Merseyside Clay Tobacco Pipes, *c*1600-1750

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Introduction

This paper briefly outlines the introduction of tobacco to Britain and the spread of smoking, before looking at the pipes made and used in and around Merseyside from about 1600-1750. The first part provides a context in which to set the Merseyside evidence. The early industry centred on Chester is examined to show how pipemaking established itself in the region and how a distinctive style was established in that city. In contrast, there is little evidence for early pipemaking in Lancaster or in the north of Lancashire and it is only in the south of the old county, and in particular in the Merseyside area, that a flourishing industry developed.

The paper moves on to look at the 'south Lancashire' industry, centred on Rainford (now in Merseyside), and the emergence of a distinctive Merseyside style in the Liverpool/Rainford area. The final section of the paper looks at the evidence for pipemaking in Liverpool itself. Despite its importance as a port and trading centre, little archaeological work has been done in the city and, unlike Rainford with its arable fields, Liverpool's built-up nature means that there are few opportunities to collect stray finds. The scale and nature of early pipe production in Liverpool is, therefore, poorly understood since there is only a relatively small amount of artefactual material available for study. The paper concludes by presenting a new typology of Merseyside bowl forms and it includes an Appendix containing a sample of nearly 1,000 marked pipes from the region to show the range and distribution of Merseyside products.

Background

Although Europeans observed tobacco during their first contact with American Indians at the end of the 15th century, it was not until the mid-16th century that it appears to have been either cultivated or used to any extent in Europe. Initially tobacco was grown as a curiosity or a medicinal herb in the gardens of the nobility and, in Britain, the habit of smoking itself does not appear to have been copied from the Indians until the third quarter of the 16th century. From the outset the English favoured the use of the pipe, as opposed to taking tobacco in the form of a cigar, which was the preferred method in Spain and Portugal. English travellers and mercenaries appear to have spread the habit of pipe smoking throughout northern Europe and, as a result of colonial activities, it was then disseminated to many other parts of the world.

The earliest British pipes were probably made of various materials, including wood and metal, but it is the pipes that were made of white clay that went on to become the most common. These clay pipes were regionally and chronologically distinct, had no value once broken and they survive well in the ground, making them an ideal subject to study archaeologically. The earliest recognisable forms date from *c*1580-1610 and had very small bowls since tobacco during this period was an expensive luxury that had to be either imported from the New World or grown in small quantities in carefully tended gardens. These first pipes are rare nationally and they tend to be associated with wealthy households or 'high status' sites. It does appear, however, that they are most frequently found in the south west of England and these early pipes were certainly being produced in or near some of the ports in that region, for example Plymouth. This association may be partly due to tobacco being more readily available at ports with shipping connections to the New World and partly due to the influence of wealthy individuals from the area such as Sir Walter Raleigh, whose enthusiasm for smoking is well known and who popularised the habit in court circles.

During the early 17th century the price of tobacco fell as larger quantities of tobacco were imported from the New World and homegrown production increased. As a result, smoking spread rapidly throughout the country and to all levels of society. It was not long before a series of prohibition orders curbed tobacco planting in Britain, although production to some extent continued for most of the 17th century. The new plantations in America, however, provided ample supplies from the 1620s and 1630s onwards. The size of pipe bowls increased and pipemakers established themselves in many towns and villages to meet the rapidly growing demand. Smoking remained extremely popular until the early 18th century, when it waned a little in favour of snuff taking, before becoming popular again during the 19th century. It is against this background of the changing popularity and affordability of tobacco that the evidence for pipe production and use in the Merseyside area will be examined.

Cheshire

To the south of Merseyside lies Cheshire, where the main stylistic and pipemaking influences relevant to this study would undoubtedly have come from Chester, which was not only the principal cultural and commercial centre within this county but also within the region as a whole. A lot of archaeological work has been done across Cheshire and, in particular, within Chester itself where numerous excavations have produced large quantities of pipes. The documentary and archaeological evidence for pipes and pipemaking in the city was brought together during the 1970s in a major research project, which was published by Rutter and Davey in 1980. This publication still provides the basic reference work on Chester pipes, although subsequent excavations have added to the range of known forms and marks and suggested that some refinement of their dating is required. Since the 1980 paper was published, an early 17th- century pipe kiln has been found at the Old Infirmary site in Chester, the earliest

yet discovered from anywhere in the country (Edwards 1999), and a very large pipe assemblage recovered from the Debenhams site in Bridge Street (Higgins 2004). Elsewhere in the county significant groups of pipes from Warrington, Norton Priory and Beeston Castle have been studied (Davey and Petch 1976; Davey and Pierce 1977; Davey 1985a; Davey 1993) as well as smaller groups from elsewhere (for example, Blackmore and Lewis 1987; Higgins 1987a). There is also a large assemblage from Bewsey Old Hall, on the outskirts of Warrington, which is currently awaiting publication (Higgins, forthcoming (a)) and a very large collection of pipes from fields near Nantwich (Robinson Collection in the National Clay Tobacco Pipe Archive, which is currently held at the University of Liverpool). Taken together, these finds and publications provide a good overview of pipes from the county and they provide a context for the pipes that were being produced in and traded to Merseyside.

At the end of the 16th century Chester was one of the principal ports and cities of England. It is of little surprise, therefore, that some of the earliest pipes from the region have been found in this prosperous town, including quite a number of the very earliest pipe bowls, dating from *c*1580-1610. Most of these very early bowls are unmarked and, when marks do occur, they are invariably geometric or symbol marks that are very hard to pin down to a particular production source. Small cross or 'snowflake' designs have been found, as well as a *fleur-de-lys* stamp, but none of these marks are peculiar to Chester and they can be paralleled from collections in Bristol, Devon and London (Rutter and Davey 1980, 102-3). It is still not clear whether these pipes were being traded from early production centres elsewhere, such as London or Plymouth, or whether pipe production was actually taking place in north west England during the late 16th century. What is certain is that by the early 17th-century pipemakers had established themselves in the city. All the evidence for this comes from the archaeological record, since the earliest documentary reference to a Chester pipemaker so far discovered only dates from 1646 (Rutter and Davey 1980, 234). Excavated pipes of *c*1610-40 are relatively common in the city and, from an early date, these exhibit distinctive characteristics that show they were being made locally rather than being imported from elsewhere. Furthermore, the early kiln site discovered at the Old Infirmary, which dates from around 1630, clearly demonstrates that production was taking place well before the first documented reference to a pipemaker.

The pipes from the Old Infirmary kiln are unmarked, so the maker cannot be identified, but the bowls are already of a distinctive Chester style and most of them are not milled. Rim milling was almost universally applied to 17th-century pipes from elsewhere in the country and the fact that very few early Chester pipes from either this site or from elsewhere in the city were milled is a distinctive local characteristic found from *c*1610-60. By the 1630s and 1640s a number of makers were clearly established in the town, as is shown by the range of makers' marks that appear, 'SE', 'NE' and 'AL' being particularly common. Most of the pipes produced were heel forms although small numbers of spur pipes were also being used. These were also being produced in the town, as is shown by a mid 17th-century dump of kiln waste from the Bridge Street (Debenhams) excavations, which consisted almost entirely of spur forms (Higgins 2004).

The large assemblage of pipes from the Debenhams site, consisting of some 5,570 fragments, allowed an analysis of the relative proportions of different pipes that were being used in the city (Higgins 2004). This analysis has shown that, during the 17th century, initial marks were about twice as common as symbol marks but that, taken together, the marked pipes only account for around 14% of the pipes in use. Both marked and unmarked pipes were clearly being produced locally, since they share the lack of rim milling. This evidence shows that local makers who did not mark their wares were producing the majority of pipes being used in Chester at this time, around 86% of the total. The bowl styles, finishing techniques and use of stamped marks all help define these Chester products and allow them to be compared and contrasted with the pipes found in neighbouring areas of Merseyside.

Towards the end of the 17th century a marked change occurs in the pipes being made and used in Chester. The bowl forms become larger and move away from the traditional barrel shape which had been the dominant form for the previous half century. The rim angle changed to become more nearly parallel with the stem and the heel or spur area became much more varied in form, with everything from fine pointed spurs to large tailed heels being produced. Some of these forms are very distinctive to Chester, although they were also copied to some extent by pipemakers in the surrounding areas, including Merseyside. By the first half of the 18th century relatively large, upright bowl forms had established themselves as the standard type and these were produced in both heel and spur varieties. The very large oval or tailed heels of the transitional period (*c*1680-1720) tended to die out during the second quarter of the 18th century, being replaced by smaller more cylindrical heels (see Rutter and Davey 1980, 216-223 for a typology of Chester bowl forms).

Throughout the late 17th century and the first half of the 18th the overall quality of Chester pipes was generally very good with most pipes having fine straight cylindrical stems, some of which were also burnished. The most distinctive Chester characteristic, however, was the use of finely engraved stamps that were used to mark the stems. The stem stamps start towards the end of the 17th century with quite narrow and often geometric borders but, during the early 18th century, they evolved into an elaborate range of wider borders with more complex designs. These 18th-century stem borders were often associated with smaller decorative stem stamps, impressed across the stem. The smaller stamps are most often oval in shape and they contain a wide

range of heraldic or decorative devices, with the Arms of Chester being a particularly common motif. These later 17th and 18th-century pipes are invariably made of finer fabrics, almost certainly imported from the south west of England, rather than the coarser coalmeasure clays that were available more locally. Evidence from a sample of the Port Books suggests that most, if not all, of this clay was obtained from north Devon, with various shipments of up to 16 tons of pipe clay at a time being carried from Bideford to Chester during the 1670s (Rutter and Davey 1980, 47). The fine quality of the Chester pipes and the decorative nature of the stem marks ensured a good market for them, with the Port Books noting return shipments of pipes to Bideford as well as overseas to Ireland during the 1680s (Rutter and Davey 1980, 47-48). Excavated examples of Chester pipes have been found all over England, while examples from Newfoundland and the east coast of the United States provide tangible evidence for the export trade in these pipes. The scale of this trade during the 18th century was clearly of some note for, in 1810, it was commented that Chester pipes were "*esteemed the best in Europe about 30 years ago and were exported in great quantities to foreign countries*" (Lysons and Lysons 1810, 608).

As would be expected with a major production centre, the pipes found in Chester are almost entirely those produced in the city itself. What is perhaps more surprising is the fact that Chester pipes do not appear to have dominated the surrounding markets to the extent that might be expected. A proportion of Chester pipes are found in the surrounding areas but often as just one element of the total assemblage. A similar pattern is seen around Bristol, where the pipemakers appear to have concentrated on the export trade at the expense of the domestic market outside of the city itself, and it may be that the same was true of Chester.

Elsewhere in Cheshire a more diverse mix of pipes is found, quite a number of which are either imported from Shropshire, or influenced by the designs from that county. Shropshire pipes in the distinctive Broseley/Much Wenlock style have been found scattered across the old county of Cheshire, including all of the Wirral, as far north as the Mersey but they are very rare to the north of this boundary. Occasional examples have been recovered from places such as Warrington and Liverpool but they do not appear to have penetrated any further north than this. The extent of more local pipe production in other parts of Cheshire has not been much studied, although finds from the Nantwich area suggest that a number of makers operated in or near that town. The bowl forms and styles of mark that were produced in Nantwich were more strongly influenced by Shropshire than Chester and it is notable that relatively few actual Chester pipes are found at Nantwich. In contrast, nearly a quarter of all the marked 17th-century pipes found there originated from Shropshire, principally from either the Broseley/Much Wenlock area or from the industry centred on Wem in the north of the county. This suggests that the stylistic influence of Chester was not very strong outside of the city itself, a suggestion supported by the fact that the late 17th-century pipemakers of Buckley, just a few miles to the west of Chester, were also copying Shropshire styles rather than those from the city itself (Higgins 1983). Apart from Nantwich, there do not appear to have been any other early pipemaking centres of note within the county. Not surprisingly, there are some pipes from Staffordshire in the south-east of the county but, as described above, the main external influence comes from Shropshire to the south.

Greater Manchester

To the east of Merseyside lies Greater Manchester, an area where there has been comparatively little study of the local pipes, despite the fact that a number of reasonably large groups have been recovered from excavations and there are some quite substantial collections of stray finds in the local museums. The situation is made worse by the fact that there are no documented pipemakers known from the area before the late 18th century. This is probably due to a lack of research rather than an actual absence of pipemakers but it does mean that the scale of the trade cannot be assessed from known documentary evidence. The region now occupied by Greater Manchester includes a number of historic townships and it would be surprising if a fairly densely settled area of this size did not have its own pipemakers during the 17th and early 18th centuries. Despite these problems, it is still possible to present a broad overview of the region's pipes from those groups that have been published and from material that has been seen by the author.

There are only two of the earliest pipe forms, dating from *c*1580-1610, known from Greater Manchester and both of these were recovered from excavations at Ordsall Hall in Salford. One of these has lost its heel but the other has half of its heel surviving, which is stamped with a single incuse letter mark. From the surviving portion this initial must be either a 'B' or an 'R' (Davey 1980, Fig 10.14). The single letter 'B' is the more likely, since a number of early pipes are known with this mark, including examples from London and from the earliest phase of settlement at Jamestown, Virginia, which was founded in 1607. The maker has not been identified but he may well have worked in London.

From the early 17th century onwards there are a lot more pipes known from Greater Manchester and smoking must have become much more widespread during the 1620s or 1630s, with pipes appearing commonly in archaeological deposits from the 1640s onwards. The majority of these mid 17th-century forms are of distinctive styles that were produced in the Rainford area (see below) and they are quite different from the contemporary types that were being produced in Chester. This suggests that there was a clear divide between the production and/or consumption of pipes in Greater Manchester and Cheshire. Many of the makers'

marks found in Greater Manchester can also be matched with examples from the Rainford area (Appendix 1), suggesting that a high proportion of the pipes were actually being brought from there, rather than the Rainford style being copied by more local manufacturers. There are other marks, however, that are different from those found in the Rainford area and it is these that support the suggestion that local makers established themselves in Greater Manchester as well. Some of the outlying groups, such as those from Timperley Moat near Altrincham, include pipes that may have come from production centres in rural Cheshire and Staffordshire as well as in Shropshire (Higgins, forthcoming (b)). There is very little evidence of trade in pipes across the Pennines although there are stylistic similarities, particularly during the second half of the 17th century when bulbous bowl forms were adopted in both areas.

During the late 17th and early 18th century larger 'transitional' bowl forms occur, mirroring the Cheshire styles but with the pipes being slightly different and with the majority probably coming from the Rainford area. Once again it is the makers' marks that bear this out. Very few of the elaborately decorated Chester stems occur in Greater Manchester while those from Rainford are more frequently found. Furthermore, it is clear that not all of the pipes with decorated stems were coming from Rainford. Several decorated stems that cannot be matched in Rainford have been found and, in particular, mid-18th century stems with the makers' marks 'CULME / MANCHESTER' and 'JNO BERRY' represent local manufacturers who have yet to be properly traced in the documentary records. What these stems do show, however, is that the 18th-century Greater Manchester makers were using their own styles of elaborately engraved roll-stamped stem decoration and associated stamped oval marks in the same way as the Chester makers, whereas this does not seem to have been the case in Rainford itself. So, although there was not much actual trade in pipes between Chester and Manchester, there are certainly stylistic links that can be traced, particularly during the early 18th century. Furthermore, by the later 18th century, the Manchester manufacturers were starting to develop a distinct local identity, something that does not seem to have been so apparent previously.

Lancashire

At present, no particularly early pipemaking centres are known within the present county of Lancashire (White 1975, Fig 1). Oswald (1975, 176) lists Thomas Allanson as working in Chorley in 1653 but his evidence for this is a trade token and these were often issued by tobacconists or other shopkeepers rather than by pipemakers themselves. The most important production centre in this area during the 18th and 19th centuries appears to have been Lancaster but, even in the county town, there do not appear to have been very many makers and the earliest so far documented only dates from 1732, when the marriage of John Holland was noted (Oswald 1975, 177). As with Greater Manchester, it seems highly probable that a few earlier makers would have operated within the present county but that the documentary research needed to identify them has not yet been carried out.

