XI
Excavation of Medieval Remains at Marygate, Berwick-upon-Tweed, Northumberland

R. G. L. Heawood and C. L. E. Howard-Davis
with contributions by A. Bates, E. Huckerby, G. G. Jones, and R. A. Nicholson

SUMMARY

An area of Marygate was excavated by Lancaster University Archaeological Unit (LUAU, now Oxford Archaeology North) in late 1999. Features were uncovered, which date from the late twelfth century to the seventeenth century based on pottery and leather finds. The earliest buildings were situated on the Marygate frontage, which were subsequently abandoned by about the fourteenth century, with new constructions erected in the backplot in the later Medieval period. A number of pits were found during the excavations, some of which were used for depositing rubbish, whilst others were involved in the fish processing industry. Indeed, fish processing, including drying and probably salting was an important activity on this site, particularly between the fourteenth and sixteenth centuries. There is also evidence of gardening practices in this area as demonstrated by the palaeobotanical findings. This report highlights the significant evidence which can be found on urban excavations, especially sites with good organic preservation as evidenced at Marygate.

INTRODUCTION

In late 1999 Lancaster University Archaeological Unit (LUAU, now Oxford Archaeology North) excavated a site on Marygate, Berwick-upon-Tweed (NT 9981 5303; fig. 1). It was investigated in advance of the redevelopment of the former Bus Station by Terrace Hill North East Ltd, who commissioned and funded the excavation. Costs of post-excavation were met equally by Terrace Hill, Northumberland County Council and Berwick District Council. The available area, *c.* 33 m by 17 m, lay between the Tweeddale Press and Woolworth's buildings (fig. 2), within what was once the core of the medieval town (fig. 1B).

As the existence of significant medieval deposits in this area had been demonstrated by an earlier archaeological evaluation (LUAU 1996), considerable efforts were made to preserve most of the stratified archaeological deposits *in situ*. Therefore, the excavation programme restricted investigation to those deposits which were most likely to be affected directly by the new structures. As a result, excavation was concentrated upon the planned position of three substantial beams (Trenches 1, 2, and 3, fig. 1C), where the full depth of the surviving archaeological record was examined, to the level of the natural deposits. Elsewhere, excavation was stopped 0.05m below the level of the new foundations, leaving a significant depth of archaeological deposits unexamined. During the excavations a 3m wide strip was left untouched along the north-west and south-east edges of the site, in order to avoid damage to adjacent buildings (fig. 2). This was subsequently investigated by means of a watching brief.

The site archive, containing artefacts and full written and drawn records, is to be deposited at the Museum of Antiquities, Newcastle upon Tyne.

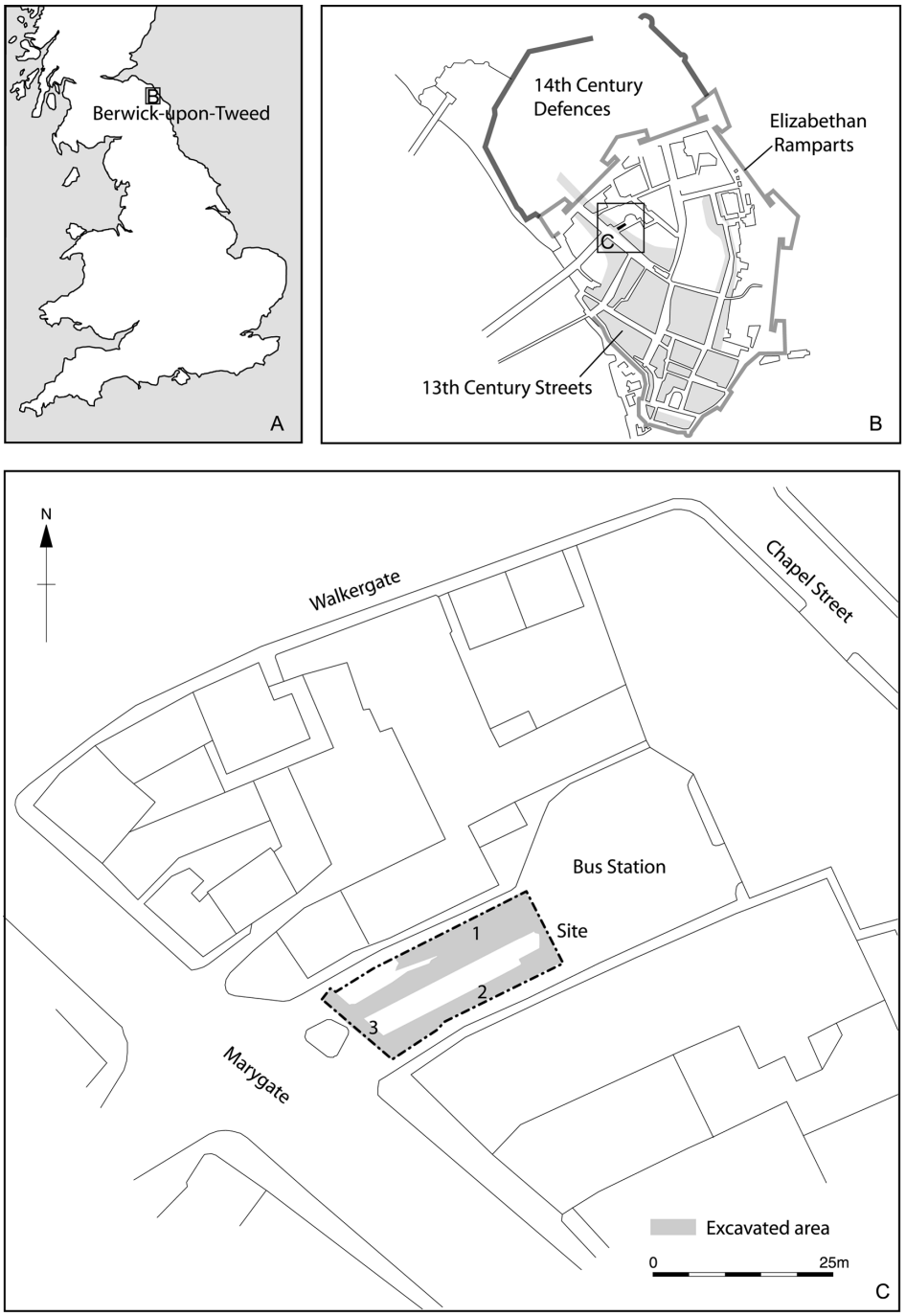

Fig. 1 Location of excavations showing excavated Trenches 1–3.

Fig. 2 Looking south-west across the site in the early stage of excavation from the old Bus Station towards Marygate.

TOPOGRAPHICAL, HISTORICAL AND ARCHAEOLOGICAL BACKGROUND

Marygate, apparently well-established by the twelfth century, was a principal artery of medieval Berwick, lying within the circuit of the early town walls. It stands at *c*. 23 m OD, on a ridge of boulder clay above the estuary of the river Tweed, which lies *c*. 200 m to the south-west. The slope between Marygate and the river was probably more abrupt during the medieval period than it appears today (Hunter 1982, 73).

The origins of Berwick-upon-Tweed probably lie in the late pre-Conquest period (Ellison 1976; Hunter 1982), but are obscure. The first reliable documentary reference in 1097 records the gift of 'the village of Berwick with all its appurtenances' to the monastery of Coldingham, by King Eadgar of Scotland (Skene 1872, 215). Berwick rapidly gained importance after the border between England and Scotland stabilised along the Tweed, perhaps soon after the battle of Carham in 1018 (Ellison 1976, 147), particularly as the settlement was able to offer both good harbourage and a potential bridging point. By the late eleventh century Berwick was probably a Scots shire capital (Hunter 1982, 68), and by the reign of David I, in the twelfth century, it was a thriving town, and had gained the status of Royal Burgh (Gordon 1985, 44). At this time Berwick had become important as a thriving international port, handling a substantial part of the export trade in Scottish wool and other goods (Ellison 1976).

The twelfth century also saw construction of Berwick's three main churches, Holy Trinity,

St Mary's, and St Lawrence's in the parish of Bondington, as well as a nunnery and two hospitals (Cambridge *et al* 2001, 75–78), presumably an indication of its growing wealth. Documents also make reference to the castle, a palace, and a bridge at this time, and several streets, including Marygate, are mentioned by name. The town was a Scottish possession, but it passed briefly to the English in 1174, being returned by Richard I in 1189, in exchange for a substantial sum of money (Ellison 1976, 147; Scott 1888).

The thirteenth century probably marked the peak of Berwick's importance and prosperity; Scottish kings frequently stayed there, and its status was reflected by the number of religious foundations in the town, which included houses of the four major orders of Friars, and a Cistercian nunnery. Berwick was a vital port during this period, arguably carrying most of Scotland's import and export trade, and with its customs returns surpassing those of Newcastle or Edinburgh (Cambridge *et al* 2001, 89). It served a vast hinterland, which must have given the town enormous economic significance (Ellison 1976, 150). There are few specific references to traded goods, but Flemish merchants are documented as having their own headquarters, 'The Red House', in thirteenth-century Berwick, from where they co-ordinated the export of wool from the monastic estates of southern Scotland. Wool and hides were exported to Germany, and records suggest the import of wine and grain from Dieppe. Trade with England is poorly documented, although references exist to the export of herrings, hides, and wool (Bain 1881, 881). The claim that several thousand townspeople were killed when the town was captured by Edward I in 1296 serves as an indication of its size by the close of the century.

Berwick changed hands between Scotland and England on numerous occasions during the fourteenth century but, initially, its economic well-being seems to have suffered little. Traders from Hamburg and Cologne were still active in the export of wool and hides, and like the Flemish a century before, had their own base, 'The White Hall', in the town (Hunter 1982, 82). Indeed, by 1327, Berwick exported twice as much wool and hides as its closest competitor, Aberdeen (Stuart and Burnett 1878). From the middle of the century, however, Berwick's prosperity appears to have waned and the town seems to have fallen both physically and economically into a severe decline. This was almost certainly a result of the frequent change of mastery, but was probably exacerbated by the plagues and animal murrains, or diseases, of the period. Berwick was still hugely desirable for the Scots as a port and centre of economic activity, but its value to the English lay more in hampering Scottish trade than expanding their own (Hunter 1982, 70). The loss of Scottish markets, coupled with Berwick's restricted access to those of England, must have considerably reduced its attraction to foreign merchants.

From this time, Berwick was regarded as a strategically important frontier stronghold, and became a pawn in the frequent clashes between Scotland and England. The damage, insecurity, and expense engendered by this situation swiftly impoverished the town, and by the end of the fourteenth century, documentary evidence suggests numerous empty properties and dereliction (Ellison 1976, 150). It was at this time that the first fortifications were built around the town, thereby excluding the population of satellite settlements, such as Bondington, from their protection, and causing some depopulation of the surrounding area (Cambridge *et al* 2001, 85). Decline continued through the fifteenth century, presumably exacerbated by the social and economic upheavals of the Wars of the Roses, so that when Henry VI gave the town to the Scots in 1459, it was recorded as destitute. After Edward IV's recapture of the town in 1482, Berwick passed permanently into English hands, but economic decline continued and probably accelerated whilst the line of the national border was being finalised, with much of Berwick's immediate hinterland left as uninhabited waste.

Berwick never regained its former importance as an international port. Indeed, such was the extent of its dilapidation that when new

defences were constructed in the sixteenth century, their circuit excluded the north-western part of the medieval town and its principal church (Ellison 1976, 150). By the reign of Elizabeth the population was little more than 1500 (Scott 1888). Much of the town was no longer occupied, and the remainder in very poor repair. Any wealth was derived from the presence of the Garrison, and when this was withdrawn in 1603, Berwick fell yet further into economic decline. In fact, Berwick's economic descent resulted in no medieval architecture, either ecclesiastical or vernacular, being left standing in the town today (Cambridge *et al* 2001, 33).

Later in the seventeenth century Berwick Bridge was built, reusing stone from the castle, which was demolished for this purpose. This may have been the impetus for economic regeneration, and the town regained some of its former prosperity by the early eighteenth century. Many of the buildings in the historic core are of this date, but despite extensive rebuilding, the medieval street plan appears to have been retained (Ellison 1976, 150). Rebuilding focused on the quayside, implying an increase in maritime trade.

MARYGATE

Our knowledge of the medieval street plan is quite extensive, but it derives largely from documentary references to the streets on which the major Scottish abbeys held properties, as no medieval buildings survive. It is known that streets bearing particular names had been established at an early date, but there is little information about their precise line. Nevertheless, thirteenth-century documentation implies that the town comprised Marygate, the area between Marygate and the Tweed quayside to the south-west, the Palace Green and Ness areas at the southern tip of the peninsula, and the line of Ravensdowne. The trading nucleus may have been centred around Marygate, and the Ness area may have been a royal or administrative focus. It seems likely therefore that the present excavations examined part of the frontage of a street that was already of considerable importance by the thirteenth century.

The modern frontage on the north-east side of Marygate shows a distinct step, in effect a widening of the street to the north-east, beginning immediately north of the excavation area, at the Tweedale Press building (fig. 1C). Cartographic evidence confirms that this step is not a recent development, but has existed for several centuries. The earliest known map of the town dates to 1570 (*The true depiction of Her Majesty's town of Berwick*), and clearly shows Marygate, Walkergate, Church Street, and Chapel Street in approximately their present locations. It does not appear to show the deviation on the Marygate frontage, but this may not be of particular significance, because it gives a stylised representation of the street plan – and may contain at least one error, in that it appears to confuse the relationship between Walkergate and the Elizabethan ramparts. The map shows the Marygate frontage, in the approximate position of the excavation described below, to have been occupied by a continuous row of two- or three-storied buildings, mostly with their gable ends facing the road. Behind the frontage lay irregular plots divided by fences or walls. In the main, these plots appear wider than, and apparently not related to, individual buildings on the frontage. The plots are notable for containing stylised linear and sub-circular features which appear to represent horticultural or agricultural activity.

Speed's map of 1610 shows much less detail, but it may be more reliable. It shows the stepped Marygate frontage in approximately its present position, as well as a cross-street linking Marygate and Chapel Street, in approximately the position of Narrow Lane, shown on nineteenth-century maps. The latter almost certainly ran across the southern part of the excavation area, and its precursor of the sixteenth or seventeenth century may well have done likewise, although Speed's map is not sufficiently precise to demonstrate this conclusively.

Fuller's 1799 map also shows the stepped Marygate frontage and part of the Narrow

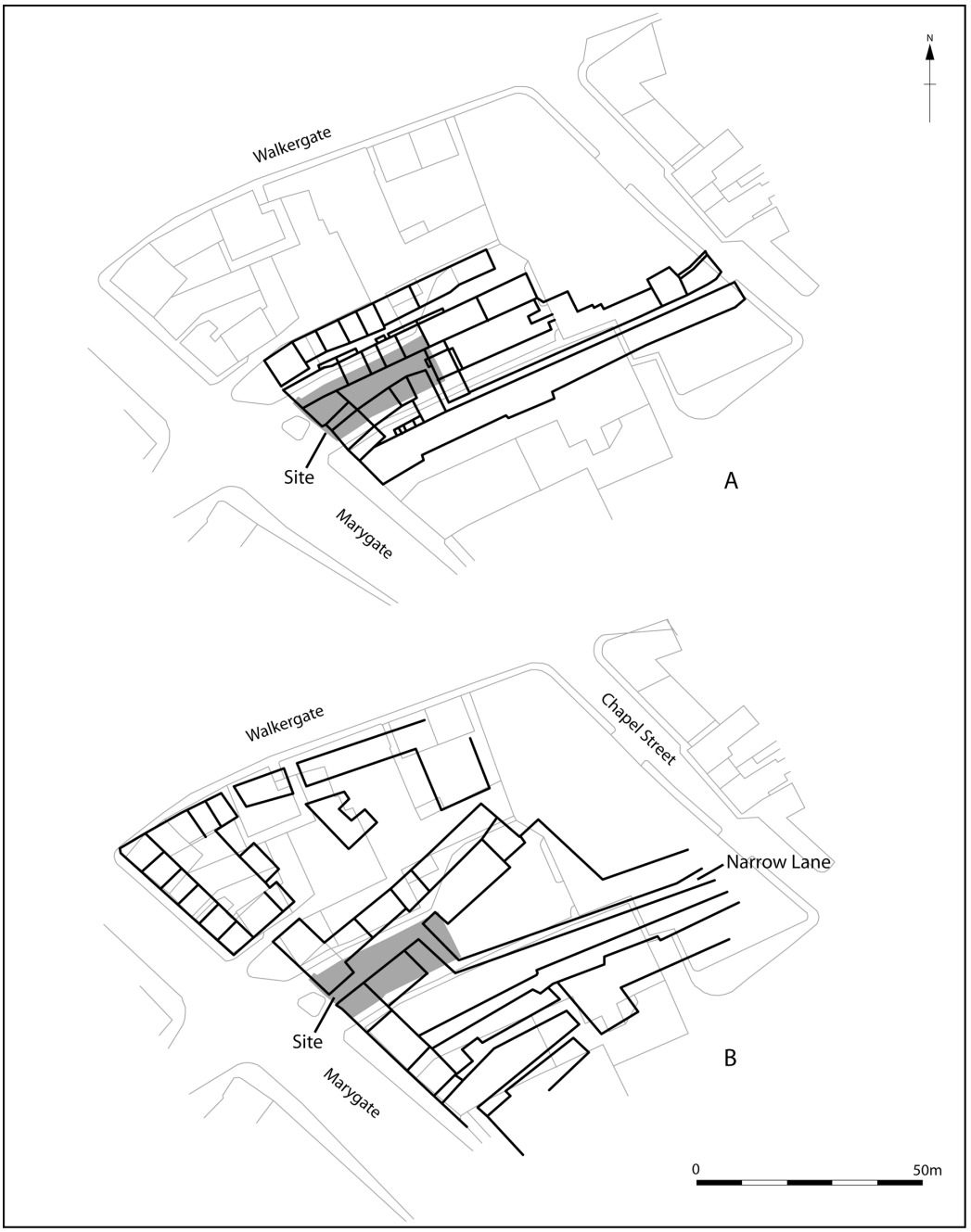

Fig. 3 Plan showing modern street layout and indicating buildings shown on (A) Wood's map of 1822, and (B) Ordnance Survey map of 1855.

Lane frontage developed, but gives no detail of the land behind. On maps of 1822 and 1855 (fig. 3; Wood 1822; Ordnance Survey 1855) two strips of long narrow buildings, separated by yards, are shown stretching back from Marygate, within the excavation area. If the maps are accurate, the more northerly strip was rebuilt on a new orientation before 1855. By this time, Narrow Lane kinked north-westwards, opening onto Marygate through Weatherly Square, a yard lying within the footprint of the excavation. These buildings were demolished in the 1930s to make way for the Bus Station.

