

**The dynamics of regionalisation and trade:  
Yorkshire clay tobacco pipes  
1600-1800**

VOLUME I

This is submitted in accordance with the requirements of the  
University of Liverpool for the degree of Doctor in Philosophy by  
Susan Denise White

December 2002

## **Abstract**

This thesis uses the artefactual evidence provided by seventeenth and eighteenth century clay tobacco pipes as a means of studying not only pipe production itself but also the broader questions of regionalisation and trade. The historic county of Yorkshire has been used to provide a large and topographically varied study area within which to examine these topics.

The archaeological value of pipes with specific reference to trade and regional studies is outlined in Chapter 1. Chapter 2 draws together the existing evidence for pipe production in Yorkshire and presents a synthesis of both the documentary and artefactual material from published sources. Chapter 3 describes the detailed recording system that has been used to log the attributes of each pipe fragment in a computerised database. A total of 8,203 pipe fragments from 84 different collections and 467 different find-spots have been recorded in detail. This represents by far the largest and most geographically extensive pipe database of its type ever to have been compiled. The systematic recording of these fragments has enabled the development of bowl forms, finishing techniques and marks to be analysed both geographically and chronologically in ways that have never been possible before.

A synthesis of the results in their broadest sense is presented in Chapter 4. The remaining chapters provide a detailed analysis of the various attributes represented by the archaeological data with a discussion of the findings. Published and unpublished documentary sources have been drawn together to provide the most comprehensive Yorkshire makers' lists to date (Appendices 1 and 2). These lists not only provide a means of identifying some of the marked pipes but also show how many more pipemakers are represented by the archaeological evidence than are currently known from documentary sources alone.

A collections summary and corpus of bowl forms and makers' marks from Yorkshire has also been compiled (Appendix 3). This includes illustrations and descriptions of some 2,283 pipes, which it is hoped will form a standard reference source for future researchers. A CD containing the Yorkshire Clay Tobacco Pipe Database, in an Access format, has been provided with this thesis. This CD gives full details of each of the pipes as well as the collections and sites that have been recorded, including an Ordnance Survey grid reference, where known.

This thesis has drawn together one of the largest data sets of its kind and has highlighted the value of using a systematic recording system to compare groups of clay tobacco pipes from across a large geographical area. From this study it has been possible to define the styles and finishing techniques of the pipes that were produced in Yorkshire. A detailed analysis of the data has also shown that regional variations in both bowl form and mark existed within the study area during the seventeenth and eighteenth centuries, and that the market areas of individual makers or production centres can be defined.

# Contents

Abstract .....	i
List of contents .....	ii
List of figures.....	viii
List of tables .....	xiv
Acknowledgments .....	xviii
<b>1. Regionalisation and trade</b>	
1.0 Introduction .....	1
1.1 Models for regionalisation and trade patterns in the archaeological world .....	1
1.2 The importance of clay tobacco pipes in the archaeological record .....	2
1.3 Regionalisation and trade within clay pipe studies .....	4
1.3.1 Trade .....	6
1.3.2 Production centres.....	6
1.3.3 Consumption centres.....	7
1.3.4 Regional studies .....	8
1.3.5 The study of specific attributes of a pipe or particular decorative motifs.....	9
1.3.6 The interpretation of pipes from archaeological contexts .....	9
1.3.7 The systematic recording of clay tobacco pipes .....	11
1.4 The present research.....	12
1.5 Summary .....	15
<b>2. Existing evidence for the production of clay tobacco pipes in Yorkshire</b>	
2.0 Introduction .....	16
2.1 Documentary sources – evidence for distribution.....	16
2.2 Documentary sources – social status.....	21
2.3 Kiln sites.....	25
2.4 The pipes themselves.....	27
2.5 Summary.....	30
<b>3. Methodology</b>	
3.0 Introduction .....	33
3.1 Documentary sources .....	33
3.2 Sources of artefactual evidence.....	34
3.3 Methodology for the recording and analysis of the artefactual evidence .....	37
3.4 National Clay Tobacco Pipe Stamp Catalogue (NSC).....	41
3.5 Illustrations.....	44
3.6 Dating and the quoting of date ranges.....	44
3.7 Summary.....	45
<b>4. Summary of data collected</b>	
4.0 Introduction .....	46

4.1	The study area.....	46
4.2	The historic county of Yorkshire.....	48
4.3	West Yorkshire.....	49
4.4	East Yorkshire.....	49
4.5	South Yorkshire.....	50
4.6	North-west Yorkshire.....	51
4.7	North-east Yorkshire.....	51
4.8	York and its environs.....	52
4.9	Yorkshire products from outside the county.....	53
4.10	Milling and burnishing.....	53
4.11	Stem-bores.....	54
4.12	Mould flaws.....	55
4.13	Bowl crosses.....	55
4.14	Summary.....	56
<b>5.</b>	<b>Clay sources and kilns sites</b>	
5.0	Introduction.....	58
5.1	The availability of raw materials.....	58
5.2	Kiln sites.....	61
5.2.1	The seventeenth-century kiln site at Potovens.....	63
5.2.2	The eighteenth-century kiln site at Doncaster.....	65
5.3	Summary.....	74
<b>6.</b>	<b>Development of the bowl form in Yorkshire</b>	
6.0	Introduction.....	76
6.1	The influences on the development of bowl forms in Yorkshire.....	76
6.1.1	The South: Derbyshire / Lincolnshire / Nottinghamshire.....	76
6.1.1.1	Derbyshire.....	76
6.1.1.2	Lincolnshire.....	77
6.1.1.3	Nottinghamshire.....	79
6.1.2	The West: Lancashire/Cumbria.....	80
6.1.2.1	Lancashire.....	81
6.1.2.2	Cumbria.....	82
6.1.3	The North: Tyneside.....	84
6.1.4	The East: maritime influences.....	85
6.2	The evolution of Yorkshire bowl forms.....	88
6.2.1	Early pipes (1580-1640).....	88
6.2.2	Pre Civil War (1610-1640).....	89
6.2.3	The Civil War period (1640-1660).....	92
6.2.4	Yorkshire bulbous (1660-1690).....	96
6.2.5	Transitional forms (1690-1720).....	99
6.2.6	The eighteenth century (1700-1800).....	101
6.3	The regional variation of Yorkshire bowl forms.....	103
6.3.1	Chronological variation.....	105
6.3.2	Geographical variation.....	108
6.4	Summary and conclusions.....	108

<b>7.</b>	<b>Finishing techniques and stem bore analysis</b>	
7.0	Introduction .....	110
7.1	Stem bores .....	110
	7.1.1 Stem bores – summary .....	119
7.2	Milling .....	124
	7.2.1 Milling on the bowl rim .....	124
	7.2.2 Milling elsewhere on the pipe .....	129
	7.2.3 Milled stems .....	130
	7.2.4 Milling on or near the heel or spur .....	135
	7.2.5 Milling on the bowl itself .....	137
	7.2.6 Milling – summary .....	139
7.3	Burnishing .....	140
	7.3.1 Burnishing –summary .....	151
7.4	Summary and conclusions .....	152
<b>8.</b>	<b>Development and range of marks used by Yorkshire makers</b>	
8.0	Introduction .....	153
8.1	Definition of the types of bowl marks recorded in Yorkshire .....	153
	8.1.1 Stamped heels .....	154
	8.1.2 Stamped bowl marks .....	155
	8.1.3 Moulded heels .....	155
	8.1.4 Moulded spurs .....	156
	8.1.5 Moulded bowl marks .....	156
8.2	Range of Yorkshire bowl marks .....	157
	8.2.1 Range of stamped heel marks .....	157
	8.2.1.1 Catalogue of selected heel marks from Yorkshire .....	164
	8.2.2 Range of stamped bowl marks .....	189
	8.2.3 Range of moulded heel and spur marks .....	190
	8.2.4 Range of moulded bowl marks .....	191
8.3	Analysis of Yorkshire bowl marks .....	192
	8.3.1 Chronological analysis of Yorkshire bowl marks .....	193
	8.3.2 Geographical analysis of Yorkshire bowl marks .....	197
8.4	Stamped stem marks .....	200
	8.4.1 Stem stamp marks .....	201
	8.4.1.1 Catalogue of selected stem stamp marks from Yorkshire .....	203
	8.4.2 Roll-stamp stem marks .....	207
	8.4.2.1 Catalogue of selected roll-stamp marks from Yorkshire .....	208
8.5	Summary .....	218
<b>9.</b>	<b>The distribution of Yorkshire clay tobacco pipes</b>	
9.0	Introduction .....	220
9.1	Distribution of marked Yorkshire products within the county .....	220
	9.1.1 AB heel marks .....	221
	9.1.2 SB stamped heel marks .....	229
	9.1.3 GC stamped heel marks .....	229
	9.1.4 Stamped heel marks with an F surname .....	233

9.1.5	IH stamped heel marks .....	236
9.1.6	Anchor motif with initials.....	237
9.1.7	Castle motif with initials .....	238
9.1.8	Crowned initials.....	238
9.1.9	Fleur-de-lys within a lozenge .....	241
9.1.10	HN stamped heel marks .....	243
9.1.11	SV stamped heel and stem marks .....	244
9.2	Die analysis – summary.....	251
9.3	Mould flaw analysis .....	252
9.3.1	Pipe production using a two-part mould.....	252
9.3.2	Mould flaws .....	253
9.3.2.1	Mould groups from Pontefract Castle.....	256
9.3.2.2	Mould groups from Sandal Castle .....	260
9.3.2.3	Discussion of the Civil War mould groups.....	264
9.3.2.4	Other groups.....	264
9.4	Mechanisms of distribution .....	265
9.5	Summary.....	269
<b>10.</b>	<b>Imported products recorded in Yorkshire</b>	
10.0	Introduction .....	271
10.1	Documentary evidence for importation of pipes to Yorkshire.....	271
10.2	Archaeological evidence for the importation of pipes to Yorkshire .....	272
10.2.1	Imports from English production centres outside Yorkshire .....	273
10.2.2	Chester .....	273
10.2.3	South Lancashire, centred on Rainford .....	277
10.2.4	Tyneside.....	278
10.2.5	London.....	280
10.2.6	Other English production centres .....	281
10.3	Dutch pipes.....	282
10.4	Summary and conclusions .....	290
<b>11.</b>	<b>Discussion of findings and proposals for future research</b>	
11.0	Introduction .....	292
11.1	Regionalisation .....	293
11.1.1	Bowl form.....	293
11.1.2	Marks.....	295
11.1.3	Burnishing.....	296
11.1.4	Milling.....	297
11.1.5	Summary.....	297
11.2	Trade .....	299
11.3	Future research .....	300
	<b>Bibliography.....</b>	<b>303</b>

## Appendices

1.	<b>List of Yorkshire pipe makers</b> .....	322
2.	<b>Transcriptions of selected wills, inventories and other documents relating to Yorkshire pipe makers</b> .....	365
3.	<b>Collections summaries – Part I</b> .....	379
	• <i>Cleveland</i>	
	Hartlepool Museum Services, Hartlepool.....	379
	Tees Archaeology, Hartlepool.....	380
	Dorman Museum, Middlesbrough.....	387
	• <i>County Durham</i>	
	Bowes Museum, Barnard Castle.....	388
	• <i>East Riding of Yorkshire</i>	
	Sewerby Hall, Bridlington.....	401
	Humber Archaeological Partnership, Hull.....	406
	Wilberforce House Museum, Hull.....	416
	Stothard Collection.....	425
	Rayner Collection.....	426
	• <i>Merseyside</i>	
	National Clay Tobacco Pipe Archive, Liverpool.....	464
	Higgins Collection.....	466
	Stocks Collection.....	466
	White Collection.....	467
	• <i>Lincolnshire</i>	
	Scunthorpe Museum and Art Gallery.....	474
	• <i>North Yorkshire</i>	
	Raines Collection.....	479
	Tierney Collection.....	490
	Yorkshire Dales Museum of Lead Mining, Earby.....	494
	Mercer Art Gallery, Harrogate.....	496
	Dales Countryside Museum, Hawes.....	502
	English Heritage Store, Helmsley.....	504
	Ryedale Folk Museum, Hutton-le-Hole.....	515
	Manor House Museum, Ilkley.....	518
	Beck Isle Museum of Rural Life, Pickering.....	525
	Richmondshire Museum, Richmond.....	530
	Scarborough Borough Council, Lonsborough Lodge, Scarborough.....	535
	Butterfield Collection.....	543
	The Craven Museum, Skipton.....	544
	Thirsk Museum.....	551
	Whitby Museum.....	553
	York Archaeological Trust, York.....	558
	York Castle Museum, York.....	619
	• <i>South Yorkshire</i>	
	Abbey House Museum, Leeds.....	629
	Doncaster Museum and Art Gallery.....	636
	Rotherham Museum.....	653
	ARCUS, Sheffield.....	659

Kelham Island Industrial Museum, Sheffield .....	665
Sheffield City Museum .....	672
• <i>West Yorkshire</i>	
Bradford Museum .....	677
Wood Hall Archaeological Trust .....	680
Tolson Memorial Museum, Huddersfield .....	696
Pontefract Museum .....	706
Denham Collection .....	712
Wakefield Museum and Art Gallery .....	714
West Yorkshire Archaeological Services (WYAS) .....	737
Mayfield Collection .....	766
Richardson Collection .....	770
<b>Collection Summaries – Part II</b> .....	<b>771</b>
• <i>English Collections</i>	
Oswald Collection .....	771
Grosvenor Museum, Chester .....	772
Cleveland County Archaeological Unit .....	772
Carlisle Archaeological Unit .....	772
Carlisle Museum and Art Gallery .....	773
Abbot Hall Art Gallery and Museum, Kendal .....	773
Royal Albert Memorial Museum, Exeter .....	773
Austin Collection .....	773
Lampeter Archaeological Unit .....	776
Brackenridge Collection .....	776
Salford Museum and Art Gallery .....	777
Central Excavation Unit, Portsmouth .....	777
Fox Collection .....	777
English Heritage .....	777
Elkins Collection .....	780
North West Archaeological Trust (NWAT) .....	780
Dagnall Collection .....	785
Jennings Collection .....	785
York Excavation Group .....	786
Newark Museum .....	786
The Bassetlaw Museum, Retford .....	787
Somerset County Museum, Taunton .....	787
Dept. of Archaeology, Sheffield .....	787
University of Sheffield .....	787
South Yorkshire Archaeological Unit .....	787
Birmingham Museum and Art Gallery .....	788
• <i>Overseas Collections</i>	
Akerhagen Collection, Sweden .....	788
Historic St Mary's City, Maryland, USA .....	789
Maryland Archaeological Conservation Laboratory, Maryland, USA .....	791
Association for the Preservation of Virginia Antiquities, Jamestown, Virginia, USA .....	791
Virginia Dept. of Historic Resources, Richmond, Virginia, USA .....	792



Colonial Williamsburg, Virginia, USA.....	792
Flowerdew Hundred, Virginia, USA.....	793
Virginia Foundation for Archaeological Research, Virginia, USA.....	793
<b>4. Guidelines for using the clay tobacco pipe record system .....</b>	<b>794</b>
<b>5. Notes for recording stamped marks .....</b>	<b>800</b>
<b>6. Clay tobacco pipes from Sandal Castle .....</b>	<b>810</b>
<b>7. Data summaries by geographical sub-division and period .....</b>	<b>834</b>
<b>8. Results from the bowl height and width ANOVA tests.....</b>	<b>884</b>

## List of Figures

<b>1. Regionalisation and trade</b>	
1.1 Map showing the boundary of the historic county of Yorkshire .....	14
<b>2. Existing evidence for the production of clay tobacco pipes in Yorkshire</b>	
2.1 Chronological distribution of all known makers and apprentices from Yorkshire as a whole 1600-1800 .....	19
2.2 Chronological distribution of all known pipe-makers from specific centres in Yorkshire 1600-1800 .....	20
2.3 Map showing the geographical distribution of all known pipemakers from Yorkshire 1600-1800.....	22
<b>3. Methodology</b>	
3.1 Example of a completed pipe recording form for use in the field 39	
3.2 Example of a pipe record taken from the Access database .....	40
3.3 Example of a completed stamp recording form for use in the field.....	43
3.4 Example of a stamp record taken from the Access database .....	44
<b>4. Summary of data collected</b>	
4.1 Map showing the sub-divisions within the study area.....	47
<b>5. Clay sources and kilns sites</b>	
5.1 Range of mould-decorated bowls and an S Lumley stem recovered from the Church Street Kiln, Doncaster .....	68
5.2 Photograph of a section of muffle showing the reinforcing stems and the layers of pipe-clay. Scale is 5cm. Photograph by D A Higgins .....	71
5.3 Detail of fragment shown in Figure 5.2, showing stem fragments clearly stamped S LUMLEY. Photograph by the author .....	72
5.4 Pipe-clay 'brick' from DC/AAE showing the heavy slagging on one side as well as worn areas. Scale 5cm. Photograph by the author .....	72
5.5 Sample of the kiln debris recovered from Church Street. Scale 5cm. Photograph by the author .....	73

5.6	Part of a muffle wall from DC/ABL with reinforcing stems clearly visible, showing the shelf support. Photograph by the author.....	73
5.7	Detail from part of the muffle wall (DC/ABL) showing the impression left by a fluted bowl that has been used within the body of the muffle itself. Photograph by the author.....	74

**6. Development of the bowl form in Yorkshire**

6.1	1580-1610 Period bowls.....	89
6.2	1610-1640 period bowls.....	90
6.3	Measurements of the maximum height and width of a Civil War period pipe bowl.....	93
6.4	A range of Civil War period bowls.....	95
6.5	Bulbous bowls dating from 1650-1670.....	97
6.6	Yorkshire bulbous forms.....	98
6.7	Transitional bowl forms.....	100
6.8	Eighteenth-century bowl forms.....	102
6.9	Measurement of the maximum length and width.....	104
6.10	Bowl length and width diagrams for West Yorkshire (top); East Yorkshire (middle) and South Yorkshire (bottom) for the periods 1640-1660, 1660-1690 and 1690-1720.....	106
6.11	Bowl length and width diagrams for North-west Yorkshire (top); North-east Yorkshire (middle) and York and its environs (bottom) for the periods 1640-1660, 1660-1690 and 1690-1720.....	107

**7. Finishing techniques and stem bore analysis**

7.1	Pipe bowl recovered from excavations at Queen Street, Hull (HQS90 (98)) showing two bore holes. Photograph by P Rayner.....	113
7.2	Binford's line regression with the average bores for the whole of Yorkshire.....	117
7.3	Binford's line regression with the average bores for each of the six geographical sub-divisions within Yorkshire.....	118
7.4	Plots of the percentages for each of the six geographical sub-divisions in Yorkshire for 9/64" bore (top), 8/64" bore (middle) and 7/64" bore (bottom).....	120
7.5	Plots of the percentages for each of the six geographical sub-divisions in Yorkshire for 6/64" bore (top), 5/64" bore (middle) and 4/64" bore (bottom).....	121
7.6	Suggested date/bore band diagram.....	123
7.7	Plots of the percentages for each milling index from West Yorkshire (top), East Yorkshire (middle) and South Yorkshire (bottom).....	126
7.8	Plots of the percentages for each milling index from North-west Yorkshire (top), North-east Yorkshire (middle) and York and its environs (middle).....	127
7.9	Percentage of milled stems for the period 1600-1740 from a range of sites throughout England.....	132

7.10	Type series for milled stem decoration .....	134
7.11	Number of milled heels for each of the six geographical sub-divisions for the period 1600-1750.....	136
7.12	Examples of milled stems and bowls from Yorkshire .....	138
7.13	Percentage of burnished bowls for the period 1580-1800, from a range of English sites .....	142
7.14	Percentage of burnished bowls for the period 1580-1800 for the whole of Yorkshire (top); a range of sites in York with the average line at 44% (middle) and for a range of sites in Hull with the average line at 11% (bottom) .....	145
7.15	Plots of the percentage of burnishing for each of the six geographical sub-divisions in Yorkshire – West Yorkshire (top); East Yorkshire (middle) and South Yorkshire (bottom) .....	148
7.16	Plots of the percentage of burnishing for each of the six geographical sub-divisions in Yorkshire – North-west Yorkshire (top); North-east Yorkshire (middle) and York and its environs (bottom).....	149
<b>8.</b>	<b>Development and range of marks used by Yorkshire makers</b>	
8.1	Wheel mark type series.....	159
8.2	IB and IH anchor marks. Scale 2:1 .....	161
8.3	IH and ON castle marks. Scale 2:1 .....	161
8.4	IH, SH, IT and IW crowned initial marks. Scale 2:1 .....	163
8.5	HF and IH lozenge marks. Scale 2:1.....	163
8.6	Selected Yorkshire heel marks: AB (Abraham Boyes) Scale 2:1 .....	166
8.7	Selected Yorkshire heel marks with initials. 1-8 IB; 9-15 RB; 16 SB; 17-21 IC; 22-26 GC; 27 TC; 28 & 29 ID. Scale 2:1.....	171
8.8	Selected Yorkshire heel marks with initials. 1 IE; 2 RE; 3 BF; 4 EF; 5 GF; 6 & 7 RF; 8 WF; 9-14 IG; 15 HH; 16-24 IH; 25 IMH; 26 MH; 27 & 28 SH; 29 WH; 30 II. Scale 2:1.....	176
8.9	Selected Yorkshire heel marks with initials. 1-4 II; 5 IL; 6 WL; 7 IM; 8-11 WM; 12 HN; 13-15 MP; 16 P; 17 HS; 18 IS; 19-24 RS; 25-28 IT; 29-30 NT. Scale 2:1 .....	181
8.10	Selected Yorkshire heel marks. 1 NT; 2 FW; 3-6 WG; 7-9 IW; 10-13 Wheel; 14-16 Fleur-de-lys; 17 Crown; 18 Lamb; 19 ESX; 20 Dutch RW. Scale 2:1.....	186
8.11	Chronological analysis of bowl marks recorded in Yorkshire. 1610-1640 (top), 1640-1660 (middle) and 1660-1690 (bottom).....	194
8.12	Chronological analysis of bowl marks recorded in Yorkshire. 1690-1720 (top), 1700-1750 (middle) and 1750-1800 (bottom).....	195
8.13	Geographical analysis of bowl marks recorded in Yorkshire. 1610-1640 (top), 1640-1660 (middle) and 1660-1690 (bottom).....	198
8.14	Geographical analysis of bowl marks recorded in Yorkshire. 1690-1720 (top), 1700-1750 (middle) and 1750-1800 (bottom).....	199

8.15	Selected stem stamps from Yorkshire. 1 TC; 2 IG; 3 I GILL; 4 IH; 5-7 WH; 8 HS (or SH); 9 ?IS; 10-13 SV; 14 Crown. Scale 2:1 .....	204
8.16	Selected roll stamp stem marks. Members of the Hillary family. Scale 2:1 .....	209
8.17	Selected roll stamp stem marks. Scale 2:1 .....	212
8.18	Selected roll stamp stem marks. Scale 2:1 .....	214
8.19	Selected roll stamp stem marks. Scale 2:1 .....	216
<b>9.</b>	<b>The distribution of Yorkshire clay tobacco pipes</b>	
9.1	Distribution map of AB heel stamp marks from all periods .....	227
9.2	Distribution map of AB heel stamp marks by period .....	228
9.3	Details of the GC mark from the Rayner Collection (left) Pcode 2220 and the Tyneside example (right) Acc. No. CC91 (22). Photograph by the author .....	232
9.4	Distribution map of heel stamp marks attributed to members of the Fowler family together with marks of an unknown maker with the initials WF .....	234
9.5	Distribution map of RF heel stamp marks .....	235
9.6	Distribution map of IH heel stamp marks .....	237
9.7	Distribution map of crowned initial heel stamp marks .....	239
9.8	Distribution map of different crowned SH dies .....	240
9.9	Distribution map of lozenge shaped fleur-de-lys heel stamp marks .....	242
9.10	National distribution of SV marks .....	246
9.11	Rayner Collection (Pcodes 03052 and 03069) showing a distinctive mould flaw on the side of the heel on the smoker's right. Photograph by the author .....	255
9.12	Rayner Collection (Pcodes 03052 and 03069) showing a distinctive mould flaw on the side of the heel on the smoker's left. Photograph by the author .....	256
9.13	Mould Groups 1 to 12 from Pontefract Castle. Mould Groups 1, 2, 3, 7, 8 and 12 heel plans and bowl details have been given to show the different finishes found within these group (Scale 1:1).....	258
9.14	Two examples from Pontefract Castle's Mould Group 2 clearly showing the 'pimple' flaw on the smoker's right. Scale 3cm. Photograph by the author .....	259
9.15	Mould Groups 1 to 13 from Sandal Castle (Scale 1:1).....	262
9.16	Two examples from Sandal Castle's Mould Group 12 clearly showing the mould flaw on the smokers left. Photograph by the author .....	263
<b>10.</b>	<b>Imported products recorded in Yorkshire</b>	
10.1	Spur bowl of 1660-1680 with the initials GD in relief on the bowl facing the smoker. Recovered from excavations at Beverley Gate, Hull. Drawn by J Marshall, Humber Archaeological Partnership. Scale 1:1.....	272

10.2	Map showing the production centres whose products have been recorded in Yorkshire .....	274
10.3	Chester bowl type 82 from Acaster Malbis and Chester bowl type 90 from Thorne .....	275
10.4	Examples of Chester roll-stamp borders and stem marks .....	276
10.5	Selection of Rainford style bowls recovered from sites in Yorkshire .....	278
10.6	Selection of Tyneside bowl forms recovered from sites in Yorkshire .....	279
10.7	Selection of Dutch bowls and stems recovered from sites in Yorkshire .....	285
10.8	Map showing the distribution of Dutch clay pipe fragments in Yorkshire giving total number of bowls and stems .....	286
10.9	Map showing the distribution of Dutch clay pipe fragments in Yorkshire giving the proportion of Dutch pipes as a percentage of the total fragments recovered from each site.....	288

### **Appendix 3 – Collection Summaries – Part I**

#### *Cleveland*

1-3	Pipes from the collections of Tees Archaeology, Hartlepool.....	384-386
4	Pipe from the collections of the Dorman Museum, Middlesborough.....	387

#### *County Durham*

5-10	Pipes from the collections of Bowes Museum, Barnard Castle .....	395-400
------	--	---------

#### *East Riding of Yorkshire*

11-12	Pipes from the collections of Sewerby Hall, Bridlington...	404-405
13-17	Pipes from the collections of the Humber Archaeological Partnership, Hull .....	411-415
18-21	Pipes from the collections of the Wilberforce House Museum, Hull .....	421-424
22	Pipes from the Stothard Collection .....	425
23-40	Pipes and hair curlers from the Rayner Collection .....	446-463

#### *Merseyside*

41	Pipes from the National Clay Tobacco Pipe Archive (NCTPA) .....	465
42	Pipe from the Higgins Collection .....	466
43-45	Pipes from the White Collection .....	471-473

#### *Lincolnshire*

46-47	Pipes from the collections of Scunthorpe Museum and Art Gallery.....	477-478
-------	--	---------

#### *North Yorkshire*

48-53	Pipes from the Raines Collection.....	484-489
54-55	Pipes from the Tierney Collection.....	492-493
56	Pipes from the collections of the Yorkshire Dales Museum of Lead Mining, Earby.....	495
57-59	Pipes from the collections of the Mercer Art Gallery, Harrogate .....	499-501

60	Pipes from the collections of Dales Countryside Museum, Hawes .....	503
61-65	Pipes held by English Heritage at the archaeological store at Helmsley .....	510-514
66	Pipes from the collections of the Ryedale Folk Museum, Hutton-le-Hole.....	517
67-69	Pipes from the collections of the Manor House Museum, Ilkley.....	522-524
70-71	Pipes from the collections of the Beck Isle Museum of Rural Life, Pickering .....	528-529
72-73	Pipes from the collections of the Richmondshire Museum, Richmond .....	533-534
74-77	Pipes held by Scarborough Borough Council.....	539-542
78	Pipes from the Butterfield Collection.....	543
79-81	Pipes from the collections of the Craven Museum, Skipton.....	548-550
82	Pipes from the collections of Thirsk Museum .....	552
83-84	Pipes from the collections of Whitby Museum .....	556-557
85-113	Pipes held by York Archaeological Trust.....	590-618
114-118	Pipes from the collections of York Castle Museum.....	624-628
<i>South Yorkshire</i>		
119-121	Pipes from the collections of the Abbey House Museum, Leeds.....	633-635
122-129	Pipes from the collections of Doncaster Museum.....	645-652
130-132	Pipes from the collections of Rotherham Museum .....	656-658
133-135	Pipes from sites excavated by ARCUS, Sheffield.....	662-664
136-138	Pipes from the collections of Kelham Island Industrial Museum, Sheffield .....	669-671
139-140	Pipes from the collections of Sheffield Museum .....	675-676
141	Pipes from the collections of Bolling Hall Museum, Bradford.....	679
<i>West Yorkshire</i>		
142-149	Pipes from the Wood Hall Archaeological Trust .....	688-695
150-153	Pipes from the collections of the Tolson Memorial Museum, Huddersfield .....	702-705
154-156	Pipes from the collections of Pontefract Museum .....	709-711
157	Pipes from the Denham Collection .....	713
158-167	Pipes from the collections of Wakefield Museum and Art Gallery .....	727-736
168-179	Pipes from sites excavated by the West Yorkshire Archaeological Services (WYAS).....	754-765
180-181	Pipes from the Mayfield Collection .....	768-769

### **Appendix 3 – Collection Summaries – Part I**

#### *English Collections*

182	Pipes from the collections of the Grosvenor Museum, Chester.....	772
183	Pipes from the Austin Collection .....	775
184	Pipes from the Brackenridge Collection .....	776

185	Pipes held by English Heritage.....	779
186-187	Pipes held by the North West Archaeological Trust (NWAT).....	783-784
188	Pipes from the Dagnall Collection.....	785
189	Pipe from the collections of Newark Museum.....	786

*Overseas Collections*

190	Pipes from the Akerhagen Collection, Sweden.....	788
191	Pipes from the collections of Historic St Mary's City, Maryland, USA.....	790
192	Pipe from the collections of the Association for the preservation of Virginia Antiquities, Virginia, USA.....	791
193	Pipe from the collections of Colonial Williamsburg, Williamsburg, Virginia, USA.....	792
194	Pipe from the collections of Flowerdew Hundred, Virginia, USA.....	793

**Appendix 6 – Clay tobacco pipes from excavations at Sandal Castle**

1	Bowl date chart for Sandal Castle.....	812
2	Approximate find spots of the clay tobacco pipes from Sandal Castle. Each coloured dot represents a pipe. The red dots denote the marked fragments.....	813

**List of Tables**

**4. Summary of data collected**

4.1	Count of all pipes recorded for this present research.....	48
4.2	Counts of unpublished and published bowls, stems and marked fragments recorded from West Yorkshire.....	49
4.3	Counts of unpublished and published bowls, stems and marked fragments recorded from East Yorkshire.....	50
4.4	Counts of unpublished and published bowls, stems and marked fragments recorded from South Yorkshire.....	50
4.5	Counts of unpublished and published bowls, stems and marked fragments recorded from North-west Yorkshire.....	51
4.6	Counts of unpublished and published bowls, stems and marked fragments recorded from North-east Yorkshire.....	52
4.7	Counts of unpublished and published bowls, stems and marked fragments recorded from York and its environs.....	52
4.8	Counts of unpublished and published Yorkshire bowls, stems and marked fragments recorded from outside the county.....	53
4.9	Counts of unpublished and published milled and burnished fragments recorded for this present research.....	54
4.10	Counts of unpublished and published stem-bores from each of the six geographical sub-divisions and of Yorkshire products found outside the county.....	54
4.11	Counts of the presence or absence of bowl crosses for the unpublished and published bowls from the six geographical	

	sub-divisions in Yorkshire together with Yorkshire products found outside the county.....	56
<b>5.</b>	<b>Clay sources and kilns sites</b>	
5.1	Summary of the kiln material recovered from excavations at Church Street, Doncaster, in context number order .....	69
<b>6.</b>	<b>Development of the bowl form in Yorkshire</b>	
6.1	Number of 1580-1610 period pipes recorded in each of the six geographical sub-divisions in Yorkshire for this present research.....	89
6.2	Number of 1610-1640 period pipes recorded in each of the six geographical sub-divisions in Yorkshire for this present research.....	91
6.3	Quantity and percentage of heel and spur type bowls for the period 1610-1640 from the six geographical sub-divisions in Yorkshire .....	92
6.4	Ranges and average height and width measurements for Civil War period pipes.....	93
6.5	Quantity and percentage of heel and spur type bowls for the period 1640-1660 from the six geographical sub-divisions in Yorkshire .....	94
6.6	Quantity and percentage of heel and spur type bowls for the period 1660-1690 from the six geographical sub-divisions in Yorkshire .....	97
6.7	Quantity and percentage of heel and spur type bowls for the period 1690-1720 from the six geographical sub-divisions in Yorkshire .....	99
6.8	The sample size, range of lengths and widths, and mean length and width, for the samples from each of the geographical sub-divisions by period .....	104
<b>7.</b>	<b>Finishing techniques and stem bore analysis</b>	
7.1	Count of bowls, stems and mouthpieces for stems bores 9/64" to 6/64" for bowls from the Civil War countermine shaft and garderobe at Pontefract Castle. ....	115
7.2	Suggested date ranges over which particular bores were produced .....	124
7.3	Number of seventeenth- and early eighteenth-century milled stems, heels and bowls from a selection of English sites.....	130
7.4	Number of examples for each type of stem milling from the county of Yorkshire .....	133
7.5	Sites producing high numbers of burnished bowls and stems.....	144
7.6	Correlation between burnished and stamp-marked pipes for the whole of Yorkshire .....	146
<b>8.</b>	<b>Development and range of marks used by Yorkshire makers</b>	
8.1	Count of stamped heel marks recorded from within Yorkshire .....	155



