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ARCHAEOLOGICAL SERVICE  
EXCAVATION & SURVEY REPORT NO 14

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25 BRIDGE STREET 2001  
TWO THOUSAND YEARS OF URBAN LIFE IN MICROCOSM



Dan Garner  
and others



*Chester  
City Council*

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**Dan Garner**

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***Chester  
City Council***

2008

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# Clay Tobacco Pipes and Other Pipeclay Objects

David A Higgins

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## Introduction

The excavations produced a total of 5,570 pieces of pipe, comprising 987 bowl, 4,369 stem and 214 mouthpiece fragments. The pipes were recovered from 306 excavated contexts, in addition to which there is a group of 170 unstratified finds. About one third of the excavated groups, 205 contexts, produced between just one and ten fragments of pipe (Table 5.6.5). There were thirty-seven contexts which produced between eleven and twenty fragments, twenty contexts with between twenty-one and thirty fragments and thirty-five contexts with between thirty-one and one hundred fragments. There were eight contexts which produced large groups of between 101 and 200 fragments and one exceptionally large group ((1507): Phase VII, Plot 4) which produced 741 pieces of pipe. The larger the group of pipes, the more reliable the dating and interpretation of those fragments is likely to be. The site produced just over 100 context groups containing ten or more fragments of pipe, which provide a good basis for dating the post-medieval deposits on the site. Furthermore, the assemblage as a whole is exceptionally large, being by far the largest domestic assemblage that has been studied in detail from anywhere in the north-west and is one of the largest assemblages of its type from anywhere in the country.

In the report that follows, the pipes themselves are considered and presented first. This section examines the overall range of pipes present and provides a detailed discussion of various aspects of the assemblage, such as the bowl forms, makers' stamps and manufacturing techniques. The most significant context groups are described and illustrations provided of the significant bowl forms and marks. The report concludes with a short section considering the pipes as archaeological evidence and, finally, reports on the hair curlers and marbles from the excavations.

## Methodology

All of the fragments were individually examined and details logged on an Excel worksheet based on a draft clay tobacco pipe recording system developed at the University of Liverpool (Higgins & Davey 1994). A summary, also prepared as a similar Excel worksheet, gives the overall numbers of fragments and date range for the pipes from each context; this is included below as Table 5.6.5. Digital copies of both the worksheet and the draft recording system have been provided for the site archive.

Several of the context groups contained more than one similar pipe bowl or marked stem which did not have a Small Find number. In order to identify the individual fragments, capital letters have been allocated to these pieces so that they can be cross-referred to the computerised record (A, B, C, ... AA, AB, AC, etc). These letter codes have been pencilled onto the bowls following the

context number. They appear under a reference column in the full catalogue as well as in the captions accompanying the figures. An assessment of the likely date of the stem fragments has also been provided in the catalogue. The stem dates should, however, be used with caution since they are much more general and less reliable than the dates that can be determined from bowl fragments.

A large number of stamped makers' marks or decorative borders were present within the excavated material. Some of these marks have been added to the national catalogue of clay tobacco pipe stamps which is being compiled by the author. Any die numbers quoted in this report refer to the unique die numbers which have been allocated within this catalogue.

A few pieces of pipe were cleaned of iron staining in a chemical solution of EDTA using the technique established for a group of pipes from Leicester (Higgins 1999). Cleaning was used for the fragments making up two complete pipes and for one or two decorated stems where encrustation and/or discoloration obscured the design. The cleaning process proved to be extremely effective, leaving blackening from smoking unaffected and site numbering intact, unless it had been applied over surface encrustation. Some site numbers were manually scrubbed off to allow the reconstructed pipes to be relabelled on one side, leaving the other clear for display purposes.

As a result of the cleaning one important observation was made. The fragments of the complete pipe from context (1503) were cleaned, leaving them looking fresh and white. In contrast, the remaining fragments from this group appeared off-white to pale buff in colour. The cleaning has shown that this coloration is due to an overall tint caused by general iron-staining from the ground and that it is not a true reflection of the original colour of the pipes themselves. This is significant in showing that colour descriptions of excavated fragments may well be unreliable, particularly for seventeenth- and eighteenth-century examples, which tend to have quite open and porous fabrics. These porous fabrics are likely to be very susceptible to iron-staining from burial, making fabric colour descriptions virtually meaningless unless the pipes have been freshly broken or chemically cleaned (any original coloration of the fabric from iron in the source material would be fixed in the fabric during firing and so should be unaltered by the subsequent chemical cleaning). Many previous publications of early pipes include colour descriptions and so these should now be used with caution, since they may merely reflect the burial conditions of the fragments rather than the actual clay types that were being exploited by the pipemakers.

## Clay tobacco pipes

### The pipe marks

The makers' marks and decorative stamps found on pipes provide one of the best means of dating them and tracing them to a particular source or manufacturer. Chester is fortunate in that a wide variety of different stamped marks are found in the city. During the 1970s a survey of the available evidence produced an extensive corpus of the various types then known from Chester (Rutter & Davey 1980). Comparison of the Bridge Street finds with this corpus has shown that many previously unrecorded marks

## 5 Portable artefacts/Clay tobacco pipes and other pipeclay objects

**Table 5.6.1** Clay tobacco pipe bowl marks dating from c 1610 to 1660: summary showing their position ( S = across the stem of the pipe; H = on the base of the heel; B = on the bowl facing the smoker), primary motif, the number of examples, the overall date range for the examples present, their likely place of origin and the figure numbers for any illustrated examples.

Position	Mark	No	Date	Origin	Ills
S	Snowflake	1	1610–1640	Uncertain, possibly Chester	2, 121
S	<i>Fleur de lis</i>	1	1610–1660	Probably Chester	3
H	Incuse 'star'	1	1620–1650	Uncertain	4, 110
H	Cross and dots	1	1610–1650	Uncertain	5, 111
H	Wheel with dots	6	1610–1660	Chester	6, 109, 112
H	Crossed keys	1	1610–1650	(? and/or London) Possibly Chester ) (if not, Dutch	113
H	Running animal (? fox)	1	1640–1660	Chester	
B	GA	1	1640–1660	South Lancashire	7, 145
H	TB (probably)	1	1640–1660	Uncertain	8
H	NE	3	1610–1660	Chester	9–11, 124–6
H	EG	1	1640–1660	Chester	
H	IG	1	1610–1640	Uncertain	12, 127
H	RG	1	1640–1660	Probably Nantwich	13, 139
H	WK	1	1610–1640	Probably London	14, 108
S	AL	1	1640–1670	Chester	15
H	AL	8	1610–1660	Chester	
B	GL	1	1640–1660	Rainford	
H	HL	1	1640–1660	Probably Rainford	16, 138
H	IL	2	1610–1640	?West midlands	17, 114
H	PL	1	1630–1660	Probably Rainford	
H	M	2	1610–1640	West midlands	18, 115–16
H	AP	1	1630–1660	?London	19, 120
H	NT	1	1640–1660	Chester	
H	Illegible	3	1610–1660	Probably local (NW) types	

are represented, the majority of which are here illustrated at twice life size (Ills 5.6.1–3, nos 1–57). In the following sections, the marked pipes from the site are considered by period and by type.

### Late sixteenth and early seventeenth-century marks

This site is notable in that it produced a number of the earliest pipe forms, datable to c 1580–1610, which are very rare nationally, even as isolated examples. At least six bowl fragments and one stem dating from this period were identified, but only one of these pieces was marked. The marked piece is a bowl with part of the stem surviving, which has been decorated with a series of small lozenge-shaped marks containing a 'snowflake' design (Ills 5.6.1.1 and 5.6.6.92). Decoration of this type has most commonly been recorded from London and so it is usually presumed that these pipes were produced there. Almost identical decorative stem stamps, however, were also being used in Jamestown, Virginia, about 1608–10, where they can be attributed to Robert Cotton, a pipe-maker who settled there in 1608. This not only provides a good date when this style of decoration was certainly in use, but also shows how easily London styles could be transmitted by pipemakers moving to set up in other centres. Although the Chester example is most likely to be a London import, the possibility of early pipemakers bringing this style to Chester cannot be entirely ruled out.

### Early to mid-seventeenth-century marks

Excluding a large dump of spur bowls from (1507) which probably represent kiln waste, the excavations produced the remains of some 300 pipe bowls that are likely to have been produced between around 1610 and 1660. Amongst these were forty-two fragments with stamped marks on them, comprising thirty-seven heel stamps, of which thirty-four were identifiable, two bowl stamps and three pieces with stem stamps. This shows that, in broad terms, around 14% of the pipes in use at Chester during

this period were marked. The thirty-seven identifiable heel stamps can be further subdivided into two groups, the symbol marks (ten examples) and the initial marks (twenty-five examples), showing that initial marks were two and a half times as common as symbol ones during this period (Table 5.6.1).

### Early symbol stamps

The most common type of symbol mark from the excavations was the wheel mark, of which there were six similar examples (eg Ills 5.6.1.6; 5.6.6.109 and .112). This mark is particularly difficult to source since it appears to have been used by a number of different makers up and down the country. It is quite common on early London pipes, which has often led to the suggestion that these pipes represent traded goods coming from the capital. While this may be true of some examples, the number found at Chester does seem to be particularly large. Furthermore, two pairs of these marks appear to match, that is, they were probably produced using the same die. This duplication of examples argues towards local production, either by someone moving from London or by a local maker copying London styles.

There are three other star or cross-like heel marks which, once again, are of types that were widely produced and/or traded during the early seventeenth century (eg Ills 5.6.1.4–5). The most interesting is a cross-like motif which was probably intended to represent a pair of crossed keys (Ill 5.6.6.113). An example of this type has previously been recorded from Chester (Pepper Street 1941; Rutter & Davey 1980, fig 32.12), when it was thought to be of southern English or Dutch origin. Since that time another example has been excavated from Chester (CHE/12HP92 context (1945)), bringing the total from the city to three. Comparison of the three mark impressions shows that, although they are all very similar, they were probably all made using different dies. The close similarity of detail in these three marks, however, suggests that the

working dies were all produced from a common master, which in turn would indicate that all three examples were produced in the same workshop. Likewise, although the bowl forms are very similar, at least two different moulds appear to be represented. This range of mould and die types, together with the number of excavated examples, would all argue for local production in Chester itself. The situation is complicated, however, by the discovery of another example from Nuffield College, Oxford, now in the Woodstock Museum, Oxfordshire (Acc NUFF 5495; Higgins 1987a, fig 79.3). The Oxford example appears to have been marked using the same die as the Hamilton Place example from Chester. The occurrence of a fourth example reinforces the argument for an English origin for these pieces, since Dutch imports were always rare, with the most likely source being Chester. In any event, the Oxford and Chester examples demonstrate that both centres were sharing contact and a movement of goods across the country from a common source at this period.

The final symbol heel mark is very fragmentary but can be identified as part of a running animal stamp, possibly a fox, an example of which has previously been found in Chester (Rutter & Davey 1980, fig 32.15). This is a distinctive and unusual mark and one that was almost certainly made in the city. In addition to the heel marks, symbols were also used in a purely decorative way on the stems of pipes. There is one bowl of c 1610–40 with two lozenges made of smaller 'snowflake' type stamps on the stem (Ill 5.6.7.121). Enough survives to suggest that this is the complete decorative motif, that is, one lozenge of nine impressions adjoining another of four. The Dutch makers commonly used this style of decoration and so this finely burnished piece could be an import from overseas. On the other hand, the bowl is not milled, a characteristic of Chester pipes at this period, and there is other evidence that this style of stem decoration was being used in the city (*see below*). An interesting parallel for this particular stem comes from Eccleshall castle in Staffordshire, where an almost identical example has been found (E73 6/50). This piece has a lozenge of nine roughly applied lozenges with the same asymmetric motif as the Chester example. At Eccleshall, however, the outline of the die seems more rounded as if it is worn or the die is a second copy from the same master as the Chester example.

The final evidence for multi-stamped lozenge designs on the stem being used at Chester comes from the last symbol marked piece, a stem with the remains of a lozenge that would have been made up of nine individual *fleur de lis* impressions (Ill 5.6.1.3). The first point to note is that this stem is made of a very coarse gritty fabric with a granular fracture, like that produced by the local coal measure clays. This in itself suggests local production. As with the crossed key motif discussed above, there are also several local examples of this design, representing at least two different dies. There is a stem with a lozenge made up of nine individual *fleur de lis* impressions from the Cuppin Street 1986 site in Chester (CHE/CUS86 I (48) SF 13) which was made using the same die as an identical example from Beeston castle (Davey 1993, fig 58). In his report Davey says that there were two examples of this type from Beeston, but the author only has impressions of one with which to compare the Chester examples. Although the individual die used to create the

Cuppin Street and Beeston examples is slightly different to the Bridge Street one, they demonstrate a common motif and technique. In the Beeston report, Davey identifies that example as being Dutch, and dates it to c 1660–90, presumably based on similar Dutch examples using the *fleur de lis* motif. Single lozenge-shaped *fleur de lis* stamps can, however, be shown to have been used by the Chester makers. One was used as a heel mark on a local bowl form of c 1660–80 from Grey Friars Court in Chester (Rutter & Davey 1980, fig 32.18) and there is a stem decorated with both *fleur de lis* lozenges as well as an Alexander Lanckton stamp from another site in Chester, Sedan House 1989 (CHE/SH89 (1) SF 14). The Lanckton stem probably dates from c 1640 to 1660 and demonstrates that the Chester makers were certainly using this style of mark by the mid-seventeenth century. Given this fact, plus the evidence presented above, the author feels that these marks are almost certainly Chester products, foreshadowing the single large lozenge stamps containing many smaller *fleur de lis* which became characteristic of the late seventeenth century Chester pipes. If this is the case, then the Beeston examples may well derive from the Civil War deposits, rather than the later date which they have been assigned and, equally significantly, this reduces from three to one the number of Dutch imports found at that site.

#### Early initial stamps

The twenty-five initial marks are somewhat easier to attribute, since the lettering makes them more distinctive and they can often be matched with known distributions or documented makers. The majority of these marks were probably produced in Chester, where pipemaking was clearly well established by the second or third decade of the seventeenth century. There are three examples of NE marks, all from different dies (unidentified Chester maker; Ills 5.6.7.124–6), and eight examples of AL marks, from six different dies (seven heel stamps and one stem stamp, Ill 5.6.1.15). The AL marks can be attributed to Alexander Lanckton of Chester, who is recorded as a pipe-maker in 1657 and was probably the same person who was buried there in 1670 (IGI). The products of both of these makers are well known from the city. It is interesting to note, however, that there are no examples of the SE marks, which are commonly found elsewhere in the city, but which are absent from this site.

In contrast to these more common marks, some of the less frequent marks are likely to have been imports from other parts of the country. The HL and PL marks, for example, are likely to have been produced in Rainford, south Lancashire (Ills 5.6.1.16 and 5.6.7.138), while the WK and AP marks may well be London types (Ills 5.6.1.14, .19; 5.6.6.108 and 5.6.7.120). The single letter M pipes (Ills 5.6.1.18, 5.6.6.115 and .116) can be paralleled by various examples from the west midlands, where these pipes seem almost certain to have been made, although the exact source has not yet been identified. Oswald illustrates an example from West Bromwich manor house (Oswald 1978–9, fig 4.15) and cites another from Shrewsbury, although his reference for this is incorrect in the literature. The single letter M has also been found at Eccleshall castle in Staffordshire, supporting the West Midlands distribution of this mark. Also from Eccleshall castle are six IL pipes, at least two of which were proba-

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bly stamped using the same die as the Chester examples (Ills 5.6.1.17 and 5.6.6.114). The bowl forms for these pipes suggest that, like the single letter M marks, they are either local products or from the Broseley area industry in Shropshire. Similar IL marks have been found as far away as Worcester, suggesting a very wide distribution for this maker's products. Similarly, the RG mark (Ills 5.6.1.13 and 5.6.7.139) is almost certainly from Nantwich, where these initials occur in a wide range of different forms and in large numbers, suggesting a local maker. The two bowl stamps (GA and GL) are both crescent-shaped marks (eg Ills 5.6.1.7 and 5.6.8.145), which are characteristic of the south Lancashire industry, centred on Rainford.

These imported pipes clearly demonstrate the widespread trading connections of the city during the first half of the seventeenth century. Pipes from south Lancashire, Cheshire, the west midlands and London were all finding their way into Chester, where they circulated amongst the locally produced wares, in addition to which there was certainly some form of common link with Oxford. Although the 'imported' pipes form a significant proportion of the marked examples, around one third, this figure is unlikely to be representative of the unmarked examples, which form the bulk of the finds from the site. In some production centres, for example at Rainford, the majority of pipes of this date had stamps on them so any imports to Chester would be immediately apparent. In other cases, such as the west midlands area, local bowl forms were emerging which would help distinguish these pipes if they were present. This suggests that the low percentage of identified 'imports' to Chester is a true reflection of the situation and that the bulk of the finds, which are unmarked, are likely to have been produced in the city itself. Furthermore, the fact almost all the imports appear to be marked suggests that there is a correlation between marked pipes and those that were traded a significant distance from their place of manufacture, especially from places further afield such as the midlands and London. In this respect, the marks can be seen as an early form of branding that allowed the more established and large-scale manufacturers to identify their wares and this, in turn, made them more likely to be traded. The majority of the pipes found at this period, however, were unmarked and most of these are likely to have been produced in Chester itself.

### **Late seventeenth-century heel marks**

After about 1660 there appears to have been a radical change in the use of stamps in Chester. The previous section has shown that just over 10% of the pipes made *c* 1610–60 found in Chester were marked. Excluding the large mid-seventeenth century kiln group in (1507), which would skew any results because of the large number of identical bowls from a single source, there were around 120 bowl fragments which are likely to have been produced within the period *c* 1660–1700. Of these, only one example had a stamp on it and that was an import to the city. The piece in question dates from *c* 1680 to 1710 and has the initials IP stamped on the heel beneath a distinctive scroll (Ills 5.6.1.20 and 5.6.8.149). Both the bowl form and mark are characteristic of pipes from Coventry, and the IP mark can be attributed to John Pottifer, who was recorded as a pipemaker there when his

son was apprenticed in 1710 (Muldoon 1979, 268–71; Gault 1979, 403). Even if the 137 bowl fragments from (1507) are included, none of these was marked, and so it is clear that the Chester makers effectively gave up using bowl stamps during the second half of the seventeenth century. This may be partly due to the preference for spur forms during the second half of the century, since this style of pipe was often unmarked, but it does go against the trend of the surrounding production centres. Pipes of this date from Nantwich, Broseley, Buckley and Rainford all continue to use stamped bowl marks and so it is clear that the Chester makers were setting their own styles. Where stamped bowls dating from after *c* 1660 are found in the city, they are almost invariably imports from elsewhere. What the IP example does show is that extent of the city's trading connections. Coventry lies in the heart of the midlands and so this pipe presumably represents overland trade from around one hundred miles away reaching the city.

### **Late seventeenth- and eighteenth-century stem marks**

Although the Chester makers largely abandoned the use of bowl marks from the middle of the seventeenth century they did go on to produce some of the finest decorated stems ever produced. Although milled bands were occasionally used to decorate stems in many parts of the country from the early seventeenth century onwards, Chester was one of the centres to pioneer the use of decorative stem stamping. As noted above, the Chester makers were certainly using individual stamps to decorate stems by the middle of the seventeenth century, often employing them to make up decorative schemes. From around 1680 simple borders began to appear, sometimes used in association with decorative stamps or makers' marks placed across the stem. By around 1700 these had evolved into a range of elaborate decorative borders which were usually employed in conjunction with purely decorative stem stamps. Finely decorated stems became the hallmark of Chester pipes for nearly a century and their widespread distribution across Britain and beyond shows the extent of the city's trading influence during this period.

The excavations produced a total of eighty-four late seventeenth- or eighteenth-century stems with makers' marks or decorative stem stamps on them. These stems included seventy-eight with parts of one or more roll-stamped borders on them, forty-one with decorative stamps or marks placed across the stem and three with stem twists. These various marks range in date from around 1680 to 1790 and provide a representative selection of the styles produced in the city. Of the marks recovered, some ten borders and five stem stamps were too fragmentary to allow proper identification, leaving a total of 109 different marks which could be identified with reasonable certainty. Although well over 200 different Chester stem stamps of various types have already been documented (Rutter & Davey 1980), new types are regularly being discovered and around thirty of those from the Bridge Street excavation were of previously unrecorded types. This is more than a quarter of the stamps recovered and represents a 15% increase in the number of known types from the city as a whole. The large number of new types identified suggests that the known range of Chester stamps

is far from complete and that many more types remain to be discovered.

The 1980 publication remains the standard work on Chester pipes and was used as a starting point in trying to identify the new finds from Bridge Street (Rutter & Davey 1980). In doing so a number of significant problems with the die drawings and accompanying catalogue were encountered which it is important to be aware of. For this reason, the defects which have become apparent in the 1980 catalogue will be described and discussed before moving on to an examination of the new finds.

The first problem encountered was in trying to establish exactly which pieces were used to define the various die types illustrated in the published catalogue. In the 1980 publication each different die type was illustrated with a catalogue entry listing all the known examples of that particular die. This catalogue entry, however, does not identify the exact context and small find number for each example, merely the site from which it was recovered. In some cases only one example of a particular die impression was known, making it relatively easy to identify the exact piece in the excavation archives. But in other instances multiple examples are listed, often from a number of different sites. This makes it very hard to even locate all the known examples, let alone to know which of them have been used to create the type drawing. This becomes crucial when doubt arises over the accuracy of the type drawing itself and comparison is required with the source material.

The type drawings themselves are very neatly drawn and presented, but the illustrations often appear to be slightly stylised. The drawings were prepared for publication at 1:1, which is not large enough to show the fine detail present on many of the dies. This fine detail can be very important, especially when trying to distinguish two very similar dies. Rutter and Davey, for example, illustrated a geometric border incorporating a panel containing alternate dots and cinquefoils (1980, fig 60.52). The die drawing was clearly created using a ruler, giving the horizontal lines a crisp and mechanical appearance. While this illustration superficially resembles a border from 25 Bridge Street, the new example seems to have a rope-like band above the dots and cinquefoils rather than a straight line (Ill 5.6.2.40). The rather stylised drawing gave rise to doubt as to whether the original drawing had simply omitted the finer detail or whether there were actually two different dies represented. The only way to tell if they were the same or not was to compare the type example that has originally been illustrated with the new find. However, Rutter and Davey list no less than fifteen examples of this die from at least six sites, making it impossible to know which piece(s) were used to prepare the original illustration. Spot-checking some of them, however, showed that a die does exist with straight lines above the dots and cinquefoils, and so the 25 Bridge Street example with its rope-like band does represent a new die type.

Although the 1980 drawing was accurate in this instance, this was not always found to be the case. A Chester oval from 25 Bridge Street (Ill 5.6.1.24), for example, appeared similar to an example illustrated by Rutter and Davey (1980, fig 56.49), except that it had only two dots flanking the shield and not a third above it, as shown in 1980. The 1980 drawing could have been any one of four

examples listed in the catalogue, and so all of these impressions were compared with the drawing. This revealed that none of the quoted examples had a dot above the shield and that all four dies were, in fact, identical to the new Bridge Street example. Furthermore, none of the four original examples had the left-hand side of the mark properly impressed, so that the 'C' of 'CHESTER' was not present in any of them. The 1980 illustration, however, showed the lettering complete. From this it is clear that the 1980 illustrations are not always accurate and that, in some instances, detail has been added to complete a mark, even when there is no surviving impression to show that it is correct.

While checking the actual marks with the published catalogue further problems were found in that the examples of each die type listed in the 1980 paper were not always correct, ie similar but different dies had been identified as being the same and allocated to the same drawing number. This has a 'knock on' effect in that any of the associated marks listed in the catalogue do not necessarily date to the same period or belong to the same workshop.

Finally, there must also be a question over the accuracy of the dating of some of the stamp types, since some marks that were supposedly associated with one another sometimes have completely different date ranges given. For example, in 1980, one particular oval was identified as depicting the arms of the Grosvenor family and dated to c 1690–1715 (Rutter & Davey 1980, fig 54.9). Subsequent research has shown that these were, in fact, the arms of the Duke of Chandos (Brydges family), which were only granted in 1719 and that it may well have been as late as 1724 before these stamped pipes were actually commissioned (Cannon 2000). A dating of c 1720–30 would, therefore, seem more appropriate for this stamp, and this in turn has ramifications for the dating of all of the border types associated with it, including the type with alternate dots and cinquefoils, discussed above, which was previously also dated to c 1690–1715. This border, in turn, is associated with another six ovals, all of which were likewise dated to c 1690–1715. Given that the Chandos arms cannot date to before 1719, it seems likely that all of these interrelated marks need to be re-dated to the 1720s or later.

The attempt to use the 1980 paper to identify Chester die types has raised some important issues. On the one hand, there is no disputing either the importance or the continuing value of the 1980 paper. It was the first comprehensive study to bring together the existing documentary and artefactual evidence for the Chester pipe industry and to tackle what must be the most elaborate and complex series of decorative stamps from anywhere in the country. It established and classified the range stamped marks used in Chester and attempted to establish both a typology and chronology for them. While the present study does not question the broad overview established by the 1980 paper, it has shown that there are a number of problems with using the detailed die drawings and accompanying catalogue and that a reassessment of the die dating and associations is almost certainly required. Although this is beyond the bounds of the current study, it is clear that type examples for each different mark need to be identified so that there is a reference specimen against which new material can be compared. The existing illustrations also need to be redrawn in great-

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er detail so that they show the distinguishing idiosyncrasies of each die and so that they can be published at 2:1. Finally, any duplicate examples need to be rigorously examined and identified so that correct associations can be determined and the dating of each class of mark reassessed.