PREVIOUS ARCHAEOLOGICAL INTERVENTIONS

Until recently little archaeological investigation had taken place in Berwick. In the 1960s there were excavations at Spades Mire, to the north of the Elizabethan walls (White 1963). In 1975 and 1976, Hunter investigated three sites, on the north side of Walkergate, on Ravensdowne, and at Oil Mill Lane, in the Ness area (Hunter 1982, 72–81). At Walkergate and Ravensdowne, little evidence was found for intensive medieval occupation, but at Oil Mill Lane, which lay within the medieval core of the town, a relatively small excavation revealed significant medieval remains, including a stone wall, and provided a large assemblage of botanical evidence. Pottery from Oil Mill Lane suggested a thirteenth- to fourteenth-century date, with little fifteenth-century evidence. The appearance of imports from Yorkshire during the fourteenth century was interpreted as reflecting the changing economic focus of the town at that time, with the loss of Scottish sources of supply and an increasing reliance on English producers (Hunter 1982, 84).

The last eight years have seen a significant increase in the number of archaeological interventions within the town, though most have been small in scale. The original plans for redevelopment of the Bus Station included land to the north-east of the present excavation, fronting onto Walkergate and Chapel Street. An evaluation in 1996 demonstrated the survival of medieval deposits, which appeared to become progressively deeper to the north and east of the area reported here (LUAU 1996). In the light of these findings, the redevelopment plans were substantially revised in order to protect the archaeological heritage of the town. When a new library and Social Services centre was built on the Chapel Street frontage, great care was taken to minimise damage to the surviving archaeological record; inevitably this reduced the opportunity to investigate the archaeological sequence.

Elsewhere, an excavation and watching brief in 1996 at the New Quay revealed a long sequence of rubbish dumping on the tidal foreshore dating from the thirteenth to sixteenth centuries (Griffiths 1999). In addition, evaluations close to Berwick's urban core have identified potentially important medieval deposits at Eastern Lane, Quay walls, and Tintagel House (LUAU 2000, 42–44).

More recently, the medieval churches of Berwick have come under investigation. In 1998 an excavation at 21 Castle Terrace in north-west Berwick exposed the lower stone courses and foundations of a large church. Dating to the twelfth century, it is likely that this was St Mary's, a parochial church. Another of the town's churches was identified after a small investigation at Cheviot House in August 2000. The survival of part of its graveyard and its location suggested that it was the Church of St Lawrence (Cambridge *et al* 2001, 75–78).

EXCAVATION RESULTS

Stratigraphic overview

A sequence of five phases of activity, representing a chronological progression probably from the late twelfth century through to the sixteenth or seventeenth century was recognised. It was possible to examine relatively long stratigraphic sequences in Trench 1 and in Trench 2 (fig. 1C), but a number of stratigraphically isolated archaeological features could only be assigned to a phase on the basis of

pottery dates. Removal of overburden and modern intrusions had truncated these isolated features from the medieval sequence in some parts of the excavation, allowing no direct stratigraphic relationship to be established. As a result of this, linking these to the main sequences proved difficult, as did the provision of a precise correspondence between the Trench 1 and Trench 2 sequences.

Phase 1 features were mostly stratigraphically isolated, being identified by the presence of relatively well-stratified early pottery. Contexts ascribed to Phase 2 could be shown to predate the creation of two north-east to south-west aligned divisions, which were represented by a wall foundation (Phase 3a; 5117, 5059, 5154) in Trench 1, and a ditch (Phase 3b; 5201) in Trench 2. At least one of these might represent the boundary of a medieval burgage plot. Features attributed to Phase 4 were stratified above the Phase 3 plot divisions. It should, however, be noted that Phases 2a, 3a, and 4a, recognised in Trench 1, cannot be equated directly with Phases 2b, 3b, and 4b, in Trench 2. Phase 5 comprises later features, principally sixteenth and seventeenth century in date.

Phase 1: twelfth to fifteenth centuries (fig. 4)

Structural features

Several early features were noted towards the west end of the study area, in the vicinity of the street frontage. In Trench 3, three pits or post holes formed a north-west to south-east alignment parallel with Marygate. These were *c.* 0.5 m apart, with vertical sides and a flat base. To the north-west, pit 5009 was sub-circular, 1.3m by 1 m, and 0.65 m deep. In its north-west corner, a smaller re-cut (5005; 0.45 m in diameter, 0.45 m deep) is probably evidence for a later replacement, suggesting maintenance of the original structure. It contained part of a waterlogged, dressed wooden beam, but as this lay at a steep angle (*c.* 45°) it was probably dumped rather than an element of the original structure surviving *in situ*. Medium and large sandstone fragments in the eastern side of pit 5009 may have been stone packing around the original post, or it could be evidence of an attempt to underpin or shore the original structure before 5005 was cut to hold a replacement.

Pit 5003 lay 1m south-south-east. It was sub-rectangular, measuring 0.95 m by 0.8 m, and 0.3 m deep. A flat stone set in its north-west corner may have been laid to serve as a post pad. Pottery from the upper fill (5002) suggested a twelfth- to fourteenth-century date.

Pit 5122, at the southern end of the alignment, was rectangular, 1.3 m by 0.8 m, and 0.5 m deep (fig. 5). A possible post pipe, 0.2 m wide, was noted, probably reflecting the original position of a structural post. Pottery of thirteenth- to fifteenth-century date was recovered from the fills, but it was not clear whether it derived from the construction or demolition of the structure.

With only a limited area available for investigation, it was difficult to determine whether any other features might be associated with this alignment. The possibility of a parallel wall line was, however, raised by the presence of pits 5109 and 5147, 1.3 m apart, which lay some 4.5 m to the north-east. Pit 5109 was sub-circular, with steep sides and a flat base, measuring *c.* 0.9 m in diameter, it was 0.4 m deep; and 5147, also sub-circular, was of comparable dimensions, but less steep-sided. Several large stones at the western end of the latter could have been displaced post-packing. Twelfth- to fourteenth-century pottery was recovered from both pits and, in addition, 5109 was cut by a Phase 5 feature (pit 5098). Interpretation was, however, difficult, and 5147 could equally be seen as part of an alternative, north-east to south-west aligned structure, represented to the east by post hole 5152 and stakehole 5146. The three features lay 2.1 m apart. Another post pit (5116) still contained part of a large waterlogged timber, of boxed quarter conversion, 0.26 m by 0.26 m, with a surviving length of 0.55m. It lay slightly out of alignment with 5122 and 5109 and, given the lack of scope for investigation beyond the limits of Trench 1, associations remain uncertain.

Pits 5009, 5003, and 5122 can be interpreted with relative confidence as representing part of

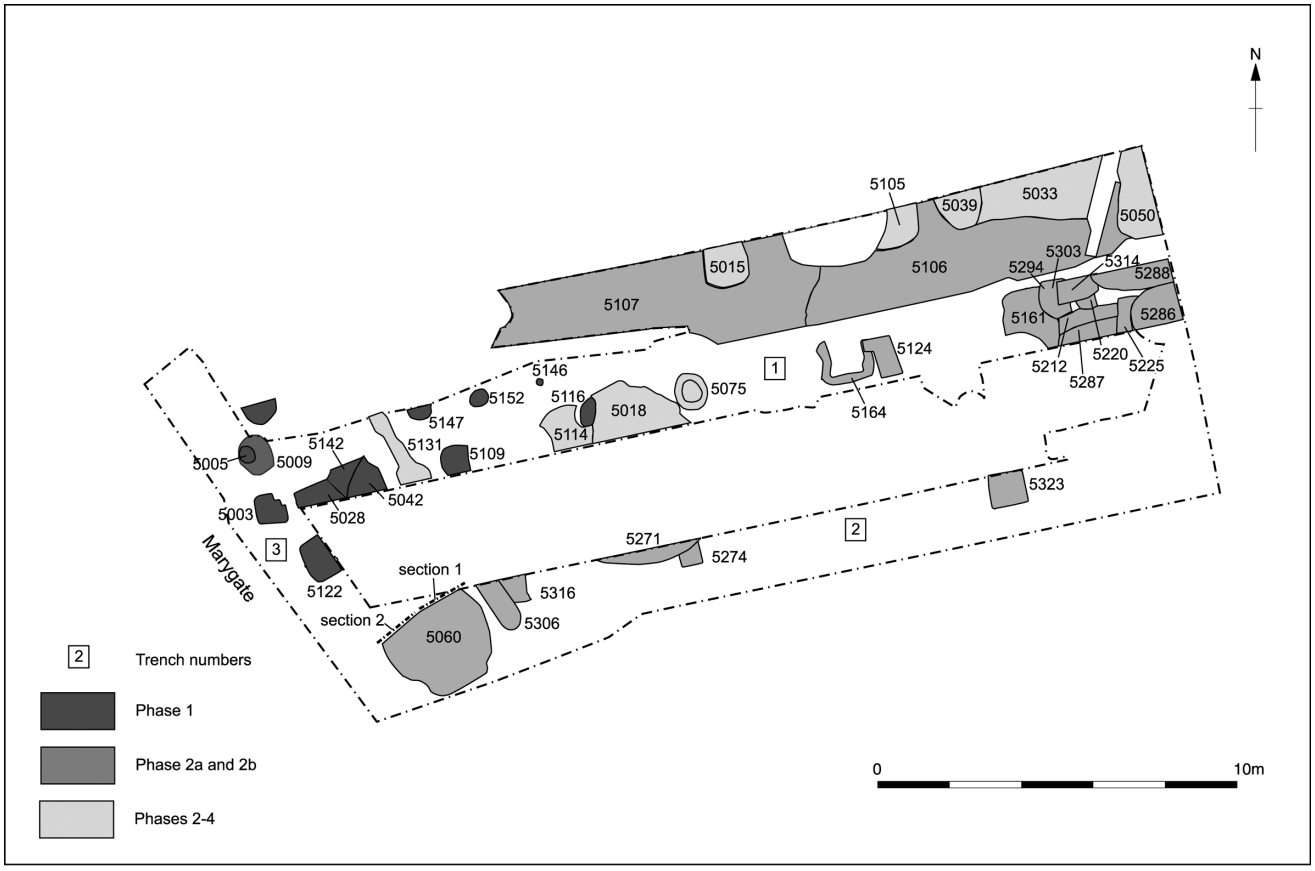

Fig. 4 Features of Phases 1, 2 and 2–4, twelfth to sixteenth centuries (1:200).

Fig. 5 Pit 5122, Phase 1, a possible post pit forming part of a wall of Structure 1.

one wall of a building fronting onto Marygate (Structure 1, fig. 16). Pits 5109 and 5147 suggest a second wall for the same structure, which would imply that, by the twelfth to fourteenth century, the street frontage stood in more or less its present position. Dating remains problematical, as few closely datable finds were recovered and the preserved timbers were unsuitable for dendrochronology. The proposed structure, however, could not have been contemporaneous with pits 5042, 5142, and 5028 (see below), although whether earlier or later remains unclear.

Pits

Ceramic evidence suggests that three intercutting pits (5042, 5142, and 5028) investigated at the south-western end of Trench 1 were amongst the earliest features found. All were at least 1.4 m in diameter, and had steep or vertical sides and gently rounded or flat bases. The earliest, 5042, was 0.6 m deep, and produced fragments of twelfth- to fourteenth-century pottery. It was truncated by pit 5142, which was the same depth, and probably stone-lined, as two courses of clay-bonded masonry (1.3 m long, 0.35 m high) had survived along its southern edge. Its fill contained charred grain, weed seeds, and heather. Most pottery from this pit was of comparable date, but the presence of two fragments dating to the fourteenth to sixteenth centuries, raises the possibility that the majority of early pottery from this and pit 5028 (below) is residual. The latest pit in the group, 5028, cut both its predecessors, and was again of comparable depth. One of its fills (5030) contained twelfth- to fourteenth-century pottery, as well as a wide range of domestic debris. This included burnt grain, heather and ling, which can be used for a number of purposes, including dyeing, roofing, animal bedding, or fodder, and weld, which is also used for dyeing. In addition, significant quantities of animal bone, fish bone, oyster, and mussel shell were found. The fills of 5028 and 5142 produced the largest fish bone assemblages from the site, and in particular, that from 5142 probably derived from the specialist production of salted and dried stockfish, rather than normal domestic waste (as described below on p. 149 in the report on fishbone).

As the pits lay only 2 m from the edge of present-day Marygate, it seems likely that there were no buildings on that part of the frontage when they were in use, or that the street lay further south-west at that time.

Phase 2: fourteenth to sixteenth centuries (fig. 4)

Phase 2 encompasses the earliest activity within the longer stratigraphic sequences examined in Trenches 1 and 2. The Phase 1 features defined above did not have direct stratigraphic links with these sequences, but there may be some chronological overlap between Phases 1 and 2.

Fig. 6 Pit 5164, Phase 2, showing the stone lining, probably a cess pit.

Phase 2a: Trench 1 features

Several features towards the centre of Trench 1 predated Phase 3 masonry wall 5117. The most westerly was a substantial rectangular pit, 5164 (1.74 m by 1.54 m, 1.36 m deep) (fig. 6). With almost vertical sides and a flat base, it was lined on three sides with irregularly-coursed, roughly-hewn sandstone blocks, bonded with red clay, and contained nine fills. Finds from the waterlogged fills included a leather shoe (fig. 12.4), part of a turned wooden bowl (fig. 14.8) and part of a possible curfew (fig. 11.5), all from fill 5178. The latest medieval pottery (from later fills 5178 and 5163) was of fourteenth- to sixteenth-century date. Analysis of samples from the fills strongly suggests faecal material, and thus that 5164 was probably a cess pit. Cherry and plum stones, fig, bilberry, and blackberry pips, fish and animal bones indicate the range of foods being consumed. Bones of a cat, however, suggest that it was also used for the disposal of other rubbish.

This pit clearly predated Phase 3 foundation wall 5117, being partially sealed by the masonry. However, it was left unlined on one side suggesting it originally abutted an earlier structure on the same alignment as 5117. Further evidence for an earlier building was provided by wall 5124, aligned north-west to south-east. This wall overlay the masonry which lined the eastern side of pit 5164, and extended south-eastwards beyond the limit of Trench 1. It was roughly faced to both sides with large, roughly-hewn, coursed sandstone blocks, retaining a rubble core. Three sherds of thirteenth- to fourteenth-century pottery were recovered from the wall, together with an intrusive modern fragment. The uppermost course of 5124 was sealed by 5163, the penultimate fill of pit 5164. After pit 5164 had been

completely filled, a stone-lined drain (5127) was built over the top, emptying from north to south.

An extensive deposit (11 m by 3 m) of mottled silty clay, with patches of large angular stones (5107), lay along the north-western limit of excavation. A similar deposit (5106) lay immediately to the north-east, and overlapped 5107; both could be shown to be over 0.5 m thick. As they lay beyond Trench 1, and below the level of the agreed limit of excavation, neither deposit could be fully investigated.

Further north-east, several features were stratified below Phase 3 foundations 5059 and 5154, including a cluster of intercutting features excavated at the north-east end of Trench 1, the fills of many of which were waterlogged. The earliest was 5287, which lay in the north-east. This feature, at least 3.5 m long, 0.5 m wide, and 0.5 m deep, was either part of a ditch aligned north-east/south-west, or one side of a very large pit. Despite the favourable conditions provided by waterlogging, the fills were surprisingly devoid of finds.

Two pits, 5314 and 5294, both at least 1 m wide and *c*. 0.5 m deep, lay to the north of 5287, but had no stratigraphic relationship with it. The latest pottery suggested a fourteenth- to sixteenth-century date for 5314. Samples suggest that the pit had filled gradually, and had been used for the disposal of a variety of materials, including faeces, general domestic waste, and garden rubbish. Environmental samples from pit 5294 produced evidence for flax and weld, as well as ling heather shoots. Together these suggest the production and dyeing of linen. This was only part of a large and varied plant macrofossil assemblage, suggesting that the pit could have been used primarily for the disposal of vegetation, something like a modern compost bin.

After 5294 had filled, another pit or ditch, 5296, was dug through its northern edge. Subsequently, pit 5303 was dug almost entirely within the footprint of 5294; its lower fill (5216) contained part of a timber wall-plate, with stumps of wattle sails set at *c*. 40 mm intervals, fragmentary wattle, and a grooved board. Three sherds of thirteenth- to fourteenth-century pottery were recovered from the upper fill (5215).

Pit 5288 cut the north-eastern edge of 5314; it was a substantially larger feature than its predecessor, being 2.1 m by at least 1.4 m, and 0.6 m deep. Pottery from its earliest fill (5300) again suggests a fourteenth- to sixteenth-century date. This pit was in turn cut by pit 5286, which contained pottery of the same date.

These pits were subsequently covered by a silty black layer, 5221, 0.1 m thick, which could represent a trampled surface. Above this lay the collapsed remains of a wattle fence, 5225; the points of the stakes lay to the west, suggesting that, if the wattling had collapsed *in situ*, it had fallen eastwards. Two sherds of pottery and part of a wooden barrel head were found with the wattle.

Surface 5221 was cut by a sub-circular pit, 5212, *c*. 1 m in diameter and 0.5m deep, which produced a single sherd of medieval pottery from upper fill 5211. Pit 5212 was crossed by the construction trench for drain 5161, running north-west to south-east, the latter represented by two parallel alignments of large, rounded stones. Again, its fill (5162) produced only residual thirteenth- to fourteenth-century pottery. To the north, cut 5220 was interpreted as possibly representing evidence for a ditch on exactly the line of later Phase 3 wall 5059.

The identification of a possible ditch, 5296, hints that a boundary aligned north-east to south-west could have been established on the same orientation in Phase 3 before the construction of masonry foundations.

