

# Excavations south of Edinburgh High Street, 1973–4

by John Schofield

with contributions by Philip Armitage, Marinell Ash, Raymond Chaplin, Linda Barnetson, R J Charleston, Pamela Clarke, J G Hurst, Elizabeth Eames, David Heppell, Neil Hynd, Nicholas Holmes, Graeme Lawson and Lisbeth Thoms

## INTRODUCTION

Excavations took place on the site of the future Royal Mile Centre on Edinburgh High Street, a rectangular block of land bordered on the north by the High Street, the south by the Cowgate, Niddry Street to the west and Blackfriars Street to the east (figs 1, 2). The site was therefore inside the medieval town, about 100 m inside the Netherbow Gate which forms the E boundary at its farthest distance from the castle. Three main closes originally ran from north to south through the site: Dickson's Close, Cant's Close and Strichen's Close, which are discussed in detail below (pp 163–4). In the summer of 1973, when archaeological work began, the area of demolished buildings occupied only the central strip between Dickson's and Cant's Closes (fig 2), with the High Street frontage cleared to ground level except for a shop on the NE corner which was used by the excavation as a finds processing building and display centre. The available area was about 1.3 hectares, but the strategy of excavation was greatly influenced by problems of spoil storage on such a narrow, congested and steeply sloping site, and by the availability of machines.

Archaeological attention was first drawn to the site by the masterful national survey of Simpson (1972). The first period of excavation in the summer of 1973 lasted eight weeks, with an average of 25 volunteers. The excavation had two main objectives; to ascertain if there remained any medieval occupation along the High Street frontage, by removing with machines the cellars of the previous range of buildings there; and thereafter an exploratory trench was to be cut by machine from the crest of the hill as far as possible to the south in order to locate areas of archaeological interest and in particular the King's wall of *c* 1425–50.

A charter of James II of 1450 orders the Provost and Community of the burgh to 'fosse, bulwark, wall, toure, turate, and otherwise to strengthen our burgh against the dreid, the evil, and the skeith of our auld enemyis of England' (Marwick 1871, 70), but Miller (1887) proved that property deeds were using the 'King's wall' as a boundary as early as 1427. The accepted course of the Wall was about half way up the slope from the Cowgate to the High Street, running from W to E from the Castle, via the Over-Bow port, to St Mary's Street, where it turned N to meet the Netherbow gate, and fragments of walling found S of the Advocates' Library in 1832 and on the site of the Old Parliament Stairs in 1845 were attributed to it. Two fragments of wall, one apparently running slightly north or inside of the other, are visible in this area in the map

of the city by Gordon of Rothiemay (1647) (fig 5). It therefore seemed likely that this wall ran through the site.

The general strategy was successful, for while no medieval occupation was found along the High Street frontage due to the depth of later cellars, the exploratory trench uncovered a

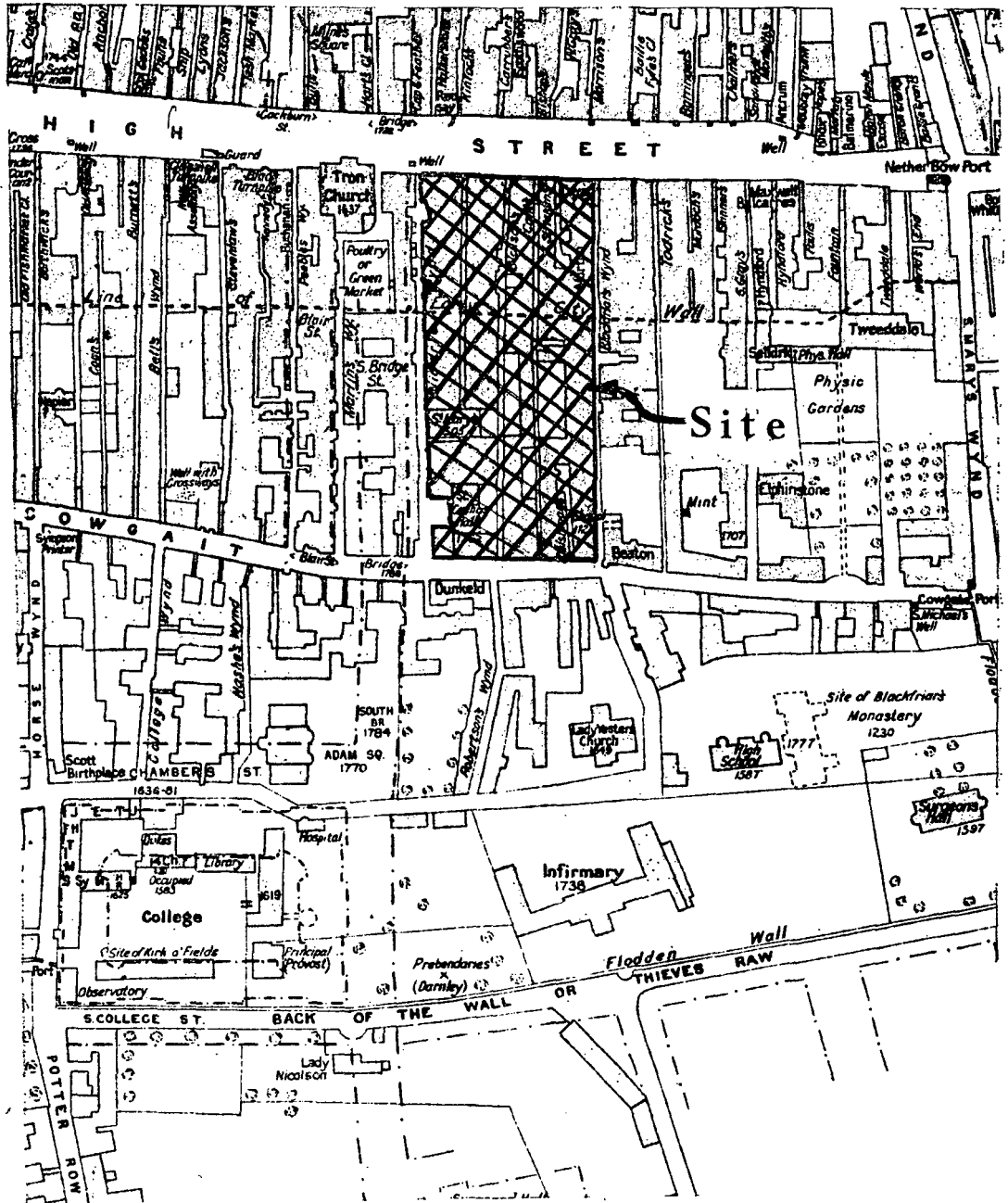
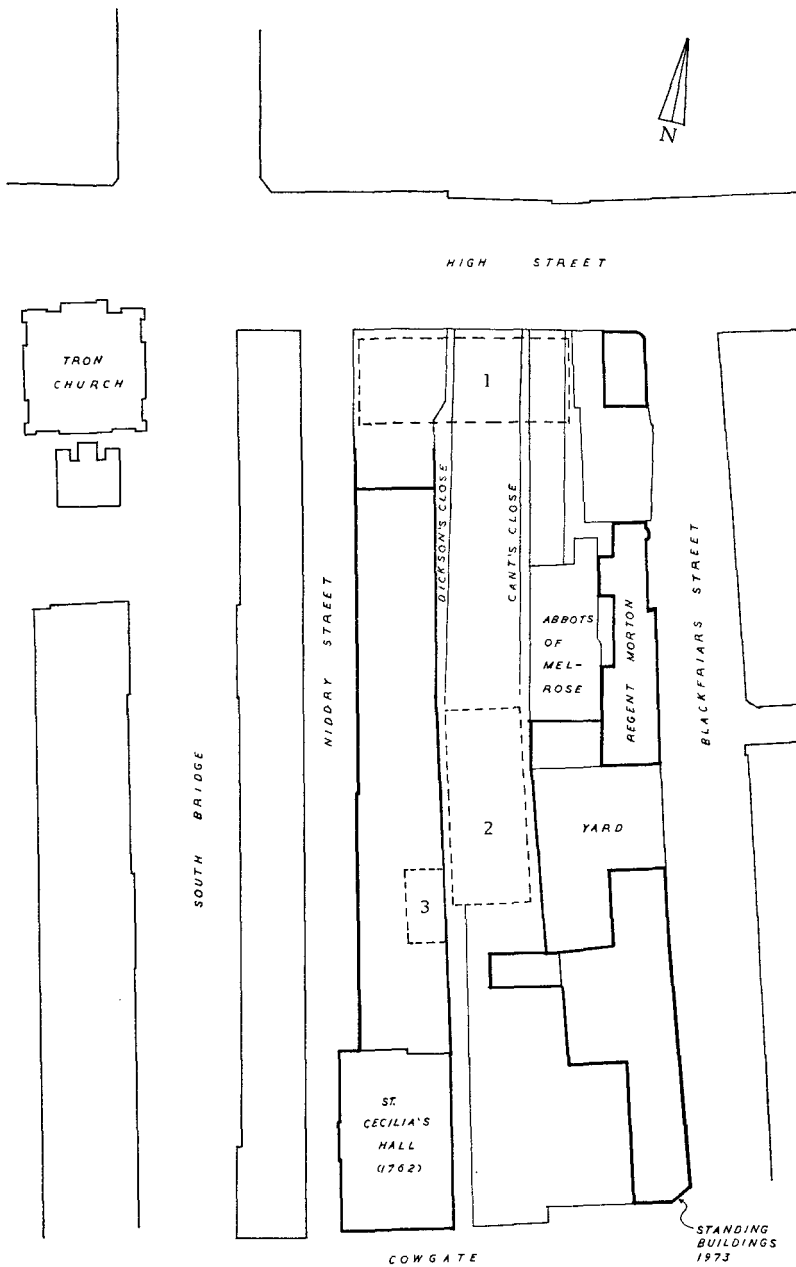


FIG 1 Edinburgh High Street: site location



EDINBURGH HIGH STREET 1973: SITE PLAN

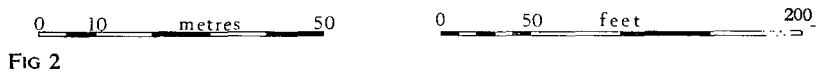


FIG 2

substantial wall half way down the slope, and a large area of archaeological deposit which was subsequently excavated as Area 2 (fig 2). Lack of turning space for machines and a dangerous gradient (fig 4) precluded examination of the site of the 16th-century town house of the Abbots of Melrose, known to be on Strichen's Close towards the NE corner of the area available (fig 2). This was situated just W of the house of Regent Morton, parts of which were 16th century and still standing, which therefore could not be approached too closely. This disappointment was however more than offset by the excavation of what turned out to be the only area of undisturbed archaeological deposit on the site as a whole, with a wall and midden which must have come from a very similar noble or ecclesiastical house on the next close westwards.

During the opening stages of the excavation it was also decided to open a third area, the shell of a late 16th-century building on Dickson's Close, adjoining Area 2 (fig 2). This ruin had already been summarily noted in the Royal Commission's volume on Edinburgh (RCAMS 1951, 94), but the opportunity was taken of stripping it of debris and modern rubbish to make a detailed architectural record, which is included in this report (below, Appendix A).

In the autumn of 1973 buildings on both sides of Area 2 were demolished, and a further two-week excavation was carried out in January 1974, in rather inclement weather, by a small team of professional diggers.

The records of the excavation and the finds have been deposited in the Edinburgh City Museums.

## THE SITE

The site (NGR NT 26007355) lies on the S slope of the crag-and-tail of the Castle Rock and the Royal Mile of Edinburgh, between the High Street and the Cowgate. The resistant volcanic plug of the Castle Rock has protected the sedimentary rocks on its E side from the gouging action of glacial erosion, and the High Street forms a tail some 1.4 km long (Sissons 1973). Similar crag-and-tails are the geological origin of the Calton Hill, where the extent of the lava outcrop obscures the tail, and of Salisbury Crags, where the deep trough now followed by the Queen's Drive bears witness to the influence of ice-moulding. These three hills face the direction of the oncoming ice, and their tails lie almost parallel. Thus also all early tracks into the citadel of Edinburgh approach the castle from the east (Adams, Harvey and Whitson 1929, based on Mears 1919). Parts of the valleys left by the glaciers have been filled with glacial drift; up to 29 m at the base of the Castle Rock. Boreholes (Sissons 1973) have shown that a buried trench sweeps round the base of the Castle Rock on the S side and down the valley of the Grassmarket. Thus the tail of the High Street was formed by a pincer movement of the ice, and it is reasonable to suppose that in pre-glacial times the valleys of the Cowgate and of the Nor' loch, now Princes Street Gardens, did not exist.

The deep trench on the S side of the tail is occupied by a belt of sand and gravel, laid down by a melt-water river, curving W and S of the Rock; and near the E end of the Grassmarket-Cowgate trench closely-spaced boreholes have shown a buried valley cut 15 m into the rock, also suggesting a melt-water stream. This may have developed into a marshy, silty valley dotted with pools (Cadell 1893). Over this streambed of sand and gravel lie silty clays and organic matter, the gradual accumulation of city rubbish over centuries spreading down from the first habitations on the ridge. Tait (1939) described buildings along the N side of the Cowgate erected on piles, and an upright water-butt was discovered embedded in clay at a depth of 5-6 m. One borehole in this area proved there to be 6 m of rubbish-deposit, on which the present Cowgate is built. In the present excavations the southernmost cutting, 13, found natural under almost

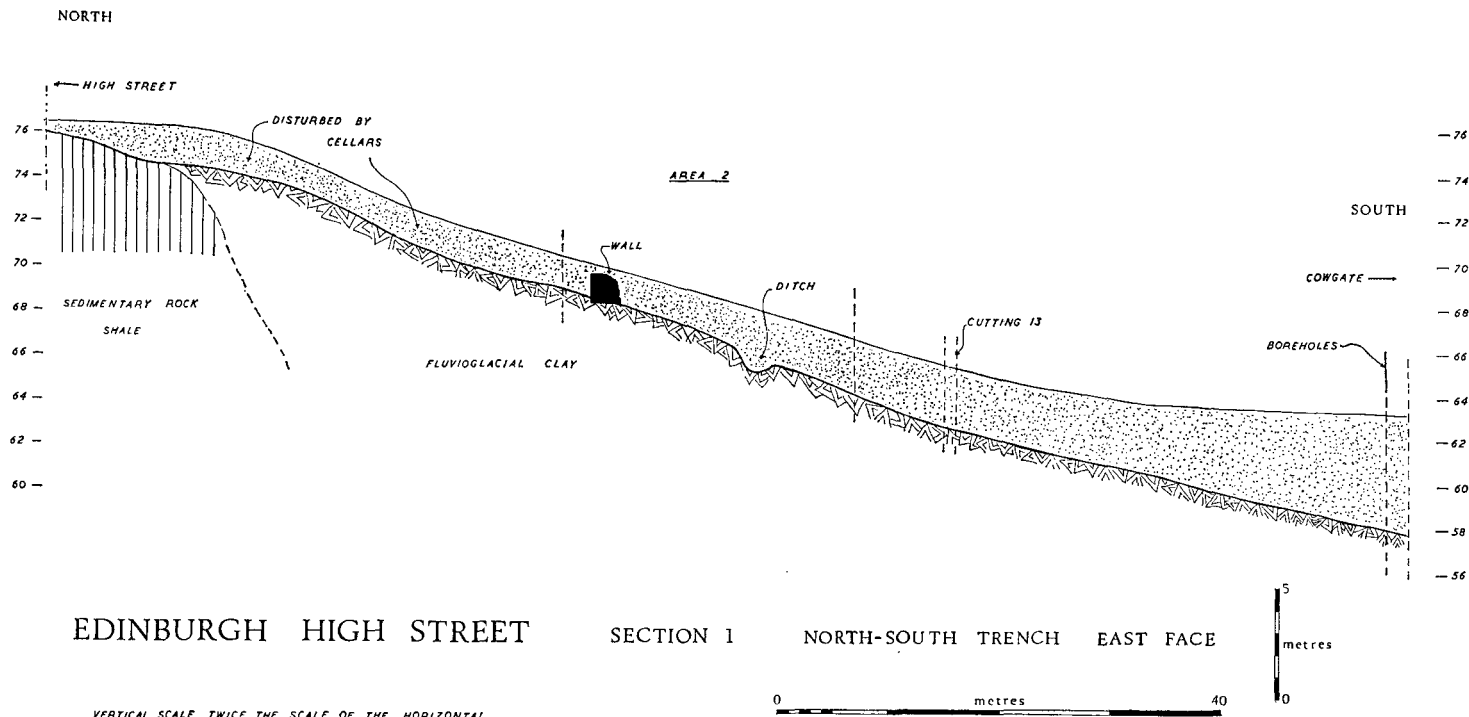


FIG 3

3 m of midden material, at a distance of 40 m N of the Cowgate, with the indications that this great layer spread to E and W as well as S into the valley. It is likely that most of the closes westwards to the West Bow are similarly built on thick layers of organic refuse, so much so that along the Cowgate and Grassmarket valley the existence of cellars should not preclude future archaeological investigation, since the deposits may well be deeper than a single basement.

Examination of the N/S exploratory trench (fig 3) showed that the organic rubbish deposit began slowly accumulating on the hillside as soon as the ridge started dipping down to the Cowgate, and the section along the exploratory trench is shown in part in fig 9. After about 11 m the purple shale of the tail gave way to softer brown clay, and this was the natural subsoil over the whole of the slope to the south. No cultivation surfaces prior to the ditch and pits of the late 14th/early 15th century were detected, and it is likely the surface consisted of weathered natural, perhaps with a skimpy covering of soil.

### THE EXCAVATIONS: SUMMARY

Nineteen cuttings were excavated on the site, and these are numbered in their order of opening (fig 4).

*Area 1* (Cutting 1). The cellars along the High Street frontage, cleared by machine. These late 17th- and 18th-century cellars had removed all traces of earlier occupation. Beneath the floor of one cellar a group of early clay pipes and 17th-century coins were found, and a second group of pipes associated with an 18th- and 19th-century tobacconist's shop. A bread oven, of post-medieval date, was also uncovered.

Cuttings 4 and 12 were made to test the deposits on the crest and immediate slope of the hill, but without profitable result.

*Area 2* (Cuttings 2, 5, 8-11). This area expanded from the initial exploratory N-S trench. It disclosed the wall of a house (A) with a garderobe chute emptying into a shallow pit cut into the weathered natural of the hillside. South of the house was an E-W ditch butting on the line of Dickson's Close, and some small pits. The garderobe, later furnished with a stone drain, spread organic and material refuse down the hill, presumably mixing with the refuse from other similar garderobes, and formed a thick layer which reaches a depth of nearly 6 m by the time it tips into the valley of the Cowgate, some 90 m to the S of the house. The street Cowgate, of mid 15th-century foundation, is built on this layer. Also built on the midden material is a late 15th- or early 16th-century house (B), fronting on to Cant's Close which, like Dickson's Close, connected the High Street with the new street in this later period. Documentary evidence points to a wasteland in roughly the position of the midden in 1638; and the archaeological evidence suggests the demolition of house A sometime shortly after 1470. The wall of house A and the wall across the adjoining property to the W seem to form the King's wall of c 1425-50 at this point. The most likely date for the destruction of house A, or for its modification into a more defensive role which ejected the inhabitants, is following a royal decree of 1473 to tear down houses built on the wall itself (Marwick 1870, 140). House B was destroyed in the late 17th or early 18th century, and the land thereafter used as an open space and drying green.

*Area 3* (Cutting 3). The half-demolished shell of a large town house on Dickson's Close was examined. It is suggested that it was built entirely in stone in the late 16th century, and extended with a timber superstructure in the mid 17th century.

*Later cuttings.* Various attempts (cuttings 7, 13-19) were made to locate other features of the site and extensions of the excavated features, but with very little result. Neither the walls nor the ditch to the S was traced on either side of Area 2 during the 1974 excavations. The use

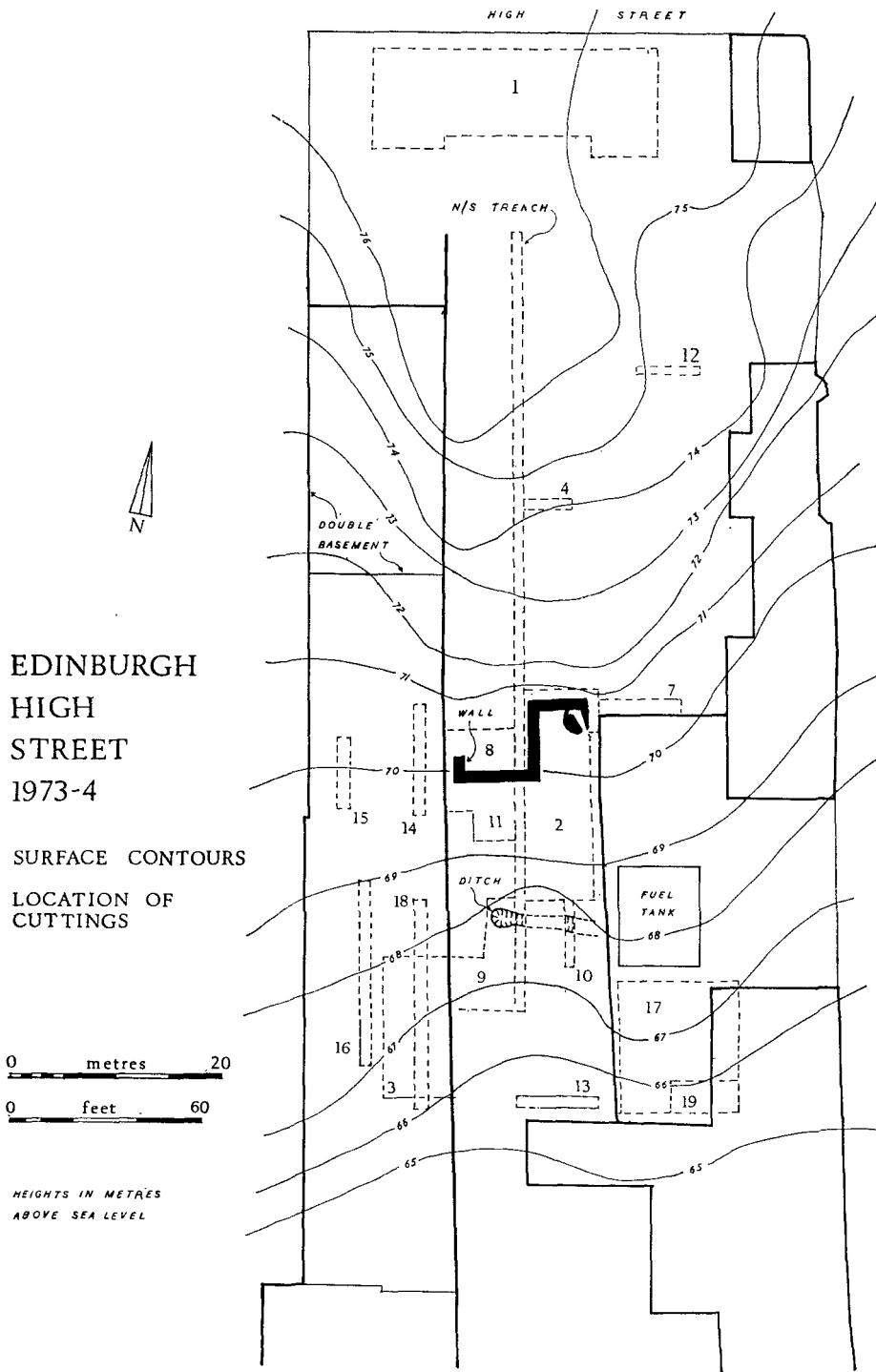


FIG 4

of Area 2 as an open space for the inhabitants of the two highly congested closes during the late and post-medieval periods had clearly preserved it comparatively intact from the deprivations of later cellars and foundations, which were particularly destructive elsewhere.

The midden presented problems of excavation, as it was fairly uniform throughout its entire length and depth, which reached 2.05 m at the S end of the site excavated by hand and 2.95 m in the southernmost cutting (13) excavated by machine. The upper layers particularly had been churned about, dug up and redeposited during the 16th and 17th centuries. The excavated portions produced nearly 13,000 objects in ten weeks of excavation: 6,300 fragments of native and foreign pottery, 36 coins or tokens, 62 fragments of floor tile, about 40 glass fragments, 50 small finds of metal, leather or bone, 512 clay tobacco pipe fragments, at least 1,880 shells and about 4,000 animal bone fragments. During post-excavation analysis the midden was divided, because of its homogeneity, into five arbitrary layers, 0.25 m thick except for the top layer which was 0.5 m thick to allow for the transition into topsoil and rubble. These and other more discrete layers and features have been arranged into 43 *stratigraphic groups*, numbered roughly in their proposed chronological order, and this grouping forms the basis of the excavation report and of the several finds reports. The stratigraphic groups may be viewed as 43 phases in the development of the site (some, e.g. Groups 13-15, happening at the same time), from the 14th century to the present.

The groups and their dates may be summarised thus:

Groups 1-6: house A, its garderobe pit, the ditch and other small pre-midden pits, ?late 14th century.

Groups 7-12: midden, lower layers, early 15th century.

Groups 13-15: house B, 15th century.

Groups 16-18: midden, upper layers, 15th century.

Groups 19-27: stone drain for garderobe of house A; uppermost layers of midden; Cant's Close alongside house B; 15th/16th centuries.

Group 28: destruction of house B, ?late 17th/early 18th century.

Groups 29-32: upper layers and topsoil, Area 2, 16th/19th centuries.

Groups 33-35: Area 1 cellars, Late 17th-19th centuries.

Group 36: Unstratified contexts.

Groups 37-43: Cuttings 13-19, excavated 1974. Various dates.

## DOCUMENTARY EVIDENCE

by *Marinell Ash*

The documentary background for the High Street excavation is rather disappointing, although the history of the site as a whole is well documented from the end of the 15th century. The documents consulted fell into three groups: property deeds now belonging to the Post Office Superannuation Fund (seen in the office of Tods, Murray and Jameson, WS, Edinburgh), protocol books and the 1635 Extent Roll from the Edinburgh City Archives. The Extent Roll provided the only comprehensive picture of the entire site. It is a sequential list of property owners, properties and occupiers drawn up to assess property valuation to pay the minister's stipend (Watson 1924). The property deeds related only to properties fronting on Blackfriars Street (excepting the foot of the street and Morton House), the High Street and all of Niddry Street except for St Cecilia's Hall. None of these deeds was earlier than the last quarter of the 17th century (hereafter these deeds will be cited as Post Office Deeds, followed by street number and name as given on the deed bundles).



There is no documentary evidence for the site before the 15th century, but it is possible to trace the earlier development of the site in outline. At the time of excavation the site was bounded by the High Street to the N, Blackfriars Street to the E, the Cowgate to the S and Niddry Street to the W. The N boundary dated at least from the 12th century, although the High Street of Edinburgh was almost certainly laid out on the line of an older track leading from the Castle Rock to the ancient track which crossed the tail of Edinburgh rock roughly on the line of the later division between Edinburgh and the burgh of the Canongate. The Cowgate was also probably established in the 12th century along the natural passage way at the S side of the tail of Edinburgh Rock. The Cowgate, however, does not seem to have become a recognised street boundary until the early 15th century (RCAMS 1951, xli). Blackfriars Street was a widening of the medieval Blackfriar's Wynd (Preaching Friar's Vennel) which led from the High Street to the Dominican friary founded just outside the burgh by king Alexander II in 1230 (Easson 1957, 99). The W boundary of the site, Niddry Street, was an 18th-century creation. The medieval Niddry Wynd was to the W of the present Niddry Street which was built to provide access to the Cowgate after South Bridge was built between 1785 and 1788 to span the valley of the Cowgate. The properties to the E side of Niddry Street were built over the line of the earlier Blacklock's or Kinloch's Close. This organised feuing of properties along the new street explains the regular frontages and sizes of properties in Niddry Street: the only exception being the earlier St Cecilia's Hall (1762) (RCAMS 1951, 45).

The entire site was subdivided by the end of the middle ages, if not before, into strips of lands or tenements, which ran from the High Street to the Cowgate. By the 15th and 16th centuries the boundaries of these tenements can be traced in the closes and wynds which took their names from the owners of the more substantial houses or 'lands' in them. As the names of the owners of houses changed, so did the names of the wynds and closes. After the destruction of Niddry Wynd and the creation of Niddry Street there were four wynds remaining in the High Street site (Watson 1923, 78-81, 135). The most westerly close was Kinloch's (Blacklock's) Close which ran from the High Street as far as St Mary's Chapel (1505) and which took its name from the 17th-century family of Sir Francis Kinloch of Gilmerton who owned property here. At its S end the close was known as Davidson's Close. This wynd was gradually built over as a consequence of the construction of Niddry Street. Its High Street end was closed up by 1817 and the wynd had disappeared entirely by the middle of the 19th century.

Next to the E was Dickson's (Bruce's, Haliburton's, Catchpole, Machan's, Aikman's) Close, which took its most common name from an early 18th-century proprietor, John Dickson. The name 'James Aikman's Close' occurs in 1538. Catchpole Close comes from the tennis court on the E side of the close recorded in 1614, and apparently there from the late 16th century (Edinburgh City Archives, Protocol Book of William Hay of Baro, i, 76). Such tennis courts (for the game of *jeu de paume*) were a common feature in 16th-century Edinburgh. The name 'Machan's Close' appears in 1684.

Cant's Close to the E was one of several bearing that name in Edinburgh. This close took its name from the family of Cant of Priestfield and St Giles' Grange. In 1514 Alexander Cant, who owned the entire tenement from the High Street to the Cowgate, had a town house at the High Street end. The close was subdivided among various members of the family over the next century and a half. In 1578/9 property at the S end of the close is described as containing a dwelling, stables, a barn, a steipstane (trough for steeping flax or malt), and a well (Edinburgh City Archives, Protocol Book of Alexander Guthrie (senior), ix, 59). Along the W side of Cant's Close there was a tenement belonging to the Provost of Crichton Collegiate church in the 16th century, and later to John Johnston of Elphinstone (Post Office Deed, 72/4 High Street).

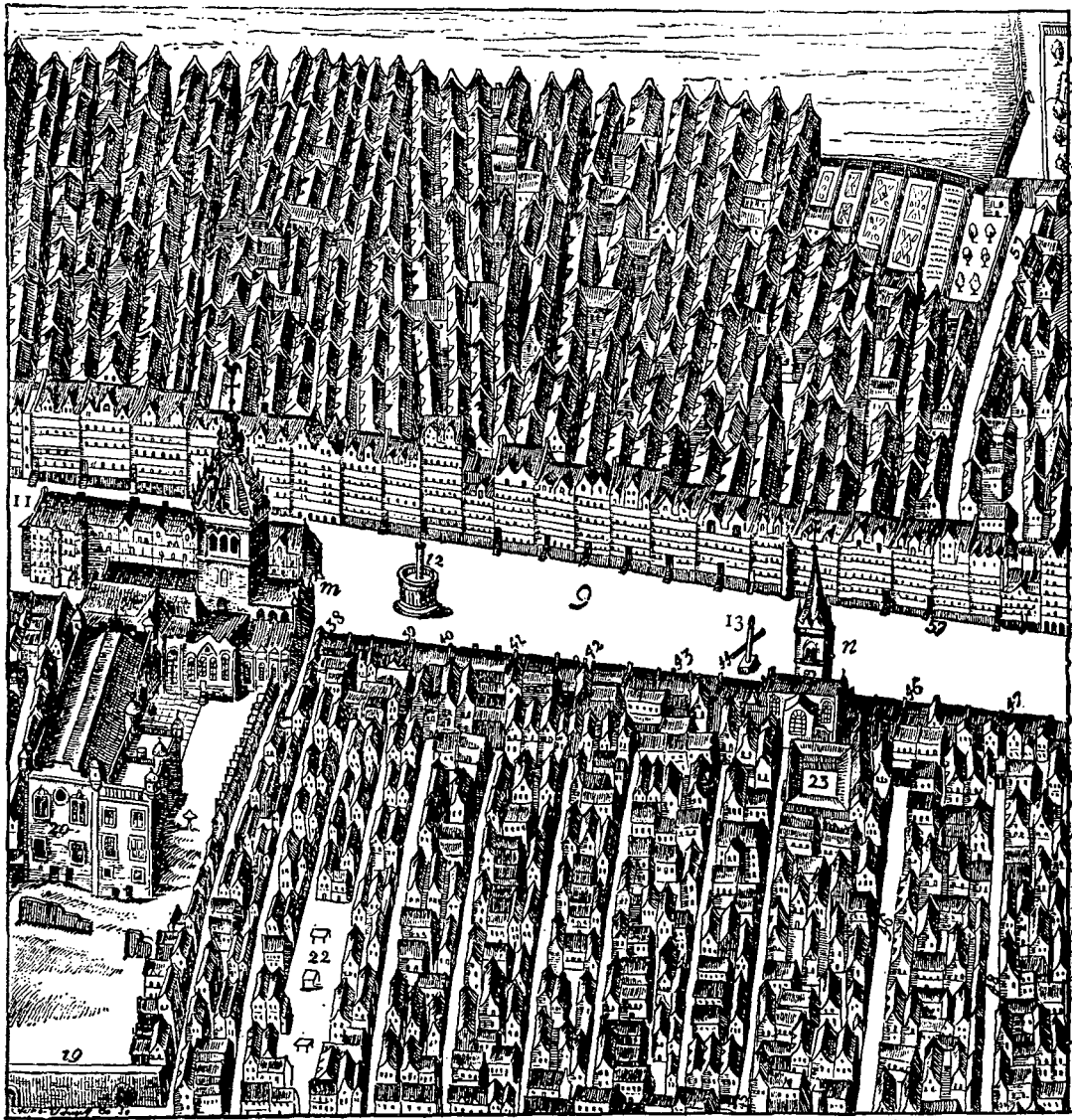
Strichen's (Melrose's, Abbot of Melrose's, Walter Mawer's, MacKenzie's, Rosehaugh's) Close was the most westerly close on the High Street site. It had an opening on the High Street and terminated in the town house of the Abbots of Melrose. The specific title 'The Abbot of Melrose's Close' derived from Andrew Durie, abbot of Melrose between 1526 and 1558. The close's other names all come from the post-reformation owners of the abbot's house. These included Walter Mawer and his wife Margaret Waus, whose armorial panel, dated 1600, was placed over the doorway (RCAMS 1951, no. 37). In the 17th century the house belonged to Sir George MacKenzie of Rosehaugh (Bluidy MacKenzie). Rosehaugh's daughter married Alexander Fraser of Strichen, Lord Strichen (d. 1774).

At the Cowgate end of the site there was a small close on the same alignment as Strichen's Close, called Hall's (Cessford's, Leishman's) Close. It was demolished in 1922. Although most of the evidence for its owners and namesakes derives from the 18th century it may well have been on a much earlier alignment.

Besides these wynds and closes the site was also intersected in an E-W direction by one – and possibly two – boundaries. From what is known about the origins of other Scottish towns it seems possible that the burgh boundaries of Edinburgh were marked out by some kind of ditch or palisade. There is no documentary evidence for the existence of such a boundary in Edinburgh. There is, however, clear evidence that the later King's Wall ran through the site. This wall is first documented in 1427 (Edinburgh St Giles Registrum, no. 34). In 1450 the wall may have been strengthened as the result of a royal warrant ordering the burgesses to see to the defences of the town (RCAMS 1951, lxii–lxiii). This wall appears to have been overwhelmed by later building and thus only fragments of it appear in the open churchyard of St Giles in Gordon of Rothiemay's map of 1647 (fig 5). Nevertheless, the wall is mentioned in the 1635 Extent Roll. Half way down the W side of Cant's Close there was 'a long rouynous waste, old wall southwards' (Edinburgh City Archives, 1635 Extent Roll, 393). It is clear from the terms of this reference that the wall is only important as a boundary because of the wasteland next to it. If the line of the wall had coincided with the boundary between buildings, it should not have been mentioned at all.

On the whole the documents from the Post Office Superannuation Fund provided the fullest evidence of structural features, especially with the houses fronting on the High Street. Here the presence of cellars and bakehouses had destroyed evidence of medieval buildings, although perhaps not their forebuildings. That these earlier buildings may have included booths and other buildings along the High Street frontages N of the later cellars is suggested by the almost unanimous testimony of the 17th- and 18th-century property deeds that contemporary houses on the High Street had forebooths. Numbers 78–82 (the buildings later numbered 82–4) had piazza frontages perhaps similar to those surviving at Gladstone's Court (Post Office Deed, 78–82 High Street). These piazzas are clearly shown in a painting by David Allan (who had a flat at the head of Dickson's Close) now in the National Gallery of Scotland.

It is clear from these deeds that considerable rebuilding in stone was carried out in Edinburgh in the 17th and 18th centuries (the high fire risk of the 18th century was evidenced by a number of fire insurance certificates surviving among the property deeds). In the 17th century and before Edinburgh houses were commonly described as being built entirely of wood or, with better housing, of stone with timber fronting. Thus one High Street property, (number 72/4) was described in a deed of 1778 as 'the new stone tenement which of old belonged to John Johnstone of Elphinstone' (Post Office Deed, 64 High Street). In fact this description, in the manner of property deeds, had become slightly out of date for John Johnstone had obtained the land after the Reformation and the rebuilding had taken place in the late 17th century.



PLAN OF EDINBURGH, FROM ST. GILES'S TO HACKERSTON'S WYND. (After Gordon of Rothiemay.)

9, The High Street; 11, The Tolbooth; 12, The High Cross or Market Cross; 13, The Tron; 19, Meal Market; 20, The Parliament House; 22, The Fish Market; 23, The Flesh Market; 38, S. Monan's Wynd; 39, Fish Market Wynd; 40, Borthwick's Wynd; 41, Conn's Close; 42, Bell's Wynd; 43, Steven Law's Close; 44, Peebles Wynd; 45, Marlin's Wynd; 46, Niddry's Wynd; 47, Dickson's Close; 48, The Blackfriars Wynd; 57, Hackerston's Wynd; m, The Great Kirk, or St. Giles's Kirk; n, The Tron Kirk.

FIG 5 Detail from map by Gordon of Rothiemay 1647 (after Grant c 1890)

But it is with numbers 78-82 (later 82-4) High Street that it is possible to see the process (and the politics) of rebuilding. The piazzaed building on this site spanned the entrance of Dickson's Close (RCAMS 1951, no. 256). In 1635 the Extent Roll described this site as containing houses, booths, cellars and bakehouses (Edinburgh City Archives, 1635 Extent Roll, 379-80). Then in 1681 'ane considerable quantity of gunpowder in the merchant booth belonging to (blank)

Mitchell and possessed by Archibald Duncan on the western side of the entry of the said close taking accidentally fire did with great violence not only break through the floor of the house . . . immediately above the same but broke through the Eastmost syde wall of the said booth to the close . . . so that the severall tenements and inhabitants can (not) securely dwell in the same . . .' (Post Office Deeds, 78-82 High Street, dated 1686). The owner of the property was the architect and king's master mason, Robert Mylne of Balfarg (who also happened to be the city surveyor at the time). He petitioned the town council to allow him to demolish the damaged building and construct a new stone tenement. Mylne's best-known Edinburgh tenement is Mylne's Court. At number 78-82 he engaged in a less pretentious piece of speculative building. Mylne rebuilt the property and feued it out, floor by floor, between 1686 and 1690 to substantial craftsmen and burghesses. The best known resident of this land was David Allan, described in his property deeds as 'historical painter', who lived in an eight-room flat on the fourth floor in the 1780s and 90s (Post Office Deeds, 3 Dickson's Close, 4th storey).