The 17th-century pipes that have been recorded from the present county are predominantly of Rainford area types (see below and Appendix 1), but it is not yet clear how many of these were actual Merseyside imports and how many were simply produced locally using Merseyside styles. The balance of probability is that most of the marked pipes were actually produced in the Merseyside area and that the makers there were able to dominate the market over most of mid and north Lancashire, where there seem to have been very few early pipemakers. This would not be surprising since Rainford area marks of both the 17th-century ('IB') and 18th-century date (Mat Plumbly) have been found in some numbers as far north as south Cumbria (Appendix 1; Kendal Museum). One or two Yorkshire style bowls are present amongst the Lancashire collections, including an 'AB' mark from York and a few 'IG' marks, probably from West Yorkshire, which represent a small influx of pipes from across the Pennines. A typical mix of spur and heel forms is found amongst the locally produced (Lancashire/Merseyside) pipes during the 17th century, followed by transitional bowls in both styles during the late 17th and early 18th centuries. As in both Chester and Manchester, the 18th-century manufacturers adopted the use of broad roll-stamped stem marks but, unlike those at the previous two centres, they seem to have typically included their name within the mark, often in several lines of lettering. Two different Lancaster makers are known to have used this style of mark, namely John Holland (married 1732; died 1754) and G Edkin (White 1975, Figures 1 and 2). White attributes the latter mark to Andrew Edkin, recorded in 1766, but an examination of the stamp itself clearly shows that the Christian name initial is 'G' and so it must be another, as yet undocumented, member of the family, perhaps Andrew's father. There are also unpublished examples of a John Holland mark that include the date 1748 and it seems likely that both of these Lancaster makers were operating around 1730-60.

Merseyside

The brief survey of pipe production in the surrounding areas, presented above, provides a context within which to set the Merseyside evidence. From the preceding sections, it is clear that there was an early and vibrant industry to the south of Merseyside, particularly in Chester, where pipes were being produced from at least the early 17th century onwards. Other centres further south still, for example the pipemaking industries centred on Wem and around the Much Wenlock/Broseley area of Shropshire, ensured that rural Cheshire could obtain supplies of pipes from a variety of sources. There does

not appear to have been much north to south trade in pipes in either direction across the Mersey, a situation mirrored to the east of the Pennines, where there appears to have been very little movement of pipes across the Humber between Yorkshire and north Lincolnshire (White 2004). Similarly, the Pennines themselves appear to have formed a barrier with very few examples of Yorkshire pipes having been found in Greater Manchester or Lancashire, while the Lake District provided a barrier to the north, with quite different types of pipes being present at Carlisle. These physical boundaries – the Mersey, the Pennines and the Lake District – appear to have helped define an area of north west England within which Merseyside pipes could dominate the market, both in terms of stylistic influences and actual products.

To the north and east of Merseyside there is very little documentary evidence for pipe production before the mid-18th century and archaeological finds certainly support the idea that there were only a few pipemakers operating in these areas. Where local pipe production can be identified, the styles of pipe that were being produced appear to have been set primarily by manufacturers working in the Rainford area. The majority of the early pipes being consumed within this region can be traced back to production sites in and around Rainford and so this must be seen as one of the principal areas for study when considering the early development of pipemaking in Merseyside. The other principal area for study must be the port of Liverpool itself, which not only provided the channel through which many Rainford area pipes were exported but which also operated as an early pipemaking centre itself. Liverpool went on to grow tremendously during the 18th century and its pipemaking industry kept pace so that it went on to became one of the most significant production centres in Britain during the late 18th and 19th centuries. For these reasons, the early pipemaking industries of Merseyside will be considered in two linked sections: the Rainford area and Liverpool itself. The section on Rainford, however, contains a number of general observations about Merseyside area pipes that almost certainly apply to Liverpool as well, but which cannot be proved at present for lack of artefactual evidence.

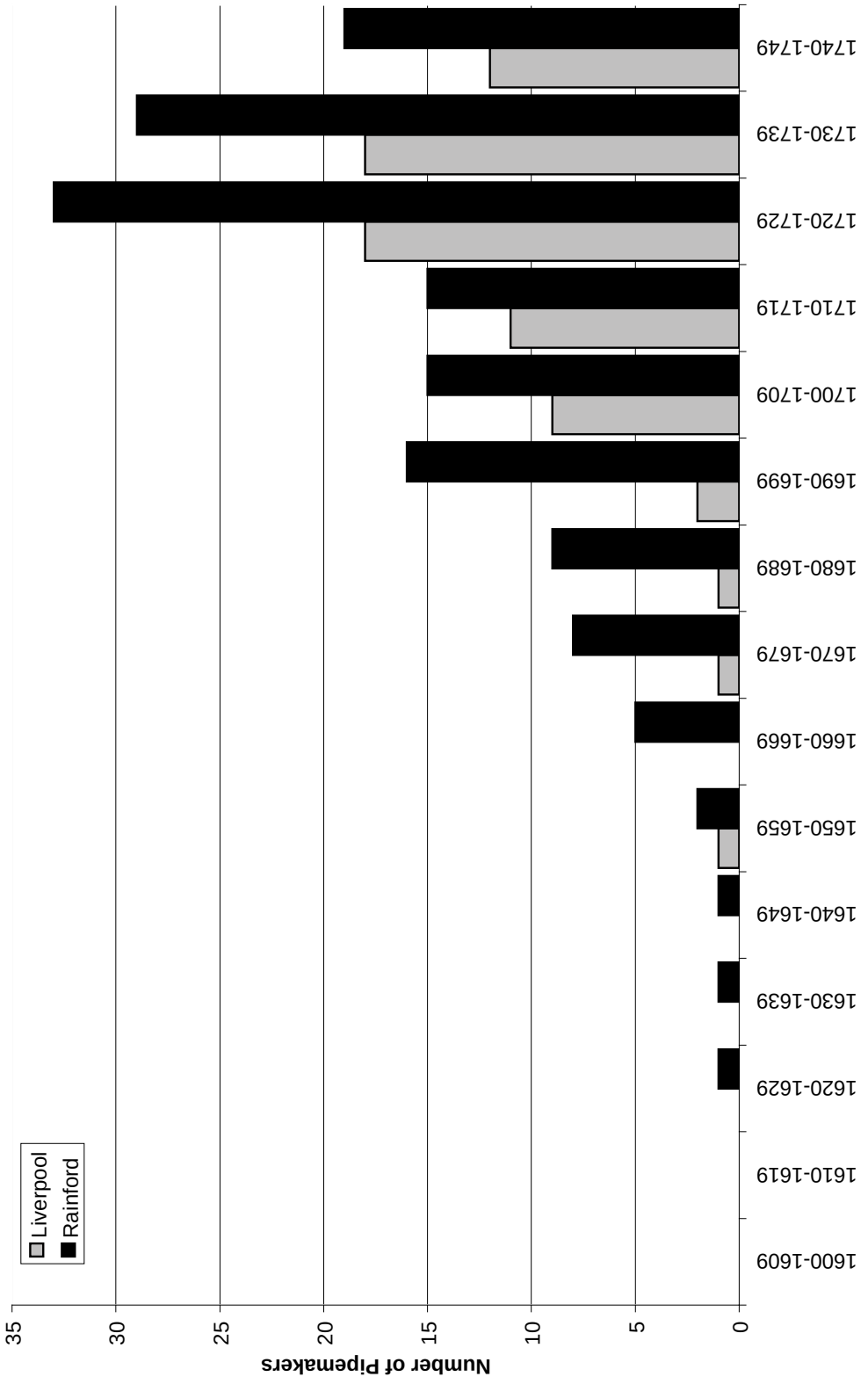
The Rainford Area

As has been outlined above, the area around Rainford was an important pipe-manufacturing centre whose products are found all over north west England. While many 17th or 18th-century market towns had one or two makers to supply local needs, Rainford was one of the few centres nationally where pipe production far outstripped local demand and a significant trade with surrounding areas developed. In most small production centres the manufacturers simply followed regional styles whereas in Rainford sufficient manufacturers were interacting together to forge distinctive local styles themselves. Although there were probably a few 17th-century pipemakers in the towns and villages of Lancashire and Cumbria, it was in the Rainford area that the majority of the pipes used in these counties were produced and in the Rainford area that the regional styles for the north west of England from the Mersey to Cumbria were set.

The reason for Rainford's early dominance of the pipemaking industry in north west England is probably tied up with its easy access to supplies of raw materials. Rainford is situated on the south Lancashire coalfield and the coal measure deposits not only provided fuel but also good seams of both white firing pipe clays for pipemaking and heat resistant fireclays that were used to build kiln structures. Potters had been exploiting the local clays and fuel sources since the Medieval period and so there was already an established tradition of clay working when the habit of smoking was introduced. The early industry has been studied through a combination of documentary and archaeological sources, particularly by Peter Davey during the late 1970s and early 1980s (Davey: 1978, Davey *et al:* 1982) and by Ron Dagnall since then (Dagnall: 1985, 1987a, 1987b, 2001, 2004, 2005). Field evidence in the form of waste pipes clearly shows that production started in the early 17th century with the first documented maker from the area being Henry Billinge, who was recorded at Prescot in 1622 (King 1982, 257).

Although it was Rainford that became the focus for pipemaking, many of the early pipemakers established themselves in the surrounding settlements, for example, Eccleston, Farnworth, Prescot and Windle. Research in these areas to the east and northeast of Liverpool has shown how pipemaking established itself at an early date and then grew rapidly during the 17th century to become a significant local industry. The as yet unpublished list of pipemakers from these areas clearly shows this trend (Dagnall 2005). Chart 1 shows the total number of different pipemakers recorded by Dagnall in the Rainford area during each decade between 1600 and 1750. This shows a dramatic increase in the number of pipemakers recorded in the Rainford area during the second half of the 17th century, rising to a peak of no less than 33 during the 1720s.

When looking at this plot of known pipemakers, especially the early ones, there are two important points to bear in mind. First, that the individuals named as pipemakers only represent a small proportion of the people who would have actually been involved in the trade. When pipemaking was first introduced it would have been a new industry that did not have an established market capable of supporting large numbers of full-time workers. Studies have shown that many of the early pottery and pipemaking workshops in the area were located on smallholdings, where they would presumably have been just one of the activities contributing to the household income. It was only as the trade grew that it would have been economically viable for them to become full time ventures. Even then, it is quite possible that some workshops were still run as family concerns alongside other activities. The second point is that the surviving documentary record is variable but generally



	1600-1609	1610-1619	1620-1629	1630-1639	1640-1649	1650-1659	1660-1669	1670-1679	1680-1689	1690-1699	1700-1709	1710-1719	1720-1729	1730-1739	1740-1749
Liverpool	0	0	0	0	0	1	0	1	1	2	9	11	18	18	12
Rainford	0	0	1	1	1	2	5	8	9	16	15	15	33	29	19

Chart 1. Plot showing the number of documented pipemakers during each decade based on unpublished lists compiled by Dagnall (2005) for Rainford and by the author for Liverpool

diminishes going back in time so that the early makers are probably less well represented in the surviving archives than they would have been originally. This suggestion is supported by the archaeological evidence from fieldwalking and excavations, which shows a rapid growth in the number and range of pipes that were being manufactured from the 1630s and 1640s, far earlier than the documentary evidence would suggest.

In order to compare the documentary and artefactual evidence for the origins and development of the Rainford area industry, a table showing the known makers' initials from the region has been prepared (Appendix 1). Although this only provides a very simple breakdown of the marks into broad types, it is still very useful in demonstrating the number of makers who were producing pipes, the styles of mark that they were using and, from the distribution of their marks, the likely location and market area of their workshops. Before looking at the evidence provided by this table in detail, it is first necessary to explain the various styles of mark that are found in the Merseyside area and the dates during which each particular style was used.

The Evolution of Merseyside Marks

The earliest pipes must have been copied from examples obtained from places such as London and the same is true of the marks. Many of the earliest pipes were marked with simple incuse initials, without any border. One of the most relatively common of these early marks was the single letter 'B', which was in being used in London around 1590-1610, an example of which has been recovered from Ordsall Hall (Davey 1980, fig 10.14). Pipes such as this may well have influenced some of the early makers to use incuse initials, for example, the 'HL' and 'RL' pipes that are found in the Rainford area (figs. 1.5 and 1.6). This style, however, was never particularly common and appears to be confined to some of the early heel styles, produced around 1630-1660.

The majority of early marks comprised relief initials, usually within a circular frame (figs. 1.2 & 1.3) although sometimes the frame was slightly shaped (for example, fig. 1.1) or with a serrated edge (for example, fig. 1.7). These marks usually appear on the heel of the pipe but very occasionally they were placed on the bowl facing the smoker instead. This style of basically circular initial mark was one of the most enduring and was used by the local makers from the earliest days of the industry right through into the early 18th century, around 1720. Having said that, the later examples of these marks, dating from after about 1680 (for example, fig. 1.13) are comparatively rare and the majority of the circular marks were produced between about 1630 and 1680.

The most distinctive type of 17th-century mark, however, is the so-called 'crescent-shaped' mark, that developed in south Lancashire around 1640. This mark consists of relief initials that are contained within a serrated arched frame, which in turn is set within a roughly semi-circular die, surmounted by a little crest or fleur-de-lys like mark (for example, figs. 1.8-1.11). This very distinctive shaped mark clearly developed out of the south Lancashire industry and it was almost exclusively produced in this area, where it was used regularly until about 1680 with occasional examples occurring until about 1690 (for example, Merseyside Type 'S7'; see below for definition and discussion of the bowl forms).

This specific type of mark provides a good example of the way in which the style of the mark was as much connected with the style of the pipe as it was with the identification of the maker since the crescent-shaped mark was almost exclusively used on the bowls of spur pipes, facing the smoker. Very occasionally it was stamped on a heel pipe in place of a circular mark and, as noted above, very occasionally a circular mark was used on the bowl of a spur pipe, but these are rare exceptions to the rule. Furthermore, bowl marks (as opposed to heel stamps) were not used on heel pipes at all and certain bowl forms of both types, such as 'S8-S12' or 'H12-H13' (below) never appear to have had marks on them at all. This shows that there was a specific association between the style and placing of the mark and the bowl form. In short, spur pipes and heel pipes were marked in different ways, each with their own style of mark. It seems that most pipe manufacturers would have produced a range of pipe styles to cater for different sectors of the market. Some of these styles would be expected to have bowl marks, some would be expected to have heel marks and some would not have been expected to have any mark at all. As a result of this specific association between bowl type and stamp type most 17th-century makers would have needed two different styles of stamp, a circular one for heel pipes and a crescent-shaped one for spur types. This behaviour is clearly reflected in the range of known initial marks (Appendix 1), many of which are represented by both styles of mark, as can be seen, for example, with the 'EA' marks shown in figs. 1.11 and 1.12.

During the late 17th century new bowl forms appeared, many of which were never marked on either the heel or bowl. Manufacturers who were still making the old styles of pipe with their respective stamp types must have introduced these new forms and the fact that they chose not to use their existing marks on the new pipe styles once again shows the important relationship between bowl form and mark. It also shows that, by this date, the manufacturers did not feel that it was particularly important to identify their products so that, in effect, the mark had become subordinate to the overall design of the pipe.

Although heel and bowl marks fell from favour in the late 17th century they were replaced to some extent by stem marks in the early 18th century. Stem marks probably first appeared in this region at Chester at the end of the 17th century, usually as relatively narrow decorative borders without any maker's initials or name. In the south Lancashire area the same technique was employed but using a very distinctive style comprising a broad band that ran all the way round the stem, with the maker's name across the centre. These are known

as 'roll-stamped' marks and the particular style that developed in south Lancashire typically comprised serrated lines or bands flanking the name with more broadly toothed borders at the edges of the mark (for example, fig. 1.14). The style of the serrated lines employed on these marks are very similar to those being used on Dutch roll-stamped borders of the period, although these do not usually include the maker's name as well. How this style came to be adopted in this region is unclear, but it became a very distinctive feature of the industry here. As well as the full roll-stamped borders running all the way round the stem, some makers, such as Nathan Birch (or Birchall) used large square name marks that only extended part of the way around the stem. These named stamps and borders were most commonly used between about 1700 and 1740 although some later 18th-century stems, such as those produced by one of the William Birchalls, are also known (fig. 1.15). The William Birchall stamps occur on slightly thinner stems than the early 18th-century examples and the mark includes both the makers name and place of manufacture. The die for these particular marks was clearly very finely cut, with friezes of small animals flanking the lettering. The use of stem borders went out of fashion towards the end of the 18th century in both Chester and Rainford, to be replaced by long, single line stem stamps, which lie beyond the scope of this study.