Phase 2b: Trench 2 features

A possible drain, 5274, running north-west to south-east, was one of the earliest features seen in Trench 2. It was cut by a wide pit, 5271, measuring 3.4 m by at least 0.5 m, which extended beyond the edge of the trench. Another pit, 5316, lay 1.7 m to the west, and was cut by an indistinct linear feature, 5306. Very few finds were recovered from these features, and they were sealed by 5217, a very mixed dump of clay, 0.2 m thick, which might

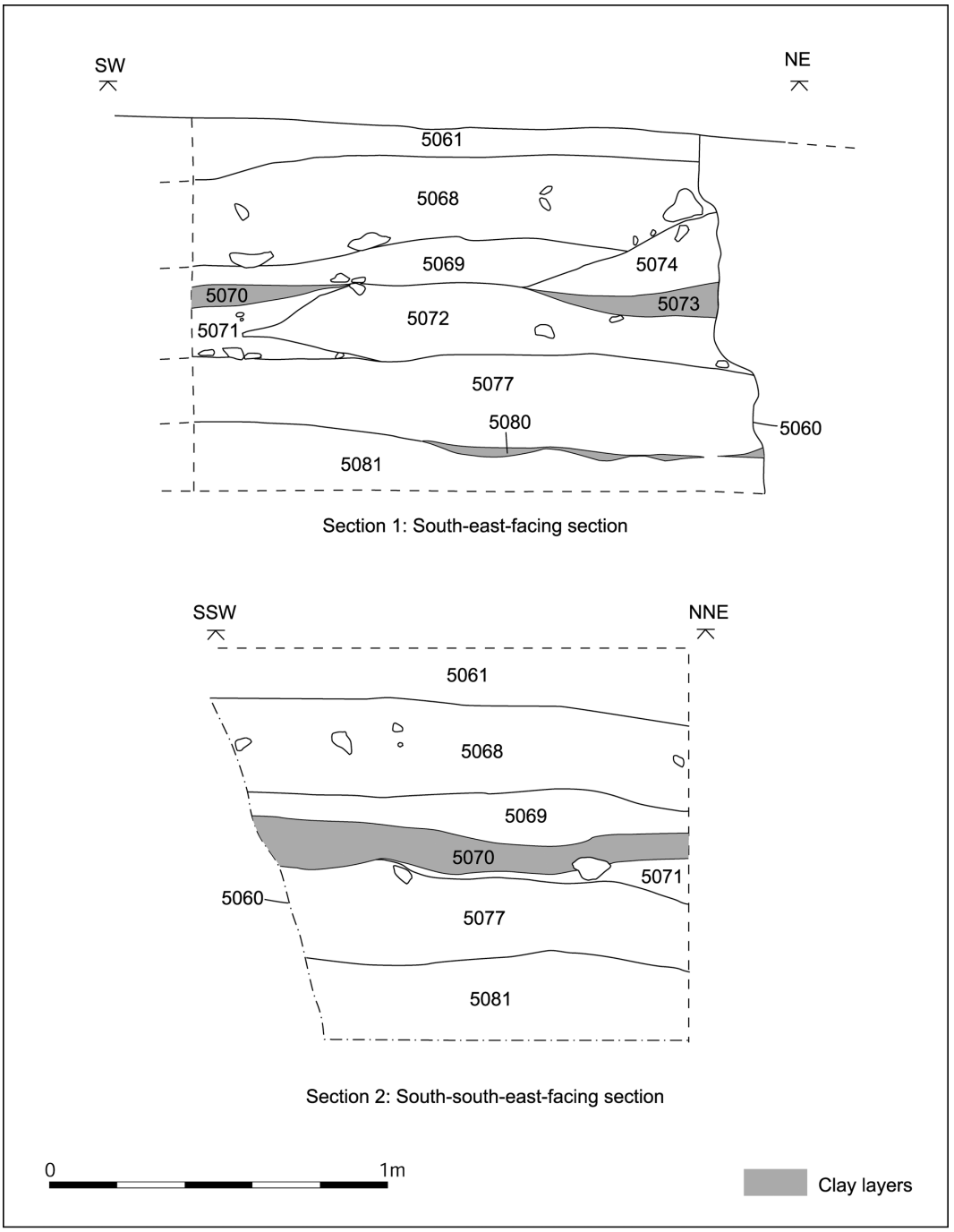

Fig. 7 Pit 5060, Phase 2, sections 1 and 2 (see fig. 4 for location) (1:20).

represent the consolidation and levelling up of this area after the pits had fallen from use.

A large sub-circular pit, 5060, 3.5 m in diameter and 1.6 m deep, lay at the south-west end of Trench 2, only 1.5 m from the modern Marygate frontage. With vertical or undercut sides and a gently rounded base, it contained 12 fills, some highly organic. Two interleaved layers of clay probably represent attempts to sanitise or cap the feature, but it appears, subsequently, to have slumped sufficiently to encourage deposition to continue (fig. 7). A considerable quantity of finds was recovered from the feature; pottery from a number of the fills (5081, 5077, 5071, 5070, 5069, 5068, and 5061) fell into a fourteenth- to sixteenth-century date range. Other finds from the pit included fragments of leather (fig. 12.1), wood, iron, window glass and floor tile, the latter presumably deriving from the demolition of a relatively high status building. High concentrations of fly puparia in samples from 5061, 5068, and 5077 imply that the pit was periodically left open to the elements, and probably filled over a protracted period, and the plant assemblage from the samples was characteristic of grassland and damp ground.

The position of pit 5060 within the plot perhaps suggests that the property frontage had not been stepped back to its present position by the time the pit was dug. Therefore, the buildings fronting the street in Phase 2 lay further to the south-west, or it is possible that the frontage was not continuously built up, with areas used for waste disposal running right up to the street.

In the eastern part of the trench a square pit, 5323, had vertical sides and a flat base, measured 1.3 m by 1.3 m, and was 0.8 m deep; its fill (5322) contained twelfth- to fourteenth-century pottery. Its primary purpose was unclear, although its regularity suggests that it might have been timber-lined.

Phase 3: fourteenth to sixteenth centuries (fig. 8)

Phase 3a: Trench 1 features

Three short stretches of foundation wall (5117, 5059 and 5154) were uncovered, which seemed to represent a wall line at least 11.9 m long (Structure 2, fig. 16) running north-east to south-west. This wall could represent the boundary of a medieval burgage plot. Of these, masonry 5117 lay furthest south-west, and was approximately 3.25 m long and 0.95 m wide. It had been heavily robbed, but, despite this, survived below the level of the robber trench. The base of the foundation comprised angular stones pushed into the underlying deposits, and above this was laid an intermittent course of roughly-hewn red sandstone blocks bonded with reddish-brown clay, then a layer of smaller stones, again packed with clay, the foundation having a maximum depth of 0.36 m. The overlying masonry appeared to have been built flush with the sides of foundation trench 5092, although the northern side of this feature lay beyond the limit of Trench 1.

Foundation 5059 lay 3.6 m further to the north-east. The surviving portion was 2.55 m long, 1.05 m wide, and consisted of a single layer of coursed rubble overlaid by one of squared red sandstone blocks, both bonded with reddish-brown clay, with an overall depth of 0.45 m. The northern face of the masonry was constructed flush with foundation trench 5093. To the south, the rubble lay within trench 5093, but the upper course was abutted by deposits which appeared to overlie the construction cut, so that the masonry acted in part as a retaining wall, terraced into the slope to the north. To the north-east, a significantly deeper foundation, 5154, was contiguous with 5059. As the two met in a vertical butt joint there was no clear indication of their sequence of construction. Wall 5154 was at least 2.4 m long and 1.25 m wide, and comprised *c.* 0.6 m of large, angular fragments of yellow sandstone (5309) again with those at the base pushed into the underlying clay. Above this were two courses of large roughly-hewn or squared blocks of a gritty, whitish, crystalline stone, *c.* 0.4 m deep. Sandstone 5309 appeared to have been packed against the north side of a foundation trench (5155) from the south, leaving a space *c.* 0.2 m wide on the south side of the trench, which was backfilled before the upper courses were added. The considerable depth of

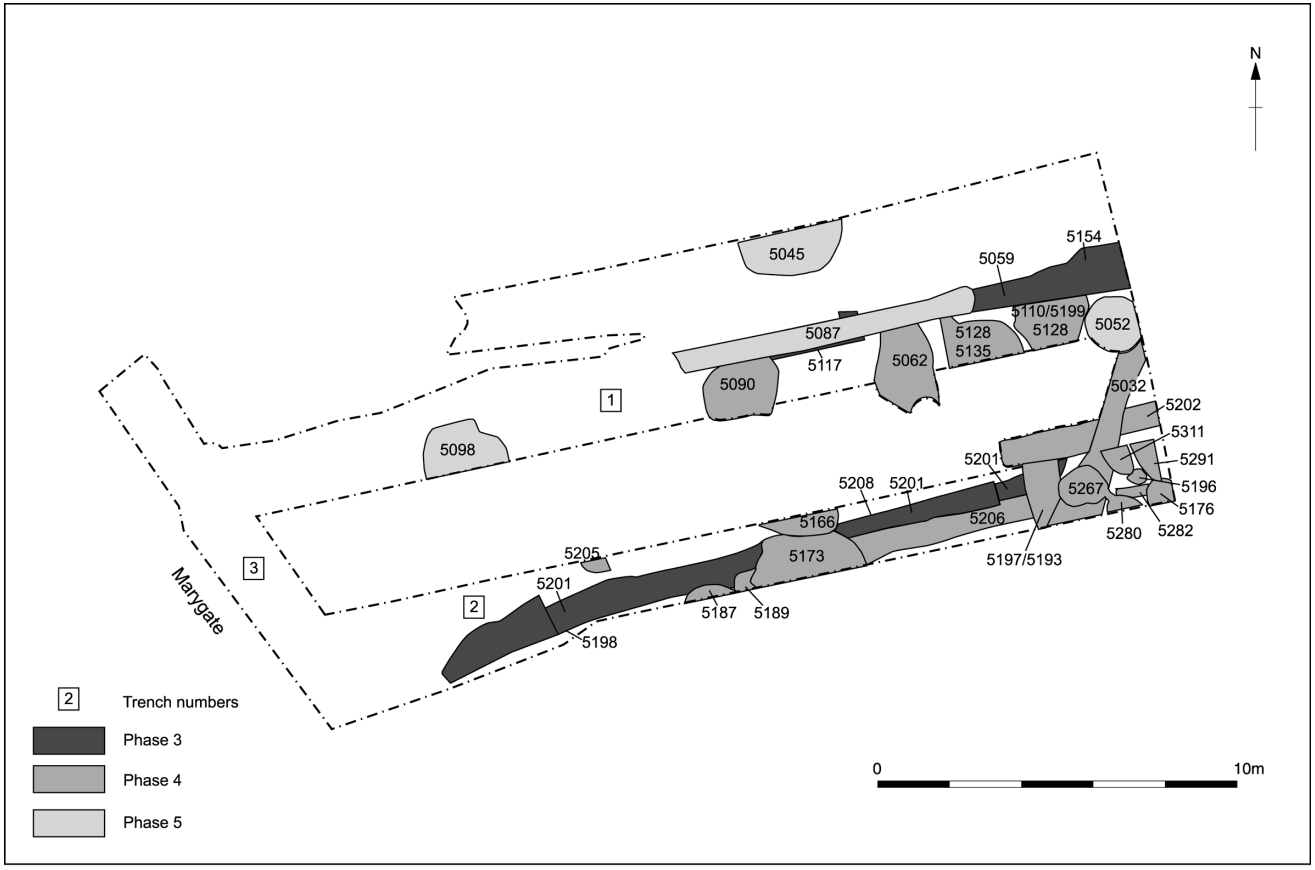

Fig. 8 Features of Phases 3 to 5, fourteenth to sixteenth centuries (1:200).

this foundation, compared with those of 5117 and 5059, could imply that a significantly more substantial structure stood here, or conversely, it might simply reflect the fact that the wall line here ran over a cluster of pits with soft and unstable fills, and thus required more support.

Phase 3b: Trench 2 features

Ditch 5201 ran north-east to south-west for approximately 21 m and was between 0.6 m and 1.2 m wide, and from 0.35 m to 0.6 m deep, depending on the extent of later disturbance. At its north-east end, it turned through 90°, running beyond the limit of excavation to the north, although it was not identified in Trench 1, only 3.5 m further to the north-west. Roughly half way along its length it deviated slightly to the south, and was traced as far as the southern limit of excavation. The profile was broadly U-shaped, and towards the south-west end the lower parts of the sides and base were stone-lined. Towards the north-east end of the feature there was a large vertical post, suggesting there at least, that there might have been a fence set in its base. It is considered likely that feature 5201 could represent a boundary ditch for the plot. Pottery from the ditch fills was largely of thirteenth- to fourteenth-century date, although a single sherd was probably later; and part of a leather turnshoe of similar date was also recovered. This ditch was stratified above pit 5060, which also contained a small amount of fourteenth- to sixteenth-century material, perhaps suggesting that both were filled towards the beginning of that date range.

Phase 4: fourteenth to sixteenth centuries (fig. 8)

Phase 4a: Trench 1 features

Four successive deposits were later dumped against the south face of masonry 5059, all but the earliest also abutting 5154. The first three, 5199, 5135, 5128, contained a considerable organic component, and may represent midden material, whereas a clay deposit above them (5110), could have been intended to consolidate the area. Four fragments of a leather turnshoe of probable late twelfth- to mid-thirteenth-century date (fig. 12.2) were recovered from 5199, and a single sherd of twelfth- to fourteenth-century pottery from 5110, perhaps suggesting the clearance of earlier middens rather than contemporary deposition.

The south-west end of foundation 5117 was probably cut by an oval pit, 5090, although the relationship was not entirely certain. Pit 5090 was relatively large, 2.6 m by 1.7 m, and 1.2 m deep with vertical sides. The latest pottery from the pit suggested a fifteenth- or sixteenth-century date. The pit was undoubtedly filled with domestic waste, including animal bone, part of a leather shoe, and a small amount of fuel ash/slag (fill 5089), suggesting that it was probably dug as a midden. Further north-east, another probable midden pit, 5062, lay between masonry 5059 and 5117, and probably cut the original wall line.

Phase 4b: Trench 2 features

Two thick (*c.* 0.3 m) dumps of clay, 5198 and 5208, sealed the fills of ditch 5201 and probably represent an attempt to cap the redundant ditch. Three shallow pits, 5189, 5205, and 5187, were also recorded as cutting clay 5198, but may represent no more than undulations in the surface of the underlying dump.

Linear slot 5206 (Structure 3, fig. 16) was dug to the immediate south of, and parallel to, ditch 5201, just clipping the edge of the earlier feature and possibly representing a replacement. The surviving portion was 5.9 m long, 0.95 m wide, and 0.25 m deep, with near-vertical sides and a flat base, and the fill contained frequent large stones. It is possible that this was the construction trench for a drain, but the profile suggests it to be a robbed-out structural feature, perhaps a wall foundation. As the feature was truncated at both ends, its original length is unknown, but it was noted that a line of stakeholes, 5282, followed the same alignment *c.* 2 m to the north-east.

Pit 5267 cut the fill of ditch 5201 at the point where the latter turned to the north-west. It was 1.2 m in diameter and 0.7 m deep, and appeared to be linked to pit 5280, which lay

c. 1.5 m further east, by a narrow, shallow gully, possibly used to convey some fluid between the two pits. The two appeared to have been of comparable size originally, although 5280 extended beyond the limit of excavation and was thus not fully explored. Analysis of bulk soil samples from 5267 again showed plentiful ling heather shoots and flowers. As heather is well-known as a dye, its presence in the interlinked pits perhaps suggests that they might have been used for dyeing.

Approximately 6.5 m to the south-west, two larger pits cut both ditch 5201 and linear slot 5206. The first to be dug was 5173 which was sub-circular, and measured 3.7 m by at least 1.3 m, and was at least 1.5 m deep, with steep sides and a partly flat base. Pit 5166 lay largely beyond the northern limit of Trench 2, and was at least 2.1 m by 0.6 m, and 1.1 m deep, with vertical or undercut sides. The few finds recovered from the two pits included a sherd of thirteenth- to fourteenth-century pottery from the lower feature, and one of fourteenth- to sixteenth-century date from the upper. The original purpose of the pits is not known, although the clayey texture of 5184, the lower fill of 5173, hints that it might not have been rubbish disposal.

Stone wall 5202, at least 5.18 m long, 0.7 m wide, and 0.7 m high, was recorded adjacent to Trench 2 (Structure 4, fig. 16). Constructed of large random-coursed stone blocks, some roughly-squared, and bonded with reddish brown clay, it ran north-east to south-west, parallel both to the line of ditch 5201 and to Structure 2 in Trench 1 (*see above Phase 3a*). It had rough faces to the north-west and south-east. The foundation trench was indistinct, and the footings may have been laid flush against the sides of the cut. As well as post-dating ditch 5201, the foundation trench also cut Phase 4a layer 5110, dumped to the north, and described in Phase 4a, Trench 1 above.

A second stretch of masonry, 5193, lay at right-angles to 5202 at its south-west end. It did not survive above foundation level and was badly disturbed. Built of very roughly-hewn medium and large blocks bonded with clay, it was 1.6 m long, 0.4 m wide, and 0.3 m deep. Construction trench 5197 cut slot 5206 (Structure 3), as well as pit 5267. Two sherds of seventeenth-century pottery were recovered from the vicinity of its fill (5177) but the wall had been badly disturbed, and the provenance of the pottery was not entirely certain. Eighteen medieval sherds were recovered from overlying clay deposits 5191, 5194, and 5195, which appeared to represent part of the foundation. It was impossible to determine a stratigraphic relationship between 5202 and 5193, but their locations suggested that they were broadly of the same date, and related to the same structure.

Two adjacent pits may well have abutted the southern side of Structure 4. Both were *c.* 0.5 m deep. The larger of the two, 5291, had very steep sides and a flat base, whilst 5311 had more gently sloping sides and a rounded base, perhaps suggesting differing functions. Very few finds were recovered, though 5311 appeared to have been backfilled with very organic, midden-like material. The pits were sealed by successive deposits 5196 and 5176. The former probably represented a rough surface or levelling up over the pits; and 5176 may also have been dumped as make-up.

A stone-lined drain (5032, fig. 9) was later cut through these deposits and foundation 5197. The base and sides of the drain were lined with flat stone slabs, and some capping stones had also survived. Nineteenth-century finds were recovered from the upper fill (5026) of the drain, but this deposit had been badly disturbed from above and these were probably intrusive; medieval pottery, the latest of fourteenth- to sixteenth-century date, came from undisturbed backfill (5175).

Other medieval features contemporary with Phases 2–4 (fig. 4)

Several other features, predominantly pits, contained fourteenth- to sixteenth-century pottery, but were isolated from the main stratigraphic sequences described above.

Features within Trench 1

A stone-lined well (5075) lay towards the centre of this trench (fig. 10). The lining was

Fig. 9 Stone-lined drain 5032, Phase 4.

constructed of unworked stone including some water-worn cobbles, bonded with clay but not coursed. It was roughly circular, with an internal diameter of 0.7 m, but the shaft was excavated to a depth of 0.8 m (21.15 m OD), and not bottomed. Three fills were identified; and although all had a sizeable coarse component, which suggested deliberate backfill rather than silting, samples from the lowest fill revealed large numbers of fly puparia and insect remains, perhaps indicating that infilling had been a protracted process. Charred oat and wheat grains, waterlogged flax seeds, and straw were also recorded. The second lowest fill examined (5118) produced part of a decorated leather knife sheath (fig. 13.6), probably dating to the late thirteenth to fourteenth century, and 40 sherds of fourteenth- to sixteenth-century pottery. The overlying fill (5076) produced part of a large globular-bodied jug, again dating from the fourteenth to sixteenth century. The well shaft had been capped by clay (5102) which was later cut by pit 5018, strongly suggesting that the well had been abandoned and filled before the end of the medieval period. Pit 5018 was at least 3 m by 1.5 m, and 0.9 m deep, with vertical sides and a relatively flat base. Eight sherds of pottery were recovered from its numerous fills, the latest being dated to the fourteenth to sixteenth centuries. A bulk soil sample from fill 5025 was exceptionally rich in arable weeds, suggesting that the pit had been used for the disposal of cultivation debris. Also, as seen elsewhere on this site, heather was abundant. The south-western edge of the pit had also cut pit 5114, which was 1.6 m in diameter and 0.35 m deep, with relatively clayey fills.

