now runs, and was built along its edge. An alternative return line might have been along the north-west defences of the Old Baile. Recent excavations suggest that the river front of the Roman town did not have a wall, though a steep river cliff may have offered defensive potential (Carver *et al.* forthcoming).

In Anglo-Scandinavian times it seems even more likely that York extended to the Old Baile area. The nearest modern excavations, in Bishophill, showed fairly intensive occupation at this time, and St Mary Bishophill Senior seems to have been an important church from an early period (Addyman 1976a, 12-14; Ramm 1976, 45-7). In the Old Baile itself pre-Conquest artefacts have been found on several occasions. They included characteristic comb cases, a knife handle, two spear heads, several decorated lead and bronze objects and two Northumbrian stycas (*YMH*, 211, 214-15; Yorkshire Museum Accession 1929.832). In 1802 and 1882 coin hoards of Edward the Confessor and William I were found (*SCBI*, 21, Hoards 15, p. xxxv; 12, p. xxxiii; 17, p. xxxvi). The Institute's excavations produced a few sherds of Anglo-Scandinavian pottery from below the castle mound which provide further evidence of occupation in the area. While objects at this period are notoriously difficult to date precisely some at least of these finds are clearly pre-Norman. Nothing is known of the defences of the Anglo-Scandinavian town in the area, but they may well have been based, as elsewhere in York (RCHM 1972, 7-10, 110-17, 122), on Roman predecessors. If this is so the siting of the Old Baile in this position becomes instantly intelligible. The castle would have been set in the angle of already existing town defences, as was done so often elsewhere by the Normans. The Tower of London, Winchester Castle and Pevensey Castle similarly utilize Roman defences, while the castles at Southampton, Christchurch, Wareham, Exeter, Lydford and indeed Dover all probably incorporate pre-existing Anglo-Saxon fortifications. The list could be much extended. The Old Baile would have had the steep natural slope down to the Ouse on its north-east side, and only towards the town, to the north-west, would major strengthening be necessary. In view of the speed with which the York castles are known to have been constructed the utilization of existing works is most likely.

In most general terms the two York castles are sited to dominate the two halves of the Anglo-Scandinavian town and at the same time to control the main river. York Castle, moreover, overlooks the tributary river Foss, then probably also navigable in its lower reaches. In controlling both town and rivers the two castles between them control movement over the whole of the central part of the Vale of York, for the York moraine

is the natural land route across the Vale, and York was until road-building of the 1970s the only crossing point of the river for many miles. The moraine is nearly a mile wide at York, and gives rise to well-drained sandy and loamy soils safe from floods. The city for the most part, and the Baile Hill site, lie on brown gravelly boulder clays overlying Bunter Sandstone. The area surrounding the medieval city, and the immediate banks of the Ouse, are alluvial, subject to flooding in medieval and recent times.

York's key role in the Norman conquest began even before Hastings, with the events leading up to Stamford Bridge, and its security was a matter of immediate concern in effecting the conquest of the North. Details of the story are difficult to establish since the English accounts represented by the Anglo-Saxon Chronicle (hereafter ASC) are fragmentary and sometimes inconsistent, and do not always tally with that of Ordericus Vitalis, written in the early twelfth century but based on the eye witness account of William of Jumièges, who wrote about 1070 (Le Prevost 1838-55, 188, 192-5). A coherent story can be constructed through use of the twelfth-century chroniclers who supplement and edit the basic accounts, William of Malmesbury (WM), Florence of Worcester (FW), and the northern Roger of Hoveden (RH) (Stubbs 1887-9; Thorpe 1848-9; Stubbs 1868-71). Ordericus's version is followed except where noted.

The events start with the northern revolt of 1068. In the summer of that year William marched north, following apparently a policy of establishing castles in towns of particular importance, first at Warwick, then at Nottingham (ASC(D)), and subsequently at York, which sent the keys and hostages without resistance. William, suspicious of the city's loyalty, nevertheless built the castle (*munitionem firmavit*). ASC, FW and RH all say that two castles were built, but as they omit the details of the later building of a second this is presumably a conflation. William left a garrison of 500 picked men to guard it, in the charge of William Malet, and on his course south established castles in Lincoln, Huntingdon and Cambridge.

The revolt was, however, by no means over. The first Norman Earl of Northumbria, Robert de Commines, and most of his men were killed at Durham on 28 January 1069, and Edgar Ætheling and a force of Northumbrians attacked the city and castle (*munitionem Regis*) at York, where the Norman commandant and constable Robert fitz Richard was slain. William Malet appealed for help, and William marched rapidly to the rescue. He caught the Northumbrians unaware, sent the Ætheling in flight back to Scotland, slew many of the rebels and plundered York. He built another castle (*alterum praesidium condidit*) during his eight-day stay, to keep the city in double check, and left it in the charge of earl William fitz Osbern. As soon as he had left, the rebellion flared up again but was rapidly put down by the garrison. Florence of Worcester omits the whole story of the first revolt, perhaps because he considered it a duplication of the later and more important one; but the detailed and circumstantial account by Ordericus sounds convincing.

In the autumn of 1069 a large Danish fleet, having attacked Dover, Sandwich, Ipswich and Norwich, sailed up the Humber and was joined by 'the aethling Edgar and earl Waltheof and Maerleswein and earl Cospatrick with the Northumbrians and all the people, riding and marching with an immense army rejoicing exceedingly, and so they all went resolutely to York'. William warned the garrison of their approach, which replied confidently that it could hold out for a year if necessary. On 19 September the

garrison burnt the houses immediately around the castles to stop the rebels using the building materials to bridge the ditches, but either accidentally or, as ASC says, deliberately, they set most of the city alight. The Winchester Annalist blames the Danes for this, though in fact they had not reached the city by this time. When the rebels took York the garrison made a rash sally and, fighting on disadvantageous ground, was easily overcome. The castles were taken on the first day (FW). The Danes, heedless of, or ignorant of the strategic value of the castles, destroyed them.

When William returned to York the Danish army retreated down the Humber; William left them under surveillance, but returned from Nottingham on hearing they were again preparing to attack York. The Danes were bought off for the winter, and William kept Christmas at York. There ensued the harrying of the North and the rebuilding of the two York castles.

In summary therefore we can expect archaeological traces of a *munitio* put up in 1068 and attacked early in 1069; a second castle, *alterum praesidium*, put up in eight days early in 1069; evidence of the Anglo-Danish attack later in 1069 which resulted in the destruction of the city by fire and the demolition of both castles; and the restoration of both castles, completed at William's Christmas visit of 1069. Between them the castles should provide a sensitive reflection of changing ideas about military fortifications immediately after the Conquest, when ideas may well have been evolving rapidly. For this reason Baile Hill, assumed to be the site of one of the castles of the Conquest, was chosen for investigation as part of the Institute's research project.

Authorities have always assumed that the Conqueror's two castles at York were, on the one hand, Baile Hill and the Old Baile south-west of the Ouse, and on the other the mound below Clifford's Tower and York Castle nearby, equidistant north-east of the Ouse (RCHM 1972, 87 ff.; *VCH* 1961, 521; Cooper 1904, 215-38; Benson 1911). That they jointly covered a considerable area is deduced from the very considerable area recorded in Domesday Book as *vastata in castellis*, one complete shire of the seven which then made up the city (*VCH* 1961, 191-3). Which of the two was the earlier can probably never be resolved. Then as now the most important part of the city probably lay north-east on the Ouse, and the first castle is perhaps most likely to have been erected there. The name *Vetus Ballium* for Baile Hill, authenticated as early as 1268 (Craster & Thornton 1933, 12) may, however, reflect a local tradition that Baile Hill was the earlier, as might the application of *Newarke* to the castle on the other side of the river (Raine 1945, 157). The reference in 1190 to *castellum in veteri castellaria* (Stubbs 1887-9, 3, 34) apparently refers to York Castle, though Drake assumed it was the Old Baile (1736, 266). Archaeological observations by Benson showed that a complex sequence of earlier structures is encapsulated within the mound beneath Clifford's Tower (Benson & Platnauer 1902, 68; RCHM 1972, 59-86), but it is unlikely even with the re-examination of these deposits, and even with the remarkable precision of dating now offered by dendrochronology, that it will ever be possible to separate castles built less than a year apart. It is clear enough, however, that the future lay with the northern castle, for it developed into the main royal stronghold in the North, while the other decayed into obscurity.

The later history of the Old Baile has recently been reviewed by the Royal Commission on Historical Monuments for its definitive account of the monument, where

full references may be found (RCHM 1972, 87-9). After a brief mention as the site of a trial by wager of battle in 1268 it appears in the hands of Archbishop Greenfield in 1308, who in that year excommunicated citizens who, armed with bows and arrows, had broken down the gate. It may have passed into archiepiscopal hands under Geoffrey Plantagenet when both Archbishop and Sheriff in 1194-8. In 1309 the Archbishop's steward paid for the building of a foss in the Old Bailey and for the precuring of plants for it. In the fourteenth and fifteenth century there were repeated disputes between the Archbishop and the city as to who was responsible for its defence. In 1322 Archbishop Greenfield agreed to defend it provided the citizens would help if it were singled out for attack. When, however, in 1327 it was considered a defensive weakness against the Scots the Archbishop claimed that though the citizens claimed it was his responsibility since it was outside the city it was *infra fossata civitatis* and therefore theirs. Whether by council decree or his own free will he built a stone wall to replace the defences of bushes and 18 ft planks he had constructed in 1322. Disputes continued in the fifteenth century. By 1423 the walls were collapsing and Archbishop Bowet was sued to force him to repair them. The dispute was ended by 1466 by which time Archbishop William Bothe (1452-64) had 'recently' granted the Old Baile to the mayor and commonalty and their successors.

The Old Baile had been let for grazing under the archbishops and this continued under the city until the eighteenth century. From 1487 the bailey was used for yearly musters and for the annual 'view of Artillery', as for instance in 1608 when all citizens between seven and forty had to appear with bow and arrows, presumably to show their prowess by shooting at a target. The practice may account for the numerous iron arrow tips found on Baile Hill during the excavations (p. 130, below).

Leland described Baile Hill in 1540: 'The waul rennith over the west side of Ouse right agayn the castelle on the est ripe. The plotte of this castelle is now cauld the old baile and the diches of it do manifestly appere' (Smith 1907, 54-6). These are marked on Speed's map of 1601, and in various forms on subsequent maps up to the Ordnance Survey plan on the scale 5 feet to a mile of 1852. In 1561 stones fallen from the wall were gathered up and put on top of the motte, and in 1566 the Biche Doughter, an inner tower in disrepair, was removed; this was probably the 'le Bydoutre', the King's prison, which had been repaired in 1451-2.

During the Civil War the motte became a fort and two cannon were placed upon it, which fired at besiegers in 1644. A watch house was built there in 1645, perhaps, as is suggested by the Royal Commission on Historical Monuments, at the south corner of the Old Baile (RCHM 1972, 88). A view of 1720 (Pl. VIb) shows Baile Hill as a mound with an irregular summit, possibly with an earthen rampart around the edge. Ash trees had been planted there in 1628, and as part of a scheme for the restoration and beautification of York Alderman Henry Pawson levelled the top of Baile Hill and by 1722 had replanted it with trees; they were later replanted after destruction in 1726. It is possibly at this time that a curving path was cut up the mound side, and certainly it continued as a popular place of resort, as eighteenth and nineteenth-century finds from the mound surface indicate. From 1635 the lease was granted on condition that the citizens were to have their accustomed liberties therein, and in the eighteenth century the Shrovetide Games were held in 'the Hollow' which is marked on contemporary maps in the bailey.

Between 1802-7 a house of correction for debtors and felons was built in the north part of the bailey which was pulled down in 1880, after which most of the bailey was sold for building. Various maps show the later stages in the Old Baile's history in some detail. Captain James Archer's plan of *c.* 1680 or *c.* 1673 in the York City Library, shows the bailey divided into fields with trees (Butler 1972), while Benedict Horsley illustrates the irregular hump of the motte as it looked in 1697. John Cossin's map of 1722 shows the newly-planted trees on the hill top, and later maps show the hollow and the house of correction. Baile Hill was finally scheduled as an ancient monument in 1922. It still belongs to York Corporation.

### THE EXCAVATION

Most of the Old Baile is today covered with modern houses (Fig. 2). The position of its defensive ditches is indicated by cracks in the walls of nos. 6-8 Newton Terrace and nos. 22-26 Kyme Street, and in the brick patching on the inner face of the city wall where it passes over the former ditch. The Royal Archaeological Institute's work was therefore undertaken at Baile Hill itself, now a denuded tree-covered mound about 10 m high with the city wall running along its south-east flank. The mound is not symmetrical, having been eroded by paths and children's slides, and there are two platforms at the top, thought perhaps to have originated as Civil War gun emplacements. A terrace round the south flank from the top of the city wall may have been an access path cut as part of the eighteenth-century landscaping. The ditch at the foot of the mound is scarcely visible. Even though little, therefore, remains to indicate the original layout of the site it seemed likely to the Institute that limited excavations might be expected to show whether the Old Baile was indeed one of the Conqueror's two castles at York. The excavations sought to reveal the old ground surface below the mound, and any pre-castle structures thereon. It was also hoped to locate and date the original castle on the site, to establish its character and subsequent modifications; and to trace its later constructional and occupational history. The area available for excavation was limited by the presence of the city wall, and by the need to retain all trees, valued both as a local amenity and as a means of binding the mound and preventing erosion. Within these limits parts of two quadrants of the mound top were investigated (Fig. 3) and a trench was cut at the base of the mound to locate the pre-mound surface and investigate the make-up of Baile Hill. A machine-cut trench linked this cutting to the now-filled ditch; and an exploratory cutting within the former bailey near the rear of the city rampart revealed that archaeological deposits in the bailey had been almost completely cut away or eroded.