Finally, before returning to a general discussion of the marks from this region, it is worth noting that some of the marks found within it are 'imports' of types that are not known to ever have been produced in south Lancashire itself, for example, the square full name marks from the Broseley area of Shropshire. A few of these full name marks, which were placed on the heel of pipes from around 1680-1730 and across the stems of pipes during the 18th century, are known from north west England. This style was copied as far north as Buckley in North Wales but there are no examples that are known to have been produced in south Lancashire itself. Another example is provided by the Chester stem marks, which, perhaps more surprisingly, do not appear to have been copied to any great extent in the Rainford area. Stem lozenges and ovals were produced in Chester from the late 17th century onwards and, as noted above, these styles were certainly copied in the Greater Manchester area. A great number and variety of these marks were used in Chester, often in association with elaborately decorated flanking borders, and examples of these stems certainly found their way to the Rainford area. Despite this, the local manufacturers appear to have stuck to their own distinctive style of named borders, and they did not generally adopt the use of purely decorative borders or the associated ovals and lozenges. The only known exception to this is a deposit of kiln waste from Pennsylvania Farm at Rainford, which included large numbers of Chester style decorated stems, including some with the Chester arms actually stamped on the stem in an oval (Dagnall 1987b). These pipes appear to have been made in Rainford using dies from at least two different sources. A few of the dies, including a Chester oval and a Chester style border, are of the best quality and must have come from the same engraving workshop or workshops as other material from Chester itself. Some of the other dies, however, are slightly less accomplished (although still of good quality) and were almost certainly made elsewhere, showing that individual makers may have adopted the Chester style and started developing their own local version of it. The presence of a few George Sephton marks associated with these decorated stems may well indicate the maker of these pipes. George Sephton died in 1781 and the pipes are of mid 18th-century style.

17th Century Makers' Marks from the Merseyside Area

Returning to the question of the numbers of pipemakers operating in the Rainford area and their products, a table showing some of the known marked pipes from the region has been prepared (Appendix 1). This appendix lists the marks from selected groups or collections from north west England so as to provide an overview of the range and distribution of Merseyside type pipes. For most of the groups all of the marks have been listed, irrespective of where they were produced. In some instances, however, only selected marks are shown, for example, from Chester, where there are a very large number of marks produced in that City that are not otherwise represented from the study area. These have been excluded since they are not relevant to the distribution of Merseyside pipes. On the other hand, the Chester marks that are present amongst the other collections have been listed, since these indicate the degree to which Chester products competed with other North West types outside of the City itself. The purely decorative stem borders and ovals from Chester have also been excluded, since they cannot easily be attributed to individual manufacturers.

The marks listed have not been identified to individual die types, but rather enumerated in groups according to their basic form. In general terms, the marks can be broken into four main classes ranging in date from about 1630 through to the second half of the 18th century as follows: -

Incuse initial marks of c1630-1660.

Crescent-shaped marks, usually applied to the bowl, c1640-1690.

Circular marks, usually applied to the heels of pipes dating from c1630-1720 (although the majority of the examples date from before c1680).

Stem borders and ovals of c1700-1790.

Within the various types of heel or bowl stamp, the majority date from the period *c*1630-1680 with only relatively small numbers dating from before or after this period. There are relatively few late 17th-century

marks of any type and, during the early 18th century, stem marks replace the remaining heel types, although they never become as numerous as the earlier classes of stamped mark. These general guidelines can be used to interpret the mark types listed in Appendix 1. It is also worth noting that any unusual mark types where the bowl form or style of the mark suggests an origin outside of north west England have been identified as such in the Appendix; for example, the 'AB' mark from York or one of the 'HB' marks, which comes from Shropshire.

By examining the list of marks in Appendix 1, it is clear that there is a mis-match between the documentary evidence and the artefactual evidence for the number of 17th-century makers working in the Merseyside area. Dagnall's list of known Rainford area makers (2005) includes some 28 individuals who were working during the 17th century, to which can be added another three or four from Liverpool, making a total of around 32 for the Merseyside area as a whole. While this is a very respectable number that clearly reflects the scale of the 17th century industry, it only represents around half the number of different 17th century initial combinations (62) that have been recorded on south Lancashire style bowls, the majority of which are likely to represent pipemakers from the Merseyside area itself. Furthermore, the list of documented makers includes several whose names give the same initials so that, in fact, only 22 different sets of initials are represented by the known makers, that is, a third of the number represented by the 62 different initial combinations found on the actual pipes. Finally, although there are 22 sets of initials represented by the documented makers, not all of these tally with known sets of initials on marks, which are often of a different date to the period when the documented maker would have been working. At best, only 15 sets of initials on pipe marks can be matched with documented makers, and four or five of these are rather tentative because the dates do not fit very well. So, if the situation is viewed the other way round, less than a quarter of the marks recovered archaeologically can be attributed to documented pipemakers, suggesting that the 17th-century industry was at least four times greater than the paper record would suggest. This is a significant finding and one that shows the importance of assessing archaeological material, even for a supposedly 'well documented' period.

The number of makers represented by the marks as opposed to the surviving documentation is also important when considering the numbers of known makers over time. The documented makers have been plotted by decade in Chart 1, which would suggest that there was relatively little pipemaking activity in the Rainford area during the first half of the 17th century with the main growth of the industry taking place between about 1660 and 1700. When the marks are considered, it is evident that the majority of these occur on pipes dating from around 1630-1680 with relatively few late 17th century examples. This situation completely changes the image created by the documentary sources. The artefactual evidence clearly shows a huge growth in both the range and number of marks during the second quarter of the century so that there must have already been a substantial and well-established industry by the 1650s and 1660s. This puts the main period of establishment and growth for the industry several decades earlier than the documents alone would suggest.

As well as allowing an assessment of the overall scale of the industry to be made, the data provided in Appendix 1 can also be used to help determine the location of the various pipemaking workshops represented. By far the most significant clustering of marks is provided by the 'GA' pipes, which have been found in large numbers at Warrington. In particular, 48 of the 52 crescent shaped marks listed (92%) come from Warrington, while none has been noted from the various Rainford area collections. This marked clustering clearly suggests that the 'GA' maker worked in Warrington itself, where he was able to dominate the local market (some 16% of all the stamped pipes from Warrington are marked 'GA'). The only complicating factor is that there is no known Warrington maker with these initials while there is a Gowine (*sic*) Atherton of Windle, who was recorded as a pipemaker at the time of his marriage in 1657. This is a case where the archaeological evidence has clearly set up a hypothesis about the location of a workshop that needs to be tested by further research.

In other cases, the location of the workshop itself is very far from clear. The crescent shaped 'HH' mark provides a good example of this with 11 listed examples that are widely distributed between Chester in the south and Kendal in the north. This wide distribution suggests a well-established workshop with good marketing connections but the overall number of examples so far recorded is still too small to indicate where this workshop might be. There is a cluster of 'HH' marks (five examples) from Norton Priory but this could just as easily reflect the site-specific discard of a batch of consumed pipes rather than the proximity of the actual workshop. An example of this type of skewed distribution pattern resulting from too small a sample can be seen with the later Mat Plumbly stem marks. About a half of the known Plumbly marks are recorded from the northern part of the study area with examples being recorded from Lancaster and, especially, Kendal. This evidence taken alone might suggest that Plumbly operated in north Lancashire or Cumbria, were it not documented that he was in fact a Rainford maker. Clearly the overall sample size and a clustering of records at a number of adjacent sites are both important factors when considering the location of a workshop from the artefactual evidence alone.

The 17th century sets of initials represented by pipe marks found on south Lancashire style pipes are listed (Table 1) so as to provide an overview of the industry at this period. Almost all of the different stamp types are represented by less than ten known examples and many are only represented by individual pieces. New sets of initials are regularly being discovered and it is clear that

EA
GA – George Atherton (W) or a Warrington maker
HA
IA
RA – Richard Atherton (L)
AB
DB
EB – Edmund Barnes? (R) or Edward Bostock? (R)
HB – Henry Billinge (P)
IB - John Baxter (P/S) or Joshua Billing (R) or Jonathan Birchall (R) (plus others)
MB
PB – Peter Birchall (R)
SB – Samuel Birch (R)
TB
WB
EC
PC
TC – Thomas Cartwright? (R)
RD

SD
AH
CH
EH
HH
IH
MH
NH
RH
II
NI?
P?I
AL?
GL
HL – Humphrey Lyon (W/P/R) or Hugh Lyon (W)
IL
PL
RL – Richard Lyon (R) or Robert Lyon (L/R)
SL
TL – Thurstan Lassell (R)

GM
HM
TM
WM
AN
HN
IN
IP
LP
MP
TP
GR
TR
GS
HS
IS – John Sephton (R)
PS – Peter Sephton? (R)
TS – Thomas Sephton? (E)
ET
IT
PT
IW
RY – Richard Yarnton (R)

Table 1. Pipe marks and known makers

a much larger data set is needed before the full extent of the industry at this period can be gauged. Where possible makers or production places can be suggested, these have been added, including Richard Yarnton of Rainford, who is not actually documented as a pipemaker, but whose unusual initials suggest that he was the maker of the contemporary pipes marked 'RY' that were found near to where he lived. The more doubtful attributions (where the pipe and document dates do not match very well) are marked with a question mark. The places where the suggested makers worked have been abbreviated to (E) for Eccleston, (L) for Liverpool, (P) for Prescot, (R) for Rainford, (S) for Sutton and (W) for Windle

There are a number of problems with trying to attribute the marks to known makers in this way. The first is that the list of known makers is clearly inadequate for this task in that it only represents a relatively small proportion of the total number that actually existed (less than one quarter; see above). As a result, a number of late 17th-century documented makers have been matched with mid 17th-century initials, even though this stretches their possible working periods to the limit. It seems more likely that most of the names with question marks are in fact later makers who just happen to have the same initials as an undocumented earlier maker. This leads to the second point, which is that there is not a neat 'one to one' relationship between initials and makers. The 'HL' pipes, for example, could have been made by either Humphrey Lyon or Hugh Lyon and it may well be that they both produced pipes with their initials on. This is where a very detailed analysis of the individual die types, together with the accurate dating of bowl forms and the plotting of distributional data is necessary to see if the products of the two makers can be distinguished. Indeed, it may only be through the recovery and analysis of kiln groups that issues such as this can be satisfactorily resolved.

By far the most taxing problem in the Rainford area, however, concerns the very large number of 'IB' marks that are found. These initials appear on some of the earliest pipes produced in the area, for example, fig. 1.1, and continue right through to the late 17th or early 18th century, for example, fig. 1.13. The 'IB' marks occur as both heel and bowl stamps and on a variety of different bowl forms spanning the first century of Merseyside pipe production. Even a cursory examination will show that very many individual dies are represented by these examples, while the 'IB' marks as a whole comprise nearly a third of all the marks (308 out of 951) enumerated in Appendix 1. Given that over 60 different sets of initials are known and that there are about another ten documented makers for whom no marked pipes are known, there must have been at least 70 makers working in the area during the 17th century. Since the 'IB' marks represent a third of the marked pipes found then they ought to also represent a third of the makers operating during this period, which would be

some 20 to 25. In fact, there are only three documented makers with these initials. Even if they were to have had huge workshops, it is inconceivable that they could have been responsible for a third of all pipe output from the area. What seems far more likely is that there were a large number of makers with the initials 'IB' who have not been detected in the documentary record. Dagnall's list of Rainford area pipemakers from all periods lists some 526 names of whom 115 (22%) have a surname beginning with 'B'. There are some 18 different surnames represented but, of these, Birch and Birchall are especially common and these are old family names from the area. Given that James, John and Joseph were very frequently used Christian names during the 17th century, with Isaac and Jeremiah being other possibilities, it becomes clear how there could plausibly have been a large number of makers with the same initials. The likelihood is that there would have been some 20-30 makers with these initials over the years, most of whom remain to be identified from documentary sources.

If there were at least 70 17th-century makers excluding the 'IB' makers, and the 'IB' makers produced a third of the pipes, then this would bring the estimated number of pipemakers for the area up to around 100. Even this figure is likely to be on the conservative side since, in reality, there would have been other makers who shared the same set of initials and others who may not have marked their pipes at all. This figure supports the earlier suggestion that there were at least four times more pipemakers than those documented, which would be something in the order of 120-130 individuals. This interpretation means that well over one hundred households in the area are likely to have made a living out of producing pipes during the 17th century – a very significant number when the total population of Rainford in the late 17th century was only about 500 (Dagnall 1985, 18). Many of these families remain to be documented, as is shown by the mark list given above. In particular, there are whole blocks of initials where no names are known, for example, the 'H's. Stamped marks reading 'AH', 'CH', 'EH', 'HH', 'IH', 'MH', 'NH' and 'RH' are all known, perhaps suggesting a major pipemaking family who have yet to be identified.

In terms of the marketing of their products, it is clear that the Merseyside makers were able to dominate the markets throughout Lancashire and as far north as south Cumbria. The scale of this trade is evidenced not only by the large areas over which these pipes are found and the numbers in which they occur but also by the surviving documents. In 1697, for example, a court case reveals that Thomas Sephton of Rainford had agreed to supply Mary Wells, a widow from Bolton, with six packs of pipes (Dagnall, 1985, 21). This does not initially appear to be a very significant transaction, until it later becomes apparent from the court records that each pack contained 19 gross, so that the order would have comprised some 16,416 pipes in total.

18th Century Makers' Marks from the Merseyside Area

Analysis of the available data for the 17th century has shown that the number of pipemakers is greatly underestimated in the documentary record and that the establishment and rapid growth of this industry took place several decades earlier than would have been suggested by the written evidence alone. From the end of the 17th century onwards the surviving documentary record is more complete and the situation appears to improve. In 1696 a tax of 1/- per gross was imposed on pipes to help finance wars in Ireland and France. This tripled the price the Rainford pipemakers had to charge for their pipes, resulting in a petition for relief to the Ormskirk Quarter Sessions (Dagnall 1985). In this document the four petitioners and other householders, "*to the number sixteen*", say that the trade had been ruined by the tax and that they no longer had any other means of supporting themselves. This reference is interesting for two reasons. First, it suggests that either 16 or 20 families in Rainford (depending on whether the phrase "*to the number sixteen*" includes the petitioners or not) were pipemakers. This tallies well with the 16 individuals recorded as pipemakers in various other sources during the 1690s (Dagnall 2005; Chart 1). The second point is that the pipemakers say that they have no other means to support themselves, which suggests that by this date pipemaking was firmly established as a full time occupation and that it was not underpinned by other activities.

As noted above, the use of initial marks declined rapidly during the late 17th century to be replaced by roll-stamped marks around 1700. In the Rainford area these marks usually include the maker's name in a full or only slightly abbreviated form, making their identification much easier. As with the earlier initial marks, the pipemakers often had more than one almost identical die in use, presumably either because one needed replacing or because several were required in the workshop for use by other family members or journeymen. Leaving aside the individual dies, there are at least eleven known Rainford pipemakers who used this style of mark and one from nearby Eccleston. In addition, there were at least two Lancaster makers who copied this style, a further two from Cumbria, almost certainly two in Liverpool and two whose workplace is uncertain. There are currently no known examples of this style that are thought to have been produced in Manchester where, later in the century, initials or full names appear to have been placed in stem ovals instead. Having said that, the evidence from both Liverpool and Manchester is very poor and other early 18th-century examples may well come to light from these production centres as well. It is also worth noting the very similar series of stem marks used by the Sefton family from Nottingham (Alvey 1973, fig. 3), who may well have moved from north west England to the Midlands taking the Merseyside style of stem marking with them. The currently recorded examples of Merseyside style named stem borders, together with

Name	Place	Recorded Dates / Other Comments
Chris Atharton	?Liverpool or Rainford	Four examples from St Mary's City, Maryland, USA
Thomas Atharton	Probably Liverpool	Marks found in pre-1726 deposit
Daniel Birch	Rainford	Wife buried 1727
George? Birchall	Rainford	Buried 1738
Nathan Birch (Birchall)	Rainford	Three documented working between 1702 and 1813
Thomas Birch	Whitehaven	Working from at least 1701-1713
William Birchall	Rainford	Eight documented working between 1752 and 1851
G Edkin	Lancaster	Mark includes place name Lancaster; no known dates
James Fairhurst	Rainford	Buried 1724
Sam Fletcher	Little Broughton	Cumbrian maker, working from 1684 (Fletcher 1982; Jackson 1986, 6)
Matthew Grenoh	uncertain	Not documented but possibly working in North Lancashire (surname probably Greenough; there was a filiation order between Thomas Birchall, pipemaker of Rainford, and a son of Catherine Greenough in 1768)
John Holland	Lancaster	Two makers, working *c*1700-1760; some marks dated 1748
George March (sic)	Eccleston	George Marsh (sic) documented from at least 1729-1740
Matthew Plumbly	Rainford	Daughters baptised or buried between 1718 and 1725
John Rainford	Rainford	Died 1729
Ralph Rylance	Rainford	Married 1698; Died 1741
Elizabeth Savage	uncertain	Not documented
George Sephton	Rainford	Buried 1781
Jane? Sephton	Rainford	Possible maker buried in 1720
John Sephton	Rainford	Born 1666; Died 1735

Table 2. Merseyside style named stem borders, together with the makers' dates where known

the makers' dates where known are shown in Table 2.