Most of the Post Office Superannuation Fund deeds were concerned with properties well away from the site which was excavated. This is largely true of the lawyer's protocol books as well. But from the entries in the 1635 Extent Roll it is possible to reconstruct something of the shape of the site in the early 17th century. Thus the evidence of the Extent Roll overlaps the evidence of the archaeologists. For this reason a résumé of the Extent Roll's evidence for buildings on the site is included at the end of this section of the report. The Extent Roll entries about occupations reinforces the picture of the social and economic divisions within the site. Near the High Street there are many booths, cellars, bakehouses, taverns and shops. Open land and slaughter booths predominate on the Cowgate. Lawyers, merchants and merchants' widows favoured residences at the High Street end of the site. Merchants' relics were also numerous in Dickson's Close which seems to have been the most 'residential' of the site's closes. A wright lived in Strichen's Close and had his workshop there. The place for fleshers and baxters was predominantly the Cowgate end of the site.

Despite this valuable social and economic information contained in the 1635 Extent Roll, this document is almost as unsatisfactory an archaeological guide as the property deeds and the protocol books. All these evidences may help to support the findings of the archaeologist but as a guide to excavation they have a number of obvious drawbacks. With the exception of well-known and documented tenements, such as the Abbot of Melrose's house or Robert Mylne's tenement, it is impossible to place or delineate properties mentioned in deeds and protocol books. This is especially true in such a congested site. Yet deeds and protocol books seem likely to remain the basic sources which any archivist working on an urban site in Scotland will use. Since this is the first such report for an urban excavation in Scotland it seemed suitable to end on this cautionary note.

The author wishes to acknowledge a generous grant from the Department of the Environment to help carry out this research. She is also grateful for the help of Mr W Mackinlay of Tods, Murray and Jameson, WS, and Dr W Makey, Curator of the Edinburgh City Archives.

*Buildings and owners on the High Street Site from the 1635 Extent Roll*

High Street	Andrew Kinloch's house high house, forebooth and cellar, bake vault
Kinloch's Close	James Kinloch's house, low house under turnpike stair house
W side to S	turnpike house turnpike house, two cellars without low house turnpike house at foot of close

Kinloch's Close E side to N	High house belonging to James Kinloch low house low house
High Street to the E	Booths, cellar to the E turnpike house of Grizel Udard (Woodward) booths, bakehouse and oven
Dickson's Close W side to S	Booths turnpike house low house turnpike house low house low house turnpike house Little close with house therein turnpike house, low house under low house low house large house two slaughter booths turnpike house, cellars to S low house high house low house low house turnpike house, in top floor 'a boulling bourde there' low house to S and E of former low house high house, low house under low house high house low house
Cowgate to the E	Shops on Cowgate foregait with turnpike house and lofts above wasteland and booth owned by William Blythman, flesher
Dickson's Close E side to the N	Andrew Hunter, baxter, wasteland with slaughter booth low house slaughter booth high house low house lang yard of John Benny, merchant low house low house close with house and yard of John Benny low house The Catchpole
High Street to the E	high house with large forecellar turnpike house in a little transe (back passage) to the E, bakehouses turnpike house of James Kinninmonth, Chamberlain of Fife, a tavern in a forecellar and a booth above
Cant's Close W side to the S	turnpike house turnpike house, low house under two tenements of land 'all rouynous', formerly belonging to Sir John Halidaye, no master or tenant certain yard with high house of James Dounes, tailor, S of the former low house high house 'A long rouynous waste, old wall southwards' high house of Andrew Hardie, candlemaker high house, S of the former waste large house, low house under large house 'the southmost there'
Cowgate	Fore house with booth thereunder, cellar high turnpike house, forecellar

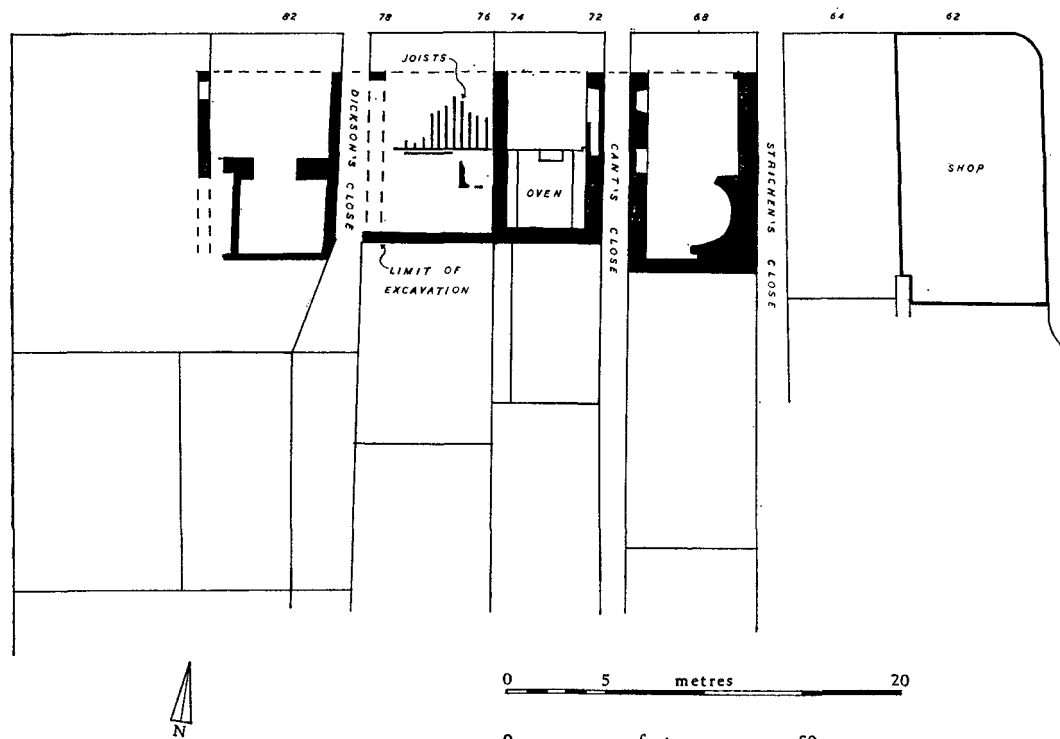
Cant's Close	two slaughter booths
E side to the N	high house with a booth under high house with two stables under
High Street to the E	turnpike house house with forebooth and foreshop
Strichen's Close W side to the S	turnpike house, cellar to W, bakehouse turnpike house low workhouse (owned by John Rid, wright) low house little close with little house and yard belonging to Dr Kincaid
Strichen's Close E side to the N	low cellar N of entry to little close high house high house
High Street to the E	high house, booths turnpike house

### HIGH STREET FRONTAGE (AREA 1)

It has been suggested (Adams, Harvey and Whitson 1929) that the burgh was laid out on both sides of the main street, now the Lawnmarket and the High Street, descending the back of the ridge E from the Castle, in the early 12th or even late 11th century (Donaldson forthcoming).<sup>1</sup> Plots ran at right angles to the street, averaging 25 ft wide and 450 ft long, giving an area of one rood or  $\frac{1}{4}$  acre. This is supported in the area of Niddry and Blackfriars Wynds by the spacing of the present wynds and closes, which are almost exactly 25 ft apart, counting Marlin's Wynd which formerly ran to the back of the Tron Church (figs 1, 5). It might then be argued that closes which do not fit into this pattern are later, but this would have to be backed up with documentary evidence. As far as was known, the High Street had not been appreciably widened since medieval times, and we could therefore hope for substantial remains of medieval buildings along the street where they had been left untouched by the later basements. An added possibility was the investigation of special buildings or those adapted for trade in the markets which flourished on this part of the High Street during the 15th century. James III, in a letter to the burgh dated 3 October 1477 (BR 1403-1528, 34-6), regulates the conduct of several markets, among which are the salt market at Niddry's Wynd and the cattle market for carcasses and mutton, around the Tron and from there to Blackfriars Wynd.

In all these hopes we were disappointed, for 17th- and 18th-century cellars had removed all traces of previous occupation. The westernmost, no. 82, was a Victorian shop basement. It was cut into the natural shale, which formed an untouched platform on its E side on which the joists of the shop at no. 78 or no. 76 had been laid, with traces of small walls surviving, at a depth of *c* 1 m below the road level. Next to the E was a second cellar, no. 74/72, with a secondary bread oven inserted in the S half. From this cellar an extremely narrow stair led up through the thickness of the E wall to ground level on Cant's Close. On the E side of the Close was the third and largest cellar, possibly also the oldest. It had a cupboard and a fireplace in its W wall, and an apse suggesting the base of a spiral staircase in its SE corner. The Royal Commission plan (RCAMS 1951, fig 256) shows this staircase rising to the second floor at least. The impracticability of shoring only 1 m of overburden along the N edge of the area precluded the possibility of examining the walls right up to the back of the pavement, although mention was made by a visiting former corporation employee of a barrel well in a small vault under the pavement between Dickson's and Cant's Closes. It was also not possible, because of the sheer bulk of the cellars and priorities elsewhere, to investigate the closes themselves for possible medieval levels beneath the services.

In general the plan on fig 6 may be taken to supplement the above-ground description of the range in RCAMS 1951, 93. Unstratified pottery from machine clearance included 16th- and 17th-century sherds (e.g. coarsewares, no. 139), but nothing earlier. The only finds of significance came from the joists of the shop and from two parts of the easternmost cellar, where the stone flags were removed to check on the layers beneath, although at a depth of 2.3 m below street level not much medieval deposit could be hoped for. The joists of the shop, evidently a tobacconist's, produced a large group of pipes dated to c 1820-60, with the possibility of some



EDINBURGH HIGH STREET AREA 1 PLAN OF CELLARS  
FIG 6

slightly earlier coming from behind the shop to the south (Group 35; fig 26). From under the flags in the NE corner of the E cellar came a second, smaller group of Victorian pipes (Group 34). Under the flags around the stairwell, and in disturbed earth below where the stair had been, was a group of earlier pipes, datable to the years 1620-90, with a scatter of coins, including five turners of Charles I (1642-50) (Group 33; pipes, fig 23). As these coins were trapped below the flags of the cellar, it may be concluded that the cellar dates roughly from the time of Mylne's rebuilding further to the west (unless, which is unlikely, the flags are a later insertion).

Cuttings 4 and 12 were cut by machine during the excavations which followed in Area 2, Area 1 having been abandoned. Both cuttings found only disturbance and robbing of walls of unknown date. Shortage of time prevented further examination of the hilltop.

It can only be presumed that medieval occupation did not build up to any great depth along this part of the S side of the High Street, since the joists of the shop at no. 78/76 were laid

directly on the natural shale less than 1 m below present road level. Further work was clearly going to take much time and effort with expensive machinery, and the focus of excavation rapidly turned to the area opening up further down the hillside.

### THE WALLS, DITCH AND MIDDEN (AREA 2) (figs 7-12)

#### *House A, the ditch, and the western wall* (Groups 1-6; figs 7, 9-12)

The earliest feature in Area 2 appears to be the remains of a wall (Group 1) of roughly cut sandstone blocks, undressed, running W from Cant's Close in the NE corner of the area. It was cut into the clay natural of the hillside (fig 11; section 5) and ran W from the Close for just over 5 m. The E end had been truncated by the intrusion of drains into Cant's Close, and it is possible that it originally ran further to the E, even crossing the line of the Close. Its E-W line was continued to the E by the N wall of the yard of Morton House (fig 2) which may be a property boundary associated with the town house of the Abbots of Melrose (above, p 164; figs 1, 2). The wall, 1.1 m wide and standing 1.35 m high, was bonded with clay, though this should not rule out the possibility of mortar bonding higher up, since the existing remains are clearly a foundation which was razed to contemporary ground level at a later date (Group 31, below). 1 m from the E end the flat bottom of a garderobe chute, 0.4 m square, was let into the surviving top appearing as a square void two courses deep. Towards the W end the superimposition of Victorian walls had produced the side-effect of the robbing of part of the wall and the backfilling of the hole thus created with a log.

The cutting-back of the hillside to take the foundation of this wall, which because of its garderobe must be regarded as a house – house A – was perhaps equally necessary for the construction of the garderobe pit on the wall's S side. This pit (Group 2) was formed by continuing the scoop in the hillside, flat-bottomed, and leaving a ledge or lip where the floor met the slope. By piling the removed clay on top of the lip, a crude cess-pit was formed (fig 7; sections 3 and 4, fig 10). When the house-wall had been built against the N edge of the scoop, the garderobe emptied into a cess-pit about 4 m N-S, though apparently only about 0.4 m deep. Four stakes were found inside the S lip towards the SE corner of the cess-pit, and it is possible they represent fencing which originally bordered the pit on the S side. They were also in line with the fence in the W half of the area (Group 2A): see below p 171. The E and W edges of the pit were more difficult to trace. On the E the later depredations of Cant's Close had totally removed any borderline feature, and it is possible the garderobe emptied on to the close itself, defined in this early period by a fence or ditch. Evidence from the close (Group 24) suggests it was not a distinct pathway until later in the early 15th century. On the W the S bank was cut by the N-S limb of the W wall, to be described shortly.

Although no dating evidence came from the fabric of the house A wall itself, a few scraps of pottery from the redeposited clay on the S lip of the cess-pit indicate a date in the 14th century for the house's construction. On the floor of the pit, directly on the natural clay, was a scatter of stones, perhaps an attempt to provide a rough floor. Although these stones were stratigraphically the same Group as the bank (Group 2), the pottery pressed between them clearly came from the superimposition of the fill of the cess-pit (Group 7). Garderobes are known in larger private houses in England from the 13th century, usually in the form of stone-lined pits (Wood 1967, 379-85). Locally examples can be found in castle keeps, for example at Crichton and Craigmillar, in the late 14th century (RCAMS 1929, 48, 123), at Dirleton in the 13th century, and in domestic buildings of the castle at Dirleton in the 15th century (RCAMS 1924, 18, 20).

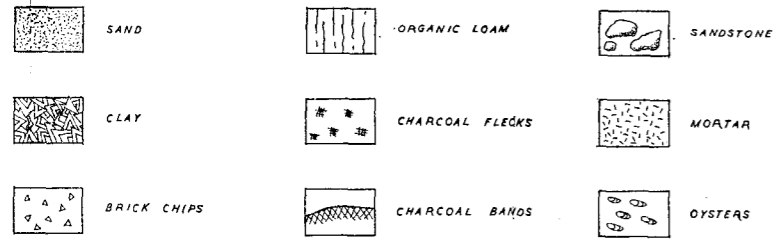
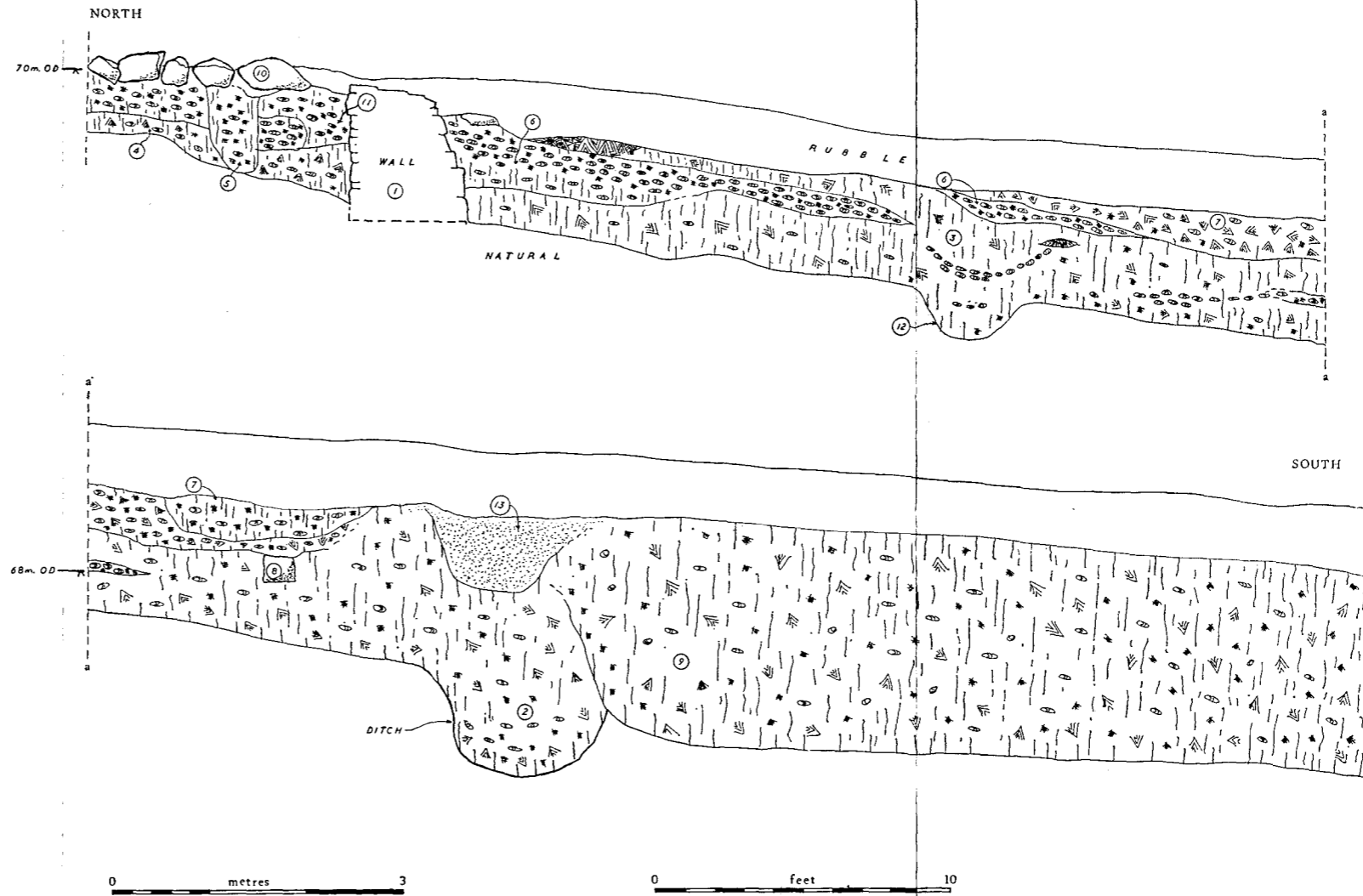
South of the cess-pit two pits were cut into the weathered natural of the hillside (Groups





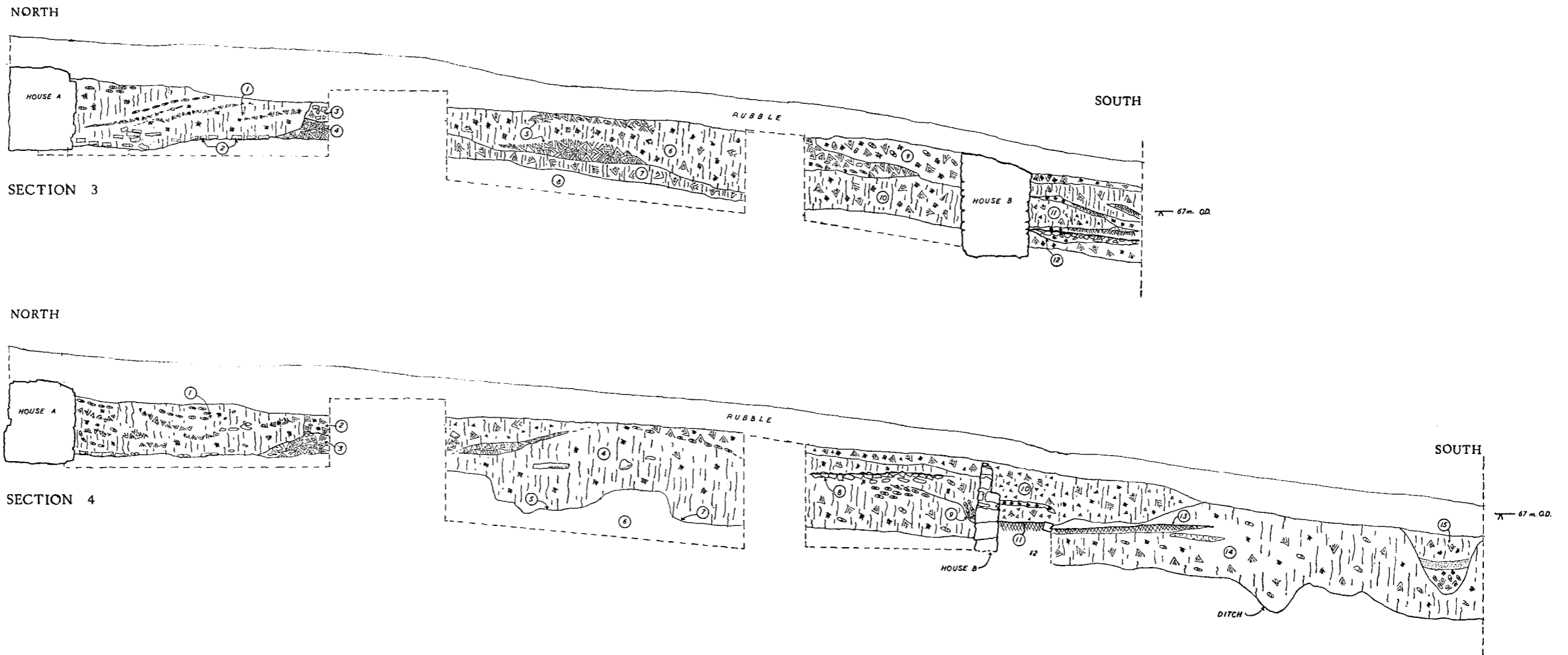
# EDINBURGH HIGH STREET

## SECTION 2 EAST FACE



SECTION SYMBOLS FOR SECTIONS 2-10

FIG 9



EDINBURGH HIGH STREET

SECTIONS 3 & 4

SOME PARTS OF EACH SECTION HAVE BEEN DRAWN IN MIRROR TO PRESENT TWO EAST FACES

0 metres 5

0 feet 15

FIG 10

3-4) with the possibility of a third bisected by the N/S exploratory machine trench (Group 3A) (fig 7; section 4, fig 10). Oval and shallow, they had no apparent purpose, and were filled with the midden material of the layers above (Groups 7-8). The northern of the pair was partly back-filled with clay and stones, and produced pottery of the 13th and 14th centuries, while the pit of Group 4 gave sherds of the late 14th/early 15th century. There were no finds from pit 3A. A sherd of Siegburg stoneware from the Group 4 pit joined with a sherd from the ditch (Group 6), indicating that they were filled in at the same time.

The most significant, and at the same time the most problematical, feature of Area 2 is the W wall (Group 5). Its main E-W limb ran for 8.1 m on a line 6 m south of house A and 2 m S of the lip of the cess-pit to the garderobe (fig 7; pl 15). It survived 1.4 m high and 1.3 m wide at the base, decreasing with a series of irregular offsets on the S side to about 1 m wide (section, fig 9; elevation, fig 12); composed of well-set and occasionally quite large sandstone blocks and boulders. Both sides were heavily mortared. It was impossible to section it in the true sense – it defied the efforts of the mechanical excavator to cut a section across it – and thus we can only surmise it was mortared throughout; this seems extremely likely because of its strength.

At the E end of this central E-W limb, the wall turned N in a less well built section – the wall bulged noticeably in width, and there were traces of hasty rubble-building instead of careful bonding of blocks. It met the W end of the wall of house A, and here the junction was obscured by a Victorian foundation superimposed. The Victorian wall, passing eastwards slightly to the S, lay on the N limb and then, in a slight stagger, followed the buried foundation of house A for at least 2 m. Despite the difficulty of interpretation at this corner, it is however clear that the W wall's N limb is a later addition to house A. At the W end of the new wall, it turned N again in a shorter limb of *c* 2 m before stopping in a flush end-face indicating an intentional halt. Whereas most of the W wall had been destroyed in a later period to approximately the same level as house A, this most westerly stub lying on the E side of Dickson's Close rose up to five courses higher, and almost reached the modern level of the close as represented by a large concrete slab, the level patio of double doors in the adjoining standing warehouse which opened onto the close at this point. On the W side of this stub lay the drain of Dickson's Close, laid in concrete in a channelled slab which might possibly be the original drain of the close (section 7, fig 11). This slab lay underneath a thin wall of sandstone blocks (section 7: 4) which might well be the yard wall seen in a sketch of 1850 of the Area 3 house (pl 16c). This wall was built down to the drain slab and yet stood outside the more substantial W wall, and is best explained as a yard wall inserted with the drains in the Victorian period, by which time the W wall itself had been forgotten.

Pressed against the end of the W stub of the W wall were a group of stakes of oak,<sup>2</sup> square-sectioned and averaging 0.1 m square (Group 2A), which then spread as a straggled line eastwards to meet the W side of the N limb connecting the W wall with house A. This fence lined up with the four stakes found after an interval of 4.5 m to the E just inside the lip of the cess-pit to house A, and it is quite possible that the N extension of the W wall to meet house A cut at right angles through a continuous fence. The substantial post-hole in line with the fence just W of the N limb (fig 7; section 2: 5, fig 9) is much later, associated with the boulders on the midden (section 2: 10). The stakes of the fence were sharply pointed and driven into the natural of the hillside. The longest surviving height was 0.18 m, and all the stakes were surrounded by the tightly-packed midden material of Group 10, the lowest layer N of the U-shape made by the W wall, but covered by the upper layers (Group 11). While it is possible the stakes were driven through the lower layers of midden material, it is clear that the fence was for a short time contemporary with the W wall, since they met at the W end; although which came first is a matter

of speculation. The two possibilities can be summarised thus: either (a) the fence continues the line of the edge of the cess-pit to house A, and the W wall is a later addition, its N limb breaking through the fence along the N-S property boundary between the tenement on Cant's Close and the tenement on Dickson's Close; or (b) the fence is later than the W wall, and acts as a screen for the narrow strip between it and the W wall itself. Since the stub on Dickson's Close ends in a flush face against the W end of the fence, it is possible that a garden gate opened at this point on to a close. Whichever of these theories is correct – and the former is more plausible – the fence was removed by breaking off the posts so as to leave their stubs in the ground, before the superimposition of the upper layers of the midden behind the W wall (Group 11). The position of the stakes, marked by wooden pegs, is shown in pl 15a, b.

About 9.5 m S of the W wall a ditch (Group 6) was cut in the hillside, a rounded end some 4 m E of the line of Dickson's Close and then running slightly S of E, becoming thinner and less deep. It was traced by the machine-cut of cutting 10 (plan, fig 7; section 4, fig 10), but not in subsequent cuttings E of Area 2, for reasons explained below (cutting 17; p 179). Like the pits (Groups 3-4) cut into the hillside just outside the walls, the fill of the ditch was inseparable from the general midden above (section 4: 2), and the inclusion of German stoneware in its layers indicates it was open for some time. The native medieval pottery from the fill of the ditch is dated to the turn of the 14th and 15th centuries, the stonewares giving a date of the first half of the 15th century. A small animal bone sample (Appendix J, sample E) comprised bones of sheep, cattle, pig, roe deer, hen and rabbit. The cutting of the ditch cannot be accurately dated, and it may even predate the building of either house A or the W wall. It does seem likely, however, that all activity on this hillside is related, and we may postulate a sequence of house A – cess-pit and fence – pits – ditch/W wall/midden material, mostly from the garderobe of house A, which gradually spread down the slope and filled the pits and the ditch.

Cutting 7, along the N side of the N wall of the yard of Morton House (fig 2), found rubble to a depth of 2.3 m and was abandoned without finding any eastward continuation of any medieval wall similar to house A.

#### *The midden, lower layers (Groups 7-12: figs 7-12)*

Against the S sides of both house A wall and the W wall, coming to their surviving tops (section 2, fig 9; section 5, fig 11), lay a thick midden of brown-black organic soil with heavy concentrations of charcoal, clay lumps and oyster shells, rich in fragments of local and imported pottery, tiles and occasional bone, iron and stone artefacts. As further cuttings (13-19) proved, this midden stretched to E and W, under present buildings, and deepened to the S to 2.95 m at cutting 13, on the S edge of the available site. A similar layer of rubbish had collected N of the W wall, in the cavity between the wall and the slope of the hillside (fig 7; section 2, fig 9). Although patches of clay and distinctive spreads or tip-lines of oysters could be seen in the sections, there was no clear stratigraphy in the midden, and joins between sherds of both native and imported pottery vessels from widely differing depths in the material show that the midden was much disturbed and turned over during its lifetime. The most striking example is provided by the four sherds of a Langerwehe stoneware jug, illustrated in Appendix C, fig 20, no. 8. One sherd was found in the NE of the four boxes at a depth of 0.85 m from the top of the midden, a second in the box to the W at a depth of 0.95 m; the third in the same box at a depth of 1.2 m, and the fourth in topsoil (Group 31) on the W edge of the SE box, fully 0.9 m higher. Other examples could be cited from both pottery and glass fragments.

After excavation, the midden was therefore divided arbitrarily into layers or spits 0.25 m thick, except for the top layer of 0.5 m (Group 31) which allowed for the transition into (16th

century and later) topsoil. Although the German stoneware, which was found uniformly throughout the midden, seems to be all of one date, the coarse pottery suggests a rough sequence up through the layers despite the continual disturbance. This is not due to the introduction of specifically new types in the upper layers, but more due to the gradual reduction in the proportion of earlier sherds in relation to later sherds as the midden mounts. This is discussed more fully below (p 180). The five stratigraphic groups of the midden proper have therefore been left, in case future work should distinguish between the pottery from them.<sup>3</sup>

The midden was apparently formed by the overflow from the garderobe of house A and others like it to the E and W, as well as dumping off and around the W wall and the adjacent closes. There is no difference between the layers remaining in the cess-pit to house A and the midden over the lip, indicating a gradual spreading of filth and rubbish over the lip and down the hill. It filled up the pits and the ditch. In the lower layers (Groups 7-8) there was a good mixture of brown clay with the darker organic material, indicating a slow change from the weathered surface of the hillside. The coarsewares from Groups 7 and 8 are predominantly early - 13/14th century - but the German stonewares, on present dating, bring the deposition into the early 15th century. Of the 281 native pottery sherds in Group 7, 95% (266) were 13th/14th century; of the 847 sherds in Group 8, the layer above, 81% (690) were of the earlier period, the remainder in each case being given the later general date of 14th/15th century. The second major bone sample from Groups 7 and 8 taken together (sample E-M) contained bones of sheep, cattle, pig, rabbit, hens, geese, duck and fish, and a cat. The stratigraphically lowest coin, a silver penny of Edward I, II or III (1278-1377), possibly minted in London, came from the lowest layer of the midden, from the junction of Cutting 10 with Cutting 2. The overflow must have started in the late 14th century, not long after house A was built.<sup>4</sup>

North of the U-shape of the W wall, on the property along Dickson's Close, similar midden rubbish built up against the inside base of the wall and spread along the inside of the N limb. A pit with traces of clay lining was found against the N edge of the main part of the wall (plan, fig 7), 0.75 m across E-W and cut through the lower layers (Group 10; section 2, fig 9) so that it just penetrated the natural. This pit (Group 9) contained a small group of early 13th/14th century sherds and no stoneware. It is perhaps significant that the lower layers of the midden through which it was cut also contained no stoneware, whereas the later layers N of the wall (Groups 11, 12) which overlie both groups, do contain stoneware. Group 10 was early, producing only 4% of 15th-century sherds (6 out of 142) among the native coarsewares; the proportion rose slightly in Group 11 to 8% (14 out of 170) (Appendix B, nos 43-5). Possibly the smaller midden N of, or inside, the N wall is undisturbed by comparison with the great midden outside the wall, and thus reflects a dating sequence more strongly. Also in the lower layers behind the wall (Group 10) were found six fragments of plaster, which were subsequently analysed.<sup>5</sup> The plaster was mid-cream, fairly hard, containing fine (less than 2 mm) pieces of charcoal, reddish-brown brick, and unburnt lime; also probably some hair. In all these respects it resembled a plaster sample from Crookston Castle, Glasgow, there dated to the first half of the 15th century (information from Eric Talbot). The Edinburgh sample was covered with 2 mm of fine later plaster and at least three layers of paint. On top of the midden were two patches of stony ground which might have been roughly laid cobbles or a made-up surface, just inside the wall or even around the fence if it was still standing during the deposition of the midden material.

*House B, the later midden, and the stone drain for house A (Groups 13-20; figs 7-12)*

Upon the lower layers of the midden (Group 8), 16 m to the S of house A, a second house - B - was built. It evidently marks the time of the creation of Cant's Close, for the layers of pebbles

and eventually cobbles which form the close begin to be laid along its thin E wall 0.48 m wide, which was traced for 2.5 m before disappearing under the spoil-heap. Its N wall was originally 0.8 m wide, but narrowed in the NE corner to accept a fireplace, of well-laid irregular slabs, bordered by a window mullion of ornate section (fig 8, A), face down, re-used as the fender. It seems to be from a high-class noble or ecclesiastical house, here re-used in a much humbler context. South of the fireplace spread a hard-packed dirt floor (section 4: 13, fig 10), though

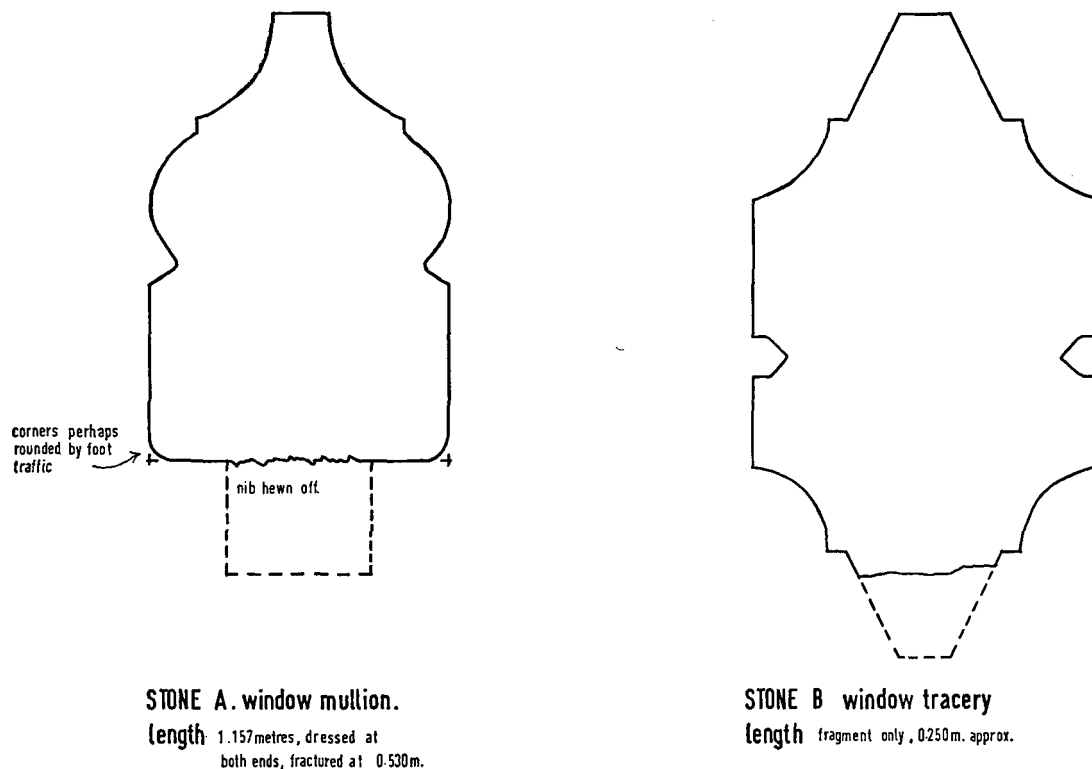


FIG 8 Moulded stones

rough cobbles were found on the other side of the baulk (section 3: 12, fig 10). A W wall could be traced by a robber trench, and three boulders just outside this line to the W (Group 13) indicated the wall's position. The existing walls were bonded with clay and very occasional poor mortar, and parts of the N wall were almost drystone technique.

On the N side of the N wall of the house, visible only in the E part (section 4: 9, fig 10) was a foundation trench cut through the lower layers of the midden, backfilled with oysters and clay. This trench was very slight, as it did not appear at all towards the W end. The more substantial section of walling towards the W end was built down to the natural, and it is likely that house B was built before much midden had had a chance to spread, though the ditch below

had been filled in and lost, almost 2 m below the dirt floor of the house. The fabric of the surviving walls produced both coarsewares and stoneware dated to the early 15th century (Groups 13-14, e.g. no. 49, fig 17), and a badly worn silver penny of late 13th/15th-century date. The lifespan of house B is indicated by a scatter of coins from the dirt floor (Group 15), beginning with a hardhead of James VI (November 1588), among four turners of Charles I (1642-50) and a double tournois of Louis XIII (1642), perhaps all lost or cast down at the same time. From the dirt floor of the house also came a dish of 15th/16th-century date (no. 50).

The relationship of house B to Cant's Close is considered below (p 176; Groups 23-24).

At the N end of the area the cess-pit of house A was continually overflowing, and the layers which were excavated in it, though subject to the greatest amount of disturbance and therefore contaminated by slightly later material, probably approximate to the lower layers of the midden proper. The sections (fig 10) show a fall of layers of red ash, oysters and charcoal sloping gently against the house wall (section 3: 1 fig 10). Again the material has been divided into two arbitrary layers to match the layers of the midden to the S, but there is little difference between the finds (Groups 16-17, nos 51-60, fig 17), both groups being rich in large fragments of coarsewares and stoneware. The largest fragments of pottery (e.g. the top of a Langerwehe jug, illustrated in fig 22, no. 9) came from these layers, possibly due to lack of abrasion and breakage which would follow from a gradual slip down the hill. From the lower of these two groups (Group 16) came a heavy coinage groat of Robert III, 1st issue (c 1390-1400), just above the lowest layer of red ash. As this coin had average wear, it agrees with the general date for these layers suggested by the pottery of the early 15th century.

The third major animal bone collection from Groups 16-17 studied together (deposit M) comprised the earliest evidence for horse from the site, along with the first appearances of dog and black rat. Sheep, cattle, pig (one with foot-rot), hens, rabbit and fish also formed part of the diet. The sheep, previously horned, were now of both horned and hornless varieties.

Above the red ash layers developed a saucer-shape deposit of green-stained soil, directly below the garderobe chute, and this can be fairly firmly identified as urine on the surface of the mounting deposit (Group 18). A sample of this deposit was taken, and compared with another sample (from cutting 16) of 'normal' midden some distance away. Both samples were high in organic matter content - 10.3% and 9.9% respectively, compared with a usual figure of 5 or 6% for soils in the Edinburgh area which have not been subjected to agriculture. The ammonium content was small in both cases, no more than 10 parts per million, and there were no traces of urea, though this is to be expected, since both these materials are readily converted into other forms of organic nitrogen. The big difference came in the soluble phosphorus content. A normal figure for undisturbed samples would be 7 or 8 parts per million; the 'typical' midden had 110 parts per million soluble phosphorus and the green-stained deposit 725 parts per million (in acetic acetate solution), i.e. about 100 times a normal figure. This saucer-shaped puddle of high-phosphorus soil is shown in section 6 (fig 11), which also shows in section the final solution to the cess problem: a stone-built drain, which directed sewage, perhaps after a crude form of trap for solids, on to Cant's Close itself (plan, fig 7). The stones were bound together with soil and a little clay only, and left a smooth channel 0.22 m wide between two opposed faces, backed up with smaller rubble. Pottery from between these stones (Group 19), from inside the filled-up drain (Group 20) and from the high-phosphorus deposit below (Group 18) all give the same general date of the first half of the 15th century (nos 61-8, fig 17). Refuse from the drain spread round and eventually obscured it (section 6: 3, fig 11), and blocked it to the top. Shortly after, we conclude below (p 177), house A was itself knocked down or at least re-designed so that the garderobe fell out of use.