8.2	Count of stamped bowl marks recorded from within Yorkshire .....	155
8.3	Count of moulded heel marks recorded from within Yorkshire .....	156
8.4	Count of moulded spur marks recorded from within Yorkshire .....	156
8.5	Count of moulded bowl marks recorded from within Yorkshire .....	157
8.6	Wheel mark type series.....	158
8.7	Main characteristics of stamped heel marks found in Yorkshire .....	188
8.8	Main characteristics of stamped bowl marks found in Yorkshire .....	190
8.9	Main characteristics of moulded heel and spur marks found in Yorkshire .....	191
8.10	Main characteristics of moulded bowl marks found in Yorkshire .....	192
8.11	Count of stem stamps (SS) and roll-stamps (RS) for each area by period.....	201
8.12	Count for each type of stem stamp recorded from the six geographical sub-divisions in Yorkshire .....	202
8.13	Main characteristics of stem stamp marks found in Yorkshire.....	206
8.14	Count of roll-stamp marks recorded for known pipe-makers from south and west Yorkshire.....	207
8.15	Main characteristics of roll-stamp marks found in Yorkshire.....	218
<b>9.</b>	<b>The distribution of Yorkshire clay tobacco pipes</b>	
9.1	Die number and image of each of the 1660-1690 AB dies identified in Yorkshire with the number of examples and find spots for each die and the overall date range of the associated bowl forms.....	222-3
9.2	Die number, if allocated, and image of each of the 1690-1710 AB dies identified in Yorkshire with the number of examples and find spots for each die and the overall date range of the associated bowl forms .....	224-5
9.3	Count of lozenge shaped marks with initials and fleur-de-lys .....	241
9.4	Number of SV marked pipes found at English site based on the work of Oswald and current research.....	245
<b>10.</b>	<b>Imported products recorded in Yorkshire</b>	
10.1	Total number of fragments imported from Chester .....	275
10.2	Total number of fragments imported from South Lancashire.....	277
10.3	Total number of fragments imported from Tyneside .....	279
10.4	Total number of fragments imported from London .....	280
10.5	Total number of fragments imported from other production centres outside Yorkshire .....	282
10.6	Number of examples for each type of Dutch mark or decoration and the source if known.....	283
10.7	Total number of fragments from the Netherlands.....	284

10.8 Total number of bowl fragments from each of the sites in Yorkshire producing Dutch material, giving the number of fragments and the percentage that figure represents .....	287
--	-----

#### **Appendix 6. Clay tobacco pipes from excavations at Sandal Castle**

1. Excel catalogue of the pipes from Sandal Castle .....	815-833
--	---------

#### **Appendix 7. Data summaries by geographical sub-division and period**

All fragments from West Yorkshire.....	835-836
Yorkshire products from West Yorkshire.....	837-838
Sites for West Yorkshire.....	839-840
Collections for West Yorkshire .....	841
Imports for West Yorkshire .....	841
All fragments from East Yorkshire.....	842-843
Yorkshire products from East Yorkshire .....	844-845
Sites for East Yorkshire .....	846-847
Collections for East Yorkshire.....	847
Imports for East Yorkshire.....	848
All fragments from South Yorkshire .....	849-850
Yorkshire products from South Yorkshire.....	851-852
Sites for South Yorkshire.....	853-854
Collections for South Yorkshire .....	854
Imports for South Yorkshire .....	855
All fragments from North-west Yorkshire.....	856-857
Yorkshire products from North-west Yorkshire .....	858-859
Sites for North-west Yorkshire .....	860-861
Collections for North-west Yorkshire.....	861
Imports for North-west Yorkshire.....	862
All fragments from North-east Yorkshire.....	863-864
Yorkshire products from North-east Yorkshire .....	865-866
Sites for North-east Yorkshire .....	867-868
Collections for North-east Yorkshire.....	868
Imports for North-east Yorkshire.....	869
All fragments from York and its environs .....	870-871
Yorkshire products from York and its environs.....	872-873
Sites for York and its environs.....	874-875
Collections for York and its environs .....	876
Imports for York and its environs .....	876
All fragments of Yorkshire products found outside the county.....	877-878
Measurable Yorkshire products found outside the county .....	879
Sites for Yorkshire products found outside the county.....	880-881
Collections for Yorkshire products found outside the county .....	882
Possible Yorkshire products from Oswald's Stamp Index (1991).....	883

## **Acknowledgements**

After a little over eight years of study how do I begin to list all the people who have helped me in the pursuit of my research? People from such diverse backgrounds who have provided me with more boxes and bags of pipes to rummage through than I thought possible. I have been truly touched by the unselfish way in which people have given so freely of their time and knowledge. To all those who have shown me pipes, lent me pipes and given me pipes as well as those who have offered words of support and encouragement, I offer my warmest thanks.

I would especially like to thank the following, who have been particularly kind in sending me information and in answering my queries; John Andrews, Ken Bartlet, Peter Brears, Contance Fraser, John Goodchild, Peter Hammond, Allan Peacey, John Rumsby, Jenny Vaughan, Alan Vince and Natalie Winter. In the same way, I would like to thank the private collectors who have been so generous in providing details of their pipes and allowing me access to their collections; Arne Akerhagen, Alan Butterfield, Mrs Denham, David Higgins, Mr H Mayfield, Roger Raines, Pete Rayner and Dan Tierney.

My thanks must also go to those at the museums and archaeological stores where I have consulted pipes and especially to those who very kindly allowed me to borrow material for more detailed study at Liverpool. Particular thanks go to the staff at Hartlepool Museum Service, Tees Archaeology, The Dorman Museum in Middlesborough, The Bowes Museum at Barnard Castle, Sewerby Hall in Bridlington, The Humber Archaeological Partnership, The Wilberforce House Museum in Hull, The National Clay Tobacco Pipe Archive, Scunthorpe Museum and Art Gallery, The Yorkshire Dales Museum of Lead Mining at Earby, The Mercer Art Gallery in Harrogate, The Dales Countryside Museum Hawes, The English Heritage Archaeological Store at Helmsley, Ryedale Folk Museum in Hutton le Hole and The Manor House Museum, Ilkley, The Beck Isle Museum of Rural Life in Pickering, The Richmondshire Museum, Scarborough Borough Council and their staff at Lonsborough Lodge, The Craven Museum in Skipton, Thirsk Museum, Whitby Museum, The York Archaeological Trust and the staff at York Castle Museum, Abbey House Museum Leeds, Doncaster Museum and Art Gallery, Rotherham Museum, Kelham Island Industrial Museum in Sheffield, Sheffield City Museum, Bradford Museum, The Wood Hall Archaeological Trust, The Tolson Memorial Museum in Huddersfield, Pontefract Museum, Wakefield Museum and Art Gallery, West Yorkshire Archaeological Services and The Archaeological Research Consultancy at The University of Sheffield.

Finally I must thank all those who have encouraged me and provided support and advice over the past eight years. In particular I would like to thank my parents for never failing to believe in me and for providing the emotional and financial support I needed to ensure my PhD became a reality; my supervisor Peter Davey for his constructive criticism and patience; to Philippa Tomlinson for help with the statistical analysis, and last, but not least, to my partner, David Higgins, for hours of discussion, helpful advice, comments on innumerable drafts and, most of all, for never complaining when I dragged him round yet another dusty archaeological store.

# **Chapter 1: Regionalisation and trade**

## **1.0 Introduction**

This chapter considers how archaeologists have addressed issues such as regionalisation and trade through the study of material remains. It goes on to consider the importance and uniqueness of a specific artefact type from the Post-medieval period – the clay tobacco pipe – its survival in the archaeological record, its usefulness as a dating tool and indicator of social status and its links to individual makers and production centres. This is followed by a critical review of the existing literature within the field of clay pipe studies. This review highlights a number of weaknesses within certain areas of pipe research that warrant further study. It is these weaknesses that have been used to formulate the questions for this particular study. The chapter concludes with a rationale for the choice of study area that will be used in an attempt to answer some of these questions.

## **1.1 Models for regionalisation and trade patterns in archaeology**

The subject of archaeology can be defined as ‘the study of past societies primarily through their material remains’ (Renfrew and Bahn 1993, 9). These material remains include artefacts, which have been defined in a variety of ways, ranging from ‘portable objects that have been modified by human activity’ (Sharer and Ashmore 1987, 65), to ‘anything which exhibits any physical attributes that can be assumed to be the results of human activity’ (Dunnell 1971, 117).

In the context of this study regionalisation can be defined as the identification of a group of artefacts that can be assigned to a specific region by virtue of their form. Renfrew and Bahn (1993, 104) noted that ‘products of a given period or place have a recognisable style . . . they are in some sense characteristic of the society that produced them’. In the archaeological world it has long been accepted that change in shape and style was often gradual allowing typologies to be created for almost any artefact type. The nineteenth-century scholar Montelius studied Bronze Age tools and demonstrated how artefacts in one region influenced those in adjacent areas (*ibid* 105).

Prior to the advent of written history links between groups of people can be made through the common use of specific artefacts or cultural objects – a particular type of stone tool, a particular method of decorating pottery, a particular style of bronze axe. These groupings of artefact types have been equated to cultural groupings in the prehistoric period and used to define and examine the social structure and evolution of these groups. In the Post-Medieval period there is a wealth of documentation for the existence of separate sovereign states, for their social and political development and for the interactions between them. At the same time groupings of artefact types can still be observed and yet little attempt has been made to reconcile these groupings with the documented political situation. White clay tobacco pipes, for example, were in common use throughout much of northern Europe, a geographical area that encompasses a number of quite separate political units, each of which have their own distinctive language and culture. These pipes exhibit marked regional differences, which can be studied and interpreted in relation to the documented social contexts that produced them.

In 1993 Renfrew and Bahn also noted that one of the growth areas in archaeology was the study of ‘exchange and trade in early societies’. This included not only the trade in manufactured goods but also in the raw materials used to produce them. The artefacts themselves are a useful source when determining contact between different areas or different groups of people. Although the exchange of goods may be obvious if the objects themselves survive in the archaeological record what is perhaps more significant is the exchange of ideas through social contacts that the objects imply (*ibid* 307). In the Post-Medieval period sufficient documentation often survives for these individual contacts and transfers of ideas to be identified. The spread of particular styles of pipe mark and decoration through the use of the apprenticeship system has, for example, been demonstrated by Walker and Wells (1979). In the same way the exchange of ideas, as well as the manufactured goods themselves, can be demonstrated as a result of inter-marriage between pipemaking families (Appendix 1).

## **1.2 The importance of clay tobacco pipes in the archaeological record**

As early as the eighteenth century clay tobacco pipes attracted the attention of antiquaries (Higgins 1999, 310). In more recent years clay tobacco pipes have proved to be one of the most useful artefact types that an archaeologist can recover from a Post-Medieval site. They spanned class and gender being smoked by men and women from all walks of life, and, as such, are seen by many scholars as the 'ideal type fossil' for the period 1600 to 1900 (Davey 1996, 65). In his review of British clay tobacco pipe studies, Higgins (1999, 310) refers to clay tobacco pipes as being 'one of the most commonly encountered elements of material culture' for this period.

The importance of clay tobacco pipes lies in the fact that they were very fragile yet had no recyclable value. Pipes were therefore often used and discarded within a relative short period of time. Fragments of clay tobacco pipes survive well in most archaeological conditions and, as they were widely used in vast quantities, they are often recovered in large quantities on Post-Medieval sites. Their bowl forms and marks changed rapidly over a relatively short space of time and can therefore be dated very closely, often to within 20 or 30 years (Oswald 1975, 29; Higgins 1995a 47). If marked, clay tobacco pipes can often be attributed either to a specific maker, whose life can be charted with the aid of documentary sources, or to a general production area based on the style of the pipe.

Clay tobacco pipes can also be used as an indicator of social status. The cost of a pipe was often determined by two major factors; the length of the stem and the finishing techniques employed. Longer stemmed pipes were difficult and time consuming to produce and therefore demanded a higher price (*ibid*). The addition of milling to the rims, burnishing to the surface of a pipe or trimming of the seams added time and therefore cost (Walker 1977, 188).

These features mean that not only do clay tobacco pipes have the ability to provide reasonably accurate dating but they can be used as a means by which the quality or 'status' of a group can be assessed, as well as providing the potential for charting

trade routes, thus making them immensely valuable to archaeologists studying the Post-Medieval period.

### **1.3 Regionalisation and trade within clay pipe studies**

One of the earliest references to a pipe find dates from 1784, from Kildare in Ireland (Anon 1793, 352). From the early nineteenth century, collections of clay tobacco pipes were being formed providing groups of pipes for study. In 1835 T C Croker published an article in the *Dublin Penny Journal* entitled 'Ancient tobacco pipes' in which he illustrated pipes from a number of places in Britain. By the mid nineteenth century it was clear that regional differences were apparent to these early scholars. Lamb (1851, 31) noted, 'the size, quality and form of clay pipes manufactured in England differ greatly according to the localities from which they come'. This idea was developed by F W Fairholt in 1859 in his *Tobacco, its history and associations* where he described and illustrated pipes from around the world as well as presenting a contemporary account of the 'latest' discoveries of clay tobacco pipes from the British Isles.

During the later nineteenth and early twentieth centuries work was carried out by a number of scholars defining regional pipemaking industries. These included Barnstaple (Hall 1890), London (Hilton Price 1900), Hull (Sheppard 1902a) and Shropshire (Thursfield 1907). These studies established local styles of bowl forms and marks and provided a framework against which new finds could be compared.

It was not until 1951 that Adrian Oswald produced the first general typology based on bowl shape. This was subsequently revised in 1955 and 1961. Oswald's typology gave a period of approximately 30 years for each type and was based on the following:

1. dated archaeological groups, mainly from London
2. drawings and pictures by contemporary artists
3. pipes bearing dates
4. documentary sources for makers

In 1975 the typology was further revised when it was presented in *Clay pipes for the archaeologist* as volume 14 of the British Archaeological Reports series. This work was the culmination of over 25 years of research and publication in the field of clay tobacco pipe studies and remains one of the most widely used works on pipes.

*Clay Pipes for the Archaeologist* presented a synthesis of the evidence for the arrival of tobacco in Europe as well as presenting the methods of pipe manufacture. Oswald published a general typology for the United Kingdom but, recognising regional variations, also presented local typologies. Several of these regional typologies include a selection of makers' marks. They are, however, rather crude, their coverage patchy and the illustrations are poorly executed making it difficult to match moulds or marks with other examples. Oswald concluded his work with a list of over 5,200 pipemakers from all over the country drawn from trade directories, apprenticeship rolls, parish registers and similar such documents.

Oswald's work continues to be widely used by clay pipe scholars and has inspired researchers all over the world. It is one of the few works that presents the study of clay tobacco pipes as a whole.

After the 1975 publication there was 'a sustained interest in all aspects of pipe studies' although 'there was no obvious mechanism for its dissemination' (Higgins 1999, 313). In 1979 this situation was remedied with the establishment of the research series *The archaeology of the clay tobacco pipe*, which was seen as a cheap and quick means of publishing new archaeological research. Since 1979 fourteen volumes in this series have been published by British Archaeological Reports of Oxford.

In addition to the clay pipe series there have been a number of published works on clay tobacco pipes that have attempted to look at wider issues such as trade, production centres, consumption centres, regional studies, the study of specific attributes of a pipe or particular decorative motifs as well as the recording and interpretation of clay tobacco pipes from archaeological contexts. The following



sections give a few examples where specific issues of pipe trade, production and consumption have been addressed.

### **1.3.1 Trade**

There have been a small number of papers where documentary sources have been used to look at the trade in the raw materials required for the production of clay tobacco pipes as well as the trade of the products themselves. Cooksey (1980) for example, draws upon documentary sources to look at the trade of tobacco pipe clay from Poole. In 1977 Arnold published a paper looking at the trade of pipes within a specific centre, in this particular case Southampton. Arnold drew on the port books as well as a range of other documentary sources in order to show how many pipes were being exported from Southampton and where they were being exported. In 1988 Jackson and Jackson took a slightly different approach and looked at documentary evidence for a particular pipe making family, the Viners of Bristol, rather than a whole centre. The documents consulted provided a wealth of information about the Viners lives and showed that they were very prosperous and exported widely. Jackson and Jackson did acknowledge, however, that there was a need for archaeological material to show the type and range of pipes the Viners produced and to confirm the extent of their trading links.

### **1.3.2 Production centres**

The discussion of clay tobacco pipes from production centres tends to fall into two basic categories. First, those accounts of pipes either found or collected from a particular town or area and often set against any available documentary evidence. Examples of this type of discussion include studies of the pipes found in Barnstaple (Grant and Jemmett 1985) and Glasgow (Gallagher 1987a).

The second category comprises the excavation and interpretation of kiln sites, again with supporting documentary evidence when it is available. These sites include that of William Heath in Brentford (Laws and Oswald, 1981), Aldgate (Thompson, 1981) and Rainford (Davey *et al*, 1982a). In 1996 Peacey published his PhD thesis in which he presented a detailed account of the development of the clay tobacco

pipe kiln in the British Isles. This publication includes a discussion of the pipes and kiln material from Gloucester, Chelmsford, Pipe Aston, and Waterford in Ireland.

### **1.3.3 Consumption centres**

There are a large number of papers that have been published looking at consumption centres or areas. Often these reports draw on evidence from excavation as well as production sites themselves. Examples of this type of publication include Hull (Watkins, 1979), Chester (Rutter and Davey, 1980) and Surrey (Higgins, 1981).

The limitations of such studies, as with the production centres (1.3.2 above) is that they usually examine just a single site or centre, which is often looked at in isolation. There is very rarely any synthesis of what this means in terms of the industry as a whole. Nor is there any integration with the wider issues of economic history. It is very rare for the dynamics of production and consumption to be examined. In 1981 Duco produced an account of clay tobacco pipe production in the Netherlands in the seventeenth century. Each site had a detailed summary and the volume included some 274 drawings but, despite this, no archaeological evidence was used, there was no quantification nor was there any assessment of the interaction between the centres in the Netherlands.

In 1985 Davey wrote a paper looking at the clay tobacco pipes recovered from excavations at Norton Priory. This site offered the rare opportunity to compare pipes used and discarded by the occupiers of the manor house with those of the cottagers from the village itself. Similar studies have been carried out at Beeston Castle (Davey 1992a) where differences between the Royalist and Parliamentary usage of pipes could be determined using a combination of typology, marks and site stratigraphy. This part of the report, however, has been consigned to microfiche and is not presented within the body of the main text. In Scotland an attempt was made to discuss the impact of Dutch imports on the pipe consumption of the whole of Scotland (Davey 1992b). Although these examples highlight a trend in pipe research such examples are few and far between and in general they include no overall assessment of production, consumption, marketing strategies or trading patterns.

### **1.3.4 Regional studies**

Although there have been a number of papers that appear to be regional studies most, on closer examination, turn out to be studies of individual centres. For example the volume on Chesapeake Bay in America (Davey and Pogue, 1991) is a study of a specific region and is based almost entirely on well-excavated material. However, on closer examination it is clear that this volume is in reality a series of site-specific statements with no regional synthesis. The methods of recording and reporting vary from site to site making it difficult for inter-site comparisons to be made. The work on Tyneside (Edwards 1988a and 1988b) is another such example. Although it is an excellent presentation of the results of an extensive documentary study, and draws together a large number of pipes from the area, there is no geographical analysis of the market area and the illustration of the marks and bowls are not detailed enough for comparison with similar material from elsewhere. In 1979 Lawrence published his work on York pipes and their makers. Although this paper draws on pipes recovered from excavations within York there is little discussion of the excavation evidence and the paper relies heavily on a descriptive account of the bowl forms and marks. On a positive note the paper offers a useful typology for York but one of the drawbacks is the quality of the illustrations, particularly of the marks themselves, making comparison of dies virtually impossible.

In the Scottish BAR volume (Davey 1987a) an attempt was made to bring together as much new artefactual and documentary evidence as possible. As with the Chesapeake volume the Scottish volume generally had site-specific interpretations with no real regional or national analysis of the competing centres. In addition, the quality and nature of the die and mould information was inconsistently presented leading to difficulties when trying to match dies or moulds with material from elsewhere.

These are but a few examples of existing regional studies, which, regrettably, are flawed on a number of counts:-

- the areas are too large for a systematic study of all the evidence

- the study is often led by documents to which artefactual evidence is appended
- the recording of bowl forms and marks is not consistent or of sufficiently high standard to allow for comparisons to be made
- regional analysis is not the main point of the study

### **1.3.5 The study of specific attributes of a pipe or particular decorative motifs**

The majority of the papers cited so far have, for the most part, drawn on groups of pipes from a particular centre, but there is a group of published material that concentrates on specific groups of pipes, their attributes or decorative motifs.

Examples of selected groups of pipes from within a larger collection include a collection of marked pipes held by the Hertbert Museum Coventry (Muldoon 1979) and a collection of Rainford pipes by the Winchester Museum Service (Dagnall, 1991). Pipe scholars have sometimes concentrated their efforts on particular decorative motifs such as Armorials (Atkinson and Oswald 1980 and le Cheminant 1981a), Prince of Wales Feathers (le Cheminant 1981b), and Dick Whittington pipes (le Cheminant 1985). Some scholars have gone further still and focussed on very specific attributes such as internal bowl crosses (Jarzembowski 1985) and stem curvature (Higgins 1985a).

### **1.3.6 The interpretation of pipes from archaeological contexts**

In the earliest part of the twentieth century reports on clay tobacco pipes from archaeological excavations, or just stray finds, tended to simply state that clay pipes were found, very rarely was any quantitative assessment or interpretation made. There has been some improvement over time, however many reports still tend to relate to just one specific site or production centre. There is no doubt that this type of report has its merits, but there is very often no attempt to place the pipe evidence within a wider social or economic context.

In 1969 Oswald published a paper on a group of marked pipes from Plymouth. In this paper Oswald, perhaps for the first time, discusses the archaeological and

stratigraphic evidence the pipes provide. It is a sad reflection that this example remains the exception rather than the rule and that most pipe reports comprise a simple description and a catalogue, sometimes accompanied with a few illustrations although these are often of poor quality.

In the wake of the Second World War, excavation of sites in the urban setting flourished. The 1960s saw the emergence of a number of archaeological units throughout the country and, for the first time, many of our towns and cities were the subject of major archaeological investigations as a result of huge new building programs. Excavations in cities such as London, York and Hull produced vast quantities of clay tobacco pipes and, although some individual site reports have been produced, little of this material has ever been pulled together in an attempt to say anything about the development of the pipe industry within these important centres.

In 1977 Mann produced a synthesis of pipes recovered from five years of excavations in Lincoln. This publication is perhaps unique in that it pulled together summaries of sites excavated and aimed to shed light on the development of 'a distinctively local Lincolnshire style, and on the general development of the industry in the city of Lincoln itself' (Mann 1977, 1).

Between 1964 and 1973 a huge excavation was carried out at Sandal Castle near Wakefield (Mayes and Butler 1983). The pottery report presented in the published excavation report stands out as a fine example of where a full analysis of the material remains is presented in relation to the stratigraphic evidence from the site. The same cannot be said of the pipe report which comprises one short paragraph with six brief captions and 11 poorly illustrated pipes reproduced at half life-size (Lawrence 1983). This is in spite of the fact that Sandal produced one of the largest and most closely dated civil war pipe assemblages from anywhere in the country.

Although there are many examples where lists of excavated pipes exist, it is rare to find reports in which the stratigraphic evidence provided for the pipes is fully presented and discussed and where these results are properly integrated into the

excavation report. The few such examples include Scalloway Castle (Davey 1987b) Barnard Castle (Davey 1988a) Chester Castle (Davey 1993a) and Pontefract Castle (Davey and White, 2002). It is rarely the fault of the pipe specialist who is often willing to produce such a report, it is more often a result of poorly excavated Post-Medieval features, sketchy or poorly maintained records, or simply because the material is considered too modern to be worthy of detailed study. It is a damning indictment of the archaeological profession, but all too often the excavators, their funders and publishers have not been interested in material of this period beyond a register of its existence.

### **1.3.7 The systematic recording of clay tobacco pipes**

A recording system that logs information about individual pipes in a consistent and systematic way is essential for inter-site comparison. Mann's 1977 article sought to deal with recording the material resulting from excavations in Lincoln. Specific attributes such as stem bore, base type and rim type were recorded and presented in a systematic manner (Mann 1977, 49, Table 1).

In 1981 Davey published guidelines for the processing of clay tobacco pipes from excavated sites. In this paper Davey highlighted the importance of pipes from excavations not only as an aid to the interpretation of a particular site but also in relation to the contribution they make to pipe research in the area concerned (1981, 66). This system was field tested by Webster (1982) and a group of extra-mural students in Cardiff who proposed a number of amendments to the system that would make it quicker and more cost-effective.

It was to be at least another 10 years until Higgins and Davey (1994) developed a system at the University of Liverpool for the systematic recording of groups of pipes making comparison of material within individual groups and between sites easier. The system was designed to use A3 recording forms, which were filled in by hand prior to data entry in a relational database. Since 1994 the clay tobacco pipes from a number of sites have been recorded using this system but to date no systematic attempt has been made to bring together a large body of data for inter-site

comparison. As a result, the full potential of this data recording system has not yet been realised.

Although now widely used within the world of pipe studies, the recording system remains unpublished. This system has been adapted for use by the Monticello Project in America (web site [www.monticello.org/icjs/archaeology](http://www.monticello.org/icjs/archaeology)) where it forms the basis of a huge database which aims to record, in a standard way, all the artefacts recovered from the excavation of 20 slave sites in the Chesapeake region, including clay tobacco pipes. Until a standardised method of recording is adopted here in Britain, inter-site comparisons remain fraught with difficulties

#### **1.4 The present research**

The review of pipe research to date has highlighted a number of weaknesses, particularly in relation to the study of regionalisation and trade. The study of these broader issues has been hindered by the lack of a standardized recording system and by the site-specific approach of much of the previous research.

If the style of a pipe from a particular area, or even a particular workshop, can be defined then two important advances can be made. First, it becomes possible to identify the origin of the pipes within a particular assemblage, thereby making it possible to map out the extent of market areas and trade routes. Second, it enables comparisons to be made between the products of one centre and those of a neighbouring centre. Both of these points provide information that allow researchers to draw some conclusion with regard to the interaction between workshops as well as to the establishment of a particular market area. With these points in mind the present research sets out to try and address the following questions:-

1. Is it possible to define a style of pipe that is typical of a given study area?
2. Is it possible to define products of individual centres within a given study area?
3. Can trading dynamics of production centres within a given study area be assessed?

4. Can the influence of external production centres be assessed?
5. If any patterns can be identified in 1-4 above, to what extent can they be explained from the historic record?

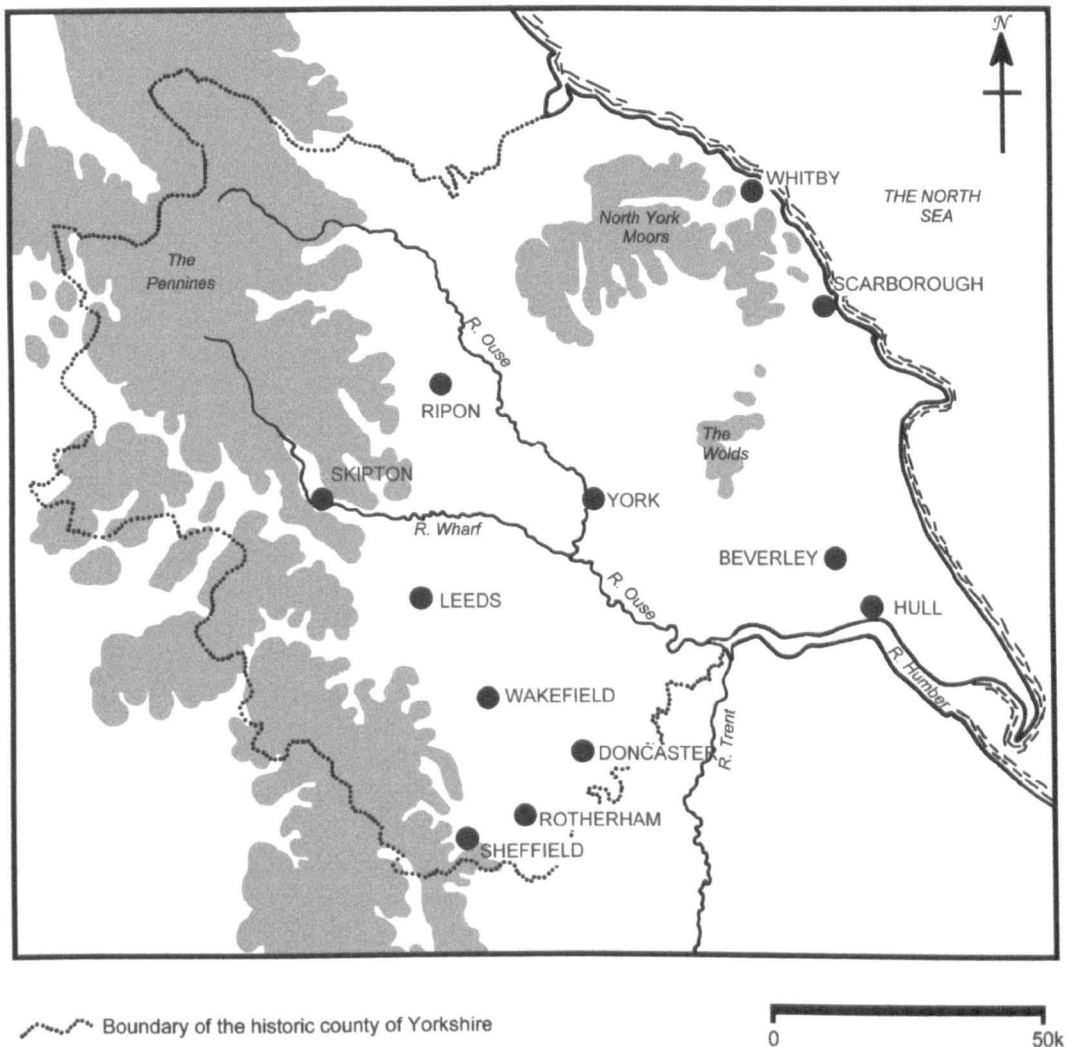
In order to answer these questions it was necessary to define a study area and a study period. The historic county of Yorkshire (Figure 1.1) was chosen as the study area for the following reasons:-

1. It is large enough for economic variables to come into play
2. Yet small enough for evidence to be fully recorded at a reasonably detailed level.
3. There are a range of settlement types of different sizes and locations, for example upland villages, market towns and coastal ports.
4. It has inland waterways for internal trade and ports for coastwise and overseas trade.
5. It has interesting topography that has the potential to affect production and trade – Pennines to the east, North York Moors to the north, coastal ports to the east, larger industrial towns to the south.
6. It has the raw materials available in some areas to allow for production of clay tobacco pipes independently of imports from outside the county.
7. This kind of study has not been attempted before in Yorkshire.

The study period c1600-1800 was chosen in order that the trade and distribution patterns of the early Post-Medieval period could be studied prior to the influence of turnpikes, canals and railways. Around 1750 there is a change in bowl styles from the plainer seventeenth- and early eighteenth-century forms to the more elaborate mould-decorated forms of the later eighteenth and nineteenth centuries. At the end of the eighteenth century there was also a change in the form and style of marking. In the seventeenth and early eighteenth centuries stamped marks could be considered the norm. The use of stamped marks continued towards the end of the eighteenth century, after which they were almost entirely replaced by moulded marks.



Rather than applying a rigid cut off date to this current study a date of *c*1800 is given and is based on the typological and stylistic developments that were occurring towards the end of the eighteenth century. Mould decorated bowls that were being produced at the end of the eighteenth century and led on to the proliferation of highly decorated pipes in the nineteenth century are not considered. For the purposes of this study only those mould-decorated bowls either bearing an eighteenth-century makers mark, or positively identified as the product of an eighteenth-century maker, have been recorded.



*Figure 1.1: Map showing the boundary of the historic county of Yorkshire.*

In order to provide a context for pipes studies in this thesis, a range of specialist literature on issues such as trade and transport was consulted, for example Speakman (1969) and Willan (1938 and 1976). The issues discussed in these works are not specific to Yorkshire or to pipe studies but provide a broad social framework against which pipe production, marketing and consumption can be set.