In terms of dating, this list makes it clear that the majority of these marks must have been used during the first few decades of the 18th century since about a half of them are either securely dated to this period or were made by manufacturers who died between 1720 and 1741. A few were certainly made later, as witnessed by the John Holland stamp dated 1748 from Lancaster or the William Birchall marks, which are of a later 18th-century style (fig. 1.15). These later forms, however, are less common and the majority of these marks appear to have been produced from *c*1700-1740 with smaller numbers having been produced until around 1780 or 1790.

Perhaps the most striking feature of this group is the much smaller number of recorded examples than for the 17th century. This may be partly due to the fact that the roll-stamps were placed some distance from the bowl so that it is necessary to collect and examine stem fragments to discover them. As a result they are probably under-represented amongst collections of stray finds, where it is the bowls that usually attract attention. Even so, they appear to be much less numerous than bowl marks, even amongst large excavated assemblages or well-dated early 18th-century groups, such as the material from South Castle Street in Liverpool. This site produced some 2,066 fragments of pipe dating from *c*1700-1730 (Davey 1985b, 122-123) and yet the excavations only produced 17 roll stamped stem fragments, seven of which were too fragmentary to identify the maker and three of which were imports from Chester or the Netherlands. A similar pattern can be seen in Rainford itself, where a small sample of early 18th-century kiln waste was excavated in the Parish Church graveyard (Dagnall 2004). This group produced 4,052 pieces of early 18th-century pipe, comprising 808 bowl, 2,338 stem and 906 mouthpiece fragments. Amongst this material were just 72 stem borders, only 45 of which were complete enough to identify the maker's name. There were a total of 306 identifiable bowls from this group and so the 45 stem marks would suggest that only around 15% of the pipes were actually marked in this way. As with the earlier stamp types, analysis of how these marks were used may well provide the key to understanding them.

Both the domestic assemblage from Liverpool and the kiln waste from Rainford suggest that only a small percentage of early 18th-century pipes had these roll-stamped marks on them. While the Liverpool group could have been the result of a particular consumption and discard pattern, the Rainford group appears to represent a contemporary kiln dump from two of the local workshops. If the two makers represented were marking all their pipes, then a much higher number of marked stems would have been expected. The most obvious explanation would be that only certain types of pipes were marked in this way, in the same way that the 17th-century pipe styles discussed above could be shown

to be related to specific mark types and sometimes to no mark at all. Although the bowl forms likely to have been associated with these stem marks can be guessed at from kiln dumps and well-stratified domestic deposits, there is not a single example yet recovered of a Merseyside style roll-stamp actually connected with its original bowl. Recovering such material is clearly a priority for future research, since the relationship between bowl form and mark is one of the most basic factors that needs to be established. Similarly, no complete south Lancashire pipes of 18th-century date are known, and so it is impossible to know if there was a relationship between bowl form and stem length, as has been found in other parts of the country (Higgins 1987b, 415-44). On the basis of our current knowledge, however, it would seem highly probable that there was. The most likely scenario is that the early 18th-century makers were producing a range of pipes that would have fallen into recognised categories (and prices) based on bowl form, stem length and quality of finish. Some of these pipes, most likely the longer and more expensive types, would probably have been associated with the use of roll-stamped stem marks. Good 18th-century deposits producing reconstructable pipes and examples where stem marks can be joined to bowls are clearly needed to test this hypothesis.

As well as being fairly scarce across the region as a whole, there is also quite a restricted range of makers' names represented on the roll-stamped stems that have been recovered. This type of marking was probably at its peak during the 1720s, the very period when there is the largest number of documented makers in the Rainford area. During this decade there were at least 33 pipemakers working in the Rainford area and at least another 18 in Liverpool, making a total of 51 for Merseyside as a whole. Despite this large number of known makers, there are only 12 or 13 makers from this area who are known to have used stem marks at all, and some of these were probably working slightly later in the 18th century anyway. In general terms, this would suggest that only around 20% of the makers were actually marking their products during the early 18th century, and that this figure fell as the century progressed.

One of the problems in assessing the number of makers who were actually using this type of mark is the fact that most of the known marks are represented by only a handful of examples. There is a sample of nearly 1,000 stamped marks from the North-West, outside of Rainford, listed in Appendix 1. Amongst these, however, there are no examples of Nathan Birchall's marks and only one produced by Ralph Rylance. In contrast, the small deposit of kiln waste recovered from Rainford has produced 39 examples of the former and six of the latter (Dagnall 2004). As with the other Rainford area makers, these two individuals must have been marketing their wares widely and yet no examples have yet been recorded from elsewhere. It seems certain that many more examples of these marks remain to be found and that there will be other makers' names represented amongst them, especially in places like Liverpool where there is currently so little artefactual evidence but where a well-established pipemaking community was working from the early 18th century onwards (see below).

In terms of the total number of makers who were actually operating during the first half of the 18th century, the figure of 40-50 workshops operating within any given decade across Merseyside as a whole appears to be a fairly realistic estimate. The late 17th century documentary references from Rainford suggests that the majority of pipemakers of this date have been identified and, in stark contrast with the earlier bowl marks, almost all of the early 18th-century stem marks can be matched with documented makers. This suggests that, by the 18th century, the documents are providing a fairly accurate picture of the scale of the industry and that, in contrast with the 17th century, it is the archaeological evidence that is underrepresented.

Liverpool

Liverpool has been left until last in this examination of Merseyside pipemaking, which may seem odd given that it is the principal urban centre and port within this area. The reason for this is that Liverpool is, in fact, the most problematic production centre within the whole of north west England and one that poses many more questions than answers. The surviving documentation for Liverpool pipemakers during the 17th and early 18th centuries is relatively poor, which makes it very hard to assess the origins and growth of the industry. Furthermore, there is a chronic lack of archaeological evidence from the City itself, which makes it very hard to assess which types of pipe were actually being produced in or traded from the port. Liverpool Museum holds a small number of stray finds but good excavated groups are almost completely lacking from the city, despite the fact that the archaeological potential of the urban area was clearly demonstrated some 30 years ago (South Castle Street excavations 1976/77; Davey and McNeil 1985). It is a matter of grave concern that so little archaeology appears to be taking place within the City, especially given the massive redevelopment of the city centre that is currently taking place.

In terms of the surviving documentation, there are hints that pipe production was established at a relatively early stage. There are isolated references to pipemakers becoming Freemen of Liverpool, for example, Robert Lyon in 1643 (Oswald 1975, 179) and Richard Atherton in 1654. This evidence clearly shows that pipemaking was taking place in the port from at least the 1640s. It is equally clear, however, that not all of the early makers have been identified. There is no known reference to James Atherton being a Freeman for example, but he was certainly described as a pipemaker when he baptised a son at St Nicholas's Church on 29 July 1678.

One difference that can be identified between

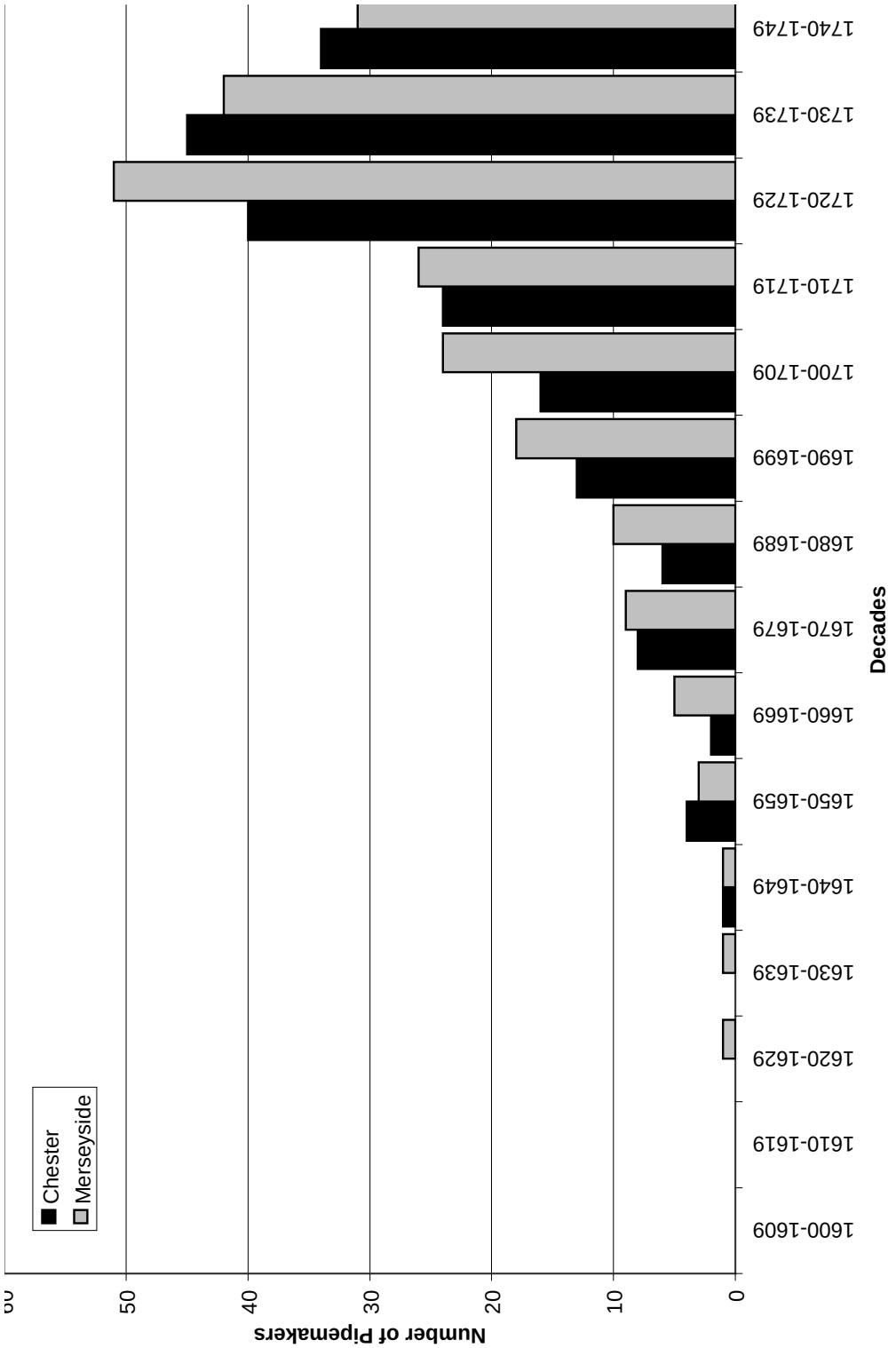
Liverpool and the surrounding areas was in the regulation of its trade. As an historic Medieval town, Liverpool had a traditional system whereby Freemen had specific trading rights and privileges within its jurisdiction. The pipemakers working in the rural townships inland of Liverpool should have paid additional taxes to sell their wares in Liverpool, but various ploys appear to have been used to avoid this. In 1690 there is a reference to *"Richard Mercer Freeman of this town being supposed to defraud it by countenancing and protecting mugs and pipes of strangers as if they were really his own"* (Berry 1963, 7). The problem clearly did not go away for, sixteen years later (in 1706), the Liverpool pipemakers petitioned the Council to stop outside makers from selling their pipes wholesale to merchants (Berry 1963, 7). These references suggest that there was a considerable trade in pipes from elsewhere, probably from the Rainford area, to Liverpool, where they could both compete with locally produced products and find a place in the export trade. Pipes were certainly being exported from Liverpool during the 17th century since the table of customs duties for 1674 includes 2d for each crate of pipes exported to foreign countries and 1d for each crate shipped along the coast (Berry 1963, 5). Examination of the various British Port Books would no doubt reveal much more about the trade in pipes from Liverpool, for example, the eight crates of pipes shipped from Liverpool to Whitehaven in 1688 (Weatherill and Edwards 1971, 166). The evidence for coastal and overseas trade can also be explored through the artefactual evidence, as has been done by Davey (see elsewhere in this volume).

Another problem with interpreting the documentary records is in following the movement of individual pipemakers and in tracing their family links. Liverpool was not only the local market town for the Rainford area pipemakers, but also a rapidly growing commercial centre where they could set up workshops or sell their wares. Where better documentation exists in the 18th and 19th centuries, it can often be shown that the pipemakers moved freely between the two areas and that they often had family links in both centres. Analogy would suggest that this situation also applied during the 17th century and the family names of some of the pipemakers, for example the Athertons and the Lyons, certainly support this suggestion since they are found in both areas. During the 18th century archaeological evidence has shown that elaborately decorated pipes stamped with the Chester Arms were being produced in Rainford, perhaps by a Freeman of Chester who had his workshop outside the City (see above and Dagnall 1987b). One such maker is known from the 1747 poll lists when Peter Fitzgerald, a Freeman of Chester, voted in the Chester election but his place of residence at the time being given as Rainford (Dagnall, 1987b, 17). The same arrangement may have applied to the Robert Lyon who became a Freeman of Liverpool in 1643; did he actually come from Rainford where there are many documented Lyon pipemakers, but take his Freedom in Liverpool so as to obtain trading rights there? He may even have continued to work at Rainford, perhaps accounting for the early 'RL' pipes found there (fig. 1.6) and 1678 reference to a pipemaker of that name in the Rainford Court Rolls (Dagnall 2005).

Whatever the case with individual makers, the overall picture is clear in that there are certainly pipemakers recorded in Liverpool from at least the 1640s onwards. The numbers of known Liverpool makers remains very low throughout the 17th century (Chart 1), but their numbers during this period are probably under-represented because of the poor documentary and artefactual evidence. The number of known makers increases dramatically in the early 18th century as a result of better documentation but there were still consistently more documented makers in the Rainford area until at least the middle of the 18th century. There were, however, close links between the two production centres, not only geographically, but also in terms of their products (see below) and in relation to family links. Given these close ties, it is perhaps misleading to regard the Rainford area and Liverpool as two separate centres. Pipemakers in the two areas shared common materials, production styles and markets. The two areas adjoin one another and, between them, they forged a 'Merseyside style' that is quite distinct from other areas. This being the case, it is perhaps more realistic to look at the Merseyside industry as a whole, especially when comparing it with other areas. For example, the numbers of Chester pipemakers documented for each decade are given by Rutter and Davey (1980, 49). When the documented Liverpool and Rainford pipemakers are combined, it is clear that the Merseyside industry was equal to, if not slightly larger than, the Chester industry until well into the 18th century (Chart 2).

Although the number of documented Chester makers exceeds that of the Merseyside industry during the 1730s and 1740s, this situation was probably fairly short lived, since Liverpool grew tremendously during the course of the century to overtake Chester in most areas of trade. The Liverpool Port Books have not been searched for pipe exports but figures for 1770 survive to show that, in that year, the annual export of pipes amounted to some 5,535 gross, which would be 797,040 pipes at 144 to the gross (Baines 1852, 715, quoting Enfield, 1774). During the course of the second half of the 18th century the rapid growth of Liverpool meant that it finally equalled or exceeded the number of Rainford area makers. By the close of the 18th century these two centres had become nationally significant in terms of pipe production so that, by the time of the 1831 Census, Lancashire could boast the highest proportion of pipemakers of any county in England, Scotland or Wales, with a staggering 17.4% of the British total (Cessford 2004, 8).