*House B and Cant's Close: the midden (upper layers)* (Groups 21-28; figs 7-12)

Outside house B to the N a number of layers suggest a rough yard or area associated with the house during its lifetime (Groups 21-2; section 9: 1, 2; fig 12). A number of rough surfaces built up, of red burnt clay, rubble and stones, and clay. The most substantial of these surfaces, of rough sandstone fist-sized pieces ('spalls'), was alongside the rough gravel surface of Cant's Close, which began to build up alongside the E wall of the house (Group 23). At first it was merely a black trodden surface with oysters pressed in at random; the layers of charcoal, oysters and pebbles gradually grew until it was over 0.6 m thick. This process appears to have taken some time, for the pottery on the yard surface and the lowest levels of the close was still early 15th century in date (Group 22), while pottery from the build-up on the close stretched from the 15th to the 17th century, in company with some early 18th-century glass (Group 23; nos 70-1, fig 17). At this later date the close was properly cobbled for the first time. A 17th- or early 18th-century date for the cobbling of the close agrees with evidence from the Tron Kirk site, excavated in early 1974, where the church of 1635 was found to overlie a similarly cobbled Marlin's Wynd (Holmes 1975). A rough kerb or perhaps wall of a double row of facing stones with soil infill extended N from the corner of house B for at least 1 m (Group 25). Due to a sudden turn to the SE just N of house B, the 19th-century drains of Cant's Close left this corner undisturbed. Above the cobbles a further deposit of 0.7 m of backfill bore witness to the raising of the close to the Victorian level, marked by a continuous row of paving slabs with a slight hollow to one side running down the hill (Group 24).

The midden was still mounting up, and two more arbitrary layers form the stratigraphic link between the yard of house B and the later stone drain from house A. The drain let out a great deal of material before it was finally blocked: a general layer of organic refuse, charcoal, oysters, tile and pottery fragments (Group 26; nos 73-86, fig 17) was followed by more refuse which both filled the area over the now totally submerged cess-pit and spread down the hill (Group 27; nos 87-96, fig 18). At this point we may put the largest spread of clay N from house B, as an attempt to arrest the spreading midden (section 2: 1, fig 9). These upper midden layers are particularly rich in oysters, and the corner of the N and central limbs of the W wall seems to have been a favourite place to dump them (plan, fig 8; section 2: 6, fig 9).

The dating evidence for these groups suggests this was happening at a date still inside the first half of the 15th century. Pottery in native styles suggests the 13th/15th-century span found in the lower layers, and German stoneware is again present throughout. The proportion of early to late native wares continues to decrease. In Group 26, 83% of the sherds were 13th/14th century (410 out of 493); and in Group 27, only 51% (287 out of 562 sherds). A new 16th- or 17th-century element enters the collection of sherds, presumably intrusive, but only 5% (Group 26) and 8% (Group 27) of the total coarsewares.

The fourth major group of animal bones studied, from Group 26, (deposit M-L), represented a wide range of species: besides sheep, both horned and hornless, cattle and pig, there was horse, deer, fowl, cat, dog, rabbit and cod. Group 27 produced the fifth major group of animal bones to be studied (deposit L1), though the sample was more like that of Group 31 (deposit L2) above in that there were more sheep (horned only) and fewer cattle. Pig, chicken, goose, rabbit, ling and ray/rocker were found. Two more silver pennies (late 13th-15th century) were found: one from the topmost layers of the midden (Group 27) and a second, in very corroded and fragmentary condition, from the later Victorian build-up on the close (Group 24). Also from the top of the midden came a fragment of the pushed-in foot of a glass beaker, or possibly a flask, faintly striped with threads of 'lattimo' glass, which is conventionally dated to early 16th century.

By the 16th century, the midden had essentially stopped forming. The stone drain had blocked up and was not cleared out, as it must have been at regular intervals to stay useful. There is a definite break in the pottery sequence, both native and imported, at around 1470-75. Wares of the two centuries after 1470 account for only 7% of the 6,300 sherds (both native and foreign) recovered. There are no Raeren drinking mugs of the kind imported into Britain in the 1480s (below, p 211). The conclusions are twofold; house A ceased to exist as a house, and the midden between the two houses became a desolate open space.

The last act of this sequence was the demolition of house B, by knocking the flimsy walls inwards and razing it to contemporary ground level. Because of the build-up of midden and close levels outside, this meant the walls were left standing to a height of 0.95 m and the room inside filled with rubble (sections 3 and 4: fig 10) (Group 28). This rubble included some interesting items which presumably came from the house itself: pressed between the rubble and the dirt floor was a fragment of thick window-glass, diamond-cut, possibly 16th century; from the demolition rubble fragments of 'bull's eyes', which would be at least 18th century. The rubble also produced a third type of window glass, fragments of the edge of a panel of 'muff' glass, of probable 17th-century date. Another fragment of the same panel was found a short distance away in topsoil, along with a piece of 'crown' glass of late 17th- or 18th-century date. A further turner of Charles I (1642-50) came from the rubble, much corroded and extremely worn. For the first time on Area 2 a number of clay pipes, bowls and stems, were recovered, all dating to the 17th century (fig 25, nos 22-3, 27, 29, 35). While a 17th-century date is suggested by the pipes and pottery (which is only 16th century at the latest, e.g. fig 18, nos 97-8) the glass fragments may bring the demolition into the 18th century.

#### *South-west extension (Cutting 9) (Group 29; figs 7, 9)*

During the later stages of the eight-week season in 1973 a further area, cutting 9, was opened in the SW corner of Area 2, initially to define the butt of the ditch seen in section on the W side of the N/S machine trench. This area was initially cleared by machine to a depth of 0.8 m – slightly deeper than elsewhere in Area 2 – and excavated by hand to a depth of 1.5 m. This cutting included the drains of Dickson's Close, and left the corner of the adjacent standing building on very uncertain foundations. The excavation was therefore somewhat hurried and, after professional engineering advice, was quickly backfilled. It should therefore be taken separately from the other areas and regarded as a salvage operation.

It was however of great interest, for besides the outline of the butt of the ditch already described (Group 6), the upper midden group 29 produced a small quantity of 14th- and 15th-century pottery, including two-thirds of a large green-glazed jug (fig 18, no. 99) – by far the largest piece from the whole excavation – and several piles of sheep's crania (Group 29). No structures were uncovered, and the upper levels were as elsewhere much disturbed. A cut-line of the S side of the ditch (section 2, fig 9) indicated some kind of re-arrangement of the midden material in the 15th century. The W part of cutting 9 went right up to the turnpike entrance of the Area 3 house (pp 187-90), but nothing was found of the other, smaller house shown in this place in the sketch of the larger house in 1850 (pl 16c).

#### *Topsoil and industrial archaeology (Groups 30-2, 36; figs 7-12)*

As explained above, topsoil was in two rough layers: a top layer of building rubble, 0.3-0.5 m thick, which was stripped by machine; and a lower layer of archaeological deposit, mixed with the lower traces of the rubble, which was excavated by hand a further depth of 0.5 m before the midden was considered 'safe' from later contamination (Group 31). Predictably, this produced

many finds with a wide date range; much residual pottery from the late 12th century to the 20th (nos 101-37, figs 18-19), the bulk of which was the 14th- and 15th-century wares to be found throughout the midden. Besides two modern coins, a 1st period billon plack of Mary Queen of Scots of 1557, much corroded, was found just E of the N limb of the W wall, i.e. above the cess-pit, and this presumably was lost during the period of desolation of the midden. A sixth major animal bone collection from above the garderobe pit and over Cutting 8 produced bones of cattle, sheep and pig as before, with horse, deer, dog, duck, rabbit, cod and two crab claws (evidently a delicacy).

During this post-medieval period a row of large boulders was laid against the inside W edge of the N limb of the W wall, and with them, or possibly just pre-dating them, a substantial posthole was dug into the midden along their line (plan, fig 7; section 2: 5, fig 9). This post, later burned out, survived as a dark charcoal stain in the midden material. It could possibly be the precursor of a certain amount of 19th-century building, including a wall which found and re-used the levelled wall of house A as a foundation, at the N end of Area 2. Using such large riverine boulders as the basis of 18th-century buildings has been noted at Linlithgow during excavations in 1973 (information C Brooks).

On Cant's Close, 5 m S of the line of house A, a small bronze foundry was cut into the very top of the midden, most of its remains mixing with the rubble layer above. This produced a number of 19th-century shoes and the fragments of fifty or more earthenware crucibles (Group 32). Material from the close at the E end of house A, where the medieval wall has been truncated by the 19th-century drains, was kept separate as being partially relevant to the House (Group 30); sherds of various dates were recovered. Unstratified material, mostly from machine clearing at the opening of the Area, is allocated to Group 36 (e.g. nos 140-1, fig 19).

#### *South of Area 2 (Cutting 13)*

As the 1973 season drew to a close, and it seemed likely the development would go ahead without delay and excavate at least one basement at the S end of the site, a trench was cut by machine to determine the depth of midden deposit as far S as we could go (fig 3: cutting 13). The trench was cut by machine from E to W until it came up against the standing building and could go no further. The sections of this cutting were pure midden on all four sides, to a depth of 2.95 m (62.55 m OD) where the clay natural was reached. Late 13th- to early 15th-century material was produced (Group 42).

#### FURTHER EXCAVATIONS IN 1974 (CUTTINGS 14-19) (fig 4: section, fig 13)

As it became clear towards the end of 1973 that the future development of the site was temporarily postponed, permission was sought and granted to carry out a further two weeks of excavation, in January 1974, as soon as the surrounding buildings had been demolished.<sup>6</sup> The unexamined corners of the High Street frontage area were known to be cellared and were left untouched. The late 18th-century buildings along Niddry Street to the E had been built, towards the N end, on a large cellar which opened on to the Area 2 slab at ground level at its S end, but became a double basement at the N end as the surrounding ground rose. In a way this was fortunate, for it allowed us to concentrate on two other objectives; following the ditch, and following the zig-zag line of the 14th-century walls to discover if they or walls like them still survived to E or W. In practical terms this meant the W, as the E line was still occupied by the standing wall of the yard of Morton House. To this was added the subsidiary objective of trenching the SW corner of the midden to discover its depth there.

Two cuttings, 14 and 15, were cut W of the line of the wall, but without result (fig 4). There

was much disturbance associated with the building of the warehouse above, and the midden material was only 1 m thick here as elsewhere at this point on the slope. 15th- and 16th-century pottery came to light (Group 37). It became clear that we had been singularly fortunate in finding Area 2, the only surviving area of totally undisturbed archaeological deposit on this level of the hillside.

Two further cuttings, 16 and 18, attempted to locate the ditch if it re-started after the hiatus of the line of Dickson's Close. No clear indication was found in either cutting, for the midden material just sloped gently southwards as in all the other cuttings. Cutting 18 was allowed to be cut as far S as possible, which meant less than 0.5 m south of the previous cutting 13, and the depth of deposit was about the same – 2.9 m. This cutting went through the middle of the now vanished Area 3 house. The pottery range from cutting 16 was 14th to 17th century, mostly 15th (Group 38); and from cutting 18 came one rim sherd, 17th century (Group 39).

Opportunity was taken after the excavation of cutting 16 of sampling the midden material, in its most undisturbed lower levels, for pollen analysis.<sup>7</sup> This sample can only be related to the general development of the midden as a whole down the entire slope, and is therefore strictly unrelated to the actual excavated areas to the NE. Conditions did not allow the preservation of much pollen, so that a complete picture could not be built up, but a slight progression could be observed from the bottom 0.15 m of the midden, elsewhere dated to the 14th century (on evidence from cutting 13, possibly the first half of that century), where there were odd grains of oak, birch and hazel, through a gap until 1 m from the bottom, perhaps the 15th century, where there were relatively abundant grains of grasses, together with relatively large numbers of *Urtica* (nettle). Very few grains were in fact preserved, but this is slight evidence for a change over from open country with occasional trees to possibly urbanised conditions. This would reflect the gradual disappearance of woodland as the suburbs of the growing city pushed southwards across the Cowgate.

Cuttings to the E of the ditch line were beset by different problems. The building which formerly stood S of Morton House was a paint factory, and its fuel tank of naphtha still sat athwart the line of the ditch. To the E of the tank was the access point to the yard of Morton House and therefore untouchable. A small area, cutting 17, was therefore cleared S of the tank, its E edge crossing the property boundary marked by the back of the former building. As Blackfriars Street dates from at least 1230, when the Blackfriars established their friary to the S, it was possible the boundary would be marked by a wall or a ditch of equal age.

As funds were running out, it was decided to leave the rest of cutting 17, which appeared to be pure midden, and section the property boundary (cutting 19). A large ditch (just possibly, in view of the narrow length exposed, a long pit) was found, and the section drawn (section 10, fig 13). As with the ditch found the previous year, there was little distinction between its fill and the midden above. Cutting 17 produced a 15th/17th-century group of pottery (Group 41; nos 143-5, fig 19) – this area could well have been the garden of Morton House – and cutting 19 mostly late 13th/15th-century pottery (Group 40). Again it was a salvage operation and the pottery could not be related to detailed stratigraphy. For most of the two-week excavation period the site was under six inches of snow.

## DISCUSSION

We may briefly review the archaeological evidence provided by the various areas of excavation on the slope from the High Street to the Cowgate. House A, built in the 14th century, had a shallow cess-pit on its S (downhill) side; perhaps the lip of this pit formed a line with a simple

fence of stakes to the W. About 10.5 m to the S of this line a ditch was cut, with a butt end against the property boundary later followed by Dickson's Close, going off roughly eastwards. At a later date – though possibly almost immediately – the W wall replaced the fence and with its N limb both formed the W edge of the cess-pit and joined the W end of house A. (It is also conceivable, though unlikely, that house A originally went further to the W, at a higher level, and that the wall excavated represents a strengthening of the foundations at a point weakened by the insertion of the garderobe chute.) The garderobe continued emptying domestic rubbish, including fine imported German stoneware cups and jugs and Dutch tiles during the period 1400–1475, and towards the end of that period a makeshift stone drain was added. To the S, sometime during the 15th century, house B was built on the midden and lasted until after the mid-18th century. House A, however, stopped emptying rubbish on to the midden around 1470–1475, and the intervening area was a waste space until the present, apart from minor Victorian intrusions at the N end. Elsewhere the midden was traced to a uniform, gradually increasing depth as it spread S. Nowhere was occupation prior to the early 14th century found, although 13th- and 14th-century pottery persisted in all deposits as residual material.

Though German stoneware was scattered fairly uniformly through the midden, early (late 12th/early 14th century) wares form a large residual component in the native pottery. In the five main midden layer-groups this component gradually decreased as the midden rose: from 95% at the bottom (Group 7), through 81% (Group 8), 83% (Group 26), and 51% (Group 27) to 39% (Group 31). Taking over from these early wares as the layers mounted up was late 14th/early 15th-century material, with a sprinkling of intrusive 16th/17th century in the uppermost layers. Of the medieval coarseware sherds, 91% were body sherds, only 4% rims, 2% handles and 3% base fragments. The German stoneware was in a similar intractable state, 11% being rims, 6% bases and 83% bodysherds. Even if one thinks of fairly large vessels being smashed and scattered by the natural downhill movement of the midden, perhaps for considerable distances, the proportions especially of the coarseware fragments seem distorted. Prolonged study of the fragments would probably assemble more profiles than the few offered here.

We have no means of reconstructing house A, other than saying it had a floor of yellow, green and black tiles. If house B post-dates the abandonment of house A, which is possible, then perhaps the window mullion re-used as the fireplace fender in B was taken from a window in house A. Little is known of late 14th- or early 15th-century urban domestic buildings in Scotland; house A may be compared loosely with the thirty-two manses of the canons of Glasgow Cathedral, which were two-storeyed buildings with staircase towers, wooden balconies and extensive gardens (Kellett 1969, 3; for later town houses see MacGibbon and Ross 1887, iv–v). Fragmentary remains of 14th-century buildings have recently come to light in Aberdeen (Simpson 1974).

Whether house A was stone-built throughout, or timber-framed above these rubble foundations, is an intriguing question which must remain unanswered. The usual date for the change from buildings of timber to those of stone is the 16th or 17th centuries (RCAMS 1951, lxviii). There is a general similarity between the foundations of house A and those of early/mid 14th-century merchants' houses excavated on several sites in the City of London, which were almost certainly timber-framed above first-storey level (Schofield 1975). The western wall was probably not a house-wall, possibly a strengthening of the original fence, on the property along Dickson's Close to the W.

Edinburgh was laid totally waste in 1342, and again seriously burned in 1385 (RCAMS 1951, xli); the archaeological evidence would suggest that house A dates from around, perhaps shortly after, the latter date. We may now turn to the possible reasons for its demise.

Here we may compare the archaeological with the documentary evidence. James III, in his charter of 1472, 'gives powers and charges the Sheriff and his deputies of Edinburgh, our Provost and Baillies of the same, that they cast down and remove whatsoever houses biggit upon our walls, or uncouth, the quhilk are needful to be casten down for the strengthening of the said town and defences thereof' (Marwick 1871, 134). If house A had been attached to the wall, its garderobe inserted in the wall, or if the wall coincided at this point with the house, destruction or modification of house A would be a natural outcome of this royal decree.

A second piece of documentary evidence may also be considered. Dr Ash found that in the 1635 Extent Roll there was a 'long, rouynous waste, old wall southwards' half way down the W side of Cant's Close (p 164). If this were house A, the wasteland would be to the N of Area 2, outside the excavated area and thus unexamined. We would also have to explain why the excavation found a wasteland, throughout the 16th and 17th centuries, with the old wall on its *north* side. If the meaning of the Roll's 'old wall southwards' can be interpreted as 'south from the old wall' instead of 'as far as the old wall to the south', the documentary and archaeological evidence would agree to make a strong case for the wall of house A being the wall referred to in the Roll.

If the line of the King's Wall is that of the zig-zag course of the two walls found in the present excavation – and it is now suggested that it is – little can be said about the wall's probable course elsewhere along the hillside, since the policy of either observing existing property boundaries or joining together existing house walls to form a defence will produce an unpredictable line which cannot be easily traced on subsequent maps. The generally accepted line of half way down the slope (fig 5) is verified; the line is almost exactly half way between the High Street and the Cowgate. Its line cannot be traced immediately to the W, towards the Castle, even though most of the closes to the Lawnmarket are of comparative age to those in the present excavations. A long section of old walling below St Columba's church in Johnston Terrace has been identified as the longest surviving stretch of the Wall, and is of similar construction to the W wall in Area 2, surviving up to 3 m high (Adams, Harvey and Whitson 1929, 388). Eastwards of the Area 2 excavation, the line of house A is taken by the wall forming the N side of the yard of Morton House, and is then carried further by an unnamed alley striking E of Blackfriars Street. Excavations on this line by St Mary's Street in 1974 found little traces of 15th-century occupation (information N Holmes), but it is possible that the wall lies under the S side of the building which formed the N side of the site. It then turned N, along St Mary's Street, to meet the Netherbow Gate.

Since it is currently thought that the original burgh tenements stretched down to the Cowgate – in the 12th century, a meandering muddy stream – the order to build a defence half way down the slope must have been ill received by the citizens of Edinburgh, which is perhaps why two royal charters were necessary to effect it. Such shrinkage in times of war is known in other towns of the period; at Berwick and at Newcastle, where there are records of property being cut through, the buildings outside being afterwards demolished (Turner 1970, 104-6). In London the land outside the town ditch was kept vacant and unencumbered for as long as possible, and the City only leased it out with reluctance, retaining the right to demolish if necessary for purposes of defence. From the second quarter of the 14th century a strip of access land 16 ft wide on both sides of the wall was ordered to be free of building or any other form of enclosure (information from Tony Dyson). There is also evidence, from English and Welsh towns, for the building of houses on walls – especially those surviving from Roman times, e.g. at Exeter (Turner 1970, 194) and perhaps at Canterbury (*ibid*, 148), but also on new medieval walls at Scarborough in 1304 (*ibid*, 110). A shop on the S side of East Street, Southampton, is said in a deed of 1296/7

to have its E boundary against the town wall (Wacher 1975, 147); and in London a man who used the rich earth of the fill of the town ditch for a garden, and even for building purposes, around 1350, was not ordered to demolish but merely charged extra rent.

The charter of 1450 instructs the citizens of Edinburgh to join together the 'hede roumys', which is normally taken to mean the ends of the rigs; if so, we may suppose the wall would run along the Cowgate, which is clearly nonsense. Perhaps the expedient adopted by the citizens was to join together their private walls, whether enclosing gardens or comprising actual buildings, at the southernmost line of development at the time. Such a ramshackle method of fabricating a defensive wall is not so far known elsewhere (e.g. in the 84 English and Welsh towns studied by Turner 1970); but at Southampton in 1363 a row of houses facing the sea (and the French) were required to have their doors and windows walled up to three ft thick or more, and 'the little postern in the cellar of John Wytegod should be closed with a wall as thick as the wall of the cellar' (Turner 1970, 173). It is likely, if house A is part of the King's Wall, that its modification after 1470 took a similar form.

The problem of where exactly the boundary of the burgh ran in the early and mid 15th century is also relevant to consideration of the fence and the ditch. Neither can be proven to be earlier than the midden of house A, though to have an earlier fence and ditch, of a defensive nature, is an attractive possibility. This would indicate that the military boundary of the burgh, if not the civic, ran along the line later followed by the stone walls. It would also elevate the lip of the cess-pit, with its artificial clay bank some 0.4 m high, to the status of a defensive bank, just by chance re-used as the lip of the later garderobe pit. The palisade formed by the two sections of fencing would be a token boundary, probably resembling the fence found dividing two tenements in 12th-century King's Lynn (Parker 1965, 196, fig 41 and pl XXIIA). Here wattle walls, of silver birch, consisted of sharpened stakes driven into the ground and supple branches woven between them, without foundation beam or trench. The uprights averaged only 1½ in (0.04 m) diameter, but supporting them at about 2 ft (0.6 m) intervals stood larger posts, about 6 in (0.15 m) diameter, both roughly squared and unworked. Such a fence is strongly suggested by the Edinburgh remains. It has always been presumed that the Scottish medieval burghs were enclosed by a ditch and a palisade (RCAMS 1951, lxii, n. 7) as were Edwardian plantation towns in England and Wales (e.g. Flint and Rhuddlan; Beresford 1967, 37), but dimensions are lacking. The archaeological evidence however suggests that the fence was standing when the W stub of the wall was built against it, and no wooden fence of the 12th century would be standing in the late 14th. It is more probable that the burgh boundary was formed by the stream of the Cowgate – streams form boundaries in several English towns of similar plan – and that the burgh was not defended at all on the N and S sides, relying on the marshy ground to the S and the Nor' loch to the N. Lack of structures and layers datable to the years before the late 14th century on this site suggest that the plots in this area were not fully developed until the ditch and fence, probably of peaceful purpose, divided the property up prior to the building of the stone walls. Stone property divisions, though not internal ones, were found in the 14th century in Aberdeen and St Andrews (Brooks 1977).

The date of the establishment of house B, and by implication the establishment of Cant's (and presumably Dickson's) Close from house A and its neighbours to the Cowgate is equally problematical. The fabric of house B gave native and imported sherds of the early-mid 15th century, with a coin of similar date. Since the house is built on a midden of residual material, such inclusions should only be viewed as a *terminus post quem* for the building. Although peace was not concluded with England until the early years of the 16th century, and then only temporarily, the latter years of the 15th century were a period of consolidation and expansion for

Edinburgh; the town became the focus for parliament and the legal profession, and was pronounced 'the principal burgh of our kingdom' by James III. The building of the wall, or the compromises with existing property walls which constituted the defence, must have dislocated the economic life of most of the S side of the High Street, since it cleft the plots in two. These two factors probably contributed to the development of the land below the wall very soon after and despite the royal decree of 1473. The construction of the Flodden wall in 1513 seems to have been initiated to enclose the suburbs which had grown up since 1473; its line enclosed the Cowgate and the religious houses of the Blackfriars and the Greyfriars on the slope beyond (fig 1). Although a space was meant to be cleared on each side of it, the compromises were similar to those of the earlier wall; any convenient house or wall was included in it, and along St Mary's Street and its northern product after the Netherbow, Leith Wynd, the continuous line of houses was refurbished as defences. The Burgh Records show many reports of building and repairs.

House B may then be put in the late 15th or early 16th century; and the Area 3 house, of much more imposing stature, is a little later (below, p 187). It is tempting to associate house B with the house owned by 'Andrew Hardie, candlemaker' noted in 1635 to the S of the ruinous waste (p 167). A subsequent re-reading of the Extent Roll by Dr Ash revealed that the 'high house south of the former waste' was actually occupied by a Janet Somerville, and that the widow, or relict, of James French, minister, occupied the high house beside it. One cannot help suggesting that it was one of these two ladies who dropped the group of Charles I turners on the dirt floor of the cellar, never to be recovered until the present excavations.

#### NOTES

- 1 I am indebted to Professor G Donaldson, University of Edinburgh, for the chance to read his introduction to the Edinburgh section of the forthcoming volume of *Historical Atlas of Town Plans for Western Europe* (ed M Lobel), which has suggested several points I have built upon.
- 2 *Quercus sp.* Identification by staff at the Royal Botanic Garden, Edinburgh.
- 3 Since every one of the 6,300 sherds from the midden is marked and its position can be plotted to within 2 m horizontally and 0.15 m vertically, total re-classification of the whole sequence is possible.
- 4 Although a late 14th-century date for both house A and the W wall has been retained throughout this report, the possibility that the former especially was built in the mid part of the 14th century should not be overlooked.
- 5 By M C Jarvis, Department of Agricultural Chemistry, University of Glasgow.
- 6 The excavation was financed by a further grant from the Department of the Environment. We are also grateful to the University of Edinburgh for the use of Morton House as our base.
- 7 By Alan Hayes, Department of Forestry, University of Edinburgh.

STRATIGRAPHY (for position of sections 2-9, see plan, fig 7; for section 10, see fig 4, cutting 19, N face)

#### Section 2 (fig 9)

- 1 The western wall. Large squared pink and buff sandstone blocks with occasional boulders, heavily mortared on both sides. At least two, probably three, irregular offsets on south side. (Group 5)
- 2 E-W ditch. Fill indistinguishable from midden above. ? Mid-late 14th century. (Group 6)
- 3 Midden fill; mid-brown clayey soil, charcoal flecks, few oysters outside traces and dumps. First half of 15th century. (Groups 7-8, 26-7)
- 4 Earliest midden layers inside western wall; identical to 3 above. ? Late 13th/15th century, possibly mid-late 14th. (Group 10)
- 5 Upper midden layers inside western wall; similar to 6 outside wall. Concentration of oysters and charcoal in brown/black soil. Early 15th century. (Group 11)



- 6 Spreads of oysters and charcoal on midden material; concentrations of oysters and charcoal in brown/black soil, similar to 5 above.
- 7 Light brown clay and soil, stony, occasional charcoal flecks and oysters; top layer of dark brown soil with charcoal and oysters. ? Yard N of house B; 15th/16th century. (Groups 21-2)
- 8 Squared sandstone block. Probably the trace of the robbed wall of house B showing through in section. ? Early 16th century. (Group 14)
- 9 Dark brown soil with charcoal, oysters and lumps of clay. The great midden layer spreading S of the site. (Group 29)
- 10 Boulders lying on the top of the midden, in a N-S row just clipped by the section. Associated with 11, later structure. ? 18th or 19th century. (Group 31)
- 11 Posthole of decayed or possibly removed post associated with boulders 10. Fill of grey-brown and charcoal, stony, with oysters. (Group 31)
- 12 Cut of pit, pre-midden, filled with midden material. ? Late 14th Century. (Group 3A)
- 13 Disturbance filled with clean sand. Modern. (Group 31)

*Section 3 (fig 10)*

- 1 Lower layers of fill of cess-pit of house A; layers of charcoal, oysters, red ash and loam, stones towards bottom. First half of 15th century. (Groups 16-17)
- 2 Stones at base of 1, possibly roughly-laid floor (? drainage) for cess-pit.
- 3 Dark-brown and grey clay with charcoal flecks and occasional stones. Re-deposited clay on lip of cess-pit. Late 14th or early 15th century. (Group 2)
- 4 Soft mid-brown clay; probably natural.
- 5 Orange-brown clay and stones; lenses of clay in midden material. (Groups as for 6)
- 6 Brown-black clay, loam and heavy charcoal; midden material. (Groups 8, 26-7, first half of 15th century)
- 7 Brown clay and soil; lower midden material. First half of 15th century. (Group 7)
- 8 Orange-brown clay; natural.
- 9 Hard clay with stones and charcoal. Demolition of house B. After mid-18th Century. (Group 28)
- 10 Brown-black clay and charcoal with loam. Probably equals layer 6 to N of baulk; midden material, first half of 15th century. (Groups 7-8)
- 11 Layers of charcoal, mortar, clay and soil. Demolition of house B. After mid-18th century. (Group 28)
- 12 Rough cobbles set in clayey charcoal, covered with hard crust of charcoal. Westward extension of dirt floor of house B; 16th and 17th century. (Group 15)

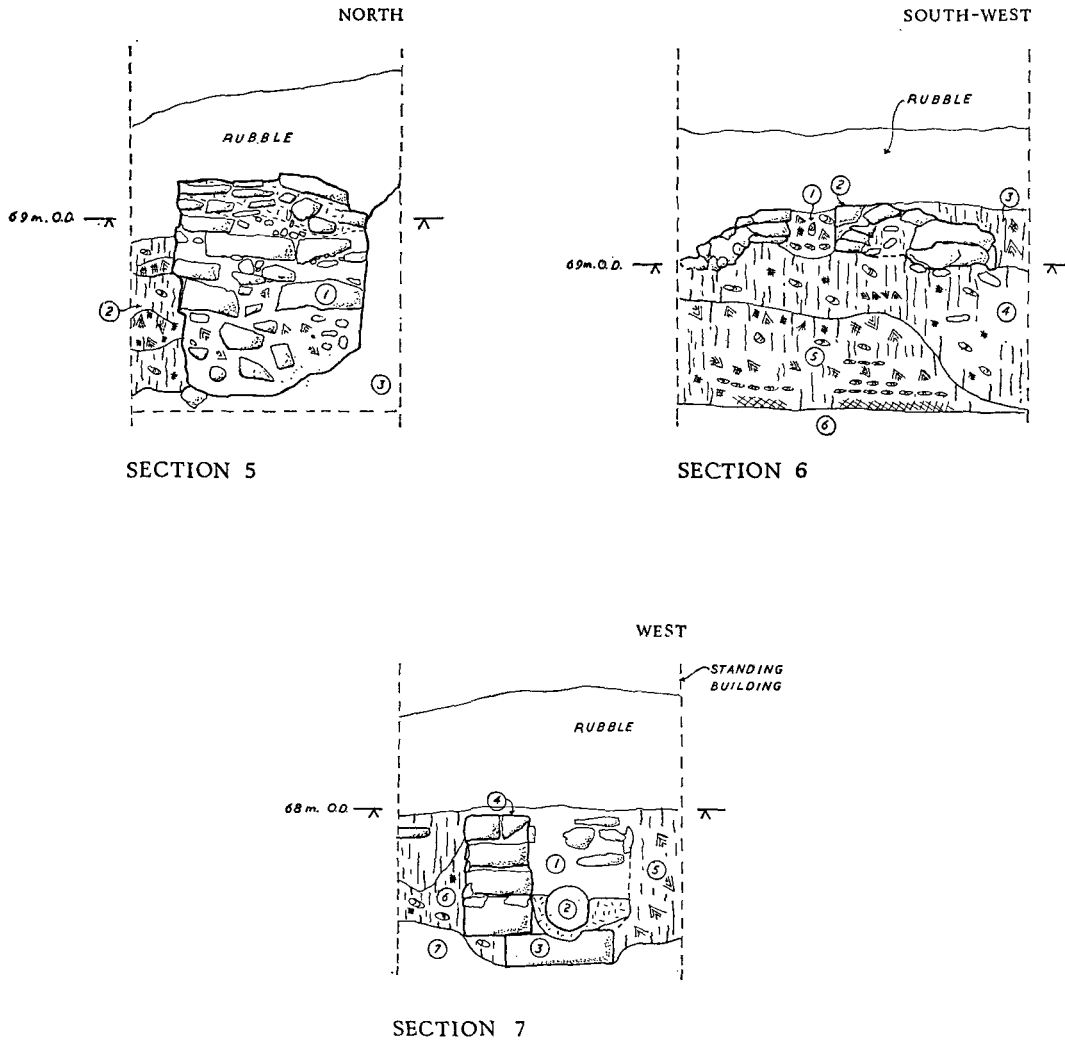
*Section 4 (fig 10)*

- 1 Brown-black clay, loam, charcoal and oysters, lenses of red clay, upper parts green-stained (Group 18); lower layers of cess-pit fill, first half of 15th century (Groups 16-17). Same as section 3 : 1.
- 2 Dark brown and grey clay with charcoal flecks and occasional stones. Re-deposited clay on lip of cess-pit, late 14th or early 15th century. (Group 2.) Same as section 3 : 3.
- 3 Soft mid-brown clay; probably natural. Same as section 3 : 4.
- 4 Brown-black loam with little clay, charcoal flecks and occasional stones. Midden material, of section 3 : 6, but more homogenous. First half of 15th century. (Groups 7-8, 26-7)
- 5 Cut of pre-midden pit, filled with lower midden layers; cut perhaps late 14th century. (Group 4)
- 6 Mid-brown clay, natural.
- 7 Cut for pre-midden pit, filled with lower midden layers; cut perhaps late 14th century. (Group 3)
- 8 Rough cobbles, charcoal between stones. ? Yard N of house B. (Group 21)
- 9 Cut in lower layer of midden material, filled with oysters. ? Foundation trench for N wall of house B. (Group 13)
- 10 Mixed clay, charcoal, loam, mortar; demolition of house B. After mid-18th century. (Group 28)
- 11 Charcoal, hard-beaten; laid stones beneath except at section. Fireplace in house B; ? Late 15th or early 16th century. (Group 15)
- 12 Window mullion re-used as fireplace fender. ? Late 15th or early 16th century. (Group 15)
- 13 Lens of hard, beaten charcoal and clay. Dirt floor S of the fireplace, house B. 16th-17th century. (Group 15)
- 14 Disturbed loam, charcoal and clay; midden material disturbed by superimposition of house B and subsequent demolition. (Group 31)

- 15 ? Pit filled with charcoal, clay and loam with a lens of pure sand; ? position of robbed S wall of house B. Possibly mid-18th century. (Group 28)

Section 5 (fig 11)

- 1 Wall of house A; irregular, sometimes roughly squared sandstone blocks in clay bonding; tendency towards rubble at bottom and rear (N side). ? Late 14th century. (Group 1)



EDINBURGH HIGH STREET

SECTIONS 5, 6 & 7

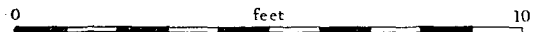
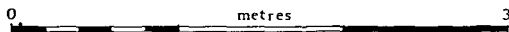


FIG 11

- 2 Fill of cess-pit; layers of red ash, charcoal, oyster traces, brown/black soil. First half of 15th century. (Groups 16-17)
- 3 Natural brown clay.

*Section 6 (fig 11)*

- 1 Fill of stone drain; oysters and charcoal. First half of 15th century. (Group 20)
- 2 Stone drain for garderobe of house A; irregular, very occasionally roughly squared sandstone blocks and rubble, no mortar, one tile fragment built in. First half of 15th century. (Group 19)
- 3 Last levels of midden, just before blocking of drain; dark brown soil, charcoal and oysters. First half of 15th century. (Group 27)
- 4 Green-brown soil, charcoal and oysters; greyer towards top, greener towards bottom. High-phosphorus deposit on midden. First half of 15th century. (Group 18)
- 5 Lower layers of fill of cess-pit of house A; layers of charcoal, oysters, traces of red ash, top part stained by 4 above. First half of 15th century. (Groups 16-17)
- 6 Natural brown clay.

*Section 7 (fig 11)*

- 1 Rubble and redeposited midden material; fill of drain-trench. 19th century. (Group 31)
- 2 Modern drain set in concrete. 19th century. (Group 31)
- 3 Channelled slab for drain. 19th century. (Group 31)
- 4 Wall of squared sandstone blocks and firm mortar, built up from 3. ? 19th century, inserted with drains. (Group 31)
- 5 Redeposited midden material on insertion of drains or building of standing warehouse to W. 19th century. (Group 31)
- 6 ? undisturbed midden material; dark brown/black soil with charcoal and oysters. (Group 31 since machine excavated, but probably = Group 7 or 8)
- 7 Natural brown clay.

*Section 8 (fig 12)*

- 1 Dark brown soil with charcoal flecks and oyster traces. Upper layers of midden, first half of 16th century. (Groups 26-27)
- 2 Darkish brown clay, charcoal flecks and oyster shell fragments; heavy charcoal below. N equivalent of yard outside house B; temporary trodden surface in midden. First half of 16th century. (Group 26)
- 3 Dark brown soil with charcoal flecks and oyster shells; lower layers of midden. First half of 15th century. (Groups 7-8)
- 4 Natural brown clay.

*Section 9 (fig 12)*

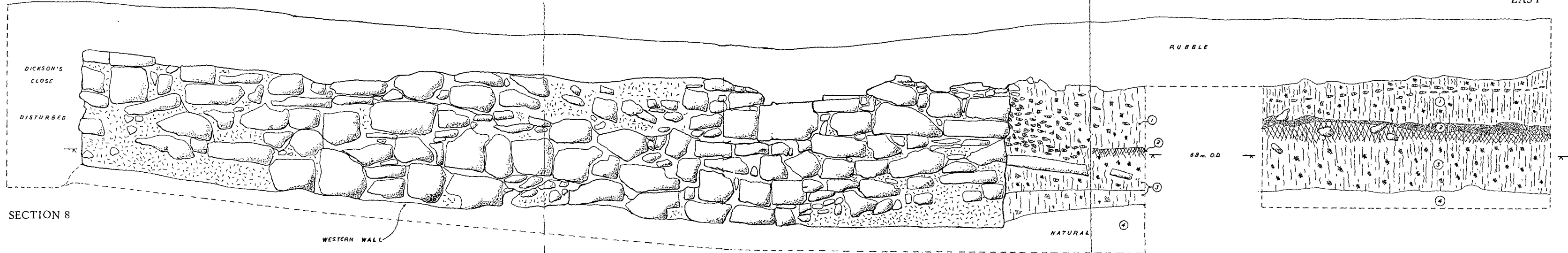
- 1 Layers of brown/yellow clay, brown soil with rubble, and a layer of rough sandstone pieces in hard dark brown soil with charcoal; rough yard N of house B. First half of 15th century. (Group 22)
- 2 Layer of rough sandstone pieces in hard dark brown soil with charcoal; rough yard N of house B. First half of 15th century. (Group 21)
- 3 Dark brown soil with charcoal, lumps of clay and oysters. Midden below yard; first half of 15th century. (Groups 7-8)
- 4 Natural brown clay.