What it has been possible to do within this study is to compare all of the new finds with the existing data and to establish which of them appear to represent new die types. These additional marks have been illustrated at 2:1 to provide new reference drawings to add to the corpus of known Chester dies. It has also been possible to correct and redraw some of the previously defined types where errors were discovered, for example, Ills 5.6.1.24, 5.6.2.45 and 5.6.3.51, or to prepare more complete drawings where better examples have now come to light, for example, Ills 5.6.1.31 and 5.6.3.51. Full details of all the decorative stamp types and associations can be found in the detailed catalogue in the site archive. The new and redrawn stem stamps dating from this period are shown in Ills 5.6.1.21–32 and the new and redrawn borders in Ills 5.6.2–3, nos 33–53.

The new stem stamps included an unusual *fleur de lis* shaped mark within a shield (Ills 5.6.1.21 and 5.6.9.161). Both the form and style of this mark are new to the Chester series. There was also part of a shield shaped mark containing the Chester arms (Ill 5.6.1.22). This example has been compared with the similar example marked RG illustrated by Rutter & Davey (fig 52.10) and it is from a different die, perhaps consisting of just the Chester arms, like that from Croydon (Higgins 1981, fig 28.14). Another partial shield of this type has been recorded from St Mary's Grove, Stafford, and so this style should be seen as an additional type to the more usual ovals with the place name 'CHESTER' beneath, for example, Ills 5.6.1.23–4.

As well as the Chester shields various other new arms and heraldic devices were discovered during the excavations. Perhaps the most distinctive was an arms with the motto 'FIDE.ET.CONS...' below (Ill 5.6.1.25). This finely executed die looks as though it represents an actual coat of arms which should be identifiable, although this has not been attempted within the confines of this study. It certainly appears that the Duke of Chandos commissioned pipes with his arms stamped on them in 1724, examples of which, produced in Chester, have been found at Tong castle in Shropshire (Cannon 2000; Wharton 1980). The duke was in negotiations to buy Tong castle during the 1720s, thus providing both a good context for their occurrence there and supporting evidence for the likely period when this type of heraldic stamp was being produced. Other new examples of heraldic ovals included a bird sitting on a bundle of arrows (Ill 5.6.1.28) and a coronet surmounted by a swan's neck (Ill 5.6.1.29). The swan's neck example is particularly interesting since it is flanked by the same border type (Ill 5.6.2.40) as that found with both the Chandos arms at Tong and with the Chester shield (Ill 5.6.1.22) from this site. In addition, there were half-a-dozen other known heraldic ovals from Chester associated with this border type. This not only suggests that all these marks date from around the 1720s but also that the same Chester workshop may have been specialising in producing specially commissioned heraldic pipes. It would be interesting to know if the Chandos (Brydges

family) papers, now in the Huntingdon Library in America, name the Chester pipemaker from whom Chandos ordered his pipes.

The excavations also produced a better example of a previously known crowned lion stamp (Ill 5.6.1.31), only a fragmentary example of which had been found before. As well as the heraldic stem stamps, the site also extended the range of other mark types, including two new lozenges produced by Elias Massey (Ills 5.6.1.26–7) and die variants for marks incorporating the initials TO (Ill 5.6.1.30) and RG (Ill 5.6.1.32). Both of these initialled marks are very similar to previously known examples, but they differ in detail. The previous TO mark has a serrated rather than a plain border while the previous RG mark has larger initials and additional small decorative elements around the Masonic emblems. The occurrence of at least two examples of almost identical and specially commissioned dies for each of these manufacturers is significant, since they must have been relatively expensive to produce. This would suggest that each of these manufacturers had sufficient journeymen working at any one time to warrant the additional expense of ordering these dies. Future excavations may well reveal other die variants, which in turn will refine our understanding of how these workshops operated and how many people they employed.

As well as the stem stamps the excavations produced seventy-eight examples of the roll-stamped borders which were often associated with them, sixty-eight of which were complete enough to allow reasonable identifications to be made. These borders included examples of nearly all the previously known range of Chester styles, including eighteen previously unrecorded dies. These included a number of stamps with 'lattice' decoration (Ill 5.6.2.34–6) which almost doubled the number of previously known examples (Rutter & Davey 1980, figs 58.27–30). The author has seen various similar examples from other sites and so this style was perhaps more common than the 1980 publication would suggest. The excavations also produced a wide range of heart, star and *fleur de lis* borders, many of which were previously unrecorded (Ills 5.6.2.41–7). One of these types (Ill 5.6.2.45) had previously been recorded by Rutter and Davey (1980, fig 59.48) but their illustrator seems to have mistaken where the ends of the die were, so that the order of the *fleur de lis* and heart was reversed. Another error was found with a wide border that appears to contain a stylised crown motif (Ill 5.6.3.51). What appears to be a poor impression either of the same die, or a working copy made from the same master, was illustrated by Rutter and Davey (1980, fig 60.60). Their illustration, however, was drawn upside down and interpreted as perhaps Atlas holding up the world. Comparison of the actual marks, however, clearly showed that this was not the case and that, in fact, it should be paired with Rutter & Davey's fig 58.34, which shows a similar but different border employing the same stylised crown motif flanked by tendrils.

### Late eighteenth- and nineteenth-century stamped marks

Only a relatively small number of late eighteenth and nineteenth century pipe fragments were recovered from the excavation and, of these, only nine had stamped marks. There were four examples of the long, single-line stamps with relief lettering which were placed on the top



of the stem. There were used from around 1770 to 1840, principally in Liverpool but with small numbers of manufacturers using this style as far east as Newcastle-under-Lyme and as far south as Worcester. All four of the 25 Bridge Street examples were made by the Fitzgerald family of Chester and at least three examples appear to be from the same, previously unrecorded die (Ill 5.6.3.54). This is characterised by a decorative motif at each end and two dots between the lettering.

There were also two examples of two-line stem stamps with relief lettering, which were used at much the same time as the single-line marks. Both were very poor examples reading 'AIRES / CHESTER' but, once again, they represent a previously unrecorded die type of c 1780–1830 (Ill 5.6.3.55). It is particularly fortunate that one of these marks joins to a bowl (Ill 5.6.10.176) since the Chester stem marks can only rarely be associated with their bowl forms and this is a period where the dating of bowl forms is particularly difficult anyway. There were various members of both the Fitzgerald and Aires families making pipes in Chester during the late eighteenth and early nineteenth century, making it impossible to attribute these marks to an individual maker. Rutter and Davey did not record any Aires marks in their study, but they did record a 'MAIRES & SON, CHESTER' stamp (1980, fig 68.3). There are no known Chester pipemakers with the surname Maires, although at least three makers named Aires are known. It seems likely that this stamp should, in fact, be read as M Aires, adding another member to this known family and removing an otherwise unknown name from the Chester pipemakers list.

The final stem mark is a fragmentary example comprising the unbordered, incuse lettering 'E.S... / BRO...'. This is part of an Edwin Southorn mark from Broseley in Shropshire. Edwin was an important and innovative maker at this production centre, where he used this style of mark from c 1858 to 1876 (Higgins 1987a, 490). Unfortunately, following Edwin's death in 1876, William Southorn & Co also occasionally used the mark until they closed in 1960. This makes it hard to date the mark exactly, but the unusual style of this particular stem (Ill 5.6.5.87) makes it more likely to be one of Edwin's products rather than a later piece. As such, it is most likely to date from around 1860–80.

As well as the stem stamps, there were also two later nineteenth-century bowl stamps. Both of these examples were recovered from (1096), the same context as the E Southorn mark of c 1860–80 discussed above. This context was a large rubbish deposit containing bottles and other debris associated with Davies and Shepherd's chemist's shop. This is a particularly useful association, since it allows the deposit to be securely dated to after 1857, which, in turn, fits with the E Southorn mark. The deposit date of c 1860–80 is important in establishing a good date for the two bowl marks, which are of types that are otherwise hard to date precisely. Both of the marks are incuse stamps on the bowl facing the smoker and both are slogans or pattern names which would have been used by a number of different manufacturers rather than specific makers' marks. One of these reads 'ISLAND BRIDGE' (Ill 5.6.3.57) and the other 'EVER-GREEN' below a shamrock leaf (Ill 5.6.3.56). This second mark is unusual in that it has inadvertently been placed upside-down on the bowl. Both of these marks are known from

various sites in the north-west and so they were presumably produced within the region. By this date, however, pipes were being much more widely marketed and so they need not have been produced in Chester itself.

#### Late nineteenth- and early twentieth-century moulded marks

The final group of five marked pipes from the excavations all have incuse moulded marks on them. This style of marking emerged around the middle of the nineteenth century and became the most common technique employed in this area by the end of it. There is one fragment that would have had 'WHO . EMMA' on each side of the stem within a relief moulded and beaded border. This was a popular slogan or phrase, taken from the title of a popular song of the day, and is variously spelt 'Woa Emma!', 'Whoa Emma', 'Who Emma' or 'Wo'a Emma'. In fact, there appear to have been at least three completely different versions of this song, which circulated from around the 1850s onwards (Higgins 1988). The general theme of all three songs was that Emma was a hard-drinking and very popular girl, as was discovered to the horror of her upstanding and rather naive partner. This song was clearly popular since it was one of the more common titles appearing on the stems of pipes. Song titles appear to have been simply added to everyday pipe designs: for example, another song title, 'Not for Joe', has been found in the Liverpool area on a pipe the bowl of which is of typical Irish style, decorated with a harp and shamrock design (Higgins 1988, fig 1). A stem marked 'Wo'a Emma' has previously been recorded from Chester (Rutter & Davey 1980, fig 68.22), showing that at least two different versions of this pipe were circulating in the city.

The other moulded marks were more mundane and included two identical stems marked 'BURNS CUTTY' (Ill 5.6.5.88), a popular pattern name for a spurless pipe style, and a stem marked '420'. This would have been a pattern number, used to identify a particular pipe style in the catalogue of a large pipemaking firm. This piece could have travelled quite a distance to get to Chester, since it is unlikely that any of the makers there used a numbering system running into the 400s. A good example of how far pipes could travel is provided by the final and very fragmentary moulded mark, which reads 'Mc... / ...W' (Ill 5.6.5.89). This was almost certainly part of a stem marked 'McDOUGALL / GLASGOW', one of the major Scottish manufacturers, who operated from 1846 to 1967 (Anon 1987, 354). McDougall's were major exporters of pipes and were listed in the Liverpool trade directories of the early 1890s, and they would almost certainly have had agents based there for even longer. Their pipes were common in the region and show how much more diverse the market for pipes was during the late nineteenth century.

#### Bowl forms

A wide range of bowl forms was represented, with the collection being particularly strong in material dating from the late sixteenth through to late eighteenth century. A large number of bowl forms from Chester has previously been published (Rutter & Davey 1980), but the new material not only added new variants for some of the known makers but also some new forms which had not been recorded from Chester before.

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In the 1980 publication, an extensive type series was given for Chester pipes, running to some 107 different forms. Although this typology has been used to identify bowl types in the archive catalogue for this site, it was found too cumbersome to be of much general use in sorting the pipes. At one extreme, it often includes several very similar variants of a particular form so that it is impossible to determine which characteristics have been used to distinguish them. Some of the forms were so close that they seemed to be at the level of defining individual mould types rather than general classes into which groups could be divided. At the other extreme, some bowl forms which occurred with either heels or spurs were given the same number, making it impossible to distinguish them without adding some sort of suffix to the type number. Finally, the dating assigned to the various types was extremely poor. Instead of being individually dated, the bowl forms were lumped together into broad groups which gave only a general and often unreliable indication of date. There were no forms dated to before *c* 1630 but then there were sixty-three forms ranging from between 1630 and 1680, all but seven of which, on the basis of the typology, were in production during the 1640s. In contrast, no forms at all were allocated to the 1680–90 period. Some groups were given what appears to be an unrealistically precise date of only ten years, while others were given ninety-year ranges, even when some of the forms included were clearly much more closely datable than this. A new Chester typology is clearly required with a smaller but more useful range of bowl forms. These forms need to be carefully selected so as to produce an overlapping sequence of individually dated forms which will provide a more realistic and useable classification system for Chester pipes.

While it was not possible to prepare a new Chester typology as part of this project, it has been possible to illustrate both some key groups (discussed above; Ills 5.6.4.58–5.6.5.91) and a sequence of other bowl forms ranging from the late sixteenth century through to the end of the nineteenth century (Ills 5.6.6.92–5.6.10.178). These forms are not intended to provide a full sequence for the types found in Chester but rather to extend and supplement the corpus to be found in the 1980 paper.

### **Bowls of *c* 1580–1610** (Ill 5.6.6, nos 92–6)

The excavations produced five relatively complete examples of the earliest bowl forms to be found in this country. These are characterised by their small bowl size, a heel trimmed flush with the underside of the stem and their generally unmilled rims. The only milled example in this group had widely spaced milling (Ill 5.6.6.96), which differs from that generally adopted after *c* 1610 (eg Ills 5.6.6.97–.104). These early pipes often had relatively small stem bores of 4/64”–5/64” although the Chester examples ranged up to 7/64”. All of them had burnished surfaces and some had a distinctive reduced, grey core to the fabric, which is typical of these early pipes. Pipes of this form are rare nationally since tobacco was still a scarce and expensive commodity, and no production sites have yet been located. These early pipes are usually presumed to come from London, although this does not necessarily have to be the case, with the distribution of Eglantine marks around Plymouth clearly suggesting that production had been established there

before *c* 1610. Likewise, Robert Cotton emigrated to Jamestown in 1608 where he appears to have set up a pipe workshop and so it is not out of the question that pipemaking could have started in Chester by the start of the seventeenth century.

### **Bowls of *c* 1610–60** (Ills 5.6.7–.8, nos 97–145)

After *c* 1610 smoking became much more common and a wide range of forms appeared, principally of heel types (Ills 5.6.6.97–5.6.7.140). Many of these are hard to source on form alone, since common styles were employed across the country, and it is mainly the distinctive makers' marks which reveal their origins (*see* above). There are, however, some manufacturing traits which are particularly characteristic of Chester, for example, the lack of milling on many of the locally produced bowls of *c* 1610–60 (Ills 5.6.7.121 and .123–.136). By the middle of the century local forms had become more distinctive. A good example is provided by the elongated bowl form and low set milling of Ill 5.6.7.139, which is characteristic of the pipes produced to the south of Chester; this piece probably comes from Nantwich.

A particularly unusual form is the miniature pipe shown in Ill 5.6.7.140. Although only the size of a late sixteenth-century pipe, the developed form and use of milling both mark this as a seventeenth-century piece. The pipe was made of a coarse clay, probably from the local coal measure deposits, suggesting that it was made in locally. If this is the case, then the quality of the form and finish would suggest that it was made in Chester itself, rather than in one of the neighbouring centres. The seams have some sharp lines scored along them, partially burnished over, which look like the trimming marks found on pipes from the Low Countries. This could be fortuitous or it could represent someone who had worked in the Low Countries bringing these techniques to Chester. A similar bowl form has been found at St Mary's City in Maryland, founded in 1634, and a small number of other examples are known, showing that these miniatures were occasionally produced by the mid-seventeenth-century makers.

Spur pipes also occurred in smaller numbers (Ills 5.6.8.141–6), the notable exception being the large kiln dump discussed below (context (1507); Ills 5.6.4.58–.62). This shows that spur pipes were being made in the city, even if they were not the dominant form. As with the heel pipes, local styles emerged so that particular shapes stand out as being imports, for example, Ill 5.6.8.145, which is from south Lancashire.

### **Bowls of *c* 1660–1790** (Ills 5.6.8–.10, nos 147–73)

Towards the end of the 1600s the standard 'barrel-shaped' bowl which had been dominant for nearly a century started to evolve rapidly. It became much larger and more elegant and the rim started to become more nearly parallel with the stem. In particular, the heel or spur area became much more dynamic, evolving into a wide range of different forms and sizes. There were changes, too, in finish, with the use of burnishing and milling dying out. These changes are poorly dated at Chester and a reassessment of the transitional forms is clearly needed to provide a better sequence and dating for this period. The two pit groups of *c* 1700 and *c* 1710, discussed below, help to define the changing styles at this time.

By the early eighteenth century a new range of spur and heel pipes had become established and it is basically these styles which dominated the eighteenth-century fashions. The heels were generally circular or oval and ranged from large to small (Ills 5.6.8.151–5.6.9.161) with distinctive tailed forms being particularly characteristic of the Chester makers (eg Ill 5.6.8.153). Sometimes the bases were cut at distinctive angle to the stem, for example, Ills 5.6.8.157–9. The larger types died out during the eighteenth century, the heels tended to become more cylindrical in form and trimmed parallel with the stem. Many of these types would have had decorated stems, as is shown by two surviving examples (Ills 5.6.9.161–2). The spur forms (Ills 5.6.9–10, nos 163–73) developed in a similar manner and these forms would have had decorated stems too (eg Ill 5.6.9.165). Only one pipe of this period was found with possible moulded initials and even that is uncertain (Ill 5.6.10.173). Moulded initials were extremely common in other areas during this period, especially London, which might have been expected to set trends for the country as a whole. The distinctive bowl forms and finely decorated stems produced in Chester are distinctive to the city and show that London did not always dictate fashions.

#### **Bowls after c 1790** (Ills 5.6.10, nos 174–8)

Later bowls are poorly represented from the excavations, making it hard to chart their evolution during this period. In general terms the bowls would have become more squat and upright during this period, with the frequent use of moulded decoration on the bowl sides and seams (Ills 5.6.10.174–5). One important discovery was that of an Aires stem stamp together with its associated bowl form (Ill 5.6.10.176). Not only was this a previously unrecorded mark but it is also extremely rare to recover the bowl forms that went with this style of stamp. There were only a few later nineteenth-century bowl forms from the excavations, at least some of which were imports to Chester (Ills 5.6.5.88–91 and 5.6.10.177–8). By the late eighteenth century Chester had been eclipsed by Liverpool as a port and trading centre and its once vibrant pipe industry went into decline. The somewhat unreliable 1831 census figures recorded only eight pipemakers for Chester as opposed to thirty-nine for Liverpool and even the more thorough figures from 1841 and 1851 give only twenty-five and thirty-four for Chester as opposed to sixty-five and 130 respectively for Liverpool (Gault 1985; Cannon 2004).

Although pipemaking in Chester went into a terminal decline towards the end of the nineteenth century, the manufacturers there must have continued to respond to the changing demand for pipes. Pipemakers in the north-west as a whole were producing elaborate mould-decorated pipes from the late eighteenth century onwards, with distinctive regional styles developing during the early nineteenth century. Pipes of this period are rarely recovered from excavations, with the result that the Chester pipemaking industry from c 1780 onwards remains poorly understood. Production sites and good excavated assemblages of this period are a priority for further research.

#### **Internal bowl marks**

Internal bowl marks are occasionally found on pipes, most

usually comprising relief moulded crosses formed by the metal stopper that was used to create the bowl cavity. These marks seem to appear around 1700, when larger bowl forms were introduced, often with a flat internal base. These marks may have been used to help break the suction created with the wet clay during the moulding process, in the same way as the rough marks that were put onto nineteenth-century stoppers. Very rarely initials or other marks are found in this position and sometimes, especially in the nineteenth century, the internal bowl marks comprised ribs running up the internal surface of the bowl.

Internal bowl marks were never particularly common and there does appear to be some regional variation in the frequency with which they are found. These marks were not very common at Chester, as is shown by the fact that only five examples were noted from this assemblage. At least four of these examples dated from the eighteenth century. There was one example with rather irregular marks from Context (1406) (Ill 5.6.8.159) and three examples where a more organised upright cross had been cut as, for example, that from context (1700) (Ill 5.6.9.160). The final example was rather fragmentary, making it hard to date, and its context was slightly uncertain too. The fragment was stored in a bag labelled context (624), where it was later than all of the other finds, but the piece itself is labelled context (424). This piece had at least six short ribs or spikes extending up from the base of the bowl, on its internal sides, and is most likely to date from the late eighteenth or nineteenth century. These five examples all followed national trends in terms of their respective styles and dates, but their small number shows that internal bowl marks were infrequently used at Chester.

#### **Modified stems and mouthpieces**

Only a very small number of the fragments recovered showed any signs of additional treatment or reworking, either during manufacture or use. Out of the 987 bowl and 4,369 stem fragments only two bowls (from contexts (659) and (1111)) and two stems (contexts (201) and (463)) had any stem milling on them. These pieces were all of seventeenth- or early eighteenth-century date and both of the stems were probably milled to disguise repairs during manufacture. In contrast, the surviving milling attached to the bowls may have been purely decorative. One example had a criss-cross design (Ill 5.6.7.122) while the other had just two parallel bands surviving (Ill 5.6.8.145). The second piece also had a south Lancashire style GA mark on the bowl, showing that it was imported into Chester. These four fragments represented just 0.07% of the pipes recovered, showing that stem milling was very rarely found on the pipes used in Chester.

Towards the end of the eighteenth century some earthenware potters started extruding great lengths of stem to make elaborately coiled and painted pipes with glazed surfaces. The vogue for coiled pipes seems to have been taken up by the ordinary pipemakers who sometimes looped and twisted the stems of their long ‘churchwarden’ pipes. These coiled pipes generally seem to have been produced from the late eighteenth century through to the mid-nineteenth century, and the wide distribution of fragments suggests that they were fairly common across the country (Higgins 2005). One piece of curved stem from

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such a coiled pipe was recovered from these excavations (Ill 5.6.10.182). It probably dates from *c* 1780 to 1830 and was found in context (1802).

As with the stems, there was very little evidence for any particular treatment of the 214 mouthpieces recovered. From the end of the eighteenth century through until about 1910 glazed mouthpieces were sometimes produced. There were particularly common in the north-east of England, but less so in the north-west. Pipes of this period were not particularly well represented on this site, making it hard to assess how representative the seven stem examples with traces of glaze on them would have been. None of the actual mouthpieces survived, just sections of stem from close by with traces of glaze on them. There was one piece with a yellowish glaze and six with various shades of green. The yellow piece came from context (208) and the others from contexts (217), (563), (601), (1096), (1109) and (1802). In addition to the glazed fragments there were two fragments with traces of a red paint or wax coating surviving – a mouthpiece from context (1090) and a stem from near a mouthpiece in context (601). This type of finish does not survive well in the ground and may well be under-represented in the excavated sample.

The final type of modification found on the pipes occurred after they had been manufactured and sold and comprised modification or wear to the stems. A total of eighteen stems and one bowl showed evidence for reworking of the stems after firing. In most cases this was on seventeenth- or eighteenth-century pipes and simply comprised the smoothing or grinding into facets of the broken end of the stem. In some cases this may have been done to smooth a broken stem end so that a pipe could be reused. In other cases the broken stem may well have resulted from idle doodling or its use for drawing, like a stick of chalk. In most cases (thirteen examples) just one end was reworked, for example Ill 5.6.10.180. In two instances, however, both ends had been smoothed (eg Ill 5.6.10.181), in which case the stem may have been reused as a hair curler (*see* below). The only instance of a bowl with a ground end to the broken stem was on a much later pipe (Ill 5.6.10.177). At this date (*c* 1840–1920) some pipes were used with very short stems but it seems more likely that this example was ground for some other reason, perhaps even to remount it into some other sort of stem.

The last two pieces with modifications were rather different. There was one piece that had a worked facet on just one side of the stem at a shallow, sloping angle (context (201), SF 8136). This was very similar to the angle seen on a larger fragment which appears to have had at least two broad, shallow grooves cut into it, which just extended into the stem bore (Context (1098); Ill 5.6.9.179). There are documentary references to pipes being used as whistles or flutes and this careful modification may have been intended for this purpose. The illustrated piece had a relatively large bore (7/64") and is most likely to date from the seventeenth century, although, being cautious, it has been given a broad date range of *c* 1640–1740 in the catalogue. The other fragment must be from a different pipe since it had a much smaller bore (5/64"). It also had a decorative stem border (Die no 792; Rutter & Davey 1980, fig 61.79) and just the very edge of an oval on it. These two pieces came

from different plots (1 and 3) suggesting that, if they were modified as whistles, that this practice was not confined to a single household in this part of Chester.

### Complete pipes

One of the objectives of this study was to see whether any complete pipes could be reassembled from the excavated material. Although documentary sources clearly show that different lengths of pipe were produced from the seventeenth century onwards, very little is known archaeologically about the complete form of seventeenth- and eighteenth-century clay pipes because they so rarely survive intact. This limits the way in which pipes can be interpreted because different stem lengths sold for different amounts (as a general rule, the longer the pipe, the more it cost). Some bowl forms appear to have been associated with pipes of a specific length, while others may have been produced in a range of lengths. There were also specific export styles of pipe being produced in Chester, some of which would also have had specific stem lengths.