## **1.5 Summary**

The current research has highlighted a number of areas within the study of the clay tobacco pipe industry that warrant further investigation. It would be a colossal task to try and address them all and certainly far beyond the scope of a single thesis. It would be a lifetime's work to re-examine the excavation archives for all the clay tobacco pipes found in Yorkshire. What is possible, however, is to record the attributes of those clay tobacco pipes found within the defined study area and to look at the development of their bowl forms, marks and at their geographical distribution in order to address one particular area of research – that of regionalisation and trade.

## **Chapter 2: Existing evidence for the production of clay tobacco pipes in Yorkshire**

### **2.0 Introduction**

This chapter will look at the existing evidence for the production of clay tobacco pipes in the historic county of Yorkshire throughout the two hundred year period from the late sixteenth century to the late eighteenth century. It will consider three main elements; the documentary sources, the known kiln sites and finally the pipes themselves drawn solely from existing published and other readily available sources.

### **2.1 Documentary sources – evidence for distribution**

Perhaps one of the most obvious places to start a search for evidence of pipe production is through the use of historical documents. Over the years a number of researchers have studied various classes of historical records and, from these, compiled lists of pipe-makers that provide a valuable starting point in any assessment of pipe production in Yorkshire.

In 1960 Oswald published a national list of pipe-makers, which included 173 makers from Yorkshire of which 102 dated from before 1800. This list was added to in 1973 when Lawrence published his work on the pipe-makers of West Yorkshire. Lawrence added a further 216 makers to Oswald's existing list of which 26 pre-dated 1800. Oswald produced his final makers list in 1975 with a staggering 435 makers for Yorkshire alone, of which 158 now pre-dated 1800.

Since the publication of Oswald's list in 1975, individual centres have been studied most notably Hull (Watkins, 1979) and York (Lawrence, 1979), and lists of makers for these specific production centres have been drawn up. Watkins' list of makers superseded Oswald's and added further information which appears to have been drawn primarily from Apprenticeship Rolls (1667-1929), Freedom Rolls (from 1369); Directories (1791-1939), Poll Books for 1724, 1747, 1757 and 1774 and the 1851 Census. Watkins' work increased the number of known Hull makers dating

from before 1800 from 60 (Oswald, 1975) to 127 (Watkins 1979). For York, Lawrence (1979) goes back to primary sources and lists 37 makers who predate 1800, five of which do not appear in Oswald's 1975 lists. The Oswald list, however, includes ten makers who Lawrence appears to have omitted from his 1979 list. These two lists appear to have been compiled independently and between them, provide evidence for 49 York makers dating from before 1800.

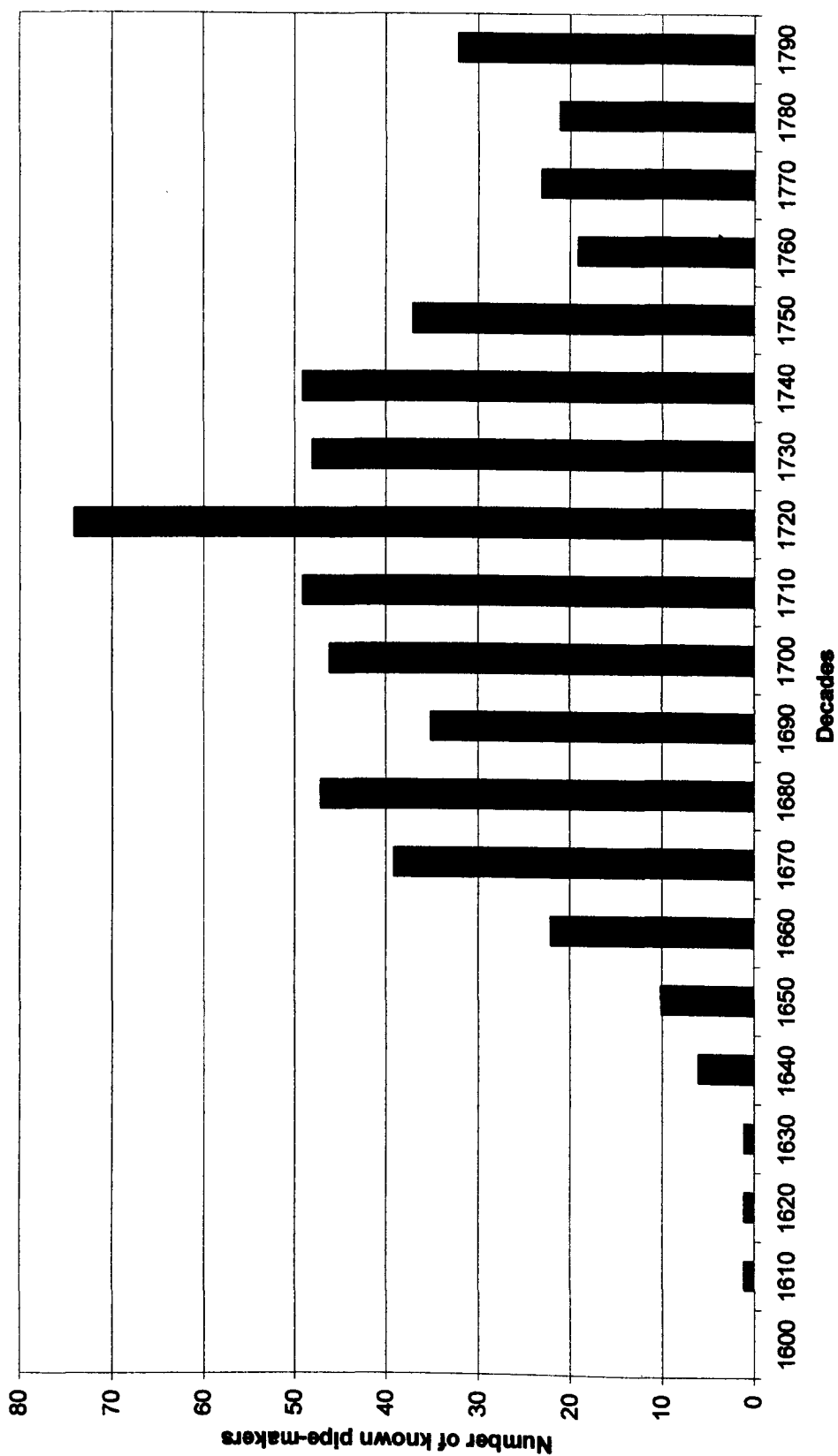
In addition to the published material on makers other researchers have added greatly to the available evidence through extensive documentary searches which have included Apprenticeship Rolls, Alehouse Keepers Licences, Cemetery Company Records, Freedom Rolls, Rate Books, Hearth Tax Returns, Register of Electors, Quarter Sessions Records and Wills in Probate. John Andrews has worked primarily on the makers of York and, although he has not added to the actual number of known makers from this particular centre, he has 'put flesh on their bones' by transcribing many individual references to them. Andrews has published some of his work (1987a, 1987b, 1988 and 1991) but the more substantial pieces of research remain unpublished. These are *Pipe-makers of the City of York 1643-1921* (n.d. but believed to be mid 1980s); *Pipe-makers of York: a list with evidences* (1986); and *The Castle Museum, York, clay tobacco pipe collection* (1987c). Copies of these manuscripts have been deposited with a number of museums in Yorkshire including York Castle Museum and are therefore available for consultation.

Andrews has also worked on the pipe-makers of Doncaster and has produced a detailed account of the pipes held by Doncaster Museum, *Doncaster Museum clay tobacco pipe collection* (1993). In this unpublished volume, he provided sketches of all the pipes together with a brief description as well as producing a list of Doncaster makers. Copies of this manuscript have been deposited with Doncaster Museum and Art Gallery and the National Clay Tobacco Pipe Archive. Other researchers, such as Hilary Brook who has worked on the pipe-makers from Birstall, have added to the list of known makers. Brook's work focussed on the nineteenth-century makers from Birstall, in particular Joseph Dodson (Brook 1989) but her

research also produced an unpublished list giving details of pipe-makers from other centres in Yorkshire (Brook *in litt* 1998).

This thesis is intended to be a study of the artefactual evidence and therefore there has been no systematic search for pipe-makers through primary documentary sources. A framework for the artefactual study has, however, been provided by compiling a consolidated list of all the known Yorkshire makers from before c1800 (Appendix 1). This appendix pulls together, for the first time, all the published makers' lists together with a wealth of previously unpublished material listing over 280 makers for Yorkshire from before c1800. From this information it is possible to begin to draw together a picture of the extent of pipe production in Yorkshire. The earliest reference to a 'pipe-maker' is 1645 when Gabriel Westoby of York took on two apprentices (Andrews 1987d, 19). As it was only master pipe-makers who took on apprentices it is safe to assume that Westoby would have been working as a pipe-maker prior to this date. He can be traced back through the records with the earliest reference being to the burial of his son, John, in 1619 (*ibid*). In 1633 he took on two apprentices, Mark Burn and Robert Beckwith when Westoby's trade was given as a trunkmaker but this does not necessarily mean that Westoby was not producing pipes at this time. Freemen of a city were required to be associated with a particular guild. As there was no guild in York specifically for pipe-makers, it would appear that in the early part of the seventeenth century pipe-makers in York bought their Freedom as trunkmakers. It is only in York that this link between trunkmakers and pipe-makers appears to exist (Lawrence 1979, 83). In 1643 Westoby took on a further two apprentices, Francis Balden and Francis Wilday and at this date his trade is given as a 'trunkmaker and tobacco pipe-maker' (Andrews 1987d, 19).

By studying the makers' lists, it is possible to see where makers were working and how many were working at any given time. In order to give an indication of the known chronological distribution of the makers over time, each decade of a maker or apprentices known working life has been plotted onto a bar chart (Figure 2.1). For example, Christopher Boyes of York is known to have been working from 1711,



*Figure 2.1: Chronological distribution of all known makers and apprentices from Yorkshire as a whole c1600-1800.*

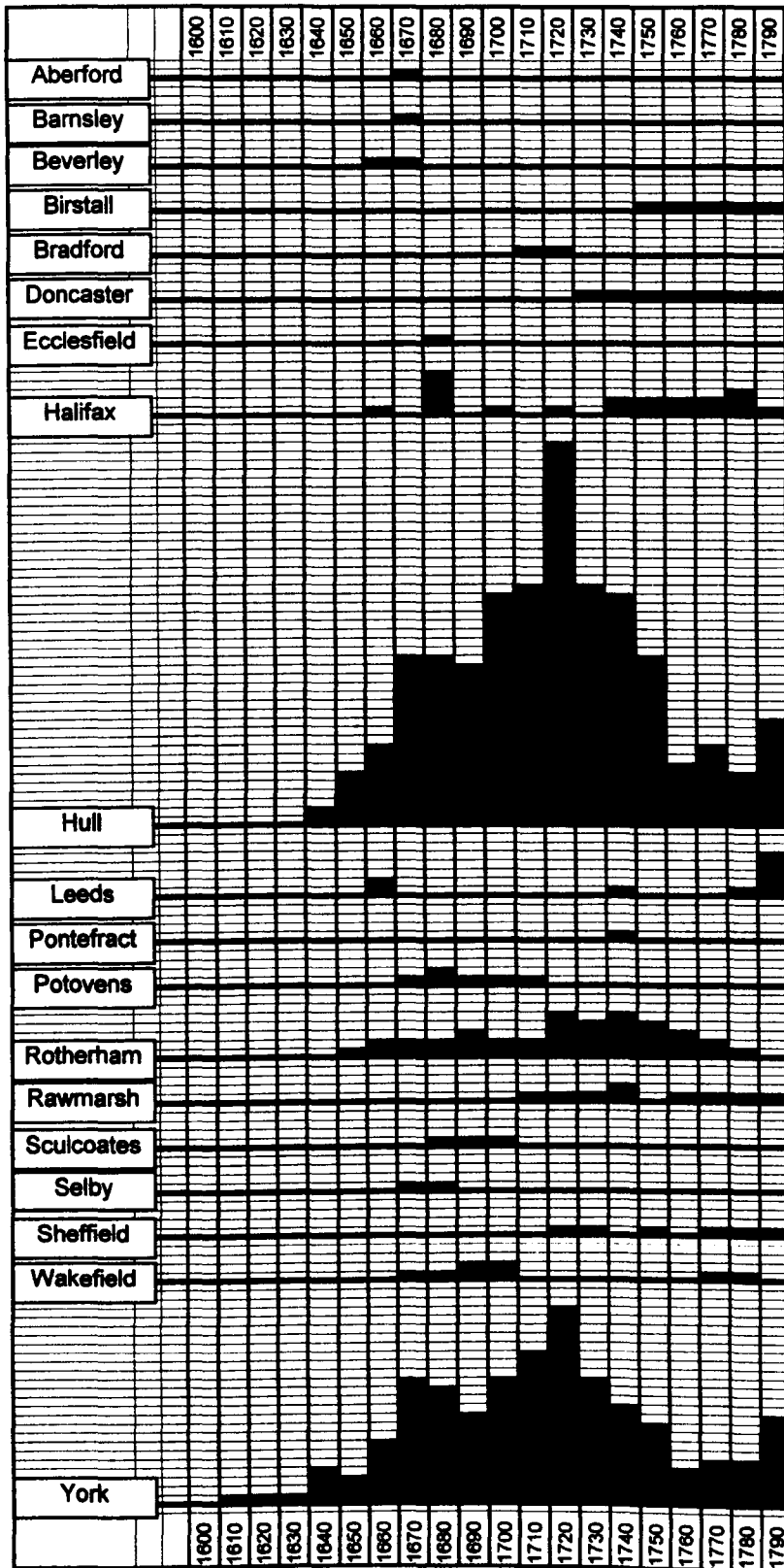


Figure 2.2: Chronological distribution of all known pipe-makers from specific centres in Yorkshire c1600-1800

when he received his freedom, until his death in 1725, therefore the decades 1710-1719 and 1720-1729 were marked once. Similar charts have been created for each of the centres where known pipe-makers were working (Figure 2.2). From these charts two large and important centres stand out – Hull and York - where large number of makers might be expected. They are also centres where more thorough documentary research has been carried out. The map in Figure 2.3 gives a clearer indication of the geographical distribution of the known pipe-makers. The solid dots are the centres where pipe-makers are known to have been working while the open circles indicate other centres where makers might be expected but where none have been identified to date through the documentary record. It is clear from the map that the known pipe-makers are clustered in south Yorkshire where there are a number of historic market towns and where the raw materials necessary for the production of pipes are readily available. The noticeable blank areas are along the coast and in central and north Yorkshire. Centres such as Ripon, Richmond and Pickering, might be expected to have pipe-makers but, to date, none have been identified. In his unpublished report on two groups of pipes from Ripon, for example, (Davey 1990b) suggested that there was artefactual evidence for a pipe-making industry in the town from around 1640 through to at least 1750, although there was no supporting documentary evidence. These charts and the map give a very biased picture but serve to illustrate the need for a systematic survey of both the documentary sources and the artefactual evidence.

## **2.2 Documentary sources – social status**

Pipe production was very much a family business and the documents that survive shed some light on the size and nature of these businesses. In most cases pipe making was carried out on a fairly small-scale with a workshop being situated behind the house. Evidence for this can clearly be seen in a will dating from 1705, where Richard Shafton of York states, “I also give unto the said Richard Shafton [his son] all my worke tooles belonging to the Pipe making Traide in my backe shop” (Appendix 2). A similar reference appears in the will of Christopher Boyes dating from 1725. Christopher’s trade is given as a trunkmaker rather than a tobacco pipe-maker and he states that “I give and devise to my son Samuel Boyes and his heirs the back part of the same house with the kitchen, two chambers, with



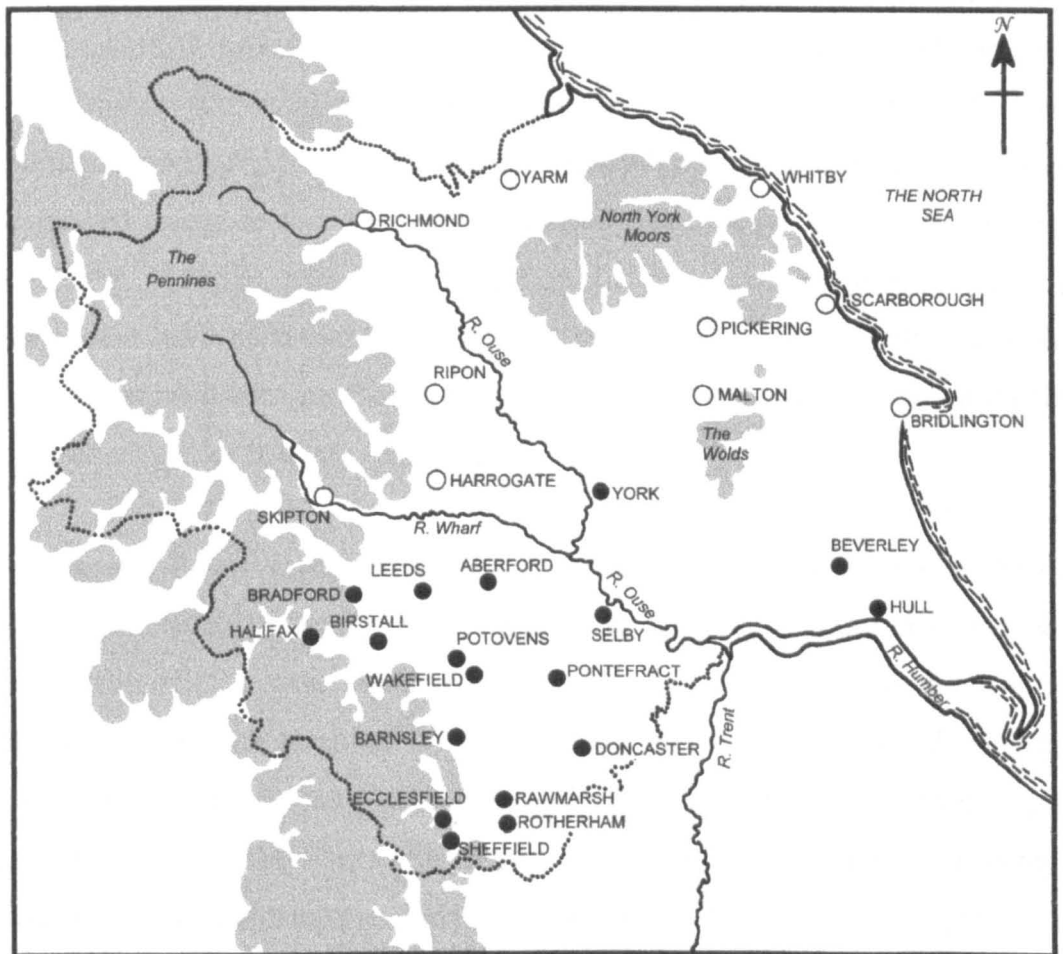


Figure 2.3: Map showing the geographical distribution of all documented pipe-makers from Yorkshire c1600-1800.

chamber and garrett's above and ye little yard and pipeshop with free passage..." (*ibid*). What is also clear from these references is that the pipe shops are being passed from father to son together with tools of the trade.

By looking at the inventories associated with wills it is possible to get some idea of how large these pipemaking workshops were. In the inventory of Christopher Boyes of 1725 specific items relating to the pipe trade are listed including approximately 40 tons of clay valued at £40:00:00; brass moulds at £01:07:00; and drying grates at £00:12:06 (Andrews n.d.). Some damp pipe fragments, which were considered to equate to a complete eighteenth-century pipe were found to weigh about 60g. If 60g of damp clay was sufficient to make one pipe then forty tons of clay would have been enough to produce some 677,333 pipes. This shows that Boyes must have been producing pipes on a considerable scale to warrant holding this amount of clay in stock.

By contrast, Brears (1967, 8) quotes an extract from the West Riding Quarter Sessions Rolls for 1680-81 which records the activities of a group of potters who were accused of 'driving waynes, Cartes & Carriages crosse over the said common and with horses and breaking ye soyle, making rutts and new ways, digging and getting of clay for making pipes, potts, and other earthenwares, and making pitts and holes neare ye hye waye to the danger of travellers'. This example shows pipe-makers who were obtaining sufficient clay to produce their pipes by digging at the side of the road.

The relative success of a pipe-maker could be determined by the number of apprentices he took on. Details of apprenticeships are given in the Apprenticeship Rolls, but occasionally the actual Apprenticeship Indentures survive. In 1992 details of two apprenticeship indentures were published. The earlier of the two was that of John Shafton of York to John Goldwell of Hull in 1721 (Andrews, 1992). The second was that of Joseph Scott to Thomas Westerdell also of Hull, in 1788 (Rayner, 1992). Both indentures follow the same basic format and include details of the length of the apprenticeship together with rules and regulations by which the apprentice was to abide.

It is clear from documentary sources that some pipe-makers were very successful, having a number of apprentices working for them. For example in the early part of the seventeenth century Gabriel Westoby of York had at least four apprentices working for him (Andrews 1991, 94), and between 1685 and 1727 Robert Burrill of Hull had at least seven apprentices (Watkins 1979, 108). The success of the pipe-maker can also be seen in the size of their property. Abraham Boyes of York, for example, is listed in the Hearth Tax Returns as having six hearths in 1670 and 1671 (Andrews 1987d). Abraham's son Christopher Boyes, also a pipe-maker, left a house with nine rooms, plus a workshop and a second house in North Street, York (Andrews n.d.). These are perhaps the exception rather than the rule, as most pipe-makers appear to have left small amounts in their wills. In some areas pipemaking was carried out in conjunction with other trades. Richard Tock of Hull appears in the Poor Rate Returns for 1735 where he is listed as being 'poor' and paid no rates (Watkins, 1979).

Full transcriptions of the Shafton indenture of 1721, the Shafton Will of 1705, the Boyes will and inventory of 1725 together with an inventory of William Spacie dating from 1710, the will of William Ramsden of 1769 and an apprenticeship indenture of Joseph Scott of 1788 are given in Appendix 2.

The makers' lists and other documents provide a wealth of information relating to individual pipe-makers, their families and businesses. From the few examples cited above, it is possible to see an overview of pipe production in Yorkshire emerging. The number of pipe-makers in any given centre may indicate how extensive pipe production was; the amount of clay or the number of moulds may give an indication of the scale of production for a specific maker; and the collection of clay gives an indication of which local clay sources were being exploited. There is a note of caution, however. The collection of details for makers' lists and surveys of other documentary sources is a very time consuming business and is fraught with difficulties. The national makers list published by Oswald in 1975 remains one of the standard works and one which is referred to time and time again. While its value and worth should not be underestimated it is important to remember that it is not a definitive list. It is only as good as the information that was available at the

time. There is a bias in favour either of those later records that are more easily accessible, or of areas where researchers have had the time and interest to search the records thoroughly. The same holds true for other documentary sources where survival of records may be patchy as a result of loss or damage over the years. The use of any information gleaned from such sources should therefore be used with caution and, where possible, in conjunction with other evidence.

### 2.3 Kiln sites

Having identified pipe-makers, the next obvious step is to look for the production sites themselves. Pipe kiln sites are notoriously hard to find, particularly for the seventeenth and eighteenth centuries. There are two means by which pipe kiln sites may be identified, first through documentary sources, and second through the identification of physical remains. The use of documentary sources has tended to focus on the pipe-makers themselves and to date there has been very little attention paid to the identification of actual kiln sites through map evidence.

The use of map evidence in conjunction with the parish registers have, however, identified the location of one possible eighteenth-century kiln site in Rawmarsh belonging to a Jonathan Scolah. In 1781 Jonathan Scorer (or Scolah) was occupying a homestead owned by Thomas Oates in an area known locally as Pipe House Lane (Munford *in litt* 28.6.00). Scolah is recorded in the parish registers as a 'maker of clay pipes' in the late eighteenth and early nineteenth century (*ibid*) and it is tempting to suggest that Scolah was producing pipes in a workshop attached to his house in Rawmarsh.

In his 1996 survey of pipe kilns Peacey lists just two kilns, both identified through physical remains, dating to before 1800 for the whole of Yorkshire. The first is a seventeenth-century kiln at Potovens and the second, an eighteenth-century site at Doncaster.

The seventeenth-century pipe kiln was discovered in 1964 to the north-west of Wakefield, near 105 Wrenthorpe Road (Brears, 1967). Topsoil had been mechanically removed from an area prior to the construction of a new road. By the

time the site had been identified the kiln itself had been destroyed and all that remained was a circular mark, approximately 8ft in diameter, in the natural clay. On the spoil heaps nearby lay 'hundreds of broken pipes, some bearing the initials 'EG'' (*ibid*, 13). Brears is a little unclear as to the exact number of pipes that were found or what percentage of those pipes were stamped with the initials EG but he dates them all, on typological grounds, to c1650-1670 (*ibid* 40). There are no known makers with the initials EG in Potovens at this date although the Gill family was a prominent and highly successful pipe producing family in and around Potovens at this date so it is most likely that the EG pipes can be attributed to a member of this family. In addition to the EG pipes, two other marked pipes were recovered. The first was stamped with the initials MP, which can be attributed to Matthew Powell (c1660-1709) and the second with the initials IG, which can be attributed to Judith Gill (c1692-1693). Unfortunately none of the pipes from this site were deposited with the local museum and it is not known if they survive or not.

Pipe kilns are generally rather small structures, often no more than 1.5-2m in diameter. With time they grew in height rather than width (Peacey 1982 and 1996). The diameter of the kiln at Potovens (Kiln 5) is given as 8ft (approx 2.5m), which is extremely large for a pipe kiln. Given that the other kilns at Potovens were pottery kilns it would seem most likely that the 'pipe kiln' described by Brears was in fact used primarily for firing pottery but may also have been used to fire pipes from time to time.

The eighteenth-century kiln was discovered during excavations in Church Street, Doncaster in 1972. At the east end of the street had been a group of industrial buildings, including a pipeworks, in what was known as Miller's Yard. Miller's Yard appears to have been purchased by the Lee family in 1620. The family built a house on the site, which was demolished during the nineteenth century. This in turn was replaced by a number of brick built outhouses, which were cleared in 1936 (Buckland *et al*, 1989, 194). Although the demolition had removed most the foundations of the buildings some features had survived including 'the base of a small kiln ... used in the manufacture of clay pipes' (*ibid*, 200). Buckland *et al*

describe the structure as being lined in ‘highly fired, partly vitrified fireclay’ but that only the ‘basal two courses remained’. The stoke hole appears to have survived reasonably well. It was partly lined with limestone slabs and contained many broken stems stamped with the name LUMLEY (*ibid*, 200). These pipes can be attributed to Samuel Lumley who is known to have been working in Doncaster from c1731 to c1769 (Appendix 1). The property, however, appears to have remained in the Lumley family after his death as an advertisement, offering the property for rent, appeared in the *York Courant* in 1782, it reads ‘... the house lately occupied by Samuel Lumley. There is a Pot, Furnace, Mold, Grates and everything necessary on the Premises for the Business (Fowler *et al* 1979, 60). Samuel Lumley is thought to have been dead by 1769 as the record of the death of his wife in 1769 clearly states ‘widow of Samuel Lumley’ (Andrews 1993, 4). The newspaper advertisement, however, strongly suggests that the pipe making business continued to be run by a member of the Lumley family, perhaps even a son called Samuel, until around 1782. The finds from this site are now in Doncaster Museum and have been examined as part of this study.

From the evidence for pipe making derived from the documentary sources we know that there were over 280 pipe-makers working in Yorkshire in the seventeenth and eighteenth centuries, all of whom would have needed a small kiln to fire their pipes. The two known examples that survive must surely be just the tip of the iceberg. A more detailed account of both kiln sites can be found in Chapter 5.

#### **2.4 The pipes themselves**

The pipes themselves provide what is perhaps the most tangible link with pipe production. Past studies of the pipes as artefacts have focussed heavily on specific centres and in particular on the marked pipes from those centres. It is ironic that any evidence the pipes may provide with regard to the identification of production sites is virtually ignored in favour of what can be gleaned from supporting documentary sources.

Published evidence makes it clear that, as a general rule, the majority of pipes did not travel further than approximately 10 to 20 miles from their place of manufacture

Oak-Rhind 1980, 360). By identifying either the mark of a specific maker, or by assigning a geographical area for a specific style of marking, or by identifying a particular bowl form, it is often possible to give an indication of the origins of a group of pipes. Very often that place of origin will be quite close to the find spot but occasionally imports from outside the region, or even from overseas, do occur. These 'traded pipes' are an indication of market patterns and will be discussed more fully in Chapters 9 and 10, but by looking more closely at common bowl forms and marks it is possible to pin down the general location of production sites even if the identification of the actual maker himself remains unknown.

Thomas Sheppard published various notes from 1902 onwards (1902a, 1902b, 1902c, 1903a, 1903b, 1903c, 1903d, 1904a, 1904b, 1905a, 1905b, and 1905c), culminating in the first substantial paper on pipes from Yorkshire 1912. This paper, *Early Hull tobacco pipes and their makers*, opens with a discussion concerning the introduction of tobacco to this country. It then goes on to list the early Hull makers and gives brief details of about twenty-four of these makers taken from Freeman's Rolls. Sheppard discusses eighty-seven groups of objects from Hull Museum including a pipe stopper and tobacconist's token. The majority of these objects came from excavations near the Town Hall, King Edward Street and Alfred Gelder Street.

It appears to be 1961 before anything else appears in print dealing with pipes from Yorkshire, with O'Neil's paper on pipes from Hungate in York which included illustrations of 21 pipes bowls, one stem and 16 marks. Between 1961 and 1979 only a dozen or so notes were published on pipes from Yorkshire and these included pipes from Gawber Glasshouse, Barnsley (Ashurst 1970), Potovens (Brears 1971), Otley (Whitaker 1973), Featherstone (Anon 1974), Kildale (Anon 1975), York (Ramm 1976), Kirbymoorside (Williams 1977), Clarke Hall, Wakefield (Brears 1978) and Allerton Mauleverer (Butler 1978). The majority of these articles comprised of little more than one or two sentences, sometimes a short catalogue to accompany some illustrations. Most of these are no more than short notes within more substantial excavations reports that, for the most part, simply record the presence of clay tobacco pipes from a site.

In 1979 Simon Lawrence published *York pipes and their makers*. In this paper he described the clay tobacco pipes recovered from a number of excavations in York. A bowl typology was given and eighty makers' marks were illustrated and described. A number of decorated stems were also illustrated. Lawrence concluded his work with list of York makers. Also in 1979 Gareth Watkins published a paper on Hull pipes that attempted to expand upon the earlier work of Sheppard. A typology is given, the dating for which is based solely on pipes bearing makers marks. A description and illustration is given for each type. A total of sixty-eight makers' marks are illustrated and described. Watkins goes on to describe and illustrate some nineteenth-century pipes of Hull manufacture. He concludes his paper with a list of Hull makers and provides a graph, which illustrates the number of pipe-makers in operation from 1640 to 1929.

During the 1980s and 1990s a number of reports attempted to set pipes in a broader historical and social context rather than just providing a list of the pipes that were found from a site. In Yorkshire, however, the majority of pipe reports published continued to deal with material from a particular site in isolation. These reports include Sandal Castle (Lawrence 1983), York (Tengnagel 1984), Wharram Percey (Davey 1987c), Cowlam (Hayfield 1988), Bawtry (Higgins 1996) and Bridlington (Earnshaw 1998). In the majority of cases these notes comprise little more than a count of the number of bowls or stems recovered with descriptions and/or illustrations of any marked or decorated pieces. One of the few exceptions is the report on the clay pipes from Wrenthorpe (Davey 1992b) where statistical analysis is used to illustrate the evolution of the bowl forms and a discussion of the wider significance of the pipes from the site is given.

The three main papers – Sheppard (1912), Lawrence (1979) and Watkins (1979) – remain as the only substantial studies of large bodies of artefacts and documents and, despite being single centre studies, provide the principal framework for the county as a whole. More recent research has updated a lot of the information presented by Sheppard, in particular, and has expanded our knowledge for a number of the makers presented by Lawrence and Watkins. What each of these three papers



does, however, is to present the evidence from a specific collection or production centre. At no point is any attempt made to say what this evidence might mean in terms of the extent of pipe production by individual makers within these centres, to assess the stylistic influence or extent of trade from these centres, or to present a synthesis of pipe production and use across the county as a whole.

As well as looking at the broader social and historical context, scholars are also beginning to apply a more theoretical and scientific approach to pipe studies. Although none are confined solely to Yorkshire more recent work has considered issues that have ramifications for pipes studies of any known centre, including those in Yorkshire. These include issues such as market patterns (Walker & Wells, 1979); production techniques and kiln types (Peacey 1996) and thin section analysis (Davidson & Davey, 1982).