### PRE-MOUND DEPOSITS (Fig. 4)

The earliest deposits encountered were at the mound foot. The basal layer, taken to be natural, was a sandy red-brown clay. Into it was cut a circular pit which contained several Roman sherds and was filled with silty brown soil with small pieces of limestone. There was a layer of black fine silty soil near the edge, taken to represent the decomposed remains of a timber lining. A coin of Theodora (A.D. 337-41, p. 144 below) came from a layer immediately above. Elsewhere there were layers of sandy soil containing mortar

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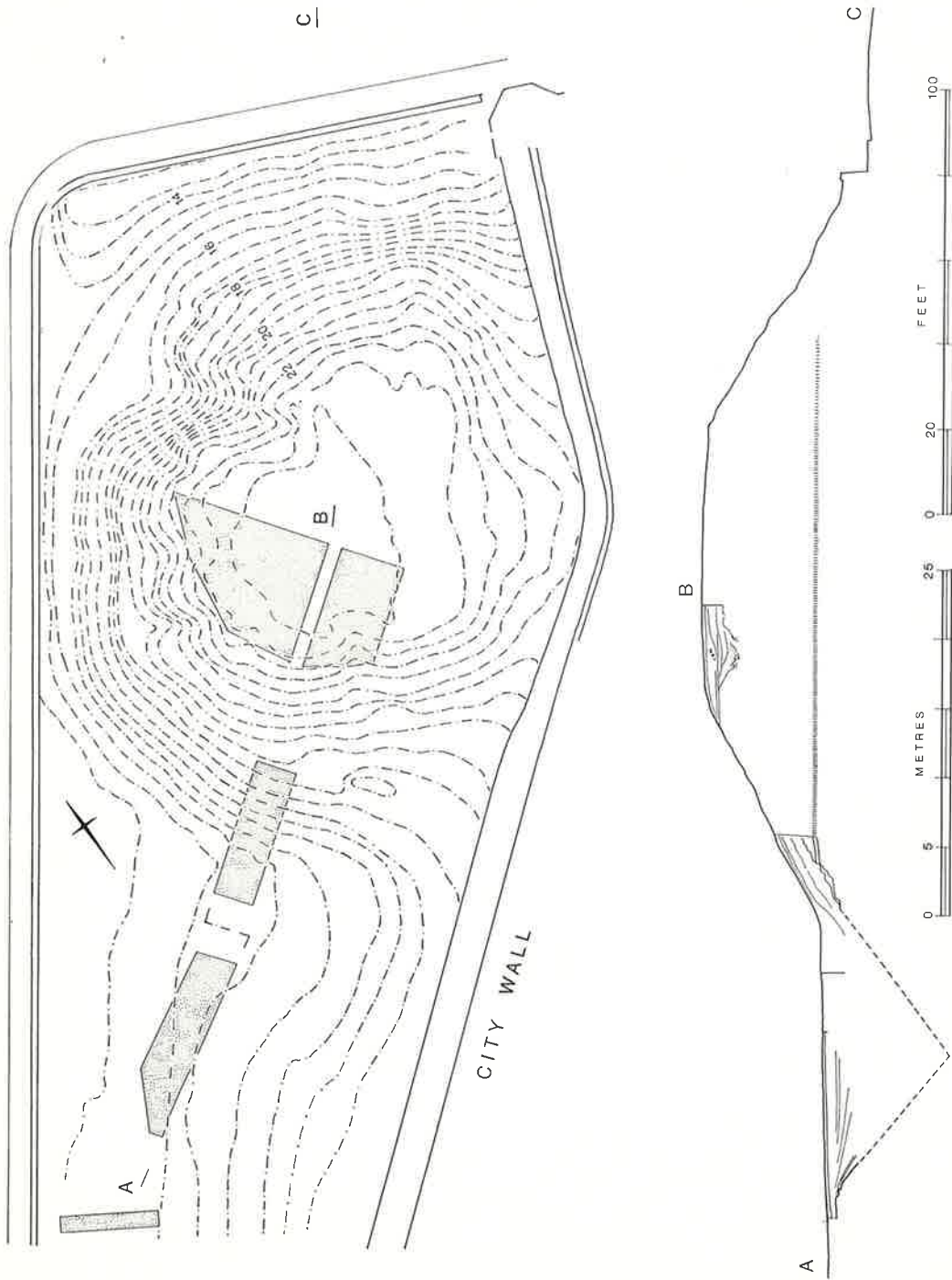


Fig. 3. Excavations at Baile Hill, 1968-9

and charcoal which seemed to be pre-mound levels, but which produced only one sherd of pottery, apparently of Stamford ware (p. 133 below, Table 1). These layers were overlain by very fine even silty material containing occupation debris including a few sherds of pottery in wares of Torksey, Stamford and York type. This layer was presumed to be the old ground surface upon which the mound was built. Though there were several sherds of residual Roman pottery (pp. 133-4 below) nothing demonstrably later than the eleventh century was found, corroborating the presumed date for the site.

#### CONSTRUCTION DEPOSITS OF THE MOTTE (Fig. 4)

Above the presumed old ground surface were several horizontal layers of different coloured clayey soils, with greenish elements in the clays. In structure they resembled rotted down turves in places, and were presumed to be make-up layers of the motte. They produced finds mostly of Roman date, including pottery and tile fragments, but one Stamford ware rim was found. On the north side of the trench the surface of these layers was formed into ascending steps with faces fresh enough to suggest that they had originally been faced with wood (Pl. VIIA). The steps were some 1.5 m wide and 350 mm deep. A wooden plank some 300 mm long projected from the slope of the mound at the side of the uppermost step revealed. Nearby was found a woodcutter's axe, probably of early medieval date (p. 139 below and Fig. 10, no. 5). At the foot of the steps there was a narrow berm beyond which, cut into the natural clay, was a shallow flat-bottomed trench some 250 mm wide; and beyond this again the inner lip of a wide and deep ditch surrounding the motte was found. The machine trench revealed the outer ditch edge (Pl. VIIB), showing the ditch to have been some 21 m wide and, if the slopes of its sides are maintained, perhaps some 12 m deep. There was a steep-faced cut into the natural at the top of the outer slope of the ditch, probably the seating for a horizontal timber. The upper deposits of the ditch were much disturbed and contained for the most part modern debris, suggesting relatively recent levelling, perhaps in the nineteenth century. The lower deposits of the ditch were not investigated.

Though the structural evidence uncovered at the foot of the mound was limited it seems at least possible that the original access point to the mound has been located. The seating on the outer lip of the ditch may have held a timber for some sort of bridge or possibly the basis for an outer revetment. The narrow trench on the inner lip seems likely also to have held timber, perhaps as a kerb to the mound. The most likely interpretation is that the arrangement represents a horizontal bridge over the ditch and steps up the mound itself, very different from the flying bridges of the Bayeux tapestry, though entirely consistent with what is known of early medieval bridges from archaeological sources (Rigold 1975).

#### EROSION AND FILLING DEPOSITS (Fig. 4)

It seems clear that there has been very considerable erosion down the face of the motte. Above the presumed old surface of the mound was some 2 m of orange-brown clayey material which had accumulated in layers of varying thickness. The interfaces were defined usually by runs of small stones, rounded natural cobbles of the kind commonly found in Boulder Clay, and in places, particularly in the upper part, by fragments of

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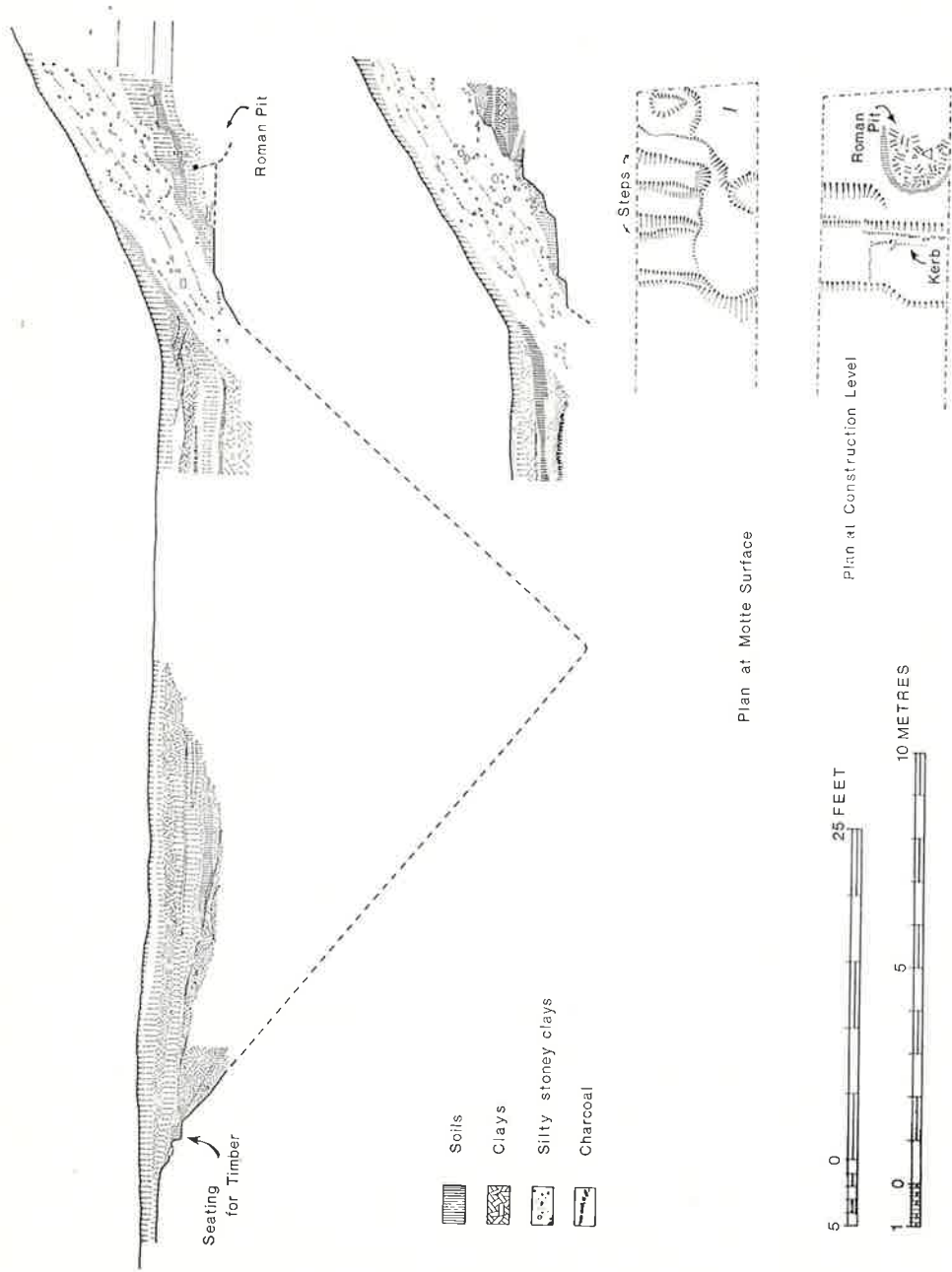


Fig. 4 Baile Hill: sections and plans of excavations at the foot of the motte

limestone. These layers extended beyond the area of the mound into the former ditch, where evidently they must form a very considerable part of the fill. On the outer lip of the ditch there was a pronounced dark layer over such material, presumed to be a turf line which had formed when silting had reached an advanced stage. Above this, and at the same level across the ditch, were layers of sand, mortary soil, charcoaly soil and various tips of clay, all of which produced much nineteenth-century pottery and bric-à-brac, suggesting that the hollow over the silted ditch was systematically levelled up with rubbish and soil at that time.

There were few finds from the erosion layers of the mound. A sherd possibly of York ware came from a position about 0.30 m below their surface, and the runs of limestone about a metre below the surface presumably arrived there at or after the period when the extensive layer of limestone on the motte top (p. 127 below) was laid down. Bones from the construction and filling layers seemed to give a picture, however, of rubbish disposal down the motte side during the main period of occupation (p. 149 below).

#### THE BAILEY (Fig. 3)

It was hoped that the trenches near the motte foot would provide evidence about pre-Norman and Norman occupation outside the ditch in the bailey. In both trenches, however, the construction of air-raid shelters had almost completely destroyed the early stratification outside the ditch. Where this had not happened a mid-brown apparently natural Boulder Clay was found, containing comminuted rounded coal fragments, as is sometimes the case in local Boulder Clays. It seems likely that occupation levels here had been scraped away to provide material to heighten the city defences, and that only under the tail of the rampart itself are undisturbed layers likely to be found. Excavation here was not possible in the current investigation, nor at the critical point of junction between the motte ditch and the city defences, because elaborate precautions would have been required to ensure the safety both of the city wall and the excavators.

#### THE MOUND TOP (Figs. 5-8)

Excavation on the mound top was limited by the presence of trees and by the need to retain areas for spoil tipping. Nevertheless parts of two quadrants were excavated to depths of between 1.50 m and 2.25 m, revealing several phases of occupation, but not reaching the earliest phase of activity. The Institute hoped to continue work in 1970 but resources could not be assembled for what would have been an expensive and technically difficult excavation. This report therefore presents the evidence so far recovered. The earliest remains are described first.

The top of the mound at the lowest level investigated (Fig. 5) was an orange-brown clay with some amorphous reddish patches. Cut into this near the edge of the mound were various holes, hollows and shallow trenches, for the most part filled with dark charcoal-flecked soil. Feature 59, a shallow flat-bottomed trench, was so eroded as to be almost non-existent, though there were marked charcoal concentrations in its fill, and the clay nearby was red, probably as the result of burning. The similar flat bottomed

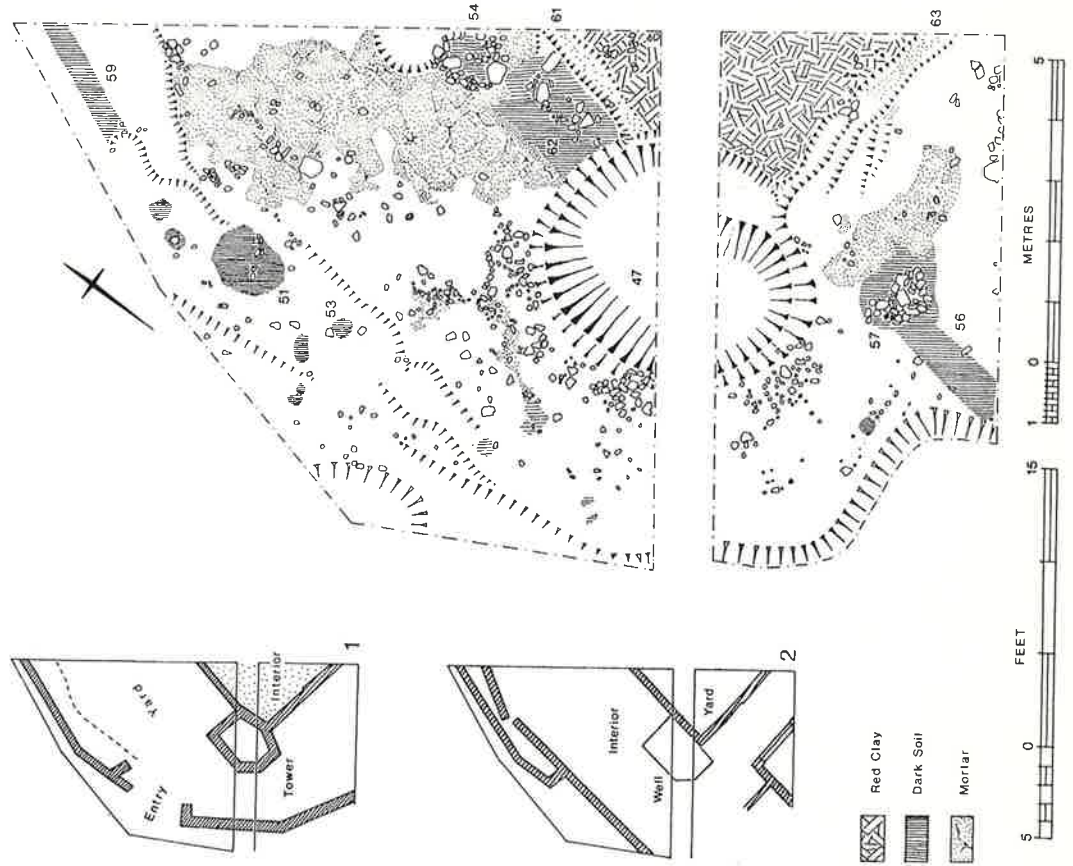
trench 56, also filled with sandy soil containing charcoal flecks, ran in from the edge of the mound and was more or less parallel with 59. It terminated in a circular pit some 1 m in diameter, filled with stones. The remainder of the features were round or oval shallow holes, mostly with similar fills, though 53 contained cobbles, bone and burnt daub. Both the orange-brown clay and the holes produced twelfth-century gritty ware, developed Stamford ware and splashed ware.