Ditch 5131 lay about 2 m to the south-west, and was aligned parallel with the street frontage. It had a wide U-shaped profile, was a maximum of 1.25 m wide, and 0.45 m deep. No dating evidence was recovered, and the ditch had no stratigraphic relationships with other features. It lay on the same orientation as Phase 2b ditch 5306, but it could not be demonstrated that this was part of the same feature. It probably marks the position of a drain or boundary.

Pits north of Trench 1

Several relatively large pits were revealed north of Trench 1, and as their cuts were identified above the proposed level of the floor slab, they were partially excavated. Relatively small amounts of pottery suggested that pits 5050 and 5105 were of thirteenth- to fifteenth-century date, and that 5033 and 5039 filled in the fourteenth to sixteenth centuries. Macrobotanical samples from the latter contained charred bread wheat, oat and rye grains, fig pips, and fish and mammal bones, together

Fig. 10 Stone-lined well 5075, Phases 2–4, fourteenth to sixteenth centuries.

indicating that the pit was filled with domestic rubbish. Large numbers of arable weeds were found also suggesting that the pit was used to dump cultivation waste. Sub-rectangular pit 5015, 1.6 m wide and 1.3 m deep, had a stepped profile and rounded base and was possibly a post pit, although if that were the case, its associations were unclear. All the pits at the north edge of the site were cut through interleaving deposits which remained unexcavated, but were considered to be of medieval date.

Phase 5: the sixteenth and seventeenth centuries (fig. 8)

Three features suggest that pit digging continued sporadically into the post-medieval period. Pit 5098 was over 2.5 m in diameter and at least 1.2 m deep, its middle and upper fills containing small quantities of fifteenth- to sixteenth-, and sixteenth- to seventeenth-century pottery respectively. Pit 5045, of similar proportions, had an irregular stepped profile, and was excavated to a depth of 1.3 m; the latest pottery from its single fill was of sixteenth- to seventeenth-century date. Further south-east, drain 5032 (Phase 4b) was cut by circular pit 5052, which contained three sherds of pottery, the latest from the sixteenth century.

The date at which Phase 3a foundation 5117/5059 was removed is uncertain, but recovery of a single sixteenth-century pot sherd from a robber trench (5087) suggests that it was taken out during or after that time. Trench 5087 was 15.7 m long and 0.35 m deep, with a flat base formed by foundations 5059 and 5117.

FINDS EVIDENCE

THE POTTERY

Some 573 fragments (12.638 kg) of pottery were recovered during the course of the excavations. Of this total, only 53 fragments (638g), which included all the eighteenth-century and later material, were unstratified.

Methodology

The material was sorted and a site-specific fabric series created (see Table 1) and recorded on a database (Microsoft Access) for ease of manipulation. The terminology used was that recommended by MPRG (1998), and the range of data recorded followed that recommended in MPRG (2002).

The state of the assemblage

Pottery recovered from the site was generally unabraded; numerous joins were noted from the material within any individual context, but except within closely related pit fills, there were far fewer fragments joining across contexts. This, and the presence of almost complete pots (both broken and unbroken) must imply that the pottery had not moved far from its original place of deposition. In general, residuality appears to be low, although inevitably, there was a considerable amount of residual material in the later fills of many of the pits.

Comparative material

The medieval and early post-medieval pottery of Berwick is not well studied, and despite a recent increase in archaeological investigation within the town, few groups have yet been published. In the pottery report from Oil Mill Lane, Berwick, obvious imports such as German stonewares, pottery from the Saintonge, Low Countries grey and red wares, and English imports from the East Coast producers (for example, Scarborough ware) were attributed to sources of supply (Moorhouse 1982). However, sources for the more local products were not considered. More recently a small, fragmentary, and largely residual group was published from Castle Terrace (Vaughan 2001) which appeared to produce a broadly similar range of fabrics, although including earlier material, dating to the eleventh/twelfth century.

The pottery supply on this site derives from both Scottish and English producers as might be expected. Some elements of the assemblage reflect material from broadly contemporary Scottish sites such as Kelso Abbey (Tabraham 1984) or Eyemouth (McCarthy and Brooks 1988, 216), whilst others would not seem out of place amongst medieval groups from Newcastle upon Tyne, or even Durham (Carver 1974). The assemblage as a whole bears a strong generic resemblance to groups from Lindisfarne to the immediate south, where a heavy reliance on Scottish sources was also noted, as well as similarities to material from Newcastle (Bown 1985). Inevitably, there is also a range of imports, with vessels from the well-known East Coast producers (Scarborough ware and possibly Developed Stamford ware), German stonewares, and a very small amount of Dutch redwares.

Forms

The assemblage is dominated by cooking pots and jugs, with very little evidence for other vessel forms until the appearance of German stoneware drinking jugs in the fifteenth/sixteenth century. A single fragment of curfew was noted (fig. 11.5), as well as an unusual fragment which might derive from a watering pot. Cistercian ware is conspicuous by its absence and, as other late medieval and early post-medieval material is not abundant, the growing proliferation of vessel forms that usually characterises the sixteenth and seventeenth centuries is not apparent within this group.

In general terms, cooking pots appear to dominate the earlier material from the site, but many of the fragments also bear spots and splashes of glaze, which indicates that glazed vessels were being produced alongside the more utilitarian cooking vessels. The unglazed cooking pots appear in both straight-sided and more globular forms, with a range of rim forms, some seated for lids. Jugs vary in form from tall baluster types to short, squat vessels. Evidence for decoration is not common, comprising occasional applied scales or pinched cordons. Two exceptions are a large jug extensively decorated with applied pinched cordons (fig. 11.1), and a single body fragment with a complex applied seal-like decoration reminiscent of that seen on thirteenth-century vessels from York (McCarthy and Brooks 1988, fig. 133; Jennings 1992, 19 and fig. 3.30–32). Only illustrated vessels are catalogued, all other pottery descriptions are retained within the archive.

Table 1 The fabric series by fabric type, with quantity and description. All vessels were wheel-thrown.

Fabric no	Fabric type	No	Wt (g)	Inclusions	Description
1	Fully reduced greyware	129	4436	Numerous very fine <0.25 mm, occasionally up to 1 mm, white	Reduced fabric, dark grey. Fine fabric with pale layer directly under the glaze.
2	Reduced gritty ware	66	2140	Numerous angular grits (mainly quartz) up to 1.5 mm	Reduced fabric, pale grey. Very gritty fabric and slightly laminated. Surfaces are pale buff. Newcastle Reduced gritty ware, type 1–2, Durham type 11.
3	Oxidised orange ware	6	14	Small 'flecky' black	Fine oxidised fabric, beige with orange surfaces within and without.
4	Reduced greyware	63	774	Quartz and others up to *c*. 0.5 mm	Reduced fabric, grey with occasional brown surfaces. Very hard sandy fabric.
5	Oxidised whiteware	2	10		Oxidised soft white fabric with pale grey surface.
6	Oxidised whiteware	44	638		Oxidised white hard, fine to sandy fabric, not dissimilar to fabric 4. Dark green glaze.
7	Low Countries Redware?	2	142		Very fine sandy fabric, oxidised to red/brown with marked grey core. Brown/green glaze. (Hurst *et al* 1986, 136–38.)
8	German stoneware	4	96		Raeren stoneware? (Hurst *et al* 1986, 194–208.)
9	Fine reduced ware	2	72	Angular grits with occasional voids	Fine pale grey soft fabric. Very dark green glazes, some ?stamped decoration.
10	Stoneware?	1	5		Fine hard grey fabric?
11	Reduced sandy ware	3	16		Fully reduced sandy fabric, thick-walled but seems light and clinkery to touch. Dark green glaze.
12		1	18		Fine hard-fired slightly sandy fabric. Thin-walled vessels.
13		3	72	Possible calcite and some voids. Iron oxide	Brown sandy fabric.
14	Scottish East Coast white gritty ware	90	1773		Oxidised gritty white fabric with beige surfaces and sometimes a grey core. Thin-walled. (Tabraham 1984, 365–404.)
15		9	132	Dark and occasional voids	Oxidised fine sandy fabric. Pale beige all through.
16	Scarborough wares?	10	89	Up to 0.75 mm, some voids, some mica	Oxidised pinkish fabric. Occasionally yellowish-beige surfaces. (McCarthy and Brooks 1988, 230.)
17		3	22		Oxidised fine red fabric. Dark green glaze inside and out.
18	Developed Stamford Ware?	12	80		Oxidised white sandy fabric with copper speckled glaze.
19		1	34	Numerous mixed, some rounded and slate-like, others water-worn quartz	Oxidised coarse gritty white fabric.

Table 1 (continued)

Fabric no	Fabric type	No	Wt (g)	Inclusions	Description
20		3	10	Mixed	Oxidised gritty white fabric with brown surfaces. Similar to Fabric 19.
21		3	32	Angular up to 1.5 mm	Gritty reduced grey fabric. Glaze splashes.
22					Gritty reduced grey fabric with white surfaces.
23		5	32	Mica fleck	Gritty reduced pale grey fabric. Pale grey surfaces. Yellow-green glaze.
24		2	26		Hard gritty fabric with fine inner surfaces. Unglazed?
25		1	28	Occasional large angular grits, quartz and very, very small red iron oxide	Fine fabric.
26	German stoneware	7	168		Frechen stoneware? (Hurst *et al* 1986, 214–21.)
27		3	46		Sandy hard pink fabric with grey-white core, copper flecked glaze.
28		17	290		Hard, slightly sandy orange fabric with grey core, copper flecked glaze.
29		2	18		Fine hard yellow fabric and self glaze. Not Staffs.
30	Modern stoneware	2	172		Stoneware drain.
31	Modern whitewares (mixed)	14	Not weighed		Modern whitewares.
32		3	85		Hard gritty dark red fabric.
33		5	30		Gritty incompletely reduced fabric, green glaze.
34		9	196		Fine incompletely reduced fabric, green glaze.
35		21	494		Sandy incompletely reduced fabric, green glaze.
36	German stoneware	1	32		Unglazed Siegburg ware?? (Hurst *et al* 1986, 176–84.)
37	Dutch redware?	12	88		Medium sandy oxidised orange fabric with colourless glaze.

Catalogue of illustrated pottery

Figure 11

1 Fabric 1: rim of jug, decorated with low pinched cordons, dark green glaze 5320/1724, unphased pit 5321

2 Fabric 2: rim, hooked-rim cooking pot 5025/1561, Phase 2–4 pit 5018, late twelfth to early thirteenth century

3 Fabric 2: neck and strap handle of round-bodied jug 5213/1691, Phase 3b ditch 5201, thirteenth to early fourteenth century

4 Fabric 4: collared rim, cooking pot 5038/1563, Phase 2–4 pit 5039, thirteenth to fifteenth century

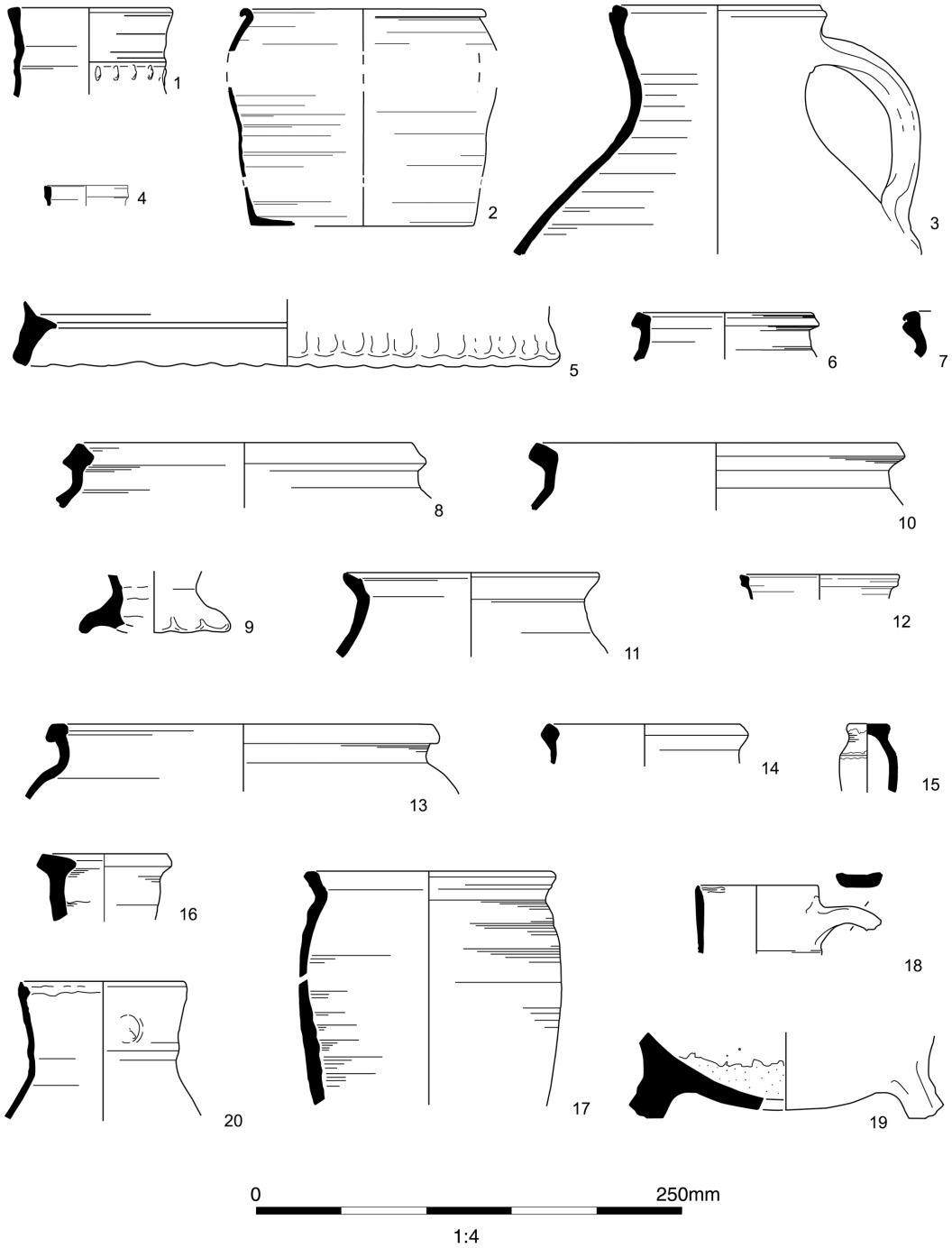

Fig. 11 1–20 Medieval pottery.

5 Fabric 4: form not identified, possibly curfew 5178/1680, Phase 2a pit 5164, fourteenth to sixteenth century
6 Fabric 6: squared rim, cooking pot 5108/1663, Phase 1 pit/post hole 5109, mid-twelfth to mid-fourteenth century
7 Fabric 6: thumbed rim? cooking pot? 5193/1702, Phase 2–4 well 5075
8 Fabric 6: collared rim, cooking pot 5068/1656, Phase 2b pit 5060, late twelfth to late thirteenth/early fourteenth century
9 Fabric 8: base and frilled foot ring of small drinking jug 5096/1661, Phase 5 pit 5098, first half of the sixteenth century?
10 Fabric 14: everted rim of cooking pot 5137/1670, Phase 1 pit 5142, mid-twelfth to mid-fourteenth century
11 Fabric 14: everted rim of cooking pot 5322/1725, Phase 2b pit 5323, mid-twelfth to early fourteenth century
12 Fabric 14: collared rim of cooking pot 5175/1553, Phase 4b culvert 5032/5029, late twelfth to late thirteenth/early fourteenth century
13 Fabric 14: squared, slightly everted rim of cooking pot 5001/1734, unphased, mid-twelfth to early fourteenth century
14 Fabric 15: clubbed rim of cooking pot 5001/1502, unphased
15 Fabric 16: knob from lid? 5276/1715, unphased pit 5278
16 Fabric 18: unusual vessel 5196/1704, Phase 4b layer
17 Fabric 20: everted rim of cooking pot 5268/1713, Phase 4b pit 5267, thirteenth to early fourteenth century
18 Fabric 26: rim and part of strap handle of small drinking jug 5053/1607, Phase 5 pit 5052, sixteenth century
19 Fabric 28: foot of cooking vessel 5123/1685, unphased wall footings
20 Fabric 37: upright simple rim small drinking jug 5061/1609, Phase 2b pit 5060, fifteenth to sixteenth century

Dating

Moorhouse was reluctant to ascribe dates to the material from Oil Mill Lane, Berwick upon which he reported (1982, 99, 102) as most medieval pottery recovered from the town prior to those excavations was unstratified and little corroborative dating evidence was available from other finds. The same is true of these excavations, although the dated leatherwork is of some help. Stratigraphic evidence suggests two broad phases of activity. The earlier is probably late twelfth, or earlier thirteenth, to fourteenth century in date, with later activity producing material which suggests the fifteenth century or later. It must be noted that the later material derives in the main from pit fills, which also contain significant amounts of residual material. There is very little sixteenth- to seventeenth-century material, perhaps reflecting the decline and decay of the town at that time. The few fragments of later post-medieval pottery found were all unstratified, strongly suggesting clearance or substantial disturbance around this date.

OTHER FINDS (STONE; GLASS; METALWORK)

Only two fragments of stone artefacts were recovered. One is a small fragment of struck flint from pit 5280, which is almost certainly residual in its context, representing much earlier prehistoric activity in the area, long preceding the medieval town. The other object is a well-made and slightly worn whetstone of typical medieval type (fig. 13.7) from pit 5187. Pottery from the same context suggests a thirteenth- to fourteenth-century date. All illustrated material is in the catalogue, the remainder is in the archive.

Catalogue of illustrated stone

Figure 13.7

Fine-grained stone hone, rectangular section, rounded ends and faceted from use. Dark stone.
Good condition, complete. L: 83 mm; W: 13.5 mm; Th: 10.5 mm
5186/1676, Phase 4b pit 5187, Medieval?

Glass

In keeping with the small amounts of later post-medieval and modern pottery from the site, only nine fragments of post-medieval or modern vessel glass were recovered, three of them (5001/1692) retrieved during machine clearance of the site. All of the remaining six fragments (5026/1624) derived from the late fill of a stone culvert (5032), suggesting it continued in use into the nineteenth century.

A single small and badly mineralised fragment of window glass was probably medieval in date. It was recovered from the latest fill of pit 5060, which contains pottery suggesting a later fourteenth- to sixteenth-century date. Although small, this, and the

small amount of glazed and decorated floor tile from the site, hint at high status buildings close by.

Very little metalwork was recovered. There were three badly preserved items of copper alloy and four fragments of ironwork. None of the copper alloy objects can be identified with any certainty. That from 5049 (fill of pit 5050) is in extremely poor condition but might represent part of a cylindrical padlock, whilst that from 5077 (a fill of pit 5060) is a small fragment of rectangular-sectioned bar of uncertain purpose. Finally, from the same pit, fill 5077 produced a small twist of round-sectioned wire presumably used as an insubstantial tie, perhaps for clothing. Crummy (1988, 13, and fig. 15.1623) identifies these as lace tags (her Type 3), and suggests a late fifteenth-century date for their use in Colchester. Such a date would also seem reasonable for this example.