## **2.5 Summary**

The above survey of evidence drawn from the published work carried out in Yorkshire to date has raised a number of questions. For example, in his article on York pipes, Lawrence (1979) states 'York and Hull had much in common as seventeenth-century centres of pipes production...'. He goes on to say that '...bowl shapes in general are very similar, as are styles of marks'. What he fails to offer, however, is any analysis of the similarities or differences between these two centres. Nor does he discuss whether any family or trading links existed between the two centres. Further into his article, Lawrence notes that 'York pipes are not usually finely produced, few being polished; stamps and milling are often haphazardly applied' and that 'those with better finishes may have been imported from Hull' (*ibid* 67). These general impressions provide a useful starting point, but they need to be substantiated with quantified data and given some sort of chronological framework. Furthermore, Lawrence's assertion that Hull pipes were of a better quality than those produced at York would seem to be at odds with the received wisdom that pipes can be used as indicators of social status. York, with its Minister, could be considered a high status site and as such would be expected to yield high status products. Hull, in contrast, was a major seaport, with docks and more industry where mass-produced, cheaper pipes for the dock workers and

labourers might be expected. This raises the question as to whether the features attributed to 'high status' products, such as milling and burnishing, are valid indicators or whether they are simply a product of differing pipemaking traditions in the two centres.

Thanks to the work of Sheppard, Oswald, Watkins and Lawrence, it has been established that both Hull and York had large numbers of pipe-makers and that there were a number of other centres where seventeenth- and eighteenth-century pipe-makers worked. If there is to be any progress from the production of lists of makers and simple counts of pipes recovered, however, it is vital that all the available evidence is considered as a whole. Although it is useful to say what a site such as York has in common with Hull, or what differences there are in the products from such centres, what is more useful are the reasons for these similarities and differences – the why? How much influence did the centres have on one another in terms of the quality and style of the pipes they were producing?

The work carried out by Wells in Lincoln (1979) and Walker and Wells in and around Nottingham (1979) highlighted the usefulness of plotting the distribution of not only the pipes themselves but also the movement of ideas and trends in style of both the bowl and the marks. Walker and Wells themselves stressed the need for work of this kind to be carried out elsewhere in the United Kingdom, not least of which in the north east of England.

Hand in hand with the question of distribution raised by Walker and Wells is that of consumption, and consumption by whom. What affected these distribution and consumption patterns? Was it the availability of raw materials? Was it the logistics of actually getting the product to the consumer? And what about major political events – most notably the civil war and the years of political unrest that followed in its wake?

The work of previous pipe researchers gives an overview of pipe production in Yorkshire but it is not a definitive or exhaustive account and there is a lot more that remains to be done. The backbone of this thesis is a systematic survey of the

artefactual evidence held in museum and private collections in Yorkshire. Such a survey has never been attempted before and it has generated one of the largest data sets of its kind. In the following chapters it is intended that a more theoretical and scientific approach be followed in analysing this data in order to address some of the wider issues of pipe production and consumption in seventeenth- and eighteenth-century Yorkshire.

## **Chapter 3: Methodology**

### **3.0 Introduction**

This chapter describes the sources of both the documentary and artefactual evidence used in this study. It outlines the methods employed in the recording and analysis of the artefactual evidence together with details of how this present study links in with the National Clay Tobacco Pipe Stamp Catalogue (NSC). The chapter concludes with sections describing how the pipe bowl forms have been illustrated and dated.

### **3.1 Documentary sources**

It was intended that this thesis be an artefact-based study of the clay tobacco pipe industry in Yorkshire during the period c1600-1800. Unpublished manuscripts and notes compiled by pipe researchers such as John Andrews (1980s, 1987a, 1987b, 1987c, 1987d 1988, 1991 and 1993) and Adrian Oswald (1991) have been consulted. Although the author has carried out no systematic survey of the primary documentary sources, it was possible to make a limited search of records relating to Yorkshire pipe-makers held at Wakefield Record Office and the Local Studies Library in Rotherham.

Specialist publications relating to clay tobacco pipe studies, including unpublished manuscripts and research notes were consulted. These publications included the BAR series *The archaeology of the clay tobacco pipe* together with the Society for Clay Pipe Research Newsletter and their occasional monograph series. The next stage was to locate references to clay tobacco pipes that were specific to Yorkshire. This was achieved by consulting local archaeological and historical journals. The national bibliographic database compiled by the Medieval Pottery Research Group ([www.medievalpottery.org.uk](http://www.medievalpottery.org.uk)) was also consulted. This database holds references to all types of ceramics from the British Isles and includes references to later material such as clay tobacco pipes. A full list of all the sources used in this study is given in the bibliography.

Finally, it was necessary to locate where the objects themselves were housed in order that a detailed record of them could be made. The *Guide to museums and galleries of Yorkshire and Humberside* lists all the museums and galleries, alphabetically by town, and gives a summary of what each museum holds in its collections. By looking at this guide it was possible to identify all those museums in Yorkshire that were likely to have clay tobacco pipes in their collection thereby creating a list of museums to contact.

### **3.2 Sources of artefactual evidence**

The clay tobacco pipes used in this study come from three main sources. The first, and the one that accounts for the majority of the material, comprises the museum collections that contain material from Yorkshire. Second, the archaeological stores of Units operating in Yorkshire, such as the Humber Archaeological Partnership in Hull, the York Archaeological Trust in York, and English Heritage at Helmsley, were contacted. Finally, there are a number of private collections, the location of which was discovered through contact with pipe researchers in the area. Although the majority are quite small, two are quite substantial. The first belongs to Mr P Rayner of Beverley near Hull and contains a very large number of pipes collected from fields near Beverley. The second belongs to Mr R Raines of Acaster Malbis near York and contains approximately 500 pipes from his farm. In addition to museum and private collections from Yorkshire there are a small number of larger national collections which include Yorkshire material, such as the National Clay Tobacco Pipe Archive (NCTPA), which is currently housed in the University of Liverpool, and the private collections of Dr D Higgins and S D White, both of which are also based in Liverpool.

The initial approach to these institutions and individuals was made by letter, which outlined the nature of the research and also sought to ascertain the range of material that each collection had. These letters were followed up with a phone call. In some instances the institutions approached did not have any clay tobacco pipes in their collection. For example, the Cannon Hall Museum, Barnsley only had two porcelain bowls of German origin and no English clay tobacco pipes. In other cases, for example the Yorkshire Museum, York, collections of clay tobacco pipes

had been dispersed. In such instances these museum could be eliminated from the list and the enquiry was taken no further. Where institutions did hold clay tobacco pipes of seventeenth- and/or eighteenth-century date, an appointment was made to go and record the material. It was possible to borrow some groups so that they could be studied in more detail in Liverpool. These latter groups included excavated material from the York Archaeological Trust, the pipes excavated at Sandal Castle and held by Wakefield Museum and Art Gallery, together with the private collections of Mr Rayner of Beverley and Mr Raines of Acaster Malbis.

Relevant material has been recorded from the following collections: -

#### Museums and other public bodies

Abbey House Museum, Leeds  
Beck Isle Museum of Rural Life, Pickering  
Bowes Museum, Barnard Castle  
Craven Museum, Skipton  
Dales Countryside Museum, Hawes  
Doncaster Museum & Art Gallery  
Dorman Museum, Middlesbrough  
Kelham Island Industrial Museum, Sheffield  
Manor House Museum, Ilkley  
Mercer Art Gallery, Hartlepool  
National Clay Tobacco Pipe Archive, Liverpool  
Newark Museum  
Pontefract Museum  
Richmondshire Museum, Richmond  
Rotherham Museum  
Ryedale Folk Museum, Hutton-le-Hole  
Scarborough Borough Council, Scarborough  
Scunthorpe Museum and Art Gallery, Scunthorpe  
Sewerby Hall, Bridlington  
Sheffield City Museum  
Thirsk Museum  
Tolson Memorial Museum, Huddersfield  
Wakefield Museum & Art Gallery  
Whitby Museum  
Wilberforce House Museum, Hull  
York Castle Museum  
Yorkshire Dales Lead Mining Museum, Earby

#### Archaeological units

Archaeological Research and Consultancy, University of Sheffield (ARCUS)  
Central Excavation Unit (HMBC)

English Heritage Archaeological Store, Helmsley  
Humber Archaeology Partnership, Hull  
Lampeter Archaeological Unit  
North West Archaeological Trust  
South Yorkshire Archaeological Unit  
Tees Archaeology  
West Yorkshire Archaeological Services  
Wood Hall Archaeological Trust, Womersley  
York Archaeological Trust

#### Private collections

Akerhagen Collection, Sweden  
Austin Collection, Lampeter  
Brackenridge Collection, Sheffield  
Butterfield Collection, Glusburn  
Dagnell Collection, Rainford  
Davey Collection, Isle of Man  
Denham Collection, Wakefield  
Higgins Collection, Liverpool  
Mayfield Collection, Potovens  
Raines Collection, Acaster Malbis, Nr. York  
Rayner Collection, Beverley, Nr. Hull  
Richardson Collection  
Stothard Collection, Hull  
Tierney Collection, Nr. Skipton  
White Collection, Liverpool

Summaries outlining the material held in each collection recorded, together with 1:1 drawings showing the range of forms are given in Appendix 3.

The second source of study material comprises the series of plaster blocks compiled by Dr D A Higgins as part of the National Clay Tobacco Pipe Stamp Catalogue (NSC) (see below). These blocks contain impressions of all the stamped marks from approximately two-thirds of England as well as groups from overseas including sites on the east coast of America. By studying these blocks it was possible to locate marked Yorkshire pipes that had found their way to other parts of the country as well as abroad, particularly to the east coast of America. Impressions of Yorkshire material were identified in the following collections from this source: -

Abbott Hall Art Gallery & Museum, Kendal, Cumbria  
Adrian Oswald Collection  
Association for the Preservation of Virginia Antiquities, Jamestown, USA  
Austin Collection, Lampeter

Bassetlaw Museum, Retford, Nottinghamshire  
Birmingham Museum & Art Gallery, Birmingham  
Carlisle Archaeological Unit, Carlisle  
Carlisle Museum & Art Gallery, Carlisle  
Central Excavation Unit, English Heritage  
Colonial Williamsburg, Department of Archaeological Research,  
Williamsburg, Virginia, USA  
Dagnall Collection, Rainford, Lancashire  
Department of Archaeology, University of Sheffield  
Elkins Collection, Acton, London  
Flowerdew One Hundred, Virginia, USA  
Fox Collection, Lutterworth, Leicestershire  
Grosvenor Museum, Chester, Cheshire  
Historic St. Mary's City, Maryland, USA  
Jennings Collection, York  
North West Archaeological Trust, Liverpool, Merseyside  
Lampeter Archaeological Unit  
Lancaster City Museum, Lancaster, Lancashire  
Maryland Archaeological Conservation Laboratory, Jefferson Patterson Park  
and Museum, Maryland, USA  
Royal Albert Memorial Museum, Exeter, Devon  
St John's Church, Hampton, Virginia, USA  
Salford Museum & Art Gallery, Salford  
Somerset County Museum, Taunton, Somerset  
South Yorkshire Archaeology Unit  
Stocks Collection, Wallasey, Merseyside  
Virginia Department of Historic Resources, Richmond, Virginia, USA  
Virginia Foundation for Archaeological Research, Virginia, USA  
York Excavation Group

The third, and final source of study material, were those groups of pipes that have already been published. The level of recording is variable and, in many cases not as detailed as for the rest of the material in this thesis. As a result the published material is not directly comparable. What these published sources do provide, however, are details of the bowl forms and stamp marks recovered from sites in Yorkshire that give valuable information regarding the development and distribution of Yorkshire products.

### **3.3 Methodology for the recording and analysis of the artefactual evidence**

The recording system employed in the collection of data for this thesis is based on one that was developed at the University of Liverpool by Higgins and Davey (1994).



It allows groups of pipes to be recorded in a standard way in order to make the comparison of material within individual groups and between sites easier.

The system was designed to use a series of A3 paper recording forms, which were filled in by hand prior to data entry in a relational database. It proved to be the most efficient means of recording material when visiting museum stores. The *Guidelines for using the clay tobacco pipe record sheets* has not been published and has therefore been presented in Appendix 4 for reference. An example of a paper recording form, which was completed in the field, can be seen in Figure 3.1. Figure 3.2 shows a print out of one of the pipe records from the Access database.

From the outset of the data collection exercise only complete bowls, or bowl fragments where the form was recognisable, and marked stems dating from c1600 to 1800 were recorded. The material from most of the museum collections visited, included excavated material, chance finds and curated pieces. It should be noted that during the course of the data collection exercise all bowls, both plain and marked, were recorded in detail but only the marked stems were recorded. This decision was made for two main reasons. First, the recording of many thousands of plain stems would have made the data set too bulky to manage, and second many of the museum collections recorded did not retain large quantities of plain stem fragments resulting in data that was not comparable.

For the purposes of this research a number of changes were made to the existing recording system. The first was the allocation of an individual pipe number. This is a running sequence of numbers that not only enables individual pipe fragments to be identified within the database, but also links to the NSC. Although the existing system allowed for the allocation of a bowl form, taken from existing typologies, it had no means of simply recording whether the bowl was a heeled or spurred form. One of the changes implemented for this research allowed an H to be recorded for a heeled type and an S for spurred type. The system devised by Higgins and Davey (1994) provided a column for a drawing reference. Originally this was intended to refer back to a set of record sketches made for the particular group that was being



Pcode	Ccode	Scode	Acc No				SF No	B/S		
04083	0070	00265	558					B		
From...	to...		H/S	B64	Bur	BX	M4	Rim	TT	TF
1680	1710		H	7	0	0	/	B	-	-
Cname			Sname			Other				
						Milled S Type 4 or 5				
P	T	M	Decoration				Dwg	Rec		
							0975	W		
Comments										
Similar to a Hull Type 3a: milled decoration on the back of the bowl near the stem										

**Figure 3.2:** Example of a pipe record taken from the Access database.

recorded. For the purposes of this research, however, the drawing reference column was used to allocate a unique number relating to publication standard drawings that were made during the course of the study. Where the original system required a separate number sequence for each group, this research used a single number sequence for all the material recorded from Yorkshire. These numbers were then cross-referenced to a set of record cards that hold a drawing of each pipe together with all the information relating to it.

By far the biggest change to the existing recording system was to convert it from a paper to computer format. Initially the paper forms were converted to an Excel spreadsheet, which enabled counts and basic statistical analysis to be carried out more easily. It soon became clear, however, that the Excel system relied on data being repeated for each record, which proved very cumbersome and was time consuming to input. It also became apparent that more complex queries required the use of a relational database such as Access. The allocation of codes for particular pieces of information, such as the collection and the site, enabled the computer to manipulate data about each pipe fragment without the necessity for inputting large amounts of repetitive data. It was therefore decided to convert all the data relating to the clay tobacco pipes collected for this research from Excel to

Access. This had the added advantage of then being compatible with the NSC database, which was also in the process of being set up in an Access format.

A copy of the Yorkshire Clay Tobacco Pipe Database, in an Access format, is provided on a CD with this thesis giving details of each of the collections, the sites as well as the pipes themselves.

### **3.4 National Clay Tobacco Pipe Stamp Catalogue (NSC)**

In 1982 Dr David Higgins registered at the University of Liverpool to undertake doctoral research into the tobacco pipe industry of Broseley, Shropshire. As part of his research Dr Higgins devised a system of creating a permanent record of the stamps that appeared on the pipes in his study area. The system required the stamps to be impressed into blocks of plasticine. Plaster casts were then made of these blocks providing a “convenient, easily transportable and accurate method of comparing stamps” (Higgins 1984, 36). From the reference casts it was possible to illustrate type examples of each mark at twice life size. Once the mark had been identified information relating to its likely date, production centre and manufacturer could be recorded. At a meeting of the Society for Clay Pipe Research in 1985 (Higgins 1985b, 5-6) it was suggested that the method be used to record marks on a national basis. The initial response from members of the Society was rather poor but work on a regional catalogue, which was regarded as a trial run, continued (Higgins 1986, 25). In 1988 Dr Higgins was able to obtain a three year Leverhulme Research Fellowship at the University of Liverpool to compile a national database of stamp marks. The principle of the study was that impressions of all the stamped pipes in every collection examined were to be made. The plaster casts taken of these marks provided a permanent reference archive (Higgins 1988, 19). It was at this stage that the data, excluding the drawings, was transferred to the mainframe computer at the University of Liverpool. Since 1991 Dr Higgins has continued to record stamped marks in this way and, to date, marks from approximately two-thirds of England have now been impressed as well groups from Scotland and a large body of material from the East Coast of America. The plaster casts are held by the National Clay Tobacco Pipe Archive (NCTPA), which is based within the Department of Archaeology at the University of Liverpool.

It seemed most appropriate to use this established recording system for stamped marks when recording the material from Yorkshire for this thesis. The prototype NSC database was set up with codes so that a relational database could handle the data. Initially this was intended to be used on a mainframe computer but now, with the advances in computer technology since the late 1980s, a desktop computer can be used to process the data. The current research adapted the system designed by Dr Higgins slightly to enable it to be converted to an Access format. This meant that, for the first time, the NSC database could be implemented in the way it was designed to be.

As with pipe recording, the system established for the initial collection of data relating to the stamped marks is based on a series of A3 paper forms all of which are ultimately transferred to an Access database. This method remains the most convenient means of recording stamped pipes in the field. The system comprises of three basic forms. The first records details about the collection itself. Each collection is allocated a unique four-digit code, which means that full details of the collection need only be entered once. On each subsequent occasion it is only the four-digit code that needs to be entered. A similar form is used to record details of each site. Again a unique number is allocated, this time a six-digit code. The third form records details about the pipe itself, an example of which is given in Figure 3.3. Figure 3.4 is a print out of a pipe record as it appears in the Access database.

As the NSC was always intended to run on a relational database, its conversion to Access was a lot simpler than that of the pipe database. In order for the pipe database and the NSC database to be compatible they share common information such as the unique pipe number allocated to each pipe fragment, as well as the unique codes for each collection and site.

Plaster casts of all the stamps recorded in Yorkshire have been deposited with the NCTPA and it is hoped that those marks recorded during the course of this research will eventually be analysed in full and that each individual die identified will be added to the NSC.

The notes for recording stamped marks, which includes the number codes for the various frame and motif types, have not been published and have therefore been presented in Appendix 5 for reference.

COLLECTION: YAT										PROJECTIONS FROM CENTER																
COUNTY	PAR	SITE	SLOD	CREF	DCOD	R00D	COOD	ACC	NMARK	MS-IX	DR	DATE	P11	P12	PB	P21	P22	P23	P24	P25	P26	P27	P28	P29	P30	PTEXT
Yates	Yac	Yates City	Y06	08	1772	1772	179	MS-5 (1823)	(5)	H	R	1823-70														? Yates-Duncan
"	"	"	Y06	09	1773	1773	179	MS-5 (1823)	(5)	H	R	"														"
"	"	"	Y06	10	1774	1774	179	MS-5 (1823)	(5)	H	R	1823-70														"
"	"	"	Y06	11	1775	1775	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	12	1776	1776	179	MS-5 (1823)	(5)	H	R	"														"
"	"	"	Y06	13	1777	1777	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	14	1778	1778	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	15	1779	1779	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	16	1780	1780	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	17	1781	1781	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	18	1782	1782	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	19	1783	1783	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	20	1784	1784	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	21	1785	1785	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	22	1786	1786	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	23	1787	1787	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	24	1788	1788	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	25	1789	1789	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	26	1790	1790	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	27	1791	1791	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	28	1792	1792	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	29	1793	1793	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	30	1794	1794	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	31	1795	1795	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	32	1796	1796	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	33	1797	1797	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	34	1798	1798	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	35	1799	1799	179	MS-5 (1823)	(5)	H	R	1823-80														"
"	"	"	Y06	36	1800	1800	179	MS-5 (1823)	(5)	H	R	1823-80														"

Figure 3.3: Example of a completed stamp recording form for use in the field.

Pipe Code	02724	Cast Ref	490.24	Die Code	1873	Status	T
Collection	0147	Site	00815	Acc No	WH92 20 840	SF No	
C Name:	O	S Name:	N				
Other:	Castle					Position	H
No. of examples	1	Date from...	1660	to...	1680		
Comments	Appears to have a P above the castle tower; ?same die as cast 548.08						

*Figure 3.4: Example of a stamp record taken from the Access database.*

### 3.5 Illustrations

All the illustrations that appear in this thesis are at 1:1 in the case of bowls and at 2:1 in the case of stamped marks, unless otherwise stated. Bowl forms have been selected for illustration either to give an indication of the range of material from a particular collection or site, or because their form varies from the established typologies.

The author has prepared all the figures unless otherwise stated. In the case of the 2:1 marks, the NSC dies numbered up to 1393 have been drawn by David Higgins; those numbered 1393 to 1709 by David Williams, with all the remaining dies drawn by the author.

### 3.6 Dating and the quoting of date ranges

Preliminary dating of the bowl forms has been done with reference to three published typologies – York (Lawrence 1979), Hull (Watkins 1979) and, as London set the fashion for bowl forms in the early seventeenth century, London (Atkinson & Oswald 1969). These typologies place the bowls within a twenty to forty year date range. In the case of marked bowls or stems, where the maker is known from documentary sources, a more accurate date is sometimes possible. It is hoped that the detailed analysis of data collected for this thesis will help to refine the current typologies for Yorkshire. It should be noted, however, that it has not been possible

to go back through the 7000+ records in the database and re-date the fragments according to this current research therefore the fragments in the database have been dated using the conventional typologies. Throughout the thesis all dates given are approximate but the abbreviation for circa (*c.*) has not been included in either the text or tables. The date *c.*1640-1660, for example, will therefore appear as 1640-1660.

### **3.7 Summary**

The current research has attempted to track down as many clay tobacco pipes from Yorkshire as possible. Although a large number of museum and private collections have been studied for this thesis, it is by no means exhaustive and there are almost certainly other collections that have not been included in this study. Having said that, however, the collections that have been recorded provide a good chronological and geographical coverage of the study period and area.

The current research has taken existing recording systems that have only previously been used to record pipes from specific excavations. They have been modified for the purposes of this thesis and, for the first time, have been used to record material over a wide geographical area producing one of the largest data sets of its kind to date. This data is analysed and discussed in the following chapters.



## **Chapter 4: Summary of data collected**

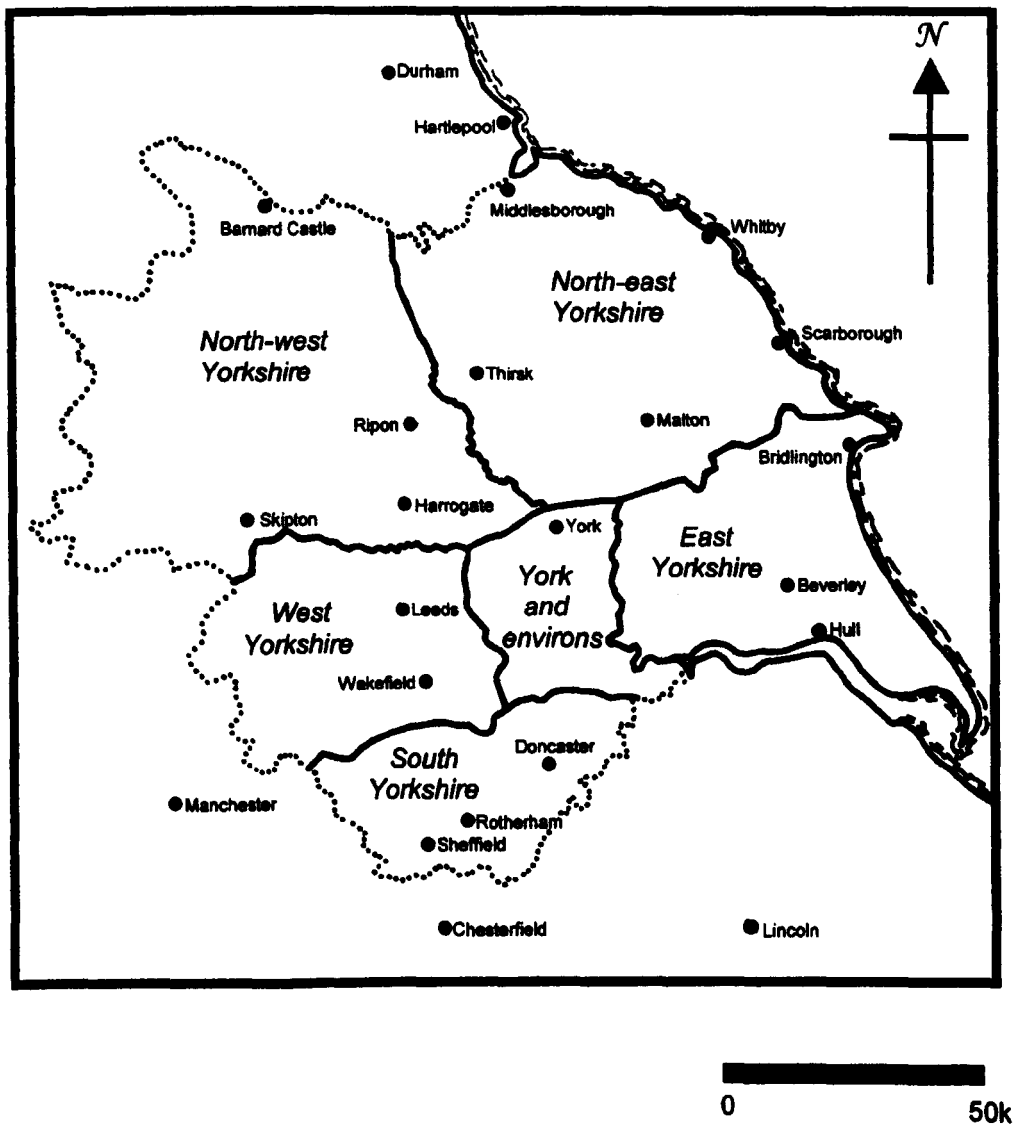
### **4.0 Introduction**

The purpose of this chapter is to present, in its broadest sense, the data collected from the museums, archaeological units and private collections listed in Chapter 3. At this stage no detailed analysis has been carried out, the aim being simply to provide an overview of the quantity, range and distribution of the clay tobacco pipes that have been recorded. A more detailed analysis of the various attributes of the clay tobacco pipes, such as milling, burnishing, stem-bore and marking, is presented in the following chapters.

### **4.1 The study area**

One of the key aims of this thesis is to consider if regional variations in the bowl forms and marks are detectable within a defined study area. The rationale for selecting Yorkshire as the area for this present study is given in Chapter 2. In order to present the broad results in a more meaningful way in this current chapter, however, the study area has been split into six geographical sub-divisions. These sub-divisions, which will be used in this and all subsequent chapters, mean that any variations, or similarities, that do occur should become more apparent. These sub-divisions are as follows and are illustrated in Figure 4.1.

1. West Yorkshire - dominated by industrial towns and urban centres, and bordered on the west by the Pennines.
2. East Yorkshire – a predominantly rural area but with coastal ports and the major production centre of Hull.
3. South Yorkshire – which is dominated by a large number of industrial towns and urban centres with possible links with Nottinghamshire and Lincolnshire.
4. North-west Yorkshire – a rural area dominated by the northern Pennines bordering Lancashire on the west with market towns such as Skipton, Harrogate and Ripon.



*Figure 4.1: Map showing the geographical sub-divisions within the study area*

5. North-east Yorkshire – a rural area dominated by the North York Moors with coastal towns, such as Scarborough and Whitby, as well as market towns, such as Malton, Pickering and Thirsk.
6. York and its environs – centred on the major production centre of York but includes the area to the south of York that borders South, West and East Yorkshire.

In addition to the geographical sub-divisions, the data is also split into seven broad chronological groups – 1580-1610, 1610-1640, 1640-1660, 1660-1690, 1690-1720 the transitional bowl forms, 1700-1750 and 1750-1800 – the purpose of this is to highlight any regional variations that may be evident over time. Again these chronological groupings will be used in the following tables and in all subsequent chapters.

#### 4.2 The historic county of Yorkshire

During the course of this present study a total of 8,203 pipe fragments were recorded comprising 7,696 fragments from sites within Yorkshire itself; 362 fragments from areas bordering Yorkshire by way of comparative material and 147 Yorkshire products found outside the county. A summary of these figures is given in the table below. A detailed breakdown for each of the six geographical sub-divisions is presented in the sections below.

Geographical Sub-division								Total
	1580-1610	1610-1640	1640-1660	1660-1690	1690-1720	1700-1750	1750-1800	
West	2	165	1059	304	61	88	8	1687
East	2	114	669	1218	407	592	77	3079
South	1	26	130	167	50	75	211	660
North-west	2	20	144	128	61	37	2	394
North-east	1	49	189	161	53	52	26	531
York & its environs	3	145	382	498	193	113	9	1343
Exports	0	2	20	94	7	23	1	147
Comparative material	3	6	36	85	128	100	4	362
<b>Totals:</b>	<b>14</b>	<b>527</b>	<b>2629</b>	<b>2655</b>	<b>960</b>	<b>1080</b>	<b>338</b>	<b>8203</b>

*Table 4.1: Count of all pipes recorded for this present research*

### 4.3 West Yorkshire

For the area of West Yorkshire 1,687 pipe fragments were recorded comprising 100 published bowls, 1,532 previously unrecorded bowls and 55 previously unrecorded stems. These fragments were recovered from 18 collections and from a total of 73 different sites within West Yorkshire.

The following table provides a summary of the data collected for West Yorkshire with counts given for the unpublished material (Unpub) and for the material that has been published (Pub).

Date Range	Bowls		Stems		Marks	
	Unpub	Pub	Unpub	Pub	Unpub	Pub
1580-1610	2	0	0	0	0	0
1610-1640	129	32	4	0	13	1
1640-1660	1002	53	4	0	50	3
1660-1690	291	13	0	0	84	11
1690-1720	55	0	6	0	19	0
1700-1750	48	2	38	0	53	0
1750-1800	5	0	3	0	5	0
<b>Totals:</b>	<b>1532</b>	<b>100</b>	<b>55</b>	<b>0</b>	<b>224</b>	<b>15</b>

*Table 4.2: Counts of unpublished and published bowls, stems and marked fragments recorded from West Yorkshire.*

### 4.4 East Yorkshire

For the area of East Yorkshire 3,079 pipe fragments were recorded comprising 96 published bowls, 3 published stems, 2,732 previously unrecorded bowls and 248 previously unrecorded stems. These fragments were from 12 different collections and from a total of 48 different sites within East Yorkshire.

The following table provides a summary of the data collected for East Yorkshire, with counts given for the unpublished material (Unpub) and for the material that has been published (Pub).

Date Range	Bowls		Stems		Marks	
	Unpub	Pub	Unpub	Pub	Unpub	Pub
1580-1610	2	0	0	0	0	0
1610-1640	85	2	25	2	45	4
1640-1660	612	13	43	1	420	11
1660-1690	1179	38	1	0	311	37
1690-1720	335	22	50	0	242	22
1700-1750	459	21	112	0	456	21
1750-1800	60	0	17	0	72	0
<b>Totals:</b>	<b>2732</b>	<b>96</b>	<b>248</b>	<b>3</b>	<b>1546</b>	<b>95</b>

*Table 4.3: Counts of unpublished and published bowls, stems and marked fragments recorded from East Yorkshire.*

#### 4.5 South Yorkshire

For the area of South Yorkshire 660 pipe fragments were recorded comprising 10 published bowls, 517 previously unrecorded bowls and 133 previously unrecorded stems. These fragments were recovered from 13 collections and from a total of 54 different sites within South Yorkshire.

The following table provides a summary of the data collected, with counts given for the unpublished material (Unpub) and for the material that has been published (Pub).

Date Range	Bowls		Stems		Marks	
	Unpub	Pub	Unpub	Pub	Unpub	Pub
1580-1610	1	0	0	0	1	0
1610-1640	26	0	0	0	8	0
1640-1660	125	3	2	0	10	0
1660-1690	164	2	1	0	51	2
1690-1720	46	2	2	0	24	1
1700-1750	40	3	32	0	43	1
1750-1800	115	0	96	0	96	0
<b>Totals:</b>	<b>517</b>	<b>10</b>	<b>133</b>	<b>0</b>	<b>233</b>	<b>4</b>

*Table 4.4: Counts of unpublished and published bowls, stems and marked fragments recorded from South Yorkshire.*

#### 4.6 North-west Yorkshire

For the area of North-west Yorkshire 394 pipe fragments were recorded comprising 2 published bowls, 355 previously unrecorded bowls and 37 previously unrecorded stems. These fragments were recovered from 16 collections and from a total of 44 different sites within North-west Yorkshire.

The following table provides a summary of the data collected for North-west Yorkshire, with counts given for the unpublished material (Unpub) and for the material that has been published (Pub).

Date Range	Bowls		Stems		Marks	
	Unpub	Pub	Unpub	Pub	Unpub	Pub
1580-1610	2	0	0	0	0	0
1610-1640	20	0	0	0	7	0
1640-1660	142	0	2	0	24	0
1660-1690	124	1	3	0	30	0
1690-1720	44	1	16	0	30	0
1700-1750	23	0	14	0	31	0
1750-1800	0	0	2	0	2	0
<b>Totals:</b>	<b>355</b>	<b>2</b>	<b>37</b>	<b>0</b>	<b>124</b>	<b>0</b>

*Table 4.5: Counts of unpublished and published bowls, stems and marked fragments recorded from North-west Yorkshire.*

#### 4.7 North-east Yorkshire

For the area of North-east Yorkshire 531 pipe fragments were recorded comprising 29 published bowls, 6 published stems, 446 previously unrecorded bowls and 57 previously unrecorded stems and 2 previously unrecorded mouthpieces. These fragments were recovered from 18 collections and from a total of 51 different sites within North-east Yorkshire.