Since no complete curated pipes of this date survive from Chester, information on stem length can only be recovered from archaeological material. Complete pipes can be reassembled from archaeological finds, but excavators rarely take the trouble to recover all fragments from key deposits, such as pit groups, and finds specialists do not often systematically search for joining fragments at the post-excavation stage. There are less than 100 complete seventeenth- or eighteenth-century pipes known from anywhere in the country, the majority of which have been reassembled by the author from various sites in London and the south-east. In the north-west complete pipes of this date have only been recovered from two sites: Church Field, Rainford (Higgins 1982) and the Royal Infirmary, Chester. There are no known pipes of later seventeenth- or eighteenth-century date.

The most promising group of pipes from the excavations, context (1507), was extensively sorted and searched for joins (*see* group summary below) but no complete pipes could be reassembled. Two other contexts did, however, produce complete or nearly complete pipes of early eighteenth-century date. The first was recovered from (1503), the fill of a cess pit containing pipes of *c* 1690–1720 but with *c* 1700–10 being the most likely deposition date (*see* group summary). This pipe was one of seven examples from the same mould recovered from (1503) and (1504) and had a stem length of 12 7/8" or 326 mm (Ill 5.6.4.67). This pipe appeared to be of middling quality: although the bowl had an average burnish on it, the stem was only poorly burnished and it had defects near the mouthpiece where insufficient clay was rolled to fill the mould.

In contrast, the second almost complete pipe, recovered from contexts (1699) and (1601), had a finely burnished bowl and stem. This pipe was also a spur form, in this instance dating to *c* 1710–20, and it was recovered from the pit (1696). This pipe was not quite complete since the very tip of the stem was broken (Ill 5.6.4.70). The stem survived to a length of 341 mm with an estimated original length in the region of 350 mm (13 3/4"). The overall quality and finish of this pipe was much finer than that from (1503) and this was perhaps reflected in its

slightly longer stem, although this could equally be attributed to its different bowl form or slightly later date. Either way, the difference in stem length was not great, making it clear that pipes of a similar style and length were available in a variety of different qualities.

One point that was striking about both of these pipes was their very straight stems. English pipes were usually placed on frames or 'grates' to dry, most likely with wooden strips laid over the stems to try and prevent warping. Although the stems produced in this way were fairly straight, they were often not as good as those found on the Dutch pipes, which were placed on specially made wooden boards with grooves cut in them to take the stems. These boards ensured that the stems dried straight, thus enabling a better and more consistent result to be achieved. Although a sample of two is very small, the Chester pipes appear to have had notably straighter stems than examples of similar date from elsewhere in this country. If further examples show this to be a consistent pattern, then this would suggest that Chester employed a different drying method than elsewhere in Britain, perhaps using boards like the Dutch examples. In this connection it is worth noting that an early seventeenth-century pipe kiln muffle from the Royal Infirmary site at Chester is also unique in Britain, but very similar to Dutch examples. This may just be coincidence, but it would be worth considering links between pipe production in Chester and the Low Countries if further similarities come to light.

The straight stems from Chester and very fine finish of the pipe from (1599)/(1601) clearly demonstrate the quality of the early eighteenth-century pipes being produced there. From the late seventeenth century onwards Chester developed a reputation for fine quality pipes, with special orders being documented and examples of marked pipes having been recovered from many parts England as well as overseas. The two complete pipes had stem lengths of around 326–350 mm (12 7/8"–13 1/4"), which fall within the mid- to upper range of known examples of this date from elsewhere in the country (Higgins 1987a, 64). The total number of complete pipes recovered was, however, very small and may not be fully representative of the range originally produced. In 1710 the Bristol Company of Tobacco Pipe Makers passed an ordinance regulating the lengths that could be produced by the makers there: long pipes 16"; Dutch Pipes 14"; Jamaica Pipes 13"; Penned Heels and Gauntlets 11 1/2" and Virginia Pipes 8 1/2". Despite this, one maker was subsequently fined for making pipes of 24" (Jackson & Price 1974, 85). As a major pipemaking centre and trading port, it is highly probable that the Chester makers were producing a similar range of pipes to the Bristol makers at this date. This suggests that the Chester pipes recovered would have been firmly mid-range products and that both longer and shorter styles are to be expected. One of the priorities for pipe research in Chester is to recover more complete examples so that the range of pipes produced can be defined and comparisons made, both over time and with other production and export centres.

### Production waste

There is no evidence that pipe production ever took place within the excavated area. There was, however, some production waste that appears to have been dumped on the

site from workshops elsewhere in Chester. There was a large group of waste pipes dating to c 1640–70 from (1507), which are discussed below. Although no muffle or other kiln debris was passed on with the pipes for examination, the group from (1507) seems certain to represent production waste from a workshop that was operating during the mid-seventeenth century. This group of waste pipes appears to have been deposited on the excavation site about fifty years later.

The only other obvious production waste was a strip of pipe clay from (301) (Ill 5.6.10.185). This had been crudely hand-rolled and the surviving section included a join where two pieces of clay had been overlapped and then smoothed together. The surviving fragment was broken at both ends and ranged from about 8 to 11 mm in width. Two opposing faces had been slightly squashed and flattened, giving an average depth of about 7 mm. The roll was made of a very fine, white pipeclay and was typical of waste from pipe production sites, where rolls like this were used as bedding or sealing strips between larger elements of kiln furniture. Unfortunately (301) was a mixed context containing mainly seventeenth- and eighteenth-century pipes, but also some nineteenth-century or later fragments. This makes it impossible to accurately date the clay strip, which was presumably dumped on the site from elsewhere in Chester.

### Significant context groups

As well as adding significantly to the number of known marks from Chester, the excavations also produced a number of good, homogenous-looking context groups that add to our knowledge of the range of bowl forms and finishes which were in use at particular moments in time. Twelve of the most significant context groups, from four discrete features or deposits, are described and discussed in chronological order below, with illustrations to show the range of forms present in each group.

#### Phase VII Plot 4 (1507): fill of pit (1506)

This context produced a total of 746 pieces of pipe, comprising 137 bowl, 564 stem and forty-five mouthpiece fragments, by far the largest group of pipes from the excavation. This deposit must have been laid down in the early eighteenth century since it contained a very distinct group of pipes (seven bowls, fifty-two stems and three mouthpieces), the bowl forms of which ranged from c 1690 to 1730. The associated stem fragments included a previously unrecorded heart, star and *fleur de lis border* (Ill 5.6.2.42), a style of border which Rutter and Davey dated to c 1700–20. If this dating is reliable, then the deposit seems most likely to date to the first two decades of the eighteenth century. In addition to this element, there were two or three early seventeenth-century bowl fragments, including one with an AL stamp on the heel, but these appear to comprise a small residual element of the main group.

All of the remaining fragments, 126 bowls, 512 stems and 42 mouthpieces, formed a very coherent group sharing the same slightly creamy-white fabric. All of the bowls were spur forms dating to c 1640–70, none of which were marked or decorated. Although the bowl forms were typical of Chester products, it was most unusual to find such a large number in one context and for them to dominate

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the mid-seventeenth-century pipes to the exclusion of all other forms. Furthermore, the majority of the bowls were unsmoked. Taken together, it seems almost certain that this group represents production waste from a kiln site, most likely dating to the 1650s. There was no other concentration of these spur forms elsewhere on the site, nor other evidence of production activity. This suggests that the kiln waste was imported to the site to fill this pit and that this redeposition occurred around fifty to sixty years after the waste was originally generated. Despite this, the deposit still provides an excellent opportunity to study a mid-seventeenth century kiln group from Chester.

Although the kiln group only included spur forms, there was quite a range in the precise size and profile of these pipes. The clean lines and extensive use of surface finishing on these pipes precluded the identification of individual mould flaws to determine the exact number of moulds represented, but it is certain that a number of different examples were present. Not only did the pipes range imperceptibly from one extreme of size to the other (Ills 5.6.3.58–62) but they also varied in the lines of the bowl. Some examples had quite a marked waist and fairly globular bowl (eg Ill 5.6.3.61) while others had a more sleek appearance (eg Ill 5.6.3.59). This suggests that the workshop was producing just spur forms at this period, but that they offered a range of styles (probably differentiated primarily by varying stem lengths) and/or that they had sufficient journeymen employed to warrant running a number of different presses at any one time.

Analysis of the fragments from this group also shed some light on the workshop practices being employed. All of the surviving pipe rims had been bottered (finished with a tool to smooth and shape the rim) and ten of the 119 examples showed signs of internal trimming as well. All of the rims had also been finished with a band of milling. Of the 112 measurable examples, the majority were fully milled (eighty-nine examples; 79.5%). There were eighteen which were three-quarters milled (16%), three which were half-milled (2.7%) and just two which were one-quarter milled (1.8%). This clearly shows that all of the products from this workshop were expected to be milled and that usually this milling was applied with some care to ensure a full band. Similarly, the majority of the bowls had been given a burnished surface (ninety-five out of 122 measurable examples, or 78%). The quality of this burnishing can be further subdivided to show that twelve of the bowls had an average burnish (10% of the group as a whole) while eighty-three had a good burnish (68%). None of the bowls had a poor or a fine burnish, showing a mid-range consistency in the quality of output from this workshop.

In contrast to the bowls, only just over a half of the stem fragments were burnished (295 out of 512 fragments, or 58%) and an even smaller number of mouthpiece fragments (sixteen out of forty-two, or 38%). The mouthpiece figure is, however, less reliable since burnishing often faded out towards the tip of the pipe and some of these fragments were very small anyway, making it hard to see surviving traces of burnishing. Despite this, the overall picture is clear, with fewer stem fragments than bowls being burnished. In some instances it can be seen that only the bowl of the pipe was burnished and that the stem had been left unburnished, for example, Ill 5.6.3.61. In

other instances it can be seen that the burnishing finished part way along the stem. One particular characteristic of this assemblage was that there often appeared to have been a gap between the stem and bowl burnishing where the two burnished areas had not been joined up properly, for example, Ill 5.6.3.59. The evidence from this group suggests that four different grades of finish were being produced: completely burnished pipes; half-burnished pipes; pipes with just the bowl burnished and completely unburnished pipes. A burnished surface added value to the pipe and so these differences in burnishing may well have been reflected in the retail price.

The large sample size and discrete nature of this pit deposit offered the potential for complete pipes to have been recovered. The whole group was, therefore, sorted and laid out to try and reassemble the fragments, using a methodology previously described by the author (Higgins 1982, 197–9). Although a number of joins were found, the success rate in relation to the size of the assemblage as a whole was relatively low, despite a considerable amount of time having been spent searching for joins (only three of around twenty bowl/stem junctions fitted and stem joins were found with only four of the forty-two mouthpieces). No complete pipes could be reassembled but the stem tapers showed that these pipes would have originally have had stems of around twenty-eight cm in length. The stem length also affected the price of a pipe and so it is likely that this was an average and that different lengths would have been produced originally. Until more complete pipes are recovered, it is impossible to assess the range of lengths produced at Chester or how these lengths relate to the finishing techniques discussed above.

What this sample did allow, however, was a comparison of the burnishing and milling. In total there were 105 bowls where both of these variables could be recorded. These are shown in Table 5.6.2, where the columns represent burnishing and the rows the amount of rim milling. The percentages in brackets show the percentage that each figure represents within its own column.

What this table clearly shows is that it was the burnishing rather than the milling which was the principal variable. Between 73% and 88% of the pipes were fully milled, regardless of whether the pipes were burnished or not, which is close to the overall average of 79.5% for group as a whole. Given the small size of some of these samples, this figure seems remarkably consistent in all three columns. Similarly, the percentages for the three-quarters milled pipes are generally close to the group average of 16%. The only slight trend appears to be that the pipes with a good burnish always had at least a half-milled rim – none of this class had just one quarter milling, despite it being by far the largest sample. In contrast, the burnish on the pipes ranges from none to good quality. This shows that the rims were always finished with about the same degree of care while the surface could be treated in completely different ways.

### **Phase X Plot 5 (1503) and Phase VII Plot 4 pit (1522), fills (1504), (1505), (1513), (1558), (1559)**

Context (1503) produced one of the freshest-looking and most significant groups of pipes from the site, comprising thirty-eight bowl, sixty-five stem and eleven mouthpiece fragments (total 114), with some of the bowls

**Table 5.6.2** Clay tobacco pipe spur bowls from the kiln dump of c 1640–70 in context (1507) showing the relationship between burnish quality and the amount of rim milling

Rim milling	Unburnished	Average burnish	Good burnish	Total
One-quarter	1 (4%)	1 (9%)		2
Half			3 (4%)	3
Three-quarters	2 (8%)	2 (18%)	13 (19%)	17
Full	21 (88%)	8 (73%)	54 (77%)	83
Total	24	11	70	105

having up to 149 mm of surviving stem. It was possible to reconstruct a complete pipe from this deposit, the first of its date from anywhere in the north-west, and there were quite a number of joins between the generally large fragments. Apart from a few residual seventeenth-century pieces, the whole group comprised a narrow range of bowl forms, dating to c 1690–1720, plus contemporary-looking stems. The only problem with this group is that (1503) is recorded as the fill of a modern sewer pipe trench, which seems most unlikely for such a fresh-looking and coherent group of early eighteenth-century material.

A cross-join between pipe fragments in (1503) and (1513) was found, (1513) being one of the contexts within pit (1522). The other pipe-bearing deposits from the pit all produced pipe assemblages that would fit with (1503), and pipes from the same mould were present in (1503), (1504) and (1513), suggesting that all three deposits were closely contemporary. On the other hand, (1505) only produced one small chip of pipe from a sieved sample. This seems a very small quantity given the general occurrence of pipes within the pit as a whole. Likewise, there were no pottery or glass fragments recorded for (1505). It is suggested that the finds from (1505) were mislabelled (1503), thus explaining both the absence of finds from (1505) and the appearance of a first-rate assemblage of c 1690–1720 in a modern sewer trench. This would also explain the occurrence of late seventeenth- to early eighteenth-century assemblages of glass and pottery in (1503), including partially complete ceramic vessels. It would also explain the odd pieces of later material from (1503), which had already been identified as possibly intrusive in the pottery assessment, but which probably represent the actual finds that were in the sewer trench. For these reasons, (1503) will be considered as part of the pit sequence, where it was probably excavated as (1505). The pipe evidence suggests that the most likely date for the filling of this pit was around 1700–10.

The pipes from the pit as a whole included a small element of residual material, as might be expected. (1503), (1504), (1558) and (1559) all produced odd fragments ranging from c 1640 to 1680 but these pieces were generally smaller and more battered-looking than the bulk of the other pipes. The remaining material was extraordinarily consistent. One bowl form, a transitional spur type (Ills 5.6.3.63–7) dominated the assemblage, with thirty-one of the thirty-three substantially complete bowls being of this type. These were all so similar that, on first inspection, almost all might be taken as having been produced in the same mould. Detailed inspection, however, revealed that at least five different mould types were represented. Two of these types could be identified by their slightly different bowl forms (Ills 5.6.3.63 and .65) and three by mould flaws evident on the bowls or stems of the pipes (Ills 5.6.3.64, .66 and .67 – see figure captions for descriptions of the mould flaws). This still leaves sixteen examples, representing 52% of the spur bowls, which were

so smooth and well finished that mould types could not be identified. These could easily represent a further five mould types, suggesting that around five to ten different moulds of this specific type were represented in the pit.

In contrast to the spur bowls, only three heel bowls of this period were found (eg Ills 5.6.4.68–9). Two of these were almost identical, although it is not certain whether they were made in the same mould or not (Ill 5.6.4.69). Both had simple cut rims and neither was milled or burnished. None of the spur pipes were milled either, although half of them (fifteen out of thirty-one) had been given a good burnish to finish the bowls' surface. In addition, three of the spur bowls had bottered rims and a further four appeared to have been smoothed or wiped around the rim in some way. One of the heel bowls (Ill 5.6.8.68) also had a bottered rim.

The pipes from this pit group in Plot 4 suggests that the occupant of this property about 1700 favoured a particular form of spur pipe. The diversity of mould types may well indicate that this style was being produced by a number of different Chester makers at the time and that the pipes were being obtained from a variety of sources. Similarly, the total absence of any marked or decorated fragments from the pit suggests that this style of pipe was usually plain. The pipes being purchased at this date were not milled and only a few had bottered rims. This group provides a useful characterisation of the Chester pipes that were being consumed within a single household at this date.

#### **Phase VII Plot 4 pit (1696) (fills (1599), (1601), (1604), (1607), (1625), (1695))**

Pit (1696) contained six pipe-bearing deposits, which produced a total of 325 pieces of pipe, comprising eighty-one bowl, 231 stem and thirteen mouthpiece fragments. The pit fill also produced fragments of a tankard with a Queen Anne excise stamp on it and so must have been sealed after 1702. Despite the large size and fresh appearance of many of the pipe fragments, the pit produced a significant quantity of residual material, with at least twenty-nine of the pipe bowl fragments dating to before c 1680, including one very early bowl of c 1580–1610. Having said that, fifty of the bowl fragments formed a very consistent group, with the bowl forms ranging from c 1690 to 1730. All of these bowl forms would fit with a deposition date of around 1710–15, while the stamped stems are all of late seventeenth- to early eighteenth-century types. On balance, the later pipes would suggest a good group of c 1705–15, with a final deposition date of around 1710 seeming most likely. The pipe evidence suggests that the majority of the material represents a coherent group, probably discarded over a short period of time, but with the pit fill containing a significant quantity of residual material in its fill.

The latest material from this pit makes an interesting comparison with pit (1522) discussed above, in the same plot and probably sealed only about ten years earlier. Matthew Anderton Jr, who was Mayor of Chester in 1703/4, inherited this property following his father's death in 1693. Matthew Jr died in 1709 and his widow continued to occupy the property during the 1710s. Although parts of the building were rented out (see documentary section elsewhere in this volume), it is tempting to see pit (1522) as containing material discarded from the household dur-

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ing his occupancy and pit (1696) as a general clearance following his death in 1709. Either way, both pits relate to the same property and can be used to examine changes in pipe production and consumption over the first decade of the eighteenth century.

One of the principal changes from (1522) was the appearance of five marked or decorated stems in the (1696) assemblage. These five pieces still only represented a small percentage of the 150–200 stems of this date in the pit, suggesting that decorated stems were either still not particularly common or that they were not favoured in this household. The five pieces included parts of three lozenge marks and four different border types. One of the marks comprised the very tip of a lozenge divided into sections containing *fleur de lis* and two of the lozenges were marked Elias Massey, one of which proved to be a new die type for this maker (Ill 5.6.1.26). The Massey marks were associated with two different types of pinnacle and dot border (Rutter & Davey 1980, figs 58.10 and 59.19), one of which was duplicated as an isolated fragment without a surviving lozenge. The final border was a heart, star and *fleur de lis* border type (Rutter & Davey 1980, fig 59.40), which was important in that the bowl survived so that this stamp type could be associated with a specific bowl form (Ill 5.6.4.71). It is also interesting to note that this border appears to have been used by itself, without any accompanying stem stamp. The lozenge with *fleur de lis* appears to have been used in the same way, since it started 80 mm from a bowl junction without any border in between. The lozenge stem stamps and two different, fairly simply executed, styles of border all belong to the earliest styles of Chester stem decoration and support both the integrity of this group and its dating to the early eighteenth century. They also support the suggestion, alluded to above, that some of the more elaborate borders and ovals should be redated to the 1720s or later and that they do not belong to this early period.

Another difference between (1522) and (1696) can be seen in the range and form of the bowl types present. A number of very similar spur bowls dominated pit (1522), with just three heel pipes being present. In contrast, the forty substantially complete bowls from pit (1696) could be divided into almost equal proportions of spur pipes (twenty-one examples: Ills 5.6.4.70–7) and heel pipes (nineteen examples: Ills 5.6.5.78–.86). Some of the spur forms were very similar to those from (1522) (eg Ills 5.6.4.75–6), but none of the mould types could be cross-matched, suggesting that completely different supply sources and/or moulds were being used. Furthermore, the spur pipes tended to have slightly taller, more slender and elegant forms, often with a slight ‘kick’ in the profile just below the rim and facing the smoker. These subtle differences over no more than a decade show how bowl forms were continually changing and evolving, thus providing the potential for extremely accurate dating. The lack of common mould types also suggests that these had a relatively short life expectancy, either by virtue of wear or changing fashions. The evidence from these two pits would suggest a working life of less than a decade at this period.

The most marked change in style between the two pits, however, can be seen in the heel forms. About 1700 just one heel form was represented in pit (1522). By around 1710 nearly half of the forty pipes were heel forms, all of

which were characterised by quite marked flares to their heels. These heel forms could be further subdivided into those with round heels (thirteen examples or 33% of the group as a whole: Ills 5.6.5.78–84) and those with tailed heels (six examples or 15%: Ills 5.6.5.85–6), both varieties of which came in a range of sizes. The round heels ranged from very large heels (Ill 5.6.5.84), like two of those from (1522), right through to examples with very small heels (Ills 5.6.5.78–9). The bowl forms associated with the round heel pipes were also extremely varied. Some of these forms were very forward-leaning, for example Ill 5.6.5.81, while others adopted a much larger and more upright bowl, resembling the contemporary London styles (Ill 5.6.5.82). Four of the six tailed heels were generally small, for example Ill 5.6.5.85, although two had rather larger heels to them (Ill 5.6.5.86). Pit (1696) produced a much greater range of bowl forms than (1522), but more detailed comparative studies would be needed to determine how far this reflected general changes in Chester’s pipe production over this decade as opposed to specific changes in the consumption patterns in this particular household.

In terms of finishing techniques, there was a notable drop in the use of burnishing. Half of the spur forms in (1522) were burnished, whereas only four of the twenty-one spur forms in (1696) were burnished (19%) and only two of the nineteen heel forms were burnished (11%), giving an average of 15% for the pit group as a whole. This change almost certainly reflected a general trend in the Chester industry at this date, rather than a conscious move away from burnished pipes by the consumers at Plot 4. Most of the burnishing was of a typical standard for the local industry but one piece was finely burnished. This example (Ill 5.6.4.70) could be almost completely reconstructed, giving an estimated original stem length of 350 mm. This pipe is discussed in more detail above, but it is worth noting that it was not significantly longer than the complete pipe from (1503), despite having a very high quality finish. As with the group from (1507), suggested that the surface finish was one of the most important variables, as opposed to other characteristics, such as rim finish or stem length.

Out of the forty-three surviving rims in (1696), thirty-four were simply cut and nine were cut and wiped. Only one example had a milled rim and this was on an ‘older’ style of bowl (Ill 5.6.5.84). This confirms that the use of milled rims died out rapidly in the early eighteenth century and that, where it did occur, it was usually associated with ‘old fashioned’ bowls, where it was seen as part of the ‘package’ for that particular design.

### Phase IX, Plot 2, layer (1096)

This layer produced an interesting assemblage of nineteenth-century pipes, which was important for a number of reasons. First, it was one of the few nineteenth-century assemblages recovered from the excavations. As such it helps complete the picture of changing pipe consumption on the site. Second, good nineteenth-century groups from controlled excavations are relatively rare nationally, and so this group helps establish the range and dating for the types present. Third, this pipe assemblage is associated with refuse dumped from a chemist’s shop fronting onto Bridge Street, thus providing both a social context and independent dating evidence for this group.



The pipe assemblage totalled thirty-three pieces, comprising bowls bowl fragments, twenty-five stem fragments and one mouthpiece. The group itself was rather mixed, with about a half the material clearly being residual. The earlier pieces included both seventeenth- and eighteenth-century fragments, some of which could not have been much disturbed since their original deposition, since stem fragments of up to 166 mm in length were present. The latest material was, however, quite distinct and included five of the seven bowls, all of which had makers' names or slogans on them. There was also a marked stem, which provided the best dating evidence for the group.

The marked stem had part of an incuse stamp that would have read 'E. SOUTHORN / BROSELEY' on it (Ill 5.6.5.87). Edwin Southorn came from a prominent pipe-making family in Broseley, Shropshire, and established his own business there in about 1858 (Higgins 1987a, 490). He died in 1876 and the business eventually passed back into the family, who occasionally used Edwin's mark on their products until the business finally closed in 1960. Edwin was a particularly interesting and innovative maker, who experimented with different pipe designs and methods of decoration. This stem had been moulded with an unusual ridge or collar in its mid-section and was almost certainly from one of these designs. The combination of this unusual feature and the form of the other pipes from the layer clearly suggest that this pipe was made by Edwin rather than being a later product of the family. As such it can be dated to around 1860–80, providing a good date for the associated material from this layer.

One of the fundamental changes in pipe design during the nineteenth century was the introduction of short-stemmed pipes, which became known as 'cutties', about 1840. At least four out of the five later pipe bowls were of this type. These short-stemmed pipes were made in a wide variety of different styles, many of which had different pattern names. There were two examples of 'Burns Cutty' pipes, both of which were produced in the same mould and both of which had the pattern name moulded in neat, incuse lettering on both sides of the stem (Ill 5.6.5.88). This was one of the most popular nineteenth-century designs and was characterised by a plain, spurless bowl. There was a similarly shaped bowl but with raised ribs on the seams. This had just the very ends of an incuse moulded mark on the stem, which would almost certainly have read 'McDOUGALL / GLASGOW' originally (Ill 5.6.5.89). McDougall's were one of the principal Scottish manufacturers and operated from 1846 to 1967 (Anon 1987, 345). Their pipes were widely exported and circulated freely in the north-west during the second half of the nineteenth century. There was also a specifically shaped bowl that was a pattern known as a Gladstone pipe (Ill 5.6.5.90). This particular example had a shamrock and the slogan 'EVER-GREEN' stamped on the bowl. Irish slogans and motifs were very popular in the north-west but this example was unusual in that the mark had inadvertently been placed upside down.