*Section 10 (fig 13) (Group 40)*

- 1 Brown clayey soil with large lumps of clay, occasional oysters. Top of general midden layer mixing with top soil rubble above. 17th-19th century.
- 2 Solid brown clay. A dump, perhaps a temporary foundation.
- 3 Dark brown soil, clay and oysters, with charcoal. General midden, upper layers.
- 4 As 3 but darker and with more charcoal; fill of ditch or ? pit.
- 5 Modern wall of building forming boundary on edge of excavation.
- 6 Natural brown clay.

WEST

EAST



SECTION 8

WESTERN WALL

NATURAL

RUBBLE

68m. O.D.

0 1 metres 3

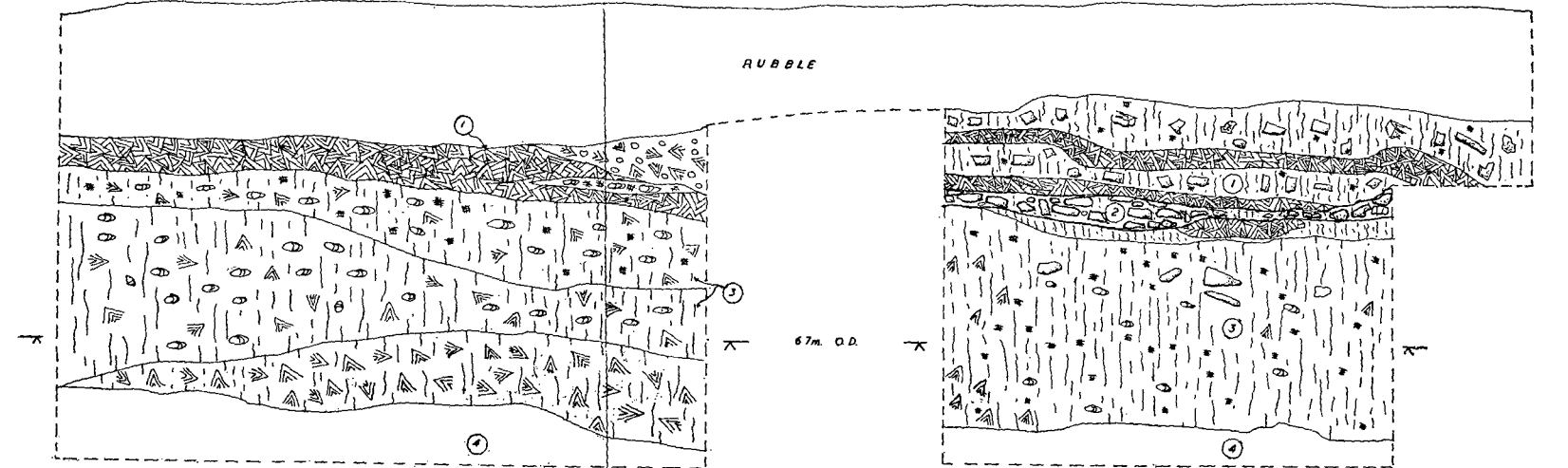
0 feet 10

EDINBURGH HIGH STREET

SECTIONS 8 & 9

SECTION 9

EAST



RUBBLE

67m. O.D.

FIG 12

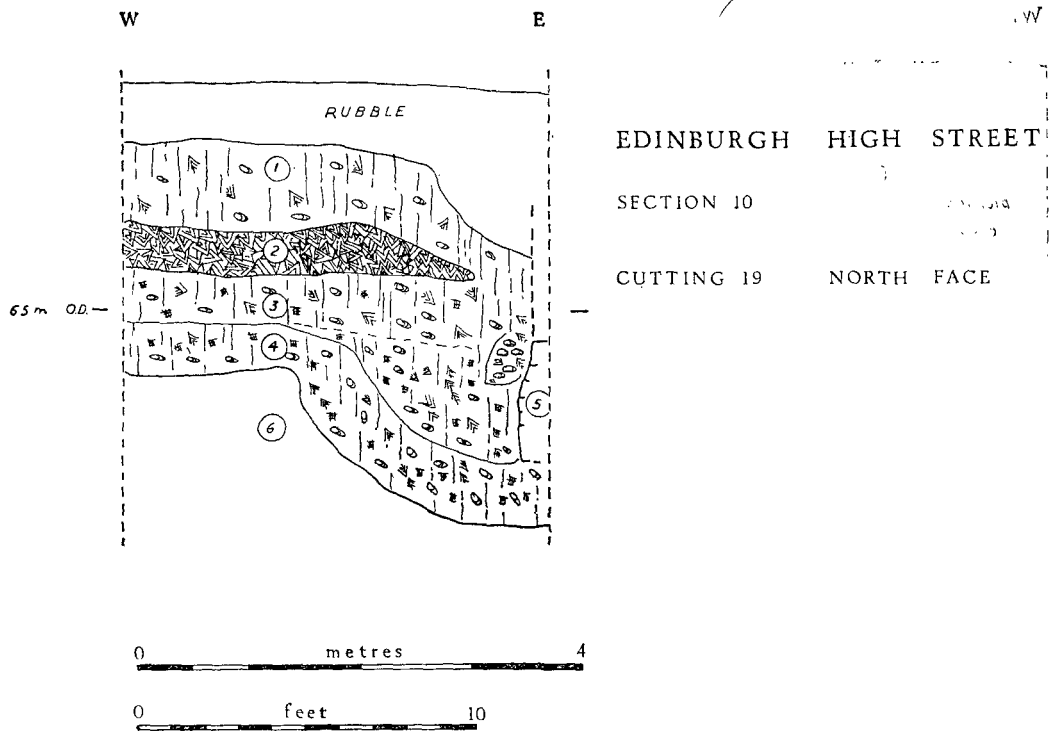


FIG 13

## APPENDIX A

## A late 16th-century house on Dickson's Close

by Neil Hynd

The half-demolished shell of a town-house of some distinction bordered the main archaeological excavations on the SW (fig 2) and its short description in the *Inventory* for Edinburgh (RCAMS 1951, 94) is now augmented by the following study, made during the excavations of 1973. The overgrown and partly backfilled ground-floor rooms were cleared by machine and latterly by hand, but lack of resources for substantial and cumbersome timber shoring of the surrounding buildings, which reached six storeys, precluded further examination of the basement. The resulting plans are given here as figs 14-15, becoming more and more sketchy until the third floor was defined merely by a ghosting on the gable end (pl 16b), with the presumptions that the spiral stair must have risen to serve it, and that the chimney flues sought the conventional exit upwards.

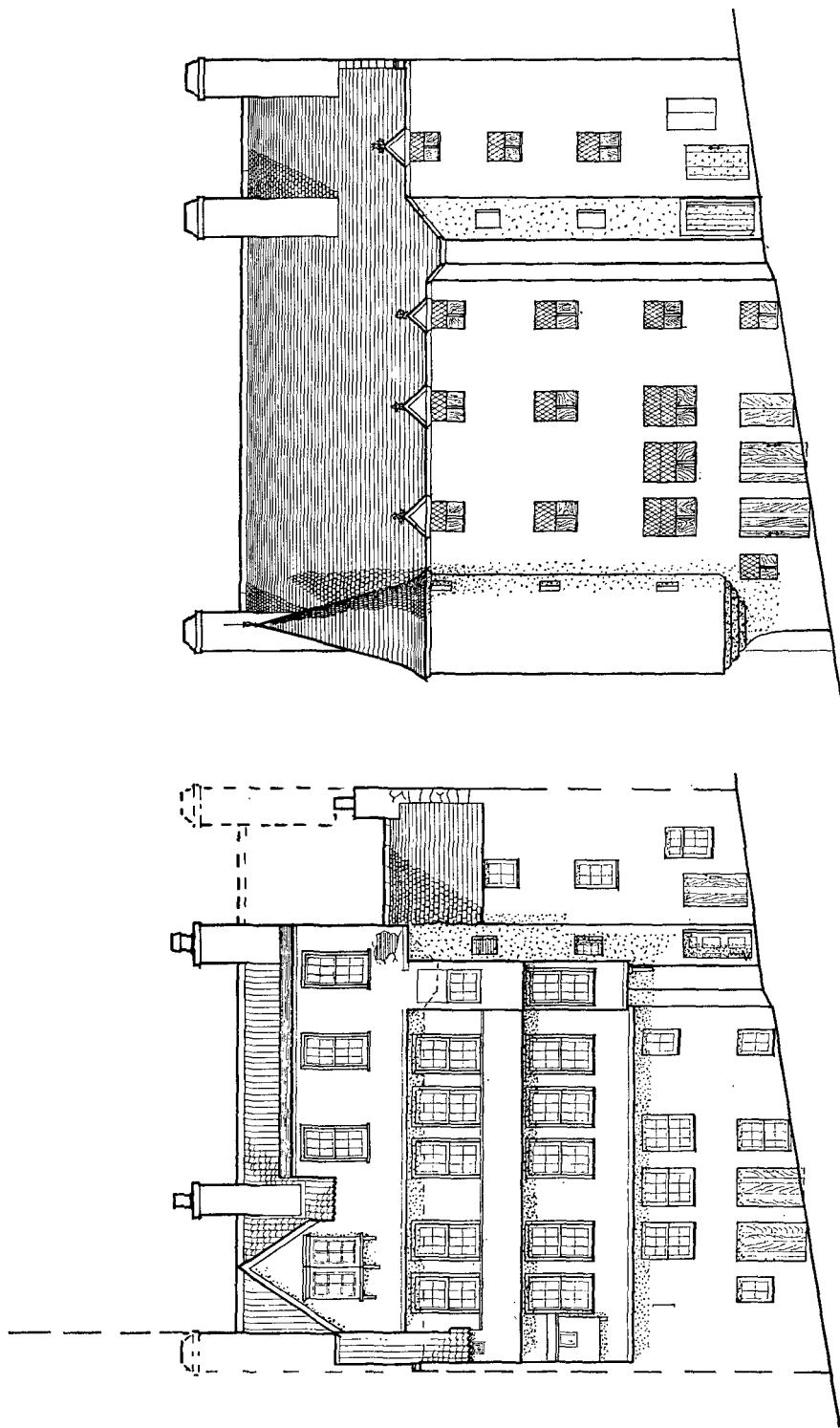
There are several general points to note in the construction of the building. Firstly it was of rubble sandstone and lime mortar construction with plain but finely dressed ashlar blocks around the main window openings; these seeming to be by the same hand that tidied up the stub ends of the elevation at levels 2 and 3 on the S gable. All was probably harled, lime washed or both. A deep cut moulding surrounded the door, apparently (see pl 16c) without any inscription or heraldic device. The doorway itself was closed with a secondary 18th-century panelled door. All the ashlar window returns had slightly rounded arrises, and contained glazing checks for leaded lights, where these could be inspected.

There were several risband joints running up the building, particularly at the S gable and the central cross wall. The first analysis of this would imply that the smaller N chambers were added to the building at a later period, presumably being served from the spiral stair, though it did not survive to a height that could confirm this. The second analysis shows that the S gable is not contiguous with any of its four supporting walls. The inference that this common gable predates both of the houses adjoining it is perhaps not so improbable when one thinks of the continuous building and rebuilding on the site over the centuries; with neither party wishing to endanger his neighbour, thus leaving the common wall standing. This was to some extent substantiated by observing, during the final demolition, a fireplace opening onto the neighbouring building to the S at a level different from the then current floors and also a large flue (see plan, fig 15) which certainly had no opening on the N side and must have served a fireplace at some still lower, now abandoned, level of an earlier house to the south.

There was only one feature with any claim to individuality in the building. This was the arrangement of the older fireplaces in the larger S chambers. Two of them had their lintels cantilevered on plain hewn corbels, but three of them, and probably more of them that have perished higher up, had the peculiar arrangement of off-set jambs so that the lintel springs flush with the jamb on one side but is caught by a corbel at the other side of the fireplace. The break in the wall thus formed is taken up and forms the more forward of the next set of off-set jambs higher up. This sounds complicated and awkward but in practice looked well and was a cunning device to thicken the wall just where and when it was needed; i.e. at the point of introduction of a new flue into the thickness of the wall.

Looking for signs of the upper two storeys on the E elevation it soon became obvious from the dressed off 'stumps' that the upper floors had been cantilevered out on a timberframed elevation. This theory was at first only supported by the remains of two short timbers projecting from the E elevation at the junction with the S gable; however, this was subsequently confirmed by the discovery shortly after the excavation of a very fine sketch (pl 16c). The drawing itself is clear and lucid, executed as an architectural study rather than a work of art, and therefore I suggest that artistic licence is at a minimum. Certainly the transposing of the sketch to within the measured dimensions (fig 14) posed no difficulties. We see immediately that the central 'gable', abutting the stair tower, has four chimney pots plus a fifth one, at the front, obviously serving the later garret. The N gable survived to the end much as in the sketch - a very mean chimney and a most unsatisfactory broken skew line. In my opinion this suggests that this N block was at least one storey higher; this proposal is strengthened by the rather untidy edge to the stair tower immediately above the lowered roof, and further one can trace by a vertical line what must have been the height of the free standing central chimney; where this line stops the roof should begin.

Below the cantilevered section a rather heavy shadow is cast, making this section maddeningly vague. It looks as though only two large windows were in use. The farther away one may be two windows



1850

1590 approx.

FIG 14 Area 3, house elevations

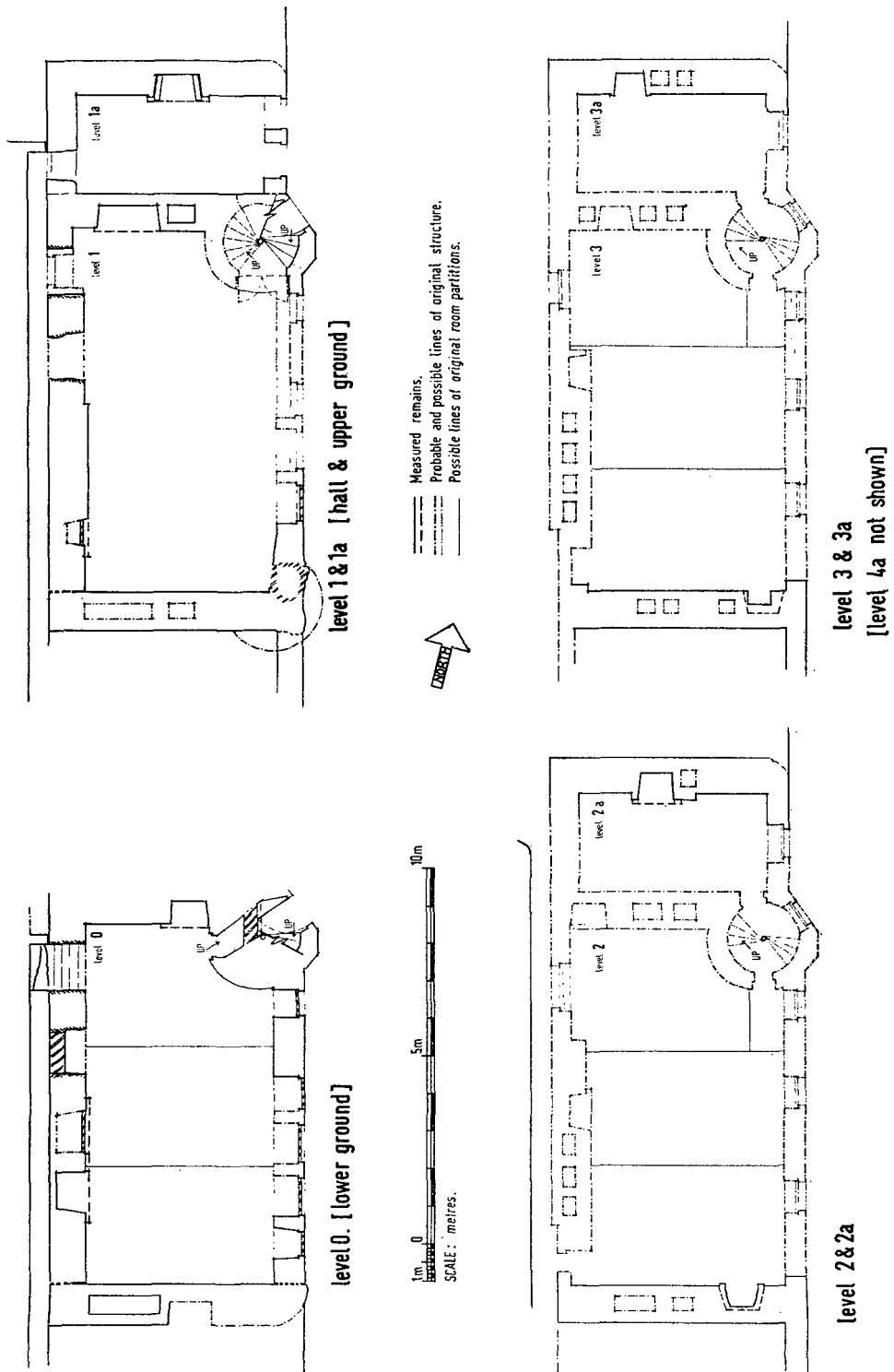


FIG 15 Area 3, house plans



close together or, as it looks, a window with a stone mullion. Certainly one stone mullion piece was discovered amongst the ultimate demolition of the building, but this had 'ecclesiastical' mouldings which in no way match the plain surrounds that we recorded (fig 8, B). Also at that far end at first-floor level there is a small dot of a window. This can only be described as a window because of the survival of one of the window jambs at this point (plan fig 15, level one). This combined with a just-detectable change in direction of the face, and the discovery of a blocked doorway on the inside led me to suggest that there might have been a private stair at this point linking the hall at first-floor level with the upper private apartments. I had hoped to find more evidence of this during the final demolition but the contractor beat me to it. The only other support for this theory might come from the later rebuilding of this corner during the timber frame construction, and allied with this seems to be the two well formed fireplaces, again of plain ashlar jambs and also well fashioned relieving arches; utterly different to the other fireplaces previously described. It could only have been a quite narrow stair, but even so I am a little baffled as to why they should dispense with extra circulation at a time when the house must have been in multi-occupation. It may have been a form of garderobe chamber (cf Loudon Hall, Ayr).

A building such as this, completely devoid of datable architectural features, makes its origins impossible to pinpoint. The 16th century is blandly talked about for timber structure in Edinburgh such as we have here, and the replacement, in the sketch, of the sash and case windows with older ones is all that would be necessary to show a credible house of the late 16th century. It is my opinion that in this case, however, the 16th-century building was entirely masonry and that the timber superstructure is an addition of the mid-17th century. The Extent Roll records that by 1635 the house may have already been in multi-occupation and I would date the extension from any time thereafter, the floors being pushed out to give extra accommodation or circulation. I have the feeling too that it was designed to receive sash and case windows, a comparatively modern innovation which greatly increased the influx of daylight. Of the very plain masonry one can only point to the many plain Scottish towers of the 16th century; in particular there are many parallels with the 'palace' buildings at Culross, dated at 1597, but it is unlikely to be earlier than about 1550.

## APPENDIX B

### Coarse pottery

by *Lisbeth M Thoms*

The pottery from the site, though quite considerable in quantity, unfortunately provided little opportunity for the reconstruction of profiles as the bulk of the material is in the form of relatively small body sherds. For the same reason no attempt has been made to estimate the number of vessels represented. The material has not been subjected to any scientific analysis; observations are purely by feel and by sight. The state of knowledge of Scottish medieval and post-medieval pottery and the stratification on the site are such that no definitive dates can be given to the material. This position in Scotland may be somewhat improved when groups of material from towns such as St Andrews, Perth and Aberdeen have been fully published. Although direct comparison with material from NE England should be used with caution, ceramic trends in that area and the evidence from towns such as Hartlepool, Durham and Newcastle can give pointers to the Scottish situation. The dating of the material in this report is given only as a guide and is based largely on work done on groups of material from towns mentioned above. The table below shows the total number of sherds recovered and groups them into broad date brackets in an attempt to show the proportion of material attributable to particular periods.

The material which can be ascribed to the late 12th-14th century is in many cases in the form of extremely small body sherds and in some groups may well be residual. A variety of cooking pot rims is represented but all are known from other Scottish sites. The gritty fabrics are found over much of SE Scotland and are well known from the Colstoun kiln site (Laing 1973; the Colstoun (E Lothian) kiln is as yet unpublished). It is likely that much of the material must have been produced at Colstoun and probably other local kilns. The jug material is generally in a very hard fired fabric with upright rim, strap handle and very little glaze or other applied decoration. All types of decorative motif represented in the material have been illustrated. Colstoun is also the likely source for the jug material, though the similarity of some of the material to a large group of pottery recovered from the curtain wall of the castle, Newcastle, in 1970 is quite considerable (excavation in 1970 by Miss R B Harbottle). Without any scientific analysis however, such comparison can carry little weight.

By far the greater part of the material which dates to the 15th century and later is in a very common fabric which is thick, hard, smooth and grey. The vessels in this fabric are mostly jugs or jars and most commonly are covered with a fairly thick green glaze, but with little other applied decoration. This fabric and vessel type are typical of late medieval and post-medieval Scottish ceramics and would appear to have a long life-span. Unfortunately the contexts on this site do nothing to improve the closer dating of this type of material. Other post-medieval forms represented in the material include skillets, meat dishes, bowls and tripod pipkins or cooking pots. Without exception the material can be described as domestic.

The pottery has been written up in groups numbered 2-43 with the exception of 5, 21, 34 and 35 which do not contain pottery. For each group there is a summary of the material recovered followed by details of particular sherds which in total demonstrate the forms and type of material recovered. All detailed sherds are illustrated except if marked with an asterisk.

*Total number of coarse pottery sherds excavated*

	Total no. of sherds	%	Late 12/14th century	Late 14/15th century	16/17th century	18th-century modern
Rims	237	3.9	147	35	51	4
Handles	128	2.1	67	37	24	—
Bases	166	2.8	88	64	14	—
Decorated body sherds	86	1.4	76	10	—	—
Body sherds	5,348	89.6	3,501	1,856	334	107
Totals	5,965		3,429	2,002	423	111
			(57.5%)	(33.6%)	(7.1%)	(1.8%)

**BANK OF GARDEROBE PIT WITH HOUSE A**

*(Group 2) Summary*

13th/14th century: 1 rim; 1 fragment strap handle; 2 base sherds; 7 body sherds.

*Detail*

- \*1 Plain rim of jug in very hard, gritty grey fabric. Traces of external dark green glaze and dark heat skin suggest overfiring. ? 14th century.

**PRE-MIDDEN PIT A**

*(Group 3) Summary*

13th/14th century: 1 broad strap handle sherd; 1 base sherd; 15 body sherds.

**PRE-MIDDEN PIT B**

*(Group 4) Summary*

13th/14th century: 1 rod handle; 4 body sherds.

Late 14th/15th century: 1 rim/handle; 2 body sherds.

*Detail*

- 2 Part of 'twisted cord' handle of a jug in hard gritty fabric with grey core and orange buff surfaces. Some yellow/green glaze. 13th/14th century.
- 3 Rim and handle of jug in hard, grey fabric fired orange buff on outer surfaces except where covered with lustrous green glaze. Late 14th/15th century.

**PRE-MIDDEN DITCH**

*(Group 6) Summary*

13th/14th century: 2 plain rims; 38 body sherds.

Late 14th/15th century: 1 tiny fragment strap handle; 14 body sherds.

*Detail*

- 4 Considerable part of the upper half of a jug in very hard, light grey, gritty fabric fired brownish buff on external surface. There is evidence of over-fired yellow/brown glaze on the shoulder of the vessel below the pinched spout. 13th/14th century.

## MIDDEN, ARBITRARY LAYER 5 (depth 1.25-1.5 m)

*(Group 7) Summary*

- 13th/14th century: 3 rims (probably cooking pot); 4 upright jug rims; 1 plain strap handle; 1 'corrugated' handle; 7 base sherds; 234 body sherds; 4 body sherds (applied brown coloured strip); 1 body sherd (zig-zag decoration); 1 body sherd (applied pellet decoration).  
15th century: 1 'corrugated' strap handle; 24 body sherds.

*Detail*

- 5 Rounded rim of cooking pot in hard, smooth fabric, considerably reduced on upper rim and internal surfaces. External surface fired 'dirty' white. 13th century.  
6 Very tiny moulded rim in hard gritty orange buff fabric. 13th century.  
7 Very tiny rim in hard greyish brown fabric. ? 13th century.  
8 Rim of jug in hard, smooth fabric, fired pink on outer surface and cream on inner surface. 13th century.  
9 Body sherd of jug in hard, gritty white fabric with external green glaze and applied strip decoration. 13th/14th century.  
10 Body sherd of jug in hard, pale grey fabric, with external green glaze. Applied brown glazed strip encloses incised zig-zag decoration. 13th/14th century.  
11 Body sherd in thick, smooth grey fabric, with external surface decorated with roughly applied pellets glazed very dark brown. Remaining external surface glazed green. ? Late 14th century.

## MIDDEN, ARBITRARY LAYER 4 (depth 1-1.25 m)

*(Group 8) Summary*

- Late 12th/14th century: 14 cooking pot rims; 15 small upright jug rims; 8 plain strap handles; 4 'corrugated' strap handles; 12 base sherds; 617 body sherds; 9 body sherds (dark brown glaze runs); 1 body sherd (notched decoration); 5 body sherds (rouletted); 1 body sherd (applied pellet); 1 body sherd (applied strip); 1 small body sherd (incised line); 1 body sherd (zoned zig-zag); 1 body sherd (combed wavy line).  
Late 14th/15th century: 1 dish profile; 1 rim/handle; 2 strap handles; 152 body sherds; 1 body sherd (incised line). (Includes also 8 16th/17th-century body sherds, probably contamination from Group 15 above.)

*Detail*

- 12 Cooking pot with square rim in hard, slightly gritty fabric with grey core and orange surfaces. 13th century.  
13 Cooking pot with square rim in hard white fabric. 13th century.  
14 Cooking pot with thick rounded rim in grey, gritty fabric. External surface fired orange buff. 13th century.  
15 Cooking pot with flat topped rim and rounded edge in hard, gritty pink/buff fabric. 13th century.  
16 Cooking pot with thin rectangular rim in hard pale grey fabric. Late 13th century.  
17 Cooking pot with flat topped rim in hard grey fabric, fired pink/buff on outer surface. 13th century.  
18 Cooking pot with rounded, almost chamfered rim in hard gritty creamy white fabric. 13th century.  
19 Bowl with rectangular rim in hard gritty fabric, with grey core fired orange buff on internal surface. Outer surface is soot-blackened. ? 13th century.  
20 Upright rim of jug in hard gritty fabric, fired orange/buff on external surface. Unglazed. 13th century.  
21 Upright rim of jug in hard fabric with grey core, cream internal surface and external yellow/green glaze. 13th century.  
22 Strap handle of jug in very hard gritty fabric, fired orange/buff. Unglazed. 13th century.

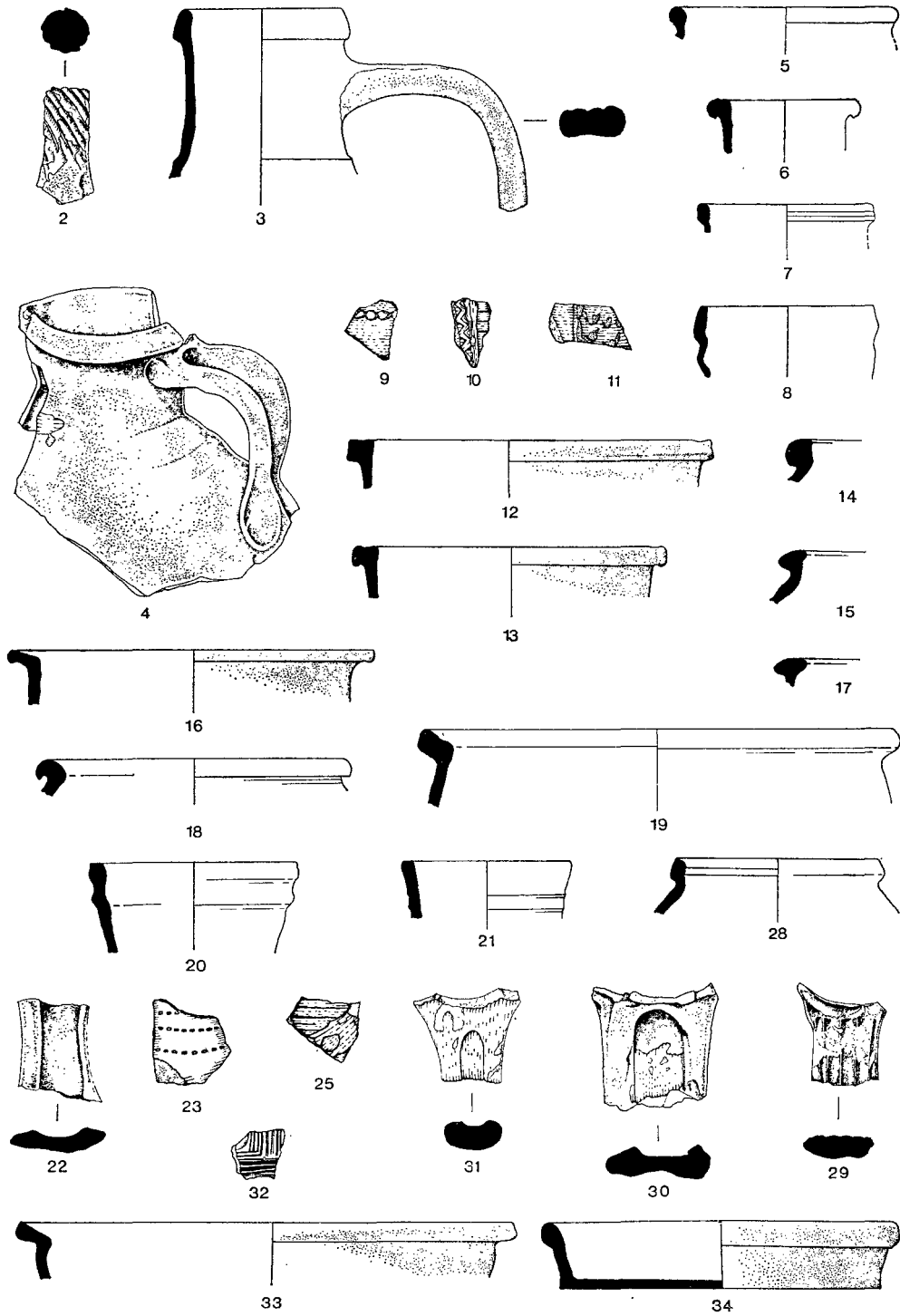


FIG 16 Coarse pottery (scale 1 : 4)

- 23 Body sherd of jug in hard grey fabric with external green glaze and notched decoration. 13th/14th century.
- \*24 Body sherd of jug in fabric similar to 23 with external green glaze rouletted decoration. 13th/14th century.
- 25 Body sherd of jug in hard, white gritty fabric, with external yellow/brown glaze and applied strip and pellet decoration.
- 26 Body sherd with zoned zig-zag decoration. (cf 10, 77)
- \*27 Body sherd with combed wavy line decoration. (cf 111)
- 28 Small cooking pot rim in hard orange fabric. Some external yellow glaze, and soot blackening. ? 14th century.
- 29 Strap handle with grey core and buff surfaces except where traces of orange/green glaze. Late 14th century.
- 30 Strap handle in thick grey fabric fired reddish brown on outer surfaces. Traces of yellow/brown glaze. ? 15th century.
- 31 Rim and handle in hard orange fabric. Upper surface of handle is curved with green/brown glaze. 15th century.
- 32 Small body sherd in grey fabric with external green glaze and incised decoration. 15th century.
- 33 Rim of bowl in hard pale orange fabric. Internal honey coloured glaze. ? 16th century.
- 34 Profile of shallow dish in hard fabric. External surface is soot blackened, internal basal surface is covered with rich brown glaze. ? 15th/16th century.

PIT BEHIND W WALL

(Group 9) *Summary*

13th/14th century: 5 body sherds.

MIDDEN BEHIND W WALL (lower layers depth 0.6-1 m)

(Group 10) *Summary*

Late 12th/14th century: 5 cooking pot rims; 2 jug rims; 2 large twisted rod handles; 2 rod handles (incised); 7 base sherds; 116 body sherds; 1 body sherd (applied/strip with zig-zag); 4 body sherds (applied brown strip); 1 body sherd (applied decoration with incised lines); 1 body sherd (incised wavy lines).

15th century: 6 body sherds.

*Detail*

- 35 Cooking pot with square rim in hard, fairly smooth white fabric fired cream on internal surface and pale orange on external surface. 12th/13th century.
- 36 Very small square cooking pot rim in hard, grey fabric. 12th/13th century.
- 37 Cooking pot with flat topped, rectangular rim in hard, gritty grey fabric fired creamy white on internal and external surfaces. Yellow glaze spots on all surfaces. 12th/13th century. (cf 16)
- 38 Cooking pot rim (cf 15) in hard gritty fabric with grey core fired creamy white on external and internal surfaces.
- \*39 Cooking pot with rounded rim in hard, gritty dark grey fabric fired pink on surfaces. 13th century. (cf 14)
- 40 Plain, upright rim of jug in gritty white fabric, fired pale orange on external surface. Sharp cordon below rim, and traces of yellow glaze on external surfaces. 13th century.
- 41 Plain, upright rim and oval strap handle of jug in hard, slightly gritty white fabric, fired orange on surfaces. Traces of yellow/brown glaze on upper rim and handle surfaces. 13th century.
- 42 Rod handle of jug in hard, gritty white fabric. Patchy green glaze on upper surface decorated with incised lines. 13th/14th century.

MIDDEN BEHIND W WALL (upper layers depth 0-0.6 m)

(Group 11) *Summary*

Late 12th/late 14th century: 2 cooking pot rims; 2 upright jug rims; 2 large plain strap handles (unglazed); 1 plain glazed strap handle; 1 'corrugated' strap handle; 1 strap handle with central applied thumbled strip; 2 twisted rod handles; 5 base sherds; 149 body sherds; 5 body sherds (applied brown coloured strip).

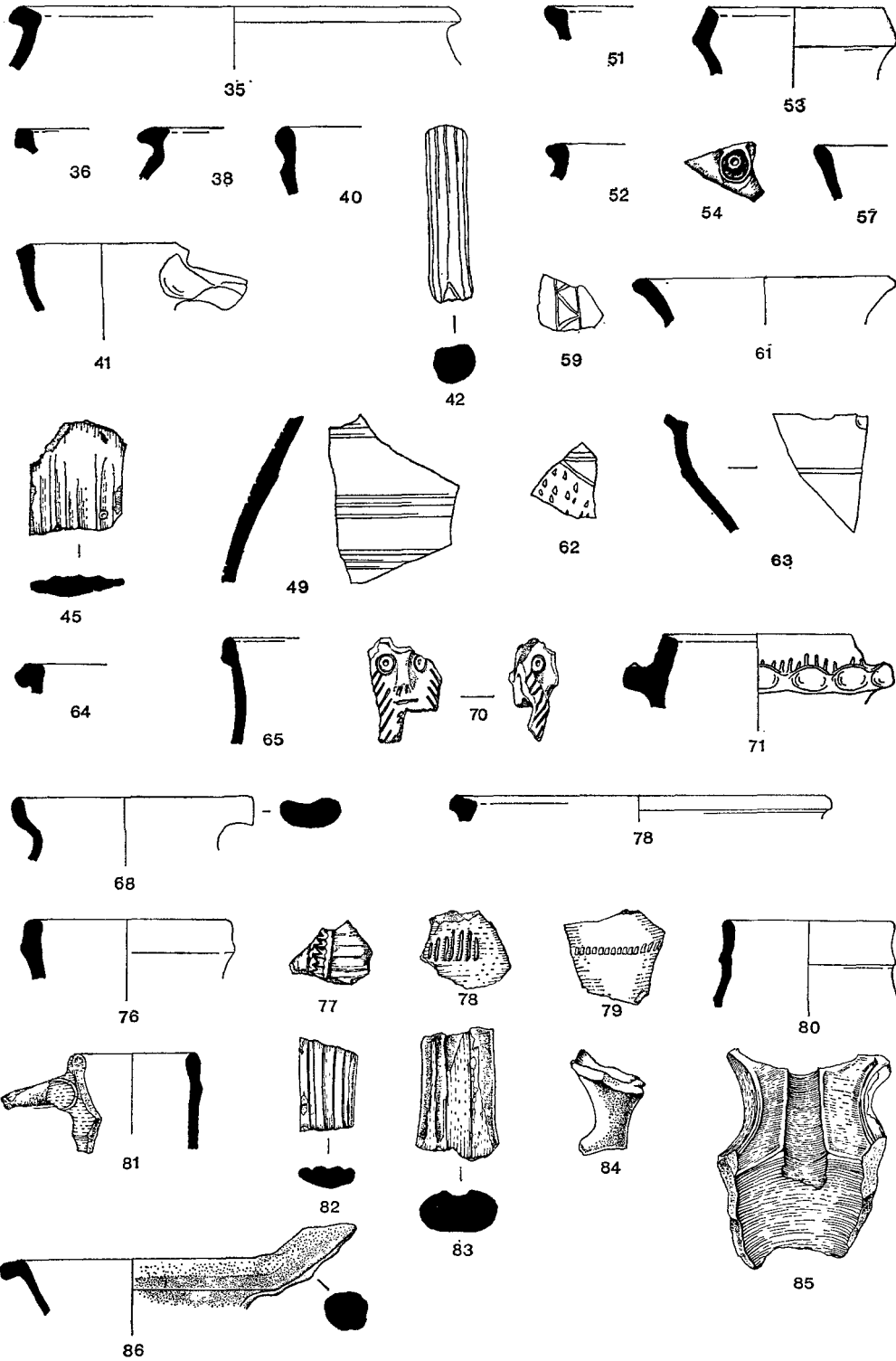


FIG 17 Coarse pottery (scale 1 : 4)

Late 14th/15th century: 14 body sherds.

*Detail*

- \*43 Cooking pot with square rim in hard gritty fabric with grey core, fired orange on surfaces. Green glaze spots on external surface. Late 12/13th century.
- \*44 Cooking pot with rounded rim in hard, gritty fabric with grey core fired pale orange on surfaces. Green glaze spots on external surface. 13th century.
- 45 Part of a large strap handle in hard, white fairly gritty fabric. 'Corrugated' upper surface covered with yellow/green glaze. 13th/14th century.

MIDDEN BEHIND W WALL (all layers E of machine trench)  
(Group 12) *Summary*

13th/14th century: 2 cooking pot rims; 1 jug rim; 2 base sherds; 13 body sherds.

15th century: 6 body sherds.

*Detail*

- \*46 Cooking pot with rectangular rim in hard gritty creamy white fabric fired orange on surfaces. Yellow glaze spots on rim surface. 13th century. (cf 16)
- 47 Small cooking pot with rounded rim in hard gritty fabric with grey core, surfaces fired creamy buff. 13th century. (cf 73)
- \*48 Plain upright rim of jug in hard, gritty pale buff fabric. Sharp cordon below the rim (cf 40) and traces of green glaze on external surface. 13th/14th century.