The following table provides a summary of the data collected for North-east Yorkshire, with counts given for the unpublished material (Unpub) and for the material that has been published (Pub).

Date Range	Bowls		Stems		Mouthpieces		Marks	
	Unpub	Pub	Unpub	Pub	Unpub	Pub	Unpub	Pub
1580-1610	1	0	0	0	0	0	0	0
1610-1640	43	1	3	0	2	0	7	0
1640-1660	174	5	10	0	0	0	25	1
1660-1690	142	12	7	0	0	0	38	4
1690-1720	37	2	13	1	0	0	26	2
1700-1750	43	0	8	1	0	0	25	1
1750-1800	6	0	16	4	0	0	20	4
<b>Totals:</b>	<b>446</b>	<b>20</b>	<b>57</b>	<b>6</b>	<b>2</b>	<b>0</b>	<b>141</b>	<b>12</b>

*Table 4.6: Counts of unpublished and published bowls, stems and marked fragments recorded from North-east Yorkshire.*

#### 4.8 York and its environs

For the area of York and its environs 1,343 pipe fragments were recorded comprising 49 published bowls, 23 published stems, 1,260 previously unrecorded bowls and 11 previously unrecorded stems. These fragments were recovered from 7 collections and from a total of 69 different sites in York and its environs.

The following table provides a summary of the data collected for York and its environs, with counts given for the unpublished material (Unpub) and for the material that has been published (Pub).

Date Range	Bowls		Stems		Marks	
	Unpub	Pub	Unpub	Pub	Unpub	Pub
1580-1610	3	0	0	0	0	0
1610-1640	144	1	0	0	91	1
1640-1660	372	6	3	1	62	7
1660-1690	475	22	1	0	233	22
1690-1720	187	5	1	0	132	4
1700-1750	73	15	3	22	22	24
1750-1800	6	0	3	0	4	
<b>Totals:</b>	<b>1260</b>	<b>49</b>	<b>11</b>	<b>23</b>	<b>544</b>	<b>58</b>

*Table 4.7: Counts of unpublished and published bowls, stems and marked fragments recorded from York and its environs.*

#### 4.9 Yorkshire products from outside the county

During the course of the data collection exercise a number of Yorkshire products were recorded from sites outside of the county. In total 147 possible Yorkshire products were recorded comprising 16 published bowls and one published stem, and 110 previously unrecorded bowls and 20 previously unrecorded stems. These fragments are from 28 collections and from 42 different sites.

The following table provides a summary of the data collected for Yorkshire products from outside the county, with counts given for the unpublished material (Unpub) and for the material that has been published (Pub).

Date Range	Bowls		Stems		Marks	
	Unpub	Pub	Unpub	Pub	Unpub	Pub
1580-1610	0	0	0	0	0	0
1610-1640	2	0	0	0	2	0
1640-1660	20	0	0	0	18	0
1660-1690	70	16	8	0	48	5
1690-1720	6	0	1	0	4	0
1700-1750	12	0	10	1	20	1
1750-1800	0	0	1	0	1	0
<b>Totals:</b>	<b>110</b>	<b>16</b>	<b>20</b>	<b>1</b>	<b>93</b>	<b>6</b>

*Table 4.8: Counts of unpublished and published Yorkshire bowls, stems and marked fragments recorded from outside the county.*

In addition, the Oswald Stamp Index lists a further 28 clay tobacco pipes bearing marks that have been attributed to Yorkshire makers. Of these 24 are from England, two from the United States of America and two from Jamaica. In spite of the limited information given for each of these fragments their details have been added as they do give valuable information with regard to distribution.

#### 4.10 Milling and burnishing

In the following table the number of fragments that are milled or burnished for each of the sub-divisions is given. The figures given in brackets are examples that have



been published. The figures do not include those fragments where the milling and burnishing is unmeasurable.

A more detailed analysis of each of these attributes is considered for the material from each geographical and chronological sub-division will be presented in Chapter 7.

Area	Milled	Burnished
West	888 (80)	246 (19)
East	524 (7)	213 (11)
South	255 (2)	103 (3)
North-west	160 (0)	41 (0)
North-east	194 (2)	51 (0)
York & its environs	667 (29)	325 (0)
Yorkshire products from elsewhere	31 (2)	5 (0)

*Table 4.9: Counts of unpublished and published milled and burnished fragments recorded for this present research. Unpublished figures are given in brackets.*

#### 4.11 Stem-bores

The following table presents the number of fragments from each sub-division where a stem-bore is measurable. The stem-bores are given in 64<sup>th</sup> of an inch and have been measured using a ruler. As with the milling and burnishing, a more detailed analysis of the chronological and geographical distribution of stem-bores is discussed in Chapter 7.

Area	3/64	4/64	5/64	6/64	7/64	8/64	9/64
West	1 (0)	24 (2)	128 (1)	386 (22)	733 (43)	46 (11)	2 (0)
East	3 (0)	94 (0)	459 (4)	573 (4)	1258 (7)	305 (1)	27 (1)
South	1 (0)	85 (0)	134 (2)	111 (1)	144 (2)	11 (3)	11 (0)
North-west	0 (0)	1 (0)	46 (0)	60 (0)	135 (0)	31 (0)	1 (0)
North-east	2 (0)	12 (1)	66 (3)	122 (4)	200 (4)	40 (0)	0 (0)
York & its environs	1 (0)	19 (0)	137 (0)	265 (0)	426 (0)	200 (0)	14 (1)
Yorkshire products from elsewhere	0 (0)	0 (0)	21 (0)	5 (0)	12 (2)	7 (8)	2 (0)

*Table 4.10: Counts of unpublished and published stem-bores from each of the six geographical sub-divisions and of Yorkshire products found outside the county.*

#### 4.12 Mould Flaws


By studying the bowls carefully it is sometimes possible to detect small flaws that are unique to a particular mould, rather like a fingerprint. These flaws, caused either during the manufacturing process or by subsequent re-filing and repairing of the mould, can be used to help identify individual bowls that were produced from the same mould. Mould flaws may help to identify the number of moulds used by a particular maker or, in the absence of any mark on the pipes themselves, to identify the presence of previously un-recorded makers through the distribution of their wares.

The material recorded for this present research included three large groups of pipes where mould flaw analysis was possible. The first two were groups of Civil-War Period pipes from Pontefract Castle and from Sandal Castle. It was possible to identify 12 different moulds from Pontefract, and 13 from Sandal. In addition, the analysis of the moulds from these two Civil War Period sites was able to demonstrate that some of the pipes recovered from Pontefract were made in the same moulds as examples from Sandal (For discussion see Chapter 9). The third group was a collection of pipes with moulded initials for the period 1680-1770 from the Rayner Collection. Analysis of this group resulted in the identification of 69 different mould groups accounting for 203 pipes produced by 14 different makers.

#### 4.13 Bowl crosses

Bowl crosses, or marks, are relief moulded impressions created in the bottom of the bowl by marks cut into the end of the stopper that forms the bowl cavity. These marks are often crosses and most frequently appear as one of the following types:

A cross 

A plus sign 

A star 

Although pioneering work into the use and purpose of bowl crosses has been carried out in the south of England, for example Surrey (Higgins 1981) and London (Jarzembowski 1985), there has been no systematic recording of these marks from other parts of the country. As a result it is difficult to place the Yorkshire examples

within their broader context. The Yorkshire examples do, however, point to a pattern similar to that seen in both London and Surrey where these marks appear to represent only a small percentage of the bowls recorded. It also appears that they are only present in bowls dating from the eighteenth century or later, when there was a change from a pointed base to a flat base within the bowl.

In Yorkshire, from the present study period, 13 examples were recorded – nine of the plus type (⊕) and one of the cross type (⊗) from South Yorkshire, two of the cross type (⊗) from West Yorkshire, and one of the plus type (⊕) from East Yorkshire, all dating from the period 1700-1750.

The following table presents the number of examples, from each geographical sub-division, of bowl crosses recorded. These figures exclude those bowls where the base of the internal bowl cavity could not be seen.

<b>Area</b>	<b>Present</b>	<b>Not present</b>
West	2 (0)	901 (10)
East	1 (0)	2481 (12)
South	10 (0)	413 (5)
North-west	0 (0)	300 (0)
North-east	0 (0)	303 (6)
York & its environs	0 (0)	1172 (0)
Yorkshire products from elsewhere	0 (0)	29 (0)

**Table 4.11:** *Counts of the presence or absence of bowl crosses for the unpublished and published bowls from the six geographical sub-divisions in Yorkshire together with Yorkshire products found outside the county.*

#### **4.14 Summary**

The tables presented above give an indication of the quantity, range and geographical distribution of the material collected for the purposes of this study. Complete summaries of all the attributes recorded for each of the six geographical sub-divisions is presented in Appendix 7.

**A detailed analysis of all the data collected is presented in the following chapters in order to consider the following issues:-**

- **The development of the bowl form**
- **The development and range of marks used**
- **The finishing techniques employed by the makers**
- **The distribution of Yorkshire products within the county itself**
- **The distribution of Yorkshire products outside the county**
- **The distribution of non-Yorkshire products recorded within the county**

**Each of these topics will be discussed both geographically and chronologically in order to highlight the regional variations or similarities within the study area.**

## **Chapter 5: Clay sources and kiln sites**

### **5.0 Introduction**

In this chapter the clay sources available to and exploited by Yorkshire's pipe-makers will be considered. This is followed by an assessment of the only two known early pipe kiln sites from Yorkshire - one from Potovens, dating from the seventeenth century, and one from Doncaster, dating from the end of the eighteenth century.

### **5.1 The availability of raw materials**

The production of clay tobacco pipes required two main ingredients – a white firing clay and fuel for a kiln. By the seventeenth century there was a general shortage of wood in Southern England caused by an increase in demand from the urban centres, particularly London, and for good timber for shipbuilding. In the 1634 charter of the London Company of Tobacco Pipe Makers it was agreed to set aside £40 per year to pay 'to a person to teach the members of the company how to make their fires of coal' (Atkinson and Oswald 1969, 172). This may be a possible attempt to alleviate the demand on supplies of wood and suggests that pipe-makers were actively being encouraged to use coal as an alternative fuel source. In 1663 the second company was formed imposing certain conditions including one that required 'only coals to be burnt for firing pipes' (*ibid*). There is very little evidence for the use of different fuel sources but by looking at documentary evidence it is possible to get an idea of the fuels that may have been exploited. For example in Spalding, Lincolnshire in 1671 the inventory of John Fox includes '3 loads of wood and 2000 turves' (Oswald 1975, 23) and in Portsmouth around 1700 wood and charcoal appears to have been used (*ibid*, 20). This would suggest that in spite of the conditions imposed by the 1663 charter wood, charcoal, and turves might have been used for some time. There appears to be even less in the way of evidence for the use of fuels in Yorkshire. Coal, however, was readily available, particularly in south Yorkshire, and it seems most likely that this would have been the dominant fuel source exploited by pipe-makers in the county.

Some of the finest, and whitest, pipe clay is found in Dorset, Devon, and on the Isle of Wight (Walker 1977, 214 & 221). This clay is often referred to as 'ball clay' taking its name from the fact that the clay was originally mined in cubes or 'balls' measuring approximately 10 inches (c25cm) across and weighing between 30 and 35lbs (*ibid*, 213). From at least the late 1620s records show large quantities of 'clay for tobacco pipes' was being shipped to London (Willan 1938, 151). In the year Christmas 1627 to Christmas 1628 160 tons of clay specifically for tobacco pipes was shipped to London from Southampton (*ibid*). With the increase in demand for clay tobacco pipes came an increase in the amount of clay shipped to various ports around England's coast. In the year from Christmas 1690 to Christmas 1691 3,114 tons of clay was shipped out of Poole, 2,215 tons of which was destined for London. Only 212 tons of this was actually specified as tobacco pipe clay, but it seems probable that most was for production of clay tobacco pipes (*ibid* 156).

Some of Yorkshire's coastal ports appear in the records and Hull in particular was a regular destination. In the year ending Christmas 1687, for example, Cowes shipped 60 tons of tobacco pipe clay to Hull (*ibid* 153). It would appear that part of these consignments were then trans-shipped to other Yorkshire destinations, for example in 1684 Bridlington imported tobacco pipe clay from Hull, although the quantity is not specified (*ibid* 121).

In addition to the clays that were clearly being imported into parts of Yorkshire from Dorset, Devon and the Isle of Wight, local sources were being exploited by the pipe-makers where they could be found. Yorkshire has two main sources of local white firing clay, those associated with the Carboniferous coal measures and those associated with the Jurassic. In both cases the clays form thin seams interleaved with other materials. Although no one appears to have mapped these clays according to their firing characteristics, an indication of their locations can be obtained by looking at where white-firing clays have been exploited for other purposes – normally pottery making (Alan Vince *in litt* 10.3.02). In 1980, Kilmurry looked at the pottery industry in Stamford and was able to distinguish Stamford Ware from similar looking and contemporary products from Northampton, Lincoln, Oxford and Winchester through neutron activation.

Coal measures outcrop extensively in the west and south of Yorkshire and excavations in and around Doncaster have recovered large quantities of pottery in what is described as 'white coal measure clay' (Buckland *et al* 1989). Similarly, local white firing clays were used at Potovens, near Wakefield, to decorate the local earthenwares with applied strips, motifs or stamped pads (Brears 1967, 19). Also at Baxter Gate in Doncaster where vessels were recovered bearing applied decoration in the form of fleur-de-lys, flowers and dots, all in white 'pipeclay' (Buckland *et al* 1989, 385). There are also direct references to local clays being exploited specifically for pipe-making. In the West Riding Quarter Sessions Records for the year 1680-81 it was noted that potters were 'driving waynes, Cartes & Carriages crosse over the said common and with horses and breaking ye soyle, making rutts and new wayes, digging and getting of clay for making pipes, potts and other earthenwares, and making pitts and holes neare ye hye waye to the danger of travellers' (Brears 1967, 8). In 1715 Thoresby noted that at Wortley there 'is a good vein of fine clay, that will retain its whiteness after it is burnt (when others turn red) and, therefore, used for the making of tobacco pipes, a manufacture but lately begun in Leeds' (Brears 1991, 2).

The Jurassic outcrop is intermittent around the North York Moors, its southwest extremity being at the Roman kilnfield of Cranbeck, heading north through the Hambleton Hills and Osmotherley, then on to the outskirts of Whitby and finally Scarborough. These clays are often siltier than the coal measure clays and with variable iron content. Although these local sources would have provided cheaper and perfectly adequate clay for the manufacture of clay tobacco pipes, it could be argued that the proximity of production sites to the coast may have meant that Devon or Dorset ball clays would also have been accessible.

In 1982 Davidson and Davey looked at a sample of pipes from five production centres in England, including Hull, in an attempt to identify the clay sources. The object of the paper was to 'see whether pipe clays from differing sources could be distinguished in thin section' (*ibid* 311). By plotting the various inclusion characteristics of the samples Davidson and Davey were able to show that there were distinct clusters (1982, 334, Fig 8). This suggested that it was indeed possible

to distinguish pipes made from different clay sources. However, the authors point out that of the nine samples, only two were of sufficient size to be representative. The remaining seven samples were described as being ‘not sufficient’ (*ibid* 318), ‘too small’ (*ibid* 319) or ‘weak’ (*ibid*) and in two cases ‘clearly insufficient’ (*ibid* 320). In addition, the study would clearly have benefited from the inclusion of a sample of Dorset or Devon ball clay in order to compare with the samples made from possible ‘local’ clay.

Dunham employed an alternative technique in 1992 when he noted the minerals found by x-ray diffraction in two clay tobacco pipes recovered from a building site in the centre of Beverley. One of these pipes dated from the seventeenth century, while the other was of twentieth-century date. In addition to noting the absence of mica in the seventeenth-century pipe, which indicated that it had been fired to a higher temperature than the twentieth-century sample, Dunham suggests that the mineralogical content of both samples were typical of ball clay (*ibid* 111).

It is clearly possible to differentiate between clays obtained locally and those imported from outside a given production area, using a combination of the scientific methods. Although small numbers of pipes from within Yorkshire have been sampled using one or more of the techniques outlined above, there has been no systematic survey of possible clay sources within the county as a whole. This is clearly an area for further research.

## **5.2 Kiln sites**

The pipe-makers whose names appear in the records are often listed as coming from a specific town or village and it is assumed that most, if not all, of these makers would have had a small kiln attached to their house. Occasionally it is possible to glean information about the house they may have lived in from the documentary sources, for example Judith Gill of Potovens, appears in the Manor Book for 1709 as holding ‘a poor cott[age] and a garth of 1r. 4p. at Potovens’ (Brears 1967, 42); and Henry Byram, another Potovens pipe-maker working from the 1670s also appears in the Manor Book for 1709 when he held ‘a cott[age] and a garth of 25p.’ (*ibid*). In many cases it is not possible to precisely locate these properties but by



using map evidence in conjunction with the parish registers it is sometimes possible to locate kiln sites or workshops. An enclosure map of Rawmarsh dated 1781 and held by the Archives and Local Studies library in Rotherham (Munford *in litt* 28.6.2000), clearly shows that Jonathan Scorer (or Scorah) was occupying plot number 453. The lane that ran across the north side of this plot was known as Pipe House Lane (*ibid*). From documentary sources a Jonathan Scorah is known to have been working as a pipe-maker in Rawmarsh from 1764-1821 (Lawrence 1973, 193; Appendix 1). Unfortunately, the area around plot 453 has since been re-developed as a housing estate and Scorah's house has long since been destroyed so it is not possible to look for any physical evidence, but it is tempting to suggest that he was producing pipes in a small workshop attached to his house. A similar site came to light in 1991 when Higgins published a schematic map drawn from details contained within an indenture dating from 1665/6, which dealt with the division of a plot of land in Bugbrooke, Northamptonshire. The plot was to be divided between Richard and Elizabeth Halliwell, and Thomas Halliwell, a pipe-maker. The details of the plot and the description of how the division was to be made, were so precise that it was possible to locate these properties within the village itself. Unlike the Scorah property in Rawmarsh, the plot occupied by Thomas Halliwell in Bugbrooke was substantially undisturbed and it was possible to carry out a series of trial excavations in the garden. These excavations yielded muffle fragments and wasters, strongly suggesting that a kiln had indeed been present on the site. Such cases are rare, as are direct reference to actual pipe kilns. In the Wakefield Court Rolls for 1664 reference is made to a 'pipe furnace' belonging to a John Watson of Halifax that was causing a nuisance (Constance Fraser *in litt* 21.8.2000). Watson objected to the charge but was found guilty and fined £10. He later appeared at Brighthouse where the court ruled that he 'shall not at any time hereafter burne any pipes in any furnace now builded and made upon the backside of his dwellinge house in Halifax whereby the people passinge alonge the streets may be annoyed with the smoke thereof, upon payne to forfeit for every time so doinge the summe of Twenty shillings' (*ibid*).

In terms of actual kiln structures, very few remains have ever been found in Yorkshire. In his national survey of the clay tobacco pipe kilns Peacey (1996) lists

just two Yorkshire kiln sites, one from the seventeenth century, at Potovens, and one from the eighteenth century, at Doncaster. A brief summary of each of these sites is given below.

### **5.2.1 The seventeenth-century kiln site at Potovens**

Wrenthorpe is the modern name for the settlement that was known as Potovens from at least the mid seventeenth century due to the large numbers of potters who lived there. The settlement lies less than 2 miles to the north-west of Wakefield at SE 315226, in an area that was well supplied with all the raw materials required to produce pottery – coal, clay and water (Bartlett 1968, 1). Between 1963 and 1966 thirteen kilns, or kiln-sites, were excavated in advanced of a housing development. Kiln 5 was discovered near 105 Wrenthorpe Road during the construction of Imperial Avenue and was identified as a clay tobacco pipe kiln. The discovery of the kiln was made in less than ideal conditions by Peter Brears in 1963. At that time Brears was attending Leeds College but had become alerted to the archaeology that was being destroyed by the rapid construction of new suburban housing at Potovens, which was only two miles away from his family home. In the absence of any ‘official’ archaeological input, Brears undertook to ‘rescue and record’ whatever he could in the evenings after college (*in litt* 4.10.2001). Brears describes how the finds were recovered ‘mostly by torchlight, from the foundation trenches of buildings that were being constructed’ (*ibid*). Brears goes on to describe how he arrived on site ‘one evening close to dusk’ only to find ‘that the surface had been scraped back by a bulldozer, which had apparently destroyed the lower section of a pipe kiln, leaving little more than a stained area and the bottom of a flue on the surface of the clay’ (*ibid*). The diameter of the stained, or burnt circle, left by the kiln measured 8ft (Brears 1967, 13). On the spoil heaps nearby there were ‘chunks of heavily fired clay kiln interior’ and ‘masses of broken pipe stems and MP stamped bowls’ but only a sample were retrieved due to failing light (*ibid* and *in litt* 4.10.2001). There were also large quantities of pipes marked EG (Brears 1967, 40). Regrettably, at the time the local museum showed little interest in the site and Brears was unable to keep large quantities of material himself, therefore only samples were retained. By the time Brears could visit the site again, the foundations had concrete in them and the area around the new house had been re-

levelled as a garden. A small sample of the bowls recovered by Brears has subsequently been deposited with the Wakefield Museum and Art Gallery and a selection have been illustrated in Appendix 3, Figures 158.13, 158.14 and 158.15.

Peacey's survey of tobacco pipe kilns (1996) would suggest that a kiln base with an 8ft diameter, as recorded by Brears, is much too large for a pipe kiln. If this is the case, it raises the question of why pipe waste was found with such a large kiln at Potovens. One hypothesis is that the Potovens kiln was in fact a pot kiln that was also being used, from time to time, by the local pipe-makers. Precedent for this is set by a find from Barnstaple in North Devon, where a cylindrical saggar containing pipes was found (*ibid* 55). The fragments of saggar base have pipes, dated typologically to 1610-1630, fused to it by a thick lead glaze. The site yielding these fragments also produced large quantities of potting waste. It would appear therefore, that in the early part of the seventeenth century, in Barnstaple at least, pipe-makers were firing their pipes in pottery kilns. This is the only firm evidence from anywhere in England where pipe-makers and potters were sharing a kiln, although it is known that Dutch pipe-makers often fired their pipes in potters' kilns (Brongers 1964, 40). The material from Barnstaple might indicate that this English 'experiment' was unsuccessful as lead glaze from the pots contaminated the pipe filled saggars and it does not seem to be an arrangement that lasted. If the pipe-makers and potters at Potovens had a similar arrangement, it would be an extremely rare and an interesting parallel for the Devon material. Potovens clearly had a well-developed potting industry by the seventeenth century and documentary sources show that pipe-makers were also well established in the village, which has clear parallels with Rainford in Lancashire and Broseley in Shropshire. At both Rainford and Broseley potting and pipe-making were important local industries. Archaeological evidence from these two centres clearly shows that, from at least the mid seventeenth century pipe-makers and potters were using their own kilns, specially constructed for their individual needs.

There is no doubt that what Brears recovered and recorded at Potovens were fragments of pipe waste, and the evidence for a kiln base is not in dispute. What is in question, however, is the interpretation of that evidence. Given the evidence

from Peacey's survey of pipe kilns (1996), the archaeological work at Rainford, in particular Church Field (Davey *et al* 1982b) and the survey of the Broseley pipe industry (Higgins 1987), it seems most likely that the Potovens kiln was in fact a pot kiln. The presence of such large quantities of pipe waste may simply have been the result of material having been dumped on the site from elsewhere. The lack of any direct stratigraphic association between the kiln and the waste dump makes it impossible to say how these two deposits relate to each other. The balance of probability however, suggests that this is not actually a pipe kiln, but simply a site on which pipe kiln waste had been dumped from a nearby manufactory.

### **5.2.2 The eighteenth-century kiln site at Doncaster**

As with the seventeenth century, there is only one eighteenth-century pipe kiln known from Yorkshire. The kiln was discovered during excavations in Church Street, Doncaster in 1967 with further work being carried out on the site in 1972 (Buckland *et al* 1989, 191). This pipe kiln was clearly being operated by a Samuel Lumley, since numerous stems bearing his full name mark and dating from the end of the eighteenth century were recovered from the site.

There is a great deal of confusion in the documentary sources with regard to exactly how many Samuel Lumleys were pipe-makers in Doncaster. The documentary sources and the IGI (International Genealogical Index) would suggest that Lumley was a common name in South Yorkshire in the eighteenth century, as was Samuel, and there would appear to have been as many as three pipe-makers by the name of Samuel Lumley (Appendix 1). The first was working in Rotherham from 1723 to around 1753 but may have moved to Doncaster later in his life. The second, most likely the son of Samuel (1), was working in Doncaster from the mid 1750s but died somewhere between 1766 and 1769. A possible third Samuel Lumley may have been working at the Church Street pipe-works until 1782, since an advertisement of that year appeared in the York Courant offering for rent 'the House lately occupied by Samuel Lumley. There is a Pot, Furnace, Mold, Grates, and everything necessary on the Premises for the Business.' (Fowler *et al*, 1979, 60). There is no evidence to indicate this offer was taken up and pipe-making, therefore, appears to have ceased on the site at this date.

Unfortunately the excavation of the pipe kiln itself was never written up fully for publication. A summary account is therefore given below drawn from the interim report (*ibid*) and from the notes made when the kiln material was examined by the author during a recording visit to Doncaster Museum and Art Gallery in July 2001.

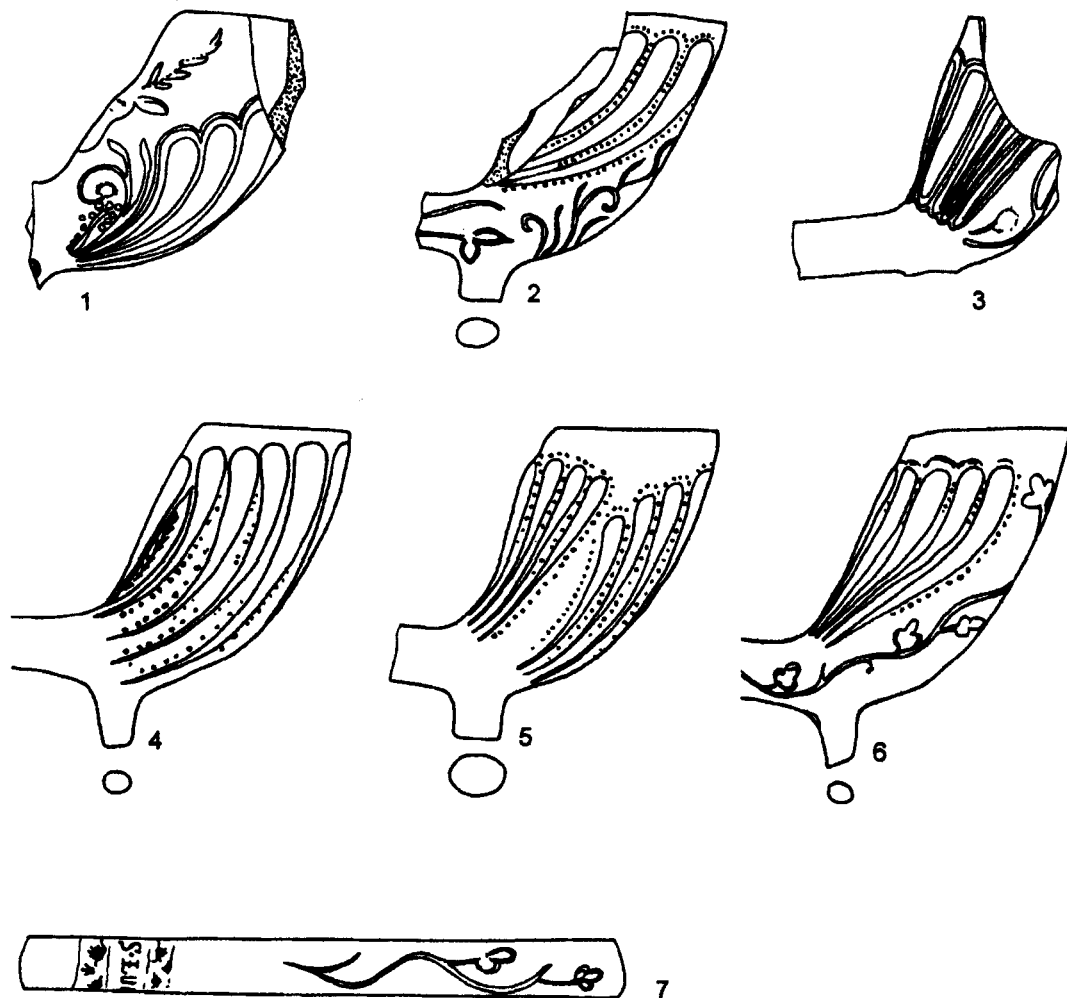
The site of the kiln lay on the north side of Church Street in an area later to be known as Miller's Yard, named after a eighteenth-century antiquarian and church organist called Edward Miller who lived in the adjoining house (*ibid*). The site itself appears to have been purchased in 1620 by the Lee family who had their family home immediately to the west of the pipe kiln site (*ibid*). Buckland *et al* suggests that the Lee family were linked with the tannery which formed part of a small industrial complex that later included the pipe works (*ibid* 194). Edward Miller acquired the site through marriage around 1763. A map of 1767 shows that, by this date a substantial building known as Clergy House stood on the site, but that to the east of this, where the kiln was later located, were gardens (*ibid* 10). Although Clergy House stood until the nineteenth century, when it was demolished, the gardens were clearly developed long before this. By 1832, when the town was surveyed, the garden area had gone and in its place were a series of narrow alleyways between the buildings leading off Church Street to small courtyards beyond (*ibid* 41). The map evidence is important in showing that the kiln site itself must have been constructed after 1767, when the area was still shown as gardens.

Very little published information exists concerning the kiln itself other than to say that the base of a small kiln was 'inserted into a sub-rectangular pit, 2.6m long by 1m wide, and associated with a roughly cobbled surface' (*ibid* 200). Buckland *et al* go on to describe how this structure, which was 'lined in highly fired, partly vitrified fireclay, had been built of brick and only the basal two courses remained, where it had later been incorporated into the cobbled yard surface' (*ibid*). In addition, there was a small stoke-hole 'partly lined with upright limestone slabs' containing 'many broken stems and bowls. The former [being] stamped with the name Lumley.' (*ibid*).

In July 2001 the material recovered from the pipe kiln was recorded by the author at Doncaster Museum and Art Gallery. In terms of pipe fragments this material comprised 132 bowls, 91 stems and 6 mouthpieces. A total of 108 bowls were of six different moulded designs (Figure 5.1) some of which were associated with stems stamped with an S LUMLEY mark and were almost certainly being produced on the site. The largest group of bowls recovered from the site were those with a flute and dot design as Figures 5.1.4 and 5.1.5. It is interesting to note that these are either a heel form (Figure 5.1.5) of which there were 41 examples, or a spur form (Figure 5.1.4), which accounted for 27 examples. Of the remaining 19 flute and dot bowls the spur or heel was missing. The design in the second group comprised a total of 15 bowls decorated with flutes combined with leaf and tendril design, which ran down the bowl away from the smoker, and part way along the stem (Figures 5.1.2, 5.1.3 and 5.1.6). Again, this group included both heel and spur forms. A number of stems with parts of the moulded tendril designs also had the S LUMLEY stamped mark. The third group comprised five fluted bowls with a stag's head facing the smoker (Figure 5.1.1). All five of these bowls appeared to be of a spur type, although none survived. Two of the stag's head bowls appeared to be wasters.

In addition to the Lumley material there were six bowls with Masonic motifs and the moulded lettering W WATSON/ROTHERHAM in two lines, on either side of the bowl seam away from the smoker dating from 1775-1800. Oswald (1975) does not list a W Watson for Rotherham at this date so this would appear to be a previously unrecorded maker. The remaining 18 bowls comprised three residual bowls dating from 1640-1680, two of which were stamped on the heel with the initials IH; nine plain bowls dating from 1740-1800, seven of which appear to have formed part of the muffle; four bowls or fragments bearing Masonic motifs; and two small, plain bowl fragments.

A total of 78 pipe fragments, mainly stems, with stamped marks were also recovered from the kiln site. Of these 78 fragments 60 (77%) were stamped S LUMLEY, which appears to have been produced by the same die, and a further 10 (13%) were marked with a diamond pattern stamp. The only other marked stem



**Figure 5.1:** 1-6. Range of mould-decorated bowls recovered from the Church Street Kiln, Doncaster; 7. S LUMLEY stem fragment with traces of moulded decoration, similar stems were used as reinforcement for the muffle. Scale 1:1.

from the site was one, which can be attributed to Richard Scolah of Rawmarsh and is contemporary with the Lumley material.