Nearer the centre of the mound top there were traces of a spread of mortar, now patchy, cracked and in places sunken, but formerly perhaps covering much of the top (Pl. VIIIA). The outer edge, only partly preserved, was formed in places of limestone chips bonded with mortar and material resembling plaster. The mortar spread lapped up to, and perhaps also underlay, the circular hollow 54 (Pl. VIIIC), which contained cobbles and burnt stones, bones and very dark soil. The mortar also lapped up to the narrow flat-bottomed trench 61, a somewhat irregular feature ranging in width from 0.30 to 0.50 m, and filled with mortar and rubble. A similar flat-bottomed trench 63, running at right angles to 61, also contained mortar (Pl. VIIIB). It is at least possible that both trenches are formed by subsidence over some buried feature, perhaps decayed wooden beams; but for the present they are presumed to be contemporary with the mortar. The mortar spread also displayed a marked sinkage on a line running across the mound top, almost certainly because of collapse over some pre-existing structure. In part of the sunken area was a thin layer of black charcoal-flecked soil, possibly part of a formerly more extensive occupation layer. Within the area defined by the two trenches 61 and 63 was a layer of red clay, burnt in places, with a level top, apparently a floor.

At the point of junction of the two trenches 61 and 63 was a large pit, 47 (Pl. VIIID), only partly excavated in the 1969 investigations. It was clearly of considerable depth, since all the upper layers of the motte, to be described below, had sunk deeply into it. In its lower fill there was a thin layer of dark brown soil, thought to be the decayed remains of a former timber lining, around the edge, and associated with this were found numerous long nails, up to 80 mm (Fig. 10, nos. 6-8), in length. The main fill was medium brown soil with much mortary material and several layers of large limestone rubble. The pit produced twelfth-century pottery, and several objects, together with a cut short cross halfpenny of 1205-8. Its size, the steepness of its sides where not eroded, and its apparently great depth suggest the pit may have been either a well, a latrine, or the subterranean part of a corner turret encased in the mound much as was the timber tower at South Mimms. Sinkage had made interpretation of its relationship to the mortar floor and associated structures difficult, but it seems at least likely that it was in use at the same time. Finds from the pit seem to be broadly comparable, and similar finds also came from a layer of dark brown soil containing much animal bone and pottery above the mortar spread, presumably the result of occupation on this surface.

Clearly there has been recent erosion near the edge of the mound but depressions at the point where access might have been gained from the bailey via the possible steps described above (p. 124) may be original.

Covering the whole area within the perimeter postholes and trenches, and overlying the occupation layer and mortar spread, there was a spread of stones (Fig. 6; Pl. IXA). Towards the north they were mainly water-worn cobbles while to the south small limestone blocks predominated. The stone spread was neither level enough nor



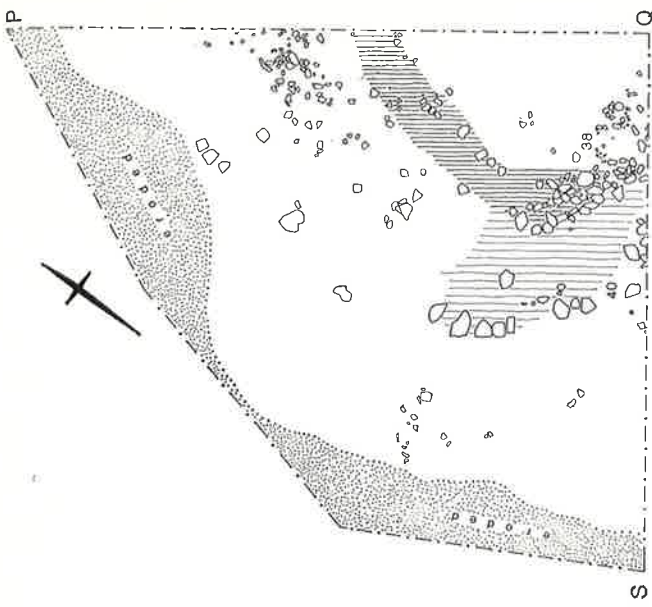
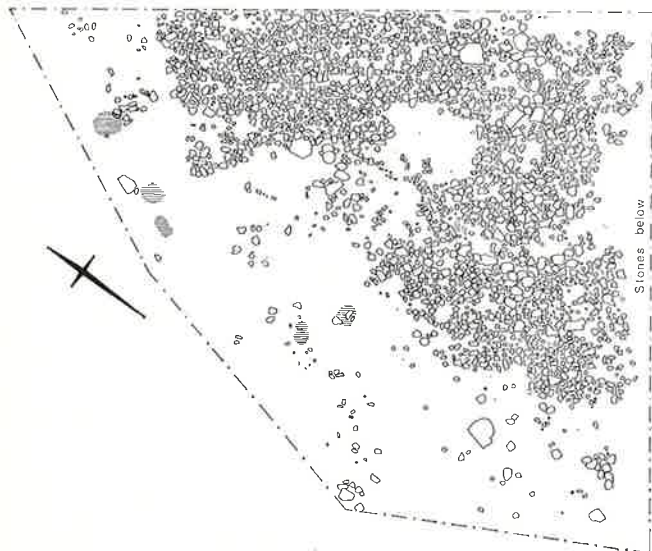
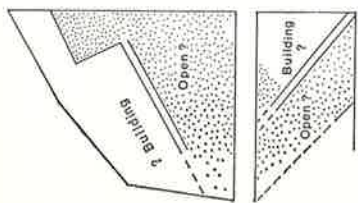
Baile Hill

Fig. 5 (right). Twelfth-century structures on top of the mound

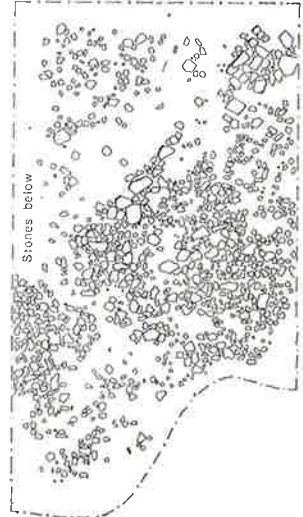
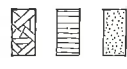
Fig. 6 (below left). Thirteenth-century stone spread on top of the mound

Fig. 7 (below right). Post-medieval features, possibly connected with Civil War heightening, on the mound top

Dark Soil  
Mortar



Clay  
Dark Soils  
Disturbed or eroded



sufficiently homogeneous to have been systematic cobbling, and careful recording failed to reveal any alignments or settings within it which might have denoted structures. The edge of the spread was more or less well-defined, which might suggest that perimeter structures were standing when it was laid down, but otherwise it bears the appearance of rough levelling or surfacing over the demolished interior buildings of the motte. The spread contained numerous fragments of Roman tiles, both tegulae and imbrices, some of them bearing traces of mortar; and there were large flat bricks, some 350 mm thick. It also contained a few blocks of limestone ashlar with broad diagonal tooling of twelfth-century type, in very fresh condition. Though some of the stones were mortared the spread, composed mainly of small, worn fragments, did not have the characteristics of a building destruction layer. Pottery from amongst the stone spread included many small sherds of twelfth-century gritty and splashed wares, but there was also some glazed pottery of thirteenth and fourteenth-century type, possibly intrusive. Animal bones from the soil over and among the stones included a wide variety from both meat-carrying and non-meat-carrying joints (p. 146 below) mostly in very small fragments, the larger bones being absent. Such a bone assemblage would be consistent with continued occupation of the mound and domestic consumption on the spot rather than rubbish dumping, and the absence of larger bones would indicate a surface kept clear through use.

The hollow over the large pit 47 had clearly been evident when the stone spread was being laid, for large quantities of stone were tipped into it. The possible point of access to the motte top, by contrast, was not levelled up, but kept free of stones, perhaps corroborating the slender evidence that this was an entrance. Over the stone spread as a whole there was a thin even sandy layer some 0.10 to 0.15 m thick, containing thirteenth and fourteenth-century finds. It did not extend to the edge of the stone spread.

Above the stone spread and associated deposits there was some 0.80 m of varied soily material, for the most part fairly homogeneous, silty, and mid-brown in colour. It was excavated with minute care in the expectation of timber structures. Though many evanescent dark patches and lenses were noted none could with any certainty be interpreted as the remains of a structural feature. The lower part of the deposit, assumed to have been built up partly by natural causes and partly by heightening of the mound prior to the siege of York in 1642, contained very mixed finds including quantities of twelfth and thirteenth-century pottery, pipe stems, small pipe bowls and post-medieval pottery. Ashlars, plinth fragments and undressed limestone comparable to material in the nearby city wall corroborate the use of the mound top either during construction of the wall, after 1327, or when the motte top was used as a 'dump' for stones fallen from the wall prior to repair, recorded in 1561, though it doubtless happened frequently during the many periods when the wall is recorded as in bad repair.

Numerous arrowheads were found in this layer (p. 139 below). This, taken with the documentary evidence for the holding of musters and views of artillery in the bailey in the fifteenth, sixteenth and seventeenth centuries, presumably indicates that the citizens used the mound as an archery butt to prove their prowess.

It was expected that some signs of the Civil War use of the mound would be found. An irregular scoop in the overall layer, filled with stiff reddish clayey soil, may have been connected with a remodelling of the top at this time, as may have been settings of lime-

stones in front of the clay-filled feature (Fig. 7 and Pl. IXB). The stones may represent some sort of breastwork to the recorded battery. Arrowheads, horseshoes and lead musket shot (p. 143 below) may also date from this period. The layer produced numerous everyday finds, including a bronze end for a leather strap, bootlace tags, buttons and studs, part of a graded chain, a lead strainer, tinned nails, part of a comb, a bronze strip, a prick spur, a knife, medieval coins, and tokens. Both in this and in the upper layer bone was fairly plentiful, including various dog skeletons, and it is evident that throughout there had been extensive contemporary and modern disturbance confusing its stratification. The upper part of the layer was even more mixed. The soil, basically mid-brown, contained numerous different lenses and small intrusions, including shallow pits, rabbit holes, root disturbances, and it was riddled with worm holes. It contained eighteenth and nineteenth-century pottery, bottle fragments, post-medieval pottery and tile, pipestems and several eighteenth and nineteenth-century tokens, together with earlier coins. The layer presumably reached its present condition through eighteenth and nineteenth-century landscaping. Its main importance archaeologically is that it effectively masks and protects the medieval castle structures.

#### INTERPRETATION

The earliest motte-top structures investigated belong to the later twelfth or early thirteenth century, at which time various buildings, probably all of timber, stood on the mound. They can be interpreted in at least two ways. Perhaps the most likely is that trenches 61 and 63 represent the bedding trenches for the foundation beams of a rectangular timber structure with red clay floor set more or less centrally on the mound. At the corner of the structure was a small tower set deeply in the mound, now represented by the weathered pit 47. Outside the central structure the mound top was covered with mortar, and around the perimeter was a wall or fence of timber, perhaps braced within, or with a lean-to around its inner edge, against which the mortar spread was laid. Entry was gained to the mound top through a gap in the timber perimeter wall at a point where the putative bridge and steps would have reached the top.

An alternative interpretation would make the mortar spread an interior surface, its limits denoting the position of two ranges of timber buildings. Some of the perimeter features may have held structural members of the buildings, and the two trenches 61 and 63 would have held foundation beams for walls facing on to an inner courtyard surfaced with red clay. Pit 47 might have been a well or latrine within one of the buildings. The vestigial trench 59 may have been part of a wooden perimeter wall.

It is evident that full excavation of the mound top could rapidly decide between these possibilities, or possibly suggest others. For a moment, therefore, the character of the late twelfth-century motte-top structures must remain uncertain, except that they were of timber and involved rectangular buildings.

After the twelfth-century timber structures fell into disuse, probably in the thirteenth century, the motte-top was covered with a rubble layer. There were probably timber buildings or a braced timber wall around the motte perimeter. The character of the bones and other debris suggests continued occupation of some sort.

There is no evidence of permanent occupation in late medieval times, but evidence was recovered for sporadic use of the mound as a stone dump and as an archery butt.

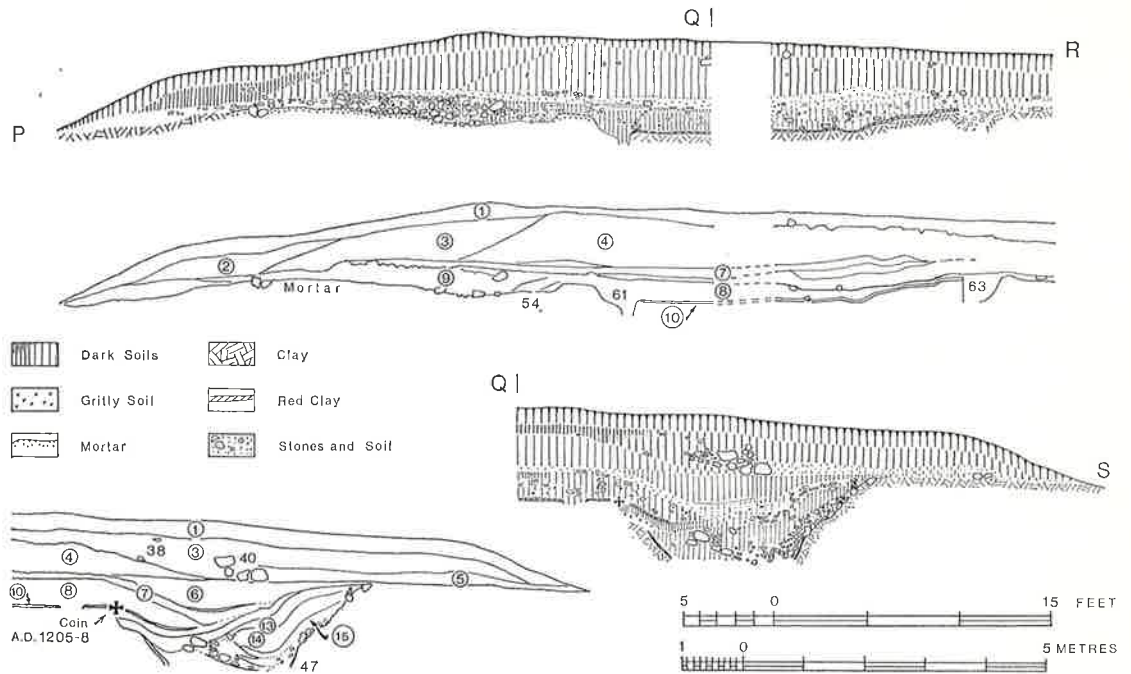


Fig. 8. Baile Hill: sections of the top of the motte. The layers are grouped as follows: 1: Group 14; 2-3: Group 10; 4-6: Group 9; 7: Group 8; 8-9: Group 7; 10: Group 4; 13-15: Group 3

The mound was heightened in post-medieval times, perhaps first during the Civil War when slight evidence might indicate works to do with the recorded establishment of a gun battery. There was probably subsequent heightening and/or remodelling in the eighteenth century, perhaps when the mound was landscaped and planted with trees. Subsequent to this it seems, from the numerous small personal objects lost and incorporated in the upper layers, to have become a place of popular resort, as indeed it still is today.