In terms of the Liverpool products themselves, the evidence is somewhat scanty, but it does at least provide a basic overview. It is possible that that some or all of the early RL marks (for example, fig. 1.6) were produced by Robert Lyon of Liverpool, although this is where



	1600-1609	1610-1619	1620-1629	1630-1639	1640-1649	1650-1659	1660-1669	1670-1679	1680-1689	1690-1699	1700-1709	1710-1719	1720-1729	1730-1739	1740-1749
Chester	0	0	0	0	1	4	2	8	6	13	16	24	40	45	34
Merseyside	0	0	1	1	1	3	5	9	10	18	24	26	51	42	31

Chart 2. Plot showing the total number of documented makers during each decade for both the Chester and Merseyside industries

excavated evidence from the City itself would be useful. The first pipes that can be attributed to a Liverpool maker with reasonable certainty are those stamped RA for Richard Atherton (fig. 1.9), who is recorded taking his Freedom in 1654 and who may well be the same individual who was buried at St Nicholas's Church in 1671. Atherton was using a coarse coal measure type clay for producing his pipes, almost certainly obtained from the south Lancashire Coalfield, as opposed to the finer imported clays that were sometimes used in neighbouring ports, such as Chester, and which were most likely also used to some extent in Liverpool during the 17th century. Atherton's mark is of a typical south Lancashire style crescent form, which has been found on more typical local styles of spur pipe as well as the rather less usual small-heeled form shown in fig. 1.9.

The use of local clays probably continued in Liverpool to some degree until at least the end of the 17th century and there is even evidence that new local sources were being tested well into the 18th century. In his diary for 18 April 1719, Nicholas Blundell notes "*sent some clay to the Mugg Hous & Pip-Makers to be tryed there*" (Tyrer 1970, 255). These trials date from a period when many landowners were testing new methods of exploiting their estates through mineral extraction and small-scale industries and good parallels can be seen on both the Isle of Man, where the Earl of Derby's agent experimented with both pipemaking and potting in 1692/3 (Higgins 1999, 303) and at Whitehaven, where Sir John Lowther's agent carried out similar experiments in 1697/8 (Weatherill and Edwards, 1971). The Liverpool trials were ultimately doomed since the better quality pipe clays available in the south and south-west of Britain were soon to achieve a near total domination of the British markets, especially around the coastal areas where they could be shipped more cheaply than hauling clay even a few miles overland. This is clearly shown by the excavated material from South Castle Street, much of which can be dated to before 1726 (Davey 1985b), by which time the pipes are almost exclusively made of imported fabrics from the south and south-west of England.

The early 18th-century bowl forms from South Castle Street are predominantly heel forms, although spur forms are also well represented. The bowl forms are very similar to Chester styles of the period, although small differences in detail and finish show that most are not from there. The most notable difference is the lack of the elaborately decorated stems that were rapidly becoming characteristic of the Chester industry at this period. There are a few marked stems, but these comprise the wide geometric borders with a central makers name in the Rainford style (similar to fig. 1.14) as opposed to copying anything from Chester. These include a number with the maker's name THO ATHARTON in the centre (Davey 1985b, fig. 46.36), a maker who has not yet been located in the documentary sources, but who almost certainly worked in Liverpool. It seems almost certain that other Liverpool makers would have used this style of mark, for example, Christopher Atharton, who is known from four marked stems found at St Mary's City in Maryland, U.S.A. that are stamped 'CHRIS ATHARTON'. These marks are in the same style as the Thomas Atharton examples and the two makers were probably related. Similarly, it is quite possible that some decorated stems were also made copying the Chester styles, in the same way that these styles were copied in the Manchester area.

The final point to mention with regard to Liverpool is in relation to the actual workshop tools and kilns themselves. Liverpool is probably unique in the British Isles in that there are surviving mid 18th-century descriptions and illustrations of the actual tools and kilns used in the manufacture of pipes. This information is contained in the illustrated travel diary of R. R. Angerstein, who travelled around Britain between 1753 and 1755. Although his description of the Liverpool pipe industry is very brief, it provides some crucial evidence for this period (Angerstein, 2001, 311 and 320). He notes six pipe factories in Liverpool at the time of his visit and he records that their clay was obtained from Bettisford (*sic*; presumably Biddeford) and Poole in the south of England. He records that clay was also said to be found on the Isle of Wight. His description of the clay source ties in with the artefactual evidence, which, as noted above, shows that 'imported' clays had replaced the locally obtained ones during the early 18th century.

With regard to the range of pipes produced, Angerstein notes that they sold for between 9d and 2/6d per gross and that the workers were paid piece rates for producing them at between 4d and 1/- per gross, with the kiln master getting 1d per gross. It is quite hard to find good comparative data for these prices although it is worth noting that the Rainford makers gave a price of 5d or 6d per gross for their pipes in 1696 (Dagnall 1985) and the Bristol makers were selling at between 1/- and 5/- in 1799 (Higgins 1997, 131). The 1750s prices would certainly suggest that the Liverpool pipemakers were making quite a range of products, since the various prices will reflect different lengths and qualities of pipe. It is probable that specific export styles were being produced for the various overseas markets, but this is where archaeological evidence is clearly needed.

Although the prices are very useful, it is the drawings and notes about the moulds and kilns that are especially rare and important. Angerstein illustrates a bench and press for moulding pipes, which shows the typical arrangement of a head and handle holding the stopper for the bowl and a screw and trough to clamp the mould itself. The illustration clearly shows a long runner for the mould, showing that long-stemmed pipes were being produced, which was normal for the domestic market at this period. With regard to the moulds, he notes that they were made in Chester of iron and that they cost 18/- to 20/- for the two halves. This is the only known surviving evidence for the production of 18th-century pipe moulds in this country and it is particularly interesting since it gives both a source and a price for them. He goes on

to describe a trip to Chester during which he visited a gunsmith just outside of town who, amongst other things, made moulds for pipes, for which he charged, "12, 15 to 20 shillings". He also notes that the gunsmith didn't have any in stock, for he only made them against an order (Angerstein, 2001, 320). The number of pipe moulds required at this date was probably too small to support full-time specialist manufacturers and this reference provides the first indication of the types of skilled craftsmen who were undertaking this work. It is not clear why a Chester gunsmith should have supplied moulds to Liverpool, where there were also gunsmiths working, and it may be that Angerstein merely came across one of a number of individuals who supplied moulds to the Liverpool pipemakers. The artefactual evidence clearly suggests that the Liverpool and Chester bowl styles were slightly different at this time, which would not be expected to be the case if all of the moulds came from a single source, or if Chester gunsmiths were regularly supplying the Liverpool pipemakers with moulds.

The final and equally interesting observation made by Angerstein was with regard to the pipe kilns, one of which he illustrates (Angerstein 2001, fig. 287). He states that the kiln could hold 40 gross of pipes at a time, that it took 24 hours to fire and that it was fired with pit coal, presumably from the south Lancashire coalfield. Most significantly, he describes the kiln as having six fire-mouths around its periphery. If this was indeed the case, then it is extremely unusual as all the other known British pipe kilns until the 19th century had only one fire-mouth. He also shows a domed structure with vents in the top, which again is different, since a tall chimney would be expected. If his description is accurate, then it shows a type of kiln that is not otherwise known. It could be that large urban manufactories were emerging with a new larger type of kiln but this is clearly another case where archaeological evidence is needed to test the contemporary description.

In summary, it seems that the Liverpool and Rainford makers were producing very closely related products both in form and finish. They both used predominantly local clays during the 17th century, changing to imported fabrics by the early 18th century. Both centres used distinctive bowl forms and crescent shaped marks during the 17th century before changing to larger 18th-century forms that were more closely related to Chester types. The regional identity was, however, still preserved in the detail of these forms and, more strikingly, by the different styles and uses of stem marks and decoration. Furthermore, there were often close family ties between the pipemakers in Rainford and Liverpool, whereas such links are rarely found between these centres and the pipemakers in Chester. Despite their geographic proximity, it seems that the Chester and Merseyside industries evolved their own distinctive and separate styles, but that both were successful in building up substantial markets for their wares. Both the Chester and Merseyside industries maintained extensive overseas export markets and the main difference between them appears to be in the extent of the home markets. The Chester makers dominated the supply in that City but do not seem to have captured a particularly large share of the surrounding markets. In contrast, the Merseyside makers succeeded in capturing the home market over much of north west England, from the Mersey to the Lakes and across to the Pennines.

A New Merseyside Typology

Although there have been many individual studies of pipes from this region, there has never been a systematic study of all the available material so as to produce a broader overview in the same way that there has for Yorkshire (White 2004). The regional character of the bowl forms from north west England has long been recognised (for example, Oswald 1975, 48-49), and a tentative Rainford typology based on fieldwalking finds was suggested during the late 1970s (Davey 1978, 6-7). Since then a much larger body of evidence, including good context groups containing coherent and datable stratified material, as opposed to battered ploughsoil finds, has been amassed. This paper has shown how the Liverpool and Rainford industries can be seen as parts of the same pipemaking tradition, sharing common styles, techniques and family connections between the two areas. The products from Merseyside dominated the market across much of north west England and influenced styles still further afield.

As a conclusion to this paper, and to facilitate the classification and dating of material in future studies, a new Merseyside typology has been drawn up to show the evolution of locally produced bowl forms from the early 17th century through to the mid-18th century. During this period there was quite a lot of variation between individual bowl forms, especially during the 17th century, but examples have been selected to best illustrate both the range of types encountered in this area and those with the most typical characteristics of each different type. The forms have been dated by reference to similar types from other parts of the county, from examples with known maker's marks, and by pipe bowls associated with other material in archaeological deposits. Considering the area over which Merseyside pipes either dominated the market or set local styles, this typology should be widely applicable to finds from west of the Pennines between the Mersey and the southern Lake District as well as to exports from the region, which were certainly sent to the Isle of Man and Ireland in some numbers.

The Merseyside bowl forms can be divided into two broad classes; those with heels and those with spurs. Each of these two types has been put into a separate numbered sequence, prefixed by the letters 'H' and 'S' respectively to identify the different styles. The bowl forms in each of these two sections have been arranged in roughly chronological order, but with some leeway so that similar forms, such as the bulbous types 'S5-S7' can be kept

together for ease of comparison. A general overview of the evolution of these broad styles is given below, followed by a more detailed description of the individual forms, which accompany the illustrations at the end of this report.

Merseyside Heel Forms

Pipes with heels were the earliest types to have been produced in this region and this form probably remained the most popular throughout the period under consideration. The very earliest styles of *c*1580-1610 have not yet been found in Merseyside itself and, even if examples are discovered, it is probable that they will be imports from elsewhere, since production is unlikely to have actually been taking place within the area at this time. These earliest forms have, therefore, been omitted and the typology starts with the barrel-shaped forms that were popular all over Britain during the 17th century (fig. 2.).

Some of the earliest 'barrel-shaped' heel forms have a slight double curve to the profile, in that the bowl constricts slightly just below the rim ('H1-H3'). This constriction is usually most evident on the side facing the smoker, although it can appear on the other side of the profile as well. The earliest varieties are often made of local clays, showing that they were produced in the region, and some are unmilled, a regional characteristic that was also common at Chester (for example, 'H1'). This form usually has a medium sized heel and the basic form was produced from *c*1610-1670. The main criterion for dating individual examples within this period is a gradual increase in size ('H1-H3').

Another early style, also produced from around 1610, is characterised by a generally smaller heel and, in particular, a rather smoother profile to the bowl without the constriction below the rim ('H4-H6'). Although these bowls are similar in height to the first series ('H1-H3'), this lack of a constriction tends to make them look rather longer and more sleek. As with the first series, it is the overall bowl size that is most important in determining date ('H4-H6').

Around 1630 a new bowl form with a more bulbous body appears, and this marks the appearance of the first distinctly regional Merseyside characteristic. The bulbous forms are similar to the second series described above in that they do not have a constriction below the rim. Instead of a sleek form, the body of the bowl swells out into a rounded, bulbous shape and the heels tend to be larger. This style was current from around 1630-1690 and, once again, it is a gradual increase in size that dates the individual examples within this range (H7-H9).

Towards the end of the 17th century a few bowls are found with a more 'baggy' shape to the bowl and with a large, flared heel (H10). This form and, in particular, the flared heel, are reminiscent of contemporary styles from the Broseley area of Shropshire, although these pipes usually have a tail extending back along the underside of the stem as well. This particular Shropshire style was being copied as far north as Buckley in North Wales and occasional Shropshire examples are found within Merseyside, so they could have influenced Merseyside designs. This form, however, does not appear to have been particularly popular and it was soon eclipsed by a range of other 'transitional' styles.

The so-called 'transitional styles' are those that fall between the characteristic barrel shapes of the 17th century and the larger, more upright forms that were produced for most of the 18th century. The transitional styles generally date from around 1680-1730 and occur in a much less standardised range of forms (H11-H14) than had previously been the case. In general terms, the bowls become taller with less sharply curved profiles and thinner walls. The rim becomes less sharply angled away from the smoker, often becoming roughly parallel with the stem line itself, and the bowl forms become more upright. Although the rims are often still bottered (smoothed and shaped with a special tool), milling becomes rare. The heels of these forms are particularly variable, ranging from quite large (H11) to small (H13) and sometimes with distinctive raised ridges down each side, in the Chester fashion (H12). One of the first transitional styles, and that most closely related to the previous 17th-century forms (H11), is sometimes marked with a heel stamp. The other forms, which were introduced slightly later, are not marked in this way although some of them (for example, H13 and H14) almost certainly had stamped marks or other decoration applied to their stems.

The final form in this sequence (H15) represents a typical 18th-century form. After the experimentation with transitional forms, the pipemakers settled on a fairly tall, quite thin-walled bowl for most of the 18th century. This is characterised by a fairly cylindrical body and a cut rim, without any smoothing or milling (although it is sometimes internally trimmed). The top of the rim in usually either parallel with the stem, or dips slightly towards the smoker. The use of burnishing becomes less common on this style but some examples were certainly produced with marked or decorated stems.

Merseyside Spur Forms

Spur forms seem to appear in north west England slightly later than the heel forms, but this is typical of the picture nationally. Once the form had been introduced, spur pipes were produced alongside heel forms for the rest of the period under consideration. The bowls themselves follow a very similar sequence and development to the heel forms described above, which is not surprising given that heel and spur pipes often seem to have simply been alternative styles, with the only real difference being in the treatment of the area beneath the bowl. In terms of classification, a heel is defined as a base that is broader than it is deep, while a spur is one that is deeper than it is broad. Furthermore, heels are usually trimmed to give a broad flat base, while spurs tend to taper to a flattened or rounded base, which is not always trimmed (fig. 3).

The earliest spur forms have a 'barrel-shaped' bowl with a slight double curve to the profile, in the same way as the heel forms ('S1'). Large versions of this appear over time ('S2-S3') and some examples have a more nearly oval shape to the bowl profile without a particularly marked constriction below the rim ('S4'). This mirrors the development of heel forms, as does the appearance of a notably bulbous series of spur bowl forms ('S5-S7'). Bowl forms 'S2-S7', with the exception of form 'S3', are usually marked on the bowl facing the smoker with a crescent shaped mark. Form 'S3' is not usually marked on the bowl, nor are any of the following types.

Around 1660 a different form with a much more open bowl mouth appears ('S8'). This form, however, does not seem to develop any further and is out-competed by a series of more slender and slightly taller bowls that bridge the transitional period into the early 18th century ('S9-S12'). During this period there is a tendency for the bowl rim to become more nearly parallel with the stem and for the use of rim milling to be abandoned. During the early 18th century the use of local clays declines in favour of finer imported fabrics and the use of burnishing, which was almost universally applied to the earlier spur forms. Early 18th-century pipes are not well represented amongst local assemblages but forms 'S13-S14' represent the types currently known. These tend to be more forward leaning and with the rim more angled away from the smoker than pipes from other areas. They also lack the more cylindrical body that is typical of heel forms nationally at this period.

Summary and Conclusions

Only some 30 years ago the pipemaking industries of north west England were barely recognised, let alone understood. Since then a tremendous amount of excavation and research has shown the importance of both Chester and south Lancashire as pipe producing centres, while publications and systematic recording programmes are now starting to provide details of their interaction and trading patterns. For the first time this study has attempted to provide an overview of the industry in the Merseyside area and to set it within its broader regional context. This paper has shown how Chester emerged as one of the earliest and most significant pipe manufacturing centres in the region but that the south Lancashire industry followed soon after. The south Lancashire pipemakers were able to develop their own distinctive styles of bowl form and mark, but based on a very different social framework and set of geological conditions to the Chester makers. There appears to have been very little other pipemaking elsewhere in north west England and the Rainford area pipemakers appear to have been able to capture almost the entire market between the Mersey and Cumbria, while the Chester makers concentrated on the export trade.

Archaeological evidence has been shown to be crucial in examining these early industries in both areas. In Chester the earliest evidence of pipemaking comes from artefactual not documentary evidence, while in the Rainford area an analysis of the marks suggests that only about a quarter of the pipemakers represented from marked pipes is known from documentary sources. This may be partly because the early Merseyside pipemakers seem to have operated pipe workshops as part of a range of activities. The industries in both areas, however, grew rapidly during the second quarter of the 17th century and large numbers of marked pipes were produced during the mid- to late 17th century. Despite their proximity, the two centres appear to have evolved quite independently, with little exchange of either stylistic influences or workforce.