Three of the fragments of ironwork are nails (one from fill 5011 of pit 5015 and two from fill 5089 of pit 5090). Other artefacts date the former to the thirteenth-fourteenth century and the latter possibly as late as the sixteenth century. A possible wall-hook or hinge pivot derives from another fill of pit 5060 (fill 5081), pointing to a fourteenth- to sixteenth-century date for the object.

ORGANIC FINDS

Leatherwork

In all, 44 fragments of leather were recovered, probably representing a minimum of 10 objects, eight of them single shoes. All of the shoes are turnshoes, largely with single piece uppers and relatively rounded toes. The turnshoe was first stitched together inside out and then turned. This type of shoe was prevalent throughout the medieval period, with any dating based on relatively slight changes of fashion. The three best-preserved examples (figs 12.1–12.3) all seem to be in styles dated (in London at least, see Grew and de Neergard 1988) to the later twelfth- and thirteenth-centuries, which would not seem out of place in terms of other finds from the site.

It must be noted that evidence from elsewhere, for example Beverley, Yorkshire, suggests that changes in fashion travelled northwards slowly, with these styles probably still being current in Beverley in the earlier part of the fourteenth century (Atkinson and Foreman 1996). Two of the three appear to be ankle boots of one-piece construction, one drawn together about the ankle with a single thong (fig. 12.2), the other, perhaps rising above the ankle and laced down the inner side, again with a leather thong, a style which persisted into the early to mid fourteenth century (fig. 12.3). The final well-preserved example (fig. 12.1) is a relatively low-cut shoe, again with a side fastening. Few of the shoe fragments have pointed toes, being gently rounded, and none show the exaggerated poulaine-styles fashionable in the fourteenth century. A sole (fig. 12.4), clearly recycled before deposition, has a narrow waist and pointed toe, and might thus date to the fourteenth century, but equally, could reflect an earlier, twelfth-century fashion.

There was also a small number of offcuts, along with clearly recycled (cut up across seams) fragments of soles and uppers, and fragments of what appear to be very worn and heavily repaired soles. Such material is a clear indication of leatherworking, probably shoe-making and repair, but cannot, in such small quantities, be taken to indicate anything more than day-to-day household refurbishment of shoes and the reuse of old leather.

One further object was of interest. It is part of a small decorated knife sheath (fig. 13.6). The object is simply made, from a sheet of leather, first folded in two, and then folded again to form a tapering receptacle for the blade of a small knife, and the open seam simply whip-stitched. There is decoration on both sides, one bearing a stamped pattern of lozenges, each enclosing single small *fleurs-de-lis*, the other incised running foliage. Opinions differ as to the date at which stamped *fleurs-de-lis* became a popular design element, but it is clear that in the thirteenth century it was a widely used motif (Cowgill *et al* 1987, 43) and persisted in use throughout the fourteenth century and on, into the fifteenth century (Ward-Perkins 1940, 188). Later examples, however, seem to be multiply stamped, to form a decorative ground, rather than as individual motifs. The running foliage seen on the opposite side of the sheath appears to have been popular in the mid-thirteenth to fourteenth century, and considered together, it would seem reasonable to suggest a thirteenth- to fourteenth-century date for the sheath, which would concur with the suggested date for the shoe (fig. 12.3) from the same context (fill 5118 of well 5075). All illustrated material is in the catalogue, the remainder is described in the archive.

Catalogue of illustrated leather

Figure 12

1 Turnshoe (6 fragments). Turnshoe upper, principal fragment is upper vamp of low-sided

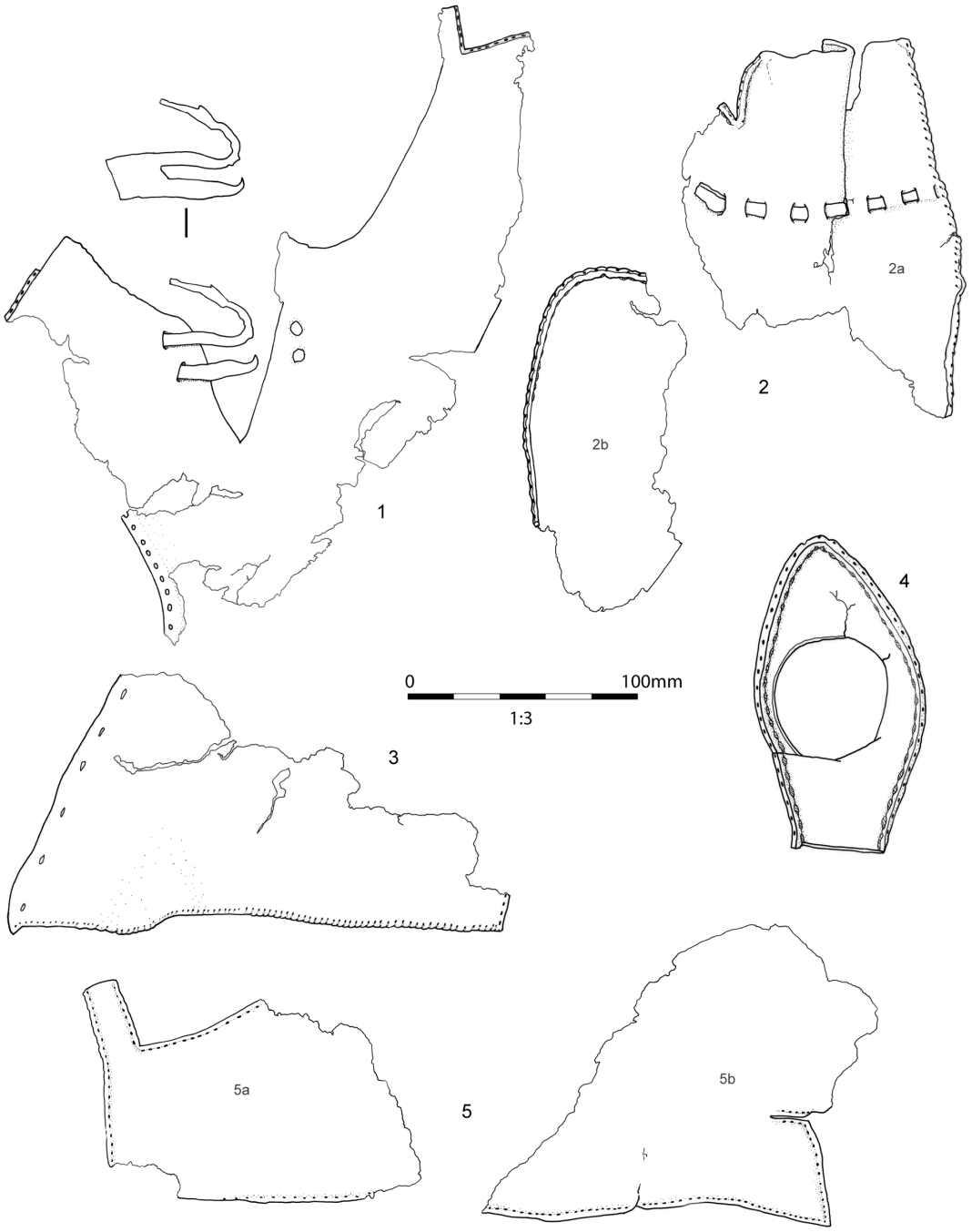

Fig. 12 Medieval leatherwork, 1–4 shoes, 5 unidentified composite object.

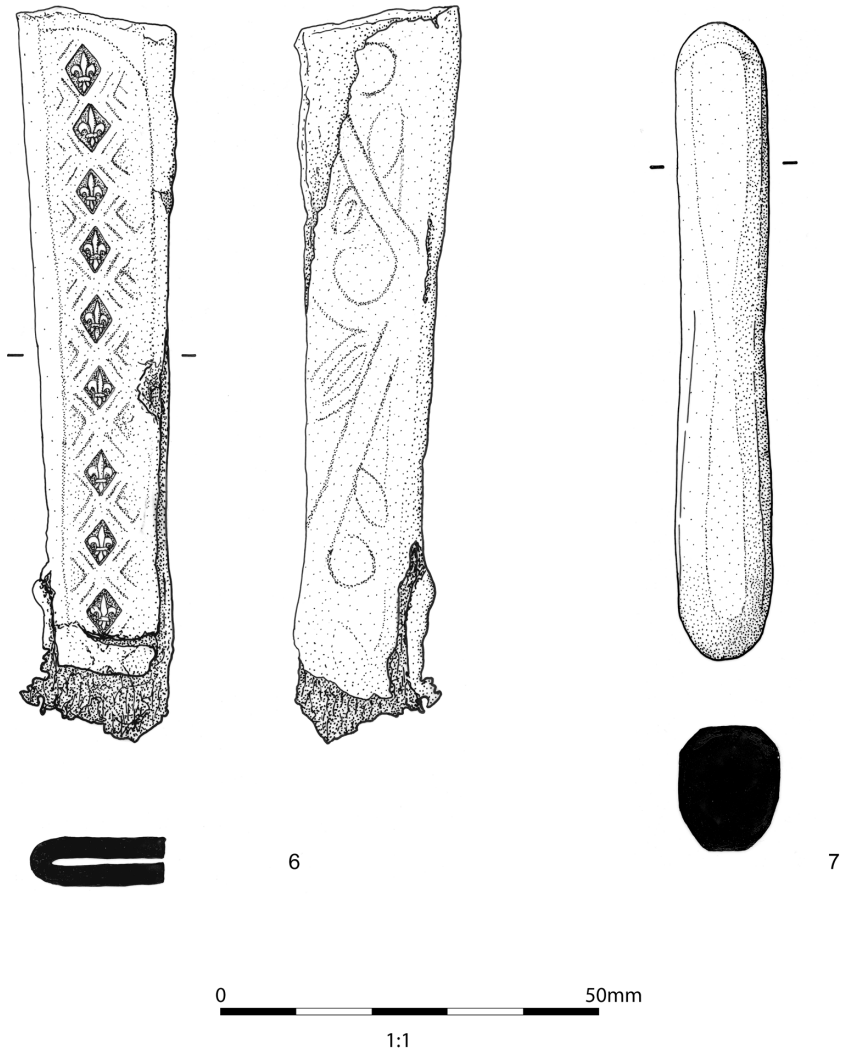

Fig. 13 6 Decorated knife sheath thirteenth to fourteenth century, and 7 medieval whetstone.

one-piece shoe; the front opening is closed by two thongs/laces. The edge of the upper is largely detached, but is stitched, with stitches at two or three per 10 mm. The surviving fragments of thongs are *c.* 6 mm wide. Poor condition, incomplete. L: 257 mm; W: 170 mm; Th: 2 mm
5068/1616, Phase 2a pit 5060, Medieval, probably late twelfth to thirteenth century

2 Turnshoe (5 fragments). Four fragments of upper, three of which are irregular, with little, if any, original edge surviving. The larger of these (2a) represents part of the quarters of a low boot, with the vertical back seam (edge/flesh whipped). Approximately 70 mm from the upper edge is a line of thonging probably intended to draw the shoe tight around the wearer's ankle. The fifth fragment is part of the sole (2b), probably the front, with a turned seam evident. Poor to fair condition, incomplete. L: 169 mm; W: 120 mm; Th: 2.5 mm
5199/1635, Phase 4a layer, late twelfth to thirteenth century

3 Turnshoe? (1 fragment). Probably part of the upper of a side-lacing ankle boot. Sub-triangular

panel with original edges surviving on three sides, one to its full original length. Two edges, meeting at right-angles, have edge/flesh whipped stitching at 4 stitches per 10 mm and was clearly intended to lay flat. The other surviving edge has widely-spaced thong holes. Good condition, incomplete. L: 225 mm; W: 113 mm; Th: 2 mm
5118/1632, Phase 2–4 well 5075, Medieval, probably late twelfth to thirteenth century

4 Turnshoe/Offcut (1 fragment). Thick sole, small size, worn and reused. Cut across waist and a careful disc *c*. 50 mm diameter removed at the ball of the foot. Right foot, slender with pointed toe. Good condition, complete. L: 138 mm; W: 70 mm; Th: 3 mm
5178/1628, Phase 2a pit 5164, possibly fourteenth century

5 Unidentified composite object (2 fragments). Fragment 5a: Irregular seamed fragment, one edge torn, the remaining five seamed. Fragment 5b: Irregular seamed fragment, seams surviving only on two edges. Fair condition, incomplete. Fragment 5a: L: 138 mm; W: 95 mm; Th: 2.5 mm; Fragment 5b: L: 154 mm; W: 134 mm: Th: 2.5 mm
5299/1698, Phase 2a pit 5314

Figure 13.6

6 Sheath (1 fragment). Top part of a small knife sheath made from thick leather folded in two and probably whip-stitched down the open side. This side is damaged and the stitching not clear. There are stamped panels on both sides: side 1 bears a row of concentric lozenges each enclosing a small *fleur-de-lis*, which runs down the length of the sheath; side 2 is decorated with a pattern of running foliage. Fair condition, incomplete. L: 98 mm; W: 20 mm; Th: 6 mm
5118/1634, Phase 2–4 well 5075, thirteenth to fourteenth century

Rope

A single small fragment of undated and unidentified plied vegetable fibre, probably part of a rope (5318/1545), was recovered from pit 5287 (Phase 2a).

Wood

In all, 41 fragments of wood were recovered, most structural, originating from the wooden structures on the site, and wood-working associated with their construction. Unfortunately, none were suitable for dendrochronological dating. Perhaps the most significant was the large fragment of wall plate and wattle infill from fill 5216 of pit 5303. It seems likely that this was demolition debris dumped into a midden pit. There was no other dating evidence from this context. Several other contexts produced woodworking debris generated by the conversion of timbers, for example a large 'notch and chop' fragment (5180) from pit 5164, and debris from pit 5288 (fill 5300), which probably indicates the cutting of simple joints.

Part of a turned bowl was found in pit 5164 (fig. 14.8; fill 5178). Turned wooden bowls and dishes were common objects, in use throughout the medieval period, although they seldom survive in the archaeological record. There are very few diagnostic traits to enable such objects to be dated, but a leather shoe sole from the same context suggests a thirteenth- to fourteenth-century date for the deposit. Part of a barrel head was recovered from layer 5225; pottery from the same context suggests a similar date range. The material is described in detail in the archive.

Catalogue of illustrated wood

Figure 14

8 Bowl (1 fragment). Turned bowl fragment. Simple profile, no footring, single internal groove. Fair condition, incomplete. Base diam: *c.* 75 mm; max wall thickness: *c*. 5 mm. Wall height unknown.
5178/1627, Phase 2a pit 5164

CERAMIC FINDS

A small group of 11 fragments of ceramic roof and floor tile (512 g) was recovered. Four pieces of roof and five of floor tile were distinguished, the remainder being largely featureless. The green-glazed roof tile fragments are all in a very gritty reduced fabric. They give some indication of the appearance of the outside of buildings although it cannot be determined whether they were used for the entire roof, or simply formed a capping for the ridge of a thatched roof. Roof tile was recovered from pits 5033 (fill 5012), and 5105 (fill 5101), the former probably dated to the fourteenth to sixteenth century. A single fragment was also found in stone culvert 5029 (fill 5026). The floor tile was recognised from small fragments, mainly in oxidised fabrics, some with a

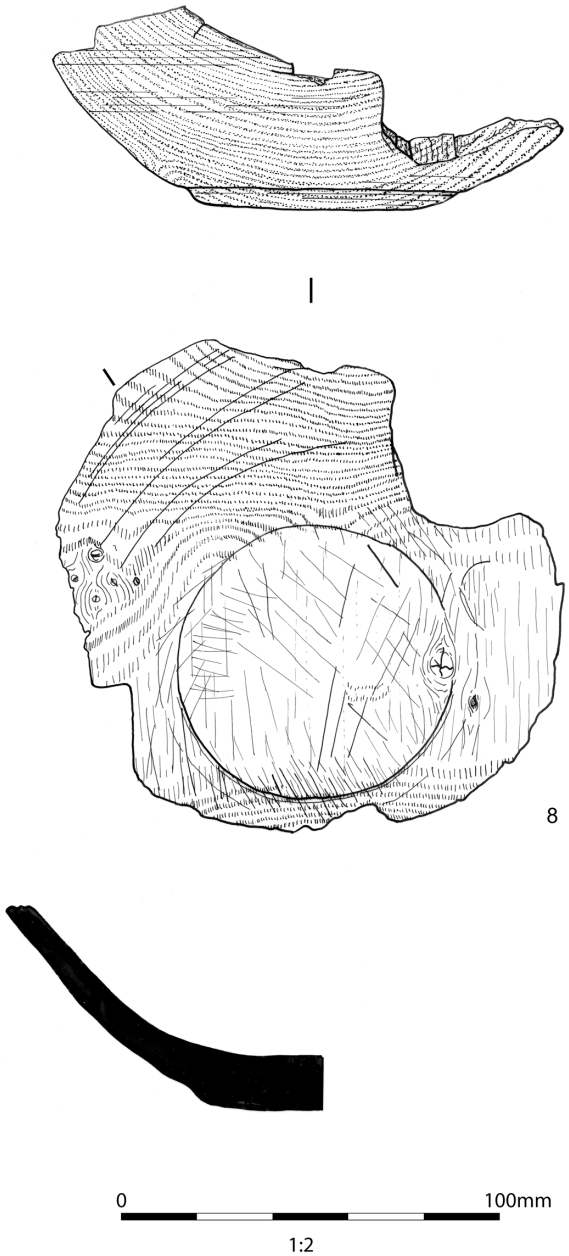

Fig. 14 8 Turned wooden bowl.

plain green glaze, but at least one with a white slip giving a yellow surface. This is badly worn, but probably this tile was also patterned. Fragments came from pit 5060 (fill 5081) and pit 5045 (fill 5034), both probably dating to the latter part of the fourteenth to sixteenth centuries. Again, the presence of decorative tiles, even if fragmentary and probably redeposited, presents evidence for high status buildings in the vicinity. It is likely that the presence of window glass and decorated floor tiles imply an ecclesiastical building, but there is growing evidence that a range of high status secular buildings, for instance merchants' houses, were glazed, and would also have required durable flooring.

PALAEOECONOMIC EVIDENCE

ANIMAL BONE

Andrew Bates and Gillian Jones

Introduction

In total, 321 animal bones were recovered from deposits dating from the thirteenth to approximately the seventeenth centuries. The material was in a good state of preservation, with loose teeth making up only 1.4% of the assemblage, a high percentage of loose teeth being characteristic of poorly preserved assemblages. The animal bone was identified and recorded by Gillian Jones, and the report compiled by Andrew Bates.

Methodology

The material was identified using the reference collection held by Gillian Jones, the mammal and bird collections at the Environmental Archaeology Unit (EAU), York, and the collection of deer bones held by P. Sadler. All parts of the skeleton were identified where possible, including long bone shafts, skull fragments, all teeth and fairly complete vertebrae. Sheep/goat distinctions were made using reference material and published work (Boessneck *et al* 1964; Lawrence 1980) and for young mandibles (Payne 1985). Detailed recording of species, condition, pathology and similar is provided in the archive.