The final bowl from this group was also designed to draw on the popularity of Irish designs and slogans. This bowl was of an Irish style, with thick walls and a band of hand applied milling around the rim. It also had a slogan stamped on the bowl, in this case reading 'ISLAND BRIDGE' (Ill 5.6.5.91). This pipe may have been a short stemmed cutty or it may have had a longer stem – some of

these Irish style bowls had stems around 25 cm long. Apart from these bowls the only other diagnostic nineteenth-century fragment was a piece of stem with traces of a dark green glaze on it. This would have formed part of the mouthpiece coating and would probably have come from a long-stemmed or 'churchwarden' type of pipe.

This group was useful in that it provided a sample of the styles being used in Chester during the 1860s or 70s. The most marked contrast with earlier periods was in the range of styles and supply sources for the pipes. Prior to the mid-nineteenth century the majority of the pipes used in Chester would have fairly plain, long-stemmed varieties, the majority of which would have been produced locally. By this date, however, the majority of the pipes appear to have been short-stemmed cutties, made in a distinctive range of different patterns and by makers from as far afield as Shropshire and Glasgow. Irish styles and slogans were clearly popular but a larger sample is needed before the relative proportions of the different styles in use can be quantified.

### **The pipes as archaeological evidence**

One of the most useful functions of pipe fragments is as a means of accurately dating and interpreting the archaeological deposits in which they occur. The detailed catalogue, deposited as part of the site archive, provides details of all the fragments recovered while a summary of this information is provided below (Table 5.6.5). The significant contexts have been described and discussed above. The following section briefly considers how this information fits into a broader interpretation of the site.

The first point to note is that the archaeological record only contains a partial and biased sample of what once existed. Despite being continually occupied during the post-medieval period, this site produced hardly any nineteenth-century pipes and, had the dump associated with the chemist's shop (context (1096), discussed above) not been within the excavated area, there would only have been scant remains of the nineteenth-century occupation. It would clearly be absurd to suggest that the site was unoccupied during the nineteenth century and so this dependency on survival must be kept in the fore when assessing the archaeological evidence. It is clear that the pipes only reflect events that have happened to survive in the archaeological record and their absence in other periods may simply reflect waste disposal taking place away from the main occupation site. The pipes that have been recovered, however, provide some useful evidence for the use of the site.

The second point to note is the uneven distribution of the pipes across the site as a whole. Table 5.6.3 shows the numbers of fragments excavated from each of the historic property plots (1–6). It is clear that much greater numbers of pipes were recovered from some plots than others, for example, Plots 1 and 4 both produced well over 1000 fragments each while Plot 5 produced only 176. This marked difference could well be the result of a combination of factors – such as the total area excavated within each plot or historic waste disposal patterns. If, however, this bias is peculiar to the pipes, then it may reflect differences in the smoking habits between the various households.

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**Table 5.6.3** Clay tobacco pipe fragments quantified by plot, pipe part and fragment count

Plot	Bowl	Stem	Mouthpiece	Total
Plot 1	171	884	23	1078
Plot 2	154	679	24	857
Plot 3	137	603	25	765
Plot 4	328	1263	98	1693
Plot 5	52	112	12	176
Plot 6	111	654	24	784
Unattributed	34	174	8	212
Total	987	4369	214	5570

One way to explore this theme is to look at the pipes from specific periods. The excavations produced six of the earliest bowl forms, dating from bowls around 1580 to 1610, plus one stem which appears to be of a similar date. These fragments, however, were not evenly distributed across the site with only one piece coming from each of Plots 1 and 4 but five of the fragments coming from Plot 6. This distribution does not in any way reflect the overall numbers of pipes recovered from each of the excavation areas and clearly suggests that there was a connection between early smoking and Plot 6.

In the late Tudor period tobacco was very expensive and the habit of smoking was only just being disseminated through the upper levels of society. This marked concentration of early fragments is interesting but, unfortunately, it may be more to do with patterns of waste disposal rather than identifying a particular owner who took up smoking at an early date. Plot 6 appears to have been an area comprising an open garden and then a yard or drying ground during the nineteenth century. This area may well have been open ground since the Tudor period and so the early pipes could have been discarded there as general rubbish or become spread on a garden with night soil as manure. The exact nature and degree of access to this plot in the late sixteenth century is uncertain and so it is not possible to link this concentration of early pipes with a particular owner or family.

Similar problems are encountered when trying to attribute pipes to particular events, such as the Civil War period in Chester. Although pipes dating from the mid-seventeenth century are certainly present in the excavated sample, there were no discrete features that stood out as being distinctive from this period, nor any marked change in the deposition of pipes to suggest a breakdown in waste disposal during at this time. This may be partly the result of collecting data from a crowded urban environment where there had been a lot of accumulated debris and reworking of deposits during the post-medieval period. As a result, the survival of key groups is perhaps more fortuitous and dependent on the individual history of the plot rather than a matter of course following national events.

While it may not be possible to follow these national events very closely, the excavated evidence proved particularly strong when it comes to individual events affecting the individual households. The excavation and filling of rubbish pits following a domestic agenda, for example, produced some of the best evidence from the site. Some of the larger groups may have accumulated over a period of time while others may have been triggered by a change of ownership or a death in the family, as has been tentatively suggested above. These groups not only provided an insight into the consumption patterns of individual households but, taken together, they provided a reflection of changing trends within Chester

as a whole. The pipes discussed above have not only provided important dating evidence for the post-medieval deposits from the excavations but also a broader window through which to view pipe manufacturing, trading and consumption patterns as well as the personal preferences of individual households.

### Other pipeclay objects

In addition to the pipes, various other pipe clay objects were recovered from the site and these are discussed below.

#### Hair curlers

Although wigs had been used in England to hide baldness since at least the sixteenth century, they only became popular as fashion items following their introduction from the French court by Charles II in 1663 (Bullock *et al* 1996, 5) and they remained in common use until about 1800. The early curlers were comparatively crudely made and often show signs of being entirely hand-modelled, probably being made as a sideline by local pipemakers or potters. By the eighteenth century the demand was sufficient for specialist manufacturers to emerge and much more symmetrical and professionally made curlers were produced. There were three fragments of purpose-made curlers from the excavations, all of which were of a neat, symmetrical form, suggesting that they date from the eighteenth century.

Half of a medium-sized curler was recovered from (601), a context containing material of mixed date which was not sealed until at least the nineteenth century (Ill 5.6.10.183). This piece had a simple cut end 7 mm across; it was broken in half, where it was 12 mm in diameter, swelling to a maximum of 16 mm at the surviving end. A fragment from a curler of generally similar proportions was recovered from (344), but this was too fragmentary for any useful measurements to be made (both the ends and the middle were missing and the surviving piece is splintered diagonally across the maximum swelling). The pipes from (344) were of mixed seventeenth- and eighteenth-century dates, with final deposition most likely taking place around 1740–1800.

The final purpose-made piece was from a small curler and was interesting since it had the incuse stamped initials WB with a dot above and below on its surviving end (Ill 5.6.10.184). The end had been cut before the stamp was applied and was about 5 mm across. The maximum thickness of the surviving end was 13 mm. This piece came from context (208), which contained finds of mixed date but which was probably sealed during the first half of the nineteenth century. Maker's marks are relatively rare on curlers and, when they do occur, they tend to belong to a very restricted range and to be found on particularly well shaped and neatly finished products. This suggests that most of these marked curlers were made by a small number of specialist makers who marketed their products very widely. The WB mark is by far the most common to be found nationally and it is these initials that occur on about two-thirds of all marked curlers. The author has documented examples of this mark from all over England, ranging from as far afield as Carlisle to Cornwall, and these pieces must have been produced in a

**Table 5.6.4** Marbles quantified by phase, plot, context and material

Phase	Plot	Context	Diam (mm)	Material	Date	Description
IV	1	265	15.2	Grey stone?	Medieval	Appears to be made of a fine-grained pale grey stone.
V	2	1311	13.5	Buff stone?	Late medieval	Pale white to buff-coloured object with a very weathered and eroded surface, possibly stone; rather irregular shape, surviving to 13.5 mm max diam.
IX	1	208	15.5	Grey stone	1800–1850	Appears to be made of a fine grained greyish stone.
		208	16.5	Marbled clay	1800–1850	Mainly white clay marbled with red veins.
		208	17.2	White clay	1800–1850	White clay marble.
IX	1	601	18	Pinkish clay?	1800–1910	Pale pinkish coloured marble - clay?
IX	2	1286	20	White stone	1810–1850	Slightly mottled white stone, probably marble. This example not as perfectly spherical as the others.
IX	6	375	13.9	Grey stone	1800–1900	Fine, darker grey stone.
		510	15.8	Buff stone	1790–1920	
X	3	1399	16.3	Marbled clay	19–20 cent	Mainly white clay marbled with red veins; slightly irregular form.
		1399	16.1	Buff stone	19–20 cent	Pale brownish buff coloured stone.
X	6	300	16.4	White clay	19–20 cent	Probably white clay (not certain).
		300	15.4	Buff clay	19–20 cent	Pale yellowish/buff coloured clay (probably).
		301	18.4	Grey stone	19–20 cent	Very fine pale grey stone with fine banding visible with lens.

large-scale workshop, most likely situated in London. One example has previously been recorded from Chester (Rutter & Davey 1980, fig 86.16).

As well as purpose-made hair curlers, it is known that other objects were sometimes used to curl hair, including pieces of pipe stem. At least sixteen of the pipe stems from the excavations had at least one of their broken ends ground smooth, for example, Ills 5.6.10.177, .180 and .181. Unfortunately, it is very hard to say whether this had occurred because a broken pipe has been adapted for reuse (as, perhaps, is the case with Ill 5.6.10.177), because a pipe fragment has been used to draw like a stick of chalk, because a fragment has been made into a hair curler or because it has simply been doodled with. In most examples just one smoothed end survived, making interpretation even more difficult, for example, Ill 5.6.10.180. In one instance, however, a stem fragment with both ends smoothed survived, raising the possibility that it had been adapted for use as a curler (Ill 5.6.10.181). The stem fragment had quite a large bore (7/64") and a rather oval section, which would suggest a date of around 1680–1730 for this piece. It was recovered from context (325).

## Marbles

A total of fourteen marbles, or possible marbles, were recovered from the excavations (Table 5.6.4). Although these items are often recovered from excavations there appears to have been very little study of the materials from which they are made, the variations in size and finish that are evident or the dates at which they were produced. The finds from the 25 Bridge Street excavation are described below in the hope that they will contribute to a broader study of these objects at a future date.

Despite being sorted as clay objects the first point to note is that the majority of the marbles are, in fact, made of stone. There is one very weathered and irregular object from Context (1311) that is probably a natural stone nodule and so this will not be discussed further. Of the remaining thirteen marbles, at least eight and possibly as many as eleven appear to have been made of various types of very fine-grained stone. These ranged from 13.9 to 20.0 mm in diameter and the majority vary from a near white to a pale grey in colour. These examples are generally extremely well made, with a strongly spherical form, suggesting that they have been machine-turned. With

one exception, these were all recovered from Phase IX and X deposits, with the associated pipes suggesting a date of after 1800 for these examples. The one exception was from context 265 (Phase IV), a medieval context where it was presumably intrusive.

In contrast, only two of the marbles were certainly made of clay with two or three further examples that were possibly made of clay. The two certain examples were both made of marbled red and white clays and had diameters of 16.3 mm and 16.5 mm. These examples had a slightly less perfectly spherical form, although they were still of a good quality, and were presumably hand-rolled. The other three examples were pinkish, pale grey and buff in colour and it is not certain whether these are made of clay or stone – a proper geological examination is required to identify with certainty the materials from which all of these marbles were made. As with the stone examples, the clay marbles all came from Phase IX or X deposits and dated from after 1800.

In general terms, all of the marbles recovered appear to date from the nineteenth or twentieth centuries and range from 13.0 to 20.0 mm in size. This compares closely with the 15–18 mm range recorded for two nineteenth- or early twentieth-century clay marbles from excavations at Castletown on the Isle of Man (Higgins 1996, 96–7). The majority of the 25 Bridge Street marbles were found in Plots 1 and 6 (five examples each), with smaller numbers from Plots 2 and 3 (two examples each). Further work is clearly needed to establish the timespan over which marbles were commonly used and to see whether regional or temporal differences in size and material (glass, stone, clay, etc) can be discerned.

## Summary

The pipes from this site not only provided a valuable means of dating and interpreting the deposits in which they occurred, but also an important reference point for future pipe studies. This is probably the largest domestic assemblage to have been recovered from Chester over the last twenty-five years and provided an opportunity to assess the sequences of bowl forms and makers' marks that were established for the city during the 1970s. While these still provide an invaluable framework, it has been found that the previously published corpus of marks needs to be redrawn at a larger scale and with greater precision. Similarly, the dating of the marks and their attribution to individual workshops needs to be reviewed and a new

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and more manageable typology established for the bowl forms. This study has also shown many more marks remain to be discovered, with this one assemblage contributing some thirty new marks to the known range – an increase of about 15%.

The excavations produced a good number of the earliest bowl forms, datable to c 1580–1610. These were concentrated in Plot 6 and reflected not only the affluence of the city at a time when tobacco would have been very expensive, but also the fact that it was ‘moving with the times’ by adopting new habits. The earliest pipes were probably imported from London, but by the early seventeenth century others may have been made locally, raising the question of exactly when production started in the city: a very early date seems likely. Around 14% of the early seventeenth-century pipes were stamped with makers’ marks, initials being more than twice as common as symbol marks. These provided clues to the origins and trade in these pipes but it must not be forgotten that 86% of the pipes were still unmarked. The Chester makers went against the national trend by not using milling for much of the seventeenth century and this shows that many of the unmarked pipes were, as might be expected, produced in the city.

Both local and imported fabrics appear to have been in use and, during the seventeenth century, distinctive local styles of marking appeared. Stem stamps, and in particular individual *fleur de lis* marks, were used to make patterns, and these provided the inspiration for the more complex stem stamps and decorative borders that were to follow. A sudden decline in the use of maker’s marks was noted after c 1660 and of burnishing towards the end of that century. In contrast, decorative stem borders appeared from the late seventeenth century and became much more complex and elaborate as they developed to become the hallmark of Chester pipes during the eighteenth century. The evidence from these excavations suggests that the early borders were generally simple and that some of the more elaborate and refined borders need to be redated to a slightly later period, most likely to the 1720s and later.

Tangible evidence for trade was provided by pipes with parallels from as far afield as the west midlands, Oxford and London, while individual groups provided information on manufacturing techniques and consumption patterns within Chester itself. The general quality of the pipes was good, with some exceptionally well finished pieces demonstrating how Chester achieved its reputation for producing outstanding pipes. One important discovery is the straightness of the stems that were produced, suggesting the use of special drying racks, such as were used in the Netherlands. The use of specially produced racks with stem grooves is unknown elsewhere in Britain and, if they were used here, they mark a distinct technological break with the rest of the country. Another discovery was the fact that iron-staining in the ground can significantly alter the overall appearance of buried pipes by giving them a colour cast. This overall tinting (as opposed to individual discoloured areas of staining) renders any description of the whiteness of the fabric meaningless unless the fabric has either been chemically cleaned or is freshly broken.

This site produced individual groups ranging from kiln waste to possible house clearance assemblages. Some of these groups can be traced back to individual families,

including those used by a former mayor of the city. Finds such as these provide insights into the day-to-day production of pipes and the choices made by domestic consumers. Similarly, the first complete eighteenth-century pipe from the city provides an initial step towards defining the range of stem lengths that were produced in Chester. Chester was an important production centre with a substantial export trade. The pipemakers would have produced a range of different patterns for their various markets, many of which would have also been produced in different qualities. Although many of the bowl forms and finishing techniques are well known, these cannot be fully understood without knowing the lengths of the pipes to which they belonged. The cost of a pipe was largely dependent on stem length and so assessing the social status of a group is also dependent on knowing the overall form of the pipes that it contains. The careful recovery of all fragments from discrete and undisturbed deposits is clearly a research priority if further complete pipes are to be reassembled. These are needed to not only provide fresh insights into the home markets but also into the styles that were produced for export to many other parts of the world.

### Catalogue (Ills 5.6.1–.10)

Where there is more than one bowl fragment from the same context a letter (A, B, C, etc) has been allocated to each piece to identify it in the records. These letters have been pencilled onto the pipe fragments and are given in brackets following the context number. All die numbers refer to the numbers allocated in the National Clay Tobacco Pipe Stamp Catalogue, which is being compiled by the author. The illustrations are all at 1/1 with the exception of the stamp details, which are at 2/1, and the complete pipes, which are at 1/3.

#### Stamps

- 1 Die no 1983. Incuse stamped ‘snowflake’ mark across the stem of a heel pipe of c 1580–1610. This is an early bowl with bead rim and at least six ‘snowflake’ stamps forming a pattern on the stem. This particular design is known to have been in use c 1600–1610, suggesting that this mark may be more closely dated to the very early years of the seventeenth century. (1819): Phase VIII, Plot 1; SF 9275. Ill 5.6.6.92.
- 2 Die no 1986. Relief stamped ‘snowflake’ mark across the stem of a heel pipe of c 1610–40. The stem is decorated with two lozenges made up of a series of individual ‘snowflake’ type stamps (the first lozenge is made up of nine stamps and the second four). (429) A: Phase VI, Plot 3, fill of (850)/(430); SF 8648. Ill 5.6.7.121.
- 3 Die no 1985. Relief stamped *fleur de lis* mark across the stem of a pipe of c 1610–60 (and, most likely, 1610–50). This stamp occurs as part of a group of seven identical surviving impressions that would almost certainly have formed a lozenge of pattern made up of nine stamps originally. Very coarse gritty fabric, probably a Chester product. (223): Phase VIII; Plot 1, fill of (219).
- 4 Die no 1980. Incuse stamped star mark on the base of a heel pipe of c 1620–50. (1414): Phase X, Plot 3, fill of (1415); SF 9409. Ill 5.6.6.110.

- 5 Die no 1981. Relief stamped wheel mark on the base of a heel pipe of *c* 1610–50. Very shiny surface to the pipe but no obvious burnishing lines. (1371): Phase VIII, Plot 4, fill of (1545); SF 9236. Ill 5.6.6.111.
- 6 Die no 1979. Relief stamped wheel mark on the base of a heel pipe of *c* 1610–40 (1871): Phase VIII, Plot 1, fill of (1812); SF 9356. Ill 5.6.6.109.
- 7 Die no 1982. Relief stamped mark reading GA facing the smoker on the bowl of a spur pipe of *c* 1640–60. This is a south Lancashire style of mark with at least two bands of milling surviving on the stem. (659): Phase VII, Plot 2; SF 8653. Ill 5.6.8.145.
- 8 Die no 1987. Relief stamped mark reading TB on the base of a heel pipe of *c* 1640–60. Heel fragment only survives. Evaluation Trench F (17); SF 9872.
- 9 Die no 1990. Relief stamped mark reading NE (ligatured) on the base of a heel pipe of *c* 1620–60. Unidentified Chester maker. (301): Phase X, Plot 6; SF 9304. Ill 5.6.7.125.
- 10 Die no 1988. Relief stamped mark reading NE (ligatured) on the base of a heel pipe of *c* 1620–60. Unidentified Chester maker. (302): Phase X, Plot 6, fill of (303); SF 8327. Ill 5.6.7.126.
- 11 Die no 1989. Relief stamped mark reading NE on the base of a heel pipe of *c* 1610–40. Unidentified Chester maker. Evaluation Trench F (26); SF 9873. Ill 5.6.7.124.
- 12 Die no 1991. Relief stamped mark reading IG on the base of a heel pipe of *c* 1610–40. (1406) (B): Phase VIII, Plot 3, fill of (1413). Ill 5.6.7.127.
- 13 Die no 1992. Relief stamped mark reading RG on the base of a heel pipe of *c* 1640–60. Probably an unidentified maker from the Nantwich area of Cheshire. U/S; SF 9137. Ill 5.6.7.139.
- 14 Die no 1993. Relief stamped mark reading WK (ligatured) on the base of a heel pipe of *c* 1610–40. Probably a London mark. (1601) (AH): Phase VII, Plot 4, fill of (1696). Ill 5.6.6.108.
- 15 Die no 1999. Relief stamped hexagonal mark with a bird and the initials AL across the stem of a pipe of *c* 1640–70. This mark can be attributed to Alexander Lanckton of Chester (*Jl* 1657, d 1670). (301): Phase X, Plot 6; SF 8131.
- 16 Die no 1994. Relief stamped mark reading HL on the base of a heel pipe of *c* 1640–60. Probably a Rainford (south Lancashire) maker. (1601): Phase VII, Plot 4, fill of (1696); SF 9565. Ill 5.6.7.138.
- 17 Die no 1998. Composite drawing of a relief stamped mark reading IL found on the base of two heel pipes of *c* 1610–40 (eg Ill 5.6.6.114). There is a similar IL mark from Eccleshall castle, Staffordshire. Drawing based on examples from contexts (1546): Phase VII, Plot 4; SF 9786 and (1556)/(1566): Phase VI, Plot 4; SF 9552.
- 18 Die no 1995. Composite drawing of a relief stamped mark reading M found on the base of two heel pipes of *c* 1610–40 (Ills 5.6.6.115 and .116). (663): Phase VII; SF 8667 and (1901), fill of (1902); SF 9423, both from Plot 1.
- 19 Die no 1996. Relief stamped mark reading AP on the base of a heel pipe of *c* 1630–60. Probably a London mark. (429) (B): Phase VI, Plot 3, fill of (850)/(430); SF 8555. Ill 5.6.7.120.
- 20 Die no 1997. Relief stamped mark reading IP on the base of a heel pipe of *c* 1680–1720. Coventry style bowl and stamp, attributable to John Pottifer, working at Coventry in 1710. U/S; SF 9793. Ill 5.6.8.149.
- 21 Die no 1984. Relief stamped *fleur de lis* mark across the stem of a pipe of *c* 1690–1715 made up of two joining fragments This pipe is very finely finished and has two shields, one above the other, each containing a single *fleur de lis*. Above and below these shields are two bands of milling, so neatly applied that it is impossible to see where each band starts or finishes. Made of a fine and probably imported fabric. This mark also occurs on the same pipe as a double milled border (Die no 826). Joining bowl from (463) (AE): Phase IX, fill of (465) and stem from (484): Phase IX, fill of (483); SF 8226; both Plot 2. Ill 5.6.9.161.
- 22 Die no 2000. Part of a new shield shaped Chester mark on a pipe of *c* 1690–1715. This is similar to the top of Die no 640, which includes the maker's initials RG (Rutter & Davey 1980, fig 52.10) but it is larger. This mark also occurs on the same pipe as a roll-stamped border, Die no 765 (Rutter & Davey 1980, fig 60, 52). (520): Phase VIII, Plot 6, fill of (519); SF 8381.
- 23 Die no 1768. Relief stamped Chester arms across the stem of a pipe of *c* 1700–30 This is on the same pipe as a heart and tendril border of previously unidentified form (Die no 1932; Ill 5.6.2.47). (301): Phase X, Plot 6; SF 8130.
- 24 Die no 703. Good impression of the Chester arms on a pipe of *c* 1730–60. This mark does not have a dot above the shield, unlike the 1980 drawing of the same die by Rutter & Davey (fig 56.49; their source material has been checked and none have a dot in this position). This mark also occurs on the same pipe as a decorative border (Die no 794; Rutter & Davey 1980, fig 61.81). (1867): Phase VIII, Plot 1, fill of (1866).
- 25 Die no 1770. Relief stamped arms with the motto 'FIDE.ET.CONS...' across the stem of a pipe of *c* 1700–20. The arms includes three crescents and the motto possibly ends with the letter 'A'. There is a very crisp tulip/heart/*fleur de lis* borders above and below arms (Die no 2008; Ill 5.6.2.46). (1406): Phase VIII, Plot 3, fill of (1413); SF 9350.
- 26 Die no 1967. Composite drawing of a relief stamped mark reading 'ELIAS MASSEY' across the stem of a pipe of *c* 1690–1710. This mark is associated with a stem border (Die no 733; Rutter & Davey 1980, fig 58.19). Examples from (1607): Phase VII, fill (1696); SF 9398 and (1546): Phase VII; SF 9355, both from Plot 4.
- 27 Die no 1968. Relief stamped mark reading 'ELIAS MASSEY' across the stem of a pipe of *c* 1690–1715. Shiny stem but no obvious burnishing lines. This mark is associated with a stem border (Die no 1975; Ill 5.6.2.39). (463): Phase VII, Plot 2, fill of (465); SF 8883.
- 28 Die no 1969. Heraldic mark comprising a bird sitting on a bundle of arrows stamped across the stem of a pipe of *c* 1690–1720. This has rather a thick burnished stem with a large bore. The mark is associ-