Although not from the kiln site itself, it is interesting to note the existence of two plain bowls dating from 1750-1770, both stamped with the lettering 'LUMLEY DON.R' on the bowl facing the smoker. One of these was recovered from fields around Beverley (Pcode 15266) but the other was recovered from the north side of

Church Way in Doncaster (Pcode 06922) (Appendix 3, Figure 124.8), less than 100 meters from the pipe kiln site. It is also interesting to note that no examples of this particular bowl type were recovered from the Church Street kiln site, perhaps suggesting that someone by the name Lumley was working at another site in Doncaster prior to the construction of the Church Street pipe-works.

In addition to the clay pipe fragments that were recovered from the site, there was a large quantity of kiln material, a summary of which is given in Table 5.1 below.

Context	Description
DC/AAE	Thick lower muffle wall section (7cm thick) with vertical sections of pipe stem to reinforce; multiple clay lining layers can be seen on the inside (Figure 5.2); outside is heavily slagged with traces of a support. Some of the reinforcing stems are clearly stamped S LUMLEY (Figure 5.3).
DC/AAE	Fragment of mainly fine white clay with little evidence of filler. In plan it is curved like a muffle wall fragment, but on the inside it is roughly fractured as if stuck on to the outside of a muffle. Has a clearly defined edge or face; heavily encrusted and reddened.
DC/AAE	Pipe clay 'brick' with some gritty inclusions; odd fragments of late 18 <sup>th</sup> C fluted bowl confirm its association with the kiln. Three joining pieces to form a wedge-shape. Outside surface heavily slagged; inside surface clean but abraded; other surfaces slightly reddened as if repeatedly heated. The worn and abraded area is very clean and could be the result of the fragment having been set in the ground and worn as part of a path after use (Figure 5.4).
DC/AAF (\$ ) Layer 2	Fragments of kiln debris including sheets of clay some with paper impressions on one side; some fragments seem to have been folded over a 'lip' (Figure 5.5, top right).



DC/AAG	Waster bowls that appear to have been included in the body of the muffle walls (see Appendix 3 figures 122.10, 122.11 & 122.12); a pinch of clay wrapped round a pipe stem, which is broken at both ends, shaped like a small support. Discoloured from firing all over so does not appear to be broken or attached to anything else other than the pipe stem (possibly a rack, as identified by Peacey (1996, 65) - not illustrated.
DC/ABL (\$) Layer 4	Two joining fragments making up a large wall section, similar to Figure 5.2, but 6cm thick in lower area thinning to 4cm with a 2cm step on the top surface (Figure 5.6). Within the fabric are casts of bowls now missing (Figure 5.7) and stems set vertically, some of which are marked with an S Lumley stamp.
Not known	Piece of muffle support 5.75cm x 5.5cm x 4.5cm; set with three lines of vertical pipe stems; blackened by firing on the sides (Figure 5.5 top left).
Not known	Large chunk of muffle with a layer of bowls at the base and a possible support scar (Figure 5.5, bottom left).
Not known	Piece of unformed pipe clay containing fragments of pipe stems and coal (not illustrated).
Not known	Thick squashed 'sausage' of pipe clay c36mm x 22mm x 10cm; appears to have been pressed onto a curved surface ?muffle wall identified as an applied strip ( <i>ibid</i> 64)(not illustrated).

**Table 5.1:** Summary of the kiln material recovered from excavations at Church Street, Doncaster, in context number order.

Analysis of the kiln material from Church Street would indicate that Lumley was using a muffle kiln typical of the eighteenth century, with steps built into the sides on which the bowls of the pipes could be rested (Peacey 1996, 170, Fig 94). Part of one of these steps can clearly be seen in Figure 5.6. With the exception of the strange brick-like object (Figure 5.4), which is not paralleled by any other pipe kiln site in England, all the other material is of a type and form that would be expected from an eighteenth-century muffle kiln.

The presence of so many S LUMLEY stamped stems both on the site and within the body of the muffle (Figure 5.3) clearly points to the fact that Lumley was responsible for the waste material and the construction of the kiln itself. After each firing of the muffle any cracks were sealed with the application of a wash of pipe clay on the inside of the muffle. The multiple layers of pipe clay that are clearly visible on parts of the muffle (Figure 5.2), suggests that it was used several times.

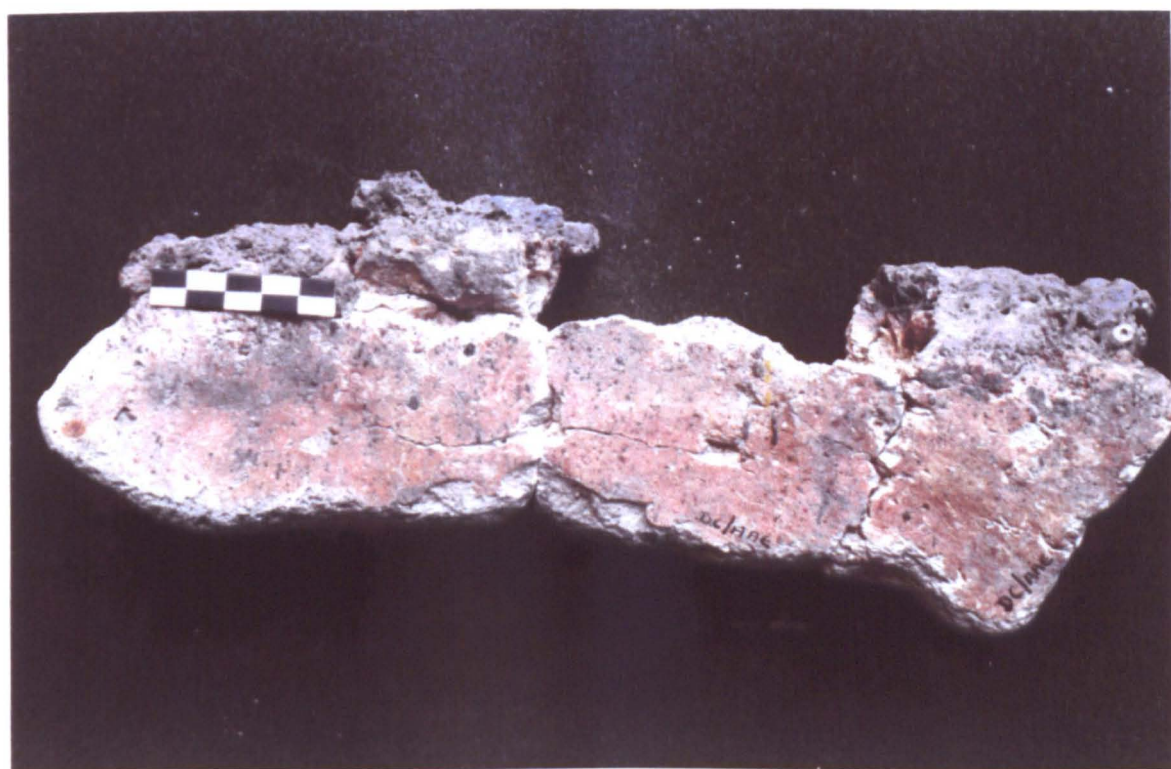
Although the confusing documentary sources make it difficult to identify which Samuel Lumley was responsible for the kiln waste found in Church Street, the map evidence and the archaeological evidence confirms that someone by that name was working on the site. In addition, the documentary evidence provides a tight date range of between 1768 and 1782 for the kiln waste. The kiln group provides an important bench-mark for the identification of Yorkshire bowl forms and decorated stem styles dating from the 1770s.



**Figure 5.2:** Photograph of a section of muffle showing the reinforcing stems and the layers of pipe-clay. Scale is 5cm. Photograph by D A Higgins.



*Figure 5.3: Detail of fragment shown in Figure 5.2, showing stem fragments clearly stamped S LUMLEY. Photograph by the author.*



*Figure 5.4: Pipe-clay 'brick' from DC/AEE showing the heavy slagging on one side as well as worn areas. Scale 5cm. Photograph by the author.*



*Figure 5.5: Sample of the kiln debris recovered from Church Street. Scale 5cm. Photograph by the author.*



*Figure 5.6: Part of a muffle wall from DC/ABL with reinforcing stems clearly visible, showing the shelf support. Photograph by the author.*



*Figure 5.7: Detail from part of the muffle wall (DC/ABL) showing the impression left by a fluted bowl that has been used within the body of the muffle itself. Photograph by the author.*

### 5.3 Summary

What is most striking about this survey of clay sources and kiln sites in Yorkshire is the paucity of both documentary and artefactual evidence. From the evidence that does exist it would appear that pipe-makers in Yorkshire were exploiting both local clay sources as well as importing clays from Dorset and Devon. Although a range of scientific methods exist to characterise the differences in these clays in order to help identify sources, these methods have not been applied systematically. This is clearly an area where more work is needed.

The survey of pipe kiln evidence from Yorkshire serves to highlight the glaring gap in the archaeological record for the county. There are hundreds of documented seventeenth- and eighteenth-century pipe-makers from Yorkshire, all of whom would either have owned or had access to a small kiln. Large numbers of these

makers have been identified through documentary research, but there are undoubtedly many more that are still to be found. Despite the clear documentary evidence there are only two pipe kilns known and one of those, that at Potovens, is most likely a pot kiln rather than a pipe kiln.

The following chapter goes on to look at the development of the bowl form in Yorkshire.

## **Chapter 6: The development of the bowl form in Yorkshire**

### **6.0 Introduction**

In this chapter the influences that affected the development of the Yorkshire bowl form are discussed, considering the impact of production centres bordering the study area as well as those from overseas. The evolution of the bowl forms found in Yorkshire 1580-1800 is then presented. This will chart the changes from the small late sixteenth and early seventeenth-century bowls reminiscent of those found in London, to the introduction of the Yorkshire bulbous during the second half of the seventeenth century and the upright forms of the eighteenth century through to the introduction of mould decorated bowls towards the end of the eighteenth century. This is followed by an analysis of the bowl forms recorded for this present research, for the period 1640-1720 illustrating the variations in form within Yorkshire.

### **6.1 The influences on the development of bowl forms in Yorkshire**

In the following sections the way in which those production centres bordering Yorkshire may have affected the development of the bowl form is considered. The actual importation of products from these neighbouring production centres is discussed in Chapter 10. This present chapter deals primarily with influences on the development of the bowl form within Yorkshire.

#### **6.1.1 The south – Derbyshire/Lincolnshire/Nottinghamshire**

Bordering Yorkshire to the south are three pipe producing areas - Derbyshire, Lincolnshire and Nottinghamshire – any, or all, of which could have had an influence on the development of the bowl form in Yorkshire. Each centre is dealt with separately below.

##### **6.1.1.1. Derbyshire**

There has been very little previous work on Derbyshire pipes. The Society for Clay Pipe Research lists only one article in its *Bibliography of Clay Pipe Studies* (Atkin 1989). This was an article by Gault and Alvey (1979), which simply lists the known pipe-makers from Derbyshire. This list includes only one seventeenth-century and

26 eighteenth-century pipe-makers. The date for the single seventeenth-century maker comes from a token.

Two other articles are known, however, both dealing with clay pipes from Chesterfield. Although the majority of the pipes from the Peacock Inn, Chesterfield (Alvey 1978) were of nineteenth-century date, the group did include some from the seventeenth century, a selection of which have been illustrated. With the exception of one of the illustrated bowls, which is slightly bulbous (*ibid*, 51 fig 25.2) none show any resemblance to products found in Yorkshire. The large group from Hady Hill, Chesterfield (Wynne 1996) also included a group of seventeenth-century pipes none of which match anything found in Yorkshire.

During his collection of stamped marks for the National Clay Tobacco Pipe Stamp Catalogue, Higgins (2002a) made detailed notes of the bowl forms encountered at a number of museums in Derbyshire. From these notes it appears that in the early seventeenth-century Derbyshire either imported London products or copied London forms. By the mid seventeenth century spur forms predominate and this contrasts quite markedly with what is happening in Yorkshire at this date, where only 3% of the mid seventeenth-century bowls have spurs. During the late seventeenth century through to the early eighteenth century Derbyshire appears to be importing a significant quantity of products from Broseley in Shropshire. In Yorkshire, however, this present research has only encountered three imported Broseley pipes amongst the many thousands examined from the county.

From this brief survey it appears that the production centres in Derbyshire had little or no influence on those being produced in Yorkshire, either in terms of bowl form or in the style of marks used. Nor, does it appear, that Yorkshire had any particular influence on the pipe styles produced in Derbyshire or the supply of pipes to that county.

#### **6.1.1.2 Lincolnshire**

Clay tobacco pipes from Lincolnshire have received far more attention than those from Derbyshire. The *Bibliography of Clay Pipe Studies* (Atkin 1989) lists 17



articles relating to clay pipes from Lincolnshire to which can be added a county summary compiled for the NSC by Higgins (2002b). In his survey of Lincolnshire makers Wells (1979, 124, figure 1) illustrates a range of bowl forms from the county. Most of which are different to those encountered in Yorkshire with one exception, Figure 1.7. This particular bowl dates from the transitional period (1690-1720) and has the moulded initials RC on the sides of the heel and a RC stamp on the base of the heel. Wells does not provide a clear caption for this figure, so it is difficult to work out to whom he is attributing the pipe, but it does bear close resemblance to the transitional bowls from Hull. It is not clear if Wells considers this an import to Lincolnshire or if he assigns it to a Lincoln maker. Although very similar to the Robert Chapman products in Hull there are no known examples from the study area that have a stamped mark as well as the moulded initials.

In 1977 Mann carried out a survey of clay tobacco pipes from excavations in Lincoln. During the Civil War period the pipes from Lincoln bear a very close resemblance to those found in Yorkshire at the same date. Mann herself notes the close similarity to pipes from York as well as a 'swollen bowl pinched-in below its lip and with a noticeable 'waist'' (1977, 11). As with Yorkshire, the majority of the Civil War period bowls appear to be heel types although spur types in Lincolnshire do appear to be more common. The bowls from Lincolnshire dating to the period 1660-1690 are much less bulbous than those from Yorkshire and appear to have slightly elongated heel, almost heart shaped (White 1979a, 176; Comrie 1979, 207). The later seventeenth-century bowls from Lincolnshire appear to be larger versions of the earlier forms as opposed to those from Yorkshire where a different range of forms emerges.

In the transitional period Lincolnshire does not appear to have the very pronounced, forward leaning bowl forms that are common in Yorkshire centres such as Hull and York. The typical Lincolnshire transitional bowl appears to be fairly upright with a slight swelling towards the rim (White 1979b, 186; Appendix 3, Figure 46 No. 13 and Figure 47 No. 1) Bowls of this type are found in Yorkshire, for example Appendix 3, Figures 88.12-15 and 99.7-8, all of which can be attributed to Yorkshire makers. In his survey of the pipe industry in Stamford Comrie (1979,

209 Fig 17) illustrates a bulbous bowl form with the initials SS moulded on the sides of the heel. Comrie dates this bowl to 1699/1700 and suggests that it is a product of Samuel Saunders of Stamford. What is interesting is that Comrie suggests that this 'squat bulbous bowl' is 'a York or Hull design adapted for use by Samuel Saunders' (*ibid*, 212). Although clearly a bulbous style it is not a form that is found in either York or Hull.

In the early part of the eighteenth century, Lincoln pipes appear to have a very distinctive form where the bowl is still quite forward leaning and flaring at the rim, with a pedestal foot (Mann 1977, 18). Forms of this type do not appear in Yorkshire where pipes of the early eighteenth century are almost all upright forms with the rim cut more or less parallel to the stem.

This survey has shown that while there were obvious similarities in the bowl forms current in Yorkshire and Lincolnshire during the mid-seventeenth century these similarities became less marked during the later seventeenth and eighteenth centuries. There were clearly some links between the two counties, although it is unclear whether it was Lincolnshire that was influencing Yorkshire or vice versa. It is possible that each centre may have been evolving independently but within a broader regional tradition.

### **6.1.1.3. Nottinghamshire**

A total of 23 articles are listed in the *Bibliography of Clay Pipe Studies* (Atkin 1989) for Nottinghamshire, the majority of which focus on specific groups of pipes from excavations in Nottingham itself. A survey of these published sources show that for the Civil War period the bowl forms current in Nottinghamshire follow those trends seen throughout England as a whole (Alvey 1975, 50 figure 12; Alvey 1977, 29 figure 12 and Todd 1978, 52 figure 6). During his survey of the collections in Nottinghamshire for the National Stamp Catalogue Higgins (2002c) noted that in the first half of the seventeenth century heel forms predominate.

By the period 1660-1690 there appears to be more in the way of spur forms (Alvey 1974, 70 figure 11; Alvey 1975, 50 figure 12). Some of the bowls also appear to be

quite bulbous although it is difficult to be sure of this as the illustrations have been over reduced with many being reproduced at half life size and even a quarter size in one instance (Alvey 1972, 30 figure 10).

Nottinghamshire bowl forms that were current towards the end of the seventeenth century and into the transitional period appear to be similar to those seen in Lincolnshire. Although the majority of these bowls lean forward slightly there are one or two examples where this lean is very pronounced, similar to those seen at centres such as York and Hull (Hammond 1985, figures 55, 62 and 68).

As with the eighteenth-century bowl forms from Yorkshire, those from Nottingham appear to be upright with the rim cut parallel to the stem although the survey for this current research found very little in the way of published eighteenth-century material.

From this limited survey it is possible to see that, as with Lincolnshire, there were links between Yorkshire and Nottinghamshire. This particular chapter has focused on the bowl forms themselves, but Nottinghamshire's greatest influence is seen in the use of two distinctive forms of marking. The first was during the period 1660-1690 and took the form of incuse lettering stamped on the bowl facing the smoker (Alvey 1972, 30 figure 10; Alvey 1973, 36 figure 1; Alvey 1975, 29 figure 12 and Hammond 1985, figures 38-55, 58-62 & 65-69). The second was the use of decorative stem stamps, which was a particular style of marking that appeared at the beginning of the eighteenth century and continued for approximately 75 years (Walker and Wells 1979, 3). Both forms of marking are found on bowls recovered from sites in Yorkshire, and there are very close parallels to stem stamps used by makers in south Yorkshire during the same period (see Chapter 8 for a discussion of the marks).

### **6.1.2. The west – Lancashire/Cumbria**

Bordering Yorkshire to the west are two pipe producing areas – Lancashire, which is dominated by the pipe producing centres of Rainford and Liverpool, and Cumbria. The possible influence on the development of both Lancashire and

Cumbria may have had on the bowl form in Yorkshire is dealt with under separate headings below.

#### 6.1.2.1. Lancashire

As with Derbyshire, the pipes from Lancashire as a county have received little attention, with work being concentrated on specific centres such as Rainford, for example Berry 1963; Coney 1979; Davey 1978 and 1982a; Dagnall 1982a, 1982b, 1985, 1990, 2001 and Higgins 1982 and 1990. In addition to the published sources, Higgins (2002d) carried out a survey of Lancashire pipes for the National Stamp Catalogue, which included material from the following collections:- Blackburn Museum; Towneley Hall, Burnley; Astley Hall Museum, Chorley; Lancaster Museum; Plint Collection in the Museum of Lakeland Life and Industry, Kendal; Ribchester Museum and the Alcock Collection, Ormskirk.

A survey of the published and unpublished material available for Lancashire would indicate that pipes from the county from the early seventeenth century had a slightly bulbous profile not unlike those found in Yorkshire. Higgins (*ibid*) indicates that seventeenth century pipes in Lancashire are ‘predominantly South Lancashire forms’ and that the industry was centred on Rainford. Some of the bowl forms found in Rainford throughout the seventeenth century have a very bulbous appearance. Unlike those from Yorkshire, however, the forms from Rainford are predominantly spur forms although some heel forms do occur. In addition, the Rainford bulbous forms are more oval in section where the Yorkshire equivalents are round, a feature that is not apparent from the two-dimensional side profiles of the bowls.

The main source of clay tobacco pipes in Lancashire from the eighteenth century and into the early nineteenth century appears to be Rainford (White 1975, 58). It is therefore not surprising that Rainford forms should dominate any assemblage from the county. The earliest documented pipe-makers for Lancaster were in 1732 and it was not until the early nineteenth century that pipemakers appear at centres such as Preston and Kendal (*ibid*). In his survey of Lancaster clay tobacco pipes White (1975) notes that Lancaster imported ‘all the pipes it required from older centres,

such as London, Hull, Chester and Liverpool'. It should be noted that, to date, no systematic survey of the pipes from either Liverpool or Manchester has been carried out.

The overwhelming impression is that pipe production in Lancashire was dominated by one or two key centres at the south of the county (Rainford and Liverpool). It is therefore not surprising that these centres should set the fashion for bowl forms within the county as a whole. Higgins (2002c) comments that eighteenth-century Lancashire products are 'clearly influenced by South Lancashire and Chester designs. He goes on to note that 'Lancashire pipes clearly fall within the north-western tradition but appear to have been subservient to it rather than setting particular trends of their own'.

There are clearly close links between the bulbous forms of South Lancashire and Yorkshire although it is unclear whether there was an exchange between the two centres or if those influences travelled in one direction. As with the products of both Lincolnshire and Nottinghamshire, however, it is the style of the makers' marks and their position on the bowl that set Lancashire products apart from her neighbours.

#### **6.1.2.2. Cumbria**

There has been comparatively little research on the pipes and pipemakers of Cumbria published. Atkins *Bibliography of Clay Pipe Studies* (1989) only lists five articles three of which focus on pipemaking in and around Whitehaven (Weatherill and Edwards 1971, Fletcher 1984 and Jackson 1986). Pipe production at Whitehaven began during the late seventeenth century (Jackson 1986, 6) and the site of at least one early eighteenth-century kiln in Whitehaven has been identified (Fletcher 1982). A series of letters survive from the late 1690s referring to pipemaking experiments with local clay (*ibid*). One of these letters, dated 18<sup>th</sup> January 1697/8, notes that "our last kill-full burnt to a degree of whiteness nothing short of ye Bristol pipes, and we think in other respects....to exceed them." (*ibid*).

Higgins survey of pipes from Cumbria for the National Clay Tobacco Pipe Stamp Catalogue (2002e) notes that pipes from the county fall into two basic groups – those to the south being influenced by Lancashire forms and those from the north displaying attributes similar to that found in southern Scotland and North-east England. These broad differences are borne out by a survey of the museum and private collections in Cumbria. For example, in the collection of the Museum of Lakeland Life and Industry, Kendal, Rainford style pipes are particularly well represented. In addition there are a large number of bulbous forms dating from the period 1660-1680 which Higgins (*ibid*) notes ‘owe more to Yorkshire types than to South Lancashire’. In contrast the collections of the Tuille House Museum, Carlisle and the Carlisle Archaeological Unit are dominated by imports from the North-east and bowl forms that bear a closer resemblance to those found in southern Scotland and Tyneside than those of Lancashire. The excavations at Carlisle Cathedral in 1988, for example, produced a small assemblage, which included bowl fragments that were almost certainly products of the Gateshead industry as well as six marked pipe fragments. Of those six fragments, however, four were stem stamps that could be attributed to Gateshead makers.

In terms of bowl forms, examples of a bulbous form similar to that found in Yorkshire have been noted. Jackson (1986, 8) illustrates some examples of pipes recovered from a pipe kiln site in Little Broughton. One of these pipes (*ibid*, fig 12) is a particularly bulbous form and bears a striking resemblance to examples from Yorkshire for example Appendix 3, Figures 44.10, 98.14 and 155.4. Bulbous bowls have also been recovered from excavations at Clifton Hall, Penrith (Alvey 1980,60). These include two bowls with an AB heel stamp that may be products of Abraham Boyes of York. Similar bulbous forms have been found in the Kendal area including large quantities of Yorkshire types dating from 1660-1680 (Higgins 2002d).

This brief summary of the bowl forms from Cumbria shows that bulbous forms are present, particularly in the south of the county. Although bulbous forms are found in both Lancashire and Cumbria they are subtly different not only from one another,

but also from those forms found in Yorkshire. All three areas clearly form part of a northern tradition, particularly during the second half of the seventeenth century.

### **6.1.3. The north – Tyneside**

In 1964 Parsons published a survey of clay tobacco pipes in North-east England in which he presented a typology. Parsons (1967, 238) suggested that local manufacture did not begin in the North East until around 1645 and that prior to this date pipes had been imported from London, Bristol and the South West. This was a view widely held in the 1960s and 1970s but one that is no longer in line with current thinking. There have been a number of published works on clay tobacco pipes from Tyneside with the majority being focussed on groups from Newcastle (Oswald 1979, 1981, 1983 and Parsons 1966 and 1967) and Gateshead (Edwards 1986, 1987, 1988a and 1988b). The most comprehensive work is Edwards' study of the Gateshead industry, which includes typologies of the local bowl forms and marks (1988a).

For the period 1635-1660 bowls with heart-shaped heels dominate. Oswald (1983, 186) noted a 'chinned' bowl, which he defines as 'leaning forward with a marked inward kink'. Although this 'chinned' form is found in London and Central Southern England, Oswald states that it is the combination between the heart-shaped base and the 'chinned' bowl that 'is rare apart from the Newcastle examples'. This particular bowl form is associated with two distinctive heel marks, both comprising initials within a heart-shaped border, GC and NW (see Chapters 8 and 9 for discussion of the marks). These 'chinned' bowls with heart-shaped heels are found in Yorkshire, indeed large numbers of bowls stamped with the same GC marks as those from Newcastle have been found in and around Beverley. The form is, however, not a typical Yorkshire form.

A quick survey of the published material from Tyneside shows that the bulbous forms typical of the Yorkshire pipe industry are not present in assemblages from sites in centres such as Newcastle and Gateshead. Oswald presents a bulbous form as Type 4 in his publication on the material from the castle at Newcastle-upon-Tyne

(1983, 187), but this type only accounted for four of the bowls recovered and it is quite possible that they were imports from Yorkshire.

Forward leaning transitional forms are present in Tyneside but these are not as pronounced as those seen at either York or Hull, nor along the east coast of Yorkshire. For the mid to late eighteenth century the bowl forms found in Tyneside are similar to those found in York and Hull in that they are more upright, with rims cut parallel to the stem and with small round or oval heels. The Tyneside typology does, however, have two eighteenth-century spur forms, which are rather unlike those found in Yorkshire (Edwards 1988a, 10).

As with all the areas that have been surveyed it is in the style and positioning of stamped or moulded marks where the greatest regional variation can be seen. Typical of Tyneside are large oval, or lozenge, shaped stem marks in the seventeenth century, and moulded initials on sides of the heel or spur in the eighteenth century. There is a full discussion of the mark types given in Chapter 8.

#### **6.1.4. The East - maritime influences**

Yorkshire's coastal and overseas trade is discussed in more detail in Chapters 9 and 10. In this section only those pipe producing centres whose influence may have reached Yorkshire via its coastal ports will be considered. These include London, the Low Countries and Scandinavia.

As has already been demonstrated by the survey of Yorkshire's neighbours, London products, or styles, were clearly in use from early in the seventeenth century. These products and styles may have travelled north from London via overland routes. The use of trade routes via the coastal ports, however, had long been established and ideas as well as products almost certainly arrived in Yorkshire by sea as well as by land.

During the transitional period large, forward leaning bowls are found predominately at sites along the east coast of Yorkshire such as Hull, Scarborough and Bridlington, or at major sites that were linked to these ports by navigable rivers, such as York.



These forward leaning forms are very similar to London Types 19 to 22 (Atkinson & Oswald 1969, 180). It could be argued that these bowls represent actual products from London that were being traded coastwise. Although London products almost certainly did find their way to Yorkshire this only accounts for a very small number of the examples found. A little over 26% of the transitional forms recorded from Yorkshire are burnished, a phenomenon that is rare in London, suggesting that it was bowl forms rather than the products themselves that were being imported by Yorkshire. The ease with which those styles can be confused is illustrated by a group of pipes at the Wilberforce Museum in Hull. The actual provenance of the pipes is unknown but on typological grounds it was thought that they may have come from London. A large number of the group, however, are burnished, strongly suggesting that they are in fact local products copying London forms.

A similar pattern can be seen in the eighteenth century. The dominant bowl form in London at this date is the Type 25 (*ibid*) which invariably has a set of initials moulded on either side of the heel. An analysis of the bowls recorded in Yorkshire shows that bowls of this type can be found at centres along the east coast of Yorkshire, particularly Hull, and up into Tyneside. This may suggest that local makers had adopted the London style of marking by applying moulded initials to mark their own products.

Trade links further a field offer the possibility of yet another source of influence. In the sixteenth and early seventeenth century trade between Yorkshire and the Netherlands was being carried out, although not all was direct trade (Davies 1978, 4). During the seventeenth century there was clearly a direct link between the two industries as documentary records show that at least five Yorkshire-men went on to become pipemakers in the Netherlands. Henry and Roger Wilkins from York; Thomas Harcastle and Christian Peters from Ripon (Duco 1981, 335-336) and Christopher Laze from Yorkshire (Anon 2000, 1197), further details of these makers can be found in Appendix 1.

Duco (1981, 371) considers that the use of tobacco and the making of clay tobacco pipes was introduced to Holland by the English and notes that in all those Dutch

towns where pipe-making was being carried out during the seventeenth century, the English played a major role (*ibid*, 372). As a result pipes produced in Holland in the early part of the seventeenth century are virtually indistinguishable from those produced in England.

Holland very rapidly developed a distinctive bowl form of its own and although these pipes are found in Yorkshire they are clearly imports to the county rather than forms that are being copied by the local makers. From sites in Holland a slightly more bulbous form does occur from time to time (*ibid*, 243 fig 12 and 244 fig 24) but these are clearly not Yorkshire forms.

As well as trade with the Low Countries, Yorkshire's coastal ports, such as Hull, had been exporting products to the Baltic, Norway and Iceland since the fourteenth-century (Davies 1978, 4). Port records tended to list only the main cargo, which for the most part was wool leaving Yorkshire and corn or flax being imported from overseas. The trade in other goods, such as clay tobacco pipes, is hinted at by other records from Sweden, which show that until the mid eighteenth century large quantities of pipes were being imported from England (Bonds 1980, 274). In 1719 a Swedish businessman living in England commented on the large quantities of pipes that were being exported from Hull to Sweden. Unfortunately for Hull he referred to the pipes as being 'rough and badly made' (*ibid*). However, he goes on to say '[the pipes] are mostly sent to Sweden and Norway' (*ibid*). Bonds notes that 'the import of English pipes almost ceased in spite of the fact that the English pipe model was popular. Instead it was manufactured within Sweden' (*ibid*, 275).

Pipes dating from the period 1660-1680 have been found in Sweden that have either been positively identified as, or bearing very close resemblance to, Yorkshire products. These sites include Falun, Jonkoping and Stockholm as well as the wreck of the Kronan near Hultestad (Akerhagen 1998; 2001 and *in litt.* 13.12.2000). In contrast, no pipes identified as Swedish products have been found in Yorkshire suggesting that influence, in this particular instance, may have travelled in one direction.

## **6.2. The evolution of Yorkshire bowl forms**

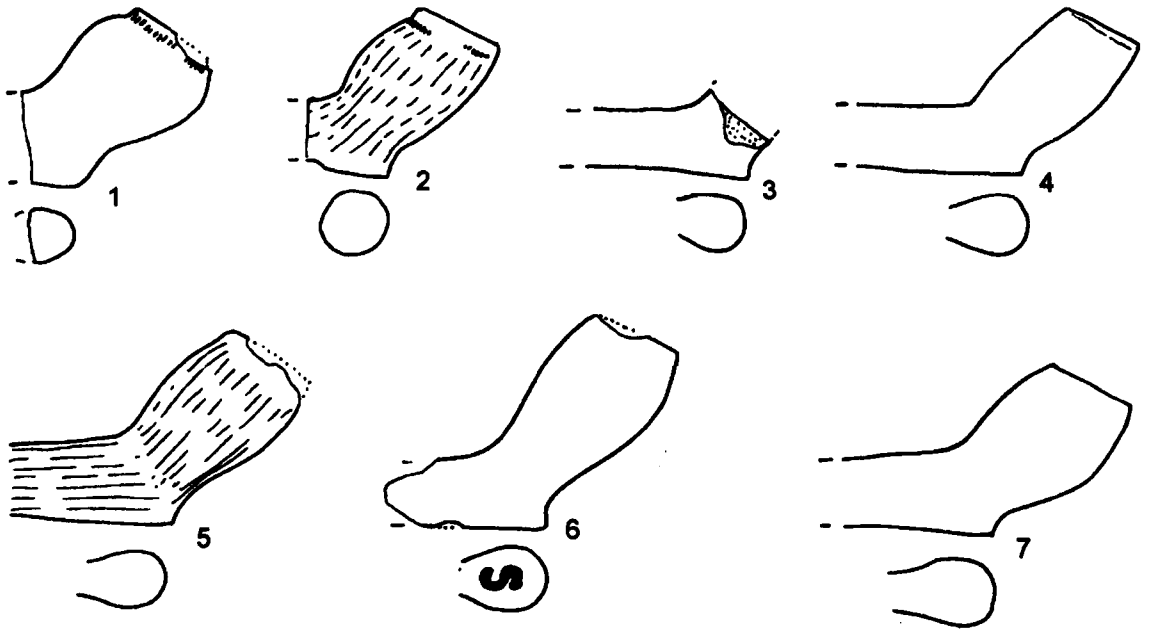
Having considered the interaction between Yorkshire and its neighbouring centres and the possible influence on the development of the bowl form, the following sections go on to look at the evolution of the Yorkshire forms within the county itself.