#### THE POTTERY

Almost all the excavated layers on the mound top or at the mound foot produced pottery, and most also produced brick and tile, either Roman or post-medieval. The excavated layers, apart from those whose stratigraphic position could not satisfactorily be evaluated, have been grouped into fourteen context groups thought to belong together stratigraphically. The incidence of various ware types, also grouped to some extent, is given in Table 1. The context groups are as follows:

- |  |  |
|--|--|
| 1. Pre-mound deposits  | 9. Clayey soil heightening mound (lower part)      |
| 2. Mound construction deposits                               | 10. Clayey soil heightening mound (upper part)     |
| 3. Primary layers in the pit F47                             | 11. Weathering deposits at mound foot (lower part) |
| 4. Mound top basic clay                                      | 12. Weathering deposits at mound foot (upper part) |
| 5. Mortar floor and associated layers                        | 13. Upper filling of motte ditch                   |
| 6. Occupation material on mortar floor and associated layers | 14. Topsoil above mound                            |
| 7. Stone spread on mound top                                 |  |
| 8. Grit and other material covering stone spread             |  |

It will be noted that there is one nineteenth-century sherd in the thirteenth-century context group 7, doubtless resulting from an unobserved intrusion. A similar intrusion could account for the few later sherds in the predominantly twelfth-century pottery in group 6.

TABLE I

Ware Types	Context Groups														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
Roman	15	16	—	—	1	5	12	5	38	43	3	8	—	53	199
Middle Saxon	—	—	—	—	—	—	—	2	1	—	—	—	—	—	3
Torksey	—	—	—	—	—	3	—	—	—	3	—	—	—	—	6
Stamford	1	—	—	—	—	—	—	1	5	1	—	—	—	1	9
St Neots types	—	4	—	—	—	1	1	—	—	1	—	—	—	—	7
Sandy 12th c.	—	—	1	—	—	2	—	—	4	5	—	—	—	1	13
Splashed	—	38	6	3	93*	44	67	10	33	12	—	—	—	1	397
Gritty	—	94	18	11	128	56	131	2	66	38	—	2	—	63	609
Fine grit and white incls.	—	—	—	—	1	—	3	—	1	—	—	—	—	—	5
Reddish-yellow 12th c.	—	—	—	—	—	—	1	—	—	—	—	—	—	—	1
Developed Stamford	—	—	—	1	—	—	—	—	—	2	—	—	—	1	4
York region 12th-13th c.	—	—	—	—	—	3	—	1	—	—	—	—	—	—	4
York/Brandsby 13th c.	—	—	—	—	—	2	2	—	2	2	—	—	—	—	8
York/Brandsby 13th-14th c.	—	—	—	—	—	1	—	—	3	12	—	—	—	21	37
Yorks red 13th c.	—	—	—	—	—	—	—	—	—	2	—	—	—	—	2
York/Brandsby 14th c.	—	—	—	—	—	—	—	—	3	—	—	1	—	—	4
Humber Basin 14th-15th c.	—	—	—	—	—	1	—	—	—	1	—	—	—	—	2
Cistercian	—	—	—	—	—	—	—	—	—	—	—	—	—	3	3
Coarse wares 17th-19th c.	—	—	—	—	—	—	—	—	—	5	—	—	—	1	6
Halifax	—	—	—	—	—	—	—	—	—	1	—	—	—	4	5
18th c. fine	—	—	—	—	—	—	—	—	—	2	—	—	†	1	3†
Clay pipes	—	—	—	—	—	—	—	—	6	6	—	—	†	10	22†
Stonewares 18th-19th c.	—	—	—	—	—	—	—	1	—	1	—	—	—	1	3
19th-c. wares	—	—	—	—	—	—	1	—	2	2	—	—	†	3	8†
Total per Context Group	16	152	85	45	223	118	218	22	164	139	3	11	†	164	1360

\* Includes 58 sherds of one pot.

† Large quantities, uncounted.

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## THE ROMAN POTTERY

By J. R. PERRIN

Almost a half of the coarse ware sherds were of locally produced 'legionary' wares in fabrics 1 and 2 (King 1975). There were no pieces in fabric 3. Another third were of various grey wares, most of which were probably also of local manufacture. Other coarsewares represented were black-burnished ware categories one and two (BB1 and BB2), colour-coated ware, Dales ware, calcite-gritted ware and, probably, Crambeck ware. None of these occurred in significant numbers. There were only two mortaria and five amphorae sherds. Over three-quarters of the small amount of samian ware was of Central Gaulish origin. There was no South Gaulish ware, the rest being of East Gaulish manufacture.

None of the coarse wares need be of first-century date though some could be residual. It is notable that there was no rustic ware. All the more closely datable material belongs to the second half of the second century with an emphasis on the late second to third centuries provided by fragments of a plain dish with intersecting arc decoration in BB1 (Gillam 1957, form 329), a flanged bowl in grey ware, a rounded rim undecorated dish or bowl in BB2 (Gillam 225 or 313), Dales ware and a Central Gaulish Dragendorff 45. There was no obviously purely third-century pottery. A grey fragment with an external wavy-line decoration could be fourth century, as were the fragments of calcite-gritted and Crambeck ware.

It would be inadvisable to draw firm conclusions from such a relatively small amount of basically unstratified pottery, but it is interesting to note that similarly composed deposits have been noted elsewhere in the Civil Town (Perrin forthcoming). The occurrence of many late second- to third-century fragments also again calls to mind other similarly dated features in the Civil Town such as the Skeldergate Well and Bishophill Terrace (Perrin forthcoming; Keen 1976) and the stoke-hole and possible terrace at Clementhorpe (Addyman forthcoming). Taken together the suggestion is that occupation of the area to the south of the Ouse began in earnest in the middle of the second century, and received a boost, or was at least affected by changes, at the turn of the second century, probably in response to general replanning (Perrin forthcoming). It is of course not certain that the occupation extended to the Baile Hill area, as the pottery from the site may have been derived from elsewhere.

## THE MEDIEVAL POTTERY (Fig. 9)

By JANE HOLDSWORTH

## TWELFTH-CENTURY POTTERY

Apart from the hundreds of late nineteenth- and twentieth-century sherds from the topsoil, the most prolific types of pottery on the site were gritty ware and splashed ware which accounted for 46 per cent and 25 per cent of the total respectively.

*Gritty ware* is a frequent find in twelfth-century deposits. It is readily distinguished by its fabric, containing large quantities of angular quartz grits which produce a lumpy granular surface, together with the characteristic angular rim form (Waterman 1953; Jope & Hodges 1956; Le Patourel 1965 & 1967). See Fig. 9, nos. 1-5 for shapes and the catalogue for a typical range of colours. Generally speaking the vessels are unglazed though some sherds may have spots of glaze.

*Splashed ware* is used rather loosely here as a generic term for early glazed wares with an uneven pitted glaze which forms small spots and dribbles as if splashed (Hurst 1965 & 1968; Coppack 1973). The most common type has a hard red/grey fabric with a greenish or brown glaze and is similar to the later fourteenth- and fifteenth-century wares of the Humber Basin (see Fig. 9, nos. 10-11, 13-14). However in this assemblage the pale brown fabrics with fine

grit and a yellow or dull green glaze have been included as the technique of 'splashing' on the glaze is similar (see nos. 9 and 12). The wide-mouthed, baggy-bodied forms are shared by most jugs in this class. Slenderer forms occur with the more developed examples.

Other sherds of interest associated with the gritty and splashed wares include no. 6, in a grey fabric with angular soft, chalky inclusions. This is most unusual for the York area, especially in the early medieval period. Despite its coarse fabric, the vessel is quite finely potted. No. 7 is a wide-mouthed jar with an atypical upright rim which is reminiscent of Thirlby jars (Yorkshire kiln, unpublished), but these have a sandier fabric. No. 8 is in a fabric which occurs consistently, though not in quantity, in association with gritty and splashed wares in York. In this assemblage there were only five sherds including the rim illustrated.

The sherd from a curfew (firecover) was found associated with sherds of thirteenth- and fourteenth-century date and is probably of that period (Moorhouse 1974).

All the wares mentioned above belong to the twelfth century though the fabrics and forms are too enduring to allow them to be placed more accurately within the century. They probably represent the debris from the main occupation of the site before the buildings became derelict and were subsequently destroyed in the thirteenth century.

Pottery from other periods was recovered in much smaller quantities.

#### SEVENTH TO EIGHTH CENTURIES

There were three sherds of possible middle Saxon date. Two body sherds from the same vessel were in a handmade black fabric with dense large grits. They had a soapy feel to the interior and exterior surfaces and there were decorative tooled lines on the outside though the potting technique was particularly poor. The third body sherd in a handmade grey fabric with quartz grits, had rough cross hatched burnished lines on the outside. There was no clear indication of the shape of either of these vessels.

#### TENTH TO ELEVENTH CENTURIES

Only 2 per cent of the total could be assigned to this period. Half of this was Stamford ware and the rest wares of Torksey and St Neots type with inclusions of both shell and calcite present.

#### THIRTEENTH CENTURY

Approximately 3 per cent of the total may be of thirteenth-century date though many of the sherds were too small to identify closely. They comprised mostly York area pottery (York White) including a pellet decorated jug: brown pellets on a green glaze. There were several sherds of developed Stamford ware with a rich green glaze and incised decoration (Le Patourel 1972).

#### FOURTEENTH TO TWENTIETH CENTURIES

The remainder of the non-Roman pottery consisted of small abraded sherds of little significance spread between the last six centuries. The use of the site in the seventeenth century during the Civil War was not reflected in the pottery. Less than 0.8 per cent of the total could be placed in the seventeenth century and this consisted of very small sherds of post medieval coarse ware, yellow ware, Cistercian/blackware and one small sherd of possible Dutch tin-glazed earthenware (Brears 1971).

Residual Roman pottery accounted for 20 per cent of the total, and this is described separately.

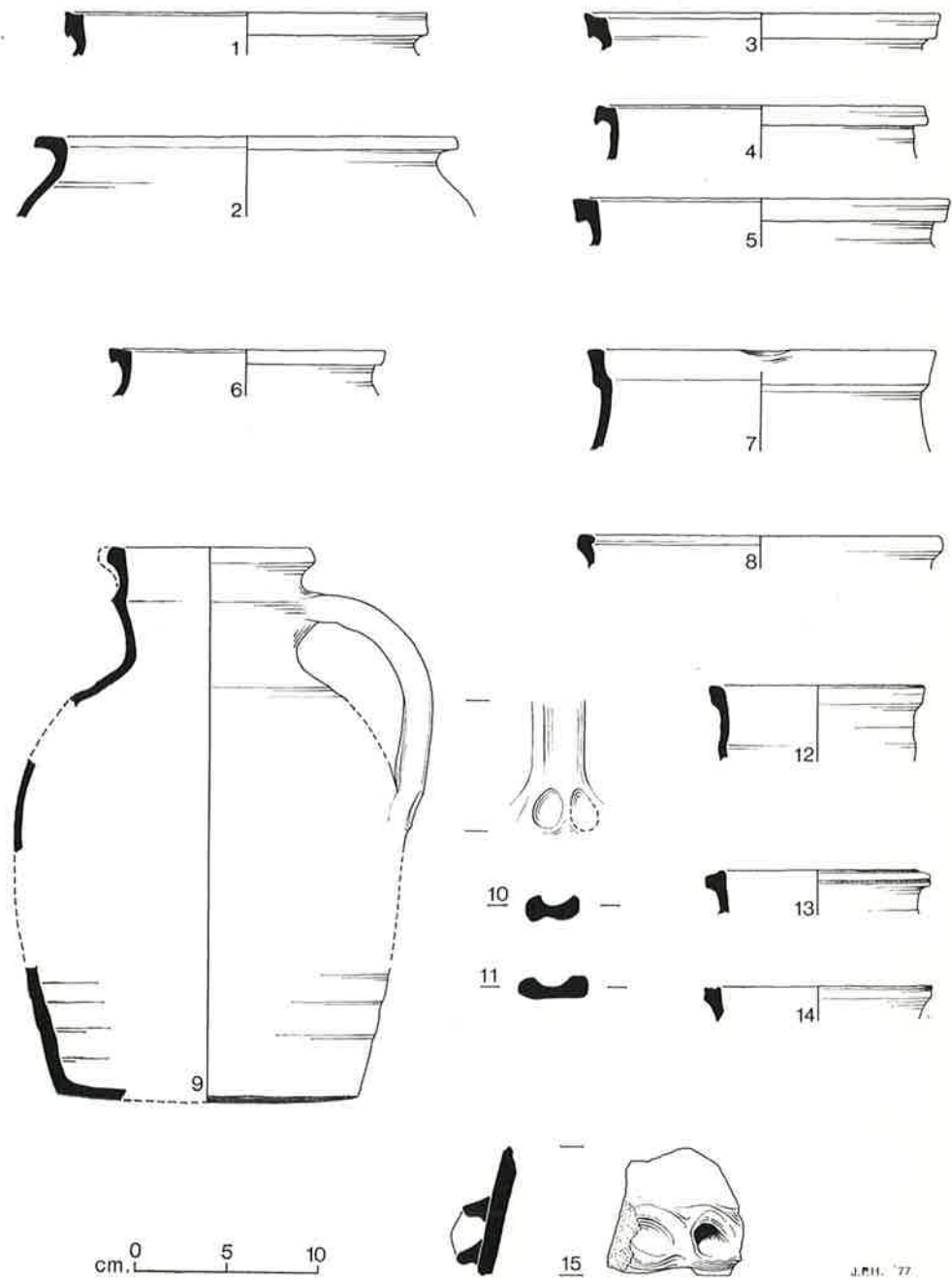


Fig. 9. Medieval pottery from Baile Hill. Scale 1:4

## CATALOGUE OF MEDIEVAL POTTERY

Numbers in brackets refer to the Munsell soil colour notation.