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- ated with a stem border (Die no 1971; Ill 5.6.2.37). (1892): Phase IX, Plot 1, cut; SF 9578.
- 29 Die no 1966. Heraldic mark comprising a swan's neck rising out of a coronet stamped across the stem of a pipe of *c* 1690–1720. The mark is associated with a stem border (Die no 1977; Ill 5.6.2.40). (1406): Phase VIII, Plot 3, fill of (1413); SF 9462.
  - 30 Die no 1769. Relief stamped mark with a lion and the initials TO across the stem of a pipe of *c* 1700–20. This TO stem stamp is similar to a mark already known from Chester (Die no 676; Rutter & Davey 1980, fig 55.22) but with a plain border, as is the case with an example from Warrington Old Academy (Higgins 1987b, fig 11.6). These marks can be attributed to either Thomas or Timothy Ormes of Chester. The mark is associated with a stem border (Die no 1932; Ill 5.6.2.47). (559): Phase VIII, Plot 6, fill of (519); SF 8408.
  - 31 Die no 681. Relief stamped rampant lion mark on a pipe of *c* 1700–1720. The mark is associated with a stem border (Die no 2004; Ill 5.6.2.44). (1404): Phase IX, Plot 3; SF 8948.
  - 32 Die no 1771. Relief stamped Masonic mark with the initials RG across the stem of a pipe of *c* 1760–1790. The mark is associated with a stem border (Die no 816; Rutter & Davey 1980, fig 61.104). (601): Phase IX, Plot 1; SF 8440.
  - 33 Die no 1970. Incuse stamped stem border on a pipe of *c* 1690–1720. This border is associated with a stem stamp (Die no 1168 which is a larger variant of Rutter & Davey 1980, fig 52.5). (1090): Phase IX, Plot 3; SF 8891.
  - 34 Die no 1972. Relief stamped stem border from a pipe of *c* 1750–60. This border is associated with other stem stamps (Die nos 31 and 668; Rutter & Davey 1980, figs 63.1 and 54.14 respectively). (344): Phase IX, Plot 6; SF 8400.
  - 35 Die no 1974. Relief stamped stem border from a pipe of *c* 1750–90. Appears to be a new border comprising a lattice pattern with dots. (1802): Phase X, Plot 1; SF 9511.
  - 36 Die no 1973. Relief stamped stem border from a pipe of *c* 1690–1720. (1891): Phase VII, Plot 1; SF 9399.
  - 37 Die no 1971. Relief stamped stem border from a pipe of *c* 1690–1720 that has rather a thick burnished stem with a large bore. This border is associated with a stem stamp (Die no 1969; Ill 5.6.1.28). (1892): Phase VII, Plot 1, cut; SF 9578.
  - 38 Die no 1976. Relief stamped stem border from a pipe of *c* 1710–1800. The top edge of the stamp is missing but it would have mirrored the bottom. (300): Phase X, Plot 6.
  - 39 Die no 1975. Relief stamped border across the stem of a pipe of *c* 1690–1715. Shiny stem but no obvious burnishing lines. This border occurs on the same pipe as the Elias Massey mark (Die no 1968; Ill 5.6.1.27). (463): Phase VII, Plot 2, fill of (465); SF 8883.
  - 40 Die no 1977. Relief stamped stem border from a pipe of *c* 1690–1720. This border is associated with a stem stamp (Die no 1966; Ill 5.6.1.29). (1406): Phase VIII, Plot 3, fill of (1413); SF 9462.
  - 41 Die no 2006. Relief stamped stem border from a pipe of *c* 1700–20. (558): Phase IX, Plot 6; SF 8407.
  - 42 Die no 2005. Relief stamped stem border from a pipe of *c* 1700–20. Glossy fabric but not burnished. The border starts 50 mm from the bowl junction. (1507): Phase VII, Plot 4, fill of (1506); SF 9115.
  - 43 Die no 2007. Relief stamped stem border from a pipe of *c* 1700–20. Very slag-encrusted stem. (1349): Phase X, Plot 4; SF 9119.
  - 44 Die no 2004. Relief stamped stem border from a pipe of *c* 1700–20. This border is associated with a stem stamp (Die no 681; Ill 5.6.2.31). (1404): Phase X, Plot 3, fill of (1404); SF 8948.
  - 45 Die no 761. Relief stamped stem border from a pipe of *c* 1700–20. This border is associated with a stem stamp (Die no 647; Rutter & Davey 1980, fig 53.7). (302): Phase X, Plot 6, fill of (303); SF 8137.
  - 46 Die no 2008. Relief stamped stem border from across the stem of a pipe of *c* 1700–20. The border is associated with a stem stamp depicting a coat of arms with three crescents and the motto 'FIDE.ET.CONS...', the last word possibly ending with an A (Die no 1770; Ill 5.6.1.25). (1406): Phase VIII, Plot 3, fill of (1413); SF 9350.
  - 47 Die no 1932. Relief stamped stem border from a pipe of *c* 1700–20 with a TO stem stamp across the stem (Die no 1769; Ill 5.6.1.30) for Thomas or Timothy Ormes of Chester. (559): Phase VIII, Plot 6, fill of (519); SF 8408.
  - 48 Die no 1934. Relief stamped stem border from a pipe of *c* 1700–30. This mark also occurs on the same pipe as Die nos 31 and 641 (Rutter & Davey 1980, figs 63.1 and 53.2 respectively). (1872): Phase VIII, Plot 1, fill of (1873); SF 9357.
  - 49 Die no 1933. Composite drawing based on three examples of a relief stamped stem border of *c* 1700–30. In all three instances the border is associated with a Talbot stem stamp (Die no 642; Rutter & Davey 1980, fig 53.2) and in one case the complete decorative scheme of two Talbots and two of these borders can be seen (Ill 5.6.9.162). Drawing based on examples from (301): Phase X, Plot 6; SF 8323; (1399): Phase X, Plot 3; SF 9497; and (1406): Phase VIII, Plot 3, fill of (1413); SF 9349.
  - 50 Die no 1243. Relief stamped stem border from a pipe of *c* 1720–60. This stem also has part of a Chester oval but it is too fragmentary to identify the individual die type. The tendril border has previously recorded at Beeston castle, but it is not in Rutter & Davey (1980). This composite drawing has been made from the 25 Bridge Street (1830): Phase IX, Plot 1; SF 9353 and Beeston castle examples.
  - 51 Die no 773. Relief stamped stem border from a pipe of *c* 1720–60. (201): Phase IX, Plot 1; SF 8135.
  - 52 Die no 2009. Relief stamped stem border from a pipe of *c* 1720–60. (1830): Phase IX, Plot 1; SF 9785.
  - 53 Die no 2010. Relief stamped stem border from a pipe of *c* 1760–90. New type of tendril border with three lines of flanking geometric borders. Incomplete example, but the triple border is very distinctive. (438): Phase X, Plot 2; SF 8377.
  - 54 Die no 1978. Composite drawing of a relief stamped mark reading 'FITZGERALD CHESTER' along the stem of a pipe of *c* 1770–1830. A number of pipe-makers by the name Fitzgerald were working in Chester between *c* 1716 and *c* 1840. There are three

- likely candidates for this particular mark, James I (c 1784–1835), James II (c 1773–1828) or Joseph II (c 1792–1840). Drawing based on three fragmentary examples, all from Plot 1: (601): Phase IX; SFs 8438 and 8439; and (653): Phase VIII. The fragment from (653) joins (601) SF 8439.
- 55 Die no 1767. Relief stamped mark reading AIRES CHESTER along the stem of a pipe of c 1780–1830. Another example of this mark with its associated bowl form is shown in Ill 5.6.10.176. (1802): Phase X, Plot 1; SF 9509.
- 56 Die no 1765. Incuse stamped mark reading 'EVER-GREEN' above a shamrock motif facing the smoker on the bowl of a spurless pipe of c 1860–1920. This particular bowl shape was generally known as a 'Gladstone'. The stamp has been applied upside-down on this pipe, the surface of which has been sanded, probably to take a "meerscham wash" finish. (1096) (D): Phase IX, Plot 2. Ill 5.6.5.90.
- 57 Die no 1766. Incuse stamped mark reading 'ISLAND BRIDGE' facing the smoker on the bowl of a spurless pipe of c 1860–1900. Irish style bowl with hand impressed milling around the rim. (1096): Phase IX, Plot 2; SF 8845. Ill 6.5.5.91.
- Bowls and stems**
- 58 Spur bowl of c 1640–70. The rim is internally trimmed and bottered and three-quarters milled; the stem bore is 6/64". The surface has a good burnish. (1507) (BY): Phase VII, Plot 4, fill of (1506).
- 59 Spur bowl of c 1640–70. The rim is bottered and fully milled; the stem bore is 6/64". The surface has a good burnish. (1507) (CO): Phase VII, Plot 4, fill of (1506).
- 60 Spur bowl of c 1640–70. The rim is bottered and fully milled; the stem bore is 7/64". The surface has a good burnish. (1507) (BL): Phase VII, Plot 4, fill of (1506).
- 61 Spur bowl of c 1640–70. The rim is bottered and fully milled; the stem bore is 7/64". The surface has a good burnish. (1507) (DM): Phase VII, Plot 4, fill of (1506).
- 62 Spur bowl of c 1640–70. The rim is bottered and fully milled; the stem bore is 8/64". The surface is not burnished. (1507) (CU): Phase VII, Plot 4, fill of (1506).
- 63 Spur bowl of c 1690–1720. The rim is bottered but not milled; the stem bore is 7/64". The surface has a good burnish and the bowl has a slightly earlier looking, more cylindrical form to the other associated bowls from the same pit group. (1503) (AD): Phase X, Plot 5.
- 64 Joining spur bowl fragments of c 1690–1720 made in the same mould as bowls F, G H and I from this context. This mould is characterised by three very clear flaws just above the spur on the right-hand side of the bowl. The rim of this example is cut but not milled; the stem bore is 7/64". The surface is not burnished. (1503) (E): Phase X, Plot 5.
- 65 Spur bowl of c 1690–1720 with a surviving stem length of 149 mm. The rim is cut but not milled; the stem bore is 7/64". This bowl is distinguished from others in its group by having a particularly large, wide-mouthed form and a chunky spur. The surface is not burnished. (1503) (J): Phase X, Plot 5.
- 66 Spur bowl of c 1690–1720 with a surviving stem length of 212 mm. The rim is cut but not milled; the stem bore is 6/64". The surface has a good burnish. A long, low ridge (mould flaw) running up from the spur on the left-hand side of the bowl distinguishes this mould type. Another example from the same mould was found in (1504) (E): Phase VII, Plot 4, fill of (1522). This example is from (1503) (Q): Phase X, Plot 5.
- 67 Spur bowl of c 1690–1720 and joining fragments making up a complete pipe. The rim is possibly wiped but not milled; the stem bore is 7/64". The surface has an average burnish. This mould type is characterised by a series of long, low lines (mould flaws) running back from the bowl on both sides of the stem. Six other examples from this mould were identified, five from (1503) (C, K, N, M and U): Phase X, Plot 5, and one from 1504 (D): Phase VII, Plot 4, fill of (1522). This example is from (1503) (A).
- 68 Spur bowl of c 1690–1720. The rim is bottered but not milled; the stem bore is 6/64". The surface is too abraded to tell whether or not it was burnished originally. (1503) (AE): Phase X, Plot 5.
- 69 Heel bowl of c 1690–1720 with a surviving stem length of 138 mm. The rim is cut but not milled; the stem bore is 7/64". The surface is not burnished. (1503) (R): Phase X, Plot 5.
- 70 Spur bowl and three two stem fragments from (1601) which join with two stems from (1599) to make up an almost complete pipe of c 1710–20. Stem bore variable from 5–6/64" along its length. The rim is cut and wiped but not milled. The surface has a fine burnish all over. (1601) (A) and (1599): both Phase VII, Plot 4, fill of (1696).
- 71 Spur bowl of c 1710–20. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1604): Phase VII, Plot 4, fill of (1696); SF 9269.
- 72 Spur bowl of c 1710–20. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1601) (L): Phase VII, Plot 4, fill of (1696).
- 73 Spur bowl of c 1710–20. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1604) (N): Phase VII, Plot 4, fill of (1696).
- 74 Spur bowl of c 1710–20. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1604) (O): Phase VII, Plot 4, fill of (1696).
- 75 Spur bowl of c 1710–30. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1601) (S): Phase VII, Plot 4, fill of (1696).
- 76 Spur bowl of c 1710–30. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1601) (T): Phase VII, Plot 4, fill of (1696).
- 77 Probably a heel bowl of c 1670–1720. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1601) (W): Phase VII, Plot 4, fill of (1696).
- 78 Heel bowl of c 1710–20. No obvious burnishing lines but the surface is very glossy; stem end freshly broken but not joining fragment in this group. The rim is cut but not milled; the stem bore is 5/64". (1601) (P): Phase VII, Plot 4, fill of (1696).

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- 79 Heel bowl of *c* 1710–20. The base of the heel has not been trimmed. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1604) (I): Phase VII, Plot 4, fill of (1696).
- 80 Heel bowl of *c* 1690–1715. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1601) (V): Phase VII, Plot 4, fill of (1696).
- 81 Heel bowl of *c* 1710–20. The rim is cut but not milled; the stem bore is 7/64". The surface has a good burnish. (1601) (U): Phase VII, Plot 4, fill of (1696).
- 82 Heel bowl of *c* 1700–20. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1601) (X): Phase VII, Plot 4, fill of (1696).
- 83 Heel bowl of *c* 1710–20. The rim is cut and possibly wiped but not milled; the stem bore is 7/64". The surface has a light but good burnish. (1599) (J): Phase VII, Plot 4, fill of (1696).
- 84 Heel bowl of *c* 1690–1720. The rim is cut and possibly wiped as well as being milled (probably three-quarters originally); the stem bore is 5/64". The surface has a good burnish. (1599) (N): Phase VII, Plot 4, fill of (1696).
- 85 Heel bowl of *c* 1710–20. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1601) (F): Phase VII, Plot 4, fill of (1696).
- 86 Heel bowl of *c* 1710–20. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1601) (E): Phase VII, Plot 4, fill of (1696).
- 87 Stem fragment of *c* 1860–80 with a stamped mark reading 'E S... / BRO...'. There is an unusual moulded 'collar' around the mid-section of the stem and part of an E. Southorn stem stamp from Broseley in Shropshire. This is similar to Die no 29 but incomplete so it cannot be identified to an exact match. This stem most likely dates to Edwin Southorn's period of production (1858–76) although the same mark was occasionally used later by William Southorn & Co. Stem bore is 5/64". The surface has a good burnish. (1096): Phase IX, Plot 2; SF 9162.
- 88 Spurless bowl of *c* 1860–1900 with a moulded mark reading 'BURNS CUTTY / BURNS CUTTY' in very neatly executed lettering. Appears to be from the same mould as SF 8847 from this context. The rim is cut but not milled; the stem bore is 4/64". The surface is not burnished. (1096): Phase IX, Plot 2; SF 8846.
- 89 Spurless bowl of *c* 1860–1967 with a moulded mark reading 'MC... / ...W'. Almost certainly a product of McDougall's of Glasgow, who were working from 1846 until 1967. The rim is cut but not milled; the stem bore is 4/64". The surface is not burnished. (1096) (C): Phase IX, Plot 2.
- 90 Spurless bowl of *c* 1860–1920 stamped with a shamrock motif above which is the lettering 'EVERGREEN' (Die no 1765). This particular pipe bowl shape was known as a Gladstone. The stamped mark has been applied upside-down. The surface of the bowl has been sanded, probably to take a "meerschau wash" finish. The rim is cut but not milled; the stem bore is 4/64". (1096) (D): Phase IX, Plot 2.
- 91 Spurless bowl of *c* 1860–1900 with a stamped mark reading 'ISLAND BRIDGE' (Die no 1766). Irish style bowl with hand impressed milling around the rim. The rim is cut and fully milled; the stem bore is 5/64". The surface is not burnished. (1096): Phase IX, Plot 2; SF 8845.
- 92 Heel bowl of *c* 1580–1610 with a stamped 'snowflake' mark (Die no 1983). This is a particularly early bowl with a bead rim and at least six 'snowflake' stamps forming a pattern on the stem, a design known to have been in use *c* 1600–1610. The rim is bottered but not milled; the stem bore is 5/64". The surface has a fine burnish. (1819): Phase VIII, Plot 1; SF 9275.
- 93 Heel bowl of *c* 1580–1610, very crudely finished and with a distinctive reduced core to the fabric. The rim is cut but not milled; the stem bore is 6/64". The surface has a good burnish. (316) (A): Phase IX, Plot 6, fill of (315).
- 94 Heel bowl of *c* 1580–1610 which appears to have been burnt. The rim is bottered but not milled; the stem bore is 7/64". The surface has an average burnish. (384): Phase IX, Plot 6, fill of (345).
- 95 Heel bowl of *c* 1580–1610. The rim is bottered but not milled; the stem bore is 7/64". The surface has an average burnish. (1604) (A): Phase VII, Plot 4, fill of (1696).
- 96 Stem fragment of *c* 1580–1610 with a very marked taper. The stem bore is 8/64". The surface has a good burnish right to the tip of the mouthpiece. (338): Phase IX, Plot 6, fill of (337).
- 97 Heel bowl of *c* 1610–40 made of a coarse local fabric. The rim is bottered and fully milled; the stem bore is 8/64". The surface has an average burnish. (454) (A): Phase X, Plot 4.
- 98 Heel bowl of *c* 1610–40 made of a coarse local fabric. The rim is bottered and fully milled; the stem bore is 8/64". The surface has a good burnish. (455) (D): Phase VIII, Plot 4.
- 99 Heel bowl of *c* 1610–40. The rim is bottered and fully milled; the stem bore is 7/64". The surface has a fine burnish. (1617): Phase X, Plot 4.
- 100 Heel bowl of *c* 1620–40. The rim is bottered but not milled; the stem bore is 6/64". The surface has a good burnish. (1514) (A): Phase VII, Plot 4, fill of (1506).
- 101 Heel bowl of *c* 1610–40. The rim is bottered and fully milled; the stem bore is 8/64". The surface has a good burnish. (656): Phase VIII, Plot 1, fill of (657).
- 102 Heel bowl of *c* 1630–50. The rim is bottered and milled; the stem bore is 7/64". The surface is not burnished. (301) (E): Phase X, Plot 6.
- 103 Heel bowl of *c* 1620–40. An average quality bowl with some folds visible in the surface of the clay. All of the surviving rim is milled and this pipe may well have been fully milled originally. The rim is bottered; the stem bore is 7/64". The surface is not burnished. (385): Phase X, Plot 6.
- 104 Heel bowl of *c* 1630–50 made of a coarse local fabric. The rim is bottered and fully milled; the stem bore is 8/64". The surface is not burnished. (420): Phase X, Plot 2.
- 105 Heel bowl of *c* 1610–40 made of a coarse local fabric. The rim is bottered and fully milled; the stem bore is unmeasureable. The surface has an average burnish. (455) (A): Phase VIII, Plot 4.
- 106 Heel bowl of *c* 1610–40 made of a coarse local fabric. The rim is bottered and fully milled; the stem bore is 8/64". The surface is not burnished. (455) (C): Phase VIII, Plot 4.



- 107 Heel bowl of *c* 1610–40 made of a coarse local fabric. The rim is bottered and fully milled; the stem bore is 8/64". The surface is not burnished. (455) (B): Phase VIII, Plot 4.
- 108 Heel bowl of *c* 1610–40 with a stamped mark with the ligatured initials WK (Die no 1993). The rim is bottered and fully milled; the stem bore is unmeasurable. The surface has a good burnish. (1601) (AH): Phase VII, Plot 4, fill of (1696).
- 109 Heel bowl of *c* 1610–10 with a stamped wheel mark (Die no 1979). The rim is bottered but not milled; the stem bore is 7/64". The surface has a good burnish. (1871): Phase VIII, Plot 1, fill of (1812); SF 9356.
- 110 Heel bowl of *c* 1620–50 with a stamped star mark (Die no 1980). The rim is bottered and fully milled; the stem bore is 8/64". The surface has a good burnish. (1414): Phase X, Plot 3, fill of (1415); SF 9409.
- 111 Heel bowl of *c* 1610–50 with a stamped wheel mark (Die no 1981). Very shiny surface but no obvious burnishing lines suggesting that it is not burnished. The rim is bottered and fully milled; the stem bore is 6/64". (1371): Phase VIII, Plot 4, fill of (1545; SF 9236.
- 112 Heel bowl of *c* 1610–40 with a stamped wheel mark (Die no 910). The rim is bottered and milled; the stem bore is 7/64". The surface has a good burnish. (663): Phase VII, Plot 1; SF 8225.
- 113 Heel bowl of *c* 1610–50 with a stamped crossed keys mark, which is very similar to Die no 532 but with very slight differences in detail – perhaps indicating two working dies created from the same master. The rim is bottered and fully milled; the stem bore is 8/64". The surface is not burnished. (456): Phase IX, Plot 4, fill of (1365); SF 9118.
- 114 Heel bowl of *c* 1610–40 with a stamped mark reading IL (Die no 1988). Similar example from Eccleshall castle, Staffordshire. Another example recovered from this site – (1546), SF 9786. The rim is bottered and fully milled; the stem bore is 7/64". The surface has a good burnish. Two labels in this finds bag; one for (1556) and one for (1566): both Phase VI, Plot 4; SF 9552.
- 115 Heel bowl of *c* 1610–40 with a stamped mark reading M (Die no 1995). Possibly the same die as that on a heel fragment from (663), SF 8667 (III 5.6.6.116). The rim is bottered and fully milled; the stem bore is 7/64". The surface is not burnished. (1901): Phase VIII, Plot 1, fill of (1902); SF 9423.
- 116 Heel bowl of *c* 1610–40 with a stamped mark reading M (Die no 1995). Possibly the same die as that on a heel bowl from (1901), SF 9423 (III 5.6.6.115). Stem bore 8/64". The surface is not burnished. (663): Phase VII, Plot 1; SF 8667.
- 117 Heel bowl of *c* 1610–40. The rim is bottered and fully milled; the stem bore is 7/64". The surface is not burnished. (386) (B): Phase X, Plot 6, fill of (385).
- 118 Heel bowl of *c* 1630–50. The rim is bottered and milled; the stem bore is 9/64". The surface has a good burnish. (1111) (D): Phase VII, Plot 3.
- 119 Heel bowl of *c* 1630–50 with no obvious burnishing lines, but a very glossy surface. The rim is bottered but not milled; the stem bore is 8/64". (429) C: Phase VI, Plot 3, fill of (850)/(430).
- 120 Heel bowl of *c* 1630–60 with a stamped mark reading AP (Die no 1996). The rim is bottered and fully milled; the stem bore is 8/64". The surface is not burnished. (429) (B): Phase VI, Plot 3, fill of (850)/(430); SF 8555.
- 121 Heel bowl of *c* 1610–40 with 13 stamped 'snowflake' marks (Die no 1986), which make up two lozenges on the stem – the first is made up of nine stamps, second is made up of four. The rim is bottered but not milled; the stem bore is 7/64". The surface has a fine burnish. Possibly a Dutch import. (429) (A): Phase VI, Plot 3, fill of (850)/(430); SF 8648.
- 122 Heel bowl of *c* 1630–50, the stem of which is decorated with milled bands. The rim is bottered and milled; the stem bore is 6/64". The surface is not burnished. (1111): Phase VII, Plot 3; SF 9794.
- 123 Heel bowl of *c* 1610–40 with the border of a circular heel mark. The rim is bottered but not milled; the stem bore is 6/64". The surface has a good burnish. (237) (A): Phase VII, Plot 1; SF 9258.
- 124 Heel bowl of *c* 1610–40 with a stamped mark reading NE (Die no 1989). The rim is bottered but not milled; the stem bore is 6/64". The surface has a good burnish. Evaluation Trench F (26); SF 9873.
- 125 Heel bowl of *c* 1620–60 with a ligatured NE stamp within a heart shaped border (Die no 1990). Stem bore 8/64". The surface is not burnished. (301) (L): Phase X, Plot 6; SF 9304.
- 126 Heel bowl of *c* 1620–60 with a ligatured NE stamp within a circular border (Die no 1988). Stem bore 7/64". The surface is not burnished. (302): Phase X, Plot 6, fill of (303); SF 8327.
- 127 Heel bowl of *c* 1610–40 with a stamped mark reading IG (Die no 1991). Stem bore is 7/64". The surface is not burnished. (1406) (B): Phase VIII, Plot 3, fill of (1413).
- 128 Heel bowl of *c* 1610–40. The rim is bottered but not milled; the stem bore is unmeasurable. The surface is not burnished. (663) (C): Phase VII, Plot 1.
- 129 Heel bowl of *c* 1610–40. The rim is bottered but not milled; the stem bore is 7/64". The surface is not burnished. (663) (B): Phase VII, Plot 1.
- 130 Heel bowl of *c* 1610–40. The rim is bottered but not milled; the stem bore is 6/64". The surface is not burnished. (663) (A): Phase VII, Plot 1.
- 131 Very neatly finished heel bowl of *c* 1620–40. The rim is bottered but not milled; the stem bore is 7/64". The surface is not burnished. (237) (B): Phase VII, Plot 1.
- 132 Heel bowl of *c* 1620–40. The rim is bottered but not milled; the stem bore is 8/64". The surface is not burnished. (237) (C): Phase VII, Plot 1.
- 133 Heel bowl of *c* 1620–40. The rim is bottered but not milled; the stem bore is 7/64". The surface is not burnished. (1906) (B): Phase X, Plot 1, fill of (1907).
- 134 Heel bowl of *c* 1630–50. The rim is bottered but not milled; the stem bore is 7/64". The surface is not burnished. (663) (F): Phase VII, Plot 1.
- 135 Heel bowl of *c* 1640–60. The rim is bottered but not milled; the stem bore is 7/64". The surface is not burnished. (301) (G): Phase X, Plot 6.
- 136 Heel bowl of *c* 1650–70. The rim is internally trimmed and bottered but not milled; the stem bore is 7/64".