W WALL OF HOUSE B  
(Group 13) *Summary*

13th/14th century: 1 vase sherd; 11 body sherds; 1 sherd (incised spiral).

Late 14th/15th century: 2 base sherds; 12 body sherds.

N WALL OF HOUSE B  
(Group 14) *Summary*

13th/14th century: 1 cooking pot rim (cf 15); 3 upright jug rims; 1 fragment strap handle; 42 body sherds.

Late 14th/15th century: 4 plain upright rims; 14 body sherds; 1 decorated body sherd.

*Detail*

- 49 Body sherd of jug in hard, smooth grey fabric with external green glaze. External surface also decorated with zones of incised lines in groups of three. Late 14th/15th century.

DIRT FLOOR OF HOUSE B  
(Group 15) *Summary*

Late 14th/15th century; 13 body sherds.

15th/16th century: 1 dish profile.

*Detail*

- \*50 Profile of shallow dish similar to 34.

CONTENTS OF GARDEROBE PIT TO HOUSE A (lower layers, depth 0.6-1.2 m)  
(Group 16) *Summary*

13th/14th century: 2 cooking pot rims; 5 tiny fragments upright jug rims; 6 plain strap handle fragments; 10 base sherds; 178 body sherds; 3 body sherds (applied brown coloured strip); 2 body sherds (dot and circle); 1 body sherd (applied thumbled strip).

Late 14th/15th century: 4 plain upright rims; 2 small strap handles; 1 base sherd; 1 foot; 103 body sherds.

*Detail*

- 51 Small everted cooking pot rim in hard, very gritty buff fabric. Dark heat skin on surfaces. 13th century.
- 52 Rounded 'knobbed' cooking pot rim in hard, fairly smooth white fabric. 13th century.
- 53 Plain upright jug rim in hard, gritty cream/buff fabric. Dark red heat skin on external and internal surface. 13th/14th century.
- 54 Body sherd in hard pale grey fabric with external green/brown glaze and applied dot and circle decoration. 13th/14th century.
- 55 Body sherd of jug in hard, fairly smooth grey fabric, fired buff at one corner. External surface covered with yellow/green glaze and decorated with applied vertical thumbed strip. 14th century.
- \*56 Rim handle attachment of jug in hard grey fabric fired red/buff on external surface except where protected by green glaze. Late 14th century.
- 57 Rim sherd in hard orange fabric. External orange/brown glaze spots. 15th century.

## CONTENTS OF GARDEROBE PIT TO HOUSE A (upper layers, depth 0-0.6 m)

*(Group 17) Summary*

13th/14th century: 6 plain upright jug rims; 1 large, plain strap handle; 4 base sherds; 115 body sherds; 1 body sherd (zig-zag); 1 body sherd (probable import).

Late 14th/15th century: 4 base sherds; 6 body sherds.

*Detail*

- \*58 Rim of jug in hard, gritty fabric fired orange on internal and external surfaces. 13th century. (cf 87)
- 59 Body sherd of jug in hard, slightly gritty, creamy white fabric. External surface is glazed yellow and decorated with two incised vertical lines containing an incised zig-zag line. 13th/14th century.
- \*60 Body sherd in hard, thin grey fabric. External rilling. Probably from a jug (cf 80). 14th century.

## LAYER OF HIGH-PHOSPHORUS SOIL, GARDEROBE PIT TO HOUSE A

*(Group 18) Summary*

13th/14th century: 1 jug rim; 6 base sherds; 18 body sherds; 1 body sherd (stabbed); 1 body sherd (rouletted).

Late 14th/15th century: 1 rim; 1 handle fragment; 16 body sherds.

*Detail*

- 61 Upright, slightly everted rim of jug in hard, slightly gritty white fabric. Traces of yellow glaze on external surface. 13th century. (cf 40)
- 62 Body sherd of jug in hard, fairly gritty fabric. External surface is glazed green and decorated with rows of stab marks. 13th/14th century.
- 63 Rim of jug in smooth, hard, grey fabric. External surface is covered with lustrous green glaze. Internal surface is fired pinkish brown. 15th century.

## FABRIC OF STONE DRAIN TO HOUSE A

*(Group 19) Summary*

13th century: 2 body sherds.

Late 14th/15th century: 4 body sherds.

## CONTENTS OF STONE DRAIN TO HOUSE A

*(Group 20) Summary*

13th/14th century: 1 cooking pot rim; 3 jug rims; 1 base sherd; 17 body sherds.

Late 14th/15th century: 1 rim.

*Detail*

- 64 Cooking pot with flat topped 'knobbed' rim in hard, grey, gritty fabric fired pale orange on external surface. 13th/14th century.



- 65 Plain upright rim of jug in hard, cream fabric, fired orange on external surface. 13th century.  
\*66 Rim similar to 65 in hard, pink, gritty fabric. 13th century.  
\*67 Plain upright rim of jug in hard, smooth red fabric. Surfaces fired grey/brown. Green/brown glaze spots on external surface. 13th/14th century.  
68 Complete rim of bowl in hard, smooth grey fabric, fired pinkish buff on external surface which is also soot blackened. Internal surface shows traces of green/brown glaze. Evidence of one strap handle attachment. Approx diam 12 cm. Late 14th/15th century.

ROUGH SPREAD OF COBBLES N OF HOUSE B

(Group 22) *Summary*

13th/14th century: 2 small upright rims; 1 strap handle fragment; 15 body sherds; 1 body sherd (stabbed strip); 1 body sherd (rouletted cordon).

Late 14th/15th century: 1 base sherd; 18 body sherds.

*Detail*

- \*69 Small body sherd in white, slightly gritty fabric with external green glaze and applied strip with stab marks on it, glazed brown. 13th/14th century.

BUILD-UP OF CANT'S CLOSE TO ? 17TH-CENTURY COBBLES

(Group 23) *Summary*

13th/14th century: 1 bearded face-mask; 1 strap handle fragment; 29 body sherds.

Late 14th/15th century: 1 rim; 2 base sherds; 44 body sherds.

16th/17th century: 2 base sherds; 5 body sherds.

*Detail*

- 70 Bearded face-mask, the top of which forms part of the rim of the vessel. Fabric is hard, smooth, grey fired orange on internal surface. External surface is covered with green glaze. ? Mid-late 14th century.  
71 Upright rim of jug or jar in hard, smooth, grey fabric. Inner surface fired reddish brown, outer surface has thick green glaze and applied thumbbed cordon. 15th century.

BUILD-UP OF CANT'S CLOSE ? 17TH-CENTURY COBBLES – MODERN LEVEL

(Group 24) *Summary*

13th/14th century: 1 cooking pot rim; 3 body sherds.

15th century: 1 strap handle fragment; 2 base sherds; 2 body sherds.

16th/17th century: 1 body sherd.

Modern: 2 body sherds.

*Detail*

- \*72 Tiny fragment of cooking pot rim, rectangular and slightly everted, in hard gritty, orange fabric. 13th century.

WALL RUNNING N FROM HOUSE B

(Group 25) *Summary*

Late 14th/15th century: 1 body sherd.

MIDDEN (ARBITRARY LAYER 3, DEPTH 0.75-1 m)

(Group 26) *Summary*

Late 12th/14th century: 3 cooking pot rims; 9 upright jug rims; 1 imported jug rim; 3 plain strap handles; 1 grooved strap handle; 11 base sherds; 373 body sherds; 6 body sherds (notched); 1 body sherd (applied thumbbed strip); 2 body sherds (incised lines).

Late 14th/15th century: 2 plain upright jug rims; 5 plain strap handles; 1 oval/strap handle; 2 'corrugated' strap handles; 2 base sherds; 1 foot; 170 body sherds.

16th/17th century: 1 rim/handle sherd; 1 rim; 1 pouring lip; 23 body sherds.

*Detail*

- 73 Rounded cooking pot rim in hard gritty fabric with grey core and orange/buff surfaces. Late 13th century.
- 74 Cooking pot with rectangular rim in hard, gritty fabric. Grey/brown and cream on surfaces. Late 12th/13th century.
- 75 Cooking pot with thick, upright rim. Slight hollowing for lid seating. The fabric is gritty with grey core and surfaces, fired creamy/orange. 13th century.
- 76 Upright jug rim in hard, slightly gritty fabric. Traces of yellow glaze spots on internal surface. 13th century.
- 77 Body sherd of jug in hard creamy fabric. External yellow/green glaze except on the decorated zone which has rich brown glaze. 13th/14th century.
- 78 Body sherd of jug in hard white fabric with external green glaze and incised lines decoration (perhaps from a jug with anthropomorphic decoration). 13th/14th century.
- 79 Body sherd of jug in hard grey fabric. External surface has green/brown glaze and a zone of notched decoration.
- 80 Rim of jug in hard, thin, dark grey fabric. Possibly an import from Holland or Flanders. ? 14th century.
- 81 Rim and part of handle of a jug in hard, soft cream fabric, fired buff except on external surface where protected by mottled green glaze. 14th century.
- 82 Strap handle in hard grey fabric. Upper surface is decorated with grooves and green glaze. 14th century.
- 83 Thick, heavy oval/strap handle in coarse grey fabric. Upper surface has patchy dark green glaze. 14th/15th century.
- 84 Foot of tripod vessel in hard orange fabric. Inner surface has rich brown glaze; outer surface is soot blackened.
- 85 Pouring lip of bowl or dish in thick, heavy grey fabric. Upper pouring surface is glazed green; under surface is fired orange. 16th/17th century.
- 86 Rim and part of the handle of a shallow bowl or skillet in gritty fabric with grey core and orange/buff internal surface. The underside of the handle has traces of green/brown glaze and some soot blackening. 16th century.

MIDDEN (arbitrary layer 2, depth 0.5-0.75 m)  
(Group 27) *Summary*

- 13th/14th century: 4 upright plain jug rims; 3 rounded jug rims; 3 plain strap handle fragments; 1 decorated strap handle; 1 rod handle; 5 base sherds; 268 body sherds; 2 body sherds (applied brown coloured strip).
- Late 14th/15th century: 2 rim/handle sherds; 2 upright jug rims; 1 body/handle sherd; 2 small strap handle fragments (incised); 3 base sherds; 1 foot; 264 body sherds.
- 16th/17th century: 1 strap handle; 51 body sherds.

*Detail*

- 84 Jug rim in hard, slightly gritty fabric, fired dirty white on inner surface and pale orange on outer surface. Part of the rim is considerably reduced probably due to the method of stacking in the kiln firing. 13th/14th century.
- \*88 Rim similar to (87) in hard orange buff, gritty fabric. 13th/14th century.
- \*89 Rim similar to (87) in hard, gritty cream fabric, fired orange on external surface. Inner surface has some yellow/green glaze. 13th/14th century.
- 90 Part of strap handle of jug in hard, white gritty fabric. The upper surface is decorated with green/brown slate and a central, applied thumbed strip. 13th/14th century.
- 91 Part of a twisted rod handle of jug, with pale grey and fired orange on external surface except where protected with yellow/green glaze. 13th/14th century.
- 92 Upright rim and part of oval/strap handle of jug, in hard, smooth fabric. Unglazed. ? Late 14th century.
- 93 Part of the body and strap handle of a jug in smooth hard grey/brown fabric, fired orange/red on external surface except where protected by green glaze turning to honey/red at the edges. ? 14th century.

- \*94 Rim and strap handle of jug in hard, smooth orange fabric. External surfaces considerably blackened except where protected by dark green glaze spots. Late 14th/15th century.
- 95 Strap handle of jug in hard, smooth grey fabric, fired orange/red on under surface. Upper surface covered in green glaze and decorated with incised lines. Late 14th/15th century.
- 96 Base sherd of a pot, shaped into a round with a hole in the centre. Possibly used as a gaming piece.

DESTRUCTION OF HOUSE B  
(Group 28) *Summary*

13th/14th century: 1 small abraded rim; 1 small fragment tubular spout; 46 small body sherds.  
15th century: 5 body sherds.  
16th/17th century: 4 rim sherds; 2 base sherds; 3 body sherds.

*Detail*

- 97 Rim, handle and part of the body of a jug in fairly hard orange fabric. There is evidence of rich green/honey coloured glaze on internal and external surfaces. 16th century.
- \*98 Rim, two small base and two body sherds of a small pot in hard smooth orange/brown fabric, fired red on external surface except where covered with honey/brown glaze. Internal surface completely glazed. 17th century.

MIDDEN IN AREA 9 (depth 0.8-1.5 m)  
(Group 29) *Summary*

13th/14th century: 1 base sherd; 8 body sherds.  
Late 14th/15th century: 1 'corrugated' strap handle; 2 base sherds; 30 body sherds; 1 large decorated fragment.

*Detail*

- 99 Considerable part of the body of a jug or jar in thin, hard, grey fabric with external green glaze. Waved line decoration below the neck on shoulder. Late 14th/15th century.

POSSIBLY UNDISTURBED CANT'S CLOSE LEVELS IN SECTION 5 (depth 1.5-1.7 m)  
(Group 30) *Summary*

13th/14th century: 1 base sherd.  
Late 14th/15th century: 2 body sherds.  
16th century: 1 strap handle; 1 base sherd.

*Detail*

- \*100 Base sherd and strap handle sherd in hard orange fabric. Upper surface of handle and internal base surface are glazed rich orange/brown. External base surface is soot blackened. 16th century.

MIDDEN (arbitrary layer 1, 0-0.5 m, and rubble topsoil)  
(Group 31) *Summary*

Late 12th/14th century: 8 cooking pot rims; 17 plain upright jug rim fragments; 14 plain strap handles; 2 oval/strap handles; 12 base sherds; 426 body sherds; 2 body sherds (applied brown coloured strip); 2 body sherds (rouletted); 2 body sherds (zig-zag); 2 body sherds (combed wavy line); 1 body sherd (stabbed decoration); 2 body sherds (applied pellets); 1 face-mask.  
Late 14th/15th century: 5 plain upright jug rims; 7 strap handles; 21 base sherds; 3 'frilled' basal angle sherds; 1 'pedestal' base; 2 feet; 733 body sherds; 4 decorated body sherds.  
16th/17th century: 37 small rims; 10 small strap handles; 5 oval/strap handles; 6 skillet handles; 191 body sherds.  
18th century-modern: 4 rims; 84 body sherds.

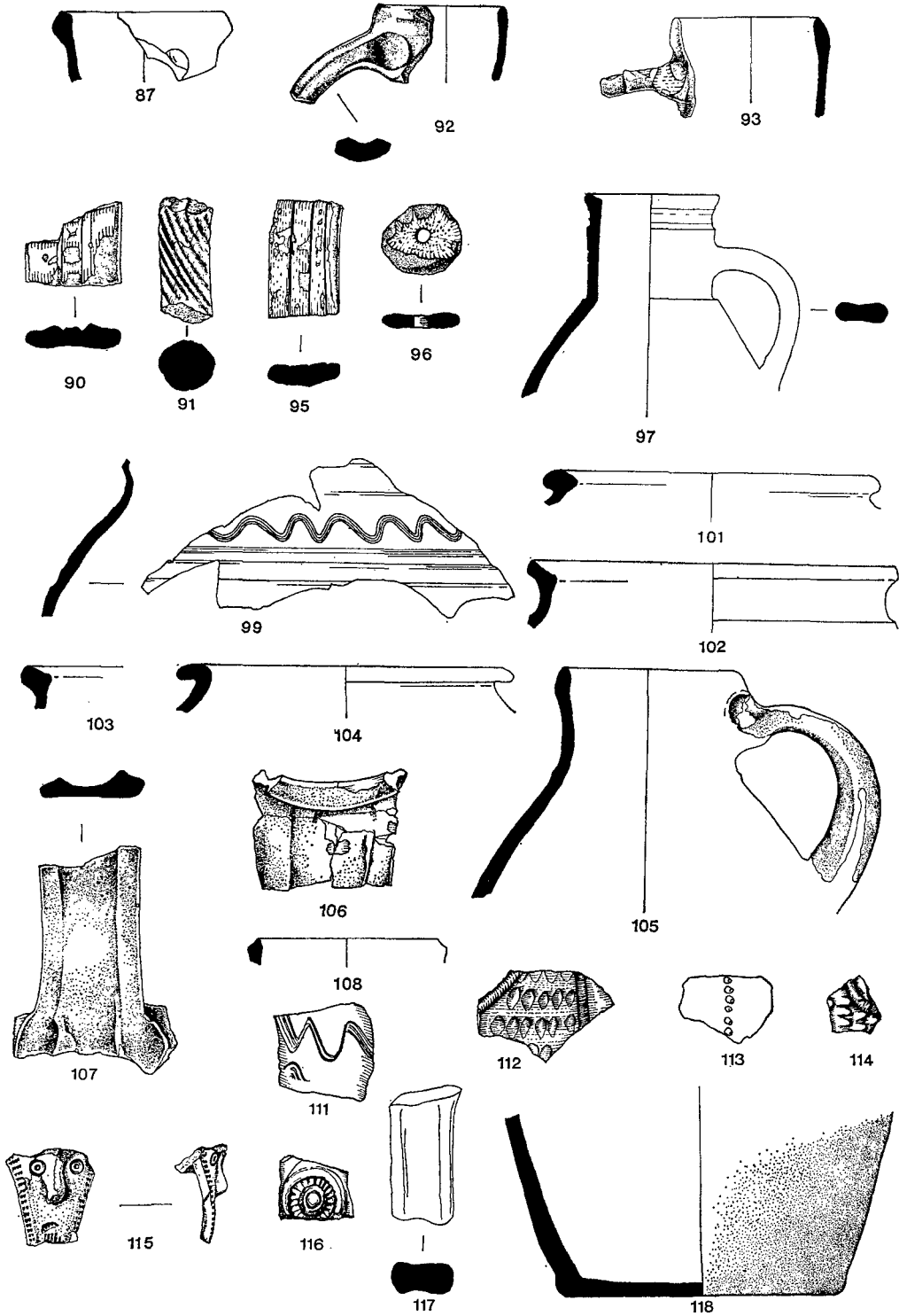


FIG 18 Coarse pottery (scale 1 : 4)

*Detail*

- 101 Cooking pot with curved, rounded rim, in hard pinkish buff gritty fabric. 12th/13th century. Approx diam 14 cm.
- 102 Cooking pot with rectangular rim in orange, gritty fabric. Pronounced cordon at base of neck. 13th century. Approx diam 14 cm.
- 103 Cooking pot with square rim in hard creamy fairly smooth fabric. 13th century.
- 104 Cooking pot with flat topped, rounded rim in hard cream slightly gritty fabric. 13th century.
- 105 Rim and large strap handle of jug in hard, smooth, grey/white fabric fired pale orange on internal surface. External surface is covered with green glaze. 13th/14th century.
- 106 Rim and part of strap handle of a jug in hard, slightly gritty fabric with grey core and buff margins; the surfaces are fired orange buff. There are yellow/green glaze spots on the surfaces of the handle and one on the rim.
- 107 Strap handle of jug in hard gritty fabric. Inner surface of jug is grey, external surfaces are fired orange/buff. 13th/14th century.
- 108 Tiny chamfered rim of jug in pale orange, smooth fabric. External surface is covered with rich apple green glaze. 13th/14th century.
- \*109 Plain, upright, jug rim in soft smooth buff fabric. External surface is covered with thick orange glaze. 13th/14th century.
- \*110 Body sherd of jug in hard, pink fabric. Rich 'honey' glaze on external surface with band of zig-zag decoration. 13th/14th century. (cf 10)
- 111 Body sherd of jug in hard creamy buff fabric, fired orange on external surface except where protected with green glaze. There are also bands of combed, wavy-line decoration. 13th/14th century.
- 112 Body sherd of jug in hard, pale grey, slightly gritty fabric. External surface is decorated with applied pellets within a frame - coloured rich brown. 13th/14th century.
- 113 Body sherd of jug in hard, gritty orange buff fabric, external surface decorated with yellow/green glaze, and a vertical line of 'stab' marks.
- 114 Body sherd of jug in hard grey fabric. External surface is decorated with applied strip and pellets and apple green glaze. 13th/14th century.
- 115 Bearded face-mask from jug with anthropomorphic decoration, in hard gritty white fabric, fired orange on under surface. Most of upper surface of face is covered with green glaze. 13th/14th century.
- 116 Body sherd of jug in hard, smooth grey fabric. The external surface is decorated with an impressed roundel and covered with thick green/brown glaze. 15th century.
- 117 Part of thick, oval/strap handle in hard gritty buff fabric, with green/brown glaze on upper surface. 14th century.
- 118 Considerable part of the base of a jug in fairly hard thick, smooth orange fabric. Traces of glaze remain on external surface. Diam 17 cm. Late 14th century.
- 119 Base of jug in hard smooth fabric. Inner surface is fired orange and external surface is covered in green glaze. the base is 'frilled' possibly in imitation of stoneware vessels. Early 15th century.
- 120 Plain strap handle of jug hard, smooth grey fabric, fired orange buff except in upper surface which shows traces of green glaze. Late 14th and early 15th century.
- 121 Rim and body sherd of large jar in hard very smooth grey fabric, oxidised on inner rim surface. The external surface is covered with green glaze and decorated with curved applied strips and a thick applied thumbed cordon below the rim. 15th century.
- 122 Rim and spout of jug in smooth grey fabric fired orange/buff on internal surface and external surface except where protected by olive green glaze. The spout is crudely formed and applied as is the stabbed decoration on the shoulder below the spout. 15th century.
- 123 Plain upright jug rim in hard grey fabric. External rim surface is fired orange/red, and below rim there are traces of brown/green glaze. 15th century.
- 124 Small 'pedestal' base in hard, smooth grey fabric. Under surface fired buff, and external surface shows traces of green glaze. ? Late 14th/15th century.
- 125 Body sherd of jug in hard smooth grey fabric. External surface is green glazed and decorated with a large applied thumbed strip. 15th century.
- 126 Small body sherd of jug in hard, smooth grey fabric. Internal and external green glaze and zig-zag incised decoration on outer surface. 15th century.
- 127 Small body sherd in hard, smooth grey fabric with external rich dark green glaze and incised wavy lines. 15th century.

- 128 Body sherd in hard, smooth grey fabric. External green glaze and applied, thumbled decoration. 15th century.
- 129 Body sherd in hard, grey fabric, with external green glaze. Applied strip with hole bored through, possibly for suspension. 15th century.
- 130 Rim and handle of bowl in hard, smooth grey fabric. Fired red on internal surface and external surface except when protected by splashed green glaze. ? 15th/16th century.
- 131 Foot from tripod vessel. Hard red fabric with internal surface covered with rich brown glaze. 15th century.
- 132 Handle of small skillet or bowl in hard, red fabric with some splashes of rich brown glaze on other surfaces. ? 16th century.
- 133 Handle of skillet or bowl in hard red fabric. Inner surface has some rich brown glaze under surface of handle and is considerably soot blackened. ? 16th century.
- 134 Handle and rim of small skillet or bowl in hard, grey fabric. Upper and inner surfaces covered in lustrous green glaze. Under surface of handle is soot blackened. ? 16th century.
- 135 Skillet handle in hard, smooth pale orange fabric. Upper surface is covered with rich green/brown glaze. Under surface is considerably darkened with soot. ? 16th/17th century.
- 136 Rim of bowl in hard grey fabric. Inner surface shows evidence of 'dirty' green glaze. External surface is much soot blackened. 16th/17th century. Approx diam 14 cm.
- \*137 Rim of bowl in hard, orange/pink fabric. Traces of rich brown glaze on external and internal surfaces. ? 17th/18th century. Approx diam 18 cm. (cf 142)

INDUSTRIAL ARCHAEOLOGY: BLOOMERY CONTENTS  
(Group 32) *Summary*

Late 12th/14th century: 1 cooking pot rim; 1 base sherd; 14 body sherds.

15th century: 1 tiny rim; 11 body sherds.

Modern: 10 body sherds.

*Detail*

- \*138 Very small rounded cooking pot rim in hard creamy buff fabric. Late 12th/13th century.

AREA 1

(Groups 33-5) *Summary*

16th/17th century: 3 rims; 2 base sherds; 19 body sherds.

18th century – modern: 10 body sherds.

*Detail*

- 139 Rim of bowl in hard, smooth fabric with grey core and buff margins. Outer surface is very soot blackened. Inner surface shows traces of green/brown glaze. ? 16th/17th century.

AREA 2. Unstratified and poorly stratified contents

(Group 36) *Summary*

Late 12th/14th century: 7 small fragments cooking pot rims; 7 small fragments jug rims; 1 plain strap handle; 2 base sherds; 1 foot; 232 body sherds.

Late 14th/15th century: 2 plain glazed strap handles; 1 'corrugated' strap handle; 8 base sherds; 108 body sherds; 3 body sherds (incised lines).

17th/18th century: 1 rim. (cf 142)

*Detail*

- 140 Small foot in hard, white, slightly gritty fabric, fired pinkish buff on external surfaces which also show yellow glaze spots. 13th/14th century.

- 141 Base of jug or jar in hard, smooth dark grey fabric. External green/brown glaze. Basal diam 11 cm. Under surface of base shows stacking mark of vessel with c 8-9 cm rim diam. 15th century.

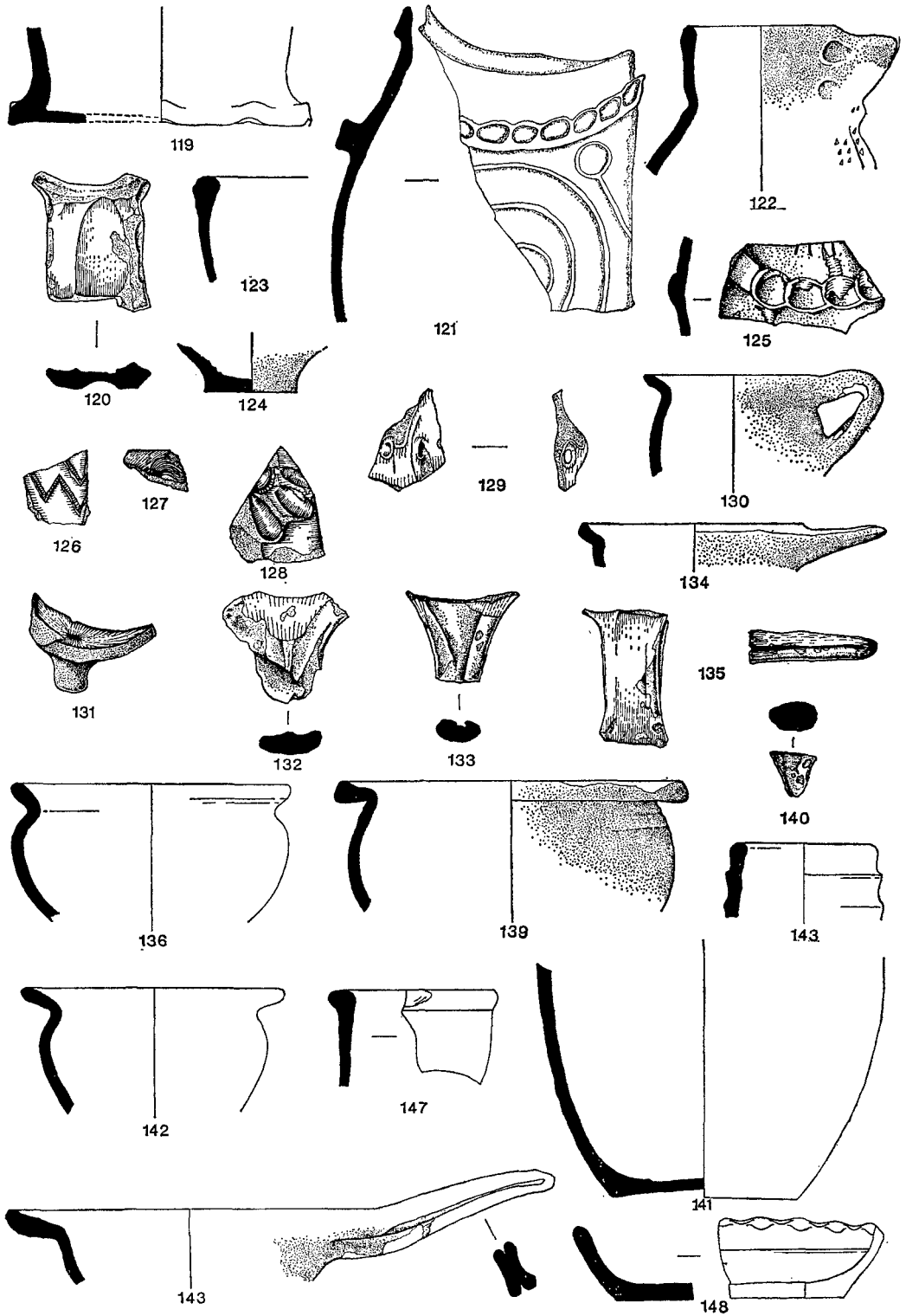


FIG 19 Coarse pottery (scale 1 : 4)

CUTTING 14

(Group 37) *Summary*

14th century: 2 body sherds.

15th/16th century: 3 body sherds; 3 base sherds.

CUTTING 16

(Group 38) *Summary*

13th/14th century: 4 body sherds; 1 base sherd.

Late 14th/15th century: 1 base sherd; 8 body sherds.

17th century: 1 base sherd; 2 body sherds.

CUTTING 18

(Group 39) *Summary*

- 142 Rim of bowl in hard, fairly smooth red fabric. Glazed brown on internal surface; brown glaze spots on external surface. 17th century.

CUTTING 19

(Group 40) *Summary*

13th/14th century: 3 rim fragments of jugs; 27 body sherds.

Late 14th/15th century: 1 small strap handle; 1 'corrugated' strap handle; 14 body sherds.

16th century: 3 base sherds; 4 body sherds.

17th century: 1 rim.

CUTTING 17

(Group 41) *Summary*

13th/14th century: 1 very small fragment rounded jug rim.

15th century: 3 rims; 2 strap handles; 24 body sherds.

16th/17th century: 1 rim; 1 handle; 1 base sherd; 6 body sherds.

*Detail*

- 143 Upright rim of jug in hard, smooth grey fabric with external patchy rich green glaze. 15th century.  
 144 Large 'gilded' handle of skillet or bowl in hard, orange fabric. Upper surface glazed yellow/green; under surface unglazed with traces of soot blackening. 16th/17th century.  
 145 Rim of bowl (cf 142) in hard, fairly smooth orange fabric with lustrous honey/brown glaze on internal surface. External surface considerably soot blackened. 17th century.

CUTTING 13

(Group 42) *Summary*

13th/14th century: 1 upright jug rim; 1 abraded rim/handle; 30 body sherds; 1 body sherd (zig-zag).

Late 14th/15th century: 1 rim/handle; 11 body sherds.

AREA 3 HOUSE UNSTRATIFIED CLEARING

(Group 43) *Summary*

Late 12th/14th century: 1 square cooking pot rim; 3 upright jug rims; 1 glazed strap handle; 21 body sherds.

Late 14th/15th century: 3 rims; 2 dish profiles; 3 glazed strap handles; 5 base sherds; 1 foot; 84 body sherds.

17th century: 6 body sherds.



*Detail*

- \*146 Rim of jug in hard, pale grey fabric pale orange on internal surface. External surface covered with green glaze. 14th century.
- \*147 Upright rim of jug in grey fabric fired orange on internal surface. External surface covered with dark green/brown case. 15th century.
- 148 Profile of shallow dish in hard cream fabric fired pink on external surfaces. Internal surface covered with green glaze. Rim is finger pinched. ? Late 15th century.

## APPENDIX C

## German stoneware

by Pamela V Clarke, with a note on dating by John Hurst, Department of the Environment, London

This group of material is of considerable interest, as it comprises the largest single group of Langerwehe stoneware so far found in Britain. It falls into three groups, that from below the midden, that from the midden, and later material. There is no significant difference in date between the dating of the first two groups (sherds from a number of individual vessels were found in differing contexts), but there is a gap between these groups and the latest group with an absence of any material which could be assigned to the period 1475-1575.

*Siegburg**Group A: below the midden*

One sherd from the rim, (Group 4), and one from the shoulder, (Group 6), of probably the same Siegburg jug, of Beckmann type 83, with a sparse light brown glaze (Beckmann 1974, 214, fig 13; 1975).

*Group B: The Midden*

<i>Jugs</i>	<i>No. of sherds</i>	<i>No. of vessels</i>	
		<i>Max.</i>	<i>Min.</i>
Base sherds	5	5	4
Body sherds	24	10	7
Shoulder sherds	3	2	2
Rim sherds	2	2	2
	—	—	—
Total	34	19	15
Cups	7	7	7
	—	—	—
Combined Total	41	26	22

Fig 20, 1 Neck of a Siegburg stoneware jug of Beckmann type 87 (Beckmann 1974, 214, fig 13) (Group 27).

Fig 20, 2 Shoulder from a similar jug (Group 26).

Fig 20, 3 Base from a similar jug (Groups 15, 21).

Fig 20, 4 Sherd from a Siegburg cup, Beckmann type 161 (1974, 220, fig 19) (Group 31).

Fig 20, 5 Sherd from a Siegburg cup, Beckmann type 161 (1974, 220, fig 19) (Group 27).

Fig 20, 6 Sherd from a Siegburg cup, Beckmann type 163 (1974, 220, fig 19) (Group 27).

*Langerwehe*

The bulk of the Langerwehe stoneware comes from the midden material; three sherds from the ditch below the midden show much similarity to this material and cannot be very much earlier in date, while sherds found with the later 16th- and 17th-century material would seem to be rubbish survivals. It is extremely unfortunate in view of the size of the group, comprising 313 sherds from an estimated 131 vessels, that it has proved impossible to reconstruct, even on paper, more than two vessels. This is, however, due to the large proportion of material represented by body sherds (266, against 15 base and 26 rim

sherds). It has also proved impossible to arrive at a satisfactory method of describing the appearance of the material; while the fabric is fairly uniform, being generally dark grey in colour, there is some variation and some sherds have an unfused earthenware fabric showing a buff or pink colouration. In addition both the internal and external surfaces of the sherds show a considerable variation in appearance, which makes classification difficult. The variations on the internal surface do seem to fall into recognisable groups, but the colour range of the outer surface of the sherds is not so easily classified. It is possible to identify groups of material with colouration ranging from glossy grey indicating the lack of any iron wash, through shades of yellow-brown, to deep purple-black, indicating the use of a thick iron wash, but as the

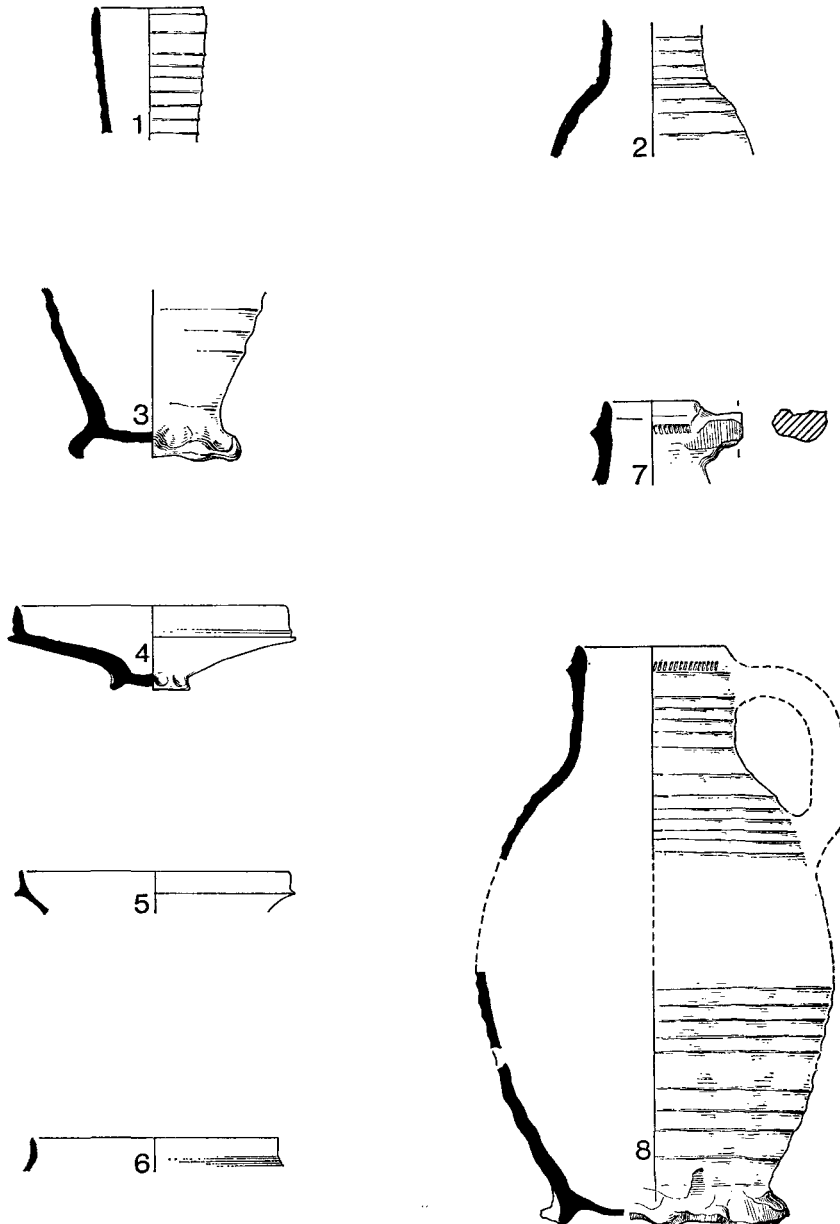


FIG 20 Stoneware (scale 1 : 4)

groups merge imperceptibly into one another, it is impossible to separate the material into rigidly classified groups.

In order to describe the material adequately, it was divided into groups according to the more readily recognised internal surface appearance, and then classified within these groups according to the degree of colouration shown by the external surface. The results were tabulated with the letters A-I indicating internal surface grouping, and with a scale of colour variations numbered 1-9, from the lightest to the darkest (Table I). Numbers 1-3 being predominantly grey to yellow-brown, number 4 showing both brown and purple colouration, and numbers 5-7 purple finishes (numbers 8 and 9 are groups of sherds with untypical surfaces).

TABLE I: Surface appearance

	A	B	C	D	E	F	G	H	I	Total
1	9	9	11	—	17	12	6	—	—	64
2	6	7	2	14	40	9	2	—	1	81
3	2	—	1	33	—	14	12	—	2	64
4	15	13	1	7	12	1	4	—	—	53
5	—	1	—	4	7	—	3	—	—	15
6	—	—	—	1	—	—	—	2	—	3
7	—	2	—	—	2	—	4	—	—	8
8	—	—	—	—	—	—	—	—	7	7
9	—	—	5	11	—	1	1	—	—	18
Total	32	32	20	70	78	37	32	2	10	313

*Surface description (interior)*

- A Light grey, almost buff unglazed surface
- B Grey unglazed surface
- C Thin to glossy clear glaze giving grey coloured surface
- D Grey unglazed, with a yellowish-grey thin wash
- E Grey unglazed, with a pinky-grey thin wash
- F Light yellowish-brown sparse to glossy glazed surface
- G Purplish brown wash, presumably an iron wash the same as that found under the external surface glaze
- H Unvitrified earthenware fabric with a pink or buff internal surface
- I Surface appearance indeterminate.