1. Jar/cooking pot; gritty ware; very pale brown ext. (10YR 8/4), reddish yellow int. (7.5YR 8/6). Context Group 3.
2. Jar/cooking pot; gritty ware; very pale brown int. and ext. (10YR 8/4), pink core (5YR 7/4), blackening on rim. Context Group 3.
3. Jar/cooking pot; gritty ware; pink throughout (5YR 8/3). Context Group 3.
4. Jar/cooking pot; gritty ware; pink ext. and int. (7.5YR 7/4), grey core (N5). Context Group 3.
5. Jar/cooking pot; gritty ware; reddish yellow ext. (YR 7/6), pink int. (7.5YR 8/4), light grey core (N7). Context Group 3.
6. Jar/cooking pot; hard fabric with large angular chalky inclusions; dark grey (5YR 4/1) to reddish grey (5YR 5/2). Context Group 3.
7. Jar/cooking pot; hard sandy fabric with a few large quartz grits; reddish yellow ext. and int. (5YR 7/8 to 7.5YR 8/6), grey core (N6); small pulled spout; tiny spots of amber glaze ext. Context Group 8.
8. Jar/cooking pot; grey fabric with dense sand and fewer small calcareous inclusions; reddish brown to reddish yellow ext. and int. (5YR 5/3 to 5YR 7/6), grey core (5YR 6/1), some blackening ext. Context Group 8.
9. Jug; splashed ware with dense fine grit; very pale brown to reddish yellow ext. and int. (10YR 8/4 to 7.5YR 8/6); yellow/orange glaze ext. Context Group 3 or 8.
10. Jug handle; splashed ware; very hard fine grey fabric (N5); light red surfaces (2.5YR 6/6); thick green/brown glaze, amber at margins. Context Group 3 or 8.
11. As 10. Context Group 3 or 8.
12. Jug; splashed ware with fine grit; very pale brown to light brownish grey ext. and int. (10YR 8/4 to 10YR 6/2P); dark olive green glaze, very dark brown at margins ext. Context Group 3.
13. Jug; splashed ware; hard light red fabric (2.5YR 6/6); thick brown glaze ext. Context Group 3 or 8.
14. Jug; splashed ware; hard light red fabric (2.5YR 6/6); amber to green glaze ext. Context Group 3 or 8.
15. Curfew; light reddish brown sandy fabric (5YR 6/3) with grog and a few large grit inclusions; grey ext. (5YR 5/1), blackened int.; heavily moulded applied strip ext. Context Group 9.

## THE SMALL FINDS

Several datable objects and a number of finds with an intrinsic interest came from primary positions in the excavations, and may be considered contemporary with their contexts. These are listed in Table 2, in the context groups used in discussing the pottery, and can be considered supplementary evidence for the date and character of the contemporary occupation. Other finds, of intrinsic interest but from secondary positions, are described in addition in the catalogue (p. 143 below) and illustrated where necessary in Fig. 10. The finds, with all other elements of the excavation archive, have been deposited in the Yorkshire Museum, York, under the accession number 1977.51.

One of the two Roman coins, of Theodora, A.D. 337-41, came from an apparently primary context below the mound, while the Antoninianus of Allectus, though in good condition, was clearly derived.

The hone (no. 1), from an early layer on the mound top, could have been a contemporary loss and is another representative of the series of imported hones now well known from Anglo-Scandinavian eleventh- to twelfth-century deposits in York. It belongs to Ellis's group IA, probably of Norwegian origin, as do many other York examples (Ellis 1969). The few building stones were all of Magnesian Limestone, the freestone most commonly used in medieval York. It comes from the broad belt west of the Vale of York. Though usually unlocatable specifically most of the York limestone came from the Tadcaster quarries some 10 miles (16 km) away (Buckland 1977). No. 2 is typical of several carefully-cut ashlar with broad axe tooling found in destruction levels of the late twelfth or early thirteenth century

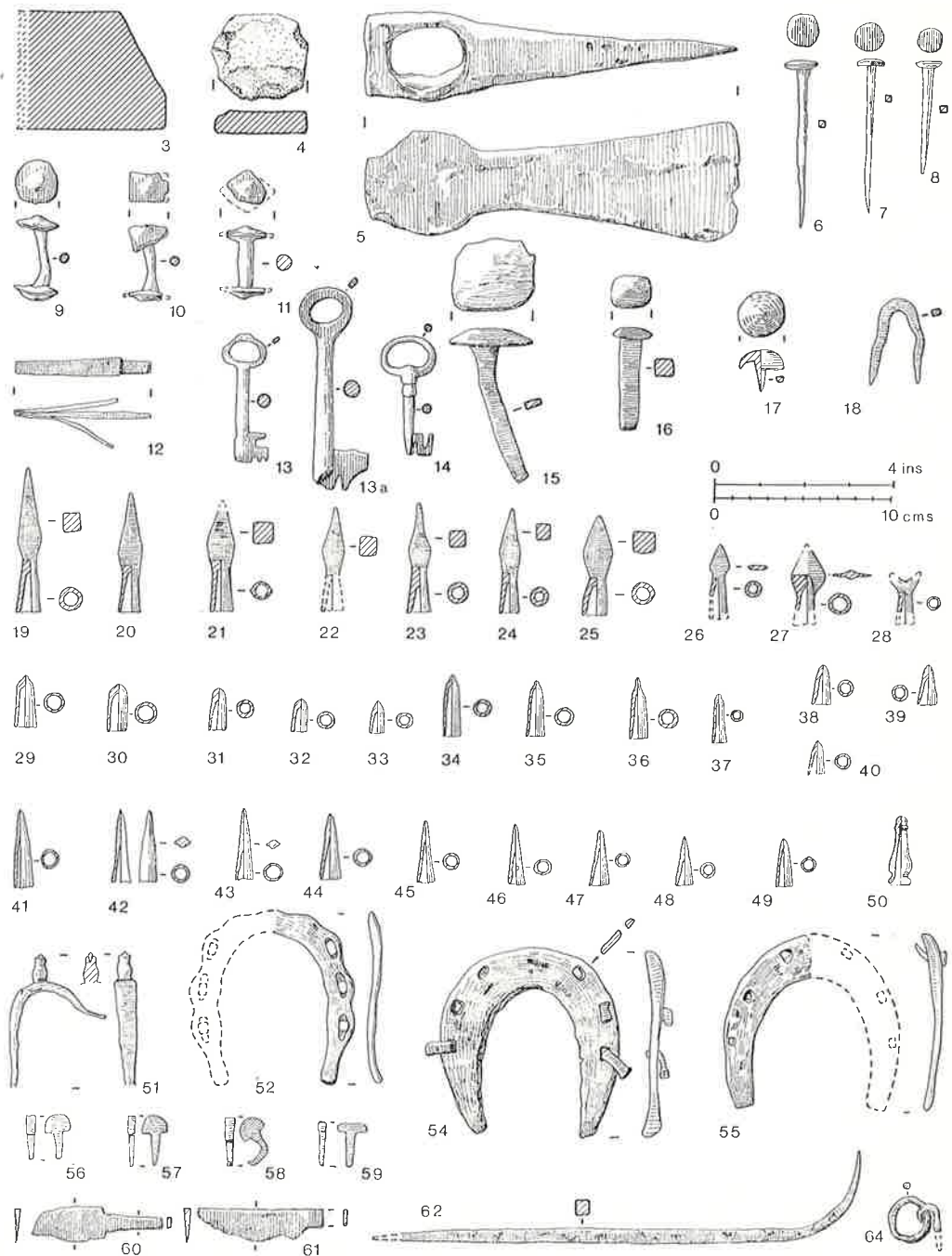


Fig. 10. Baile Hill: small objects of stone (3), pottery (4) and iron (5-64).  
Scales 1:6 (no. 3), 1:4 (remainder)

on the mound top. They are of twelfth-century character and their fresh state suggests they come from interior wall surfaces. The plinth no. 3, by contrast heavily weathered, is comparable to those on the nearby city wall. It comes from late medieval levels and probably results from the use of Baile Hill as a dump during maintenance work.

The roughly shaped disc no. 4, chipped from a tile, is probably a playing counter, of which numerous examples in tile or stone have come from other eleventh- and twelfth-century deposits in York (York Archaeological Trust, unpublished), and which have also been found in some numbers at Knaresborough Castle, North Yorkshire. Such discs could alternatively have been used as lids or stands.

The axe head no. 5 is perhaps the most important object from the excavation having been found in a layer which could be contemporary with the original construction of the mound. It may therefore be either Anglo-Scandinavian or Norman. The form is a well-known one, represented by the London Wall axe A13508, characterized in the London Museum *Medieval Catalogue* as a variant of Type 1, the woodman's axe (*LMMC*, 56-7). Such narrow-bladed axes are shown in use for felling trees in the Bayeux Tapestry, *locus classicus* for Conquest period artefacts (Stenton 1957, 66 and Pls. 38, 39 & VII). The Baile Hill axe is a solid specimen whose projecting curved socket wings add to its considerable weight. Sockets of this type are not found on north European axes until perhaps the eleventh century, but there is no reason to doubt they were current by 1067-9, when this axe may well have been lost.

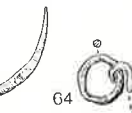
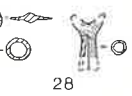
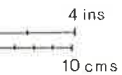
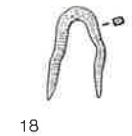
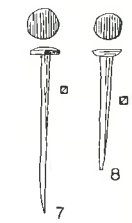
Structural ironwork from the excavation was rare. The long nails nos. 6-8, three representatives of seven examples, were used in connexion with the wooden lining of the deep pit 47, filled by the early thirteenth century. The staple no. 18 also comes from these levels. Small nails were found in most levels. They are not described in detail here but radiographs of all are preserved with the excavation records. Three other nails, of distinctive types (nos. 15-17), are from medieval contexts. The clench nails, nos. 9-11, often associated with ship construction, may equally have come from doors, chests or other double-thickness woodwork. The barrel lock spring no. 12, of a common medieval type, may have had a similar origin. The keys, nos. 13 and 13a, are of medieval type, one coming from the deep pit 47 and one unstratified from the uppermost levels of the mound. No. 14 probably dates from the eighteenth century.

Apart from ubiquitous nails the most frequent iron objects from Baile Hill were the arrowheads. They fall into seven types:

*Type 1* (nos. 19-25): Quarrels or bolts. All have hollow shanks of circular cross-section with square-sectioned solid points. No. 25 has penetration facets of somewhat rounded profile, but the rest are forged more or less straight, and differ only in size. Three come from context groups 3-4, unlikely to be much later than the early thirteenth century. The others may well be in secondary contexts, derived from these levels, and the whole series could belong together, either emanating from the twelfth-century occupation, or resulting from some attack on the mound. These bolts are of *LMMC* Type 9-10, which have been thought a development of the thirteenth century (*LMMC*, 67-70). Recent excavations have, however, produced earlier arrowheads of types which may at least be ancestral to these (e.g. Addyman 1973, Fig. 19, no. 9, Saxo-Norman).

*Type 2* Flat-bladed arrowheads (nos. 26-7): The two Baile Hill examples both come from post-medieval contexts, but represent common medieval types (*LMMC* Type 4).

*Type 3* (no. 28): Forked-terminal hunting arrowhead (*LMMC* Type 6). This is a topsoil find, but a thirteenth-century specimen has been excavated at Ludgershall Castle, Wiltshire, confirming the *LMMC* catalogue supposition of a medieval date for the type, and two good specimens from Basing House, Hampshire, have been, with reasons, given a post-medieval date (Moorhouse 1971b, 53-4, nos. 136-7).



64).

*Type 4* (nos. 29–33): Bullet-shaped arrowheads of simple form. The five examples come from late- or post-medieval contexts, and equate to *LMMC* Type 5, where they are identified as the tips of cross-bow arrows and are thought to evolve from the Baile Hill Type 1.

*Type 5* (nos. 34–7): Bullet-shaped arrowheads with tapered tips. The four examples all come from post-medieval contexts.

*Type 6* (nos. 38–40): Bullet-shaped arrowheads with semi-tapered tips. One of the three examples came from a late medieval layer, but it may have penetrated from above.

*Type 7* (nos. 41–9): Bullet-shaped arrowheads with sharp points and straight sides. Most examples came from post-medieval contexts but one (no. 49) came from the deep pit 47. The type is not normally expected as early as the late twelfth or early thirteenth century which this context might imply, and the possibility of intrusion must be considered, unlikely though it seems. No. 41 also came from a medieval context.

The arrowheads of types 2–7 are most likely to have arrived on or in the mound through archery implied by late medieval and early post-medieval documentation (p. 121 above), when Baile Hill was probably used as a butt. The terminal no. 50 has a rounded collar and tip, and seems rather to be a ferrule than an arrowhead, unless it had some special function, perhaps in practice.

Objects deriving from the occupation of the mound are few indeed. The small prick spur no. 51, unfortunately unstratified, and lacking terminals which might have been diagnostic, appears to have had a moulded swelling point with a separately inserted prick, visible in the radiograph. It is doubtless of the thirteenth century or earlier. Somewhat surprisingly there are four horseshoes (52–5) from the mound top. One, no. 52, and apparently part of a second are of the wavy-edged variety commonly found in twelfth-century deposits and there are three fiddlekey nails (nos. 56–8) derived from similar horseshoes. The T-shaped nail no. 59, may be the worn down version of such a nail (Biddle 1961–2, 176–7). Two horseshoes (54–5) are of the much heavier later medieval type, with six symmetrically disposed nail holes. These examples have thickened terminals rather than calkins, though otherwise accord well with the dated late medieval specimens quoted in *LMMC*. However the dating of horseshoes is notoriously hazardous (Moorhouse 1971b, 45–6). Some of the small nails could well be contemporary horseshoe nails.

There are parts of two knives, both of which could be early medieval (nos. 60–61). The simple handle, made from a sheep tibia, no. 100, seems to have held a lead object. The purpose of both the tapering square-sectioned bar no. 62 and the small bar with rounded terminal no. 63 is obscure. The buckle no. 64 is of a common and virtually undatable type.

The only English medieval coin, a cut halfpenny of 1205–8, came from a useful position in the filling layers of the deep pit 47, while the Tournai jetton of c.1460 was found in the gritty deposits (context group 8) representing the later medieval use of the mound before its heightening. The Philip and Mary groat of 1554–8, the sixpence of 1575, both worn, and the jetton of 1612–31, together with the Portuguese *real* of 1385–1433, came from the lower heightening of the mound, which could thus have indeed been a Civil War work. Such *reals*, which are fairly frequent finds in England, probably served here as jettons. The 1807 penny and the tradesman's ticket of c.1796 with its appropriate view of Clifford's Tower, came from the upper levels of the mound. The topsoil and disturbed late levels produced several halfpence of George I, II and III and a penny of George III. They probably represent casual losses, together with various chains, a thimble and other items not reported in detail, during the period when the mound was a landscaped pleasure area.