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- The surface is not burnished. (237) (J): Phase VII, Plot 1.
- 137 Heel bowl of *c* 1640–60. The rim is bottered and milled; the stem bore is 6/64". The surface is not burnished. (406): Phase X, Plot 3.
- 138 Heel bowl of *c* 1640–60 with a stamped mark reading HL (Die no 1994). The rim is bottered and milled; the stem bore is 8/64". The surface is not burnished. (1601): Phase VII, Plot 4, fill of (1696); SF 9565.
- 139 Heel bowl of *c* 1640–60 with a stamped mark reading RG (Die no 1992). The rim is bottered and fully milled; the stem bore is 5/64". The surface has a good burnish. U/S; SF 9137.
- 140 Miniature heel bowl of *c* 1630–60. The rim is bottered and fully milled; the stem bore is 6/64". The surface has a fine burnish. This pipe is made of a coarse clay, probably from the local coal-measure deposits, suggesting that it was made in Chester itself. The seams have some sharp lines scored along them, partially burnished over, which look like the trimming marks found on pipes from the Low Countries. (1111) (A): Phase VII, Plot 3.
- 141 Spur bowl of *c* 1610–40. The rim is bottered and fully milled; the stem bore is 7/64". The surface has a good burnish. (1887) (A): Phase VII, Plot 1.
- 142 Spur bowl of *c* 1610–40. The rim is bottered and fully milled; the stem bore is 6/64". The surface has a good burnish. (1599) (A): Phase VII, Plot 4, fill of (1696).
- 143 Spur bowl of *c* 1620–40. The rim is bottered and fully milled; the stem bore is 8/64". The surface has a good burnish. (824): Phase VII, Plot 6, fill of (925).
- 144 Spur bowl of *c* 1630–50 with a stem bore of 5/64". The surface is not burnished. (300) (B): Phase X, Plot 6.
- 145 Spur bowl of *c* 1640–60 with a stamped Rainford style mark on the bowl facing the smoker reading GA (Die no 1982). There are at least two bands of milling visible on surviving stem. The rim is bottered and fully milled; the stem bore is 8/64". The surface has an average burnish. (659): Phase VII, Plot 2; SF 8653.
- 146 Joining spur bowl and stem of *c* 1640–80 in coarse gritty fabric. The bowl has a good burnish and part of the stem is burnished, but there is a band around the bowl/stem junction that has not been burnished. The rim is bottered and fully milled; the stem bore is 7/64". (459): Phase VII, Plot 2.
- 147 Spur bowl of *c* 1660–80 (two joining fragments). The rim is bottered but not milled; the stem bore is 6/64". The surface has a poor burnish. (229): Phase VIII, Plot 1, fill of (228).
- 148 Heel bowl of *c* 1660–1720. This is a strange heel form, which does not appear to be local. Stem bore 8/64". The surface has an average burnish. (441): Phase IX, Plot 1.
- 149 Heel bowl of *c* 1680–1720 with a stamped mark reading IP (Die no 1997). Coventry style bowl and stamp, attributable to John Pottifer, recorded working at Coventry in 1710. The rim is bottered and fully milled; the stem bore is 5/64". The surface is not burnished. U/S; SF 9793.
- 150 Heel bowl of *c* 1660–90 with a very large round heel. Although part of the rim is clearly broken in more recent times but it would appear that it had been broken and ground down prior to deposition, perhaps for reuse after it had become damaged. Traces of a ground edge can clearly be seen around the line of milling. The rim milled; the stem bore is 6/64". The surface has a good burnish. (488) (B): Phase VIII, Plot 2.
- 151 Heel bowl of *c* 1690–1720 with a stem bore of 5/64". The surface is not burnished. (316) (D): Phase IX, Plot 6, fill of (315).
- 152 Heel bowl of *c* 1680–1720. The rim is possibly cut but not milled; the stem bore is 6/64". The surface is not burnished. (301) (L): Phase X, Plot 6.
- 153 Heel bowl of *c* 1680–1720. The rim is wiped but not milled; the stem bore is 5/64". The surface is not burnished. (301) (M): Phase X, Plot 6.
- 154 Heel bowl of *c* 1690–1720. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1891) (D): Phase VII, Plot 1.
- 155 Heel bowl of *c* 1690–1720. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (325): Phase IX, Plot 6, fill of (326).
- 156 Heel bowl of *c* 1710–20. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1546) (O): Phase VII, Plot 4.
- 157 Heel bowl of *c* 1710–20. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1546) (P): Phase VII, Plot 4.
- 158 Heel bowl of *c* 1720–50. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (559) (D): Phase VIII, Plot 6, fill of (519).
- 159 Heel bowl of *c* 1720–50 with an irregular internal bowl mark comprising a number of relief lines. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1406) (C): Phase VIII, Plot 3, fill of (1701).
- 160 Heel fragment of *c* 1700–50 with an internal bowl cross and very edge of a stem border surviving, but not enough to identify the die. Stem bore 6/64". The surface is not burnished. (1700) (B): Phase VIII, Plot 3, fill of (1701).
- 161 Heel pipe of *c* 1690–1715 made up of two joining fragments from different contexts. This pipe is very finely finished and has two shield shaped marks, one above the other, each containing a single *fleur de lis*, on the stem (Die no 1984). Above and below these shields are two bands of milling, so neatly applied that it is impossible to see where each band starts or finishes (Die no 826). Made of a fine and probably imported fabric. Joining bowl from (463) (AE): Phase VII, fill of (465) and stem from (484): Phase IX, fill of (483); SF 8226, both Plot 2.
- 162 Heel bowl of *c* 1700–30, the stem of which is stamped with two talbot ovals and two borders (Die nos 642 and 1933 respectively). The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1406): Phase VIII, Plot 3, fill of (1413); SF 9349.
- 163 Heavily smoked spur bowl of *c* 1700–30. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1406) (Q): Phase VIII, Plot 3, fill of (1413).
- 164 Heel bowl of *c* 1700–30. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1406) (G): Phase VIII, Plot 3, fill of (1413).

- 165 Spur bowl of *c* 1690–1710 with a stem border (similar to Die no 717). The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (1406): Phase VIII, Plot 3, fill of (1413); SF 9461.
- 166 Spur bowl of *c* 1700–30. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (1406) (E): Phase VIII, Plot 3, fill of (1413).
- 167 Spur bowl of *c* 1690–1740, possibly from same mould as bowl B from the same context. The rim is cut but not milled; the stem bore is 6/64". The surface is not burnished. (456) (A): Phase IX, Plot 4, fill of (1365).
- 168 Spur bowl of *c* 1690–1720. The rim is wiped but not milled; the stem bore is 8/64". The surface is not burnished. (463) (P): Phase VII, Plot 2, fill of (465).
- 169 Spur bowl of *c* 1690–1720. The rim is wiped but not milled; the stem bore is 7/64". The surface has a good burnish. (301) (K): Phase X, Plot 6.
- 170 Spur bowl of *c* 1740–1800 with a very thin spur; the surface of the bowl is burnt. The rim is cut but not milled; the stem bore is 5/64". The surface is too burnt to tell whether or not it was burnished originally. (206): Phase IX, Plot 1, fill of (205).
- 171 Spur bowl of *c* 1690–1720. Only a very small part of the rim survives so it is difficult to say how it is finished, but it appears to have been cut but not milled. Stem bore 6/64". The surface is not burnished. (440) (C): Phase VII, Plot 2.
- 172 Spur bowl of *c* 1740–1800. The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (424): Phase X, Plot 2, fill of (423).
- 173 Spur bowl of *c* 1760–1800 with a moulded mark. Large, thin-walled, bowl that is unusual for Chester in that it has moulded maker's initials on the heel. The Christian name has been chipped away and the surname was damaged during production, but appears to comprise the letter C or O, placed upright on the heel (an unusual orientation). The rim is cut but not milled; the stem bore is 5/64". The surface is not burnished. (821) (D): Phase IX, Plot 6, fill of (820).
- 174 Spur bowl of *c* 1810–40. The rim is cut but not milled; the stem bore is 4/64". The surface is not burnished. (469) (A): Phase IX, Plot 2.
- 175 Heel bowl of *c* 1800–50. This is one of three bowls from the same context with leaf decorated seams, all of which appear to have been made from the same mould. The rim is cut but not milled; the stem bore is 4/64". The surface is not burnished. (208): Phase IX, Plot 1.
- 176 Spur bowl of *c* 1780–1830 with a stamped stem mark reading 'AIRES / CHESTER' (Die no 1767). The rim is cut but not milled; the stem bore is 5/64". The surface has a good burnish. (1802) (B): Phase X, Plot 1.
- 177 Heel bowl of *c* 1840–1920 with the broken end of stem faceted by rubbing – possibly used to write graffiti or smoothed for reuse as an extremely short pipe. Stem bore 6/64". The surface is not burnished. (300) (A): Phase X, Plot 6.
- 178 Spurless bowl of *c* 1870–1920, this particular style of bowl generally being known as a 'Woodstock'. The rim is cut but not milled; the stem bore is 4/64". The surface is not burnished. (386) (A): Phase X, Plot 6, fill of (385).
- 179 Stem fragment of *c* 1640–1740 which had been rubbed on one side to give an undulating profile that cuts through into the stem bore. This may have been done to make a simple whistle out of the pipe. Stem bore 7/64". The surface is not burnished. (1098): Phase VII, Plot 3, fill of (1189).
- 180 Stem fragment of *c* 1690–1730 which has been ground smooth at one end. Stem bore 7/64". The surface has a good burnish. (1503): Phase X, Plot 5.
- 181 Stem fragment of *c* 1680–1730, 47 mm in length with both ends ground smooth, possibly for reuse as a hair curler. Stem bore 7/64". The surface is very scratched and abraded but it is also very glossy between these marks, suggesting that it was given a good burnish originally. (325): Phase IX, Plot 6, fill of (326); <5020>.
- 182 Part of a coiled pipe, probably dating to *c* 1780–1830. The fragment has been very badly burnt. Stem bore 4/64". (1802): Phase X, Plot 1.
- 183 Half of a hair-curler dating to *c* 1700–1800. Quite a good form with striations around the body, probably from rolling against a shaped former. End cut and unmarked. (601): Phase IX, Plot 1.
- 184 Half of a hair-curler dating to *c* 1700–1800. Very neat, well made form with a cut end, which has been stamped with a neat incuse WB mark. (208): Phase IX, Plot 1.
- 185 Hand-rolled strip of pipe clay which has been slightly squashed between two opposing surfaces, resulting in one end being more flattened than the other. Strips such as this were commonly used when loading pipe kilns for firing and this fragment almost certainly represents waste from a pipe kiln. (301): Phase X, Plot 6.

### Acknowledgements

I am grateful to Dr Susie White, who compiled almost all of the detailed pipe catalogue for this project. She also prepared the majority of the bowl form drawings, set and edited all the final digital images ready for publication and proof read the draft text. All of the detailed die drawings are by the author.

5 Portable artefacts/Clay tobacco pipes and other pipeclay objects



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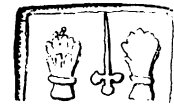
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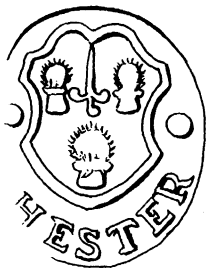
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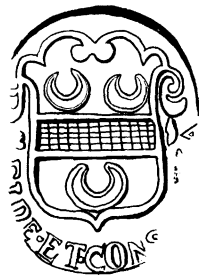
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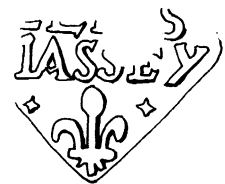
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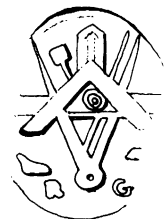
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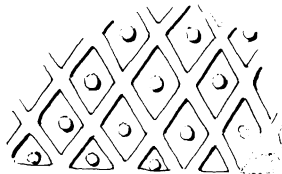
III 5.6.1 Clay tobacco pipe stamps 1-32. (Scale 2/1)



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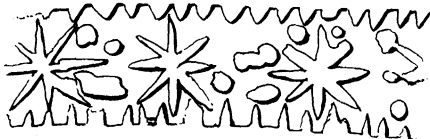
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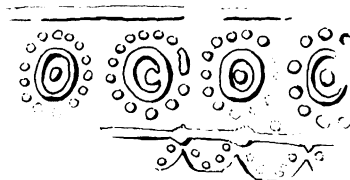
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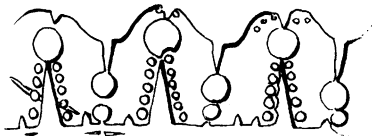
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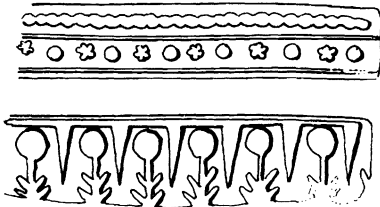
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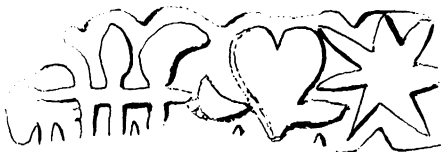
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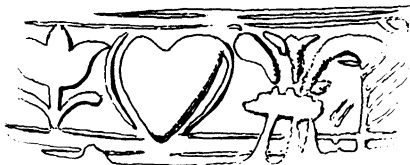
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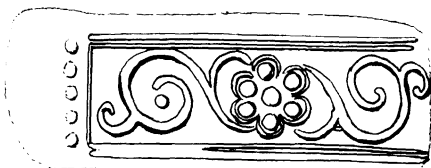
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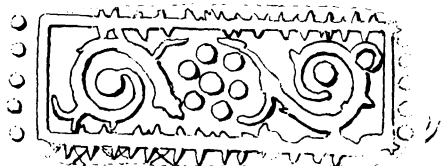
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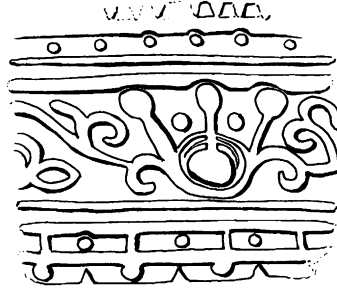


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III 5.6.2 Clay tobacco pipe stamps 33–49. (Scale 2/1)



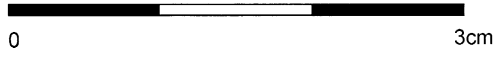
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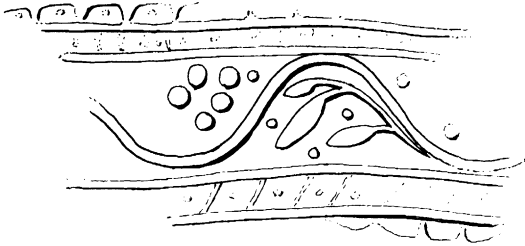
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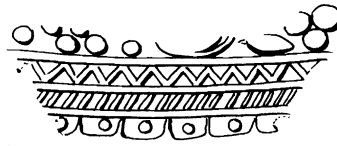
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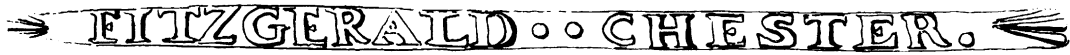
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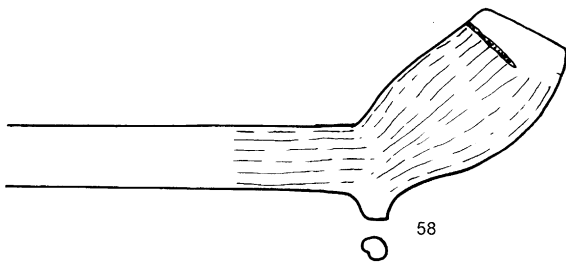
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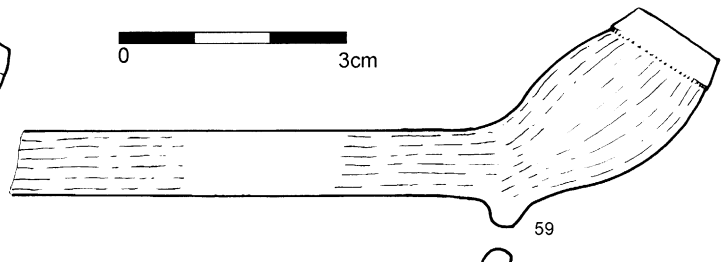
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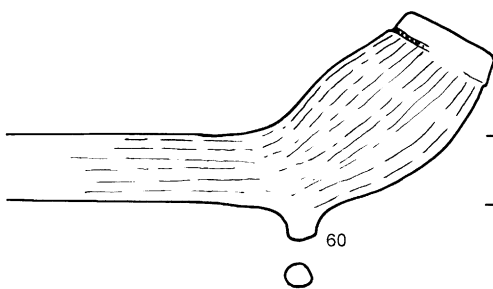
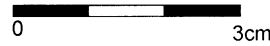
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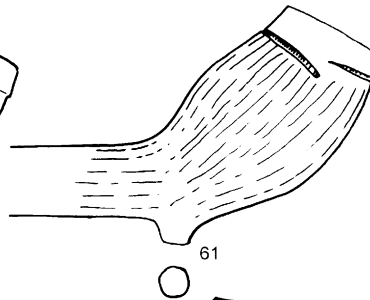
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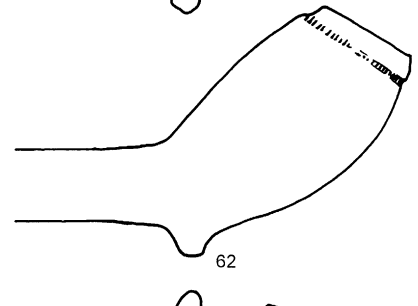
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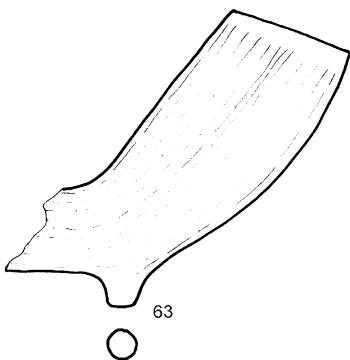
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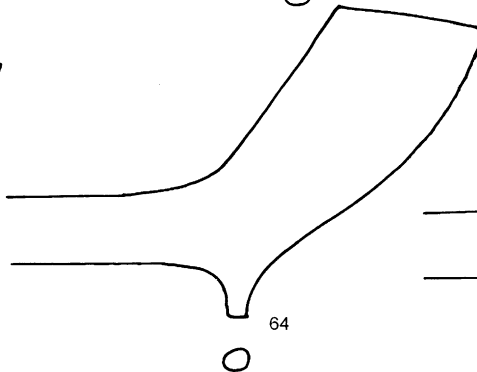
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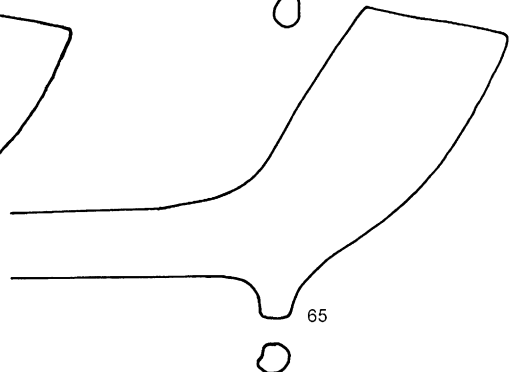
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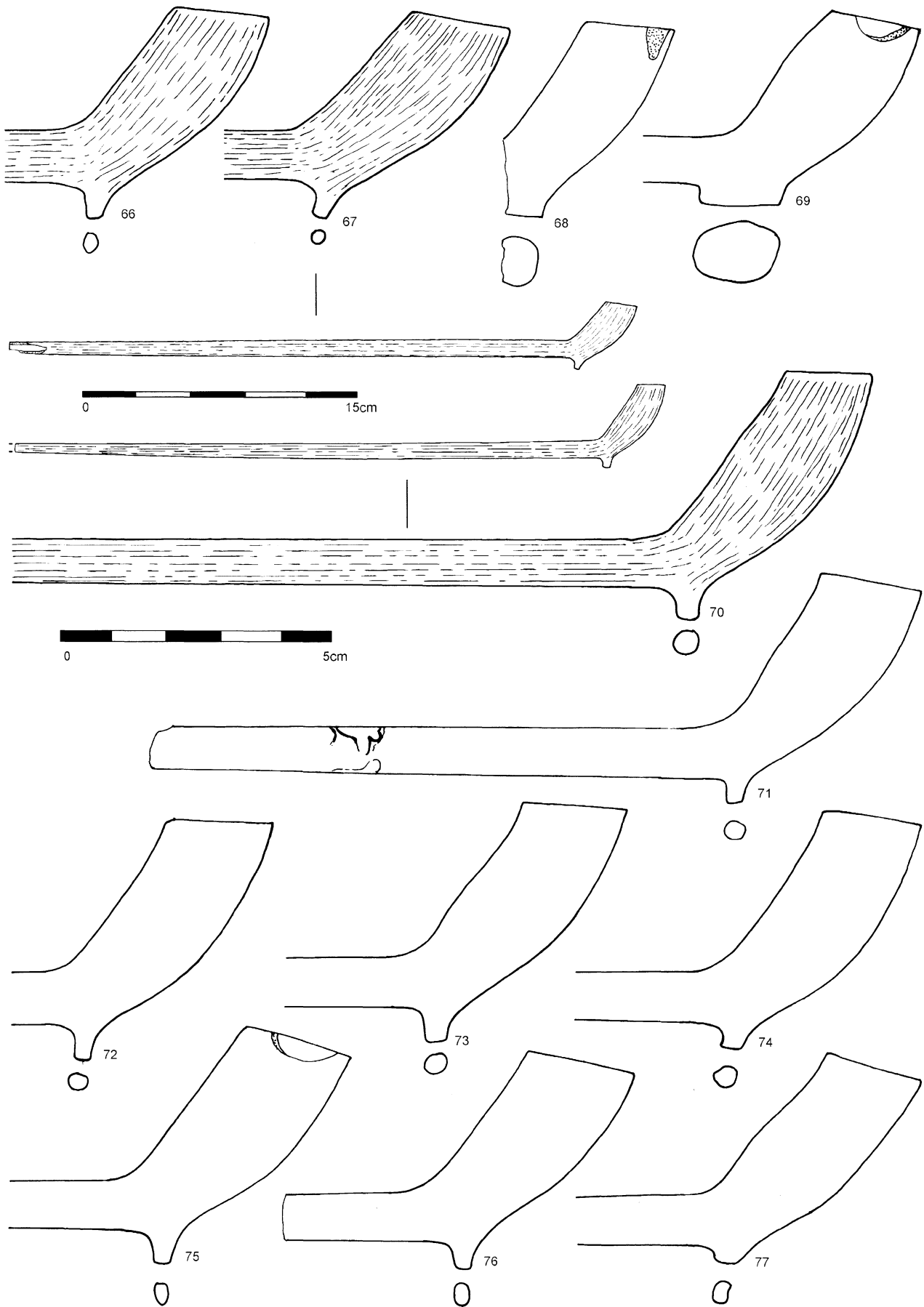


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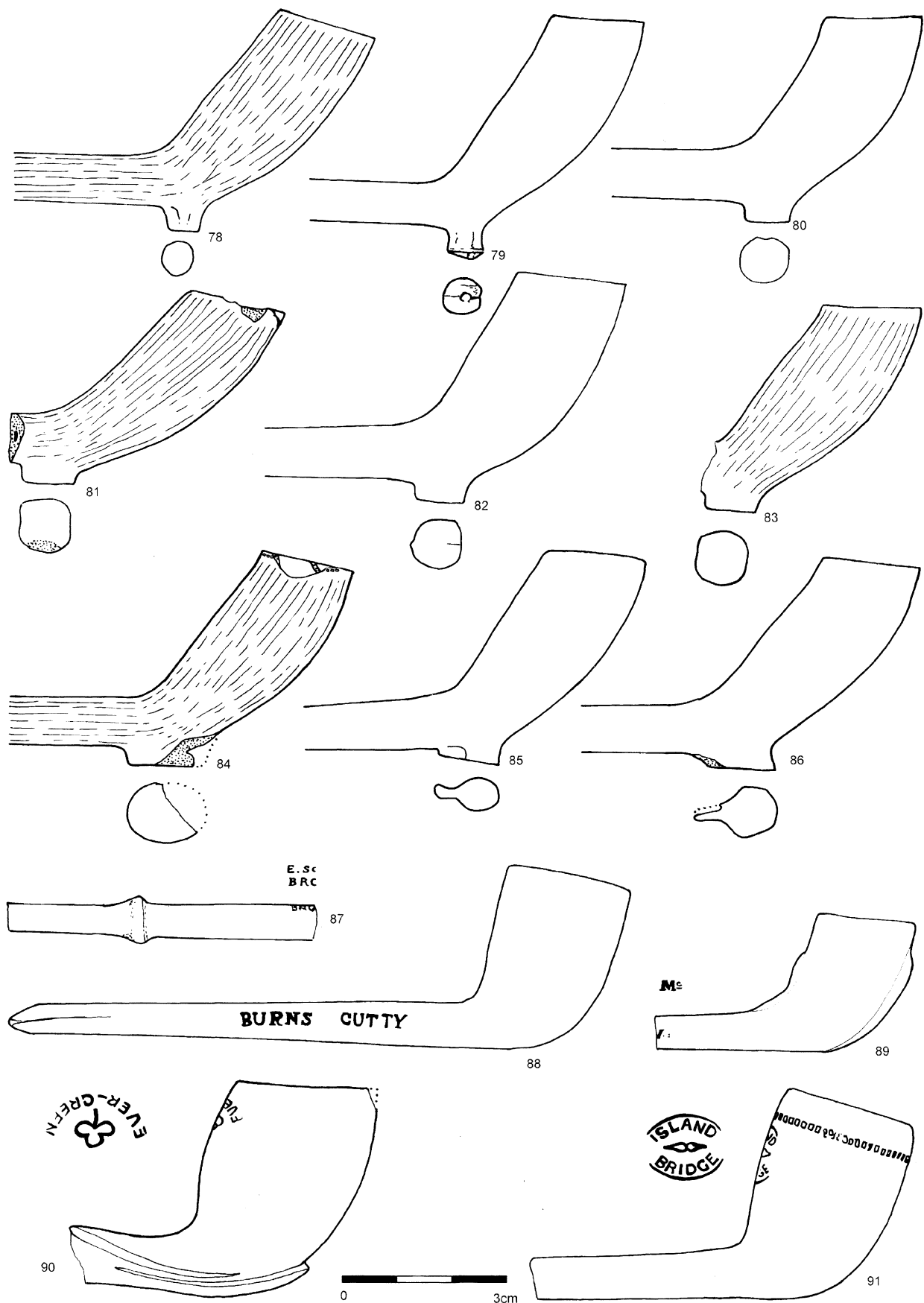
65