*Surface description (exterior)*

- 1 Clear salt glaze, giving a grey surface colouration
- 2 Salt glaze, predominantly clear but with traces of brown speckles indicating the presence of small quantities of iron
- 3 Salt glaze with a patchy grey and brown surface colouration indicating greater quantity of iron than in 2
- 4 Brown surface colouration, with a matt finish, less pitted than 1-3 above, and with some traces of purplish drips on surface
- 5 Salt glaze, with a wash beneath giving a grey and purple speckled appearance
- 6 Glossy purple to purple-black surface
- 7 Matt purple surface
- 8 Overfired
- 9 Unglazed.

A further table was drawn up to show the relationship of the groups formed by the above classification to parts of vessels and to vessel estimates (Table II).

*Group I: features beneath the midden*

Three body sherds, from different vessels from the ditch (Group 6). (1) ext 1, int C. (2) ext 1, int D. (3) ext 9, int D. There is nothing in the character of this group to suggest that it is of significantly different date from the midden above.

TABLE II

	Bases	Body	Handles	Bevel Rim	Simple Upright Rim	Total	Med.	Large	Total
1A	—	9	—	—	—	9	—	2	2
2A	—	6	—	—	—	6	1	1	2
3A	—	2	—	—	—	2	?	?	1*
4A	—	14	—	—	1	15	2	2	4
1B	—	9	—	—	—	9	3	2	5
2B	3	4	—	—	—	7	3	—	3
4B	—	12	1	—	—	13	4	—	4
5B	—	1	—	—	—	1	1	—	1
7B	—	2	—	—	—	2	—	1	1
1C	—	10	—	—	1	11	4	—	4
2C	—	2	—	—	—	2	—	1	1
3C	—	1	—	—	—	1	1	—	1
4C	—	1	—	—	—	1	1	—	1
9C	—	5	—	—	—	5	2	1	3
2D	—	12	—	1	1	14	9	1	10
3D	1	30	1	1	—	33	7	2	9
4D	2	5	—	—	—	7	2	3	5
5D	—	4	—	—	—	4	—	1	1
6D	—	1	—	—	—	1	1	—	1
9D	1	10	—	—	—	11	6	—	6
1E	—	17	—	—	—	17	7	1	8
2E	3	36	—	1	—	40	5	3	8
4E	—	12	—	—	—	12	5	—	5
5E	2	5	—	—	—	7	2	2	4
7E	—	2	—	—	—	2	1	1	2
1F	—	9	—	2	1	12	7	—	7
2F	2	6	—	1	—	9	1	3	4
3F	—	14	—	—	—	14	2	4	6
4F	—	1	—	—	—	1	—	1	1
9F	—	1	—	—	—	1	1	—	1
1G	—	5	—	1	—	6	1	2	3
2G	—	—	1	1	—	2	—	1	1
3G	—	5	—	7	—	12	4	1	5
4G	—	2	—	1	1	4	2	—	2
5G	—	—	—	3	—	3	1	—	1
7G	—	1	—	3	—	4	1	1	2
9G	—	1	—	—	—	1	1	—	1
1H	—	—	—	—	—	—	—	—	—
6H	—	2	—	—	—	2	—	1	1
2I	1	—	—	—	—	1	1	—	1
3I	—	—	2	—	—	2	1	—	1
8I	—	7	—	—	—	7	1	1	2
Total	15	266	5	21	5	313	91	39	131

\* Vessel cannot be assessed for size

*Group II: the midden*

- Fig 20, no. 7 Two sherds joining to form a portion of what might be a small jug (Hurst 1977, 224). It has not proved possible to identify any further sherds from small vessels. Group 27; ext 3, int G.
- Fig 20, no. 8 Sherds forming the upper and lower portions of a medium jug (Hurst 1977, 224), from Groups 8, 26 and 31, ext 2, int E. On this jug see also above, p 172).
- Fig 21, no. 9 Sherd forming the upper and lower portions of a large jug (Hurst 1977, 224), of Rim Type III (bevelled rim), from Group 16, ext 3, int D.
- Fig 21, no. 10 Sherd comprising the neck of a Type III (bevelled rim) jug (Hurst 1977, 225e, fig 4, 3), without the more usual rouletting round the bevel; from Group 20, ext 3, int G.

Fig 21, no. 11 Sherd from a Type IV (simple upright rim) jug (Hurst 1977, 231, fig 5, 4), Group 20.

Fig 21, no. 12 Sherd from a Type IV (simple upright rim) jug (Hurst 1977, 231, fig 5, 4), Group 31.

Fig 21, no. 13 Sherd from a Type IV (simple upright rim) jug (Hurst 1977, 231, fig 5, 4), Group 31.

Fig 21, no. 14 Sherd from a Type IV (simple upright rim) jug (Hurst 1977, 231, fig 5, 4), Group 16.

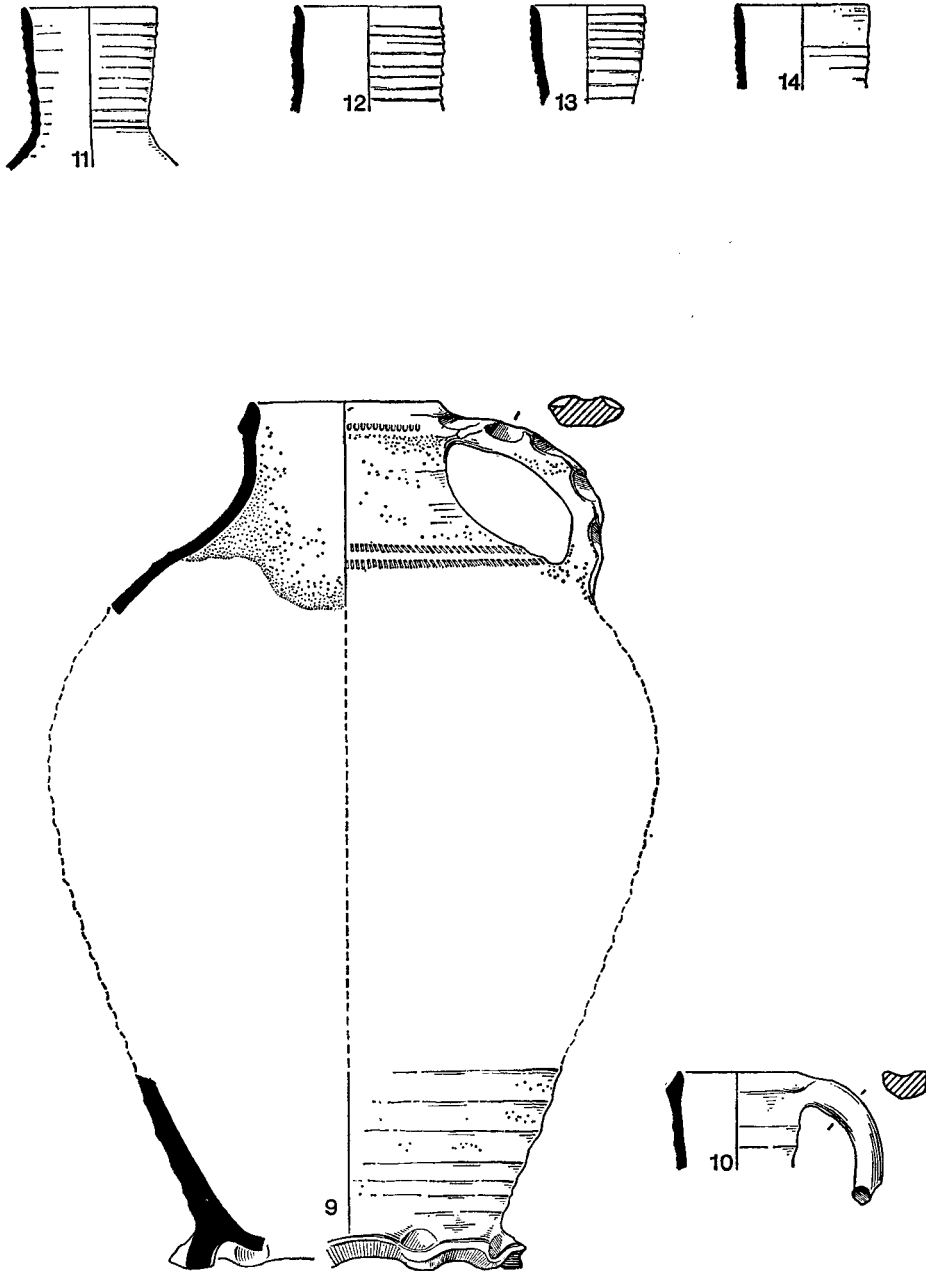


FIG 21 Stoneware (scale 1 : 4)

*Later material (Group III)*

There is a considerable gap in the stoneware sequence during the period 1475-1575, when Raeren plain jugs were current (Hurst 1964; Moorhouse 1972), and after this only a very small quantity of material representing the late 16th-17th century has been recovered. It comprises one sherd of a Siegburg jug, Group 31, one sherd of a Siegburg cup, also Group 31, and two sherds of Langerwehe stoneware, probably all residual material, together with one sherd from a late 16th-century Raeren panel jug (cf Hurst and Moorhouse 1973, 28, fig 5-5), and eight sherds from 3-4 17th-century bellarmines (cf Thwaite 1973), including a portion of a large medallion from cutting 19.

## DATING

by John Hurst

The Edinburgh Langerwehe material does not include any examples of Type I collar rimmed jugs which are characteristic of the middle of the 14th century (Hurst 1975, 225). At the other end there are no Raeren drinking mugs which start to be imported into Britain in quantity in the 1480s (Hurst 1964). The group must therefore fall within the range 1375-1475. Many of the types are comparable with examples found in the Netherlands in the late 14th and early 15th centuries (Hurst 1977, 229-30); the range may extend later but at present no mid 15th-century dated groups containing Langerwehe stoneware are known. There are no differences in the material from the various layers and especially in view of the joining sherds between layers it is all likely to be of one date. The first half of the 15th century is the most probable date range.

*Incidence of German stoneware by stratigraphic group*

Group	Siegburg no. of sherds	Langerwehe no. of sherds	Group	Siegburg no. of sherds	Langerwehe no. of sherds
4	1	—	22	—	3
6	1	3	23	—	1
7	2	15	26	9	46
8	4	26	27	4	28
11	—	3	28	—	5
12	—	5	30	—	1
13	—	2	31	8	60
15	2	6	33-5	—	4
16	2	30	36	—	10
17	2	35	39	—	1
18	1	7	40	—	1
19	3	2	42	—	1
20	1	8	43	—	10
21	1	—			
			Totals	41	313

## APPENDIX D

## The plain glazed floor tiles

by Elizabeth Eames, Department of Medieval and Later Antiquities, British Museum

Sixty-two pieces of plain glazed floor tiles were submitted, all of which were found in disturbed levels. The stratigraphic groups of the three types are tabulated in the table; 26 of the 35 pieces of type I and 22 of the 25 pieces of type II form part of Group 31, which includes everything found in the first 50 cm of the midden below the topsoil. Eight pieces of type I were found in contexts dated by the excavator between the late 14th century and the middle of the 15th century, one piece at a level slightly below those in Group 31. No piece of type II was found in the earlier levels. One piece of type II was found in the Cant's Close area. It formed part of Group 23 of the excavated material, a group which included material in date from the early 16th century to the 18th century. The two remaining pieces of

type II were unstratified in Area 1 on the High Street frontage. This distribution suggests that the tiles of type I were earlier than those of type II. The 2 pieces of type III were found over the garderobe pit at the N end of the site under house A; they form part of Group 31.

*Type I* The tiles of type I are very well made. The sides are smooth, neatly cut with a slight bevel. The base of the tiles is also rather smooth and some have marks which suggest that they had been scraped to remove any roughness. The fabric of the tile body is fairly close and well prepared. The clay seems not to have been rich in iron and has fired to a pink or pinkish buff colour. Some of these tiles have a reduced core which is pale grey. The body clay has inclusions that are visible to the naked eye. Red particles that are probably haematite vary in size from specks to pieces 3 mm in diameter. White specks are fairly thickly spread through some of the tiles, and small *glinting specks of mica are present. All of these inclusions may have been present in the natural clay.*

Most of the glaze is golden brown over the oxidised areas and pale olive green over the reduced areas of the body. A few tiles have a darker glaze. Two tiles have a near black glaze which is bubbled and rough, which suggests that they were overfired. On some pieces part of the surface has lost all its glaze but such glaze as remains is unworn; it looks as if the glaze has flaked off part of the surface but had not been worn off. This appearance is produced when a tile was first biscuit-fired, then glazed and fired a second time. Glaze applied in this way tended to crackle and sometimes flaked off. English tilers normally glazed their tiles while they were unfired and fired them once only.

No complete edge is present but the longest piece of edge measures 115 mm so the complete tiles would be more than 115 mm square. Most of the pieces are 26-27 mm thick. There are no keys in the base. Eleven pieces include a corner and in 5 of these a large nail hole is present in the surface near the corner. These nail holes indicate that while the sides were being trimmed the tile was held firm with a board from which the points of nails protruded. Such an implement was used by Netherlandish tilers but rarely by English tilers. The fact that there are holes in some corners of these tiles and not in others suggests that the board used had nails projecting in two diametrically opposed corners only. This form was frequently used. Some boards had nails in all four corners and occasionally there was a fifth nail in the middle. Both their appearance of having been biscuit-fired and the fact that they had been held with a nailed board suggest that these tiles were imported into Edinburgh from the Netherlands.

It is notoriously difficult to date plain glazed tiles. I have consulted Dr Johanne Hollestelle, who has made a special study of the early manufacture of bricks and tiles in Holland, but no typological series has yet been worked out in Holland for these plain glazed medieval tiles. I have formed the opinion that in England by the middle of the 15th century tilers had gained sufficient control of the flow of oxygen through the oven to produce tiles that were oxidised right through and had no reduced core. They may have acquired this skill even earlier. There were of course exceptions, and one sees 15th-century tiles that have reduced areas just as one sees 13th- and 14th-century tiles that are oxidised all through. Taking all the available evidence into account I would think that the tiles of type I were made in the Netherlands before the middle of the 15th century.

*Type II* The tiles of type II are rather roughly made. Most of the pieces of edge present have been cut with a very slight bevel but have not been given a smooth finish. The base of the tiles was roughly moulded. The body clay is fairly well prepared and has inclusions which appear to the naked eye to be very similar to those in the clay used for the tiles of type I; there are white specks, glints of mica and a few larger red lumps, probably a haematite. These tiles, however, are fully oxidised to a uniform bright red. The glaze is either a dark brownish green applied direct to the body or a bright orange yellow applied over a white slip. This slip was scraped over the surface so thinly that patches and streaks were left uncovered by it and over these the glaze is a rich reddish brown. Marks made by the wooden implement with which the surface was scraped are visible on some of the tiles. The glaze has crackled but shows little sign of wear. It has the characteristics of a glaze applied after the tiles had been biscuit-fired. Two large and three small pieces include a corner of a tile; only one of these has a nail hole in the surface but two other pieces have nail holes. The longest part of an edge present measures 120 mm. Most pieces are small. The thickness varies from 27 to 41 mm.

These tiles bear a marked resemblance to some found in St Magnus Cathedral, Kirkwall, Orkney. A few pieces are preserved in the cathedral and others are in the National Museum of Antiquities in Edinburgh. I have not seen examples from St Magnus Cathedral and Edinburgh High Street together to compare them in detail, but the general appearance is remarkably similar. Three of the four pieces that I was able to examine in Kirkwall, through the kindness of the Custodian of the cathedral, Mr A Thompson, included a corner with a nail hole in the surface. These pieces ranged from 38 to 42 mm in thickness.

Basing my opinion on the same criteria as those discussed in relation to the tiles of type I, I would suggest that the tiles of type II were imported from the Netherlands after the middle of the 15th century. Judging by the rather small sample present, I would say that they had not had much wear.

*Type III* Only 2 pieces of type III were present; they were found separately but are adjacent pieces of the same tile (Group 31). Together they form a complete edge, 118 mm long, of a tile 24 mm thick. The glaze is dark green, slightly worn and less glassy than that on types I and II. There are nail holes in the surface near both corners. The edges are neatly cut to a small bevel and the base retains the traces of the sand on which it was moulded. The fabric of the body has fired to a light red. There is no inclusion of haematite visible.

*Conclusion* It seems probable that all of the floor tiles found in these excavations were imported from the Netherlands. The single tile represented by the 2 pieces on type III were found over the garderobe pit under house A which is thought by the excavator to date from the early 15th century, a date which would be acceptable. Although the tiles of type I are so widely scattered, the presence of one piece in the early level represented by the ditch (Group 6) indicates that this type cannot be later than the time bracket of that level which the excavator dates to the late 14th and early 15th century. A date in the late 14th century would be acceptable for the tiles of this type, although they could belong to the early 15th century. The tiles of type II were absent from the very early levels and were concentrated in an area (Group 31, but over the pit), which suggested to the excavator that they had been thrown down the garderobe chute of house A. He has found documentary evidence that suggests that house A was destroyed c 1470. A date around 1450 would be acceptable for these tiles, and as has been mentioned they seem not to have had heavy wear. They could well have been thrown out within 20 years of being laid. It is interesting that similar if not identical tiles were being imported as far north as Kirkwall; both Edinburgh and Kirkwall were ports and it is well known that ships trading between the Netherlands and Britain brought cargoes of tile as ballast.

*Distribution of tile fragments by stratigraphic group*

Group	Type I	Type II	Type III
6	1	—	—
8	2	—	—
16	1	—	—
19	2	—	—
23	—	1	—
26	2	—	—
29	1	—	—
31	26	22	2
Area 1 (33-35)	—	2	—
Total	35	25	2

## APPENDIX E

### The glass

by R J Charleston, Department of Ceramics, Victoria and Albert Museum

I could not undertake (nor is it necessary) to report on each fragment individually, nor could we in many instances distinguish between small pieces of late 18th-century window glass as opposed to 19th-century fragments. I have therefore mostly ignored these, and only commented on those pieces of window and vessel-glass which stand a chance of being pre-1700, or which are for some other reason noteworthy.

*Window glass* There are several fragments from 'bull's eyes', from various parts of Group 31 and from Group 28, the demolition of house B. These might date as early as the middle of the 18th century, but of course this glass still continues to be made today in an 'antique' spirit; my guess is that they are late 18th-early 19th century in date. There is one piece of 'flashed' blue from Group 31, but this has every appearance of being 19th century. The interior of house B, Group 15, contains one very thick piece which seems to be part of a quarry, but one side is diamond-cut, and is therefore unlikely to be earlier in



date than the 16th century. It might be from the first half of that century, when this type of weathering seems to have affected at least the glass made in the Surrey-Sussex Weald; but on northern sites it might perhaps be more recent. Four fragments from the demolition rubble of house B (Group 28) clearly come from the edge of a panel of 'muff' glass, and are therefore unlikely to be earlier than the middle of the 16th century, and more likely to be of 17th-century date. Another fragment from just outside the house to the N (Group 31) may well be part of the same panel, and is clearly one angle of a quarry. Another, thinner fragment also from the demolition of house B is probably of much the same date. From topsoil N of the wall adjoining house A (Group 31) is a fragment which, being thicker at one edge than at the other, may well be a piece of 'crown' glass and perhaps somewhat later - ? late 17th-18th. It is not clear when 'crown' started to get the upper hand over 'muff'; the weathering of this fragment suggests a technologically superior 'metal'. Another pale green fragment, however, with a 'selvedge' (demolition of house B) might be a piece of 'muff' glass which has been distorted in the flattening process, or possibly in a subsequent fire. It indicates a late 17th-century date.

*Vessel glass* Again, there is little of which one can say confidently that it antedates 1800. The earliest comes from Group 27, towards the top of the midden, and is striped with white. This has every appearance of being part of the pushed-in foot of a beaker (or possibly, but less likely, of a flask) decorated with applied vertical flattened threads of 'lattimo' glass. A conventional dating for this type of decoration is 'early 16th century', but I suspect in this form it may even antedate 1500, even if not by many years. From topsoil (Group 31) comes part of a knop or baluster from the stem of a drinking-glass of the early 18th century (even just possibly as early as 1690). The demolition of house B (Group 28) produced the base of a wine-glass with vertical mould-blown ribbing, of much the same date. A bottle-neck from Group 23 may date from the first half of the 18th century, but I should suspect that the second bottle-rim, from Group 31, which has been distorted in a fire, is later. Several bottle-bases from the N part of the site (Group 31) seem to be of early 19th-century date. The whole site of Area 2 seems to be littered with parts of one or more large carboy-like containers (Group 31 and just in the top of Group 20). The curvature of these olive-green fragments suggests something with a very large diameter. In this connection it is perhaps of interest that the *Bristol Weekly Intelligencer* for 12 January 1751 and the *Manchester Magazine* for 15 January both carry the story: 'Leith, Dec. 28 (1750). A globular bottle has been lately blown here by Mr Thomas Symmer, principal Director of the Glass-Work of South Leith . . . containing two hogsheads, and being measured the dimensions are 40 inches by 42. This piece of curiosity . . . is reckoned by all who have seen it, to be completely done and to exceed anything ever done in any glasswork in Britain.' Perhaps this is something like it.

## APPENDIX F

### The coins

by *Nicholas Holmes*, Edinburgh City Museums

Of the 45 items submitted for identification, 32 were recognisable as coins and a further 4 as tokens or jettons; the remaining 9 items were corroded or fragmented to such an extent as to be unidentifiable. Clearly the comparatively small number of coins recovered from this site, covering a time-span of six to seven centuries, does not permit many conclusions to be drawn from the study of numismatic evidence in isolation. The range of coin-types represented indicates the probability of a more or less continuous use of the site from medieval times to the 20th century, with few of the coins being of more than small change value even at their date of issue, the obvious exceptions being the early silver coins and to a lesser extent the William III half-crown. This fact, together with the evidence of considerable wear during circulation on almost every coin, suggests that they were all lost in the course of ordinary day-to-day activities.

Of the four medieval silver coins present only one, the heavy coinage first-issue groat of Robert III, could be identified with any degree of accuracy, and the comparatively unworn appearance of this coin suggests that it was probably lost fairly soon after its date of issue, probably before about 1420. It is also probable, although by no means certain, that the three long-cross pennies had also been lost by this time, which leaves a gap in the coin record of nearly a century and a half before the issue of the next coin in the list, the billon plack of Mary, Queen of Scots. It cannot be over-emphasised, however, that this on its own is quite meaningless, as coins in small numbers are never an accurate reflection of human activity. It is a point which might be borne in mind, however, when considering the evidence of other types of artefact, especially pottery.

The coins of the 16th century and later reveal a fairly steady coin-loss pattern over a period of almost three centuries, the only outstanding feature being the large number of 3rd-issue turners of Charles I. These coins are extremely common site-finds in Scotland, however, and seem to have been the standard unit of minor currency for some time. All but one of the examples found were in a very worn condition, indicating prolonged circulation, and their small size and undistinguished appearance would have made them difficult to find when dropped. The Louis XIII double tournois is of the same size and general appearance as the turner of this issue, and the frequent occurrence of these coins also on Scottish sites indicates that they may have been accepted as such in normal circulation. The token, jettons and counter are all of types which are known to have been in use in large numbers in Scotland at various periods.

#### *Detailed List*

Descriptions of the coins are preceded by their small-find numbers in the excavation records, held in Edinburgh City Museums. The S reference, e.g. S.239, refers to types in Stewart 1955.

#### *Group 7*

- 124 EDWARD I, II or III: silver penny (1278-1377)  
obv. E . . . ; crowned bust facing; rev. CIVIT [AS] L . . . ; single long cross pattee; 3 pellets in angles;  
? London mint; broken and very worn.

#### *Group 14*

- 117 Silver penny (late 13th-15th century)  
obv. crowned bust facing; rev. single long cross, pellets in angles; obv. mis-struck and very worn.

#### *Group 15*

- 83 JAMES VI: 2nd issue billon hardhead (Nov 1588), value 2d; broken and worn. S.200.  
70 CHARLES I: 3rd issue turner (1642-50); very worn and corroded. S.239.  
79 CHARLES I: 3rd issue turner (1642-50); very worn and corroded, esp. obv. S.239.  
100 CHARLES I: 3rd issue turner (1642-50); bent and with some corrosion, but less worn than the other examples. S.239.  
101 CHARLES I: 3rd issue turner (1642-50); very worn and corroded. S.239.  
71 French: LOUIS XIII: double tournois (1642) obv. LUD XIII; adult bust undraped left; very worn and corroded, esp. obv.

#### *Group 17*

- 150 ROBERT III: heavy coinage groat, 1st issue (c 1390-1400)  
obv. ROBERTUS DEI GRA . REX SCOTORUM: pellets in cusps of tressure and between words of legend;  
crowned bust facing; rev. DNS . PTECTOR . MS . F . LIBATOR . MS . VILLA . EDINBURGI; 3 pellets in  
each angle of cross. Partly coated with black substance, but average wear. S.63.

#### *Group 24*

- 49 3 fragments of a silver or billon ? penny; unidentifiable and much corroded.

#### *Group 27*

- Unnumb Silver penny (late 13th-15th century): single cross on rev. with pellets in angles; majority survives in two pieces, but extremely worn and corroded.

#### *Group 28*

- 73 CHARLES I: 3rd issue turner (1642-50); extremely worn and corroded. S.239.

#### *Group 21*

- 34 MARY QUEEN OF SCOTS: 1st period billon plack (1557) - value 4d. Much corroded, especially on  
obv. S.157.  
35 CHARLES I: 3rd issue turner (1642-50); v. worn. S.239.  
33 GEORGE V: Penny (1920), near very fine, some corrosion.  
142 GEORGE VI: halfpenny (1940); good fine.  
42 Unidentifiable bronze fragments.  
44 Unidentifiable bronze fragments.

*Group 33*

- 90 CHARLES I: 2nd issue turner (1632); worn and v. corroded. S.237.  
 41 CHARLES I: 3rd issue turner (1642-50); extremely worn and corroded. S.239.  
 94 CHARLES I: 3rd issue turner (1642-50); slightly mis-struck; very worn and corroded. S.239.  
 89 CHARLES II: 1st issue turner (1663); worn. S.243.  
 97 Unidentifiable bronze fragments.  
 109 Unidentifiable bronze fragments.  
 111 Unidentifiable bronze fragments.

*Group 34*

- 9 GEORGE II: Halfpenny (1729-54), extremely worn, rev. flat.

*Group 35*

- 10 GEORGE II or III: halfpenny (1729-75); worn flat on both sides.  
 4 WILLIAM III: Half-crown (1694-1702); very worn and corroded, esp. rev.  
 5 GEORGE II: halfpenny (1806); worn and partly corroded.  
 1 GEORGE III: sixpence (1816); good fine, but corroded, esp. on rev.  
 3 Italian - VICTOR EMANUEL II: 5 Centesimi (1860-69); v. worn.  
 2 VICTORIA: Halfpenny (1872); very fine, but some corrosion.

*Group 36*

- 30 VICTORIA: farthing (1884); good fine, but some corrosion.  
 17 VICTORIA: halfpenny (1885); good fine, but corroded.

*Group 37*

- 182 French jetton (? 14th century): poss. from Maine, based on official issues; Barnard 1916, pl VII, no. 70 and p 121.

*Group 43*

- 180 Jetton, prob. French or poss. German: late 16th-17th century  
 obv. sailing ship; . . . MA . URBS . LU ? ? ETIA; in exergue . . . MINA; rev. cross fleurdelissee with anchors in angles; + CHRS. [VINC]IT. CHRS. [R]EG [NAT.CHR]S.IMPT.; corroded but not particularly worn.  
 156 Late 18th-century copper token of Edinburgh  
 obv. JOHN HUNTER [No. 212 COWGATE & 109] HIGH STREET; rev. GENUINE TEAS DIRECT FROM THE INDIA HOUSE; Atkins, Lothian 81; little wear except for centre of obv.  
 31 Gaming counter (base metal) in imitation of spade half-guinea; dated 1701, but probably Victorian; one side extremely worn, the other little.

## APPENDIX G

## Small finds

by *Nicholas Holmes and John Schofield*

Although 184 objects were accessioned as small finds during the excavation, many were leather shoes and scraps of leather from the topsoil industrial archaeology (Group 32), or unidentifiable scraps of bronze, copper or iron. The coins have already been dealt with (Appendix F); only two further objects have been selected for description and illustration.

- 1 Bone comb, 64 mm by 44 mm, 1.5 mm thick; slightly curved; double sided, with 77 teeth on each side; teeth 13 mm long. From topsoil clearing inside Area 3 house, presumably from the basement of the house itself.

David Caldwell writes: 'The comb is similar in form to other bone and wooden combs in the collection of the National Museum of Antiquities, Edinburgh (e.g. a wooden one from the ditch of Lochmaben Castle, NMAS UA2), but none of these are clearly datable. A date, however, from the late medieval period up to the present would be in order. The curvature on this comb is probably due to warping; combs like this could have been used for de-licing. An outside possibility is that the curvature is intentional and that the comb has been made for wearing in the hair, but such combs are normally one-sided and were probably not used in this way before the 18th century. (fig 22, 1)

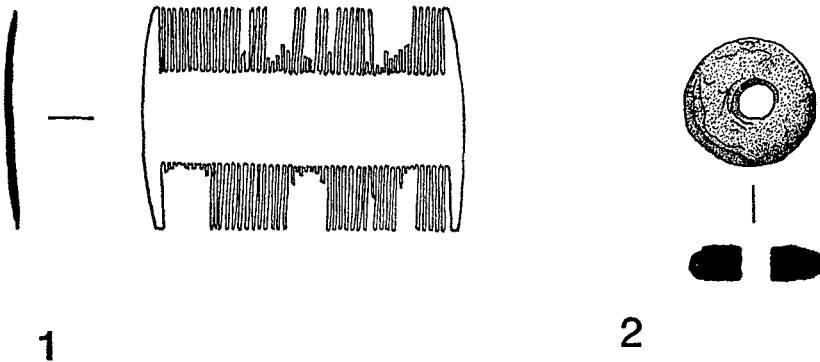


FIG 22 Bone comb and lead spindle whorl (scale 2 : 3)

- 2 Lead spindle whorl, circular, diameter 26 mm, and varying in thickness from 6 to 7 mm; circular perforation of diameter 8 mm in slightly off-centre position; weight 31.2 gm. From pre-midden pit, Group 3, ? early 15th century. (fig 22, 2)

## APPENDIX H

### The clay tobacco-pipes

by Graeme Lawson

By normal standards the quantities of clay tobacco-pipe fragments found during the course of the excavation were quite considerable. Over thirty complete pipe-bowls of the mid-17th century period alone were recovered, while later (and notably Victorian) types are similarly well represented. These pipes as a whole provide much fresh evidence to help resolve a number of both general and specific problems which have arisen around the subject in recent years, and they will, because of the nature of their deposition and recovery, be of great value in future for the development in detail of Scotland's clay tobacco-pipe typology. They begin, chronologically, with small bulbous pipe-bowls of the early 17th century and end with quite a large quantity of Late Victorian material; for all this, however, the sequence is by no means complete, the bulk of the pipes falling into two main categories; 1620-1690 and 1820-1910. There is a notable absence of anything earlier than about 1620, and a considerable hiatus across the 18th century. The dates and conclusions arrived at in this pipe report are largely the result of research carried out by the writer in NE England between 1970 and 1975. The starting points for the development of his typology (which is as yet unpublished) were the publications of Oswald (1960) and Parsons (1964), while the idea of stem-bore dating (which he is currently investigating in N British pipes) was originally taken from Binford (1962) and Walker (1967): see also Belcher and Jarrett (1971).

*17th Century* The earlier of the two groups consists of a number of bowls, many bearing impressed basal stamps and moulded heel-initials, as well as almost 300 unmarked sherds of stem (dated by the stem-bore method). The bowls (figs 23-4: 1-35) are variously shaped, though all are of the fairly small bulbous form characteristic of the 17th century as a whole, and none bears any decoration other than a line of rouletting around the rim; such rouletting, applied after the removal of the pipes from their moulds, varies here between coarse and fine-milled grades (cf pipes 3 and 22). The earliest bowls are the smallest ones (pipes 2, 3, 11-12), which may date to as early as 1620. They bear a close similarity to those from the Tron Kirk, Edinburgh (Holmes 1975), both in shape and in size, and like all but one of the Tron pipes they bear no identifying marks. On the whole, however, the majority of the early High Street pipes have slightly larger bowls. Their basically plain surfaces again bear rouletting in most cases, but moulded heel-initials are common, and 15 of the 35 bear impressed basal stamps. Of the initials most read W Y (9) or W B (4), while there is one each of T C (or P C), T B and R S; of the basal stamps all but two have architectural subjects (fig 25, a-m). These two exceptions bear initials alone, one reading W F in a circle (fig 25 f) and the other P C and E (or L). Interestingly enough, P C also occurs on one of the 'castle' stamps, on either side of the subject (fig 25 h), where it coincides with the heel-initials T or P C; there are

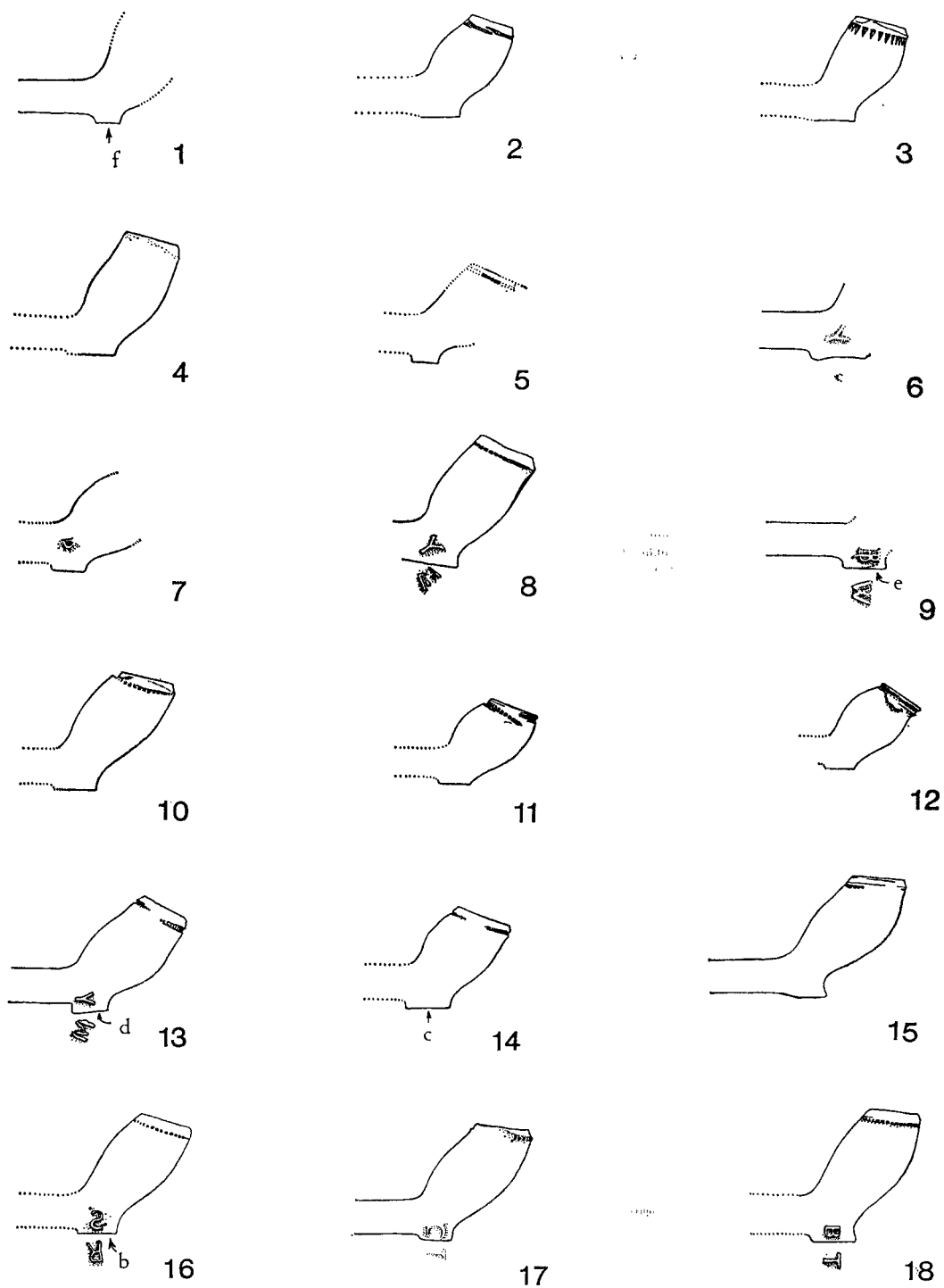


FIG 23 Clay pipe bowls (scale 1 : 2)

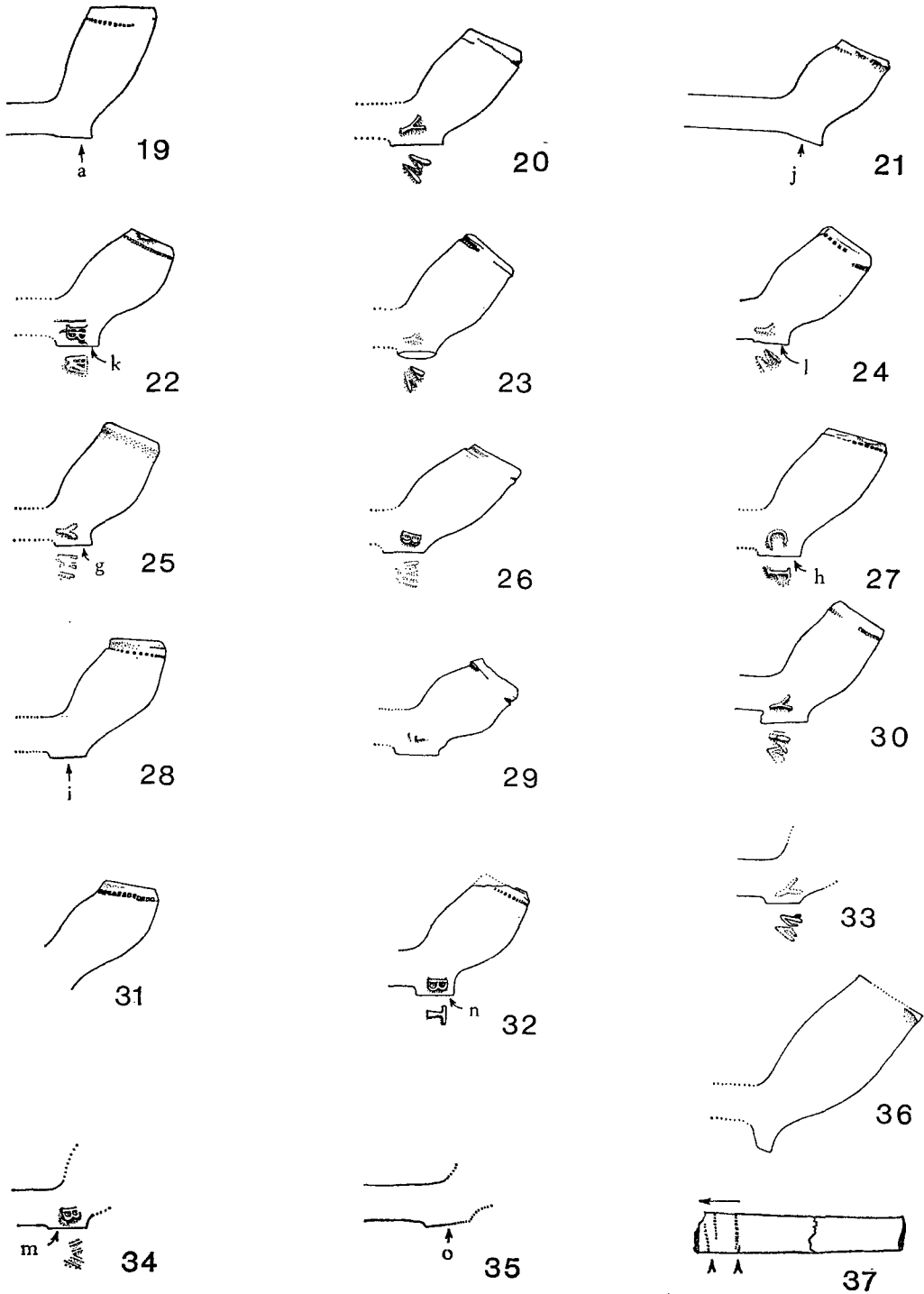


FIG 24 Clay pipe bowls (scale 1 : 2)