The medieval copper alloy objects are of some interest. The gilded gadrooned strip no. 81, though found in a post-medieval context, is of a type now becoming almost the hallmark of twelfth-century castles. Since Professor Jope's standard discussion of them (Jope & Threlfall

1959, 267-8) they have turned up in some numbers. Some of the new finds are listed by Moorhouse in discussing two examples from Burton-in-Lonsdale (Moorhouse 1971a, 96). There are several from twelfth-century levels at Ludgershall Castle, Wiltshire. Fittings on a leather-covered box in the Museum of Leatherwork, Northampton, indicate how some may have been

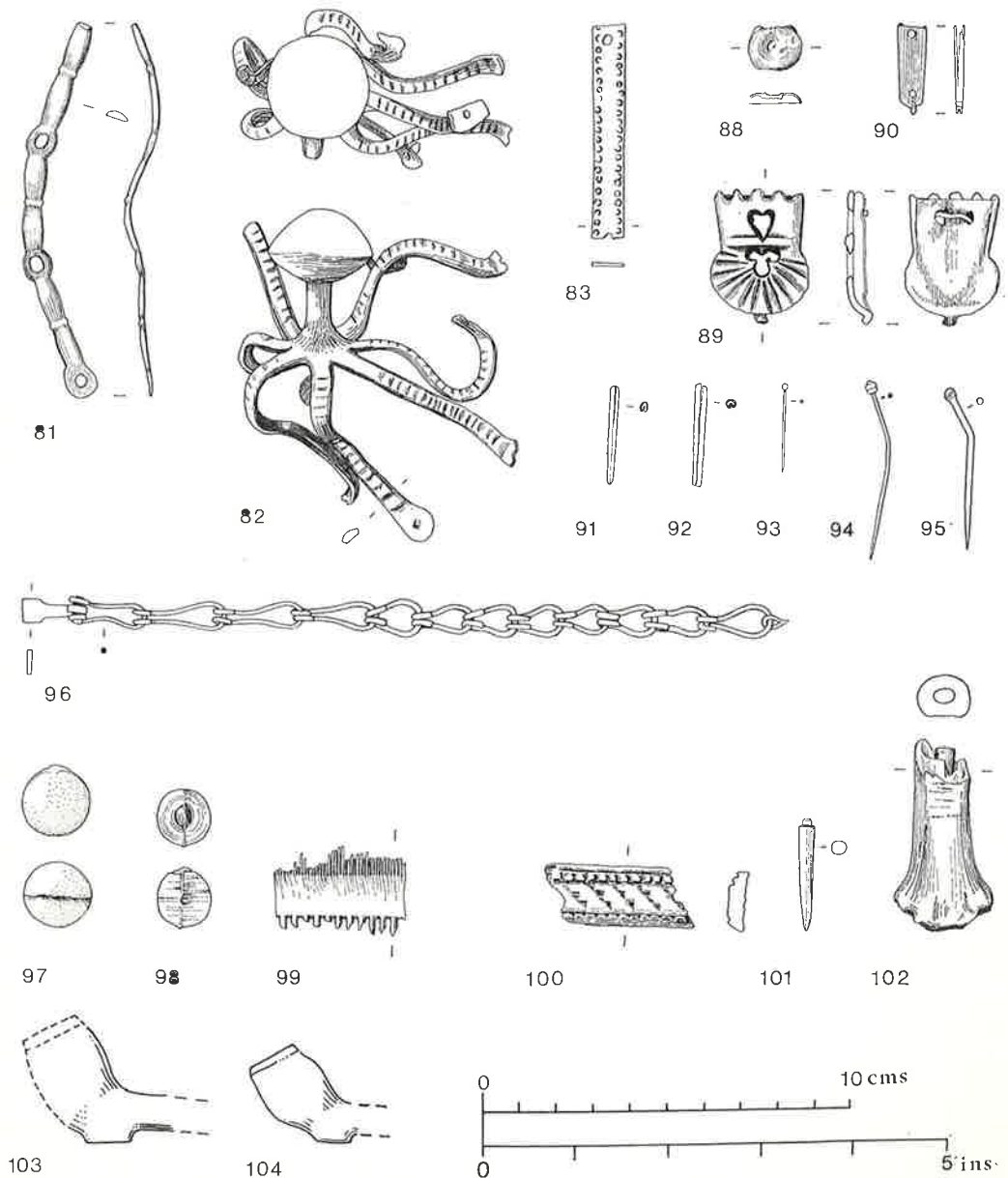


Fig. 11. Baile Hill: small objects of copper alloy (81-96), lead (97-8), bone (99-101), lead and bone (102), and clay pipes (103-4). Scale 1:2

used (Waterer 1968, Pl. 12), while others probably come from horsegear or other straps. The remarkable gilded copper alloy object no. 82, with eight ribbed arms and heavy boss on a long stem may also have been attached to leather, perhaps to provide attachment for a strap. This object came from a group 8 context, probably late medieval, but technologically it is similar to no. 81 and it may well also date to the twelfth or early thirteenth century. A somewhat similar object from Lydford Castle, Devon, may be similarly dated (A. D. Saunders, private communication). The simpler gilded copper alloy strip no. 83, with decoration of small punched circles, came from the deep pit 47, with which it is probably contemporary. Nos. 84-7, thin undecorated copper alloy strips, three having punched holes for attachment, come from late or post-medieval contexts, but are without diagnostic features. The small circular mount no. 88 is probably a strap ornament, and is comparable to a series, usually floreate, from burials in the St Helen-on-the-Walls cemetery, York, probably of late medieval date. Belts with such studs are known from London, those on A3763 being similar to this mount (*LMMC*, Fig. 63, 4).

The dagger chape no. 89 is of the *LMMC* Type III, current in the late fifteenth century and sixteenth century. This accords with its context, which also produced a fifteenth-century jetton. Identical chapes are widely known, as for example one from Pleshey Castle, Essex, in a context of similar date (Williams 1977, 183, no. 3). The small belt chape no. 90 is a simple late medieval type, common in York.

The post-medieval heightening of the mound produced several copper alloy tags (91-2), for shoe or clothing laces, of the simple type found in deposits of the sixteenth and eighteenth century at St Neots, and of the early seventeenth century at the Manor of the More, Rickmansworth (Addyman & Marjoram 1972, 92, nos. 21-2; Biddle *et al.* 1959, 184, nos. 15 & 20). The pins (93-5) from these deposits have a similarly wide date range, for Brinklow 1975 has recently shown that tinned brass pins were probably in widespread use in medieval times, and

TABLE 2

Context Group	Datable finds other than pottery by catalogue no.
1	65 (A.D. 337-41)
2	5 (11th-12th c.)
3	20 and 23 (? 12th c.); 58, 59 (12th-13th c.); 67 (A.D. 1205-8); 83
4 and 5	No closely datable contemporary finds
6	57 (12th-13th c.)
7	2 (12th c.)
8	71 (A.D. c.1460); 89 (late 15th-16th c.)
9	3 (14th c.); 31-2, 35, 37, 41-8 (late medieval); 69 (A.D. 1575); 72 (A.D. 1612-31); 70 (A.D. 1385-1433)
10	78 (A.D. 1807); 80 (A.D. c.1796)
11 and 12	No closely datable objects
13 and 14	Recent objects

most of the techniques continued in use into the eighteenth century. The pipe bowls nos. 101 and 102 are probably a more reliable indicator of the date of the lower heightening, the first being of the small bulbous bowled type thought to belong to the early seventeenth century, while the second is of the common larger 'York bulbous' type of second half of the seventeenth century (O'Neil 1959). Two musket balls come from the same levels (nos. 96-7). The ivory comb (98) from the lower heightening is of a type current in later medieval and early post-medieval times (Hall 1975, 124-5). The decorated bone strip (99), though found in the upper levels, is likely to be of much earlier date, comparable to mounts, probably for boxes, most often found in twelfth-century deposits (Waterman 1959, Pls. XVII; XX, 3; pp. 87-9 & 91).

## CATALOGUE OF FINDS

## STONE

1. Honestone: small fragment, rectangular-sectioned as much by cleavage as fashioning. Mr D. T. Moore, Department of Mineralogy, British Museum (Natural History) provides the following report: A grey, fine-grained, lineated quartz-mica schist mullion. Microscopically the rock is composed of angular quartz grains, with abundant strips of interstitial muscovite. There is pale greenish biotite and some calcite. The mineralogy and texture would place the specimen in Ellis group 1A, and the artefact is most probably of Norwegian provenance.  $57 \times 9 \times 8$  mm. Context group 8.
2. Ashlar: Magnesian Limestone, with diagonal axe tooling on two faces and traces of mortar.  $280 \times 197 \times 195$  mm. Context group 7.
3. Plinth: Magnesian limestone. Fig. 10. Context group 9.
4. Disc: chipped from medieval roof tile. Fig. 10. Context group 9.

## IRON (Fig. 10)

5. Axe head: Weight 2 lb. 13 oz. (1.375 kg). Context group 2.
- 6-8. Nails: long shanked. Context group 3.
- 9-11. Clench nails: Context group 7 for 9 and 10. 11 unstratified.
12. Barrel lock spring. Context group 9; probably redeposited.
13. Key: oval bow, stem and bit rolled from one piece, and wards probably chisel-cut. Topsoil, but probably 12th or 13th century.
14. Key: kidney-shaped bow, solid tapering stem. Modern feature in topsoil.
15. Nail: large domed oblong head. Context group 3.
16. Nail: thick shank, oblong head. Context group 7.
17. Nail: short flat headed. Context group 3.
18. Staple. Context group 6.
- 19-25. Quarrels or bolts. Nos. 20 and 23 from group 3 contexts; no. 25 from group 6 contexts; nos. 21-2 from group 8 contexts; no. 24 from group 9 contexts; no. 19 unstratified.
26. Arrowhead: flat-bladed with hollow shaft. Topsoil.
27. Arrowhead: flat bladed with keeled shaft. Group 9 context; perhaps derived.
28. Arrowhead: fork-terminal hunting arrowhead or birding bolt. Topsoil, but probably of medieval or Tudor origin.
- 29-33. Arrowheads: bullet-shaped of simple form. Nos. 29 and 32, context group 7; nos. 31 and 33, context group 9; no. 30, topsoil.
- 34-37. Arrowheads: bullet-shaped with tapered tips. Nos. 35 and 37 from group 9 contexts; nos. 34 and 36, topsoil.
- 38-40. Arrowheads: bullet-shaped with semi-tapered tips. 38, context group 8; nos. 39-40, context group 9.
- 41-49. Arrowheads: Bullet-shaped with sharp points and tapering sides. All context group 9 except no. 49, group 3, and no. 42, unstratified.
50. Terminal: Hollow, with rounded neck, and ridge near the rounded tip. Context group 9.
51. Prick spur: Terminals missing; swelling point with separately made prick. Unstratified, but probably derived from medieval layers.
52. Horseshoe: Wavy edge, countersunk oval holes. Context group 3.

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53. Horseshoe: similar to 52; fragment, not illustrated. Context group 9.  
 54. Horseshoe: fairly heavy 6-hole shoe with terminals thickened to form calkins; oblong holes with three *in situ* nails with oblong unflattened tops. Context group 9.  
 55. Horseshoe: Fairly light probably 6-hole shoe with no calkins, square holes and one *in situ* nail with flat triangular top. Context group 9.  
 56-58. Nails: Fiddlekey shaped, for horseshoes of the type of no. 52. No. 56, context group 8; no. 57, context group 6; no. 58, context group 3.  
 59. Nail: T-shaped top, perhaps a worn-down version of the fiddlekey type (see nos. 56-58). Context group 3.  
 60. Knife: Tang and blade, both broken, of a straight-backed or angle-backed knife. Context: topsoil, but perhaps derived from an earlier medieval layer.  
 61. Knife: Blade and broken tang of an angle-backed knife. Context group 8, but possibly derived from 11th- or 12th-century levels.  
 62. Bar: Square-sectioned throughout, finely tapering to both ends; one end is bent upwards, perhaps by original intention. Context group 8.  
 63. Bar: rectangular section, rounded terminal. Context group 9.  
 64. Buckle: oval bow and simple bent-round tongue. Context group 9.

## COINS

By MISS E. J. E. PIRIE and S. E. RIGOLD

## A. Roman

65. Allectus, A.D. 293-96 (British Empire), *Æ Antoninianus*, London mint.  
 Obv: legend 2: IMP C ALLECTVS PF AVG  
 bust A: radiate head, right, draped.  
 Rev: S(A)LVS (A) VG — Salus, standing, feeding serpent in her arms.  
 mm:  $\frac{1}{ML}$   
 cf. *RIC*, V(ii), no. 42 (no letters in rev. field)  
 For a coin of Allectus, this seems to be in good condition, with comparatively little wear.  
 Context group 4; derived.  
 66. Theodora (second wife of Constantius I); *Æ*, memorial issue, A.D. 337-41;  
 Obv: FLMAXTHEO DORAEAVG — head, right.  
 Rev: PIETAS ROMANA  
 mm:  $\frac{+1}{TRP}$  (first in period); Treveri mint.  
*LRBC* (i), 105.  
 Normal condition for issue.  
 Context group 1.

## B. English

67. *Æ Short Cross* cut halfpenny, class Vbii (1205-8)  
 Rev. . . . LELM'T'O ( . . . Willelm T. of London.  
 cf. *SCBI*, 12, 672-5 (? same rev. die as 673).  
 Die axis  $\sphericalangle$ ; 10.7 grains (0.69 g).  
 ? Some wear on coin. This should be added to list of York finds quoted in *SCBI*, 21.  
 Context group 3.  
 68. Philip and Mary, 1554-58; *Æ* groat, mm-lis; (worn and bent — ? touch-piece).  
 Context group 9.  
 69. Elizabeth Tudor; *Æ* threepence, 1575; (clipped and somewhat battered). Context group 9.

## C. Portuguese

70. Base real, in coppery billon, of John I (1385-1433). Crowned Ihn/'quinas' and castles. Fairly common in England, suggesting use as jettons. Context group 9.

D. *Jettons*

71. Æ jetton, 25 mm, Tournai: ? c.1460: fictitious legends: shield (France modern, three Vs in chief)/cross and lis. Context group 8.  
 72. A jetton, 22 mm, by Wolf Laufer of Nürnberg (probably W.L. II, active 1612-31): 'normal' types. Context group 9.

E. *Modern pieces*

73. George I, Irish halfpenny, 1723. Topsoil.  
 74. George II, old head halfpenny, 1740-54. Topsoil.  
 75. George II, old head halfpenny, 1740-54. Topsoil.  
 76. George III, halfpenny, 1770-75. Unstratified.  
 77. George III, Cartwheel penny, 1797. Topsoil.  
 78. George III, halfpenny, 1807. Context group 10.  
 79. George III, Irish halfpenny, 1805. Topsoil.  
 80. Tradesman's ticket or private token; York; issuer uncertain, but attributed by Bell to Cattle, Harrison and Cattle, c.1796. Compare Bell 1966, 199-200. Context group 10.