### **6.2.1. Early pipes (1580-1640; Figure 6.1)**

One of the earliest references to an instrument for taking tobacco dates from 1573 when a William Harrison notes in his *Great Chronologie* that 'In these daies the taking-in of the smoke of the Indian herbe called 'Tobaco' by an instrument formed like a little ladell ..... is gretlie taken-up and used in England...' (Oswald 1975, 3). The term 'pipe' is not known to have been used before 1580 (*ibid*, 4).

The popular myth is that Sir Walter Raleigh was responsible for the introduction of smoking at the end of the sixteenth century. Raleigh was, by all accounts, a very charismatic character and while there is little doubt that he popularised smoking at the court of Elizabeth I, it is perhaps not true to say that its introduction was solely down to him. Smoking rapidly spread throughout London, the Home Counties and Central Southern England during the late sixteenth and early seventeenth centuries (*ibid* 6). In 1618 the Venetian Ambassador to England noted that 'Women as well as men smoke night and day' (*ibid*, 5). Certainly up to 1640 London set the fashion throughout the country and pipes from almost any site in England during this period are generally indistinguishable from those produced in London - Yorkshire is no exception.

The survey of clay tobacco pipes for this present research has recorded only ten pipes dating from 1580-1610 from the whole of the county (see Table 6.1 below), all of which were heel types, and documentary sources have so far failed to yield any pipe-makers for Yorkshire from before 1635. The earliest known pipemaker is Gabriel Westaby of York, who was freed as a trunk maker in that year (Appendix 1).



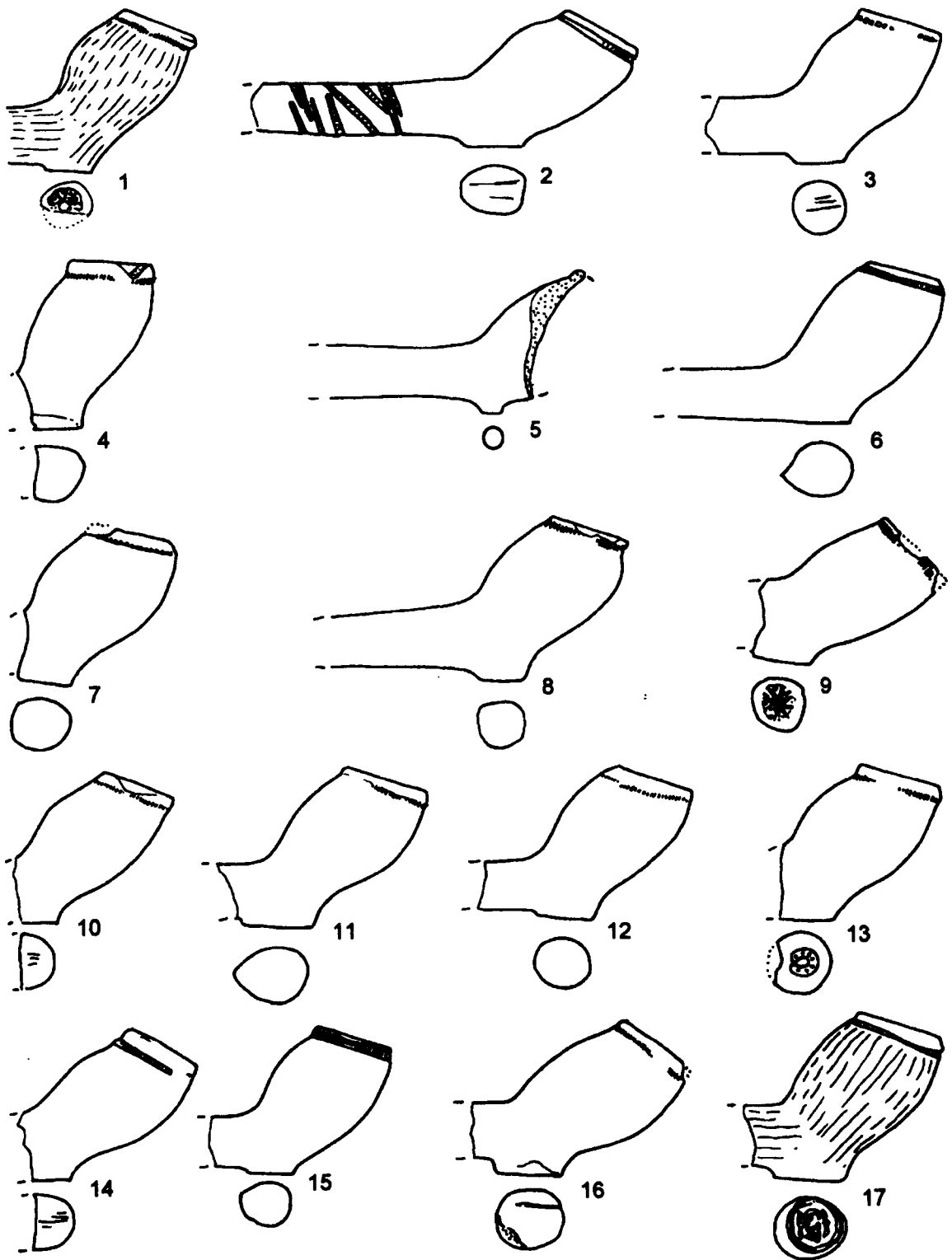
**Figure 6.1:** 1580-1610 period bowls. 1. York Castle Museum (Pcode 7781); 2. & 3. Rayner Collection (Pcodes 3875 & 3661); 4. English Heritage (Pcode 23539); 5. Manor House Museum, Ilkley (Pcode 7043); 6. White Collection (Pcode 8417) and 7. York Archaeological Trust (Pcode 5554). Scale 1:1.

Area	West	East	South	North-west	North-east	York & its environs
Quantity	2	2	1	1	1	3

**Table 6.1:** Number of 1580-1610 period pipes recorded in each of the six geographical sub-divisions in Yorkshire for this present research.

### 6.2.2 Pre Civil War (1610-1640; Figure 6.2)

Prior to the outbreak of the Civil War, bowl forms throughout England were fairly uniform in terms of size and shape. This is perhaps best illustrated by a group from the Kitto Institute in Plymouth (Higgins 1992), which produced a very closely dated group of pipes from 1625-1630. This group included pipes from London and the Low Countries as well as local forms. What is interesting about this group is that although there are subtle differences in the curves of the bowls, they are all basically the same size and shape. A similar group from Tron Kirk, Edinburgh (Gallagher 1987b) with a secure *terminus ante quem* of 1637 also has bowls of a very standard size and shape. This early 'standard' bowl form for the first part of



**Figure 6.2:** 1610-1640 period bowls. 1 & 2 Rayner Collection (Pcodes 2900 & 3538); 3 & 16 Humber Archaeological Partnership, Hull (Pcodes 6388 & 6488); 4 English Heritage Store, Helmsley (Pcode 21135); 5 Scarborough Borough Council (Pcode 5941); 6 Beck Isle Museum of Rural Life, Pickering (Pcode 21144); 7 Tierney Collection (Pcode 21224); 8 & 9 Craven Museum, Skipton (Pcodes 25150 & 25134); 10 Sheffield Museum (Pcode 7352); 11 Kelham Island Museum, Sheffield (Pcode 7396); 12 Raines Collection (Pcode 6576); 13 White Collection (Pcode 8414); 14 & 15 Wood Hall Moated Manor (Pcodes 7441 & 7467) and 17 York Archaeological Trust (Pcode 1777). Scale 1:1.

the seventeenth century can be seen time and time again from sites throughout England. There are occasional exceptions to this rule, such as the material from Ide Cottage near Exeter (Oswald 1980, 331), which dates from 1610-1630 and which clearly shows the early signs of a regional style developing. This is, however, very much the exception and at this early stage in pipe production bowl forms are very standardised.

A survey of the clay tobacco pipes from the period 1610-1640 for this present research recorded 453 Yorkshire bowls (see Table 6.2 below). With the exception of Gabriel Westaby of York who was working 1635 (Appendix 1) no other pipe-makers, working in the period 1610-1640, have been identified from documentary sources from anywhere in the county.

Area	West	East	South	North-west	North-east	York & its environs
Quantity	156	67	26	20	42	142

*Table 6.2: Number of 1610-1640 period pipes recorded in each of the six geographical sub-divisions in Yorkshire for this present research.*

The Yorkshire bowl forms from this period appear to follow the same basic trends as those from other sites in England. As with the pipes from the period 1580-1610 Yorkshire bowls are virtually indistinguishable from those produced outside of the county. Of the 453 bowl fragments recorded as being Yorkshire products only 376 could be identified as being either a heel or a spur type, the remaining 77 fragments being unidentifiable. The heel forms during the period 1610-1640 dominate, accounting for 96% off all identifiable bowls from Yorkshire. For a breakdown of the quantities and percentages by geographical sub-division see Table 6.3.

The figures in the table below clearly show that heel forms in all six geographical sub-division are the dominant form. In the North-west all those pipes from the period 1610-1640 are heel forms. In contrast those pipes from the East and North-east have a slightly higher percentage of spur forms but even then that only accounts for 10%.

	West		East		South		North-west		North-east		York & its environs	
	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
<b>Heel Type</b>	107	97%	56	90%	21	95%	19	100%	27	90%	130	98%
<b>Spur Type</b>	3	3%	6	10%	1	5%	0	0%	3	10%	3	2%

*Table 6.3: Quantity and percentage of heel and spur type bowls for the period 1610-1640 from the six geographical sub-divisions in Yorkshire.*

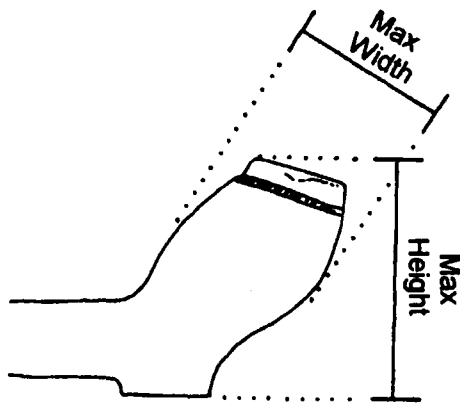
### 6.2.3 The Civil War period (1640-60; Figure 6.4)

The Civil War marks a turning point in English history and the resulting upheaval and disruption to virtually every aspect of life, including that of pipe production, at this time cannot be underestimated. It is the Civil War that appears to be the catalyst for the emergence of regional forms not only in Yorkshire but also throughout England.

During the course of this current research it has been possible to study two exceptional groups of Civil War material in detail. The first was recovered during excavations at Pontefract Castle (Davey and White, 2002) and the second from excavations at Sandal Castle. The group from Sandal Castle was reported on in 1983 by Lawrence in very summary form. Since 1983, a more detailed catalogue of the material has been prepared by the author for the Wakefield Museum Service (See Appendix 6). This is clearly a group of national importance and warrants full analysis and publication at some point in the future.

In order to try and assess the typical Yorkshire bowl form used during the Civil War period, the maximum height and width for all those bowls that could definitely be assigned to Civil War contexts was measured in millimetres using a set of vernier callipers (see Figure 6.3).

There is very little in the way of comparative material for the Yorkshire finds although it has been possible to take measurements of Civil War period finds from Tutbury Castle in Staffordshire and Portland Castle in Dorset. The measurements



**Figure 6.3:** Measurements of the maximum height and width of a Civil War period pipe bowl.

from these four sites are compared in the following table. For each site the range and average measurement for both height and width is given.

Site	Qty	Height Range	Ave. Height	Width Range	Ave. Width
Pontefract Castle	51	25.8-31.7	28.34	16.7-20.1	18.31
Sandal Castle	135	24.1-32.3	28.22	16.8-19.8	18.30
Tutbury Castle	12	27.1-32.1	29.14	16.9-20.9	18.37
Portland Castle	8	29.8-32.8	31.18	18.9-20.4	19.72

**Table 6.4:** Ranges and average height and width measurements for Civil War period pipes.

The most striking finding from the measurements taken is the very close similarity between the four different groups with a difference in the average height of just 2.84mm and in the width of 1.41mm. The only slight trend appears to be that the pipes become marginally taller and broader the further south of Yorkshire they are. This suggests that any variation on a local or national level is going to be almost impossible to discern by using overall bowl dimensions alone. Trimming too much, or too little off the heel during the manufacturing process can alter the height of a bowl quite dramatically, and both the height and width of a bowl can be affected by shrinkage both prior to and during firing. For example, the analysis of individual mould groups from Sandal Castle (see Chapter 9) showed that within Mould Group 7 there was a difference in bowl height of 2.5mm. It is only when the actual objects themselves are compared directly that the differences become apparent.



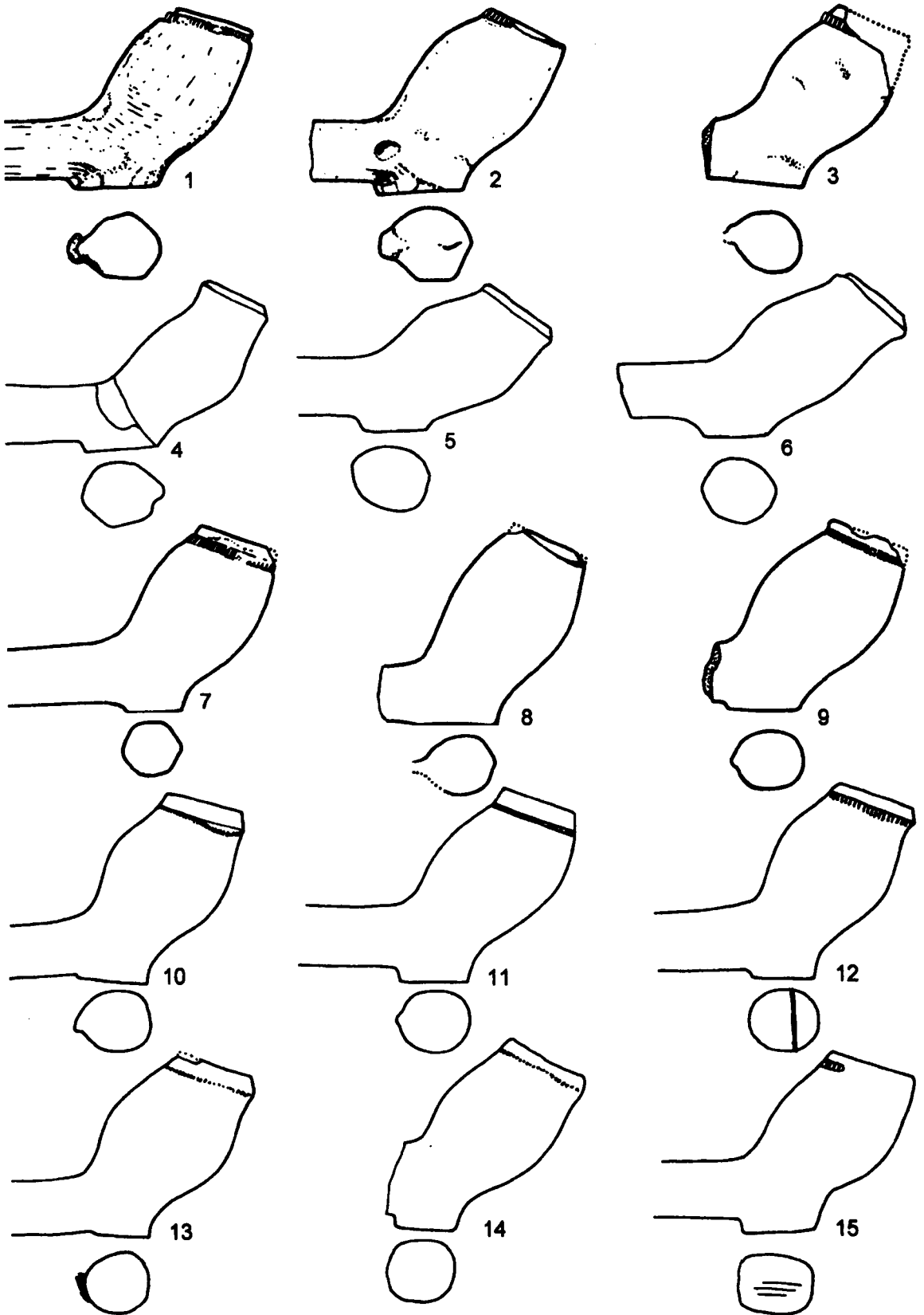
The height and width of bowls from the Civil War period appears to be fairly fixed throughout England, as does the angle of the bowl to the stem. What differentiates the bowls from the various regions within England, including Yorkshire, is the subtlety of the curves within those fixed parameters – the three dimensional quality. In order to try and illustrate this point a range of Civil-War period bowls are presented in the Figure 6.4. The bowls presented in this figure come from a small selection of sites in England that have yielded Civil-War period pipes – Tutbury Castle, Staffordshire (Higgins forthcoming A); Beeston Castle, Cheshire (Davey 1992a); Portland Castle, Dorset (Higgins forthcoming B), and Pontefract Castle (Davey and White 2002) and Sandal Castle (Lawrence 1983) in West Yorkshire.

The pipe bowls from Portland Castle in Dorset have much softer curves presenting an overall barrel shape to the bowl. Those from Beeston Castle in Cheshire are more forward leaning and are pinched at the rim. In contrast, the Yorkshire material has much more pronounced curves creating a ‘waist’ at the base of the bowl.

The figures in the table below clearly show that heel types dominate the bowl forms of the Civil-War period in Yorkshire. In York and its environs the number of spur forms are negligible and for the West, North-west, East and South of the county the figures are extremely low with between 2% and 3%. Only in the North-east of the county are there slightly more spur forms with 7%.

	West		East		South		North-west		North-east		York & its environs	
	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
<b>Heel Type</b>	909	98%	569	97%	116	97%	101	91%	111	96%	330	99%
<b>Spur Type</b>	17	2%	18	3%	4	2%	10	3%	5	4%	4	1%

*Table 6.5: Quantity and percentage of heel and spur type bowls for the period 1640-1660 from the six geographical sub-divisions in Yorkshire.*



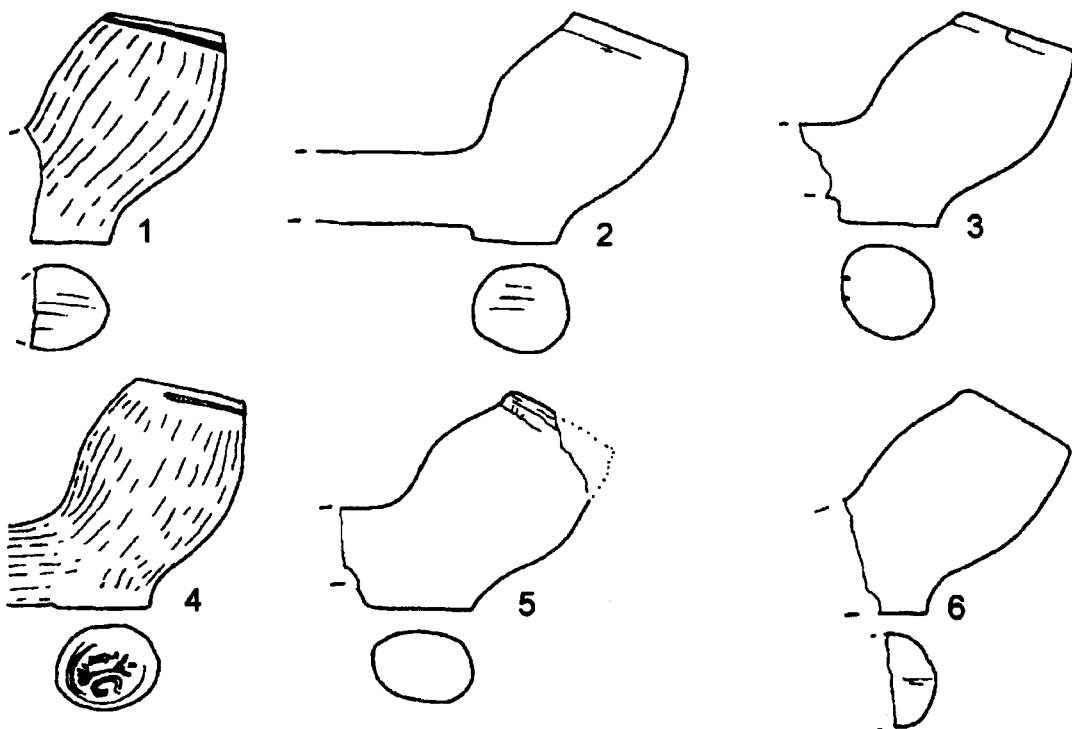
**Figure 6.4:** A range of Civil War period bowls. 1-3 from Tutbury Castle, Staffordshire (drawn by D A Higgins); 4-6 from Beeston Castle, Cheshire (after Davey 1992a. N.B. these figures have been reversed for ease of comparison); 7-9 from Portland Castle, Dorset (reproduced by permission of English Heritage; drawn by D A Higgins); 10-12 from Pontefract Castle, West Yorkshire and 13-15 from Sandal Castle, near Wakefield, West Yorkshire. Scale 1:1.

The beginnings of regional variation within the bowl forms of the Civil-War period are evident and very subtle differences can be seen, some of them hinting at the forms to come. The analysis of the material from Yorkshire has shown that although there are slight variations in the form of the bowls in the country as a whole, in some areas within the county of Yorkshire these variations are less apparent. What is interesting, however, is that one of the consequences of having a 'waist' is that it creates a slightly rounder, more globular upper part to the bowl. This globular, or slightly bulbous, feature becomes much more exaggerated and pronounced in the wake of the Civil War giving rise to the Yorkshire Bulbous form of the later seventeenth century.

#### **6.2.4 Yorkshire bulbous (1660-1690; Figure 6.5 & 6.6)**

The period 1660-1690 sees the emergency of the first truly regional bowl form in Yorkshire, the archetypal form – the 'Yorkshire bulbous'. There were hints of the origins of a bulbous form during the Civil-War period but it is not until the period 1650-1670 when a true bulbous form appears. This appears to be caused by two factors, firstly the use of a 'waist' at the base of the bowl and second the fact that during the period 1650-1670 the actual height of the bowls themselves changed very little but an increase in the width did creating a more rounded, bulbous profile (Figure 6.5)

By the 1660s the true bulbous form had arrived and although it was most common in York and Hull, the form does turn up at centres throughout Yorkshire right through to the 1690s (Figure 6.6). Watkins (1979, 87) suggests that it was York that set the trend for the round bulbous form during the second half of the seventeenth century. The earliest bulbous forms seen in York date from 1650 whereas the earliest date for their production in Hull was 1660 (*ibid*). The bulbous forms from Yorkshire are very rounded with the main body of the bowl being as wide from front to back as it is from side to side, appearing roughly circular in section. This contrasts with the bulbous forms seen in Lancashire, which are wider from the front of the bowl to the back of the bowl than from side to side appearing more oval in



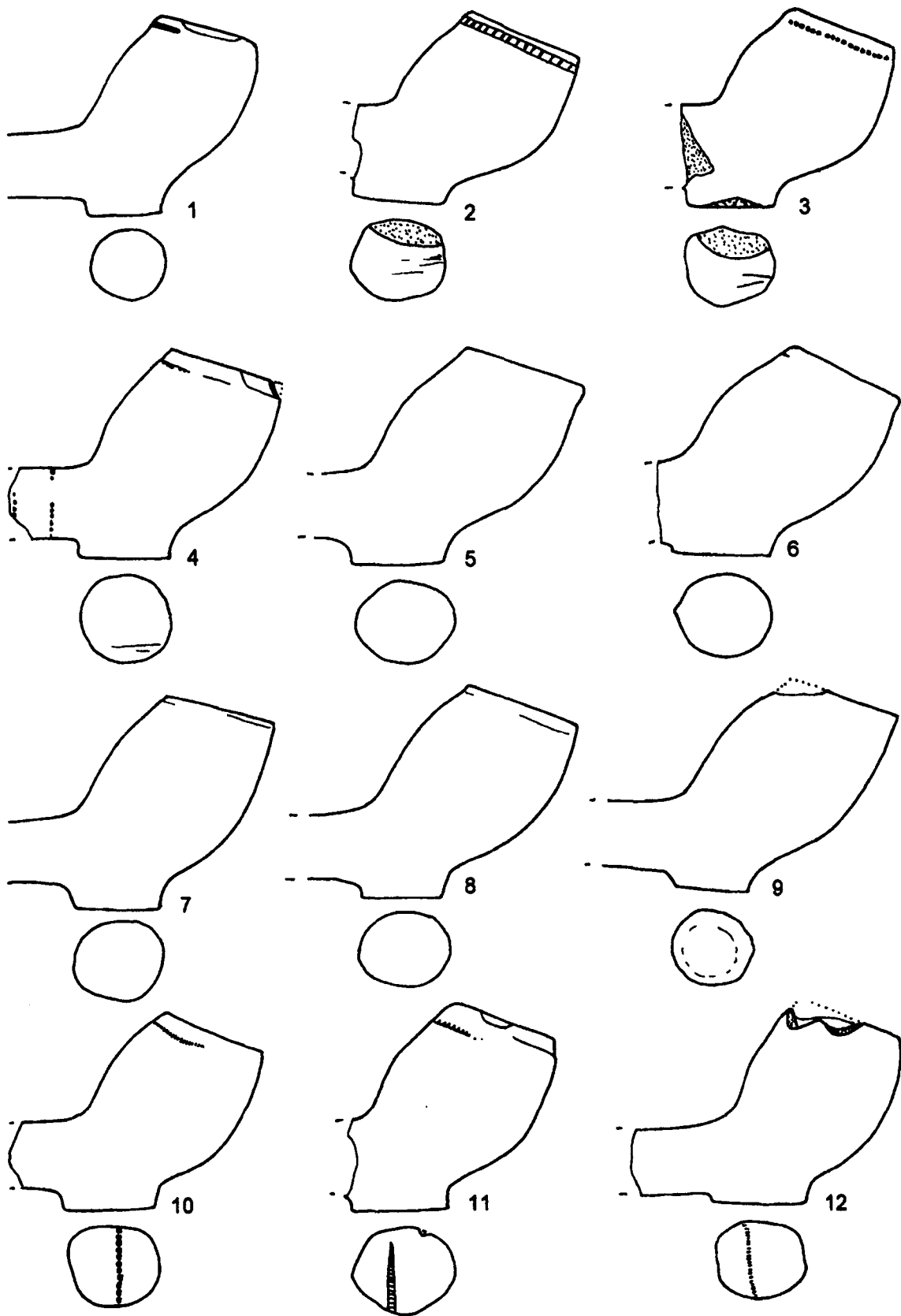
**Figure 6.5:** *Bulbous bowls dating from 1650-1670. 1-3 York Archaeological Trust (Pcodes 05508, 05712 & 05647); 4 & 5 Rayner Collection (Pcodes 02875 & 03675); 6 Dorman Museum, Middlesborough (Pcode 08107). Scale 1:1.*

section. Typical of a Yorkshire bulbous form is a large rounded heel suitable for the application of the round stamped marks, which were also typical of the county (see Chapter 8 for a discussion of the mark types).

As with the previous period, the bowls dating from 1660-1690 are predominantly heel type bowls although there are some regional variations creeping in. The following table presents the percentage of heel type and spur type bowls for each of the six geographical sub-divisions for Yorkshire for the period 1660-1690.

	West		East		South		North-west		North-east		York & its environs	
	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
<b>Heel Type</b>	257	96%	949	82%	133	88%	103	97%	119	93%	470	99%
<b>Spur Type</b>	17	2%	205	18%	19	13%	3	9%	9	7%	7	1%

**Table 6.6:** *Quantity and percentage of heel and spur type bowls for the period 1660-1690 from the six geographical sub-divisions in Yorkshire.*



**Figure 6.6:** Yorkshire bulbous forms. 1-3 York Archaeological Trust (Pcodes 5691, 5963 & 1789); 4 & 6 Rayner Collection (Pcodes 4081 & 4001); 5 Humberside Archaeological Partnership (Pcode 6159); 7 & 8 Beck Isle Museum, Pickering (Pcodes 21151 & 21152); 9 Manor House Museum, Ilkley (Pcode 7004); 10-12 Raines Collection (Pcodes 6658, 6569 & 6666). Scale 1:1.

The figures in Table 6.6 show that the proportion of heel to spur type bowls for the West, North-west, North-east and York is virtually the same as that of the Civil-War period. It is the East and South of the county, however, where there is a marked increase in the number of spur type bowls.

### 6.2.5 Transitional forms (1690-1720; Figure 6.7)

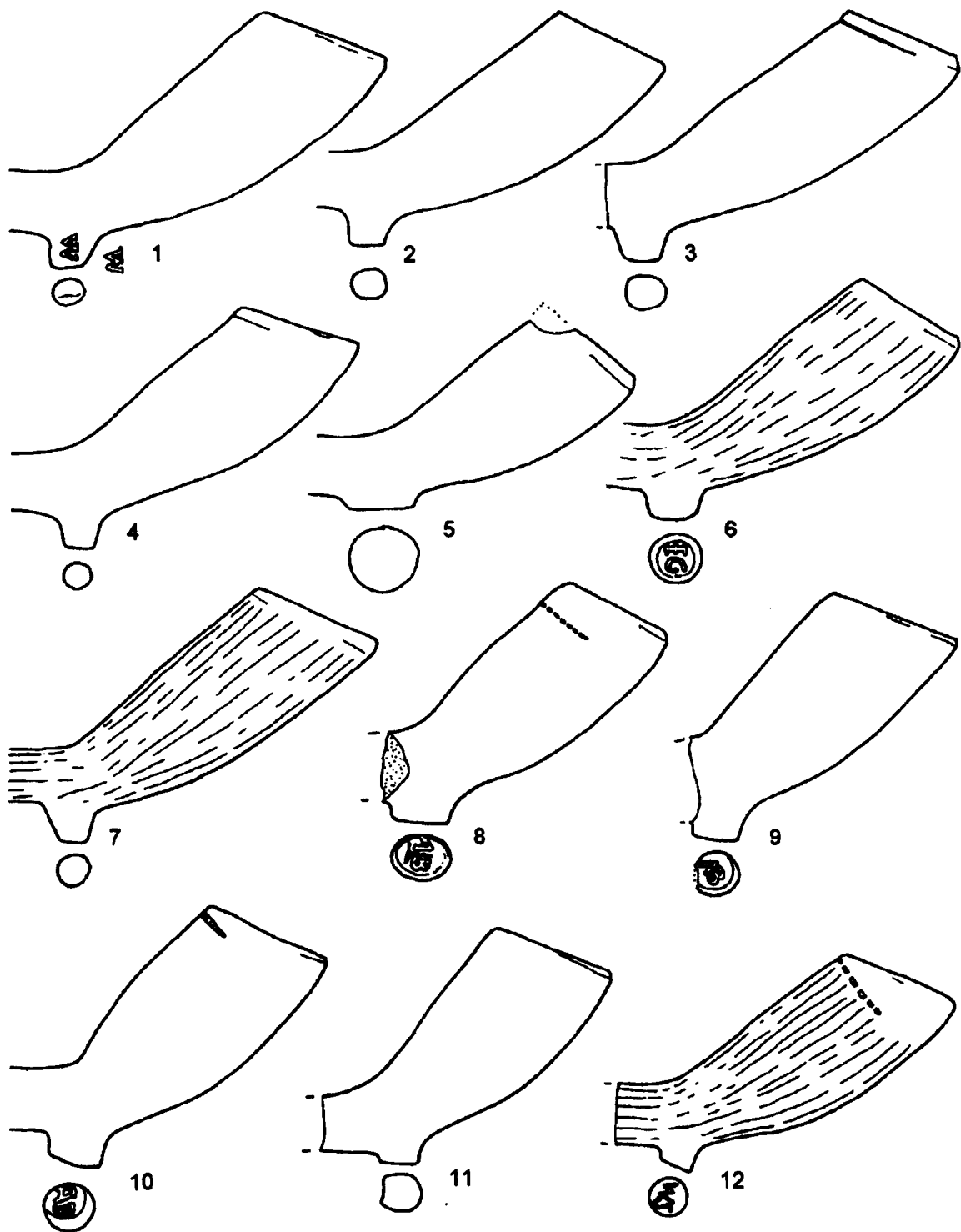
At the end of the seventeenth century there is a sudden, and rather dramatic change to the forms of the bowls produced in parts of Yorkshire. There is a very rapid move from the rather heavy, bulbous forms of the period 1660-1690 to a very elongated, forward leaning form of the transitional period (1690-1720). The typologies produced for Hull (Watkins 1979) and York (Lawrence 1979) present a small range of forms that are contemporary with the Yorkshire bulbous but have a narrower, more parallel-side, bowl. It appears to be these contemporary forms (Hull Type 3 and York Type 13) and not the bulbous forms that go on to develop into the forward leaning transitional bowls of the late seventeenth and early eighteenth century.