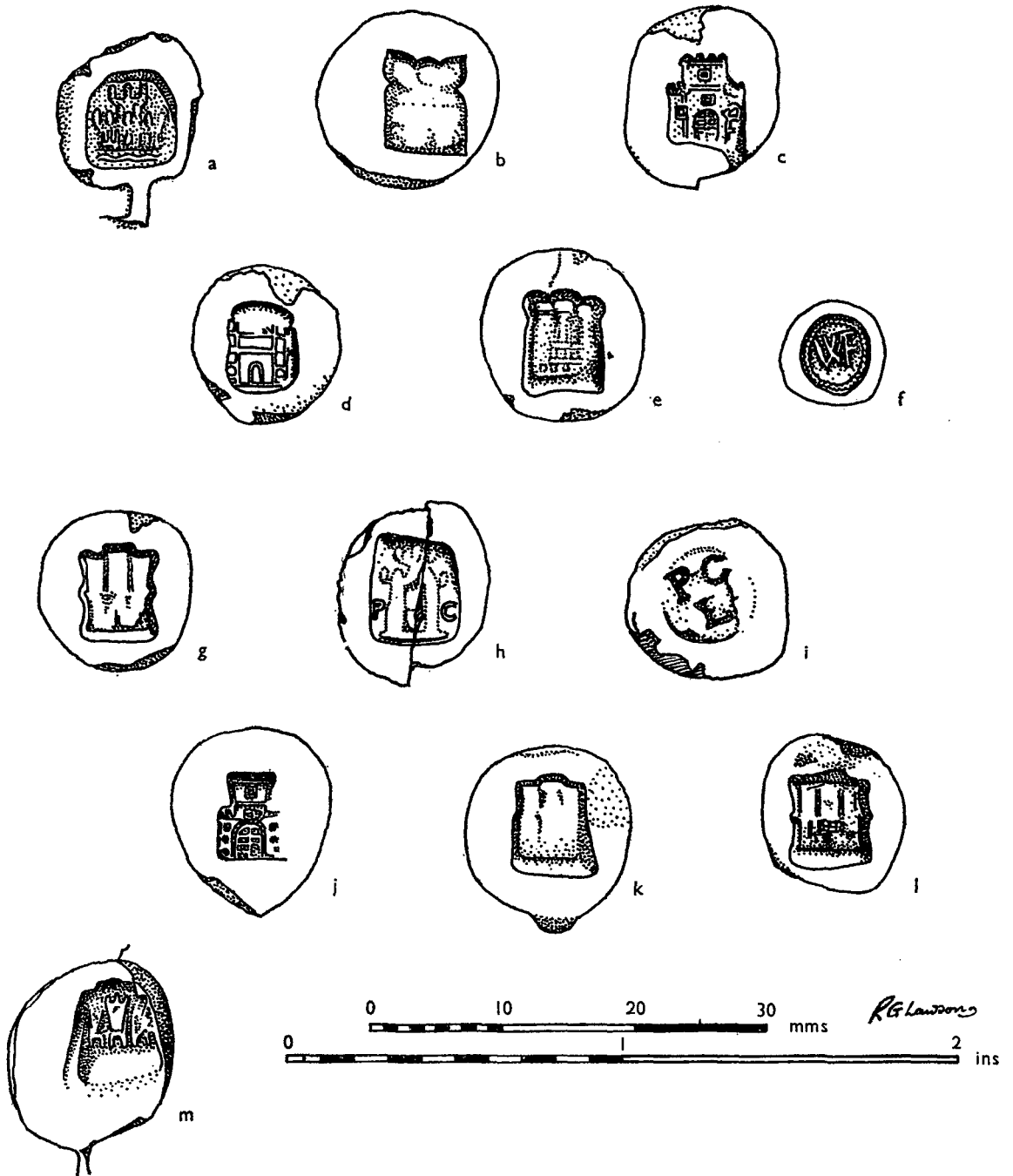


FIG 25 Clay pipes: 17th-century basal bowl-stamps (scale 2 : 1)

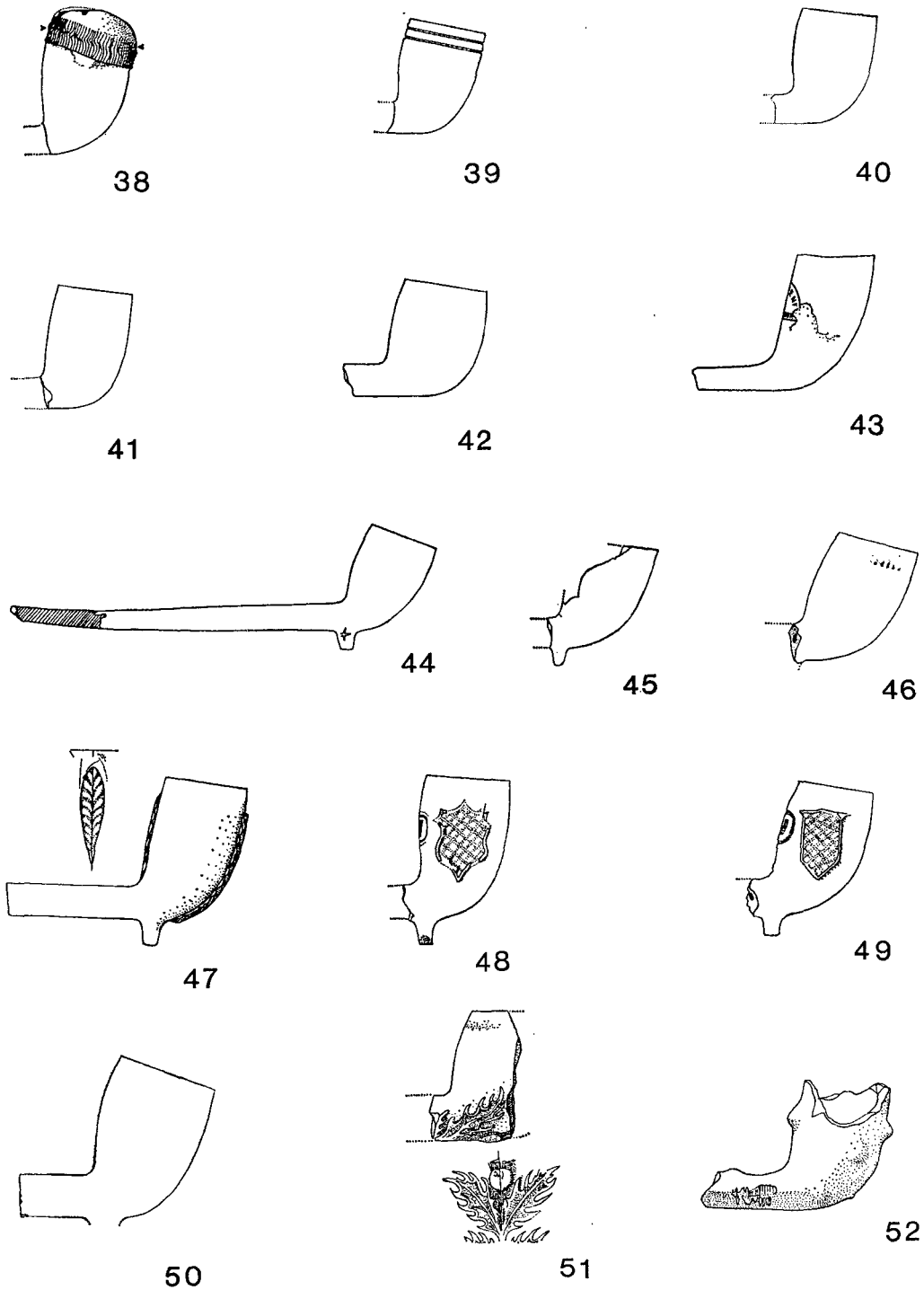


FIG 26 Clay pipe bowls (scale 1 : 2)



unfortunately no heel-initials associated with the other two initialled basal stamps to cast further light on this. Among this early/mid 17th-century material there are also three bowls which show some slightly later traits. These traits are fairly minor in two of the cases (nos 15, 28) and might conceivably be due to some extent to distortion of more normal mid 17th-century bowls on removal from their moulds, but the third (no. 19) definitely has an enlarged bowl-mouth (and cavity) and in consequence has become much less bulbous; it is beginning to resemble more the early 18th-century bowl-types, although clearly still of the later 17th century itself.

The hundreds of stem-sherds which seem to date to this early period average on the whole about 3.5 cm in length. The rate of stem-taper appears to be fairly gradual and standard, and from a number of the surviving fragments (and in particular one long piece, which at 14 cm includes traces of neither bowl

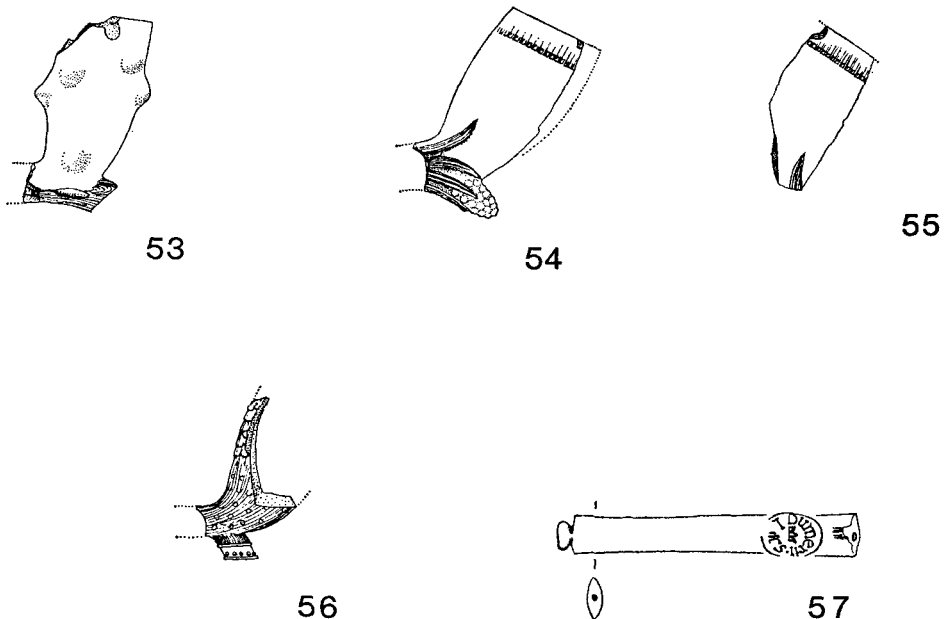


FIG 27 Clay pipe bowls (scale 1 : 2)

nor mouthpiece), it can be estimated that the original length of these 17th-century pipe-stems was probably in the region of 30 cm. It is also probable that their curvature, if any, was only slight. The mouthpiece-terminals of this period can be identified by the stem-bore method, and differ from later types by lacking any moulding or glaze. They are plain, circular in section, and in some cases bear toothmarks; this evidence combines with that of the internal blackening of most of the bowls to confirm that these pipes do not represent retail stocks, although the situation is not quite as clear as this in the later (Victorian) group.

*19th Century* The 19th-century material is typologically more varied than the early group, as one would expect. A major difference is that pipe-stem sherds now often bear datable markings, and indeed it is perhaps in stem-markings that Victorian pipes vary the least; among the bowls, as the drawings here illustrate (figs 26-7; 38-57), there is considerable variety not only in superficial decoration but also in basic dimensions and proportion.

After about 1830, the most common type of manufacturer's mark was the paired impressed linear stem-mark, occasionally with the inscription moulded in relief, and quite often with some simple framing decoration. These normally display the manufacturer's name on one side of the stem, with the place of manufacture or some other relevant information (like 'BURNSCUTTY' for example) on the other. There are 13 such paired incuse stamps represented here, of which only one bears any framing. One further fragment of stem bears its legend moulded in relief (no. 52), while another bears, in comparably-sized figures, the number 35 (no 51). These are not necessarily Edinburgh manufacturers, though of course a few such as White and McKenzie are, and indeed a further two irregular stem-stamps demonstrate the presence of

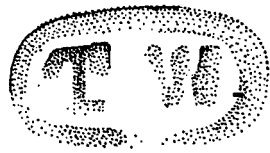
even foreign material (nos 53 and 54, also no 47). The former is plain and incuse, set around the stem in four bands, while the latter is an oval mark impressed into the top of a most unusually broad flat stem.

The remaining 8 stamps are all of one type, impressed into the back of the bowl (facing the smoker). The first (fig 28, 8) bears the name and address of a manufacturer in London – another import it would seem – while the second (fig 28, 7), though fragmentary, is clearly in the form of a shield, similarly (though less heavily) struck on the same part of the bowl. The other six, all with the same framed initials ‘T W’, a very common mark elsewhere in Scotland and England (Durham, Northumberland and Cumberland), are surprisingly difficult to explain, and will be discussed in detail separately.

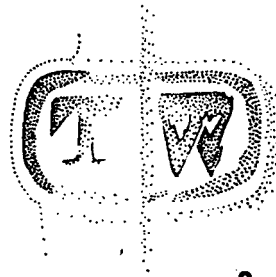
Most of the bowl designs represented in this group are of fairly standard Victorian forms. These bear relatively little decoration, or none at all (fig 26: 38–50), and they can be divided between those with spurs and those without. Only one pipe survives intact, a plain spurred specimen with a straight stem of 10 cm (no. 44) and a mouthpiece dipped in glaze, but it seems likely that the others were similarly proportioned (except perhaps for the London bowl, no. 43). The more decorated bowls, which generally date to the later Victorian period, show more diverse forms. The briar-thorn decorative motif and its derivatives are quite common on a number of different bowl-forms; here it can be seen on a short broad-stemmed ‘Workman’ type of late 19th/early 20th-century pipe (no. 52), and also on a bowl with a stem-based (rather than the usual bowl-based) heel (no. 53). I am uncertain of the dates of this last and the three other bowls related to it (nos 53–6), but would suggest a late 19th-century date. One of them, and a fragment of an identical bowl, seem curiously to mimic 17th-century rouletted bulbous forms, though with the notable inclusion of some clearly uncharacteristic foliage in the form of a corn-cob spur. There has been little application of rouletting among these particular Victorian pipe-bowls, only three of them bearing any traces of it. Many of them do, however, bear a band of rough scratch-marks (nos 45, 51) around the outsides of their rims, and one bears an actual surviving metal cap (no. 38). Whether this was intended as a seal for the sale of tobacco already packed in the pipe, or as a cap simply for convenience of the smoker, remains to be seen. The capped bowl does, however, still contain pieces of tobacco and may well, like the complete pipe already referred to, represent retail stock; furthermore, the scratches around the bowl-rims suggest, by their general form, that such caps tended to be fitted and removed only once, or twice at the most. It is probable though that the majority of the bowls did not have such caps, and many of them do show firm indications of having been smoked.

Mouthpieces of two distinct forms are represented in this late group. The first is the simplest, consisting of a plain un moulded terminal dipped roughly into a yellow/orange or yellow/green glaze. There are numerous examples of this, one still attached to the stem of the complete pipe (no. 44), but there are also moulded mouthpieces in the group as well. These bear no glaze, but are somewhat flattened dorso-ventrally, with a moulded lip or terminal bulb. Both types are datable, by the stem-bore method, to about the same post-1750 period and are probably Victorian.

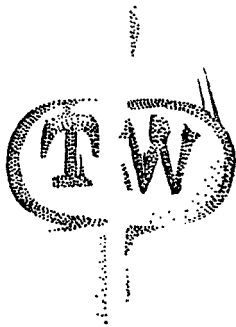
*18th Century* Between these two large 17th- and 19th-century groups there is here a considerable gap in the sequence. Only one bowl can be dated with any certainty to the 18th century, and even that is early in the period; its spur and generally elongated shape (no. 36) suggest an 18th-century origin, but in still retaining a very slight bulbousness the implication is that it is not too far from the turn of the century. It is moreover the only firm evidence for that period among the pipes from this site; the evidence of the plain pipe-stem material will be discussed later. There are very few items of either 18th- or 20th-century types, and none at all from before about 1620. It is, however, a good opportunity for testing and demonstrating the feasibility and accuracy of the infrequently tried stem-bore method of dating unmarked sherds of stem, since we have here a vast sample of such material, and ample control in the form of datable pipe-bowls and marked stems. Fig 29 (c) shows the frequencies of all of the measurable stem-bore diameters from the excavation, each group covering a range of 0.2 mm. There are two frequency peaks at 3.0 and 2.0 mm, whose significance is revealed by the corresponding peaks in graph (a) which consists of the typologically datable material alone. Here is made clear what one might already have suspected – that the two peaks correspond with the two main groups of pipes – and it demonstrates that with only one Victorian and one 18th-century exception all of the material which has bores with diameters of over 2.5 mm dates to the 17th century, while all of the Victorian pipes have bores of less. It seems likely from evidence from elsewhere that the ‘low’ between 2.7 and 2.1 mm may represent the 18th-century hiatus. Graphs (b) and (d) show in the same way the situation observed in the pipes from the Tron Kirk, Edinburgh, where all pipes dated to around 1630. Between them, the Tron and High Street graphs help to illustrate the value of the principle for dividing (with a high degree of accuracy) unmarked pipe-sherds



1



2



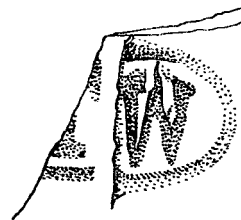
3



4



5



6



7



8

FIG 28 Clay pipes: 19th-century bowl-stamps (scale 2 : 1)

into pre- and post-1750 categories, but at the same time they illustrate also the difficulty of obtaining finer dating within these two. Pipes with 2.6 mm bores are by no means necessarily later than those with bores of 3.0, as can be seen from the data supplied with the illustrated material, and the possibility of distortion during manufacture must be borne in mind at all times.

Finally, it only remains here to discuss the Victorian 'T W' bowl-stamp. Six of these were recovered from the site, three complete and three fragmentary (fig 28), and although they are clearly not all from precisely the same stamp they are virtually identical in form, impressed into the backs of their bowls. These bowls are of two slightly different sorts; the first is the smaller, though proportioned in more or less the same way (with a short basal spur), and is without any decoration, while the second and larger of the two bears on one side a large cross-hatched panel in the form of an heraldic shield (nos 48, 49). Elsewhere in S Scotland and the Border Counties of England this distinction is also evident (the same types of pipe also often occurring *without* the T W stamp), but there the mark is also occasionally found in association with a third similar bowl which is decorated with a cross-hatched shamrock-trefoil panel and a harp (with the inscription 'ERIN').

Since there are also among this High Street Victorian group numerous stem-stamps incorporating the initials T W (though none is directly attached to a T W bowl), it might seem reasonable to conclude that they and the Edinburgh manufacturers Thomas White & Sons whom they represent are to be connected with our T W bowl-stamp. Five such stem stamps occur here: THO WHITE & C<sup>o</sup>/EDINBURGH, (THO) WHIT(E)/(EDINBU)RG(H), EDINBURGH/THO WHITE, THO WH(ITE)/(BURNSCU)TTY, and finally (in relief, rather than impressed) T W & C<sup>o</sup>/EDIN<sup>r</sup>. As on other sites in Scotland this is the only evidence for the identity of T W, and it seems very strong. However, and unfortunately, the situation is not as simple as this. Where the stamp occurs in Northumberland, for example, it is equally naturally assumed to refer to the well-known Northumbrian pipe-maker William Tennant (of Gateshead, Newcastle and Berwick), and, while this interpretation involves the reversal of the initials, we do actually have whole pipes bearing Tennant's stem-marks in direct association with the T W bowl-stamp. Tennant's case has indeed seemed completely watertight for a long time, but illusions here too have been shattered very recently by the discovery of T W bowls directly associated with the stem-stamps of the Tyneside manufacturer F J Finn. How one interprets this curious state of affairs is, at the moment, a matter of personal choice, and it is difficult to imagine how the problem will ever be resolved conclusively. For the moment, however, I would suggest that the significance of the T W stamp is likely to centre on either the Victorian manufacturers' habit of mimicking their most popular rivals' pipes, or, rather less likely perhaps, an appellation, such as pipes like 'The Workman' were to receive in the early 20th century. Meanwhile, whatever its function may be, it clearly dates to the latter half of the 19th or the first decade of the 20th century.

*Victorian linear stem-marks (and others)*

	Mark	Bore	Group
1	..... WHIT ..... / ..... RG ...	2.0	31
2	R. HA ..... / ..... BURGH	2.2	41
3	... DONALD ..... /	2.0	41
4	THO WHITE & C ... / EDINBURGH	2.0	34
5	M <sup>c</sup> KENZ ..... / ..... RGH	2.0	35
6	M ..... / .....	1.8	35
7	GO - ..... / ..... ON	2.0	35
8	COR ..... / ..... CORK (? framed)	2.0	35
9	EDINBURGH / THO WHITE	1.8	35
10	DERB ..... / .... M <sup>c</sup> EVOY	2.0	35
11	A & F ..... / ..... AND	3.0	34
12	THO WH ..... / ..... TTY	2.0	35
13	..... NZIE / EDIN .....	2.0	31
14	35 /	—	35
<i>(in relief)</i>			
15	T W & C <sup>o</sup> / EDIN <sup>r</sup>	1.6	35
16	Gambier / a Paris / mo M. / Deposé	2.0	41
17	Dumeril · / L ..... rs	—	35

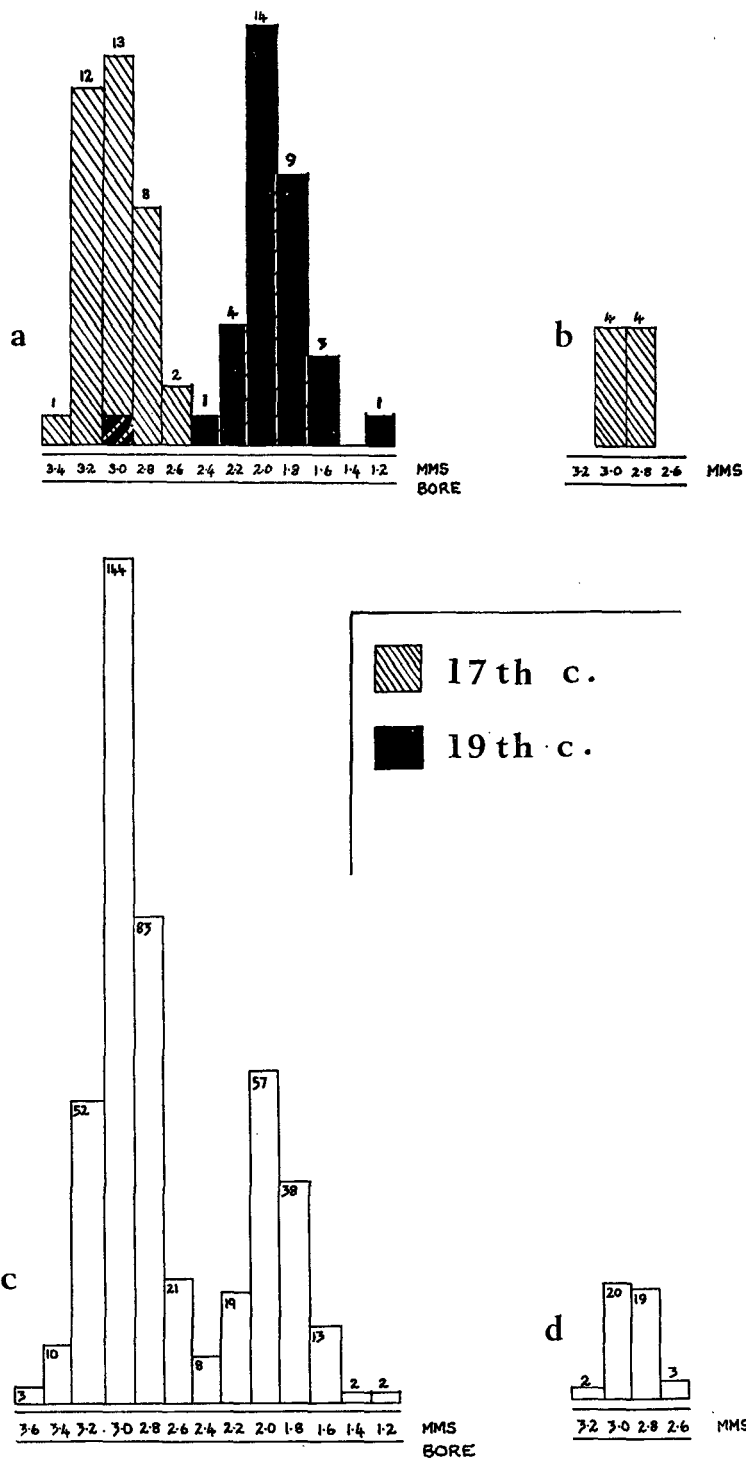


FIG 29—see caption on opposite page

*Clay pipes illustrated*

(nos 1-18, fig 23)

- 1-12, From under flags at S end of E cellar, Area 1 (Group 33):  
 15-18 1, bore 3.2 mm; 2, bore 3.0 mm; 3, bore 3.0 mm; 4, bore 3.0 mm; 5, bore 3.0 mm; 6, bore 3.2 mm;  
 7, bore 3.2 mm; 8, bore 3.2 mm; 9, bore distorted; 10, bore 3.2 mm; 11, bore distorted; 12, bore  
 distorted; 15, bore 2.8 mm; 16, bore 3.0 mm; 17, bore 3.2 mm; 18, bore 3.2 mm.  
 13-14 From machine excavation of Cutting 19 (Group 40):  
 13, bore 3.2 mm; 14, bore 3.2 mm.

(nos 19-37, fig 24)

- 19 From under flags at S end of E cellar, Area 1 (Group 33). Bore 2.6 mm.  
 20 From top of midden W of N limb of W wall (Group 31). Bore 3.0 mm.  
 21 From topsoil at E end of Area 2, E side (Group 31). Bore 2.8 mm.  
 22 From demolition of house B (Group 28). Bore 3.2 mm.  
 23 From same context as 22. Bore 3.2 mm.  
 24 From topsoil in central part of Area 2 (Group 31). Bore 3.0 mm.  
 25 From transition from top of midden to topsoil, west of stone drain to house A, Area 2 (Group 27).  
 Bore 3.4 mm.  
 26 From topsoil, on E edge of house B (Group 31). Bore 2.8 mm.  
 27 From demolition of house B (Group 28). Bore 3.0 mm.  
 28 From topsoil over central part of Area 2 (Group 31). Bore 3.0 mm.  
 29 From demolition of house B (Group 28). Bore 2.8 mm.  
 30 From topsoil at extreme N end of Area 2, above wall of house A (Group 31). Bore 3.0 mm.  
 31 From topsoil over demolition of house B (Group 31). Bore 2.8 mm.  
 32 From topsoil on central area of Area 2 (Group 31). Bore 2.8 mm.  
 33 Removing ? Victorian features in Cutting 8 (Group 31). Bore 3.2 mm.  
 34 Topsoil, S end of Area 2 (Group 31). Bore 3.0 mm.  
 35 Demolition of house B (Group 28). Bore 2.6 mm.  
 36 South of floor joists in Area 1 (Group 35). Bore 2.0 mm.  
 37 Stem, from under flags at S end of E cellar, Area 1 (Group 33). Bore 3.0 mm.

*17th-century basal bowl-stamps (stamps a-m, fig 25)*

These stamps are borne by the following pipe-bowls illustrated in fig 24: (a) 19, (b) 16, (c) 14, (d) 13,  
 (e) 9, (f) 1, (g) 25, (h) 27, (i) 28, (j) 21, (k) 22, (l) 24, (m) 34.

*Clay pipes illustrated: 19th-century bowls*

(nos 38-52, fig 26)

- 38 From beneath basement floor level in Area 3 house (Group 43). Bore 1.8 mm.  
 39 From same context as 38. Bore 1.8 mm.  
 40 From between joists in Area 1 (Group 35). Bore 1.6 mm.  
 41 From same context as 40. Bore 2.0 mm.  
 42 From same context as 40. Bore 1.8 mm.  
 43 From same context as 40. Bore 2.0 mm.  
 44 From same context as 40. No stem.  
 45 From same context as 40. Bore 1.8 mm.  
 46 From same context as 38. Bore 1.8 mm.  
 47 From same context as 40. Bore 1.8 mm.  
 48 From same context as 40. Bore 2.4 mm.

FIG 29 Clay pipes: frequency graphs of pipe-stem bores; a, datable material from Edinburgh High Street; b, datable material from Tron Kirk; c, all material from Edinburgh High Street; d, all material from Tron Kirk

- 49 From machine work inside Area 3 house (unstrat) (Group 43). Bore 1.6 mm.  
 50 From same context as 40. Bore 2.2 mm.  
 51 From same context as 38. Bore 2.2 mm.  
 52 From same context as 40. Bore 2.0 mm.

(nos 53-7, fig 27)

- 53 From between joists in Area 1 (Group 35). Bore 2.2 mm.  
 54 From same context as 53. Bore 2.0 mm.  
 55 From same context as 53. No stem.  
 56 From same context as 53. Bore distorted.  
 57 From same context as 53. Bore damaged.

19th-century pipe-bowl stamps (fig 28)

- 1 From no. 49.  
 2 From no. 48.  
 3 From between joists in Area 1 (Group 35). Bowl not illustrated.  
 4 From same context as 3. Bowl not illustrated.  
 5 South of joists in Area 1 (Group 35). Bowl not illustrated.  
 6 From same context as 3. Bowl not illustrated.  
 7 From same context as 5. Bowl not illustrated.  
 8 From no. 43.

## APPENDIX I

### Shells

by David Heppell, Royal Scottish Museum, Edinburgh

All species present are common local species, occurring intertidally, except for the oyster (*Ostrea edulis*) which is now extinct in the Firth of Forth. Only the oysters, periwinkles, (*Littorina littorea*) and whelk (*Buccinum undatum*), however, occur in sufficient quantity and condition to suggest their use for food. In one small area of Cant's Close, a depth of 0.15 m yielded 94 oyster valves and 17 whelk shells; these levels were the first stratification on the Close, dated to the early 15th century. No other context yielded such high numbers; oysters were found in 253 of the 282 contexts which produced shells, whelks in 73 and periwinkles in 58.

The whelks pose a problem as they are mostly of adult size, and as such would not be found alive intertidally. The possible sources of these shells would seem to be (i) live adults collected intertidally (unlikely); (ii) live adults collected sublittorally (unlikely); (iii) live adults washed up after storms (unlikely in these numbers); (iv) dead shells washed up, thus not used for food (probably). Shells of this species are known to have been used in N Scotland for lamps. Their size would seem to preclude their use for incorporation in the mortar of buildings, and they show no signs of calcining. Many specimens of the other ten species represented do, however, show signs of adherent mortar, and it seems likely that these were incorporated in mortar of buildings. The single instances of limpet, rough winkle and screw shell (the last two not edible species) in Group 33 can be related to the 17th-century cellars of Area 1. The shells would not necessarily have been brought from the shore specifically for this purpose; they could have been brought incidentally with sand or even derived in part from earlier midden material on or near the site. Apart from the poorly stratified examples, most of the big whelks come from the destruction debris of house B, demolished in or after the mid-18th century, and the two stratified cockles are respectively from this destruction and from the cobbled close outside, indicating a late date. In the midden generally there were less oysters towards the bottom, and very few from the pre-midden features. Periwinkles, whelks, mussels and one queen scallop valve were recovered from the midden.

Table III shows the incidence by stratigraphic group of the seven main types of shell.

*Single instances of shells:* limpet (Group 33), grey top (Group 28), rough winkle (Group 33), screw shell (Group 33), trough shell (Group 28); queen scallop (Groups 12 and 36).

TABLE III: Incidence of main types of shell by stratigraphic group

Group	oyster ( <i>ostrea edulis</i> )	whelk ( <i>buccinum undatum</i> )	periwinkle ( <i>littorina littorea</i> )	cockle ( <i>cerastoderma edule</i> )	flat winkle ( <i>littorina littoralis</i> )	dog whelk ( <i>nucella lapidus</i> )	mussel ( <i>mytilus edulis</i> )	Total shells
1-5	No shells recovered							
6	3	—	—	—	—	—	—	3
7	2	—	—	—	—	—	—	2
8	34	—	1	—	—	—	—	35
10	5	—	1	—	—	—	—	6
11	11	3	2	—	—	—	1	17
12	10	—	2	—	—	—	—	12
13	1	—	—	—	—	—	—	1
14	23	4	1	—	—	—	—	28
16	51	—	5	—	—	—	—	56
17	30	—	—	—	1	—	—	31
18	11	—	—	—	—	—	—	11
19	4	2	—	—	—	—	—	6
20	11	2	—	—	—	—	—	13
22	105	5	1	—	—	—	—	111
23	210	42	5	—	1	—	—	258
24	85	5	—	—	—	—	—	90
25	15	10	1	—	—	—	—	26
26	105	2	3	—	—	—	—	110
27	203	20	3	—	—	—	—	226
28	32	4	13	1	8	4	—	62
29	1	—	—	—	—	—	—	1
30	1	1	—	—	—	—	—	2
31	468	57	17	2	1	1	1	547
33/36	110	—	32	12	11	1	5	173
Totals	1576	163	91	16	13	7	7	1873
					Single instances			7
								1880

## APPENDIX J

## The animal bones

by Raymond E Chaplin and Linda Barnettson, Archaeozoological Services, Edinburgh

This is a greatly abbreviated form of the archival report on the animal bones lodged with Edinburgh City Museums. Copies of the archival report may be obtained from R E Chaplin, Netherfield, Upper Blainslie, Galashiels.

*Materials and methods*

Animal bones were recovered from all the areas excavated but not all of the deposits yielded bones in sufficient quantity for meaningful analysis. In the majority of cases, that is 36 small deposits ('Minor deposits'), the bones were only identified to species and are not detailed here. A full study was made of material from the undisturbed midden (Groups 7-8 and 26), the ditch (Group 6) and section 1 which consisted of the garderobe chute and pit of house A (Groups 16-17, 27 and the N part of Group 31). These groups/layers were sorted into 6 major groups to form an early-middle-late sequence. For ease of reference and tabulation in this report, the site references have been replaced by the following codes (E = early, M = middle and L = late):



Deposit E	= (ditch)	(Group 6)
Deposit E-M	= (midden)	(Groups 7-8)
Deposit M	= (garderobe)	(Groups 16-17)
Deposit M-L	= (midden)	(Group 26)
Deposit L1	= (garderobe)	(Group 27)
Deposit L2	= (garderobe)	(Group 31)

For the purposes of this report, the N part of Group 31 classed as the L2 deposit may be considered free of post-medieval disturbance.

The other upper layers of the midden included later material so that a detailed study of these is not included here. The general character of the collection was very similar to that from the other levels of the midden and included a few fragments of Roe deer and also the dorsal spines of a Thornback ray.

The species present and minimum number of animals involved were calculated for these 6 groups. Minimum numbers were determined from the principal bones of the body in accordance with the method set out by Chaplin (1971). Age estimates of the animals were based on epiphyseal fusion of individual bones and eruption and wear of teeth. Figures for the fusion of epiphyses were based on those for modern breeds of livestock and for the eruption of the teeth on data for semi-wild hill sheep, 19th-century cattle and 18th-century pigs as given by Silver (1963). Where possible, the width of the epiphyses and the length of the bones were measured. The approximate carcass yields for cattle, sheep and pigs were calculated using an estimated dressed carcass weight per animal taken from Chaplin (1971).

### Results

(a) *Minor deposits*: The species present in these deposits are detailed in Table IV.

In Group 29, sheep were represented only by skull fragments. The presence of horse and deer (Groups 11 and 32 respectively) was attested by teeth alone. The small bird category in Table IV refers to the domestic fowl, but in Group 43 pigeon *Columba* sp. was also present. The large bird category refers to the domestic goose.

(b) *Major deposits*: The range of species and the minimum number of animals present in the 6 major deposits are given in Table V, and the principal bones are set out in Tables VI, VII and VIII. The age criteria for sheep and cattle in the 6 main deposits are given in Tables IX-X. Table XI gives an illustration of the analysis in the archival report of age estimate of sheep, cattle and pigs from the teeth. Table XII summarises the estimated meat (weight) yield from sheep, cattle and pig in each of the 6 main deposits.

### Discussion

The nature of the bones in all the following deposits was that of domestic debris. Slaughter, butchering and consumption of meat was most likely carried out in or near the area excavated as the presence of both high and low meat yielding bones indicates.

*Deposit E* This was a rather small group presenting some difficulties in interpretation. It consisted of bones from the ditch, one of the earliest features on the site and possibly of 14th-century date. Cattle and sheep were present in virtually equal numbers and almost all of the principal bones were recovered for both species. Pig was represented by one femur and one mandible fragment, and these may have come from a single animal.

There were very few bones of domestic fowl. Non-domestic species present were rabbit and deer, the latter identified from a fragment of skull bearing two antler stumps as Roe deer *Capreolus capreolus*.

The presence of waste bones such as crania and astragali indicate that sheep and cattle carcasses were fully utilised. There were no obvious cut marks on any of the bones though many were in a very fragmentary condition. One sheep humerus had been gnawed, presumably by dogs. None of the bones showed any sign of disease.

The sample of sheep bones is too small to provide any certain evidence from the age data of particular slaughter patterns but both mature and immature animals are present.

The number of cattle bones was also too small to give a clear picture of husbandry practices. From the wear on some of the teeth it was evident that several animals had been kept past the age of 4-5 years. These may have been old breeding stock of castrates used for draught purposes. Several semi-intact sheep crania indicated the presence of horned sheep and some well-preserved cattle horn-cores were measurable.

It will be noted that pig is represented only by two bones.

Hens were presumably kept for both eggs and flesh, and rabbit was also present. Deer may have been hunted locally, though the number of deer bones from the site throughout the entire sequence indicates that it must have rarely, if at all, graced the table. There were no fish bones in this deposit.