The diagnostic zones used followed those described in Dobney and Reilly (1988). In general, measurements follow EAU protocol and von den Driesch's manual (1976) and, for antler, de Nahlik (1959). Tooth-wear development for mandibular teeth were recorded following Payne (1973; 1987)

Table 2 Number of Individual Specimens (NISP) recognised for each species, by broad phase.

	Medieval (13th to 14th century)	Medieval/Post-medieval (13th to 16th century)	Post-medieval
Mammal Species			
Cattle	47	12	20
Sheep/Goat	67	12	16
Sheep	7	3	2
Goat	2		
Pig	11	1	
Horse	2		1
Roe Deer	1		
Cat	7		1
Unidentified			
Large Mammal	47	14	27
Medium Mammal	25	5	8
Small Mammal	2		
Bird Species			
Domestic Fowl	2	1	1
Goose	4	1	2
Unidentified Bird	2	1	1
Total	192	50	79

for sheep, and Grant (1982) for cattle and pigs. Skull and horncores were described following Grigson (1976), Armitage (1982), and Armitage and Clutton-Brock (1976).

Quantification

The total number of animal bone fragments recovered during the excavation is low (see Table 2), but some interpretative comment can be made. The assemblage was separated into three broad stratigraphic phases; medieval, *c*. thirteenth to fourteenth centuries; medieval, *c*. thirteenth to sixteenth centuries; and late medieval/early post-medieval, *c*. fifteenth to sixteenth centuries and later. The majority of the material was recovered from pits.

Medieval pits

Table 3 gives a breakdown of the number (NISP) of animal bones by feature type. It must, however, be noted that most of the pits produced only a very small number of fragments, typically fewer than five. Two pits (5033 and 5060) produced significantly larger quantities of material, with a NISP of 49 and 23 respectively.

Table 3 Number of animal bones represented in medieval feature types.

Feature Type	Number of Features	NISP
Pits	18	185
Wells	1	3
Ditches	2	4
Drains	1	2
Foundations	1	3
Post Holes	1	3

As a result of the constraints placed upon excavation, neither pit was fully excavated. Both pits were ultimately used for the disposal of a mixture of domestic and other rubbish, for example, substantial amounts of vegetation, indicating garden rubbish. In pit 5060 the majority of the animal bone came from the uppermost, very organic, fill with only one cattle mandible fragment from a lower fill. A third collection, NISP 50, was recovered from medieval/post-medieval pit 5045, and represents all of the animal bone recovered from this phase.

Cattle and sheep/goat were consistently the most common species recovered from pit fills (see

Table 4 NISP of main domestic species recovered from Pits 5033, 5060 and 5045.

Species	Pit 5033	Pit 5060	Pit 5045
Cattle	8	15	12
Sheep/Goat	13	10	12
Sheep	3	1	3
Goat	1		
Pig		1	1
Total	25	27	28

Table 4). In general, cattle bone from pits was more fragmented, with fewer diagnostic zones being present per anatomical part. The assemblage from pit 5060 was dominated by meat-bearing bones of high food value, but this was not so clear in material from pits 5033 and 5045, where although meat bearing bones were still most frequent, metatarsals and phalanges, bones of the feet, also occurred.

The animal bone within these pits is thought to represent discarded domestic rubbish; this is also considered to be the case with the remainder of the assemblage. There is, therefore, no evidence for the deposition of material associated either with large scale primary butchery for sale, or the specialist industrial use of by-products, such as tanning or horn working.

Cattle

Cattle were recovered from all phases in numbers roughly equal to those of sheep/goat, although the high number of unattributed large mammal fragments may suggest that cattle were in fact under-represented. This arises from the fact that fragmented large mammal bones produce less diagnostic characteristics than bones from medium-sized mammals such as sheep/goat (Maltby 1996, 19). This is particularly relevant in well-preserved assemblages such as this, where there is a reduced chance of medium-sized mammals being under-represented by their bones having been completely destroyed.

Butchery marks were present, and included a single example of skinning marks on a first phalanx from pit 5033. Chop marks, associated with the dismemberment of carcasses for consumption, predominated. This was the case for both cattle and sheep/goat in all periods. Horned cattle were attested in the medieval period by the occurrence of a single horn core fragment.

Sheep/Goat

The majority of bones in the sheep/goat category are likely to be sheep rather than goat. Three mandibles were identified as sheep, and two other bones were probably sheep. The two goat bones were both horn cores which may have been traded, although this does not rule out the possibility of goat being present at the site. Eight mandibles from which the age of the individuals could be estimated were recovered from medieval contexts. These comprised one lamb of two or three months, two sheep in their second year, four mandibles from three individuals, probably in their third year, and one mandible from a somewhat older individual.

Pig

Evidence of pig keeping in the vicinity was attested by the presence of fragments from new-born piglets recovered from two medieval contexts (5002 and 5078), possibly from just two individuals. The twelfth to thirteenth centuries were a period when it is thought that most pork was brought into towns from rural areas (Maltby 1979), however, it would appear that individual households in the town could have kept pigs.

Other Mammals

There were only three occurrences of horse at the site. Medieval contexts produced single examples of a humerus and an astragalus, from drain 5161 and pit fill 5033 respectively, the humerus having been gnawed by a dog. An axis was recovered from post-medieval pit, 5098. Roe Deer was represented by a single tibia fragment from medieval pit 5060. No evidence for butchery was observed on these specimens.

Eight domestic cat bones were recovered from the site: seven limb bones from medieval pit 5164, probably come from a single individual, and a second cat was represented by a humerus from Phase 4a pit 5090.

Bird Species

The bird assemblage included a few specimens of domestic fowl and goose species. There were no signs of butchery, but all the fragments are likely to have been associated with table waste. Single bones of immature domestic fowl and goose were recovered from two separate medieval contexts (5002

and 5153 respectively), the latter suggesting the presence of domestic, rather than wild, species being bred at the site. The relative importance of one species over the other was unresolved, although geese have over twice the body weight of domestic fowl (Davis 1995). Typically, though, the importance of geese declined after *c.* 1500, and chicken predominate in later bone assemblages (Davis 1995).

Discussion

Interpretation of the sample above should be treated with caution, due to its size. In addition, it does not necessarily represent trends which could be regarded as common to Berwick-upon-Tweed as a whole. It may well be rather more locally representative, either of the immediate vicinity, or even individual burgage plots within the medieval and early post-medieval town.

All of the deposits of bone are considered to have been associated with domestic refuse. Beef appears to have been a major contributor to the diet in all phases, especially if considering the meat-weight of species, followed by mutton and lamb. Cattle meat-weight can be 11 times that of a sheep, although this assumes that whole carcasses are being exploited (Stallibrass 1998). Other products would have included milk, hide, marrow and grease. There was no direct evidence of cattle husbandry on the site, but there is historical and archaeological evidence of cattle husbandry associated with the town: Cow Gate, built as part of the defensive town walls ordered by Edward I after he first captured the town in 1296, was built to allow the inhabitants to take their cattle to pasture (Ryder 1992).

During the thirteenth to fourteenth centuries wool production was seen as one of the staples of the economy (Hinton 1993). Wool and hides were exported from Berwick in substantial quantities when the town was a Scottish Burgh, at which time it was one of Scotland's largest and richest towns, rather than an outlying English frontier town (Hunter 1982). Many of these goods would have been brought from further afield by road or sea. The sample size of this assemblage was too small to debate the relationship between medieval Berwick and its surrounding hinterland, but it is possible the adult sheep mandibles described above derive from animals surplus to maintaining rural wool flocks.

The relative importance of pork and fowl was difficult to assess from this assemblage, though both appear likely to have been bred at or close to the site. Pigs are likely to have been imported from rural areas for slaughter, and the animals exploited for their meat, hide and lard. Domestic fowl and goose would also have been exploited for their eggs, feathers, and fat, as well as their meat. The variety of bird species was perhaps fairly small in the earlier period. Other species of wild fowl may have been consumed, especially considering the town's coastal and riverine position, but which have not survived into the archaeological record. However, the small number of fragments, and lack of variety within the bird assemblage, as well as the single bone giving evidence for the consumption of venison, are together perhaps more likely to reflect the small size of the assemblage rather than to imply the presence of low status dwellings. It should also be noted that, although no dog bones were recovered, their presence is attested by gnawing marks on bones of other species.

A medieval assemblage, from excavation at New Quay, Berwick (Gidney 1999), included material dumped on the tidal foreshore of the river Tweed. The relative proportions of species represented are very similar to the assemblage discussed here, except that the foreshore produced a greater number of horse fragments. At the time the New Quay material was interpreted as the disposal of what was considered 'inedible faunal waste' (Gidney 1999, 102), citing the decree banning the human consumption of horse flesh by Pope Gregory III in 732 (Wilson and Edwards 1993). Horse may still have been regarded as a resource, for example for the skin, or as dog food, and was possibly consumed as a food resource by the peasantry, or at times of famine (perhaps during the numerous sieges of medieval Berwick). By the Victorian period little of a horse carcass was wasted, with animals ending life at the horse slaughterer (*ibid*). This may explain the lack of horse within this assemblage of domestic refuse, rather than being merely the product of a small sample size.

THE FISH BONE

Rebecca A. Nicholson

Introduction

Fish remains were recovered by hand during excavation, and, subsequently, from whole-earth soil samples sieved to 1 mm. In total 310 fish bone fragments were examined, of which 169 bones were considered identifiable. As the total number of bones was small, all were included in this study. All bones were well preserved, although some were covered in

concreted earth. There was nothing in their condition to suggest that small bones had been lost as a result of post-depositional decay.

Methodology

Bones were identified to genus and species where possible, using the author's own reference collection. Measurements were taken on several gadid skeletal elements: the articular, dentary, premaxilla, otolith, and atlas vertebra, following Wheeler and Jones (1976), Jones (1991) and Morales and Rosenlund (1979). Fish lengths were calculated using the measurements taken on the dentary (M1: dentary depth at foramen, M2 depth at symphysis), premaxilla (condyle width), and otolith (length) using the regression equations given in Jones (1991). As the assemblage was small, few bones were measurable, so fish sizes were generally estimated by subjective comparison with reference skeletons from fish of documented size. In the case of gadid taxa (cod-family), fish are described as:

Tiny	under 200 mm in total length
Small	200–350 mm in total length
Medium	350–600 mm in total length
Large	600–1,000 mm in total length
Very large	1.0–1.2 m in total length
Extremely large	over 1.2 m in total length

Flatfish are described as:

Small	200–300 mm in total length
Medium	300–400 mm in total length
Large	over 400 mm in total length

Bone condition was recorded using a numerical scale of 1–5, where condition 1 was excellent (as fresh), and 5 was extremely poor. Fragment size was recorded as a percentage of the complete bone represented by the fragment. These data are available in the site archive.

Identification and Interpretation of Species Present and Anatomical Distributions

Twenty-one samples contained fish remains, but most contained fewer than five identifiable bones. Full records of identification are available in the site archive. The richest samples in terms of fish remains were from pit 5142 (fill 5138, sample 1524) which contained some 130 fragments, and pit 5028 (fill 5030, sample 1503) which contained 58 fragments, from a range of species. Both these deposits were medieval. The sample from pit 5142 (fill 5138, sample 1524) proved particularly distinctive as all identified bones derived from large gadid fish. With the exception of seven caudal vertebrae from haddock (*Melanogrammus aeglefinus*), the recovered bones were from large, very large, or extremely large cod (*Gadus morhua*) and ling (*Molva molva*). All the ling bones were from the front part of the body: the head and the most anterior of the precaudal vertebrae. Butchery marks include knife cuts to the dorsal aspect of a supracleithrum, a chop which bisected a cleithrum and two chopped atlas vertebrae, indicative of beheading. Other cuts to precaudal vertebrae may have been inflicted during the 'splitting' of the fish prior to drying and salting. Chops through the symphysis of a dentary and a premaxilla condyle may have originated during hook removal. The butchery marks exhibited by the ling bones from Marygate are of similar types to those described by Henderson (1986) at Eyemouth. Cod was also identified from head bones as well as from anterior and posterior precaudal vertebrae. The distinctive nature of this assemblage, with the almost exclusive representation of large gadid heads and precaudal vertebrae (fig. 15), is suggestive of a specialist activity: perhaps the processing of these fish for drying and possible export as stockfish.

The sample from pit 5028 (fill 5030, sample 1503) contained a more diverse assemblage. Species identified included wolf fish (*Anarhichas lupus*), salmon or its close relative the sea trout (Salmonidae), mackerel (*Scomber scombrus*) and gurnard (Triglidae) as well as cod, haddock and ling. Unlike the assemblage from pit 5142 (fill 5138, sample 1524), there was no evidence to indicate a specialist origin for the assemblage in terms of fish processing. Wolf fish, also known locally as catfish, is common around the coasts of Britain, living at depths of 60–300 m. The flesh of wolf fish is white and firm, and the fish is frequently caught by anglers (Wheeler 1978, 289–90). Gurnards, too, make good eating, and can be caught by anglers; grey gurnards (*Eutrigla gurnardus*) feature regularly in fishmarkets today in the north of England. As an oily fish, mackerel, like herring, turns rancid quickly if not preserved. Whilst mackerel can be pickled and smoked, it was not, like herring, the focus of a major industry in medieval times. Mackerel are schooling fish, found near the surface of the sea; they can be captured on hooks or in nets but were most likely consumed fresh and were not, therefore, widely marketed.

Otherwise, most samples contained few bones, in fair or good condition and mainly from cod (*Gadus morhua*). Of the other taxa, ling and haddock were present in several samples, while saithe (*Pollachius virens*), thornback ray (*Raja clavata*), dab (*Limanda*

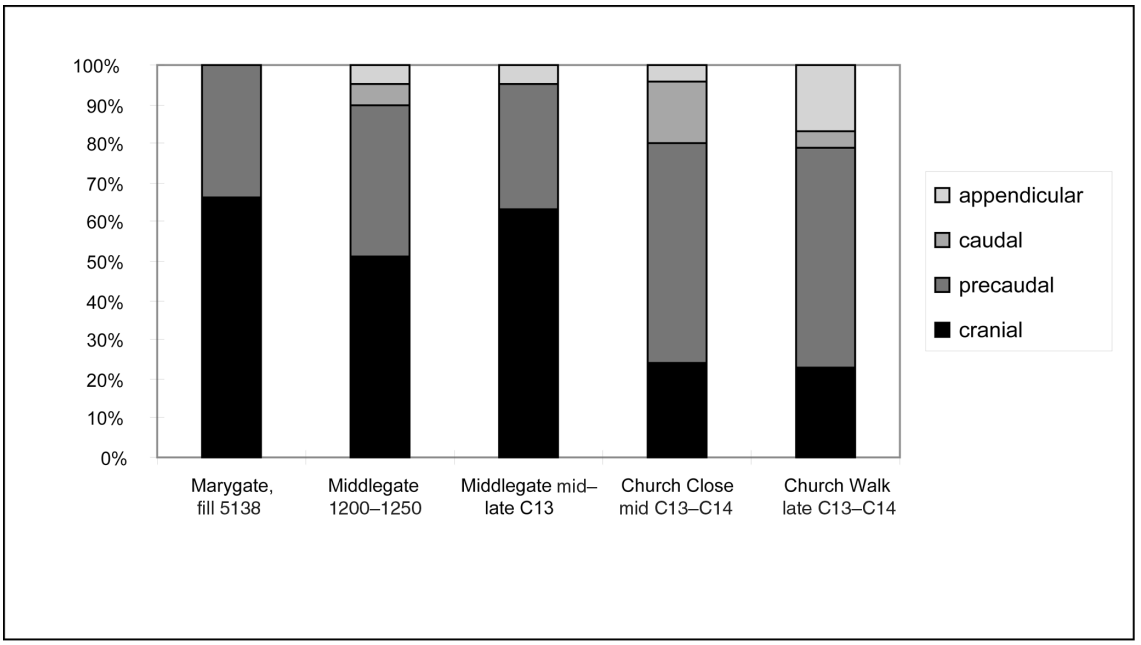

Fig. 15 Body part representation for cod and ling from Marygate, fill 5138 (sample 1524) compared with cod remains interpreted as representing processing waste from medieval sites in Hartlepool (Middlegate and Church Walk; Locker 2001). In most cases the processing (by drying and salting) of cod and ling would result in the retention of bones from the appendicular and caudal region within the body of the fish while the cranial and precaudal elements would be discarded at the processing site.

limanda) and right-sided flatfish (Pleuronectidae) were identified in individual samples. All these fish were commonly fished in medieval times and occur regularly in fish assemblages throughout Britain.

The Wider Significance of the Assemblage

With the exception of the anadromous salmon, all the fish were exclusively marine. Cod, ling and haddock are all members of the Gadidae (cod family), and have been the object of intensive fishing for many centuries. Right-sided flatfish (Pleuronectidae), including plaice, flounder, and dab, are also commercially significant species.

Dried and salted stockfish was a staple of the British medieval diet. Whilst the small size of the assemblage did not permit its unequivocal identification, the specialised assemblage from pit 5142 (Phase 1, sample 1524) is suggestive of the remains of butchery debris from salting and drying fish, perhaps destined for export. Large ling and cod, processed and marketed as stockfish, had the heads and anterior precaudal vertebrae removed so that only the frames remained, with the cleithrum left in place to support the body of the fish. Ling in particular has a northerly distribution and in the North Sea is seldom found south of the Yorkshire coast. Ling bones recovered archaeologically from sites in southern England are therefore usually considered to be the remains of imported stockfish. Documentary records demonstrate the importance of stockfish in the diet of both coastal and inland communities (Locker 2001), but surviving records from Berwick indicate that in the fourteenth century the town received dried fish from England in order to supply the English garrisons (Hunter 1982, 84). The archaeological evidence from Marygate suggests that fish sent to the garrisons could also have been processed locally.

The dominance of bones from large gadid fish is a common feature of medieval fish assemblages recovered by hand during excavation. Previous excavations in Berwick, at Oil Mill Lane, Walkergate and Ravensdowne, did not include a sieving programme,

so the exclusive representation at those sites of cod (Seller 1982) is unsurprising. However, the Marygate material is unusual in that very few bones from smaller fish were recovered even though soil samples were wet sieved to 1 mm. Given this fact, the absence of herring (*Clupea harengus*) and eel (*Anguilla anguilla*) is particularly noteworthy, as these fish are usually seen in medieval urban fish bone assemblages where sieving has been undertaken. Excavations of parts of the medieval quayside at Newcastle upon Tyne produced a much more diverse fish assemblage than that recovered from Marygate, with herring commonly represented at both the Crown Court and Queen Street sites (Nicholson 1988; 1989). At neither site was there any convincing evidence for fish processing, and the remains appeared to represent material entering the port to be sold at local markets.