## COPPER ALLOY

81. Strip: Cast and gilded, of D-shaped cross section; between each of the three surviving holes for attachment are two-lobed sections with collar between. Context group 9, presumably derived from a 12th- or 13th-century layer.  
 82. Object: six arms radiate from a central biconical boss on a sturdy narrow stem. Each arm is ribbed transversely and those which are complete each terminate in a flattened expansion with an attachment hole. In two of the holes there is a copper alloy rivet or nail. The object is gilded. It is extensively bent and in places broken, having presumably been wrenched from its setting, perhaps a box or horse gear.  
 Context group 8, perhaps derived from a 12th- or 13th-century layer.  
 83. Strip: flat, decorated with two rows of small circular punch impressions; brazed or gilded. Context group 3.  
 84-87. Strips: All are thin flat and undecorated. No. 84 is 13 × 9 mm, with no perforation; no. 85 is 40 × 12 mm with perforation, diameter 4 mm; no. 86 is 29 × 16 mm with perforation, diameter 2 mm; no. 87 is 67 × 7 mm with two perforations, diameter 2 mm; they come from context groups as follows 84:8; 85:9; 86:9; 87:8.  
 88. Mount: circular, diameter 15 mm, probably cast thinly rather than punched from metal sheet. Context group 7.  
 89. Dagger chape: Cast and gilded front plate with applied thin back plate and wire retainer loop passing through two holes in the back plate. The front plate has a ridged terminal and is decorated with holes in the shape of a heart and an inverted trefoil club. Context group 8.  
 90. Belt chape or tag end: Three-piece, the central tongue riveted to the flat outer plates near the terminal. Traces of the ? leather tag, riveted between the plates. Context group 9.  
 91-92. Tags: tapering hollow tubes with attachment hole at the broad end; terminals for shoe or clothing laces. Both context group 9.  
 93. Pin: tinned, with small spherical head. Context group 9.  
 94. Pin: wire pin with round head. Context group 9.  
 95. Pin: cast pin; ridged head. Unstratified.  
 96. Chain: twelve links formed from approximately graded wire loops, with fastening made from cut plate; part of a terminal loop survives. Context group 9.

## LEAD

97. Musket ball; casting ridge evident; diameter 17 mm. Context group 10.  
 98. Musket ball; slight casting ridge; diameter 15 mm. Context group 9.  
 See also no. 102.

## BONE

99. Ivory comb; double-sided, with fine and coarse teeth. Context group 9.  
 100. Strip: carved decoration with billeted borders and oblique lines; probably decorative attachment for box, though no fixing holes survive. Topsoil, but presumably derived from a 12-century context.  
 101. Peg: pointed, and rebated at top, where it is broken, perhaps to accommodate terminal. Context group 3.  
 102. Handle: formed from a broken sheep tibia, cut on upper surface, with lead bar inserted into central cavity. Context group 8.

## PIPES

103. Bowl: small bulbous with flattened foot. Context group 9.  
 104. Bowl: medium bulbous with flattened foot. Context group 9.

## THE FAUNAL REMAINS

By D. JAMES RACKHAM

*with a contribution by ALWYNE WHEELER*

The sample collected constitutes 1,712 bones and bone fragments and 37 mollusc valves and shells. Despite these numbers the bulk of the material was only 11.4 kg in weight. High fragmentation and small size are responsible for the number of pieces.

Although some fragmentation had occurred since excavation, groups of fragments from one excavated piece were, where noted, catalogued as one specimen. It is apparent from the size of the fragments (slivers of bone less than one centimetre long were recovered in numbers) that although no sieving was carried out, excavation and recovery were of a very high standard.

Apart from the surface layers on top of the motte (groups 8-10), the bones occur in deposits dated to the twelfth and thirteenth centuries. They are considered below in groups relating to features and layers: a destruction level associated with the abandonment of the castle (group 7 contexts); an occupation level over the castle floor (group 6 contexts); the floor of the castle and an earlier pit (groups 3 and 5 contexts); and finally the layers composing the base of the mound in a trench excavated at the foot of the motte (group 2 contexts). This latter group although apparently of the same date has a substantially different collection of bones.

## MATERIAL FROM THE TOP OF THE MOTTE

The most interesting feature of the two main levels on the top of the motte (group 6 and group 7 deposits) is the very fragmented state of the material. Only 34 per cent of the bone fragments from these destruction and occupation levels of the castle were identified. By far the majority of the bones, 77 per cent were derived from animals of sheep and pig size or smaller. This is unusual; deposits of early medieval date in York tend to be dominated by the bones of cattle (Ryder 1970; unpublished analyses by York Archaeological Trust).

In these Baile Hill deposits only 13.4 per cent of the identifiable bone fragments are cattle. The degree of concentration of small fragments, particularly in the occupation layers (group 6, Table 4) is illustrated by the fish (and bird) bones which constitute 18 per cent of the total number of fragments from this level; they are, indeed, the most common categories of fragment. Fish bones rarely occur in such numbers on other sites in the city.

This is therefore an unusual medieval collection. It probably does not reflect a dietary peculiarity of the castle, but can perhaps be most easily explained by postulating that the floor

of the castle was regularly cleared and all the larger fragments removed. This would result in significant accumulations on the castle floors of the very small bones, such as those of fish and birds and the fragmented bones of the smaller domestic animals; but it implies fairly thorough removal of the large bones of cattle and horse.

Using this hypothesis it would be rash to use the proportions of the individual species in the layers on top of the motte as any indication of the relative prominence of any species in the diet. It is however interesting to note a wider variety of species eaten than that found on domestic sites in York (York Archaeological Trust, unpublished analyses). Bones of at least nine species of game bird were found (Table 3). Their presence may possibly be explained as the result of hawking activities, since the bone of a sparrowhawk was also found, although this species itself only takes small birds and other animals.

TABLE 3  
The identification of the fragments of bone from the site as a whole

Horse	4	(1)	cf. Red deer, <i>Cervus elephas</i>	3
Ox	177	(11)	Hare, <i>Lepus europaeus</i>	10
Pig	99	(10)		
Sheep/goat	111	(6)	Wood-pigeon, <i>Columba palumbus</i>	1
Sheep	4		cf. Stock dove, <i>C. oenas</i>	1
Dog	8	(1)	Dove, sp. Columbidae	2
Cat	1		Woodcock, <i>Scolopax rusticola</i>	2 (1)
Man	2		Turdidae	1
			Small gull or wader	1
Fowl	57	(24)	Small wader	1
Goose, cf. domestic	51		White-fronted or Barnacle goose	1
Duck, cf. domestic	1		Goose, two species comparable in size to a Pink-footed & Brent	3
Large ungulate	159		Duck, teal size	1
Small ungulate	225		Buzzard, <i>Buteo buteo</i>	3
Large animal	269		Buzzard or Kite	1
Medium animal	238		Sparrowhawk, <i>Accipiter nisus</i>	1
Small animal	15			
?	49		Frog, <i>Rana temporaria</i>	1
Bird, indet.	23			
Fish, indet.	104		Haddock, <i>Melanogrammus aeglefinus</i>	6
			Cod, <i>Gadus morhua</i>	15
			Cod family	5
			Flatfish, Turbot or Brill	1
			Elasmobranch, Ray or small shark	2
			Pike, <i>Esox lucius</i>	1
			Oyster, <i>Ostrea edulis</i>	18
			Snail, <i>Helix</i> sp.	18
			Snail, <i>Discus rotundatus</i>	1

The figures in brackets have been identified as 'comparable with' the species they are listed against.

TABLE 4  
The identification of the bone fragments from each context group

Group	Groups 8-10	Group 7	Group 6	Groups 3 & 5	Group 2
Horse		1		1	3
Ox	19	23	26	12	107
Pig	4	34	37	11	23
Sheep/goat	22	41	28	11	14
Sheep		3	1		
Dog	1	3	1	2	1
Cat				1	
Man		2			
Fowl	5	36	25	15	
Goose, dom.	3	23	23	2	
Duck, dom.		1			
Red deer, cf.					3
Hare		1	8	1	
Wild birds		5	14	1	
Bird, indet.		9	12	2	
Frog			1		
Fish, identified	1	10	17	2	
Fish, indet.		16	83	5	
Large ungulate	3	35	43	25	53
Small ungulate	11	78	94	26	14
Large animal	19	58	59	24	108
Medium animal	16	103	67	26	23
Small animal		3	9	1	2
?	5	16	11	5	12
Oyster	3	6	2	2	4
Snail		8	3	7	1

#### MATERIAL FROM THE BASE OF MOTTE

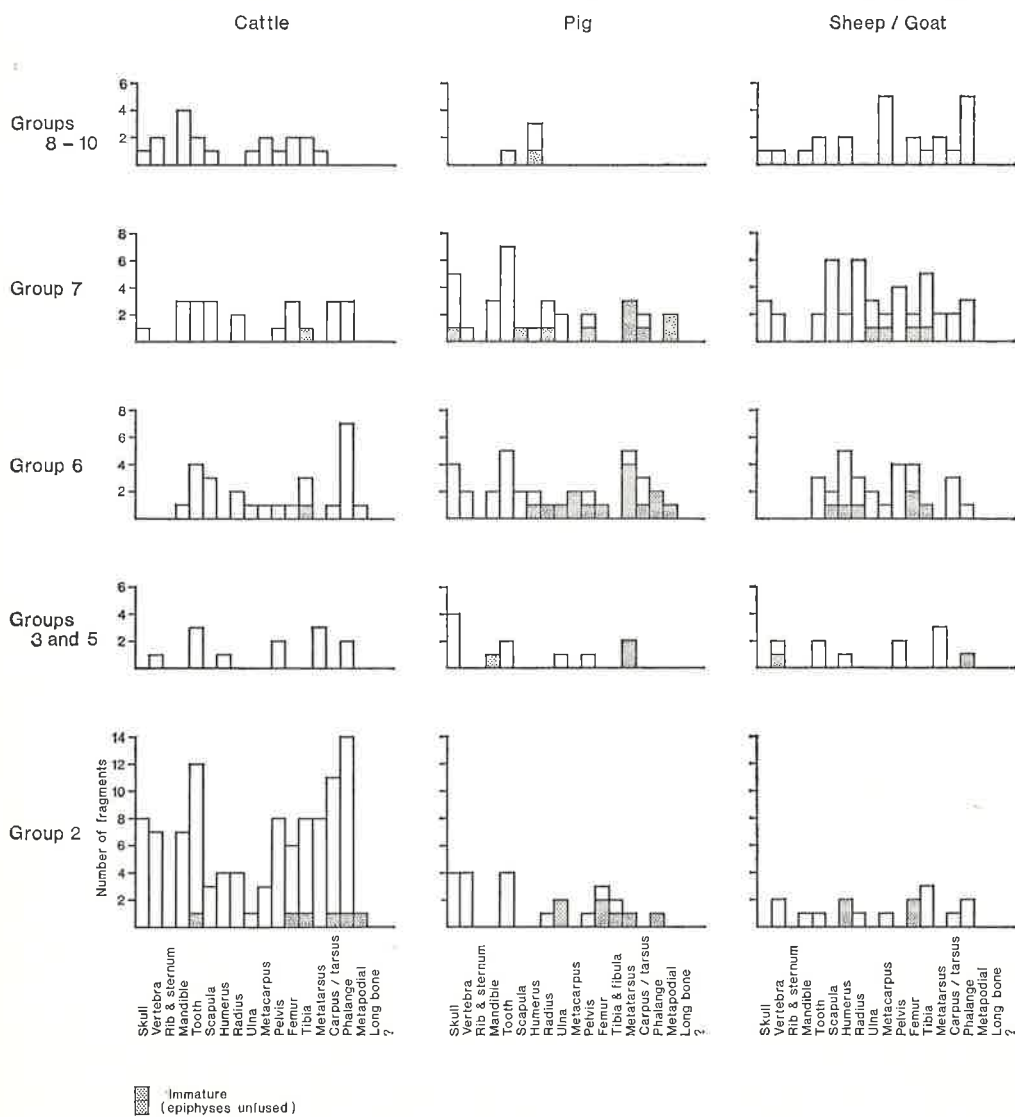
In contrast to the collections from the top of the mound, the bones recovered from the make-up of the base of the mound are dominated by those of the larger animals. Over 41 per cent of the fragments could be identified and 70 per cent of these were cattle. At least 74 per cent of all the bones were derived from large animals such as horse and cow. The ratios of the three most common animals, ox, pig and sheep/goat (shown as a percentage of their total) are 74.3:16:9.7. This although similar to other early medieval sites in York (York Archaeological Trust, unpublished analyses) seems by comparison to under-represent the bones of pig and sheep/goat.

The castle mound is thought to have been built over the Anglo-Scandinavian town and it is possible that the bones from these layers are redeposited Viking material. On the other hand, they may be the refuse thrown down from the top of the motte during occupation. The latter

explanation is favoured by the high cattle count, and relatively low numbers of pig and sheep/goat features that would be expected in the refuse from the motte. The complete absence of domestic bird bones is also perhaps uncharacteristic of Anglo-Scandinavian deposits. There are relatively few Anglo-Saxon artefacts from the excavation as a whole, and these deposits in particular. It therefore seems more likely that these are refuse bones from the mound top.

Tables 5 and 6 illustrate the number of fragments of each type of bone for the three main species of domestic animal, ox, pig, and sheep (or goat) and the unidentified remains that

TABLE 5  
The incidence of the bones of cattle, pig and sheep/goat in each feature and layer group



Group 2  
3  
107  
23  
14

3  
53  
14  
108  
23  
2  
12  
4  
1

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TABLE 6

The incidence of the bones of large animals (including large ungulates) and medium sized animals (including small ungulates)

	Groups 8-10		Group 7		Group 6		Groups 3 & 5			Group 2	
	L	M	L	M	L	M	L	M	5	L	M
Skull	4		1	3	1	1				3	1
Vertebra		4	6	22	12	29	6	4		21	9
Ribs & sternum	3	4	24	70	32	72	18	19		30	9
Mandible				1	3		3	1		5	
Teeth			1								
Scapula		1	6	11	8	5	1	5		2	
Humerus				1				1		3	
Radius				1						2	1
Ulna								1		2	1
Metacarpus		1									1
Pelvis		1				2		1			
Femur		1									
Tibia	1		2	3	2	1	1	2		1	1
Metatarsus		1									
Carpus/tarsus											
Phalanges											3
Metapodial											1
Long bone	4	12	23	30	21	26	16	9		46	10
?	11	6	29	35	23	24	5	8		43	5
TOTAL	23	30	92	177	102	162	50	51		160	37

probably also derive from these species. The marked similarity between group 7 and group 6 contexts (Tables 4, 5 and 6) would suggest that despite the former being a destruction or levelling layer it may perhaps be considered as intrinsically the same as the occupation layer. In view of the supposition that the material was removed from the motte any analysis of the butchery and meat selection would be as unwarranted as the consideration of which species were most important and their relative meat contributions.