III 5.6.3 Nos 50-7 clay tobacco pipe stamps (Scale 2/1); nos 58-62 kiln wasters of c 1640-70 from Phase VII Plot 4 context (1507) (Scale 1/1); nos 63-5 part of Phase VII Plot 4 pit group (1522) c 1700. (Scale 1/1)



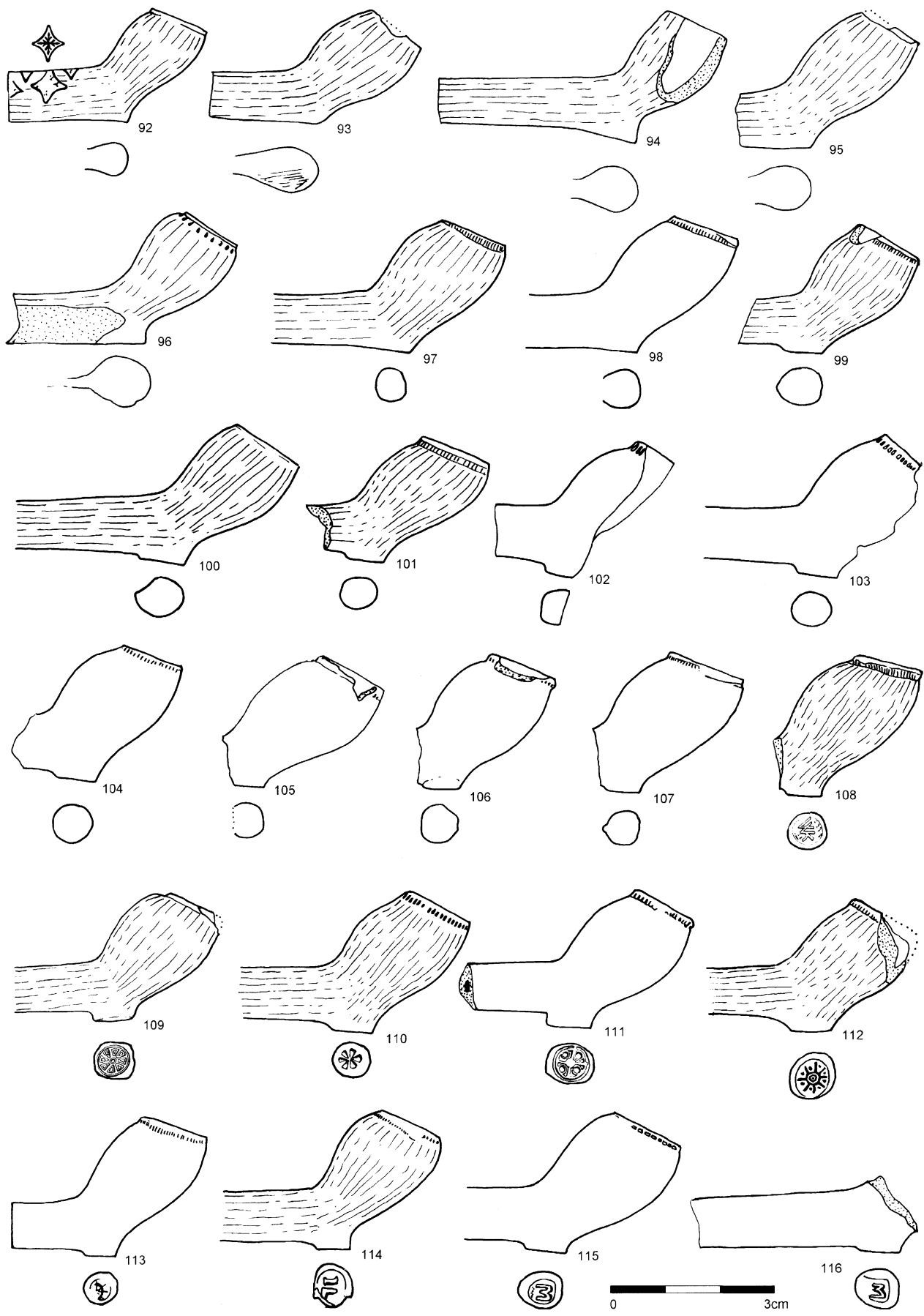
III 5.6.4 Phase VII Plot 4: clay tobacco pipes from pits (1522) c 1700 (nos 66-9) and (1696) c 1710 (nos 70-7). (Scale: bowls 1/1; complete pipes 1/3)

5 Portable artefacts/Clay tobacco pipes and other pipeclay objects



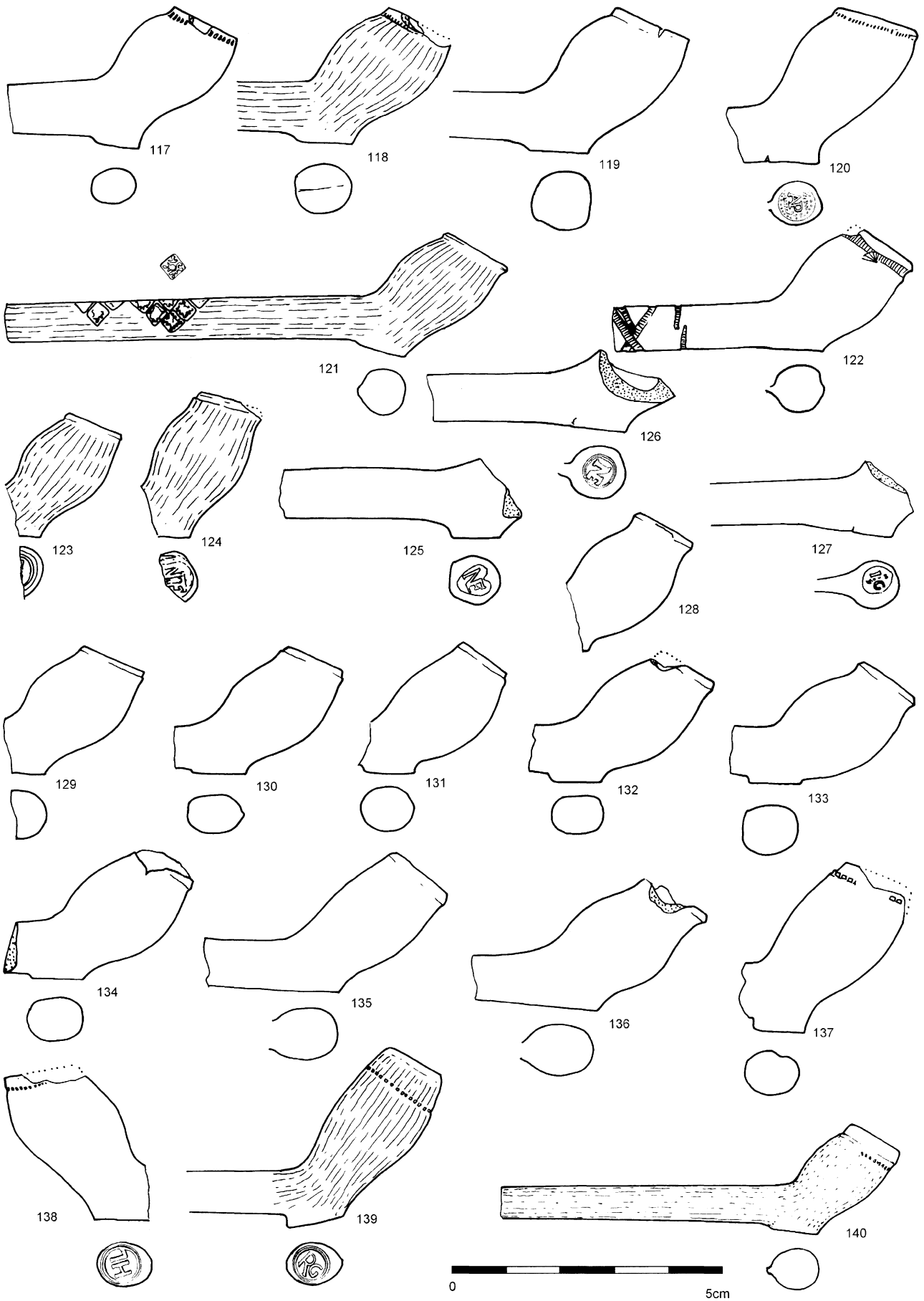
III 5.6.5 Clay tobacco pipes from Phase VII Plot 4 pit (1696) c 1710 (nos 78–86) and Phase IX Plot 2 layer (1096) c 1860–80 (nos 87–91). (Scale 1/1)



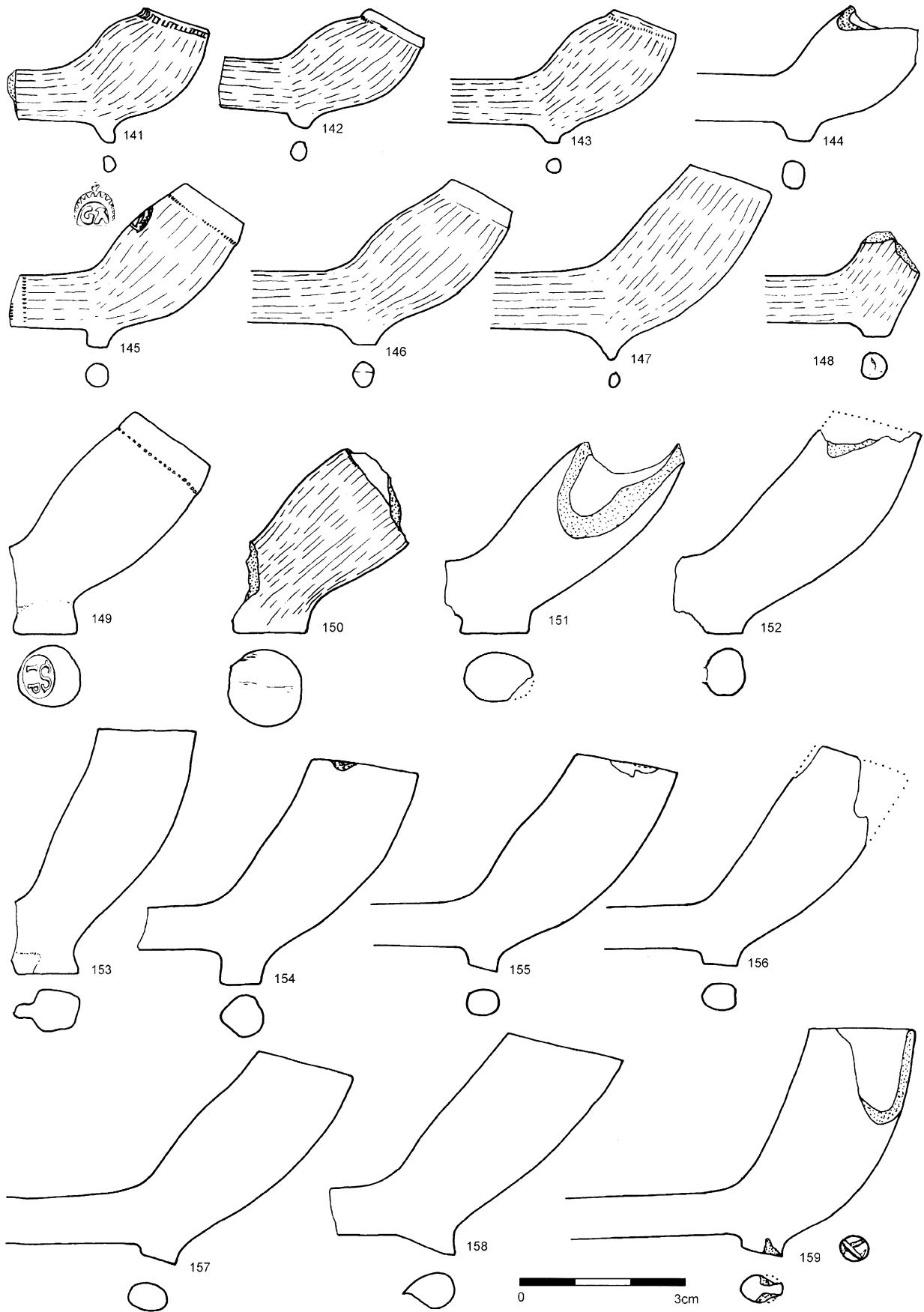


III 5.6.6 Clay tobacco pipe bowl forms ranging from c 1580 to 1640. (Scale 1/1)

5 Portable artefacts/Clay tobacco pipes and other pipeclay objects

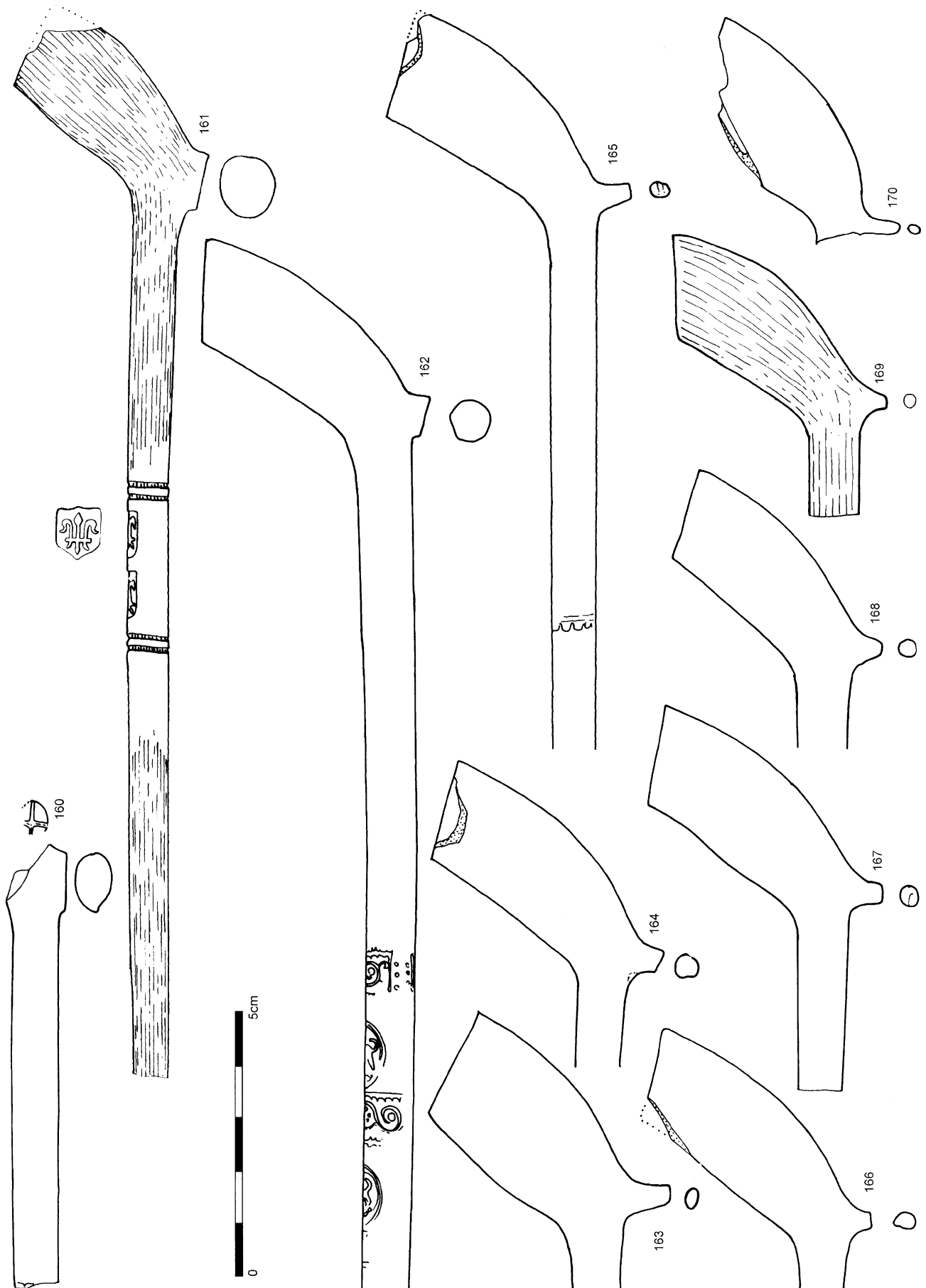


III 5.6.7 Clay tobacco pipe bowl forms ranging from c 1610 to 1660. (Scale 1/1)

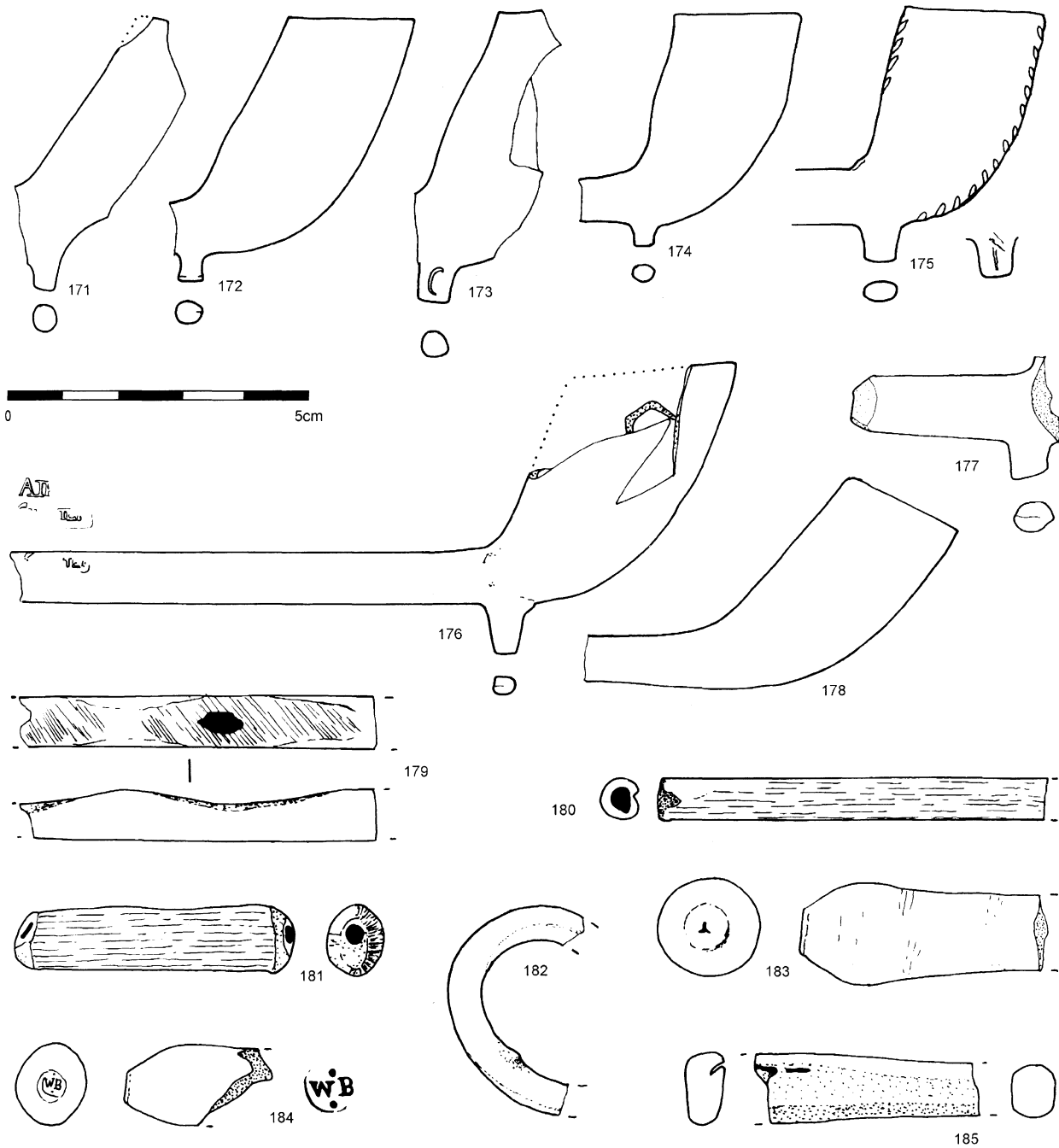


III 5.6.8 Clay tobacco pipe bowl forms ranging from c 1610 to 1720. (Scale 1/1)

5 Portable artefacts/Clay tobacco pipes and other pipeclay objects



III 5.6.9 Clay tobacco pipe bowl forms ranging from c 1690 to 1800. (Scale 1/1)



III 5.6.10 Clay tobacco pipe bowl forms ranging from c 1690 to 1920 (nos 171–8); modified or reworked stems (nos 179–82); hair curlers (nos 183–4); kiln debris (no 185). (Scale 1/1; detail of hair curler stamp 2/1)

Note on Table 5.6.5

This table provides a summary of the clay tobacco pipe evidence from the site. The phase and plot numbers are given first, followed by the context number and then the numbers of bowl (B), stem (S) or mouthpiece (M) fragments recovered from that context. These three columns are then added to show the total number of pipe fragments from the context as a whole. The overall date range of the pipes from each context is then given, followed by a suggested deposition date, based on the latest datable pipe fragments present (Deposit date). A summary of the makers' marks from each context (Marks) is then given,

followed by the total number of different stem stamps and stem borders present within that context. A brief note is then made of any notable or decorated pieces (Dec etc) and the illustration numbers for any illustrated examples. Bowl fragments, especially if they are marked, are much more closely datable than stem fragments. For this reason, the number and type of fragments present should be taken into account when assessing the reliance that can be placed on the suggested context dates given here.