Medieval sites in Hartlepool, however, did produce evidence suggestive of fish processing. At Southgate deposits dated to the twelfth century included cod bones clearly indicative of the remains discarded after stockfish production, and at Church Walk, Church Close, and Middlegate the dominance of gadid heads and precaudal vertebrae in deposits dating from the twelfth to fourteenth centuries is also suggestive of processing waste rather than consumption debris (Locker 2001, 216–7). Figure 15 compares the body part representation from large gadid fish recovered at Marygate sample 1524 with examples of cod from medieval sites in Hartlepool. The dominance of cranial elements at Marygate and the Hartlepool sites is clear, with the Marygate sample (1524) containing even fewer post-cranial elements than does the Hartlepool material, suggesting that fish processing was taking place at Marygate in Phase 1.

A substantial assemblage of fish remains recovered from the nearby medieval fishing settlement at Eyemouth was dominated by bones from large ling, cod and haddock, with lesser quantities of smaller gadids, herring, gurnards, flatfish, elasmobranchs, mackerel, and eel also represented. The relative numerical scarcity of bones from herring and eel here, too, is unlikely to be explicable in terms of poor preservation as the author had alleged, as the condition of the bones was described as 'excellent' (Henderson 1986). In fact, as at Marygate, the scarcity of herring and eels seems more likely to indicate a local fishing strategy which concentrated on large gadid fish. An inventory dated 1374 lists the boats fishing from Eyemouth for Coldingham Priory as 'two large fishing boats, a small fishing boat and a skiff and cobble each with four oars' (Dixon 1986, 2). The assemblage from Marygate could easily represent fish caught from such vessels.

Not only gadid fish were processed and traded in medieval Britain. Herring were pickled, salted and smoked for export in huge quantities from at least the tenth century (Cutting 1955) and these fish were the object of major seasonal fisheries in Scotland and off the coasts of Northern England, and in East Anglia. In the early eighteenth century, records show that salmon from the Tweed were cured and pickled in Shields for sale in London; dried salmon from Scotland were also a significant export in the sixteenth century (Locker 2001, 50). The absence of herrings and eels at Marygate is likely to indicate that the excavated pit fills did not include general fish refuse from domestic consumption (table waste), since herrings were cheap, commonly eaten, and undoubtedly fished locally during the herring season. Bone preservation was generally fair to good and it is extremely unlikely that even small bones would have been entirely destroyed. It is possible that much table waste was disposed of elsewhere. Fish carcasses may be fed to dogs, cats, or pigs and passage through the gut of any of these creatures will leave few remaining fragments (Jones 1986). The relative scarcity of fish remains in fills associated with domestic dwellings may not, therefore, necessarily reflect minimal levels of fish consumption. Fish remains are more likely to be recovered from deposits associated with fish processing or marketing, where large quantities of processing waste are disposed of. Where fish waste is identified from domestic dwellings, it may reflect urbanisation and the reduction of domestic animals kept within the house and associated plot.

Conclusions

Despite Berwick's situation, on the northern bank of the Tweed estuary, there has, to date, been little archaeological evidence to elucidate the significance of the fishing industry to the development of the medieval and post-medieval town. Thus, although small, the fish assemblage from Marygate offers some important insights into the kind of fishing practised around the coasts of north-east England during medieval times.

There is no evidence for fishing on a commercial scale, but it seems likely that local boats targeted large gadid fish, which were landed at Berwick and other ports along the north-east coast. At least a proportion of these fish appear to have been processed by drying, and probably also salting, for

Table 5 Features and contexts analysed for charred and waterlogged plant remains.

Feature	Context	Fill	Type	Phase
5028	5027	upper	Pit	1
5142	5138	middle	Pit	1
5060	5061	upper	Pit	2
5060	5068	middle	Pit	2
5060	5077	middle	Pit	2
5060	5081	lower	Pit	2
5164	5163	upper	Pit	2
5294	5277	sole fill	Pit	2
5314	5299	sole fill	Pit	2
5018	5025	middle	Pit	2–4
5018	5036	middle	Pit	2–4
5039	5038	sole fill	Pit	2–4
5075	5119	lower	Stone well	2–4
5090	5089	lower	Pit	4
5267	5268	lower	Pit	4

marketing either locally or further afield. Bone preservation was good, and the area behind the Tweed waterfront clearly offers potential for future palaeoeconomic reconstruction should the opportunity for excavation arise.

CHARRED AND WATERLOGGED PLANT REMAINS

Elizabeth Huckerby

Introduction and quantification

During the excavation, 31 bulk soil samples of 10–40 litres were taken for palaeoenvironmental analysis. These derived from a variety of discrete and well-sealed medieval features, mainly pit fills. Initial assessment for charred and waterlogged remains demonstrated a high potential for the analysis of waterlogged plant remains (LUAU 2000). Sixteen samples were selected for further study, in consultation with the excavator, Nick Hair, and Jacqui Huntley, English Heritage regional scientific advisor for North East England.

All but one of the samples selected were from pit fills which contained well-preserved waterlogged plant remains and had the potential to provide information about the function and purpose of these features over the life of the site. The exception was a fill of well 5075. Table 5 shows the contexts, features and phases from which the samples were taken.

Methodology

The samples were hand floated, the flots collected on a 500 μm mesh and air dried. The flots were examined with a Leitz/Wild stereozoom microscope and all identifiable plant material was recorded and identified as far as possible. Identification was carried out using modern reference material held at OA North and at the Department of Archaeology, University of Durham. Plant nomenclature follows Stace (1991). Charred plant remains were counted, as there is a mathematical relationship between, for example, the number of glume bases and cereal grains, which can assist the interpretation of the nature of the site as a producer or consumer. Waterlogged remains, which are preserved in anaerobic conditions, were scored on a scale of 1 (rare) to 5 (abundant). The full data tables at context level are to be found in the site archive.

Results

All contexts analysed contained very abundant waterlogged material and some charred plant material was identified in most samples.

Phase 1

Three samples from this phase were examined from three pits (5028, 5142 and 5042), which were isolated from other stratigraphic sequences. The flots from these early pits contained considerably more abundant charred plant remains than others, including a

range of cereal grains. Oats (*Avena*), barley (*Hordeum*), both spelt/emmer-type (*Triticum spelta/dicoccum*) and bread (*T. aestivum*) wheat, and occasional grains of rye (*Secale*) were identified. The cereals were recorded within an assemblage of charred plant remains which included arable weed seeds, for example pale persicaria (*Persicaria lapathifolia*) and common chickweed (*Stellaria media*), plants from grassland communities, plants from heathland, including heather (*Calluna vulgaris*) shoots, flowers, and seeds, cross-leaved heath leaves (*Erica tetralix*), bracken fronds (*Pteridium aquilinum*) and burnt rush/sedge stems (*Juncus/Carex*). Plants such as bracken and rush/sedge were frequently used as floor covering, and might easily have been burnt and disposed of in a domestic rubbish pit.

Waterlogged plant remains were also abundant in the samples and produced a mixed assemblage of taxa. Arable weeds from both nutrient-enriched damper soils, for example pale persicaria and common chickweed, and more acidic soils, for example corn cockle (*Agrostemma gigatho*), corn spurrey (*Spergula arvensis*), and corn marigold (*Chrysanthemum segetum*), were recorded. Ruderal plants were also identified, including large numbers of weld seeds (*Reseda luteola*), a plant of base-rich waste or cultivated soils. This species has been widely used in the past as a yellow dye, being mentioned by Hakluyt in 1582 as cheap and easy to obtain (Walton 2001, 334). There were also significant quantities of heather shoots and flowers. Heather is a versatile plant, being used as roofing material, animal bedding and fodder, as well as being used as an alternative yellow dye (Dimbleby 1978, 51–2). Some grassland and wet ground taxa were also recorded, but they were not abundant.

Phase 2

In total seven samples were analysed from four pits (5060, 5164, 5294, and 5314) assigned to this phase. The presence of large numbers of fly puparia in samples from all but the earliest fill of pit 5060 suggests that the fills in these features accumulated over a moderately long period of time, and that the pits were left open to the elements. There is some suggestion of domestic waste from other classes of find, with mammal bone fragments and fish bone identified. Some charred plant remains, including cereal grains, were recorded in these fills but the values were lower than in the preceding phase. Oats was the major cereal represented, together with some barley and wheat. As in Phase 1, heathland plants were important with abundant heather shoots and flowers, which together suggest that it was gathered in the late summer. Again, arable weeds were an important component of the assemblage, with very large numbers of seeds of small nettle (*Urtica urens*) recorded in all four pits. There were similarities between the pit fills of this phase but there were also significant differences between the plant assemblages. For instance, the fills from pit 5060 contained fewer arable weeds, but had a greater representation of grassland and wet ground taxa, in the upper (5061) and lower (5081) contexts. The two middle fills (5068 and 5077) had large quantities of heather fragments (both flowers and shoots) and in the case of 5077 these were burnt, which perhaps suggests that they may have been used as animal bedding, or were from burnt thatch.

The identification of swine-cress (*Coronopus squamatus*) fruits is more unusual, as the plant is only infrequently preserved in archaeological deposits. Today this plant grows on waste ground, paths and around gateways (Stace 1991). Its presence suggests, therefore, that this pit was located near to either a path, gateway, cobbled road, or waste ground. Another taxon from a similar habitat, black henbane (*Hyoscyamus niger*), was also recorded; this is poisonous.

In pits 5164, 5294, and 5314, food taxa, both exotic and native species, were abundant. The stones of cherry (*Prunus cerasifera*) and plum (*P. domestica insititia*), the pips of bilberry (*Vaccinium myrtillus*), fig (*Ficus carica*), elderberry (*Sambucus nigra*), and blackberry (*Rubus fruticosus*), and poppy seeds (*Papaver somniferum*-type) were all well represented and suggest the presence of some faecal material. The charred barley grains and abundant straw (preserved by waterlogging) may be indicative of more general domestic rubbish dumped in the same pit.

In addition, pits 5294 and 5314 contained abundant flax seeds (*Linum usitatissimum*). Flax is a plant that can be utilised not only for its fibres, but also for the production of linseed oil, and in food. If it was being grown for the production of linen, the abundant weld and heather seen in many of the samples may well have been used as dyes.

Large numbers of seeds from plants growing on cultivated ground were recorded and included fat-hen (*Chenopodium album*), corncockle, and corn spurrey seeds. These seeds perhaps provide evidence of gardening rubbish. This varied plant assemblage suggests that these pits were used for the disposal of a wide range of waste, mainly vegetable rubbish, and were in this akin to a modern compost bin, but

also served for the disposal of some cess and possibly debris from the linen industry.

Phase 4

Fills were analysed from two pits, 5267 and 5090. A few cereal grains were recorded in the fill of pit 5090, but there were none in that of pit 5267. The presence of fly puparia again suggests that both pits were open for long periods. The plant assemblage from pit 5267 included many arable weeds, for example corn cockle, corn spurrey, pale persicaria and small nettles, but that from pit 5290 had appreciably fewer species, except for abundant seeds of shepherd's purse (*Capsella bursa-pastoris*). An increase in the representation of ruderals, for example selfheal (*Prunella vulgaris*) and stinging nettle (*Urtica dioica*), and grassland and wet ground taxa, for example sedges (*Carex* spp), celery-leaved buttercup (*Ranunculus scleratus*) and marsh marigold (*Caltha palustris*), perhaps suggests that the area may have been appreciably damper and less well cultivated during Phase 4. Heather shoots and flowers were again plentiful, suggesting that heather was gathered in late summer, and bilberry was also recorded.

Phase 2–4

Four samples were analysed. Three were from the fills of pits 5039 and 5018, and one from the fill of well 5075. All of the samples, except that from pit 5039, had abundant fly puparia suggesting that, like other pits at Marygate, they were left open and that the fills had accumulated slowly. Charred cereal grains, including bread wheat, oats, barley, and rye, were recorded in all three features but were more abundant in the sample from pit 5039. Other economic plants identified included fig pips and flax. These plants, together with fish and mammal bone, suggest the disposal of domestic rubbish. Again heather was abundant, except in the fill of pit 5039. Large numbers of arable weeds were recorded, especially in the lower fill (5025) of pit 5018, when they were exceptionally rich, and included corn cockle, corn spurrey, and wild radish (*Raphanus raphanistrum*). Ruderals and plants of wet ground indicate that some of the waste in these features may be from cultivation debris and some from the more general environment.

Discussion

The archaeobotanical record from Marygate has a number of features that are common to all phases of activity on the site. Blackberry and elderberry pips, which are normally to be found on most archaeological sites, were absent, except in the fill of pit 5164 (Phase 2). This absence suggests that, during the medieval period, the area had been cleared of scrubby vegetation, and, when considered together with the ubiquitous record of arable weeds and ruderals, it provides good corroborative evidence for the suggestion of a cleared and cultivated environment to the rear of buildings on Marygate.

The high values of heathland taxa in most contexts from the site, in particular heather, but also cross-leaved heath, bracken, and bilberry, suggest that they were important components of the economy of Marygate. The heather and heath may have been used as a roofing material, animal bedding, fodder, or in the dyeing industry. Heather flowers and bracken can both be used in the dyeing process (Dimbleby 1978, 51–2) and they were found at Marygate alongside flax and stinging nettles, both of which are valuable sources of plant fibres (Dimbleby 1978, 47), and weld, which is a valuable source of yellow dye. This assemblage might indicate the production and dyeing of vegetable fibres or textiles. Certainly, linen was produced throughout the North East during the medieval period (Walton 2001, 348).

Cereals were recorded in most fills but were not generally abundant and there is little evidence of crop processing. Oats, wheat, barley and rye were all recorded, as is the case at other medieval sites in the north-east of England (Huntley and Stallibrass 1995, 64–75). Other food plants although not abundant were identified in some contexts, and included cherry and plum stones, fragments of hazelnuts and walnuts, and fig pips. A single grape pip was identified in the well fill. Fish bones and marine molluscs were also present.

The assemblage of arable weeds recorded at Marygate supports the evidence from other medieval sites in Northern England that sandy acidic, heavier clay and nutrient-rich soils were being cultivated (Huntley and Stallibrass 1995, 64–75; Huckerby 2003). There is a notable scarcity of archaeobotanical data from medieval sites in Northumberland (Huntley and Stallibrass 1995), and thus the Marygate assemblage is of considerable regional significance, especially as Berwick was a settlement of historical and economic importance during the medieval period. Apart from sites in Newcastle (Huntley 1988; O'Brien *et al* 1989; Huntley and Stallibrass 1995, 64–75; Huntley and Hall in prep), the author is only aware of a few others in the county, for example Oil Mill Lane, Berwick (Huntley 1996; Huntley and Hall in prep), two sites

on Lindisfarne (Huntley and Stallibrass 1995, 64–75) and at the Hirsel (Huntley 1984).

The site at Newcastle Crown Court (O'Brien *et al* 1989) produced a similar assemblage of charred and waterlogged plant remains with large numbers of arable weeds and, as at Marygate, huge numbers of weld seeds, which it was suggested may have been associated with dyeing. The Marygate assemblage, therefore, not only provides interesting parallels with other urban sites in Newcastle, but also extends the archaeobotanical record to the most northerly part of Northumberland, and thus, England.

DISCUSSION

Twelfth to fourteenth centuries

The excavation suggests the existence of buildings on the Marygate frontage from perhaps as early as the late twelfth to early thirteenth century (Phase 1, Structure 1, fig. 16). The three closely-spaced post holes or post pits are good evidence for one wall of a timber building, sited close to the modern street frontage. Given that the modern line of Marygate prevented excavation to the south-west, it is difficult to judge whether the features represent a front or rear wall, or an internal subdivision. However, as post pits 5109 and 5147 may represent a rear wall further to the north-east, this would suggest that a structure measuring at least 6 m by 4 m lay on the line of the modern frontage, perhaps with its gable-end to the street. Relatively little was recovered from these features, and although the pottery found centres on the thirteenth to fourteenth centuries, it could be derived from the destruction rather than construction of the building. The dating of Structure 1 is further complicated by the presence of three large pits within its proposed footprint, 5042 having been attributed to the twelfth to fourteenth centuries, and 5142 and 5028 probably lying towards the later part of that range. It is possible that the structure was built first, perhaps in the twelfth or thirteenth century, and the pits were dug following its abandonment. This might correlate with historical evidence for the onset of decline and dereliction in the fourteenth century, as a probable result of the hostilities between England and Scotland (Cambridge *et al* 2001, 85–86). The use of earthfast timber posts rather than sill beams perhaps confirms that the building was a relatively early structure.

Fourteenth to sixteenth centuries

Away from the street frontage, most features either contained fourteenth- to sixteenth-century pottery, or were phased on stratigraphic grounds. Features lying within Trenches 1 and 2 have been subdivided on stratigraphic grounds into Phases 2, 3, or 4, although there is likely to be a chronological overlap with Phase 1. In Trench 1, a significant group of pits (Phase 2a) predated the north-east to south-west division of the site, which was represented by the construction of the masonry foundations of Structure 2 (Phase 3a, fig. 16). The substantial nature of the foundation, especially at the north-east end, suggests that it supported one wall of a building running back from the street frontage, although the restricted size of Trench 1 meant that little can be said about its form, or whether it was aligned with a tenement boundary. It does, however, appear to have been terraced into the gentle slope, the foundation cutting deposits to the north-west, whilst to the south-east dumps of rubbish accumulated against the masonry. A fifteenth- or sixteenth-century pit in Trench 1 (Phase 4a) appeared to postdate this foundation, as did several fourteenth- to sixteenth-century pits in Trench 2 (Phase 4b), confirming its medieval origin. It is not clear how long the building remained standing, as robber trench 5087 (Phase 5) contained little dating evidence, although a sixteenth-century sherd suggests a later date, perhaps during the seventeenth- and eighteenth-century renewal of Berwick's fortunes. The foundation shows a close correlation with the south wall of a building depicted on the 1855 Ordnance Survey Map, but Wood's map of 1822 appears to show a different building alignment, strongly suggesting that the 1855 building was not of medieval origin. However, the 1822 map is of relatively small scale, and its accuracy may be questionable.