The ages in Table 7 are based upon figures in Silver 1969 (old data being used where given), and the order of bones is to indicate the approximate order of fusion and eruption. The estimate may not be accurate for early medieval material and it is possible that the bones and teeth of medieval animals may have fused and erupted in a slightly different sequence. The table lists all the bones and teeth of cattle, pig, and sheep and goat from the twelfth- and thirteenth-century deposits, for which any data concerning age could be obtained. In addition, the epiphyses of 16 vertebrae of large animals and ungulates were in an unfused condition and three were fused, 31 vertebrae of medium sized animals and small ungulates showed unfused epiphyses and 5 were fused. Although 90 per cent of the cattle bones and teeth were fused or erupted (approx. 10 per cent being definitely juveniles) less than 33 per cent can be shown to have definitely survived into their third year, 15.8 per cent into their fourth and 6.1 per cent

TABLE 7  
The fused and unfused condition, and erupted state of the bones and teeth of cattle, pig  
and sheep/goat in the 12th- and 13th-century levels  
(Groups 3-6)

Group 2		Cattle			Pig			Sheep/goat		
L	M	unf.	f.	Age	unf.	f.	Age	unf.	f.	Age
3	1		1	0-3 w		1	1-4 w			0-6 w
21	9		10	6-9 m		2	1 yr		4	6 m
30	9		3	7-10 m	1		1 yr	1	1	6-8 m
5			3	7-10 m	2	1	1 yr		5	6-10 m
2				—		5	1 yr			—
3			2	1-1½ yr			1 yr	2	2	10 m
2	1		6	1-1½ yr	1		1 yr		6	10 m
1		1	10	1½ yr			—	1	5	13-16 m
			12	1½ yr	2		1 yr		1	13-16 m
			1	1½ yr			—		1	1½ yr
		1	2	2-2½ yr	5		2 yr	1	1	1½-2 yr
			6	2-2½ yr			2 yr		1	1½-2 yr
1	1			2½ yr		1	1½-2 yr			1½ yr
3			3	2½ yr		1	2 yr			2½ yr
			1	2½ yr		2	2 yr			2½ yr
				—	1		2 yr			—
46	10		2	2¼-3 yr	10		2¼ yr		2	20-28 m
43	5	1	4	3-3½ yr	2		2-2½ yr		1	2½-3 yr
				3½ yr		2	2 yr			40 m
				—			2½ yr			—
				—		7	2½-3 yr			—
		1		3½ yr	2		3½ yr	4	1	2½-3 yr
				3½-4 yr	3		3-3½ yr	1		3-3½ yr
			1	3½-4 yr	1		3½ yr	1		3-3½ yr
		3	1	3½-4 yr	1		3½ yr	2	1	3-3½ yr
				3½-4 yr	1		3½ yr	1	1	3-3½ yr
			2	3½-4 yr	1		3½ yr	1	1	3 yr
			5	4-5 yr	2	2	3 yr		2	3-4 yr
				—			3½ yr			—
				4½ yr			6-7 yr			3½ yr
				7-9 yr			4-7 yr	1	1	4-5 yr

into their fifth. Assuming the large ungulate and large animal vertebrae to be cattle, rather than the other alternatives, it appears that the majority of the bones are probably derived from animals whose vertebral epiphyses had not fused, that is they were younger than 7-9 years, although three specimens indicate animals of at least this age being slaughtered. Twenty-four per cent indicate an age below 7-9 and 3 per cent indicate an age above 7-9.

62 per cent of the ageable pig bones are of juveniles (younger than  $3\frac{1}{2}$  years). Less than 20 per cent of the bones definitely indicate survival into the third year and only 3.4 into the fourth. Although it cannot be definitely ascertained owing to lack of intact material it would appear that the majority of the pigs were being slaughtered in their second or third year. Of the sheep (or goat) bones whose age could be determined 30 per cent are juvenile (less than 4 years), 9.25 per cent being less than 18 months; 36 per cent indicate animals at least 1 year-old, 15 per cent indicate an age of at least 2 years, and 11.25 per cent an age of 3 or more. The evidence suggests a substantial proportion being killed off before they reach four; possibly in their third year. Of the unidentified vertebrae of comparable size to pig and sheep, 86 per cent are unfused and this suggests that few adults exceeding five years of age, of either pig or sheep, have been slaughtered for food.

In conclusion, there is evidence to indicate that the castle was kept clean and free of at least the large bones remaining from the meals. This has prevented the usual discussions of species importance, meat contribution and butchery and although slaughter ages have been considered a bias may have been introduced, perhaps in favour of the juvenile bones.

#### *Acknowledgements*

Thanks are due to D. Bramwell of Bakewell for the species determinations on the bird bones and to A. Wheeler for his report on the fish remains from this site.

#### FISH BONES

By ALWYNE WHEELER

The fish bones examined were dominated, as is usual, by vertebral centra which are often not particularly informative as to the species concerned or the size of the individuals represented. Many of the other bones were fragmented or were not sufficiently diagnostic to permit identification.

The samples were mostly referable to the cod family (*Gadidae*), but two unidentified elasmobranch (small shark or ray) centra were recognized. With the single exception of a bone from a pike, *Esox lucius*, all the fish identified were of marine origin. Fishes were identified from the following levels.

#### *Context groups 8-10*

Elasmobranch, one vertebral centrum (11.5 mm diameter) of a ray or a small shark.

#### *Context group 7*

Elasmobranch, one vertebral centrum (7.8 mm long, 9.4 mm diameter). This size would suggest that it came from a ray or small shark (e.g. one of the dogfishes).

Haddock, *Melanogrammus aeglefinus*, one cleithrum from a fish of c. 0.4 m length.

Cod, *Gadus morhua*, one parasphenoid from a small fish of c. 0.35 m length; two anterior caudal vertebral centra (diameter 19.5, 16.5 mm) suggesting a fish of c. 0.6 m.

Cod family indet., 4 fragments, including one abdominal vertebral centrum.

Cod family, probably cod, one anterior abdominal centrum (diameter 21 mm).

#### *Context group 6*

Pike, *Esox lucius*, one left dentary (damaged) representing a fish of c. 0.3 m., 0.5 kg.

Haddock, one cleithrum from a fish of c. 0.65 m; one left premaxilla from a fish c. 0.6 m; one fragmentary otolith (sagitta); one posterior portion of a parasphenoid from a fish of c. 0.4 m.

Cod, mid-section of a right premaxilla; one parasphenoid of a fish c.1 m long; one left symplectic; eight vertebral centra — four abdominal, four anterior caudal all from fish c.0.7–1 m long.

Flatfish, probably turbot or brill, *Scophthalmus* sp., one anterior caudal vertebral centrum.

*Context group 3*

Haddock, one fragmentary cleithrum.

Cod, one right premaxilla fragment.

This relatively sparse material does not permit deep analysis. The fishes identified include one freshwater species, the pike, which might be assumed to have been caught in fresh water close to York. The marine fish remains are dominated by cod bones which include both head bones and vertebral centra from the middle of the fish, which suggests that fresh fish were consumed within the castle (dried, salted cod stock-fish were usually beheaded before preparation). Haddock remains occurred in three levels, mostly head or pectoral girdle bones being present. The elasmobranch centra suggest that either rays (or skate) or small sharks were eaten; the former seems more probable in view of its better eating qualities and the ease of capture of the common inshore roker or thornback ray, *Raja clavata*. The single flatfish centrum is not certainly identifiable: both brill and turbot are at the northern extremities of their range off the Yorkshire coast and positive identification might have been interpreted as evidence for trade in fish, but on the basis of a single bone is clearly unjustified.

With the exception of the pike and the flatfish, all the species identified would be capable of capture by hook and line from fishing vessels operating off the Yorkshire coast. Most of the specimens which could be analysed for size were rather large, a feature of many archaeological fish bones. This could be caused by the selectivity in favour of large fish of hook and line fishing, and to the possibly greater sizes of 'average' fish in underexploited fisheries.

#### ACKNOWLEDGEMENTS

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Resident York archaeologists sustained the invasion from the south coast with more equanimity than did their eleventh-century predecessors when faced with diggings at Baile Hill, and a debt of gratitude is owed to Mr H. G. Ramm, Mr L. P. Wenham and the late Mr G. Willmott for help and advice. Dr L. A. S. Butler and Mr B. K. Davison were also generous in offering advice, as were Dr Sigsworth and Dr B. Dobson of the University of York.

The excavations were carried out by volunteers with minimal remuneration, and the Institute owes thanks to all who took part. In particular Mr N. Bradford undertook much responsibility in 1968, and in 1969 Mr R. Carr, Miss J. M. Hassall and Miss H. Slater took a considerable part. Dr D. H. Hill undertook the preliminary survey and Dr M. Fulford also provided essential services. The excavation would have been impossible without the enthusiastic co-operation of these and many others.

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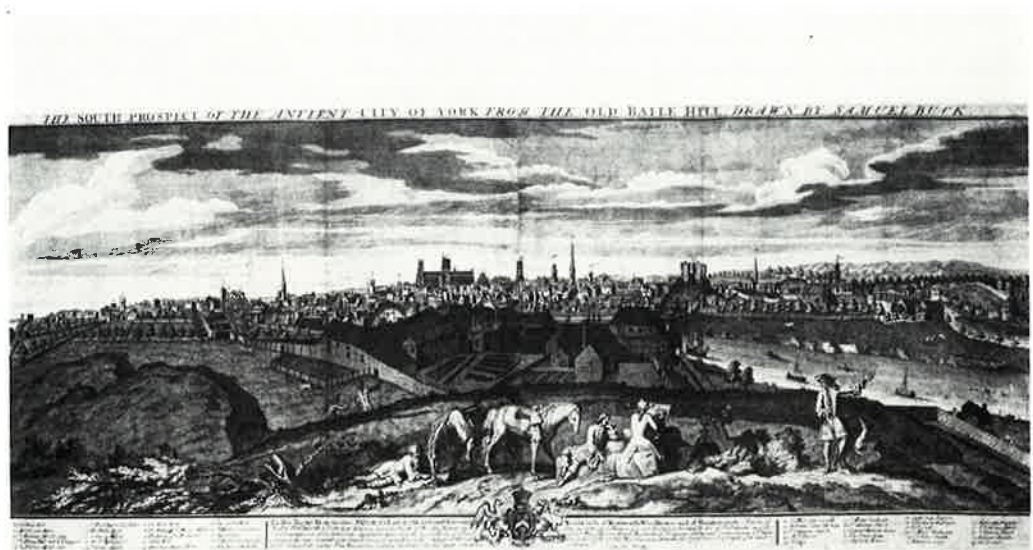
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A. The mound before excavation, from the south-west

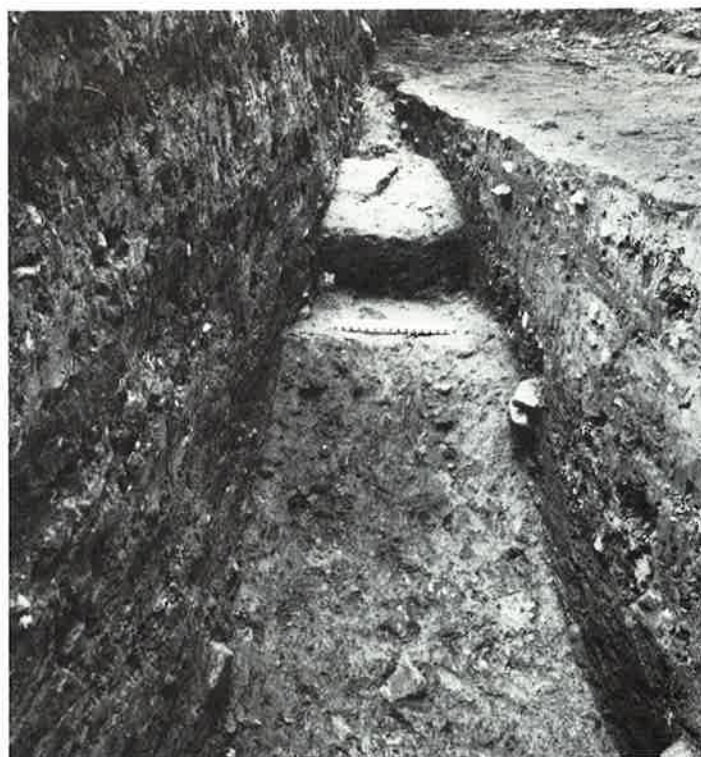


B. A Samuel Buck engraving of 1720 showing the state of Baile Hill probably just before landscaping

Baile Hill, York



A. Step-like features at the foot of the mound



B. Outer edge of ditch and possible timber setting

Baile Hill, York



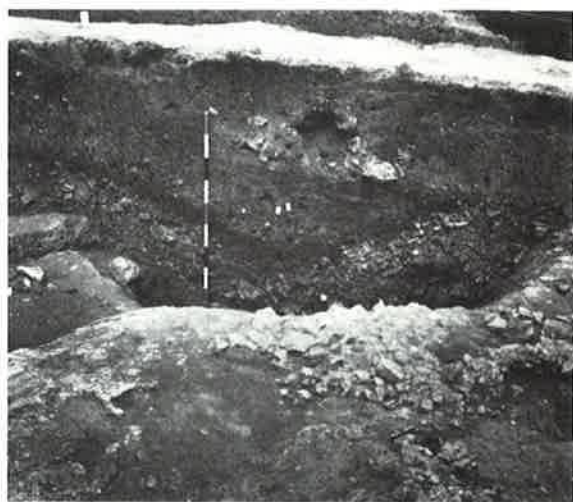
A. Mortar surface on the mound top:  
north-west quadrant



B. Mortar surface on the mound top:  
south-west quadrant



C. Hollow no. 54 on mound top,  
apparently a hearth

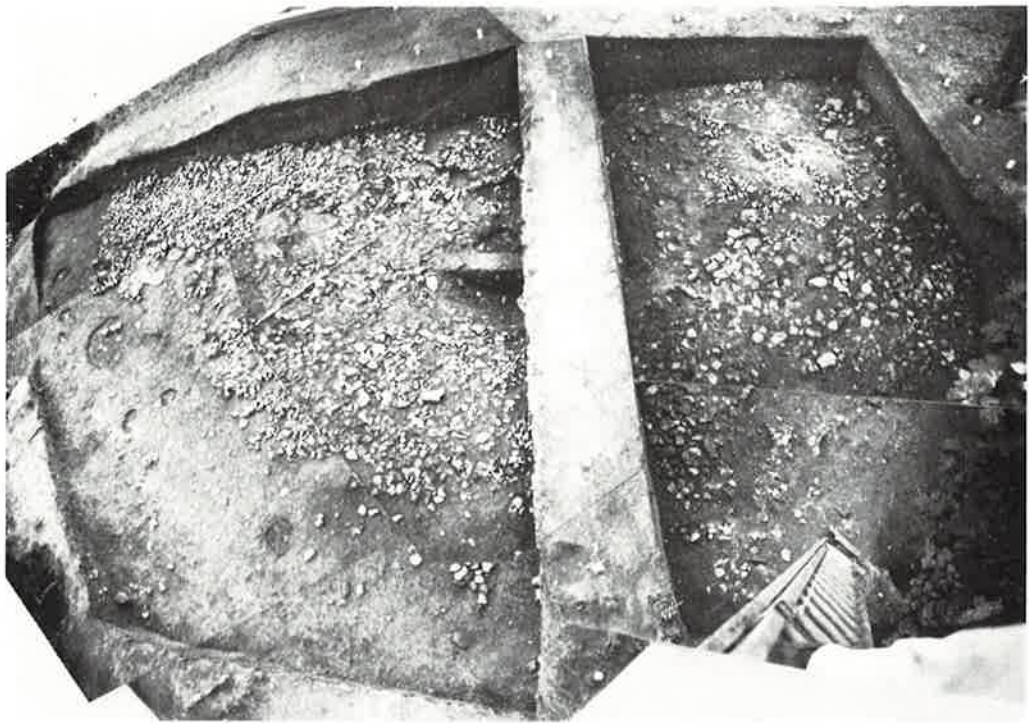


D. The deep pit no. 47 on the mound top

Baile Hill, York



ound top:  
t



a. Stone spread above occupation levels on the mound top



mound top



b. Apparent structure within the post-medieval heightening of  
Baile Hill, perhaps a breastwork  
Baile Hill, York