**Table 5.6.5** Clay tobacco pipes: total amount quantified by phase, plot, context and part (No B = no of bowl fragments; No S = no of stem fragments; No M = no of mouthpiece fragments; Stem stamps = no of different stem stamps; Stem borders = no of different stem borders)

Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments	
IV	6	1034		1		1	1710-1800	1710-1800							
V	1	260		1		1	1710-1800	1710-1800						Plain 18-cent stem.	
		1893	2			2	1610-1660	1640-60							
	2	503		2		2	1610-1740	1610-1740						Shiny surface but no obvious burnishing lines visible.	
		771		1		1	1710-1800	1710-1800							
		879		1		1	1610-1710	1610-1710							
		1334		1		1	1710-1800	1710-1800							
	3	870		2		2	1690-1780	1690-1780							
	6	1052		1		1	1710-1800	1710-1800							
	VI	1	246		1	1	2	1610-1710	1610-1710						Plain 17-cent stem and mouthpiece.
			766		1		1	1610-1710	1610-1710						
2		671	2	2		4	1610-40	1640-1700						All closely datable fragments are pre-1700. Spur fragment only; most likely to be 18-cent	
		746	1			1	1700-70	1700-70							
3		429	4	17	1	22	1610-1900	1800-1900	AP; Snowflake			Stem stamps	2, 19, 119-121	All bowls are c 1610-60. Most of stems are 17-cent but include some 18-cent fragments and one apparently 19-cent piece.	
		800		13		13	1610-1710	1610-1710							
		1702		2		2	1710-1800	1710-1800							
4		1540		1		1	1610-1710	1610-1710						Finds from bags with two labels, reading 1556 and 1566. Includes a bowl of c 1610-40 stamped IL. There is a similar example from Eccleshall castle, Staffordshire and another example recovered from context 1546 SF 9786.	
		1556/1566	1	1		2	1610-1750	1650-1750	IL				17, 114		
		1561		1		1	1610-1710	1610-1710							
	1600	2		1	3	1610-1710	1640-1700								
	1618		1		1	1710-1800	1710-1800								
VII	1	26		2		2	1610-1910	1610-1910						Chips from sieving. All diagnostic forms are 1610-80 with latest types c 1650-80. Sieving chips gave broad date. Marked heel fragment of c 1610-60. Good, consistent looking group with bowls all ranging from 1610-60 - most likely deposition c 1640-60.	
		237	15	44	1	60	1610-1910	1650-80	illegible		ground stem	123, 131-32, 136			
		243	1	1		2	1610-1710	1610-60	Wheel				18, 112, 116, 128-130, 134		
	663	16	48	2	66	1610-1710	1640-60	M; wheel							
		664		3		3	1610-1710	1610-1710							
		665	2	13		15	1610-1710	1620-60							
		667	1	3		4	1610-1710	1630-50							
		670	9	47		56	1610-1910	1700-50							
		1884	4	19		23	1610-1750	1690-1720	NT						
		1887	5	15	1	21	1610-1750	1690-1750	AL				141		
		1891	10	58	2	70	1610-1760	1690-1720					36, 154		
		1897	6	7		13	1610-1760	1730-60		1	1				
		1898		3		3	1610-50	1610-50							

Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments		
VII	2	440	3	24		27	1610-1800	1710-1800					171			
		459	1	10		11	1610-1710	1640-80					146	All 17-cent type fragments with bowl dating from c 1640-80.		
		463	45	140	7	192	1610-1750	1710-30	PL; Lozenge; Elias Massey		2		27, 39, 161, 168	Bowls all range from 1650 to 1750 but with a high proportion of 1690-1730 forms and likely deposition date of c 1710-30. Good looking context. Bowl and decorated stem joins decorated stem in 484.		
		464	32	125	3	160	1610-1840	1710-20	illegible					Large group with a range of bowl forms from c 1810 onwards. Latest forms appear to be c 1710-20 although one odd, damaged bowl could be later - perhaps intrusive.		
		472	3	25		28	1610-1730	1660-1730							Mainly 17-cent material (up to c 1710), but one or two pieces appear to be 18-cent.	
		482	3	6		9	1610-1800	1660-1800								
		491	6	21		27	1610-1750	1710-30								
		659	1			1	1640-60	1640-60	GA	1				7, 145	Rainford style mark on the bowl facing the smoker; at least two bands of milling visible on surviving stem.	
		1304		1		1	1710-1800	1710-1800								
		1309	2	7		9	1690-1730	1710-20							Two joining fragments.	
		1312			1	1	1610-1710	1610-1710								
		1343		1		1	1610-1710	1610-1710							Burnt.	
		1454		4		4	1610-1710	1610-1710								
		1627		2		2	1610-60	1610-60								
		1628		2		2	1610-60	1610-60								
		3	1098		7	1	8	1610-1800	1700-40					?whistle	179	Includes one modified stem with holes bored n it, possibly to create a whistle.
			1107			3	3	1610-1710	1610-1710							
1111	18		70	3	91	1610-1800	1690-1720	EG		1		ground stem	118, 122, 140	All bowls range from 1630 to 1680 except for two fragments, which are c 1690-1730. Group includes one miniature bowl.		
1190				1	1	1610-1710	1610-1710									
1191				6	7	1630-1710	1630-1710									
1193	12		61	6	79	1640-60	1640-60	?A?L; GL						All bowls date from between 1640 and 1680 and all would fit with 1640-660 deposition. Just one 18-cent-looking stem - could be intrusive?		
4	1495		1		1	1610-40	1610-40							Heel fragment only; no obvious burnishing lines but surface very shiny.		
	1504		5	11	2	18	1610-1730	1690-1720								
	1505			1	1	1	1610-1710	1610-1710								
	1507	137	564	45	746	1610-1720	1640-70/ 1690-1720						42, 58-62	Very large group comprising two elements. The bulk of the material forms a tight group of c 1640-70 made up almost entirely of spur forms, which may represent a kiln dump. There is, however, also a small element of 1690-1720 material, which forms a second group within this context.		
	1509		4	8	12	12	1640-1750	1690-1720								

Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments
VII	4	1513	3	44	2	49	1610-1910	1690-1715						Includes general date from sieving chips.
		1514	2	5		7	1610-1710	1620-40					100	Two early bowls of c 1620-50 plus three 17-cent-type stems.
		1533	8	12		20	1610-1800	1710-1730						
		1546	23	53	1	77	1610-1800	1710-20	IL; ELIAS MASSEY	2	2		17, 26, 156-7	A little residual 17-cent material but almost all the remainder of early 18-cent date.
		1550		1		1	1610-1710	1610-1710						
		1551		3		3	1610-1710	1610-1710						
		1552		4	1	5	1610-1800	1700-1800						All 17-cent or early 18-cent plus one stem of general 18-cent type.
		1554	3	1		4	1660-1800	1680-1710						
		1558	1		1	2	1610-1710	1640-60						Bowl fragment of c 1640-60 plus a 17-cent-style mouthpiece.
		1559	1	10	2	13	1610-1800	1700-1800						
		1592	5	16	2	23	1610-1800	1700-1800						Bowls all range between 1630 and 1680 but group appears to contain a few 18-cent stems.
		1598		1		1	1610-1710	1610-1710						
		1599	15	48	1	64	1610-1910	1710-30	ELIAS MASSEY	1	1		83, 84, 142	Overall range distorted by chips from sieving. Some residual material, primarily of c 1630-80, but the majority a good early 18-cent group. Cross joins found with 1601, including an almost complete pipe.
		1601	37	83	6	126	1610-40	1710-30	Wheel; ?A?L; AL; HL; WK			ground stem	14, 16, 70, 72, 75-8, 80-2, 85-6, 108, 138	Some residual material, mainly of c 1610-1710, but principally a good group of c 1710-30. Cross joins with 1599 found, including an almost complete pipe.
		1604	18	42	2	62	1580-1800	1710-20		1	1		71, 73-4, 79, 95	Residual element ranging from c 1580 to 1650, but most forms a good group of c 1710-20.
		1607	9	49	4	62	1610-1910	1710-30	ELIAS MASSEY				26	A little residual early 17-cent material but almost all the remainder of late 17-cent to early 18-cent date. Sieving chips produced misleadingly wide date range, none of more diagnostic fragments had a range of later than c 1750. Misleadingly wide overall date because of a chip from sieving.
		1608	1	1	2	4	1610-1910	1610-1710						
		1625		1		1	1690-1710	1690-1710			1			
		1695	2	8		10	1610-1910	1660-1730						
		1699	1	10		11	1610-1910	1610-40						Bowl of 1610-40 plus two 17-cent stems and some widely dated chips from sieving.
		1881	1			1	1610-1910	1610-1910						Chip from sieving.
	6	389		2		2	1610-1710	1710-1800						
		686		1		1	1610-1710	1610-1710						
		824	1			1	1620-40	1620-40					143	
VIII	1	207	6	36		42	1610-1850	1700-50?						Mainly small sieving chips, which are hard to date. Most of other material looks 18-cent and latest really diagnostic piece is c 1700-50.
		218	3	13	1	17	1610-1800	1710-1800						
		220		1		1	1710-1800	1710-1800						Plain 18-cent stem.



Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments
VIII	1	221	1	5		6	1610-1710	1610-60	illegible					Small heel fragment of 1610-60 with part of a stamp visible; other stems all 17-cent types.
		222		1		1	1610-1710	1610-1710						Plain 17-cent stem.
		223	5	4	1	10	1610-1910	1640-60	Fleur de lis			stem stamps	3	Late date derived from poorly attributable chips; all diagnostic pieces are early to mid-17 cent.
		225		7	1	8	1610-1800	1710-1800						Mixed 17- and 18-cent stems.
		227		3		3	1610-1800	1710-1800						Mixed 17- and 18-cent stems.
		229	1	5		6	1610-1710	1660-80					147	Bowl and joining stem of c 1660-80.
		233		1		1	1610-1710	1610-1710						Plain 17-cent stem.
		235		1		1	1710-1800	1710-1800						Plain 18-cent stem.
		604		1		1	1690-1750	1690-1750						
		643	1	3		4	1640-60	1640-60						Bowl of c 1640-60 and three 17-cent pieces of stem.
		653		12		12	1610-1710	1770-1830	FITZGERAL..				54	Latest piece part of a Fitzgerald stamp that cross joins with a piece in context 601.
		656	2	9		11	1610-1850	1750-1850			1		101	
		1812		3	1	4	1650-1820	1750-1820						
		1813		2		2	1750-1820	1760-1820			1			
		1819	6	20		26	1580-1720	1710-20	Fleur de lis			ground stem	1, 92	Mixed bowls of c 1580-1670, including a decorated example of c 1580-1610, plus one bowl of early 18-cent date.
		1821	6	28		34	1610-1820	1710-60						Mixed 17-cent and 18-cent material.
		1837		3		3	1690-1750	1690-1750						
		1867		2		2	1750-1850	1750-1850					24	
		1871	1	16		17	1610-40	1610-40	Wheel				6, 109	Bowl stamped with wheel mark, c 1610-40, plus stems of c 1610-60 type.
		1872	1	5		6	1610-1800	1720-1800		1	1		48	
		1879		1		1	1610-60	1610-60						
		1885	1	3		4	1610-1850	1750-1850						
		1901	1	4		5	1610-60	1620-40	M				18, 115	Bowl stamped 'M'; possibly the same die as a heel fragment from context 663.
	2	488	2	4		6	1610-1710	1660-90					150	
		847	5	23		28	1630-50	1660-80?						Bowls all between 1630 and 1680 - all other fragments match except two apparently 18-cent stems. Could be intrusive?
		1305		1		1	1610-1710	1610-1710						
		1307	2	3		5	1610-1800	1710-20						
		1308		18	3	21	1610-1710	1610-1710						
		1417		1		1	1610-1710	1610-1710						
		1421	2	10		12	1640-80	1700-1800						Both bowls c 1640-80 but stems appear to include 18-cent types.
		1432	1	17		18	1610-1710	1660-80						
		1439	4	3		7	1610-1730	1690-1730						
		1645		3		3	1710-1800	1710-1800						
	3	1405	3	11		14	1610-1840	1750-1840						
		1406	23	96	4	123	1610-1750	1700-30	IG	4	7		12, 25, 29, 40, 46, 49, 127, 159, 162-6	Odd residual pieces but almost all a good early 18-cent group, including borders and a new coat of arms with motto.
		1407		1		1	1640-1710	1640-1710						
		1408	1			1	1620-60	1620-60	Star					
		1435	1	3		4	1610-1710	1610-1640						
		1437	2	3		5	1610-1910	1610-1910						Bowl of c 1610-40 plus three 17-cent stems.
		1448		1		1	1610-1710	1610-1710						Chips from sieving.
		1449		2		2	1710-1800	1710-1800						
		1610			1	1	1610-1710	1610-1710						
		1637		3		3	1710-1800	1720-60		1	1			
		1684	4	21		25	1610-1750	1690-1750						
		1687		1		1	1610-60	1610-60						
		1700	2	25	1	28	1640-1800	1720-50		2	2		160	

Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments
VIII	3	1701	11	23	1	35	1660-1750	1710-30						Almost all late 17-cent to early 18-cent material with a deposition date in early 18-cent likely.
	4	455	19	80	5	104	1610-1910	1690-1730					98, 105-7	Mixture of 17- and 18-cent stems. The bowls all range from 1610 to 1730, suggesting a deposit accumulating over this period with final sealing c 1690-1730. The deposit produced sieving chips with general date of 1610-1910 only. Pottery from this context cross joins with the 'big pit' complex and includes a post-1702 AR excise stamp.
		1357	2	1		3	1710-1800	1720-50						
		1371	3	1		4	1610-1710	1640-60	Wheel				5, 111	Three bowls all between 1630-60; one with a wheel stamp.
		1524		5		5	1710-1800	1800-1900						Four 18-cent type stems and one of 19-cent type.
		1535	1	13		14	1620-50	1620-50?						Bowl dates from c 1620 to 1650 and all other stems are of 17-cent type apart from one, which appears to be 18-cent.
		1539	2	20		22	1620-1760	1740-60			1			Both bowls date from c 1620 to 1650 and all stems except one could be contemporary. The exception is an 18-cent dec stem. If this were intrusive, could be a 1620-50 deposit.
	6	341	8	36		44	1610-1910	1710-1800						Includes poorly datable sieving chips.
		349		2		2	1610-1710	1610-1710						Plain 17-cent stems.
		515		2		2	1610-1910	1610-1910						Chips from sieving
		520	6	28	1	35	1610-1910	1710-1800		1	2		22	Latest well dated piece c 1710-20, so could be an early 18-cent deposit.
		534		1		1	1710-1800	1710-1800						
		559	6	48	1	55	1610-1800	1720-50		1	1		158	All bowls date to before c 1750.
		633	1	1		2	1610-40	1610-40						Bowl of c 1610-40 and a 17-cent stem.
		715		2		2	1640-1710	1640-1710						
		1573		2		2	1650-1750	1650-1750						
IX	1	11		4		4	1690-1750	1690-1750						
		201	1	74	1	76	1610-1840	1770-1840	RG; ...D CHES...	3	3	ground end	51	Mainly 18-cent-early 19-cent finds; latest piece a Fitzgerald stem stamp of c 1770-1840.
		206	1	3	1	5	1610-1800	1740-1800					170	Very thin spur; surface of the bowl burnt.
		208	21	85	3	109	1610-1910	1800-50				8 frags with leaf dec seams	175	Appears to be good contemporary group of c 1800-50 with several pipes from the same mould.
		211	1	3		4	1750-1850	1800-50				Leaf dec seams		Plain bowl fragment.
		212	1			1	1740-90	1740-90				glazed stem		Material of mixed date - latest is 19-cent.
		217	7	21	3	31	1610-1910	1800-1900						Plain 17-cent stem.
		230		1		1	1610-1710	1610-1710						Mixed 17- and 18-cent pipes.
		441	1	20		21	1610-1800	1710-1800	ELIAS MASSEY	1			148	
		577		1		1	1750-1850	1750-1850						Latest bowl is c 1710-20, but other stems of general 18-cent type.
		581	3	24		27	1610-1800	1710-20				green glaze and red wax	32, 54	Mixed finds including two Fitzgerald stems and traces of coated mouthpieces. One of the Fitzgerald stamps joins with a piece in context 653.
		601	8	54	1	63	1610-1910	1800-1910	...ERALD CHESTER; ...D CH...	1	3			One a piece of 17-cent stem, ground at one end; possibly used as a piece of chalk.
		640		5		5	1610-1800	1710-1800						Only a faint trace of a border survives - not enough to identify the die.
		644		1		1	1610-1710	1610-1710						
		1809		1		1	1690-1750	1690-1750			1			

Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments
IX	1	1815		1		1	1610-1710	1610-1710						
		1818		7	1	8	1720-1820	1720-1820						
		1828		2		2	1720-1800	1720-1800						
		1830	2	7		9	1610-1850	1750-1810		1	2		50, 52	Joining fragments.
		1839		4		4	1610-1660	1610-60						
		1869		8		8	1720-1820	1720-1820						
		1892		12	1	13	1660-1750	1690-1750		1			28, 37	
		1912	1	3		4	1610-1720	1690-1720						Heel fragment only.
		1913	1	4	1	6	1610-1710	1660-80						
	2	418	7	35	1	43	1610-1920	1860-1920	420					All bowls c 1660-80 apart from one of c 1690-1730. But stems are mixed 17- and 18-cent types and there is one late 19-cent stem with a moulded pattern number on it. 18-cent stems plus one chip from sieving. Plain 17-cent stem. Plain stem fragment. 174 Some residual material but mainly 19 cent to early 20 cent in date.
		451	1	3		4	1610-1910	1710-1800						
		452		1		1	1610-1710	1610-1710						
		457		1		1	1610-1710	1610-1710						
		469	8	25	2	35	1610-1920	1850-1920	Ring & dot			5 with leaves etc		
	470		1		1	1610-50	1610-50							
	484		4		4	1610-1800	1710-1800		1	1		21, 161	Includes a very finely finished stem with two shields, one above the other, each containing a single <i>fleur de lis</i> . Above and below these shields are two bands of milling, so neatly applied that it is impossible to see where each band starts or finishes – joins bowl fragment in 463.	
	1096	7	25	1	33	1610-1920	1860-1920+	2 x BURNS CUTTY/ BURNS CUTTY; SLAND BRIDGE; MC... / ...W; EVERGREEN.			green glaze	56, 57, 87-91	Latest types in production into 20 cent and including a McDougall's fragment; working until 1967.	
	1109		1		1	1800-1900	1800-1900				green glaze		Stem broken near mouthpiece end, pale green glaze visible. Iron stained.	
	1114		4		4	1640-1800	1710-1800							
	1187		1		1	1710-1800	1710-1800							
	1201	6	24	2	32	1610-1800	1710-20						Looks like a good early 18-cent group of bowls. Latest clearly diagnostic pieces are two stems of c 1810-50 with crude leaf decorated seams.	
	1286	1	16		17	1640-1920	1810-50				2 stems with leaf dec seams			
3	1090	5	17	1	23	1610-1800	1690-1720	AL	2	1		33	Latest bowl of c 1690-1720; two stems of general 18-cent types and a mouthpiece of c 1790-1840 with red wax coating. Appears much later than the other elements of this group – possibly intrusive.	
	1433		2		2	1610-1710	1610-1710							
4	456	7	73	12	92	1610-1750	1720-40	Cross?				113, 167	Some residual 17-cent bowls but later examples all cluster c 1690-1740 with most likely date of deposition c 1720-40. Appears to be a good deposit.	
	1279	1			1	1710-20	1710-20							
	1280		1	1	2	1710-1800	1710-1800							
	1491		2		2	1610-1800	1710-1800				ground stem		One 17-cent piece ground at one end.	
	1527		2		2	1610-1710	1610-1710							
5	1476	1	8		9	1650-1750	1690-1720							
	1486	10	33		43	1610-1910	1660-90		1				All bowls range from 1640-1700; sieving chips responsible for broad date of 1610-1910.	

Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments
IX	6	316	5	27	3	35	1580-1900	1780-1840+	...GERALD				93, 151	Includes a residual Tudor pipe; latest closely datable piece is a Fitzgerald stem stamp.
		325	4	10		14	1610-1910	1700-1800					155, 181	Other stems could be 19 cent. Includes chips from sieving and a stem fragment possibly modified as a hair curler.
		327	1	7	1	9	1610-1800	1710-1800						
		329		2		2	1610-1800	1710-1800						
		338	2	18	2	22	1580-1800	1700-1800	Wheel				96	Plain 17- and 18-cent stems. Unusual deposit in that it includes two very early fragments of c 1580-1610. Most of the finds, however, are 17 cent including a wheel stamp of c 1610-40 and three stems appear to be of 18-cent date.
		340	2	10		12	1610-1900	1800-1900						Mixed group; one stem appears to be 19-cent - but otherwise could end in 18 cent.
		344	3	45		48	1610-1800	1740-1800		1	2		34	Mixed 17- and 18-cent finds.
		346	1	4		5	1610-1750	1690-1750						Bowl fragment possibly very end of 17-cent or first half of 18-cent.
		351	1	2	1	4	1610-1710	1660-1710						
		352	6	11		17	1610-1910	1610-40?						Diagnostic bowls 1610-40 - all other datable fragments are 17-cent types plus some broadly dated sieving chips.
		353	2	6		8	1610-1910	1690-1750						Includes chips from sieving.
		358			1	1	1710-1800	1710-1800						
		359	1	5		6	1610-1800	1710-1800					30, 47	
		367		4		4	1710-1800	1710-1800						Plain 18-cent stems
		368		3		3	1610-1800	1710-1800						Mixed 17- and 18-cent stems.
		374	3	6		9	1610-1800	1710-1800						
		375	1	2		3	1610-1910	1610-1710						Includes one chip from sieving; other two stems are 17-cent.
		381		4	1	5	1610-1710	1610-1710						Plain 17-cent stems and mouthpiece
		384	2	4		6	1580-1800	1710-1800					94	Includes a residual Tudor pipe together with 18-cent stems.
		395	1	3	1	5	1610-1800	1710-1800						
		401		7		7	1710-1800	1700-60			1			
		507	4	17		21	1610-1910	1710-1810						Includes poorly datable sieving fragments.
		510	1	4		5	1610-1920	1790-1920						Mixed material.
		512	4	5		9	1610-1910	1800-1910						Very neat early bowl with small heel; coarse gritty fabric
		513		2		2	1710-1800	1710-1800						
		524	1	2		3	1690-1800	1700-50						
		547		1		1	1610-1910	1610-1910						Chip from sieving.
		548		6		6	1610-1800	1710-1800						
		553	2	10		12	1610-1800	1700-20						Both bowls would fit early 18-cent deposit.
		554	3	10		13	1580-1800	1710-1800						Mixed finds, including a very early (1580-1620 style) stem, but most of stems are 18-cent in date.
		557		3		3	1610-1800	1700-1800						
		558		14	1	15	1610-1800	1710-1800		1	2		41	Mainly 18-cent style stems, including two early 18-cent stamped examples.
		568	2	1		3	1710-1850	1750-1850						
		571		1		1	1710-1800	1710-1800						
		607		7		7	1610-1710	1610-1710						
		620		1		1	1610-1710	1610-1710						
		629		2		2	1610-1710	1610-1710						
		630	1	1		2	1640-1800	1710-1800						
		821	5	13		18	1610-1800	1660-1800					173	Bowls mixed from c 1660-1800.
		827	1	2		3	1660-1700	1710-1800	illegible					Includes a small heel fragment of c 1660-1700 with traces of a heel stamp.

Phase	Plot	Context	No B	No S	No M	Total	Date range	Deposit date	Marks	Stem stamps	Stem borders	Dec, etc	Ill nos	Comments
IX	6	953	1	7		8	1640-60	1640-60				ground stem		Bowl of c 1640-60; all other stems of 17-cent type. One stem faceted at one end, most likely the result of being used like a piece of chalk.
X	1	200		1		1	1650-1750	1650-1750						
		203		10		10	1610-1920	1800-1920						Mainly appear 18 cent; just one piece looks 1800-1920.
		583	2	6		8	1610-1910	1710-1800						Mixed 17- and 18-cent material plus sieving chips.
		595	2	3		5	1610-40	1690-1715						Latest bowl c 1690-1715; other stems of general 18-cent type.
		597	1			1	1700-1800	1700-1800						Small spur fragment; quite neat spur.
		641		2		2	1610-1710	1610-1710						
		1802	6	47		53	1630-1830	1780-1830	AIRES CHESTER x 2		3	coiled pipe; green glaze	35, 55, 176, 182	Mixed finds but with latest pieces representing interesting material of c 1780-1830.
		1870		1		1	1640-1700	1640-1700						
		1906	6	12		18	1610-1730	1620-40?					133	All finds would fit with c 1620-40 date except for one stem of c 1690-1730. Could be intrusive?
		1919		2		2	1640-1710	1690-1710	ELIAS MASSEY		1			
	2	402		3		3	1720-1850	1750-1850			1			
		403		16		16	1610-1800	1710-1800						Mixed 17- and 18-cent stems.
		409	2	8	2	12	1640-60	1700-1800						Bowls c 1640-70 and all rest 17-cent apart from three apparently 18-cent stems.
		410	1			1	1660-80	1660-80						Coarse local fabric.
		420	1	6		7	1610-1820	1750-1820					104	
		424	1	1		2	1690-1800	1740-1800					172	
		435		2		2	1610-1710	1610-1710						Plain 17-cent stems.
		438	1	23		24	1610-1800	1760-1800		1			53	
		443		4	1	5	1610-1800	1710-1800						Mixed 17- and 18-cent pipes.
		497		1		1	1750-1850	1750-1850						
		405	1	3		4	1610-1800	1710-1800						Mixed 17- and 18-cent fragments.
		1206	2	11	1	14	1610-1850	1700-1800						
		1418	1	2		3	1610-1710	1660-1700						Heel fragment only.
		1426		3		3	1610-1710	1610-1710						
	3	406	1	2		3	1610-1900	1800-1900					137	Latest stem probably 19 cent.
		407	2	7	1	10	1610-1800	1710-1800						Bowls c 1640-70 and all rest 17 cent apart from one apparently 18-cent stem.
		415		2		2	1710-1800	1760-90			1			
		501		3		3	1610-1800	1690-1800						
		780	1	21	1	23	1610-1800	1710-1800						
		1082	6	9	1	16	1610-1900	1800-1900				ground stem		One stem with ground end. Latest bowls are 19 cent
		1199	2	12		14	1610-1800	1700-1800						Small bowl fragment; thickness of walls suggests 17 cent.
		1398	5	4		9	1620-1920	1840-1920						
		1399	13	49	1	63	1610-1850	1720-50	AL	3	4		49	Bowls range from c 1620 to 1750 in date - mixed - but main deposition clearly in 18 cent
		1404	1	18		19	1610-1800	1720-50		1	2		31, 44	Five stems look as late as 1750-1850. Latest diagnostic pieces are marked stems and bowl fragment of c 1720-50. Some residual 17-cent material.
		1412	2	29		31	1610-1850	1810-50		1	1	Leaf dec seams; 2 ground stems.		
		1414	15	43	1	59	1610-40	1700-50?	Star; ?Fox				4, 110	Mixed bowls: most range from 1610 to 1750
		1683	2	10		12	1660-1800	1710-20						One or two pieces could be later, but uncertain. Bowl and joining stem (fresh break).