Further work is clearly needed to check the degree to which small-scale production took place in other parts of Greater Manchester and Lancashire but it is Liverpool that remains the key area requiring detailed study. Liverpool was an emerging port during the late 17th century that went on to eclipse Chester during the 18th century. The chronic shortage of excavated material from Liverpool makes it hard to assess the growing industry there, but documentary sources show that pipemaking started fairly early in the 17th century and that it became extremely significant during the 18th. As the same time, Liverpool provided the gateway through which pipes would have been exported from Merseyside to many other areas, as is shown by the Christopher Atharton marks, probably made in Liverpool but only known so far from examples found in Maryland.

As well as establishing a framework for the scale and location of the Merseyside industry this study has tried to outline the development of the marks and bowl forms produced there. These established a strong regional identity and future studies are needed to see how these styles influenced pipes in other areas, both at home and abroad. There is an unusual heel bowl of *c*1680-1730 from Uttoxeter, for example, with a tailed heel in Broseley style but a crescent-shaped maker's mark in the south Lancashire style (Higgins 1987b, fig. 95.12). This piece clearly represents an unusual hybrid between these two traditions. Although an attempt has been made to define the marks used in Merseyside there is still a shortage of material available for study (the only known example of a George March mark from Eccleston comes from Cumbria), and there is still not a single known example of a stem mark that is attached to its bowl. Similarly, there are virtually no complete pipes from this period known and so it is impossible to assess either the range of stem lengths that were being produced or their relationship to the bowl forms. Despite these problems, it is clear that the Merseyside industry was extremely substantial and significant and it is hoped that the broad framework and bowl form typology set out here will pave the way for future work.

Fig. 1. Examples of Merseyside Area Pipes

1 Bowl of *c*1630-50 stamped 'IB' found in a kiln dump at Church Field, Rainford (Higgins 1982, fig. 22.3). Unusually, the mark has also been lightly applied to both sides of the bowl. Maker unknown.

2-3 Two bowls of *c*1630-50 with different 'HB' stamps found in a kiln dump at Church Field, Rainford (Higgins 1982, figs. 22.2 & 22.4). A pipemaker called Henry Billlinge was recorded at Prescot in 1622 (King 1982, 257) and he could have made these pipes if he subsequently moved to Rainford.

4 Complete pipe of *c*1630-50, reconstructed using joining fragments from the Church Field kiln dump, Rainford (Higgins 1982).

5 Heel bowl of *c*1640-1660 with a incuse mark comprising the ligatured initials 'HL'. Probably made by either Hugh Lyon of Windle (died 1663) or Humphrey Lyon of Rainford (poor relief disallowed 1664; Dagnall 2005). Timperley Moat (TM 91 259 <36>).

6 Heel bowl of *c*1640-1660 with a incuse mark comprising the initials 'RL'. Perhaps made by Robert Lyon who became a Freeman of Liverpool in 1643 (Oswald 1975,179). Timperley Moat (TM 90 9 <23>).

7 Heel bowl of c1640-1670 with a relief 'GA' mark on the heel, probably for Gowine Atherton of Windle, who married in 1657 (Dagnall 2005). Haughton Green Glasshouse, Denton (HG 70 F12 1660 (41)).

8 Spur bowl of *c*1640-1660 with a crescent-shaped bowl mark reading 'IS'. Probably made by John Sefton of Rainford, who was recorded as having been 'lying drunk in the highway' in 1669 (Dagnall 2005). Timperley Moat (TM 92 259 <50>).

9 Bowl of *c*1650-70 with an unusually small heel and a crescent-shaped bowl stamp reading 'RA', almost certainly for the Richard Atherton who became a Freeman of Liverpool in 1654. An individual of this name, no occupation given but perhaps the same person, was buried at St Nicholas's Church, Liverpool, on 1 Feb 1671. Great Meols (Ecroyd-Smith Collection in Liverpool Museum; 18.11.74.31.12).

10 Spur bowl of *c*1640-1670 with a crescent-shaped bowl mark reading 'EA', maker unknown. Bewsey Old Hall excavations (BH 1/985 524).

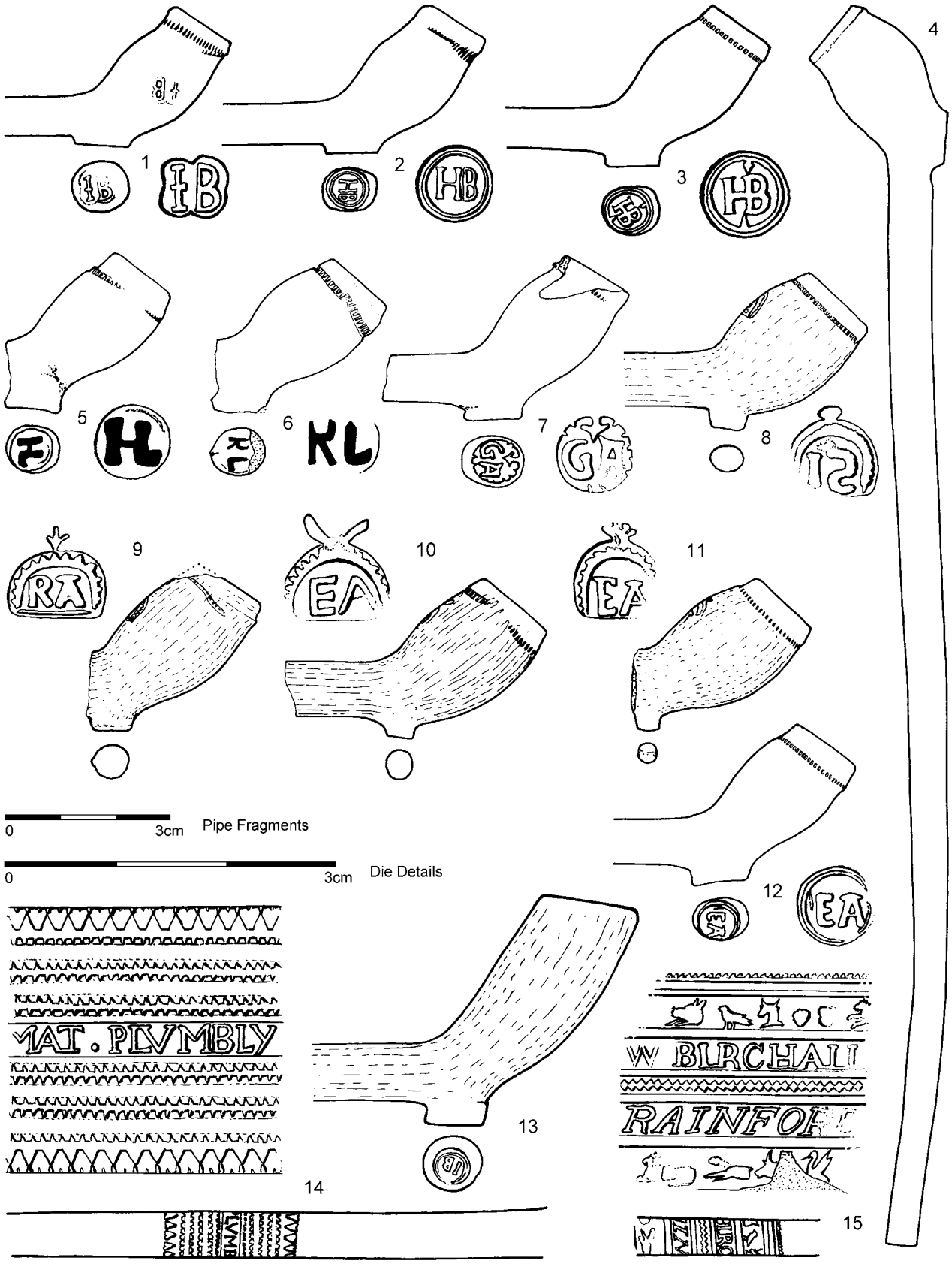
11 Spur bowl of *c*1640-1670 with a crescent-shaped bowl mark reading 'EA', maker unknown. Timperley Moat (TM 91 2 <29>).

12 Heel bowl of *c*1640-1660 with a heel mark reading 'EA', maker unknown. Timperley Moat (TM 92 259 <51>).

13 Heel bowl of c1680-1710 with a stamped 'IB' heel mark. Big Lea Green excavations, Sutton (Higgins, forthcoming (c); Area XVIII (101) <30> (AA)).

14 Stem with roll-stamped mark of Matthew Plumbly, whose daughters were baptised or buried at Rainford between 1718 and 1725 (Dagnall 2005). Warrington Old Academy excavations (Higgins 1987a, 13-18).

15 Stem with roll-stamped mark of William Birchall of Rainford. Up to eight different pipemakers of this name are documented in the Rainford area, with working dates ranging from at least 1752-1851 (Dagnall 2005). The style of this mark suggests a later 18th-century date, most likely *c*1760-90. Warrington Old Academy excavations (Higgins 1987a, 13-18).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0 3cm Die Details

Fig. 2. Merseyside Bowl Form Typology; Heel Types

H1 - 1610-1640 Early heel form characterised by its small size and a slight constriction of the bowl just below the rim. Rare form. This example is made of a highly fired, buff-coloured, local fabric with a poorly burnished surface and a half-milled rim. Stem bore 7/64". St Helens Museum; unprovenanced.

H2 - 1630-1650 Heel bowl of similar form to 'H1' but with a slightly larger overall size and much more commonly found, often with a maker's stamp on the heel. This example is made of a coarse local fabric and was excavated from a kiln dump of *c*1630-50 at Church Field, Rainford (Higgins 1982, fig. 22.2). National Museums Liverpool.

H3 - 1640-1670 The largest and latest version of the bowl forms with a slight constriction just below the rim (Types 'H1-H3'). Bowls of this type are often rather lop-sided as a result of poor mould making and the pipes are often poorly finished. Fairly common form, often found with a maker's stamp. This example is unburnished and has just a plain groove around one quarter of the rim. The inverted mark 'HL' probably represents either Hugh or Humphrey Lyon, who were working in the Rainford area. Bewsey Old Hall (BH 80 18 (3)).

H4 - 1610-1640 The smallest of the more elliptical bowl forms, characterised by a fairly top-heavy bowl and a small heel, which is usually unmarked. Rare form. This example is made of a local clay with a good burnish and a fully milled rim. It was recovered from the 1995 excavations carried out by Giffords at Eccleston Hall (Site Code 7150, Context 230).

H5 - 1620-1650 A compact and fairly chunky bowl form with a relatively small heel, which lies half way between the forms with constricted rims (Type 'H2') and the more bulbous types (Type 'H7'). This example is made of a coarse local fabric with a fully milled rim, but no burnishing. Timperley Moat (TM 259 <38>).

H6 - 1630-1660 Type H6 is a very common bowl form characterised by a neat, elliptical bowl that is usually neatly finished and often stamped with a maker's mark (often 'IB') on the heel. This example has a three-quarters milled rim and a burnished surface. Bewsey Old Hall (BH 80 18 19 (K)).

H7 - 1630-1660 The smallest of three sizes of pipe with a distinctly bulbous bowl form, which is the earliest distinctive regional characteristic to emerge. A very common bowl form, often neatly finished and usually with a stamped maker's mark on the heel. This example is neatly burnished and with a fully milled rim. Bewsey Old Hall (BH 80 18 19).

H8 - 1650-1680 A medium sized bulbous form, which does not appear to have been as common as the smaller forms ('H7'). This example is stamped 'HN', a mark that appears to represent an as yet unidentified Rainford area manufacturer. Dagnall Collection (P85)

H9 - 1670-1690 A large, bulbous form representing the final flourish of this particular style. Not particularly common but usually stamped with a maker's mark when it occurs. This example from Big Lea Green (Area XVIII, Context 101 <30>).

H10 - 1680-1700 A large and fairly bulbous bowl form characterised by its large and flared heel, which is usually marked. This style was never particularly common but it also appears to have been used in northern Lancashire and Cumbria. This example was collected in the Rainford area. Dagnall Collection (P54).

H11 - 1680-1720 A much taller and more slender bowl form with the rim more nearly parallel with the stem of the pipe. The heel is quite chunky and is usually stamped with a maker's mark. A fairly common bowl form. This example has a smoothed rim but no milling. Bewsey Old Hall (BH 1/985 524).

H12 - 1690-1730 A fairly upright bowl form characterised by moulded ridges on the sides of the heel. These ridges are characteristic of pipes produced at this period in Chester but examples made of local fabrics from the Rainford area suggest that this type was being produced in Merseyside as well. The rims of these pipes are usually either roughly parallel to the stem, or dip towards the smoker. They are not milled and do not have makers' marks on them. It is probable that Merseyside makers were producing this style of bowl in local and imported fabrics. This example is from Bewsey Old Hall (BH 80 18 19 (R)).

H13 - 1690-1730 A fairly slender, upright bowl form, similar to 'H12' but with a small, plain heel. The rims of these pipes are usually either roughly parallel to the stem, or dip towards the smoker. They are not milled and do not have makers' marks on them. It is probable that Merseyside makers were producing this style in both local and imported fabrics. This example is from Bewsey Old Hall (BH 80 18 19 (U)).

H14 – 1710-1750 A fairly large and comparatively thin-walled bowl with a rather forward-leaning form. Type H14 is further characterised by its slightly flared heel and, almost always, the use of a fine imported fabric. This style was probably used in conjunction with roll-stamped stem marks and this particular example was recovered from a kiln dump at Rainford containing the stem marks of Nathan Birchall and Ralph Rylance, both of whom were working from *c*1700-1740 (Dagnall 2004). Dagnall Collection.

H15 – 1720-1780 A large capacity bowl with thin walls and an upright form, with the rim usually dipping towards the smoker. Pipes of this style were made of fine imported fabrics and roll-stamped stem marks were used to decorate the stems. This bowl was found beneath the floors of Churchside Cottage, Rainford, in association with roll-stamp decorated stems of a type that are known to have been made in Rainford. Dagnall Collection.