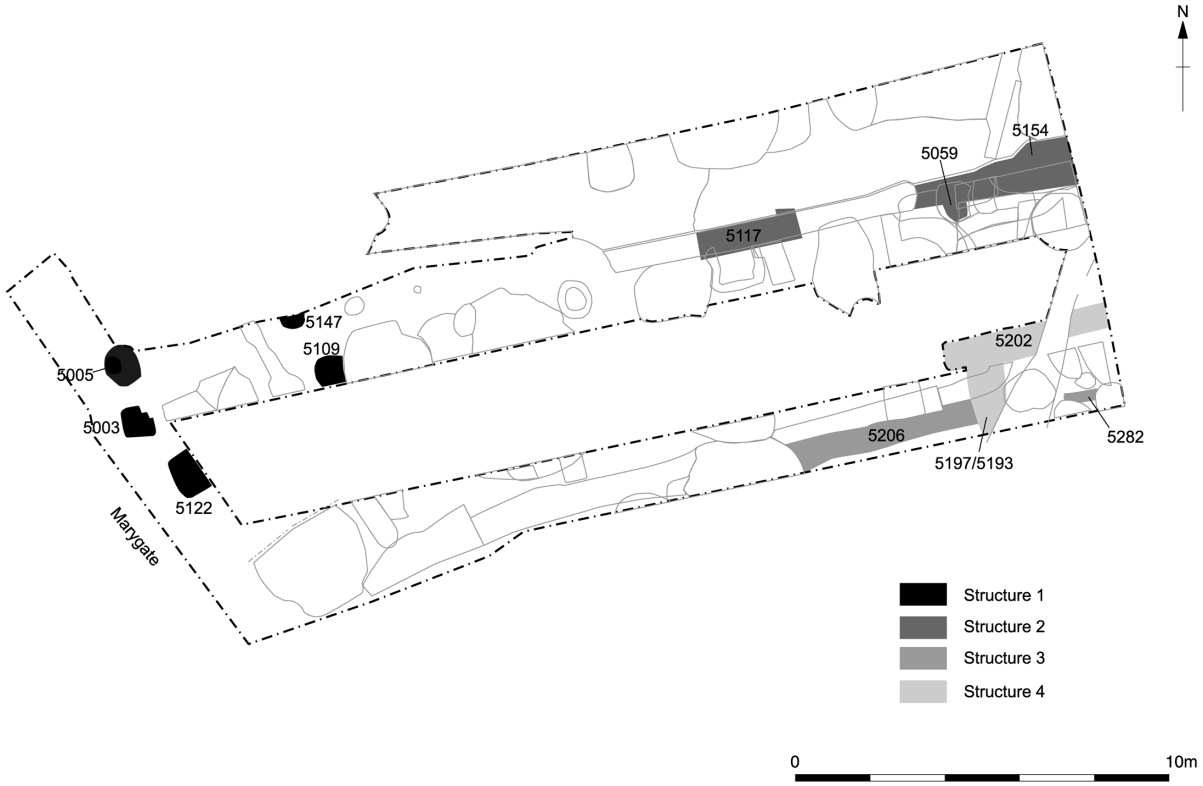

Fig. 16 Showing location of Structures 1 to 4.

The fourteenth- to sixteenth-century stratigraphic sequence in Trench 2 again showed numerous pits dug both before and after the establishment of ditch 5201, a north-east to south-west aligned plot division (Phase 3b), although the creation of the ditch cannot be correlated exactly with the construction of Structure 2 in Trench 1. Interestingly, the ditch continued the line of the rear walls of properties shown further east, fronting onto the north-west side of Narrow Lane in 1855 (Ordnance Survey 1855; fig. 3). The alignment did not survive within the excavation area, but it is possible that it marks the boundary of an early burgage plot on Marygate, which constrained the development of properties when Narrow Lane was established. At least one vertical timber suggested that there had been a fence in the base of the ditch.

The latter part of the Trench 2 sequence (Phase 4b) saw the erection of Structure 3 to the south of ditch 5201, further pit digging, and the construction of a stone building, Structure 4 (fig. 16). The latter was again difficult to date precisely; three sherds of seventeenth-century pottery were recovered from the disturbed remains of the south-west wall, but an earlier origin is also possible. The masonry may represent the remains of a building fronting onto Narrow Lane, and was probably separated from Structure 2, if it still stood, by a courtyard.

Economy and Environment

Pits were by far the most common features recorded during the excavation, with pit digging continuing throughout the medieval period. Often, highly organic fills containing

pottery, animal bone, and fragments of leather, suggested that pits had been used for rubbish, though it was rarely possible to demonstrate that this was their primary purpose. In a few instances, they clearly served a specific function: a stone-lined well (Phase 2–4), stone-lined cess pit (Phase 2a), and two pits linked by a gully suggestive of the storage and management of fluids (5267 and 5280, Phase 4b) were recorded. Analysis of bulk soil samples taken from pits has provided valuable evidence for activities conducted on or near the site. Two Phase 1 pits contained large amounts of fish bone, a sample from 5142 yielding almost exclusively the cranial remains of large or very large fish of the cod family, suggesting the disposal of waste from the specialist production of dried and salted stockfish, rather than table waste. Several pits from Phases 1, 2, and 4 contained abundant shoots and flowers of ling heather, which has a variety of uses, including dyeing. These features included Phase 4b pit 5267, which it has been suggested was used in handling fluids, perhaps during the dyeing process. More likely evidence for dyeing was found with the recovery of very large quantities of weld seeds from Phase 1 pit 5028, although it must be acknowledged that it was the stems and leaves of the plant, rather than the seeds, from which the dye derived.

The macrobotanical assemblage was notable for the abundant evidence for arable weeds. This is thought to indicate widespread gardening activity in the immediate vicinity, and lends credence to the impression given by the 1570 map that extensive cultivation plots lay behind the buildings on the street frontage. The animal bone assemblage recovered from the pits was too small to address wider questions regarding medieval Berwick and its hinterland, but it is still of some interest. It seems to have derived from the disposal of domestic rubbish rather than butchery, and beef is the most important meat represented amongst this assemblage. Bones from new-born pigs within a Phase 1 post pit provide relatively rare evidence for pig breeding within a medieval town, and add to the impression that the character of the backplots in the vicinity of the site may have been relatively agricultural.

Dating

The lack of precise evidence has hampered the dating of the stratigraphic sequence, and many features can only be attributed with confidence to the broad sweep of the fourteenth to sixteenth centuries. A considerable quantity of the late twelfth/earlier thirteenth- to fourteenth-century pottery is regarded as residual, which may be surprising in view of the generally good condition of the pottery. Rubbish pits were often cleaned or re-dug, and even if cut features originally served a different purpose, they were often backfilled in the course of midden clearance, possibly using material that had accumulated some considerable time before. Equally, as the date ranges are broad and overlapping, it could be taken to suggest that activity on the site was concentrated in the fourteenth century. Certainly, assemblages of specifically fifteenth- to sixteenth-century date were rare, and post-medieval artefacts of all types were also rare, perhaps in part reflecting a lack of open ground suitable for waste disposal at that date, or a change in methods of disposal, and the possibility that the precursor of Narrow Lane ran through the excavation area.

CONCLUSIONS

The excavation has done much to advance archaeological knowledge of Berwick, especially considering the restricted area available for full excavation. A sequence of activity can be suggested, commencing possibly in the twelfth century, encompassing early development of the Marygate frontage, subsequent abandonment, and then the construction of buildings running into the backplot in the later part of the medieval period. It would seem likely that these events mirror the general ebb and flow of occupation within Berwick. The main core of the settlement appears to have grown during the twelfth century, then undergone decline in the fourteenth century due to external political

and military pressure (Cambridge *et al* 2001, 83–85), followed by regeneration in the seventeenth century. The project also highlights the crucial importance of protecting or investigating future sites of potential development within the town, especially where, as at Marygate, organic deposits may be well preserved.

ACKNOWLEDGEMENTS

The excavation was conducted by Dan Atkinson, Zoe Clark, Chris Healey, and Chris Swain, supervised by Nick Hair and directed by Richard Heawood. Alan Lupton provided project management. OA North are also grateful for advice provided by Caroline Hardie (previously of Northumberland County Council) and for the assistance of Sara Rushton (Northumberland County Council Conservation Team Leader), and particularly for her help in securing post-excavation funding. We also thank Stuart Robertson (Consultant Archaeologist), and Jacqui Huntley and the Environmental Service of the University of Durham who permitted use of their reference collection. This report was written by Richard Heawood and Christine Howard-Davis, illustrations were by Emma Carter and research by Lynne Johnson. Figures were compiled by Carol Allen, who also managed the post-excavation analysis and edited the report.

The publication of this paper was aided by a generous grant from the Archaeology and Building Conservation Service of Northumberland County Council.

ANON, 1570 *The True Depiction of Her Majesty's Town of Berwick*.

ARMITAGE, P. L. 1982 'A system for ageing and sexing the horncores of cattle from British post-medieval sites', in R. Wilson, C. Grigson. and S. Payne (eds), *Ageing and Sexing Animal Bones from Archaeological Sites*, BAR Brit Ser, 109, Oxford, 37–54.

ARMITAGE, P. L. and CLUTTON-BROCK, J. 1976 'A system for classification and description of the horn cores of cattle from archaeological sites', *Journal of Archaeological Science*, 3, 329–48.

ATKINSON, D. and FOREMAN, M. 1996 'The Leather', in M. Foreman, *Further Excavations at the Dominican Priory, Beverley*, 1986–1989, Sheffield.

BAIN, J. 1881 *Calendar of Documents Relating to Scotland*: Vol I, 1108–1272, Edinburgh.

BOESSNECK, J., MULLER, H.-H. and TEICHERT, M. 1964 'Osteologische Unterscheidungsmerkmale zwischen Schaf (*Ovis aries Linne*) und Ziege (*Capra hircus Linne*)', in *Kuhn-Archiv*, 78, 1–129.

BOWN, L. 1985 'The Pottery', in D.M. O'Sullivan, 'An excavation in Holy Island Village, 1977', *AA*[5], 13, 47–80.

CAMBRIDGE, E., GATES, T. and WILLIAMS, A. 2001 'Berwick and Beyond: Medieval religious establishments on the North Western margin of Berwick-upon-Tweed – problems of identity and context', *AA*[5], 29, 33–94.

CARVER, M. O. H. 1974 'Excavation in New Elvet, Durham City', *AA*[5], 2, 91–148.

COWGILL, J., DE NEERGARD, M. and GRIFFIFTHS, N. 1987 *Knives and Scabbards, Medieval Finds from Excavations in London: 1*, London.

CRUMMY, N. 1988 *The Post-Roman Small Finds from Excavations in Colchester 1971–85*, Colchester Archaeological Report, 5, Colchester.

CUTTING, C. L. 1955 *Fish Saving: a History of Fish Processing from Ancient to Modern Times*, London.

DAVIS, S. J. M. 1995 *The Archaeology of Animals*, London.

DE NAHLIK, A. J. 1959 *Wild Deer*, London.

DIMBLEBY, G. 1978 *Plants and Archaeology*, London.

DIXON, P. 1986 *Excavations at the Fishing Town of Eyemouth 1982–1984*, Edinburgh.

DOBNEY, K. and REILLY, K. 1988 'A method for recording archaeological animal bones: the use of diagnostic zones', *Circaea*, 5, 79–96.

ELLISON, M. 1976 'An archaeological survey of Berwick-upon-Tweed', in P. Clack and P. Gosling (eds), *Archaeology in The North,* Durham, 147–64.

FULLER, J. 1799 *The History of Berwick-upon-Tweed*, Edinburgh.

GIDNEY, L. J. 1999 'The Animal Bones', in W. B. Griffiths, 'Excavations at New Quay, Berwick-upon-Tweed, 1996', *AA*[5], 27, 75–108.

GORDON, L. 1985 *Berwick-upon-Tweed and the East March*, Chichester.

GRANT, A. 1982 'The Use of Tooth Wear as a Guide to the Age of Domestic Ungulates', in R. Wilson, C. Grigson and S. Payne (eds) *Ageing and Sexing*

Animal Bones from Archaeological Sites, BAR Brit Ser, 109, Oxford, 91–108.

GREW, F. and DE NEERGARD, M. 1988 *Shoes and Pattens, Medieval Finds from Excavations in London: 2*, London.

GRIFFITHS, W. B. 1999 'Excavations at New Quay, Berwick-upon-Tweed, 1996', *AA*[5], 27, 75–108.

GRIGSON, C. 1976 'The craniology and relationships of four species of Bos, 3. Basic craniology: *Bos taurus*. Sagittal profiles and other non-measurable characters', *Journal of Archaeological Science*, 3, 115–36.

HENDERSON, D. 1986 'The fish remains', in P. Dixon, *Excavations at the Fishing Town of Eyemouth 1982–1984*, Edinburgh, 65–74.

HINTON, D. A. 1993 *Archaeology, Economy and Society: England from the Fifth to Fifteenth century*, London.

HUCKERBY, E. 2003 'Palaeoenvironmental evidence', in C. L. E. Howard-Davis and J. Nolan, *Bottle Bank, Gateshead, Archaeological Excavation Report* [unpubl. rep. 2002–3/083], 89–92.

HUNTER, J. R. 1982 'Medieval Berwick-upon-Tweed', *AA*[5], 10, 67–124.

HUNTLEY, J. P. 1984 *The Hirsel '82, Berwickshire: analysis of the carbonised plant remains*, Archive report to Professor R. J. Cramp, Department of Archaeology, University of Durham.

HUNTLEY, J. P. 1988 'Plant remains from Newcastle Crown Court, Tyne and Wear', *Ancient Monuments Laboratory Report 84/88*, English Heritage.

HUNTLEY, J. P. 1996 *Oil Mill Lane, Berwick*, Durham Environmental Archaeology Report 23/96.

HUNTLEY, J. P. and HALL, A. R. 'A review of the evidence for macrofossil plant remains from archaeological deposits in Northern England', in preparation.

HUNTLEY, J. P. and STALLIBRASS, S. 1995 'Plant and vertebrate remains from archaeological sites in Northern England', *Architect and Archaeol Soc of Durham and Northumberland Research Rep, 4*, Durham.

HURST, J. G., NEAL, D. S., and VAN BEUNINGEN, H. J. E. 1986 'Pottery produced and traded in North-West Europe 1350–1650', *Rotterdam Papers VI*, Rotterdam.

JENNINGS, S. 1992 *Medieval Pottery in the Yorkshire Museum*, York.

JONES, A. K. G. 1986 'Fish bone survival in the digestive system of the pig, dog and man, some experiments', in D. C. Brinkhuisen and A. T. Clason (eds) *Fish and Archaeology*, BAR Int Ser, 294, Oxford, 53–61.

JONES, A. K. G. 1991 *The Fish Remains from Excavations at Freswick Links, Caithness, 1980–1982*, unpublished D.Phil. thesis, University of York

LAWRENCE, B. 1980 'Evidences of animal domestication at Cayonu', in H. Cambel and R. J. Braidwood, *The Joint Istanbul-Chicago Universities Prehistoric Research in south-eastern Anatolia, I*, Istanbul, 257–308.

LOCKER, A. 2001 *The Role of Stored Fish in England 900–1750 AD; the Evidence from Historical and Archaeological Data*, Sophia, Bulgaria.

LUAU, 1996 *Marygate, Berwick-upon-Tweed, Northumberland; Archaeological Assessment* [unpubl. rep.]

LUAU, 2000 *Marygate, Berwick-upon-Tweed; Assessment and Updated Project Design* [unpubl. rep.]

MALTBY, J. M.1979 *Faunal Studies on Urban Sites: the animal bones from Exeter 1971–1975*, Sheffield.

MALTBY, J. M. 1996 'The exploitation of animals in the Iron Age: the archaeozoological evidence', in T. C. Champion and J. R. Collis (eds), *The Iron Age in Britain and Ireland: Recent Trends*, Sheffield.

MCCARTHY, M. R. and BROOKS, C. M. 1988 *Medieval Pottery in Britain AD 900–1600*, Leicester.

MOORHOUSE, S. 1982 'The Pottery', in J. R. Hunter, 'Medieval Berwick on Tweed', *AA*[5], 10, 99–127.

MORALES, A. and ROSENLUND, K. 1979 *Fish Bone Measurements: an Attempt to Standardize the Measuring of Fish Bones from Archaeological Sites, Steenstrupia*, Copenhagen.

MPRG 1998 *A Guide to the Classification of Medieval Ceramic Forms, Medieval Research Group Occasional Paper No. 1*.

MPRG 2002 *Minimum Standards for the Processing, Recording, Analysis and Publication of Post-Roman Ceramics, Medieval Research Group Occasional Paper No.2*.

NICHOLSON, R. A. 1988 'Fish Remains', in C. O'Brien *et al.*, *The Origins of the Newcastle Quayside*, Society of Antiquaries of Newcastle upon Tyne Monograph Series, 3, Newcastle.

NICHOLSON, R. A. 1989 'The Fish Remains', in C. O'Brien *et al.*, 'Excavations at Newcastle Quayside: the Crown Court site', *AA*[5], 17, 188–96.

O'BRIEN, C. *et al.* 1989 'Excavations at Newcastle Quayside: the Crown Court Site', *AA*[5], 17, 141–205.

ORDNANCE SURVEY, 1855 First edition 10 feet plan, Southampton.

PAYNE, S. 1973 'Kill-off patterns in sheep and goats: the mandibles from Asvan Kale', *Anatolian Studies*, 23, 281–303.

PAYNE, S. 1985 'Morphological distinctions between the mandibular teeth of young sheep, *Ovis*, and young goats, *Capra*', *Journal of Archaeological Science*, 12, 139–47.

PAYNE, S. 1987 'Reference codes for wear states in the mandibular cheek teeth of sheep and goats', *Journal of Archaeological Science*, 14, 609–14.

RYDER, P. 1992 'The Cow Port at Berwick upon Tweed', *AA*[5], 20, 99–116.

SCOTT, J. 1888 *Berwick-upon-Tweed: the History of the Town and Guild*, London.

SELLER, T. 1982 'Animal remains', in J. R. Hunter, 'Medieval Berwick-upon-Tweed', *AA*[5], 10, 87–90.

SKENE, W. F. 1872 'John Fordun's Chronicle of the Scottish Nation', *The Historians of Scotland, 4*.

SPEED, J. 1610 *Map of Berwick*.

STACE, C. 1991 *New Flora of the British Isles*, Cambridge.

STALLIBRASS, S. 1998 *Animal bones from Mitchell's Brewery, Church Street, Lancaster, 1988 and 1992* [unpub. rep.]

STUART, J. and BURNETT, G. 1878 *The Exchequer Rolls of Scotland*, London.

TABRAHAM, C. 1984 'Excavations at Kelso Abbey', *PSAS*, 114, 365–404.

VAUGHAN, J. 2001 'The Pottery', in Cambridge *et al.*, 54–57.

VON DEN DRIESCH, A. 1976 *A Guide to the Measurement of Animal Bones from Archaeological Sites,* Peabody Museum Bulletin, 1, Harvard.

WALTON, P. 2001 'Textiles', in J. Blair and N. Ramsey (eds), *English Medieval Industries*, London, 319–54.

WARD-PERKINS, J. B. 1940 *Medieval Catalogue, London Museum Catalogue, 7*, London.

WHEELER, A. 1978 *Key to the Fishes of Northern Europe*, London.

WHEELER, A. and JONES, A. K. G. 1976 'Fish remains', in A. Rogerson, *Excavations at Fuller's Hill, Great Yarmouth* [East Anglian Archaeology, 2] 208–24.

WHITE, K. G. 1963 'The Spades Mire, Berwick-upon-Tweed', *PSAS*, 96, 355–60.

WILSON, B. and EDWARDS, P. 1993 'Butchery of horse and dog at Witney Palace, Oxfordshire, and the knackering and feeding of meat to hounds during the post-medieval period', *Post-Medieval Archaeology*, 27, 43–56.

WOOD, J. 1822 *Plan of Berwick*.