*Deposit E-M* This is the earliest group from the midden and contained a substantial number of animal bones. These were mainly of sheep and cattle though pig, chicken and cat were present. No deer bones were found but there was a piece of antler the surface of which had been rubbed smooth. Cattle and sheep were represented by all the principal bones including those classified as waste, e.g. crania, mandibles and calcanea, the latter being the most numerous of the cattle bones. All femurs were very fragmented possibly due to butchering techniques. Fore and hind limbs occurred in high numbers for cattle and sheep but only the lower limb bones were present of pig. It is possible that only specific joints were imported but the presence of several fragments of upper jaw suggest that a pig may have been slaughtered and the rest of the carcass exported.

Cut marks were frequently present on sheep and cattle humeri, especially at the distal end. Several cattle astragali had been sliced through and one scapula bore a few parallel cuts near the base. There were no signs of disease on any of the bones.

The age at death of the sheep indicates a clear pattern of slaughter with a view to the provision of young and prime animals, the majority having been killed before they were 3½ years old. Of the few cattle that could be aged none were killed as calves, some were killed in the 24-36 months range and the remainder were more than four years old. Of the few pigs we can only say that they were killed between 12 and 42 months of age.

The measurements of the long bones give no clear indication of the sex of the animals.

There were no intact crania though several damaged sheep horn-cores were found attached to fragments of skull.

Besides domestic fowl and goose at least one duck was present in the group. Rabbits were a minor part of the diet and were represented by fore and hind limb bones. A few fish vertebrae were present, all of cod.

*Deposit M* This deposit yielded more cattle and pig bones and many more sheep bones than the preceding two deposits. Horse metacarpal and metatarsal fragments were present but these give no indication of how or why the animal was killed or what it was used for. This is the earliest evidence of horse on the site. Other species present were rabbit, dog, hen, goose and, of special interest, rat. The rat bones were an innominate and humerus presumably belonging to a black rat *Rattus rattus*. Unfortunately these were the only rodent bones found on the site.

All the principal bones of cattle and sheep were present with the highest numbers belonging to the fore and hind limbs. Waste bones were plentiful and the pattern established for the previous deposits did not change.

Once again the number of pigs was small but of interest was the complete absence of scapula and innominate bones while the other limb bones were all present. A few pieces of upper jaw suggested that at least one whole carcass had been on the site and the lack of shoulder and hip may either reflect some part of the salt-processing of pork or the 'commercial' dispersal of specific joints.

Quite a number of sheep, cattle and pig bones had been burned, in some cases almost calcined. Burning was not confined to any one kind of bone. There may have been an accidental fire at the site or a deliberate attempt to burn the refuse in this deposit. The only evidence of disease in this sample was an unburnt pig metatarsal with signs of foot-rot.

Many of the lambs were killed in the 6-10 month age group but no calves were killed before the age of 18 months. Systematic slaughter for mutton and beef is indicated for the later age groups, i.e. at between 10 and 36 months for sheep and 24 and 42 months for cattle. In both species older animals were also present. One sheep (> 36-48 months) had an abscess at the root of the first molar. Pigs were killed between the age of 12 and 42 months but at least one individual was killed after this.

Measurements of sheep long bones showed an overall homogeneity of the sample although one fairly massive sheep humerus may have come from a ram. As to the nature of the stock we have only the cranial fragments which in this instance indicate hornless sheep. In the earlier levels all the evidence indicates that the sheep were horned so that the hornless sheep appear for the first time at this period.

Hens and rabbits still formed part of the diet, as did fish in the form of hake and flounder.

*Deposit M-L* These two midden layers were particularly interesting, containing the greatest number of bones and yielding a wide range of wild and domestic species. Besides sheep, cattle and pig, there was horse, deer, fowl, cat, dog and rabbit. Two pieces of antler were found, one a segment cut from

an antler, the other a tine which had been rubbed smooth. Horse was represented by a metacarpal and some teeth, one of which, a third molar, was *in situ* in a piece of mandible. This tooth alone indicated that the animal was at least 4½ years old.

The high number of bones from low meat yielding joints again suggested that cattle and sheep were slaughtered and processed at or near this site. Both fore and hind limb bones appeared in quantity and although the number of cattle femurs was low in comparison to the other bones of the hind limb this was probably due to the identification bias associated with this bone in cattle.

The minimum number of pigs was only 5 but even with such a small number the scarcity of hind limb bones is probably significant. Leg of pork may have been traded from the site.

Sheep humeri most frequently bore cut marks notably at the distal end where the radius would have been severed. There were no diseased bones in this deposit. Some sheep and a few of the smaller cattle bones had been gnawed or chewed probably by dogs or rats. Pieces of the upper jaw of a dog were recovered besides a radius whose dimensions are given in the results.

12% of the sheep died or were killed before the age of 10 months but no calves before the age of 18 months. All the pigs had reached the age of at least 24 months before slaughter. Large numbers of sheep were killed in the 18-24 and 24-38 month age groups and some older animals were also present. The same sort of pattern was observed for cattle and similar proportions of old stock were kept. One pig was still alive at 42 months.

It will be seen from the dimensions of the sheep limb bones that the sample is relatively homogenous and there is no indication from this of the sex of the animals nor of the presence of more than one type of stock. Cranial fragments however establish the presence of both horned and hornless animals.

Domestic fowl and goose were represented by most of the principal bones and almost all of these had fused epiphyses. However, bird long bones usually fuse before 6 months of age so that accurate ageing is not easy. A minimum number of 5 rabbits was determined from the bones all of which were mature animals. A number of cod vertebrae were also recovered.

*Deposit L1* This rather small deposit yielded sheep, cattle, pig, fowl and rabbit bones. There was a substantial number of sheep but cattle were poorly represented, the ratio of sheep to cattle being similar to that of the other late deposit. No change was observed in the butchering pattern, both fore and hind limbs occurring in reasonable quantities alongside waste. Though few pig bones were recovered, there was a scapula for the first time.

One sheep humerus had signs of disease at the distal end and one old sheep had an abscess at the root of the first molar. Two cattle bones, an astragalus and calcaneum, were burnt and several metacarpal and metatarsal fragments looked very decayed and had been stained green. The surface of these flaked at a touch. The excavators had noted a 'pool of greenish soil (high-phosphate)' which lay just below the deposit and soil samples were analysed (p 175).

Very few young lambs were present but the established pattern of selection for prime mutton continued with only a few animals reaching the age of 42 months. Cattle culling followed the same pattern as before. As the pig bones were mostly shafts with epiphyses missing, ageing was not possible. However, several fragments of mandible with teeth *in situ* indicated that the pigs at least attained the age of 12 months. There was evidence of horned sheep only.

Chicken bones were numerous but there was little goose and few rabbits. Some pieces of ling and ray/rocker were found.

*Deposit L2* The same range of species as was found in the M-L deposit occurred in this midden layer and horse, deer and dog were represented by more bones than before. Horse metacarpal, astragalus, humerus and mandible and deer humerus, metatarsal and mandible with 2 molars *in situ* were recovered. A piece of cut antler was also present.

Minimum numbers of sheep, cattle and pig were smaller than in the preceding deposit but the species were present in the same relative proportions. There were substantial quantities of waste bones though fore and hind limbs were still favoured. The number of sheep femurs was much smaller than the other limb bones which may have been due to butchering practices or it could indicate dispersal of this specific cut. Cattle femurs appeared in numbers consistent with the other bones. Pig bones were few in number but this time the hind limb was the best represented part of the skeleton. There was no sign of disease on any of the bones.

10% of the sheep died or were killed before the age of 10 months, only slightly less than in the previous deposit. The most favoured age groups for slaughter were once again 18-24 and 24-36 months and a number of animals were kept past 42 months. There were few cattle bones but it would seem that

more stock was kept past the age of 42 months. The cull pattern for meat remained the same. One piglet died before the age of one year but none were older than 42 months at slaughter.

Measurements did not reveal sex differences. Evidence of horned, but not hornless, sheep was recovered.

Duck appeared for the first time alongside the more usual hens and geese. There were few bones of rabbit. Cod was still being eaten and there were some pieces of crab in the sample.

### Summary

The most persistent feature of the early-middle-late sequence is the dependence on sheep and, more particularly, cattle as the main source of meat. Even in deposits where the minimum number of sheep is far greater than that of cattle, the weight of beef is always greater than that of mutton as is shown in Table XII. Besides meat these two species would have provided other valuable products such as fat, hides, horn, milk and wool, and work animals kept for the latter two by-products were probably brought in for slaughter at a much older age than the rest of the stock and would account for the presence in the deposits of animals past the age of 3 or 4 years.

Pig-rearing was apparently a small-scale operation contributing relatively little meat to the diet as a whole. The increase in minimum numbers of pigs in the middle and middle-late phases could indicate that pork was becoming more popular. However, this would mean assuming that the time-span of each phase was similar and we have no reason to do so. It is always dangerous to draw conclusions from statistics such as these without knowing the other variables involved, for example, the overall area of meat dispersal, the population density of the area and the time taken for each bone sample to accumulate.

As far as one can tell from the bones, herds were quite healthy but we should not regard this as evidence of disease-free stock. On the contrary, most diseases affecting farm animals will leave no clinical sign on the skeleton. Lamb killings are notably high in the earlier phases but seem to be much reduced in the late phase. It is surprising if these were deliberately killed before the age of 10 months as meat yield would be small. If there was such a practice one would expect to see a similar early cull of calves for which there is no evidence. The highest percentage killings of lambs occurred in the middle phase. These percentages are, however, similar to the natural mortality experienced in present sheep flocks and it may be wrong to consider these animals as having been slaughtered. They might be winter casualties in the young stock.

The middle phase sees the introduction of the hornless sheep. In view of the number of intact sheep crania in the preceding deposits, we can be fairly certain that the hornless variety does appear for the first time on the site in the middle phase. It continues into the middle-late phase, and though there was no evidence of hornless skulls in the L1 and L2 deposits it may have been present as very few intact crania were recovered.

Measurements of long bone epiphyses were rather disappointing in that sexes could not be differentiated from the few statistics available. However, it is interesting to note how consistent the measurements are from phase to phase. The full catalogue is given in the archival report.

Of the other species present, deer, horse and rat are noteworthy. All three appeared in the 17th-century deposit at the nearby Tron Kirk site. Horse flesh may have been eaten at both sites but it is equally likely that this animal was used as a means of transport or for draught purposes and, when old, either died naturally or was killed and its carcass claimed for by-products. With so few bones, it is very difficult to ascertain the status of this animal. Roe deer appear sporadically in the bone sample and could not have been hunted seriously as a source of meat by the inhabitants of the site. The Tron Kirk site yielded evidence of black rat *Rattus rattus* and the rat from the High Street may be a contemporary. The black rat was introduced to Britain in the 12th century and was later displaced by the brown rat *Rattus norvegicus* in the 18th century. Recovery of such small and fragile bones is not always easy but the attempt is well worth while in view of the position this animal holds in urban environments and its effects on its human hosts.

Although rabbit appears in reasonable numbers in the middle deposit, there are not so many bones in the late deposits. Once again we have to be cautious in drawing inferences from such small numbers found in phases of unknown length. Hares were not found in the High Street but they did appear in the Tron Kirk main deposit.

As one might expect from a site situated near a river, there was plentiful evidence of fish. Hake, flounder, ling and ray were in relatively small proportions compared to cod. Crabs may also have been eaten as the two crab claws in L2 seem to indicate.

In conclusion, this was a most interesting and informative bone sample, shedding some light on the pattern of animal exploitation in medieval and post-medieval Edinburgh. The smaller and complementary Tron Kirk site gave evidence of similar husbandry practices and the two sites accord well with each other as regards range of species present and importance of sheep and cattle.

#### *Acknowledgments*

The writers wish to thank Mr E Roberts and Mr D Wallace of the Anatomy Department of the Royal (Dick) School of Veterinary Studies for their kind assistance during the preliminary stages of this study. We also thank Dr A Clark of the Royal Scottish Museum for permission to use the skeletal reference collection. Dr A C Wheeler of the British Museum (Natural History), London, kindly identified the fish bones.

TABLE IV: Species present in the minor deposits

Group	Sheep	Cattle	Pig	Other	Rabbit	Small Bird	Large Bird	Fish
2	—	P	—	—	—	—	—	—
3	P	P	P	—	—	P	P	—
4	P	P	—	—	—	P	—	—
9	P	P	—	—	—	P	—	P
10	P	P	P	—	—	P	—	—
11	P	P	P	Horse	P	P	P	—
13	P	P	—	—	—	—	—	—
14	P	P	P	—	P	P	P	P
15	P	P	—	—	—	—	—	—
18	P	P	—	—	—	P	—	—
19	P	P	—	—	—	P	P	—
20	P	P	—	—	—	P	—	P
21	P	P	—	—	—	P	—	—
22	P	P	—	—	—	P	—	P
23	P	P	—	—	P	P	P	—
24	P	P	—	—	—	P	—	P
25	P	P	—	—	P	P	P	P
28	P	P	P	—	P	P	—	—
29	P	P	—	Cat	—	P	P	P
30	P	P	P	—	—	P	P	—
32	P	P	P	Deer	?	P	—	P
35	P	P	—	—	P	P	P	P

*Note:* the bones from the machine trenches, cuttings 13-19 (groups 37-43) are not included in this report, as being virtually unstratified. P = present.

TABLE V: The minimum number of each species in the 6 main deposits

Deposit Reference	Horse	Cattle	Sheep	Pig	Deer	Dog	Cat	Bird	Rabbit	Rat	Fish
E	0	4	6	1	1	0	0	P	P	0	0
E-M	0	10	19	2	0	0	3	P	P	0	P
M	1	13	34	4	0	2	0	P	P	P	P
M-L	1	20	49	5	1	1	2	P	P	0	P
L1	0	6	26	1	0	0	0	P	P	0	P
L2	1	10	35	3	1	1	1	P	P	0	P

TABLE VI: The minimum number of sheep as determined from the principal bones of the body in the 6 main deposits

Bone	Deposit					
	E	E-M	M	M-L	L1	L2
Cranium	3	1	2	2	2	1
Mandible	3	7	16	13	7	10
Scapula	3	16	25	35	12	12
Humerus	6	19	28	49	16	33
Radius	1	19	28	43	14	35
Ulna	3	4	16	20	0	9
Metacarpal	2	9	13	14	0	9
Innominate	5	14	25	32	12	26
Femur	2	9	19	27	6	9
Tibia	6	13	34	40	11	25
Calcaneum	2	14	14	18	2	6
Astragalus	0	8	5	13	1	7
Metatarsal	2	5	11	16	7	3

TABLE VII: The minimum number of cattle as determined from the principal bones of the body in the 6 main deposits

Bone	Deposit					
	E	E-M	M	M-L	L1	L2
Cranium	2	P	1	0	1	1
Mandible	3	P	3	6	5	4
Scapula	1	7	5	7	3	7
Humerus	2	5	6	12	3	8
Radius	1	5	5	10	3	8
Ulna	3	2	3	10	1	0
Metacarpal	1	4	7	12	6	7
Innominate	4	7	10	13	3	10
Femur	3	6	4	9	2	5
Tibia	1	3	9	17	4	6
Calcaneum	4	10	9	16	6	8
Astragalus	2	8	13	20	6	7
Metatarsal	1	6	8	12	6	9

TABLE VIII: The minimum number of pigs as determined from the principal bones of the body in the 6 main deposits

Bone	Deposit					
	E	E-M	M	M-L	L1	L2
Cranium	0	P	0	0	0	0
Mandible	1	0	0	1	1	0
Scapula	0	0	0	0	1	0
Humerus	0	0	4	5	1	0
Radius	0	1	2	3	1	3
Ulna	0	2	2	3	0	3
Metacarpal	0	1	2	2	0	1
Innominate	0	0	0	0	1	1
Femur	0	0	3	0	0	1
Tibia	0	1	1	1	1	3
Calcaneum	0	0	0	1	0	0
Astragalus	0	0	1	1	1	0
Metatarsal	0	1	3	3	0	0

TABLE IX: The age criteria for sheep in the 6 main deposits

Bone and Epiphysis	Age in Months at fusion	Minimum number fused						Minimum number unfused					
		E	E-M	M	M-L	L1	L2	E	E-M	M	M-L	L1	L2
Scapula d.	6-8	3	12	18	26	9	9	0	1	4	5	1	1
Innominate (main bones)	6-10	4	11	20	31	12	24	1	2	4	1	0	1
Humerus d.	10	5	12	18	38	16	25	1	3	7	6	0	5
Radius p.		1	8	16	28	11	26	0	2	5	5	0	3
Tibia d.	18-24	6	9	23	29	7	17	0	4	9	9	2	5
Metacarpal d.		0	1	2	5	0	4	0	5	5	6	0	5
Metatarsal d.	20-28	0	2	4	6	3	3	1	1	4	6	1	0
Ulna	30	1	3	4	9	0	3	2	0	7	5	0	3
Femur p.	30-36	1	1	7	8	3	4	0	5	9	11	0	1
Calcaneum		2	11	8	14	1	5	0	3	6	4	1	1
Radius d.	36	0	3	10	13	3	7	0	13	14	19	7	17
Humerus p.	36-42	2	3	3	3	4	2	2	4	9	11	2	2
Femur d.		1	0	5	8	1	4	1	9	10	11	1	3
Tibia p.		1	4	6	10	1	5	1	7	13	15	5	8

TABLE X: The age criteria for cattle in the 6 main deposits

Bone and Epiphysis	Age in Months	Minimum number fused						Minimum number unfused					
		E	E-M	M	M-L	L1	L2	E	E-M	M	M-L	L1	L2
Scapula d.	7-10	1	7	5	6	3	7	0	0	0	0	0	0
Innominate (main bones)		4	7	8	13	2	9	0	0	0	0	0	0
Humerus d.	12-18	2	3	6	8	3	8	0	0	0	0	0	0
Radius p.		1	5	3	10	3	6	0	0	0	0	0	0
Metacarpal d.	24-30	1	2	5	8	5	6	0	0	2	3	1	0
Tibia d.		0	2	5	8	3	4	0	1	4	8	1	2
Metatarsal d.	27-36	1	4	4	11	3	8	0	1	1	0	0	0
Calcaneum	36-42	2	5	6	8	3	4	2	2	2	4	0	3
Femur p.		3	4	3	3	1	4	0	0	1	2	1	1
Femur d.	42-48	0	4	3	2	1	3	0	1	1	4	1	1
Tibia p.		0	1	2	2	2	2	1	1	5	12	2	0
Ulna		1	0	0	3	1	0	0	0	0	3	0	0
Radius d.		0	2	3	3	3	6	0	1	2	4	0	1
Humerus p.		0	0	4	2	2	2	0	0	0	2	0	0

TABLE XI: Age estimates from sheep teeth in deposit M

Number	Dental Formulae	Remarks	Age Estimate
1	p2 p3 p4 -- M1 ↑	—	c 6 months
2	p2 p3 p4 --	—	> 6 weeks <30 months
3	P2 P3 P4 M1 M2 M3	Heavy wear on M1	>48 months
4	M2 -- M3 ↑	—	c 36-48 months
5	- P3 P4 M1 M2 M3	Light wear	>48 months
6	p2 p3 p4 --	—	> 6 weeks <30 months
7	p2 p3 p4 --	—	> 6 weeks <30 months
8	p2 p3 p4	—	> 6 weeks <30 months
9	- P3 P4 M1 M2 M3	Light wear	>48 months

TABLE XI—*contd.*

Number	Dental Formulae	Remarks	Age Estimate
10	- - - M1 M2 M3	Medium wear	> 48 months
11	- P3 P4 M1 M2 M3	Medium wear	> 48 months
12	- - - M2 M3 ↑	—	c 36-48 months
13	M1 M2 -	—	> 18 months
14	- P3 P4 - M2 M3	Abscess at M1	> 48 months
15	- p3 p4 M1 M2	—	> 18 months < 30 months
16	P3 P4 M1 M2 M3	Heavy wear	> 48 months

TABLE XII: Carcass yields in the 6 major deposits

*Note:*

	Sheep equivalent (SE) value of species (units)		Estimated dressed carcass weight (lb)	
Sheep	1		25	
Cattle	12		300	
Pig	2		50	

Species	Deposit											
	E		E-M		M		M-L		L1		L2	
	A*	B*	A	B	A	B	A	B	A	B	A	B
Sheep	6	150	19	475	34	850	49	1,225	26	650	35	875
Cattle	4	1,200	10	3,000	13	3,900	20	6,000	6	1,800	10	3,000
Pig	1	50	2	100	4	200	5	250	1	50	1	50

\* Column A: Minimum number of animals (from Table V)  
 Column B: Calculated carcass yield (lb).

The following lists give the measurements in millimetres of the maximum width of the proximal or distal epiphysis of sheep, cattle and dog bones. Also listed are the base circumferences of cattle horn-cores found in deposit E. Numbers in brackets represent numbers of animals having that value. Measurements are in millimetres.

*Sheep: Humerus d*

Deposit E : 25 mm (1); 27 mm (2); 28 mm (1); 30 mm (1).  
 Deposit E-M : 25 mm (1); 26 mm (1); 27 mm (3); 28 mm (2); 29 mm (2); 30 mm (1).  
 Deposit M : 26 mm (6); 27 mm (1); 28 mm (5); 29 mm (4).  
 Deposit M-L : 25 mm (2); 26 mm (10); 27 mm (9); 28 mm (10); 29 mm (9); 30 mm (5).  
 Deposit L1 : 25 mm (3); 26 mm (3); 27 mm (5); 28 mm (11); 29 mm (6).  
 Deposit L2 : 25 mm (1); 26 mm (2); 27 mm (4); 28 mm (8); 29 mm (3); 30 mm (1).

*Sheep: Radius p*

Deposit E-M : 25 mm (1); 28 mm (2); 30 mm (1); 31 mm (2).  
 Deposit M : 28 mm (1); 29 mm (5); 30 mm (3); 31 mm (3).  
 Deposit M-L : 21 mm (1); 25 mm (1); 26 mm (1); 27 mm (2); 28 mm (3); 29 mm (6); 30 mm (2); 31 mm (5); 32 mm (4); 33 mm (3).  
 Deposit L1 : 25 mm (2); 27 mm (3); 28 mm (5); 29 mm (4); 30 mm (7); 31 mm (2); 32 mm (1); 33 mm (1); 34 mm (1).  
 Deposit L2 : 23 mm (1); 25 mm (1); 28 mm (1); 29 mm (4); 30 mm (6); 31 mm (1).

*Sheep: Metacarpal p*

Deposit M : 18 mm (1); 19 mm (2); 20 mm (1); 21 mm (2); 22 mm (4); 23 mm (3); 24 mm (2).  
 Deposit M-L : 19 mm (1); 20 mm (1); 21 mm (5); 22 mm (1); 23 mm (2); 24 mm (1).  
 Deposit L1 : 19 mm (1); 20 mm (1); 21 mm (1); 22 mm (1); 23 mm (1).



*Sheep: Scapula (maximum width glenoid cavity)*

- Deposit E-M : 28 mm (1); 30 mm (2); 31 mm (2); 33 mm (3); 34 mm (1).  
 Deposit M : 24 mm (1); 27 mm (1); 29 mm (4); 30 mm (3); 31 mm (2); 32 mm (2); 33 mm (1); 36 mm (1).  
 Deposit M-L : 25 mm (1); 27 mm (1); 29 mm (1); 30 mm (2); 31 mm (7); 32 mm (4); 33 mm (1); 34 mm (3); 35 mm (1).  
 Deposit L1 : 29 mm (2); 30 mm (1); 31 mm (1); 34 mm (1).  
 Deposit L2 : 29 mm (1); 30 mm (1); 31 mm (1); 32 mm (5).

*Sheep: Tibia d*

- Deposit E : 24 mm (1); 25 mm (2); 26 mm (2); 28 mm (1).  
 Deposit E-M : 24 mm (4); 25 mm (2); 26 mm (3); 27 mm (3).  
 Deposit M : 23 mm (2); 24 mm (6); 25 mm (6); 26 mm (8); 27 mm (5).  
 Deposit M-L : 22 mm (1); 23 mm (1); 24 mm (8); 25 mm (8); 26 mm (8); 27 mm (7).  
 Deposit L1 : 25 mm (8); 26 mm (8); 27 mm (8).  
 Deposit L2 : 25 mm (2); 26 mm (3); 27 mm (2).

*Sheep: Metatarsal p*

- Deposit M : 17 mm (2); 19 mm (2); 20 mm (1); 21 mm (1).  
 Deposit M-L : 18 mm (1); 19 mm (3); 20 mm (4); 21 mm (1).  
 Deposit L2 : 19 mm (4); 20 mm (2).

*Sheep: Astragalus (maximum length of lateral side)*

- Deposit E-M : 25 mm (1); 26 mm (3); 27 mm (3); 28 mm (1); 29 mm (1).  
 Deposit M : 21 mm (1); 24 mm (1); 26 mm (1); 28 mm (1); 29 mm (1).  
 Deposit M-L : 24 mm (3); 26 mm (1); 27 mm (3); 28 mm (5); 29 mm (2).  
 Deposit L1 : 26 mm (2); 28 mm (3); 29 mm (1); 30 mm (1).  
 Deposit L2 : 28 mm (1).

*Sheep: Calcaneum (maximum length of lateral side)*

- Deposit E : 50 mm (1); 53 mm (1).  
 Deposit E-M : 49 mm (2); 51 mm (1); 52 mm (3); 55 mm (2); 56 mm (1); 59 mm (1).  
 Deposit M : 52 mm (2); 53 mm (2); 54 mm (1); 56 mm (1); 59 mm (1).  
 Deposit M-L : 47 mm (1); 48 mm (1); 50 mm (1); 51 mm (2); 52 mm (2); 53 mm (4); 54 mm (2); 55 mm (3).  
 Deposit L1 : 51 mm (1); 53 mm (2); 56 mm (1).

*Cattle: Humerus d*

- Deposit E-M : 75 mm (1).  
 Deposit M : 64 mm (1); 65 mm (1); 66 mm (1); 72 mm (2).  
 Deposit M-L : 63 mm (1); 67 mm (1); 69 mm (1).  
 Deposit L1 : 64 mm (1); 66 mm (1); 70 mm (1); 71 mm (1); 76 mm (1); 78 mm (1).

*Cattle: Tibia d*

- Deposit M : 52 mm (1); 54 mm (1); 55 mm (1); 57 mm (1); 60 mm (1); 61 mm (1).  
 Deposit M-L : 47 mm (1); 52 mm (2); 54 mm (1); 55 mm (1); 56 mm (1); 57 mm (1); 59 mm (1); 60 mm (1); 61 mm (1); 62 mm (1); 64 mm (1).

*Cattle: Metatarsal d*

- Deposit M : 46 mm (1); 48 mm (2); 49 mm (1); 58 mm (1).  
 Deposit M-L : 46 mm (4); 48 mm (1); 49 mm (1); 51 mm (3); 55 mm (1); 60 mm (1).  
 Deposit L1 : 48 mm (1); 49 mm (1); 51 mm (1); 52 mm (1); 53 mm (1); 57 mm (2); 64 mm (1).

*Cattle: Astragalus (maximum width of lateral side)*

- Deposit E : 63 mm (1); 64 mm (1).

Deposit E-M : 56 mm (1); 57 mm (1); 58 mm (1); 60 mm (2); 61 mm (1); 62 mm (1); 63 mm (1); 64 mm (1).  
 Deposit M : 56 mm (1); 57 mm (1); 58 mm (2); 59 mm (2); 60 mm (1); 62 mm (1); 63 mm (1); 65 mm (1).  
 Deposit M-L : 53 mm (1); 54 mm (1); 58 mm (2); 59 mm (1); 60 mm (1); 61 mm (1); 62 mm (1); 64 mm (1).  
 Deposit L1 : 60 mm (1); 61 mm (3); 66 mm (1); 67 mm (1).  
 Deposit L2 : 57 mm (1); 61 mm (2); 65 mm (1).

*Dog: Radius - M-L deposit*

Proximal epiphysis - 15.2 mm

Distal epiphysis - 19.4 mm

Shaft length - 140 mm

## APPENDIX K

### Seven sheep skulls and inferences from them

by P L Armitage

Seven sufficiently intact crania of sheep were recovered: four fragmentary crania from the ditch (Group 6), two fragments from the garderobe of house A (Group 17), and one cranium from the midden (Group 26); thus all in the date range c 1400-1470.

*Group 6* All four crania represented the remains of horned sheep, three of which had carried fully developed horns, while the fourth would have had only rudimentary ones. Although the horn cores of two of the former had been broken off from the frontal bones, the small basal circumference, and the prominent flattening along the posterior margin of the base of the damaged core (producing a 'D' shape when viewed from above), indicated that one of these crania was from a female; this conclusion was substantiated by comparison with the skulls of modern Soay ewes. The Soay is regarded as the most primitive type of sheep in Europe today (Jewell 1975), and it can be used as a medieval model. The splintering around the base of the core of the second specimen was such that its size and shape, and therefore its sex, could not be determined. The sex of the third specimen that still retained both its horn cores intact was established using the radiographic technique devised by Hatting (1975). As the cores were small, stunted and hollow it was evident that the cranium was from a castrated sheep (wether); a similar stunting effect on the development of the horn following castration in the male lamb has been observed in present-day Soay sheep (information from J Clarke). It was not possible to sex the fourth cranial fragment with the rudimentary horn core.

*Group 17* Two of the three crania from this deposit were hornless, the other had only rudimentary cores.

*Group 26* The cranial fragment was hornless.

#### *Discussion*

The presence of horned and hornless sheep skulls together on archaeological sites has received two explanations:

- 1 Sexual dimorphism: only the rams were horned, the females being hornless.
- 2 Breed differences: this supposes that there were two distinct breeds, one horned and the other hornless (see e.g. Ryder 1957).

In the case of the High Street excavation, the cranial fragments from the earliest levels were from horned sheep while those from the later deposit (bone deposit M) were from hornless individuals. This may suggest that two distinct varieties of sheep existed in medieval times, at least in Scotland.

## ACKNOWLEDGMENTS

The excavation was commissioned by the Medieval Archaeology Panel of the Cockburn Association (chairman: C J Tabraham), and funds provided by the Department of the Environment, the Corporation of the City of Edinburgh, with generous help in kind from the developers of the site, Caledonian Terminal Investments Ltd and their architects, Covell, Matthews and Partners, to whom we are indebted for permission to excavate and for the generous loan of expensive

machinery without which the excavation would have been impossible. The author would also like to thank Basil Skinner, Department of Educational Studies, University of Edinburgh, for his considerable help at all stages in many capacities, and John Nimmo, Research Centre in the Social Sciences, University of Edinburgh, for help in producing the popular guide and interim reports. Marion O'Neil was site assistant and site recorder, and Cathy Brooks, Alison Gould, Elaine McClure, Victoria Craig, Jane Legget and Amy Brown were finds assistants. Principal among the other excavators was Charles Hoy, and much help was received from the members of the East of Scotland Archaeological Group. The native coarseware illustrations were drawn by Brendan Murphy and Marion O'Neil, the stoneware by James C Thorn and the pipes by Graeme Lawson. Marion O'Neil also drew the small finds. I would also like to thank my colleagues of the DUA, Museum of London, for their help: Hilary Kent and Merry Morgan-Meier for work on the stoneware, and Tony Dyson, Louise Miller, Sal Garfi and George Willcox for reading the text in manuscript.

Grateful thanks are due to the specialists who contributed to this report: Dr Marinell Ash, Neil Hynd, Pamela Clarke and J G Hurst, Elizabeth Eames, R J Charleston, Nicholas Holmes, Graeme Lawson, David Heppell, Raymond Chaplin and Linda Barnetson, P Armitage, and Liz Thoms. Dr N P Brooks made valuable criticism.

My special thanks to go Cathy Brooks and Christopher Tabraham, who have assisted with advice and encouragement throughout the project.

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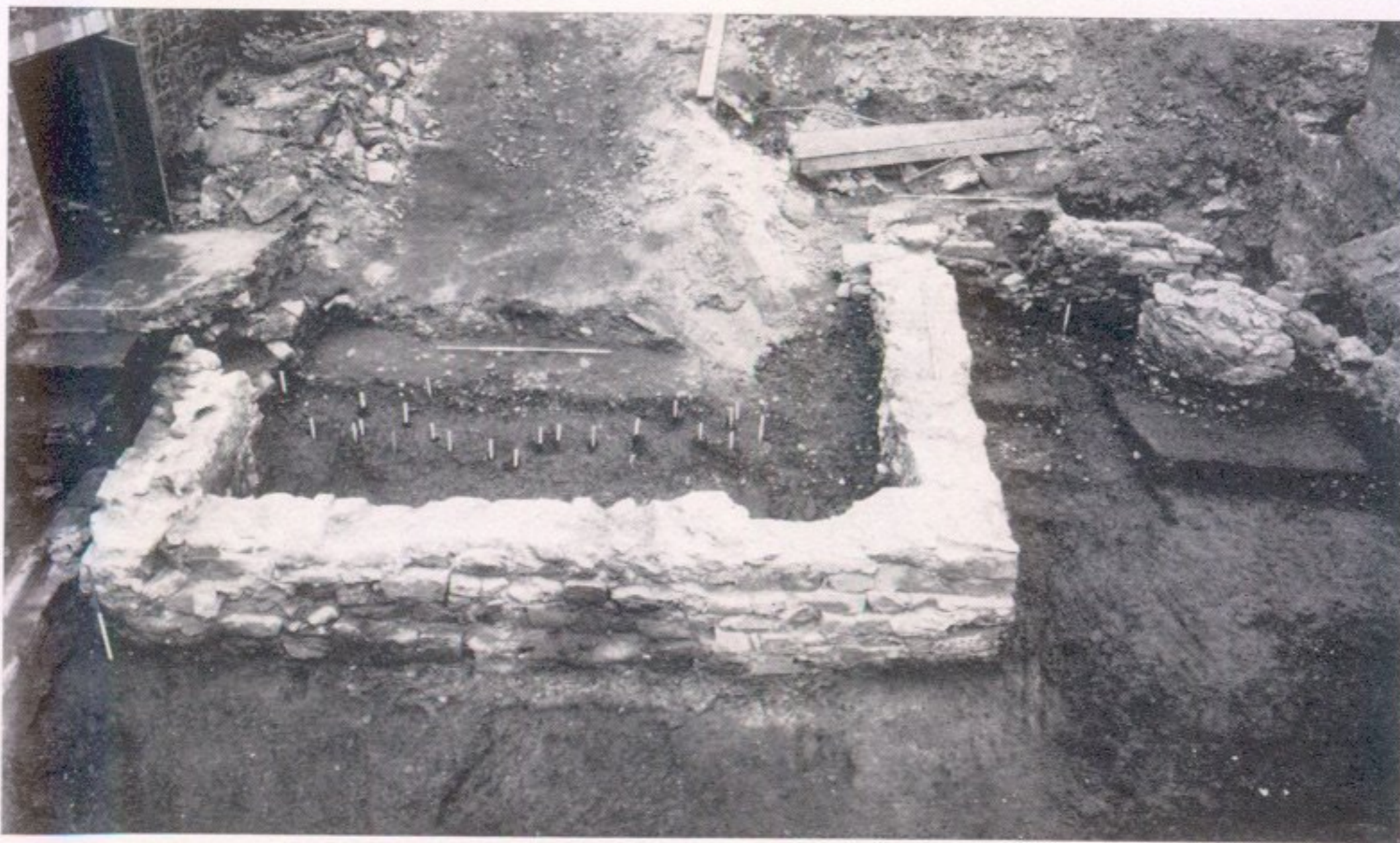
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*The Society is indebted to the Department of the Environment  
for a grant towards the cost of this paper*



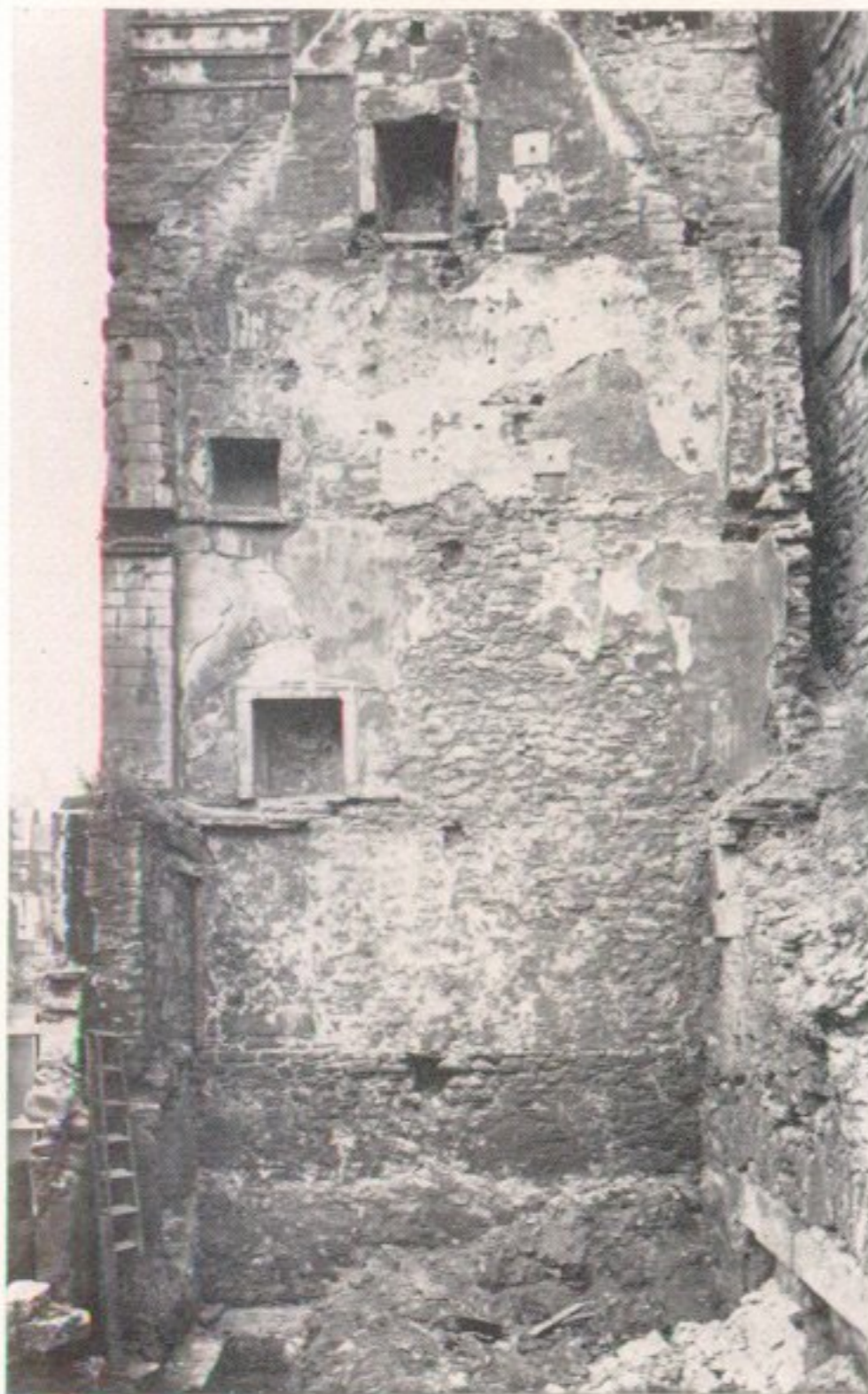
a Western wall from SW, showing stakes of fence



b Western wall and wall of house A from S



a Front of Area 3 house before excavation



b S gable of Area 3 house



c Area 3 house in 1850 (after Drummond 1879, pl 26)