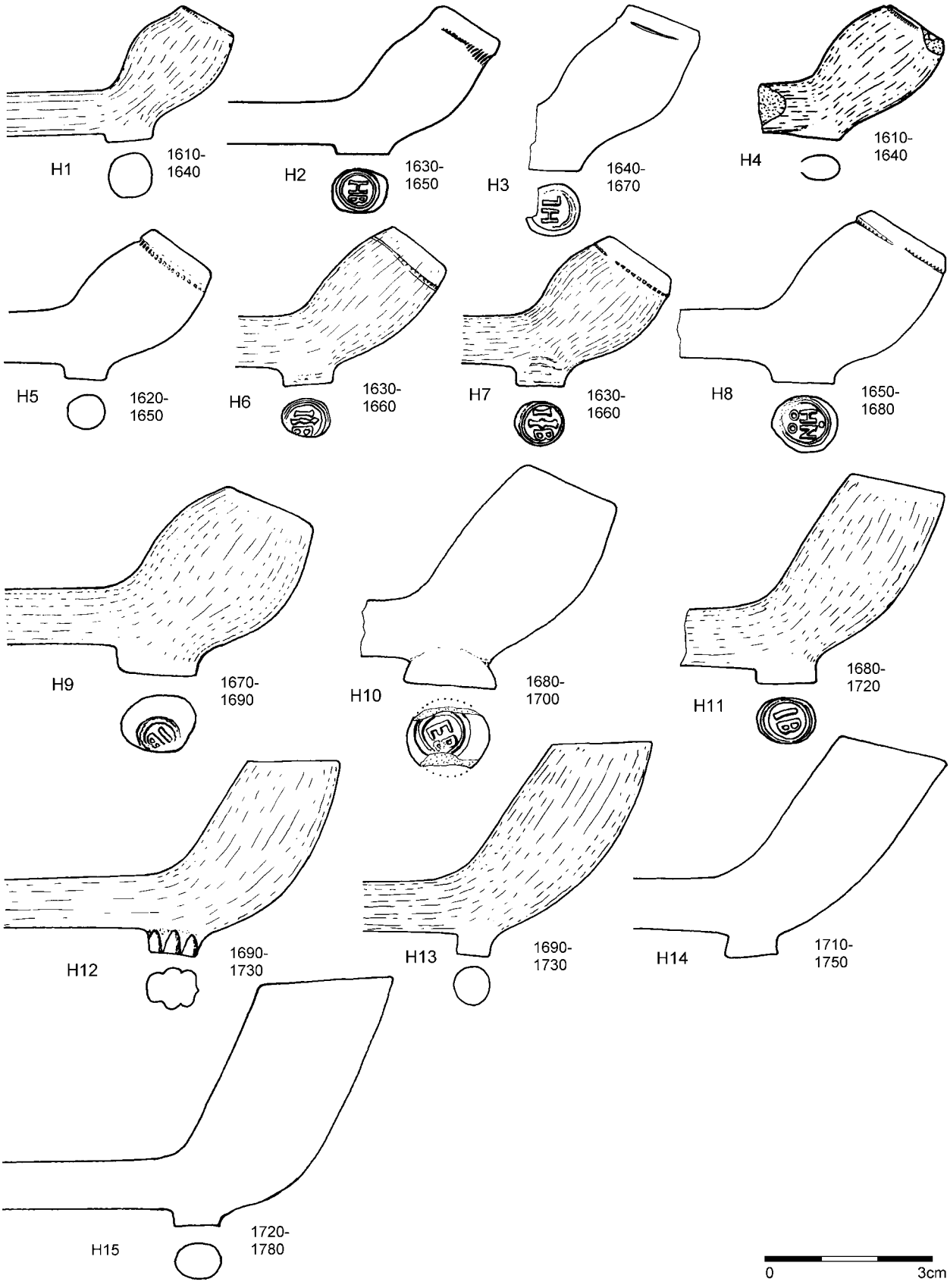

H1
1610-
1640
H2
1630-
1650
H3
1640-
1670
H4
1610-
1640
H5
1620-
1650
H6
1630-
1660
H7
1630-
1660
H8
1650-
1680
H9
1670-
1690
H10
1680-
1700
H11
1680-
1720
H12
1690-
1730
H13
1690-
1730
H14
1710-
1750
H15
1720-
1780
0
3cm

Fig. 3. Merseyside Bowl Form Typology; Spur Types

S1 - 1620-1650 Early spur form of a style produced in London and widely copied around the country by other pipemakers. This style, which was very popular in Chester, is characterised by a neat, compact form. This particular example has a fully milled rim and a burnished surface and is made of a slightly gritty fabric, showing that it is a regionally produced piece. Timperley Moat (TM91 UNST <44>).

S2 - 1640-1660 This style has a slightly more constricted 'waist' than 'S1' and the bowl is more sharply curved. These bowls are often marked with the distinctive crescent shaped bowl stamp that was characteristic of the Merseyside industry, centred on Rainford. This example is burnished, fully milled and stamped with a crescent shaped mark reading 'IB'. Bewsey Old Hall (BH 1/985 352).

S3 - 1660-1680 A spur form with a less sharply curved bowl and more open rim. This style is not usually stamped with a maker's mark and it does not seem to be so often milled as more curved contemporary styles. This example has a burnished surface but the rim is not milled. Bewsey Old Hall (BH 1/985 352).

S4 - 1660-1680 A rather tall, elongated bowl form characterised by a rather small, fine spur. This example had a good burnish, a three-quarters milled rim and a south Lancashire style crescent-shaped bowl stamp reading WB facing the smoker. National Museums Liverpool from field walking at Newton-le-Willows (NT4 F1/2).

S5 - 1640-1660 A small bulbous form with a chunky spur, which developed as a distinctive regional type in the south Lancashire area. This was a common form, usually very neatly produced and finished and marked with a crescent-shaped bowl stamp. This example is finely burnished and has a three-quarters milled rim. It is stamped with a crescent-shaped IB mark. Bewsey Old Hall (BH81 18 (31)).

S6 - 1650-1680 A medium sized bulbous spur form of a type usually stamped with a crescent-shaped bowl mark. This example is burnished and has a crescent-shaped IB mark on the bowl. Bewsey Old Hall (BH 1/985 629).

S7 - 1660-1690 A large bulbous spur form characterised by a very chunky spur and usually with a crescent-shaped bowl stamp. These large forms are often unmilled and they are not particularly common. This example has an average burnish and the rim is not milled. There is a rather small crescent-shaped GR stamp on the bowl. Big Lea Green (Area XVIII, 101, <28/29> (M)).

S8 - 1660-1690 Quite a chunky, full-bodied bowl form but with a wider more open rim than the bulbous varieties (S5-S7). This is quite a common Merseyside form but it is not usually stamped with a marker's mark and the rim is often unmilled, although it is still bottered. This example has a lightly but quite finely burnished surface, a half-milled rim and quite a fine spur. Timperley Moat (TM90 UNST <14>).

S9 - 1670-1700 A late 17th-century form with a more slender and a fairly upright bowl, which is not usually marked or milled, although it is still bottered. Quite a common form in Merseyside and usually made of local clay. This example has an average burnish and the rim is not milled. Bewsey Old Hall (BH 1/985 273).

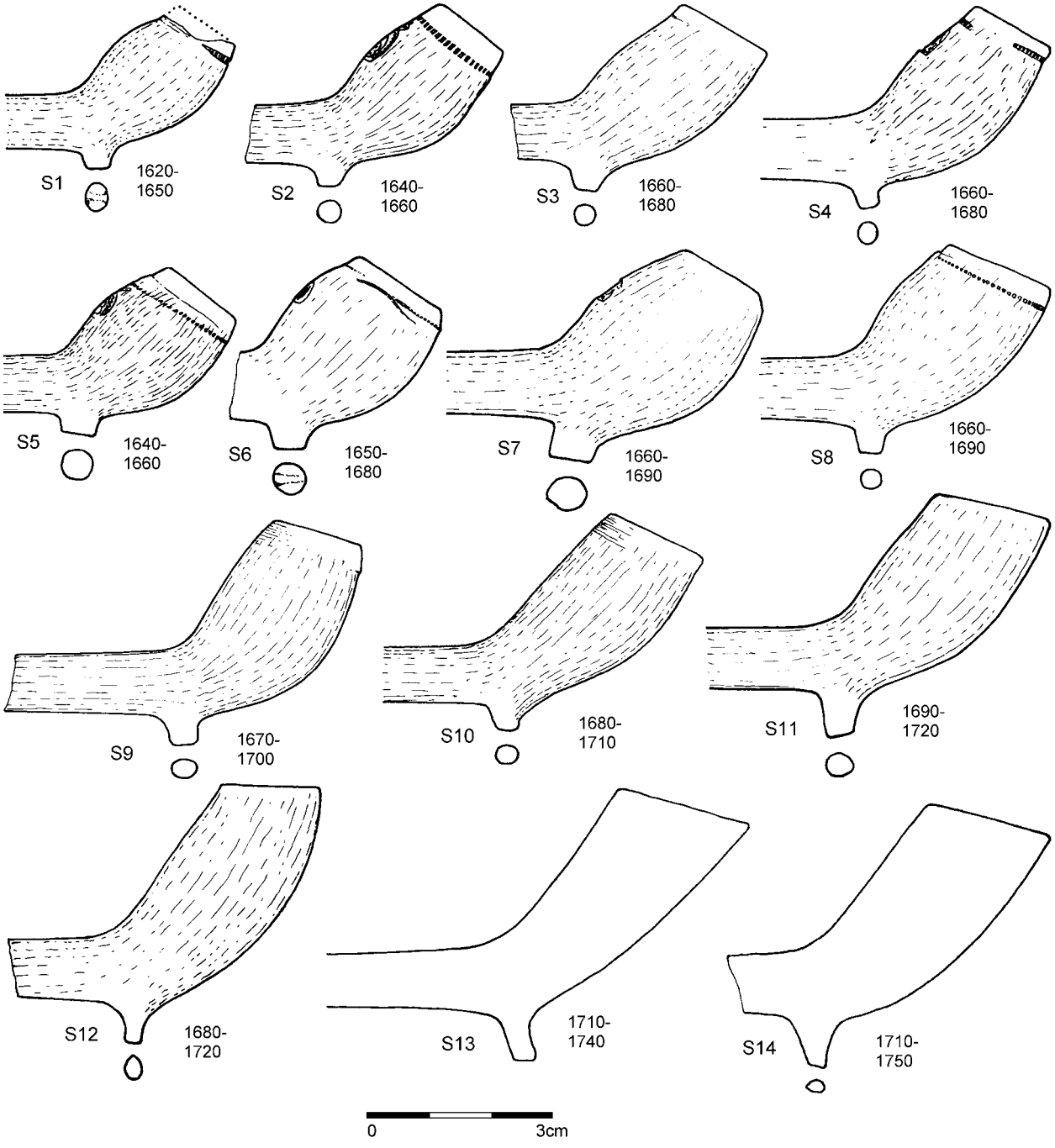
S10 - 1680-1710 A forward leaning form but with much less curve to the bowl sides than in previous types. Not usually marked. This example has a burnished surface and bottered rim, but it is not milled. Bewsey Old Hall (BH 1/985 390).

S11 - 1690-1720 A 'transitional' form, characterised by a full-bodied and more upright bowl with a relatively narrow stem junction. The bowl walls are thinner than in earlier forms and the rim more nearly parallel with the stem. Not usually marked or milled. This example has an average burnish and has had a chipped rim restored in this drawing. Big Lea Green (Area XVIII, 101 <28>(R)).

S12 - 1680-1720 A 'transitional' form, characterised by a finer spur, an upright bowl and the rim being roughly parallel with the stem. Not usually marked or milled and with the rim sometimes cut as opposed to having been bottered. Early forms of roll-stamped stem decoration were probably sometimes used on this style of pipe. This example is burnished but not milled. Bewsey Old Hall (BH 1/985 112).

S13 - 1710-1740 A distinctive form with a slightly forward-leaning spur and a cone-shaped bowl with a wide rim, usually made of a fine, imported rather than local clay. This style was probably used in conjunction with roll-stamped stem marks and this particular example was recovered from a kiln dump at Rainford containing the stem marks of Nathan Birchall and Ralph Rylance, both of whom were working from *c*1700-1740 (Dagnall 2004). Dagnall Collection.

S14 – 1710-1750 A thin-walled bowl form with a larger internal capacity than previously and a more sharply pointed spur. Bowls of this form are not milled and usually have simple cut rims. They are almost always made of fine imported clays and they may well have had roll-stamp decorated or marked stems. This example has a cut rim. National Museums Liverpool; South Castle Street Excavations (1 122 <598>).


S1
1620-
1650
S2
1640-
1660
S3
1660-
1680
S4
1660-
1680
S5
1640-
1660
S6
1650-
1680
S7
1660-
1690
S8
1660-
1690
S9
1670-
1700
S10
1680-
1710
S11
1690-
1720
S12
1680-
1720
S13
1710-
1740
S14
1710-
1750
0
3cm

Appendix 1 - Merseyside Area Marks

This Appendix has been compiled in order to provide a basic hand-list of the range of marks found in and around Merseyside and the frequency with which they have been recorded. It also shows the collections where examples are to be found, which, in turn, provides an indication of the geographical distribution of each mark. One *caveat* with regard to assessing distribution from this list is that general museum collections may contain material from various locations, not all of which are necessarily local to that museum.

A sample of about 1,000 stamped pipes has been included in the following table, all of which are in addition to the mass of material recorded from Rainford itself (which was too complex a sample to quantify for this paper). The marks listed do not represent every known example, merely a selection extracted from publications or the principal collections where data was easily available. An attempt has been made, however, to include any group with an otherwise unrecorded mark in it, so that the actual list of known marks is as complete as possible. The majority of the marks have been listed from actual impressions collected by the author as part of the *National Clay Tobacco Pipe Stamp Catalogue* that he has been compiling since the 1980s. The collections included are briefly described below, together with details of the published material that has been included.

A representative sample of collections covering the main area over which Merseyside pipes are found has been collated for the table. This area extends as far north as Kendal in south Cumbria, but excludes places in the north of Cumbria, such as Carlisle, where different types of pipes are found. Similarly, a few places in north Cheshire have been included to show the southern fringe of the Merseyside distribution but only selected pieces from Chester itself have been shown, so as to avoid a mass of locally produced pipes from that centre.

With one or two exceptions, explained below, all of the makers' marks from each collection or site have been included in the table. This list enables the full range of marks from each site or area to be seen, including any unusual or imported pieces. Symbol marks have been included but not the 18th-century Chester style ovals and stem borders, which are purely decorative. The marks themselves have been allocated into broad, but not die-specific, groups. In general terms, the various bowl and heel stamps, principally the initial marks, date from between *c*1630 and 1720, with the majority belonging to the period *c*1630-1680. Similarly, the various stem stamps and borders (including the full name marks) are principally of 18th-century date, with the majority dating from between *c*1700-1750. These types of stem mark declined in popularity after the middle of the 18th century and fell out of use completely around 1780-90 and so, for the sake of completeness, the few later examples that are known have been included. On the other hand, none of the long, single line stem stamps, which started appearing from around the 1760s onwards, have been included, since they belong to a study of the later 18th and 19th-century Merseyside pipe industry.

The pipe groups that have been included in the table are listed below. Unless otherwise stated, the marks have been identified and enumerated from actual casts made from the pipes and from notes compiled by the author. Incomplete or illegible marks have been excluded but, except where noted, all of the other marks in each group have been listed. Where the style of a mark or its bowl form differ from material typically found in the Merseyside region, then it has been listed on a different line to distinguish it from the locally produced material. The marks and sites have been listed in alphabetical order.

Beeston Castle, Cheshire Finds from a large excavated assemblage, enumerated from the publication report (Davey 1993).

Blackburn Museum General Museum Collection.

Bolton Museum General Museum Collection.

Burnley (Towneley Hall Museum) General Museum Collection.

Chester Selected pieces enumerated from a publication on Chester pipes (Rutter and Davey, 1980). The extracted list only includes south Lancashire style marks, plus any other marks that have also been recorded from elsewhere in the study area. Finds made after 1980 are not included.

Cuerdale, Lancashire A single stamped bowl recovered by Northern Archaeological Associates in 2001 as part of the Salmesbury to Helmeshore Pipeline Project and included because it represents an otherwise unrecorded set of initials. The pipe (SHP 01 1/7) was found in Curedale at SD 5858 2871.

Gleaston, Cumbria Excavated fragment recovered by Greenland Archaeology from a site in Mill Road (SD 25790 70825) in 2006 (Site Code MR 06, Context 103).

Great Meols Area, Wirral Marks recorded as part of a re-assessment of 19th century and later collections from the Great Meols area (Higgins 2007).

Halton Castle, Cheshire Marks listed from a published excavation report (Blackmore and Lewis 1987).

Kendal Museum General Museum Collection.

Lancaster Museum General Museum Collection.

Liverpool, South Castle Street Excavations, 1976-77 Recorded from the finds, which are now in the National

Museums Liverpool. A report on the pipes is included in the published excavation report (Davey 1985b).

Newton-le-Willows Recorded from field walking finds, now in the National Museums Liverpool.

Norton Priory and Norton Village Recorded from the published pipe report (Davey 1985a).

Ordsall Hall, Salford Excavated finds recorded from the published report (Davey 1980). The finds themselves are now held at Peel Park Museum (see below).

Peel Park Museum, Salford Recorded from pipes in the general museum collection, excluding the material from Ordsall Hall, which has been listed separately (see above) .

Prescot Finds recorded from the 1980 excavations in the town.

Preston Museum General Museum Collection.

Rainford Area, Miscellaneous A large number of pipes have been collected from the Rainford area and in a variety of circumstances, including excavations, structured field walking and as stray finds. Material from the area is held in numerous public and private collections and no attempt has been made to collate and enumerate this material for this paper. Instead, where existing indexes compiled by Ron Dagnall and the author show that one or more examples of a particular type of mark is known to have been found in the area, a cross (X) has been entered in the relevant box. As a result, there may be some marks that have been missed from this list.

Sutton, Big Lea Green Farm Excavated group, recorded from the pipes, which are due to be published as part of the excavation report (Higgins, forthcoming (c)).

Tatton, Cheshire Recorded from excavated material, which has also been published (Higgins 1987a).

Timperley Moat, Greater Manchester Recorded from excavated finds, which are due to be published as part of the final site report (Higgins, forthcoming (b)).

Warrington, Twiss Green Recorded from excavated finds, recovered during the excavation of a moated platform during the early 1980s. The finds are now deposited with the Cheshire Museums Service.

Warrington, Bewsey Old Hall Recorded from excavated finds, recovered during the excavation of a moated site during the 1970s and early 1980s. A report on the pipes is awaiting publication (Higgins, forthcoming (a)).

Warrington Church 1970 Recorded from finds excavated near Warrington Church in 1970 (St Elphin's Rectory Site). The pipes from this site, which are now in Warrington Museum, were published by Davey and Pierce in 1977.

Warrington Museum Recorded from the general museum collections, excluding any excavated groups listed elsewhere in this table.

Warrington, Old Academy Recorded from excavated finds, which have been published (Higgins, 1987a, 13-18).

Whitehaven Recorded from the publication of pipes excavated at Whitehaven Old Fort (Taylor and Richardson 1980, 153-5).

Wigan, Hallgate Marks extracted from notes and drawings of an excavated group, probably recovered during the 1980s.

Mark	Type	Suggested Source	Beeston Castle, Cheshire	Blackburn Museum	Bolton Museum	Burnley, Towneley Hall Mus	Chester (selected; 1980 BAR)	Cuerdale, Lancashire	Gleaston, Cumbria	Great Meols area, Wirral	Halton Castle, Cheshire	Kendal Museum	Lancaster Museum	Liverpool South Castle St	Newton-le-Willows	Norton Priory, Cheshire	Norton Village	Ordsall Hall, Salford	Peel Park Museum, Salford	Prescot (1980)	Preston Museum	Rainford Area, Misc	Sutton, Big Lea Green Farm	Tatton, Cheshire	Timperley Moat, Gtr Manchester	Warrington, Twiss Green	Warrington, Bewsey Old Hall	Warrington Church (1970)	Warrington Museum	Warrington, Old Academy	Whitehaven	Wigan, Hallgate	TOTAL
CA	Stem oval	Manchester																1															1
EA	Circular	Rainford Area													1?							X											2
EA	Crescent	Rainford Area					1						2			4			1						1		1	2	2				14
GA	Circular	Rainford Area														1						X					2		3				3
GA	Crescent	Warrington?								2		1			1											11	12		25				52
HA	Crescent	North West region											2									X											2
IA	Crescent	Rainford Area																									2		1				3
RA	Crescent	Liverpool								1				1																			2
THO ATHARTON	Stem border	Liverpool												6																			6
B	Incuse initial	London																1															1
AB	Circular	Rainford Area														1						X							1				2
AB	Circular	York			1																												1
DB	Circular	West Midlands	1																														1
DB	Crescent	North West region								1																							1
DANIEL BIRCH	Stem border	Rainford																				X											0
EB	Circular	Rainford Area										1										X											2
EB	Crescent	Rainford Area								1						1						X							1				3
?GEO BIRCHAL	Stem border	Rainford													1																		1
HB	Circular	Rainford					2			2								1				X						2					7
HB	Heart-shaped	Benthall, Shropshire	1																										1				2
IB	Circular	Rainford Area	1	3	1	1	3			5		11	11		2	1		16	6	1		X	14		3	9	37	2	13		1		143
IB	Crescent	Rainford Area		3	6	2	5			4		8	53	1		6	1	5	17	1	6	X	4		9	2	6	10	16				165
IB	Heart-shaped	Rainford Area																				X											0
JNO BERRY	Stem oval	Manchester Area																1															1
IOHN BRADLEY	Stem stamp	Broseley area, Salop	1																														1

Mark	Type	Suggested Source	Beeston Castle, Cheshire	Blackburn Museum	Bolton Museum	Burnley, Towneley Hall Mus	Chester (selected; 1980 BAR)	Cuerdale, Lancashire	Gleaston, Cumbria	Great Meols area, Wirral	Halton Castle, Cheshire	Kendal Museum	Lancaster Museum	Liverpool South Castle St	Newton-le-Willows	Norton Priory, Cheshire	Norton Village	Ordsall Hall, Salford	Peel Park Museum, Salford	Prescot (1980)	Preston Museum	Rainford Area, Misc	Sutton, Big Lea Green Farm	Tatton, Cheshire	Timperley Moat, Gtr Manchester	Warrington, Twiss Green	Warrington, Bewsey Old Hall	Warrington Church (1970)	Warrington Museum	Warrington, Old Academy	Whitehaven	Wigan, Hallgate	TOTAL
MB	Circular	Rainford Area					1															X											1
NATHAN BERCH	Stem stamp	Rainford																				X											0
NAT BIRCHAL	Stem border	Rainford																				X											0
PB	Circular	Rainford						1																									1
RB	Circular	Newcastle-under-Lyme																							1								1
SB	Circular	Rainford Area			1	1							1																				3
SB	Crescent	Rainford Area			1																	X							1				2
TB	Circular	Midlands														1																	1
TB	Circular	Rainford Area	1																										1				2
TB	Crescent	Rainford Area														1								1	1								3
THOMAS BIRCH	Stem border	Whitehaven																													1		1
WB	Crescent	Rainford Area													2							X											2
W BIRCHALL RAINFORD	Stem border	Rainford	1										2									X				7			1				11
EC	Crescent	Rainford Area																							2								2
PC	Circular	North West region											1																				1
TC	Crescent	North West region											1																				1
?JC MANCHESTER	Stem oval	Manchester																1															1
CULM MANCHESTER	Stem oval	Manchester																2															2
RD	Crescent	Rainford Area																										1					1
SD	Circular	Rainford Area	1																														1
SAM DECON	Circular	Much Wenlock																										1	1				1
G EDKIN LANCASTER	Stem border	Lancaster	6										5																				11
NE	Circular	Chester	1				12																										13
SE	Heart-shaped	Chester					14																						1				15
WE	Circular	Shropshire	2				1									1																	4

Mark	Type	Suggested Source	Beeston Castle, Cheshire	Blackburn Museum	Bolton Museum	Burnley, Towneley Hall Mus	Chester (selected; 1980 BAR)	Cuerdale, Lancashire	Gleaston, Cumbria	Great Meols area, Wirral	Halton Castle, Cheshire	Kendal Museum	Lancaster Museum	Liverpool South Castle St	Newton-le-Willows	Norton Priory, Cheshire	Norton Village	Ordsall Hall, Salford	Peel Park Museum, Salford	Prescot (1980)	Preston Museum	Rainford Area, Misc	Sutton, Big Lea Green Farm	Tatton, Cheshire	Timperley Moat, Gtr Manchester	Warrington, Twiss Green	Warrington, Bewsey Old Hall	Warrington Church (1970)	Warrington Museum	Warrington, Old Academy	Whitehaven	Wigan, Hallgate	TOTAL
WE	Square	Shropshire	1				3																									4
HF	Stem lozenge	Yorkshire											1																			1
IAMES FAREST	Stem border	Winstanley																				X										0
TF	Stem lozenge	Chester					14																			1						15
IG	Circular	Yorkshire		1								3?										X										4
MAT GRENOH	Stem border	Lancaster Area?										1	2																			3
RG	Circular	Nantwich					2																						1			3
AH	Circular	Rainford Area	2							1																						3
CH	Crescent	Rainford Area														1													1			2
EH	Crescent	Rainford Area																									2				1	3
HH	Circular	North West region	2											1?																		3
HH	Crescent	North West region			1		1			1	1	1				5											1					11
IH	Circular	Rainford Area										1						1				X				2						4
IH	Crescent	Rainford Area																											1			1
IH	Circular	Shropshire / Cheshire	1				1																									2
IOHN HOLAND	Stem border	Lancaster										1?	2																			3
IOHN HOLLAND LANCASTER 1748	Stem border	Lancaster											2																			2
IOHN HVNT	Incuse mark	Bristol								1																						1
MH	Crescent	Rainford Area																				X										0
NH	Uncertain	Rainford Area																				X										0
RH	Circular	North West region											2																			2
TH	Square	Buckley, North Wales								1																						1
TH	Circular, stem	Uncertain																												1		1
II	Circular	Rainford Area					1					1										X										2
NI?	Crescent	Rainford Area											1																			1

Mark	Type	Suggested Source	Beeston Castle, Cheshire	Blackburn Museum	Bolton Museum	Burnley, Towneley Hall Mus	Chester (selected; 1980 BAR)	Cuerdale, Lancashire	Gleaston, Cumbria	Great Meols area, Wirral	Halton Castle, Cheshire	Kendal Museum	Lancaster Museum	Liverpool South Castle St	Newton-le-Willows	Norton Priory, Cheshire	Norton Village	Ordsall Hall, Salford	Peel Park Museum, Salford	Prescot (1980)	Preston Museum	Rainford Area, Misc	Sutton, Big Lea Green Farm	Tatton, Cheshire	Timperley Moat, Gtr Manchester	Warrington, Bewsey Old Hall	Warrington Church (1970)	Warrington Museum	Warrington, Old Academy	Whitehaven	Wigan, Hallgate	TOTAL
?PI	Circular	Rainford Area																			1										1
AL	Circular	Chester	1				97																	1							99
AL?	Crescent	North West region													1?																1
GL	Circular	Rainford Area	3				2												1						1						7
GL (retrograde)	Circular	Rainford Area										1																			1
GL	Crescent	Rainford Area					2							1				1	1			X			1		2				11
HL	Circular	Rainford Area	3																			X			1	1	3				9
HL	Crescent	Rainford Area														1						X									1
HL	Incuse initials	Rainford Area			1											1		3				X			2						9
IL	Crescent	North West region					1			1																	2				4
IL	Stem lozenge	Chester																			2										2
PL	Circular	Rainford Area					1									1					1						2				14
PL	Crescent	Rainford Area									1	1	1					2			1	X					31				39
RL	Circular	Rainford Area								1			1			1						X					17				22
RL	Crescent	Rainford Area																				X									0
RL	Incuse initials	Rainford Area																				X			1		8				9
SL	Circular	Rainford Area																				X									0
TL	Circular	Rainford Area											1					1				X				2	7				11
TL	Crescent	Rainford Area																				X									0
GM	Crescent	North West region													1	6															7
GEO MARCH	Stem border	Eccleston							1																						1
HM	Circular	Rainford Area	1																												1
TM	Circular	North West region																							1						1
WM	Circular	North West region																								2				2	2
AN	Crescent	North West region					1																								1

Mark	Type	Suggested Source	Beeston Castle, Cheshire	Blackburn Museum	Bolton Museum	Burnley, Towneley Hall Mus	Chester (selected; 1980 BAR)	Cuerdale, Lancashire	Gleaston, Cumbria	Great Meols area, Wirral	Halton Castle, Cheshire	Kendal Museum	Lancaster Museum	Liverpool South Castle St	Newton-le-Willows	Norton Priory, Cheshire	Norton Village	Ordsall Hall, Salford	Peel Park Museum, Salford	Prescot (1980)	Preston Museum	Rainford Area, Misc	Sutton, Big Lea Green Farm	Tatton, Cheshire	Timperley Moat, Gtr Manchester	Warrington, Twiss Green	Warrington, Bewsey Old Hall	Warrington Church (1970)	Warrington Museum	Warrington, Old Academy	Whitehaven	Wigan, Hallgate	TOTAL
HN	Circular	Rainford Area										1	2									X										3
HN	Crescent	Rainford Area													1																	1
HN	Square	Rainford Area																				X										0
IN	Circular	North West region											1																			1
TO	Circular, stem	Chester					2																						1			3
TO	Stem lozenge	Chester					7									1											1					9
IP	Crescent	Rainford Area																									1	7				8
LP	Circular	Rainford Area																										2				2
MP	Circular	North West region																													1	1
MP	Circular	Yorkshire																	1													1
MAT PLUMBLY	Stem border	Rainford									1	5	2				1					X							1			12
TP	Circular	North West region																					1									1
GR	Circular	North West region										3	2																			5
GR	Crescent	Rainford Area											7										2									9
IR	Circular	Shropshire	2																													2
IO RAINFORD	Stem border	Rainford													1						1	X										2
RALPH RYLANCE	Stem border	Rainford																1				X										1
TR	Circular	North West region																1	1									1			1	5
ELIZ SAUAIG	Stem border	North West region										12																2	1			14
GS	Crescent	Rainford Area																				X										0
GEORGE SEPHTON	Stem border	Rainford																				X										0
HS	Circular	Rainford Area													1	1																2
HS	Crescent	North West region																											1			1
IS	Crescent	Rainford											1					1				X			1			2				5
IANE SEFTON?	Stem border	Rainford															1					X										1

Mark	Type	Suggested Source	Beeston Castle, Cheshire	Blackburn Museum	Bolton Museum	Burnley, Towneley Hall Mus	Chester (selected; 1980 BAR)	Cuerdale, Lancashire	Gleaston, Cumbria	Great Meols area, Wirral	Halton Castle, Cheshire	Kendal Museum	Lancaster Museum	Liverpool South Castle St	Newton-le-Willows	Norton Priory, Cheshire	Norton Village	Ordsall Hall, Salford	Peel Park Museum, Salford	Prescot (1980)	Preston Museum	Rainford Area, Misc	Sutton, Big Lea Green Farm	Tatton, Cheshire	Timperley Moat, Gtr Manchester	Warrington, Twiss Green	Warrington, Bewsey Old Hall	Warrington Church (1970)	Warrington Museum	Warrington, Old Academy	Whitehaven	Wigan, Hallgate	TOTAL
IOHN SEFTON	Stem border	Rainford																				X		1								1
PS	Circular	Rainford Area					2																					3				5
PS	Crescent	Rainford Area					1																				3					4
TS	Crescent	North West region														1	1															2
WS	Circular	Shropshire					1																	1								2
WS	Circular	Yorkshire?				1																										1
ET	Circular	North West region																													1	1
ED TAYLOR	Square	Much Wenlock								2?																						2
IT	Circular	Rainford Area					1															X										1
NT	Circular	Yorkshire																	1													1
PT	Circular	Rainford Area																	1			X										1
IW	Circular	North West region																									1					1
IW	Circular	Yorkshire				1																										1
WW	Stem oval	Chester					3																					1				4
RY	Circular	Rainford Area											1					2				X										3
Fleur-de-lys	Circular	North West region																								1						1
Fleur-de-lys	Crescent	North West region																									1					1
Rampant lion	Shield	Dutch?																										1				1
Ship	Circular	Dutch														1																1
Wheel	Circular	English - Various	1							1								2	1					1	1							7
TOTAL			33	7	12	6	182	1	1	25	3	51	108	10	11	38	6	43	31	2	8	-	20	5	29	12	82	55	155	4	1	11	952

Acknowledgement

The author is particularly grateful to Ron Dagnall of Rainford who has not only provided a wealth of information, notes, mark impressions and drawings of Rainford pipes over the years but who has also made available a copy of his working list of Rainford area pipemakers for this study.

Illustrations

The pipes shown in the figures are illustrated at life size with the stamp details at twice life size. Relief marks are shown in outline and incuse marks are shown in solid black. Burnished surfaces are indicated with a broken line. All of the drawings are by the author although bowl forms 'H8', 'H10', 'H14' and 'S13' in figs. 2 and 3 have been redrawn from illustrations that were kindly supplied by Ron Dagnall of Rainford. The source and, where possible, the object reference number(s) are given in brackets at the end of each entry. To save unnecessary repetition, just the site name for the most frequently used sources has been given, as follows: -

Bewsey Old Hall Pipes excavated at Bewsey Old Hall, near Warrington, between 1977 and 1985 and subsequently deposited with Cheshire Museums Service. A report on the pipes is awaiting publication (Higgins, forthcoming (a)).

Big Lea Green Pipes excavated by the field archaeology section of the National Museums Liverpool at a site in Sutton, near St Helens. A report on the pipes is awaiting publication (Higgins, forthcoming (c)).

Dagnall Collection Material collected from the Rainford area by Ron Dagnall of Rainford.

Timperley Moat Pipes excavated by STAG (South Trafford Archaeological Group) from the site of Timperley Moat at Altrincham in Greater Manchester (SJ 776 881). A report on the pipes is due to be published (Higgins, forthcoming (b)).

'Local fabrics' are typically slightly off-white in colour and characterised by numerous coarse gritty inclusions. These clays almost certainly derive from the local coalmeasure deposits. 'Imported fabrics' are much finer, inclusion-free fabrics that fire to a more nearly white colour. These clays were almost certainly imported from high quality pipeclay deposits that occur in the south and south-west of England.

The bowls in Merseyside Typology (figs. 2 & 3) have been arranged into two sequences, 'H1-H15' for the heel forms and 'S1-S14' for the spur types. The description for each form is divided into two parts. The first describes the general characteristics and attributes of that particular bowl form while the second gives details of the specific example illustrated. The type examples in the typology have been drawn from a variety of excavated groups or collections from the region.

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