The transitional bowl form in Yorkshire is very long, narrow and forward leaning. In East Yorkshire at centres such as Hull this forward lean becomes very pronounced (Figure 6.7 & Appendix 3 Figures 34.9, 34.10, and 35.1). Whereas in York and other centres in the county this form is less exaggerated.

By comparing the percentage of heel and spur types again, it is possible to see that there is yet another shift in the figures.

	West		East		South		North-west		North-east		York & its environs	
	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%	Qty	%
<b>Heel Type</b>	38	83%	326	99%	32	84%	20	63%	19	68%	179	99%
<b>Spur Type</b>	8	17%	2	1%	6	16%	12	38%	9	32%	1	1%

*Table 6.7: Quantity and percentage of heel and spur type bowls for the period 1690-1720 from the six geographical sub-divisions in Yorkshire.*



**Figure 6.7: Transitional bowl forms.** 1-2 Rayner Collection (Pcodes 4377 & 3786); 3 Wilberforce House Museum, Hull (Pcode 8220); 4-5 English Heritage Store, Helmsley (Pcodes 21128 & 21114); 6 Doncaster Museum (Pcode 6996); 7 Wakefield Museum & Art Gallery (Pcode 21129); 8-10 York Archaeological Trust (Pcodes 1771, 1843 & 1845); 11 Manor House Museum, Ilkley (Pcode 7034) and 12 Craven Museum, Skipton (Pcode 25140). Scale 1:1.

Interestingly for East Yorkshire, the proportion of spur type bowls that were seen in the period 1660-1690 (18%) drops dramatically in the transitional period to 1%. York and its environs continues to have a very low proportion of spur type bowls with a figure of just 1%. The remaining areas of Yorkshire see a steady increase in the percentage of spur bowl forms with between one quarter and a half of those bowls recorded being spur forms.

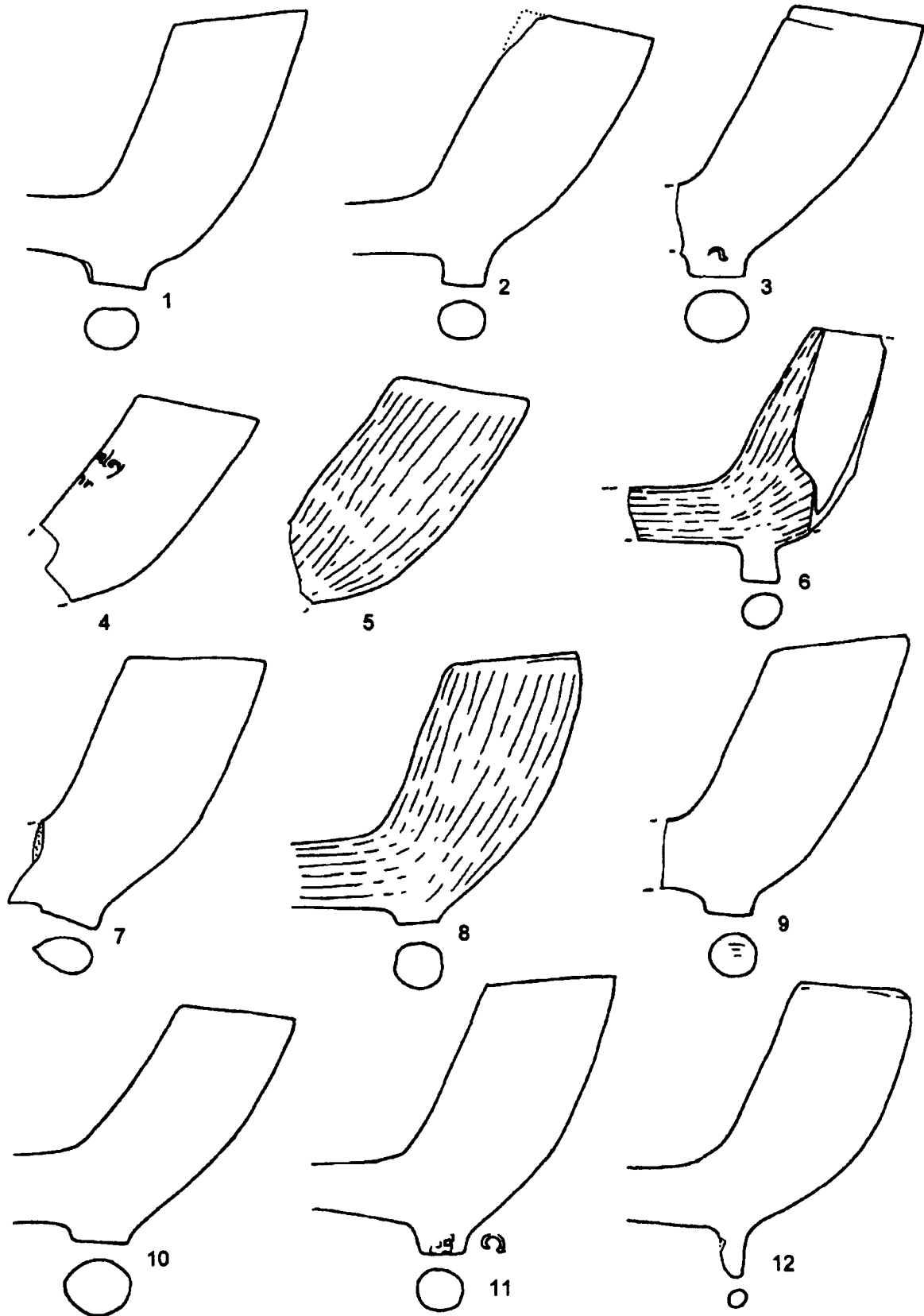
#### **6.2.6 The eighteenth century (1700-1800) (Figure 6.8)**

During the eighteenth century the regional variations within England continue. By the early 1700s the general trend is for a bowl that is more upright with the rim cut parallel to the stem. The thicker, shorter stems of the seventeenth century were gradually replaced with thinner, longer stems in the eighteenth century. Very few eighteenth-century bowls survive in the archaeological record, which may be the result of two factors. The first is the fact that the walls of the bowls were much thinner than had previously been the case. As a result the bowls often break into tiny fragments, which are difficult to recover with the result that they are often under represented in the archaeological record. The second factor is the introduction of snuff, which appears to be the preferred method of taking tobacco in the eighteenth century. For this present research, of the 6989 bowls recorded only 897, or 12%, date from the eighteenth century.

The strong regionalisation that was seen during the seventeenth century continues in the eighteenth century with some centres producing very distinctive forms, for example the West Country with its pronounced overhanging bowl forms (Oswald 1975, 53) and the Midlands where 'both bases and bowls are smaller than shapes current elsewhere' (*ibid* 47). In Yorkshire at the larger centres such as York and Hull the eighteenth-century bowls are very similar to the London Type 25 (Atkinson & Oswald 1969, 180).

By the end of the eighteenth century moulded decoration had also emerged as a regular feature of pipe production. In Yorkshire, as with other parts in England, the same basic bowl form is retained but to this is added elaborated moulded designs





**Figure 6.8:** Eighteenth-century bowl forms. 1 Rayner Collection (Pcode 3933); 2 Pontefract Museum (Pcode 8002); 3 English Heritage Store, Helmsley (Pcode 21096); 4-5 Doncaster Museum (Pcodes 6972 & 24658); 6 Wood Hall Moated Manor (Pcode 7449); 7-9 York Archaeological Trust (Pcodes 5635, 5769 & 5776); 10 Manor House Museum, Ilkley (Pcode 7056); 11 Raines Collection (Pcode 6771) and 12 Tolson Memorial Museum, Huddersfield (Pcode 7762). Scale 1:1.

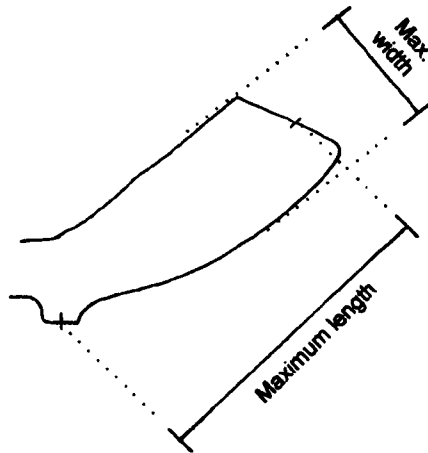
including flutes with dots (Appendix 3, Figures 123.4 and 124.5), flutes with a stag's head (Appendix 3, Figures 123.1 and 133.7), and Armorial bearings either a motto or the maker's name (Appendix 3, Figures 53.3 and 140.5). A discussion of the development and range of mould decorated pipes of the late eighteenth and nineteenth century is beyond the scope of this present research. Where time permitted some late eighteenth-century mould-decorated bowls were recorded but only when associated with stamped maker's marks, for example the Lumley group from Doncaster, were they recorded in detail.

### **6.3 The regional variation of Yorkshire bowl forms**

Having outlined the basic evolution of the bowl form in Yorkshire, and the possible influences on those forms from outside the county, this section focuses on the variation of form within Yorkshire. Analysis of the material recorded in Yorkshire focuses on bowls from the periods 1640-1660, 1660-1690 and 1690-1720. The earlier 1580-1640 bowls have not been included as they are virtually indistinguishable from pipes of that period from outside of the county. Post 1720 bowls have not been included first because there are insufficient complete examples from the present study, and second, because regional variation at this time is less apparent. A random sample of pipes from the three date ranges was selected from each of the six geographical sub-divisions within the study area. The maximum width of each bowl was measured to the nearest 0.5mm. The transitional bowls of the period 1690-1720 are rather long, forward leaning bowls and in order for them to be more easily compared to the shorter, more upright bowls of the earlier periods, the length rather than height of the bowls was measured, again to the nearest 0.5mm. The length is taken to be the line from the mid-point of the heel or spur to the mid-point of the rim (see Figure 6.9). These measurements were plotted on a series of graphs, one for each geographic sub-division (Figures 6.10 and 6.11), in order to illustrate the range of bowl sizes for each area over time. The blue dots represent the bowls from the period 1640-1660, the red dots to those from 1660-1690 and the green dots to the Transitional bowls of 1690-1720.

In addition to the actual measurements, which have been plotted in Figures 6.10 and 6.11, Table 6.8 presents the sample size, range of length and width measurements

from each sample and the mean length and width figures for each of the six geographical sub-divisions.



**Figure 6.9:** Measurement of the maximum length and width.

Geographical sub-division	Date	Sample size	Length Range	Mean Length	Width Range	Mean Width
West	1640-1660	34	28.0-35.0	31.456	17.5-20.5	18.809
West	1660-1690	57	30.5-40.1	35.133	19.0-26.0	22.439
West	1690-1720	21	39.5-52.5	44.476	19.5-24.0	21.224
East	1640-1660	37	25.8-38.0	32.022	17.5-21.0	19.081
East	1660-1690	65	33.0-43.5	36.900	18.5-26.5	22.438
East	1690-1720	19	39.5-53.5	48.263	20.5-24.0	21.816
South	1640-1660	33	28.5-39.0	33.197	17.5-22.0	19.455
South	1660-1690	62	30.0-41.0	35.758	18.5-25.5	21.960
South	1690-1720	18	37.5-50.5	43.889	19.5-22.0	20.778
North-west	1640-1660	19	28.0-36.0	32.526	17.5-22.0	19.472
North-west	1660-1690	43	30.0-39.5	35.151	20.0-25.5	22.500
North-west	1690-1720	12	39.0-50.5	43.750	18.0-23.0	20.750
North-east	1640-1660	49	28.5-36.5	32.459	18.0-22.0	19.582
North-east	1660-1690	66	32.0-44.0	37.091	20.0-36.0	23.409
North-east	1690-1720	9	39.0-53.0	46.167	20.0-24.0	21.833
York & environs	1640-1660	34	28.0-35.5	31.603	17.5-21.0	19.103
York & environs	1660-1690	43	32.0-39.0	35.523	21.0-25.5	23.500
York & environs	1690-1720	22	41.5-53.0	46.000	19.5-23.5	21.818

**Table 6.8:** The sample size, range of lengths and widths, and mean length and width, for the samples from each of the geographical sub-divisions by period.

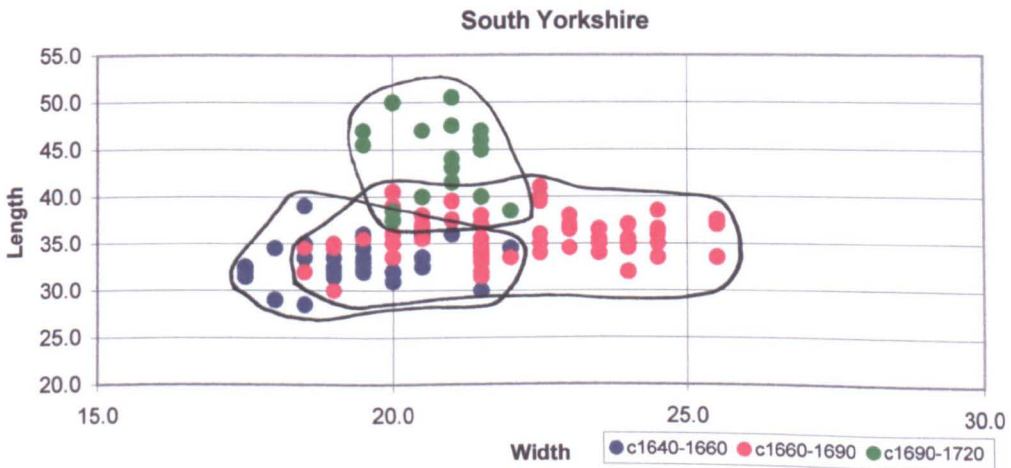
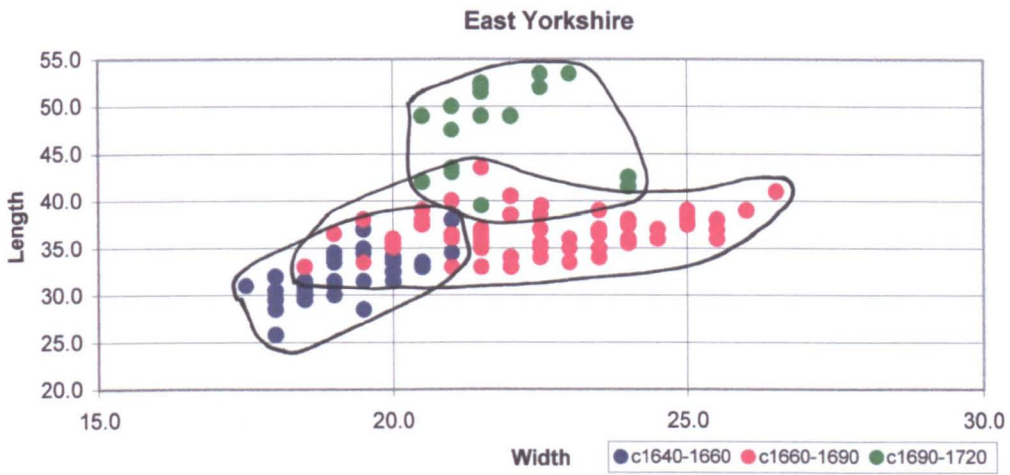
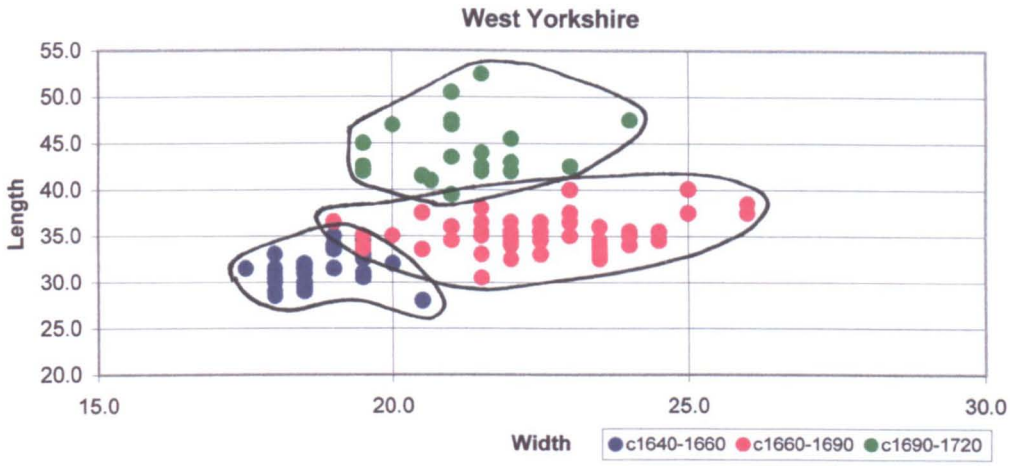
Although the graphs, presented in Figures 6.10 and 6.11, and the mean figures presented in Table 6.8 suggest that there is evidence for regional variation, the differences in the actual mean figures are very slight. In order to test that these perceived differences are in fact real it is necessary to carry out a simple statistical analysis of the data. A one-way Analysis Of Variance test (ANOVA) compares the

means of three or more samples and avoids the need to perform multiple T-tests, each of which may introduce a degree of error. What is being tested here is the null hypothesis that the means of the bowl measurements from the different areas are equal. ANOVA calculates a P value, which is the probability that the null hypothesis is true, that is, if the probability is very close to zero it means that the null hypothesis can be rejected and that significant differences between the means from the different areas in Yorkshire do exist. Both the bowl height and bowl width measurements were analysed for the three different date ranges and in each case significant differences were shown to exist (for the detailed results see Appendix 8).

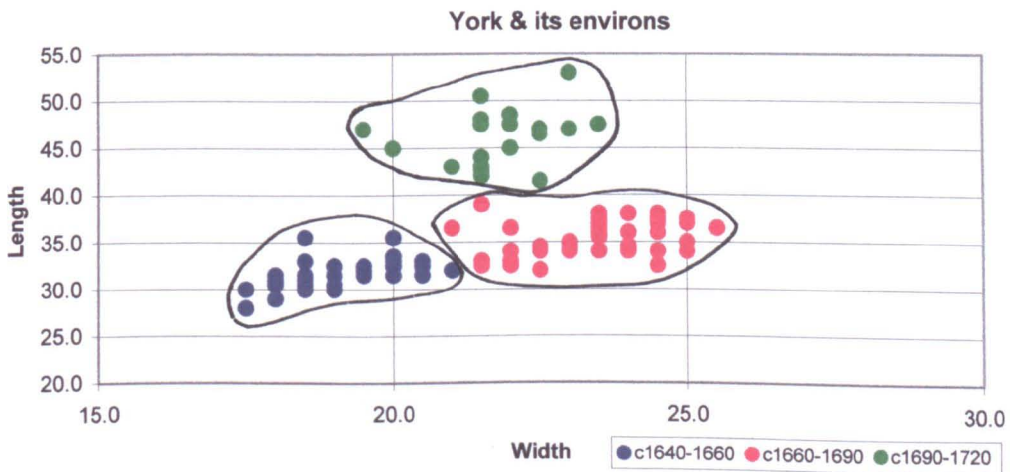
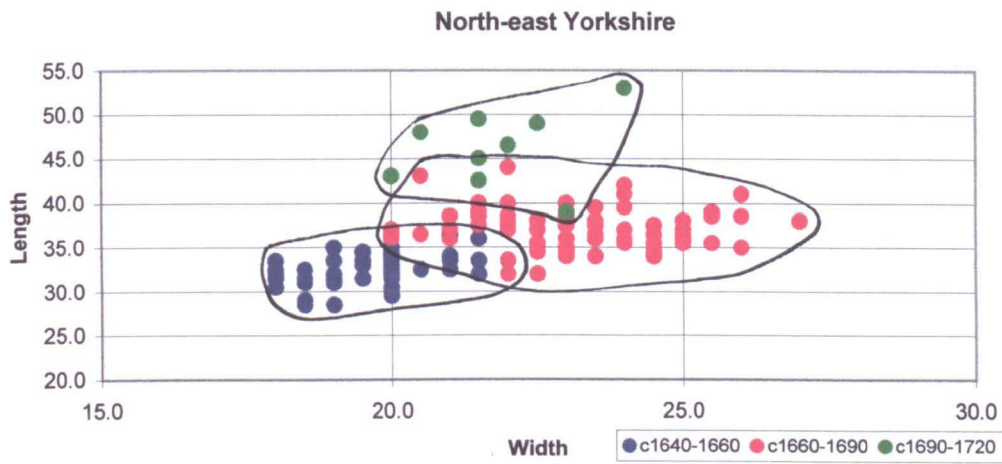
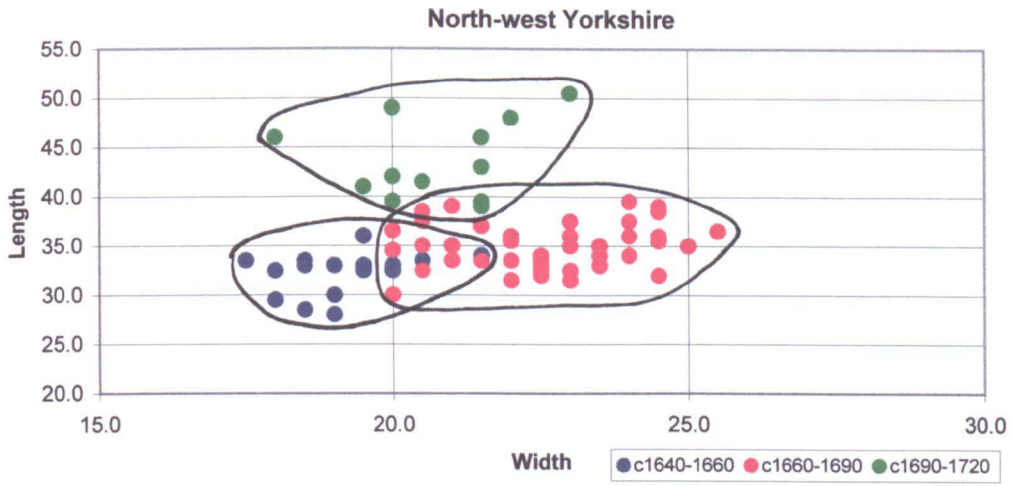
Having established that the perceived differences are now real it is possible to draw some conclusions from the evidence presented in Figures 6.10 and 6.11. The first point to notice is that they each geographical area follows the same basic pattern, that is, the bowls gradually become markedly wider but only slightly taller from the period 1640-1660 to the period 1660-1690. By the transitional period, 1690-1720, the bowls narrow again but become markedly longer. This development is not unexpected and follows the same basic pattern as the rest of England. What has not previously been noted, however, are the subtle differences that can be seen from region to region. These differences are discussed chronologically and geographically in the sections 6.3.1 and 6.3.2 below.

### **6.3.1 Chronological variation**

During the Civil War period (1640-1660) it is clear that bowls from all parts of Yorkshire were very similar. In West Yorkshire (Figure 6.10 top) during this period (1640-1660) the majority of the bowls appear to be slightly narrower than those found in other parts of Yorkshire. The widest range of both width and length measurements appears in South Yorkshire (Figure 6.10 bottom) indicating that Civil War period bowls from this area are generally slightly larger than those from other parts of the county. It was the east and north-east of the county that were producing the longest bulbous bowls for the period 1660-1690, although both the average and median figures suggest that it was York that was producing the widest bowls. York and its environs (Figure 6.11 bottom) also produced the tightest group of both widths and lengths for this period suggesting that there was less variation in the



**Figure 6.10:** Bowl length and width diagrams for West Yorkshire (top); East Yorkshire (middle) and South Yorkshire (bottom) for the periods 1640-1660, 1660-1690 and 1690-1720.



**Figure 6.11:** Bowl length and width diagrams for North-west Yorkshire (top); North-east Yorkshire (middle) and York and its environs (bottom) for the periods 1640-1660, 1660-1690 and 1690-1720.

overall size of the bulbous bowl in and around York than was seen in other parts of Yorkshire. Although only slightly longer than the bowls of the Civil War period the widths of the bulbous bowls are much greater. During the transitional period (1690-1720) the largest bowls in terms of both width and length are found in the east (Figure 6.10 middle) and north-east (Figure 6.11 middle) of the county.

### **6.3.2 Geographical variation**

The graphs in figures 6.10 and 6.11 clearly show that with the exception of one area, York, all the periods have a certain degree of over-lap suggesting that there was a wider range of overall bowl sizes in most parts of Yorkshire. York is quite different from the other areas as each period is quite separate and discrete. In all areas the bowls from the Civil War period (1640-1660) and the bulbous forms (1660-1690) are of a very similar length and width with the most marked changes occurring in the transitional period (1690-1720).

The overall length of the pipes of the transitional period (1690-1720) from the south and north west of the county are much shorter than any of the other geographical areas as well as being narrower, with an average width of just 20.8mm. In the east and north-east of the county those pipes from the transitional period (1690-1720) have a greater range of bowl widths and lengths and are generally larger than in the other geographical areas (Figures 6.10 middle and 6.11 middle).

The graphs for the west (Figure 6.10 top) and the north-west (Figure 6.11 top) of the county are quite similar with only a slight overlap between the groups of pipes. With the exception of a particularly narrow pipe from North-west Yorkshire, all the bowls from the transitional period (1690-1720) are basically the same size as those from the West of the county.

## **6.4 Summary and conclusions**

This chapter has considered a number of elements in the development of the bowl form that allow interesting conclusions relating to the pipe industry to be drawn. A survey of the pipe producing areas bordering Yorkshire suggests that neither Tyneside, to the north, or Lincolnshire and Nottinghamshire, to the south, had any

great influence on the pipes being produced in Yorkshire. There is also little evidence to suggest that Yorkshire made any significant impact on her neighbours to the north or south. What is apparent, however is that across England there is a broad band, which developed a bulbous tradition in the second half of the seventeenth century. This band includes parts of Lancashire, south Cumbria and Yorkshire. Although there are clearly variations within this band the distinctive large, round bowl dominates the assemblages from these three areas. Along the east coast of Yorkshire, London was clearly an influencing factor right into the eighteenth century. Further a field there is evidence to suggest that, the export of Hull products may have been influencing the makers in parts of Scandinavia, although the forms here are referred to as 'English' models and not specifically Yorkshire or Hull. To a lesser degree there was clearly links with the Netherlands in the early part of the seventeenth century through the movement of Yorkshire makers, rather than actual products. Although some links can be seen through the bowl forms themselves, it is the seventeenth century and particularly the eighteenth century, style of the makers' marks and the positioning of those marks that show the greatest regional variation – the subject of chapter 8.

In terms of the evolution of the bowl form it is clear that the material from Yorkshire displays the same basic trends that are seen elsewhere in England. The small, thick walled bowls of the early seventeenth century were gradually replaced by the larger, thin walled, more up right bowls of the mid eighteenth century, which then give way to the mould-decorated bowls of the late eighteenth century. What is clear is that even within these broad parameters there is strong evidence for regional variation. For example in the east and south of the county there appears to be a move towards spur forms rather than heel forms during the period 1660-1690, and during the transitional period (1690-1720) the makers in the east of the county opted for a long, wide bowl form with a pronounced forward lean as opposed to those in the south who preferred a shorter, narrower form.

Having now considered the development of the Yorkshire bowl form, the following chapter goes on to consider the finishing techniques employed by the pipe-makers.



## **Chapter 7: Finishing techniques and stem-bore analysis**

### **7.0 Introduction**

In this chapter those methods and techniques employed in the finishing of a clay tobacco pipe that leave an indelible mark will be examined. The stem-bore and how this changes over time, is discussed first, followed by a section on the use of milling as a means of finishing the bowl rim as well as a means of applying decoration to either the bowl or the stem. Finally, the application of burnishing and its possible use as an indicator of social status will be considered. Each section concludes with an analysis of the data recorded from Yorkshire both geographically and chronologically in order to highlight any regional variations within the county.

### **7.1 Stem-bores**

One of the debates that has been raging in the field of pipe research since the early 1950s is that of the use and validity of stem-bore analysis as a statistical method of dating pipe stem fragments. This analysis relies on the fact that stem-bores gradually decrease in size over time, translated into increments of 64<sup>th</sup> of an inch as bores are traditionally measured with the butt ends of a set of imperial drill bits (Harrington 1954). In his initial survey Harrington (*ibid*) measured a total of 330 seventeenth- and eighteenth-century fragments from sites on the east coast of America. He was able to show that from 1620-1800 the diameter of a stem-bore decreased and he devised a series of bar charts that provided the likely date for each bore within a broader date range. For example, a pipe with a stem-bore of 7/64” could date from between 1620 and 1710, according to Harrington’s charts, but within that range the most likely date would be 1650-1680. This system was refined in 1962 by L R Binford who presented a straight-line regression formula,  $Y=1931.85-38.26X$  where Y is the desired date and X is the average stem-bore. Binford’s formula came under some criticism in 1969 when Hanson argued that as the relationship between the date and bore was non-linear a series of equations should be used rather than a single formula.

Both the Harrington and Binford methods have been applied with some degree of accuracy for material from North America, although Audrey Noel Hume tested

Binford's formula at 13 sites in Virginia in 1963 and found that the dates given were not reliable after c1760 (Walker 1967, 94). Hume also noted that a sample of a minimum of 900-1000 fragments were necessary to 'provide a consistently reliable date' (Noel Hume 1962, 22). When applied to English material Belcher and Jarrett (1971), working at West Welpington in Northumberland, found that neither Harrington's nor Binford's method was applicable for pipes from c1720 onwards in the North-east of England. They concluded by stating that 'the Harrington method is not applicable to the dating of north-eastern pipes at this period' and that 'the median dates derived from the application of the Binford formula are almost certainly too early' (*ibid*). In 1975 a series of small groups from Chester were analysed using the Harrington and Binford methods (Davey 1975). This study showed that up to c1730 stem-bore dates, even for quite small groups, were 'reasonably reliable' (Rutter and Davey 1980, 267), however after c1750 stem-bore dates were considered to be 'very misleading' and that the method did 'not appear to be any more precise or reliable than the traditional study of bowl forms' (Davey 1975, 33-34). In 1980 Rutter and Davey published a detailed survey of the pipes from Chester. During the course of this survey there was an opportunity to test the earlier stem-bore findings by analysing a much larger sample. This analysis, of fifteen excavated groups, confirmed the findings of the earlier study and concluded that 'for most excavated groups of any size the character of the bowls present are likely to be more use than the stem-bore dates' (Rutter and Davey 1980, 268). The basis for the whole subject of stem-bore dating is that the bores become progressively smaller through time. Analysis of a group of pipes from St Stephen's, Norwich, however showed that the Norwich pipe-makers went against the national trend by using progressively thicker wires through the seventeenth century (Atkin and Davey 1985, 309-324). This example highlights a point raised by Oswald (1975, 93) who noted that 'the rate of decrease of bore diameter was subject to local variation'.

Discussions into the subject of stem-bore dating have continued since Harrington and Binford first presented their methods. These include Omwake (1967), Hanson (1971), Heighton and Deagan (1972) and Alexander (1979 and 1983). In the absence of datable bowls the analysis of stem-bores can provide a reasonable date

range, albeit a wide one, but as Oswald (1975, 94) points out, it is unlikely that in a sample of sufficient size to produce a reliable stem-bore date there would be insufficient bowls to provide a reasonably reliable date to within 30 years.

Assuming that at any given period all pipe-makers used roughly the same diameter wire to produce the bore, there were a number of actions during the production process that could distort or alter the bore, which should also be taken into account. The most obvious is the use of two wires, a moulding wire, which was used to create the bore, and a trimming wire, which was used to add strength to the pipe in its leather hard state during trimming. In Jung (forthcoming) there is an account of pipe production covering every step from the preparation of the clay to the removal of the fired pipes from the kiln, written by John Pollock in 1952. This account includes a description of a moulding wire, one end of which had a wooden handle. The account goes on to say that the other end was 'to be burred with a file to make what is called a *button*. This button on the wire makes it easier to wire the roll and to clear the hole when the wire is drawn out. If the wire has no button on it, the hole will suck or shrink when the wire is drawn out'. From contemporary accounts of pipe production it is known that as the moulding wire became worn one end was to be rounded by a hammer in order that the clay could more easily be drawn onto the wire. The stem-bore would therefore vary as the button became worn down, and would change again when it was freshly burred over. The insertion of the trimming wire, no matter how carefully, provides the potential for the bore to be distorted again. A bowl fragment from Queen Street in Hull (Pcode 6410) (Figure 7.1) illustrates what can happen when the trimming wire is incorrectly inserted - it has two bores one 6/64" the other 7/64". The smaller bore may well have resulted from compression of the surrounding clay as the second hole was made.

In 1954 Harrington noted that an examination of the long stem fragments in his sample showed that the diameter throughout was constant, the only exception occurring at the mouthpiece end where the hole was enlarged by the action of removing the wire. Harrington (*ibid*) does not say how far along the stem this distortion goes. In order to try and assess the extent of any distortion a group of pipes from a kiln site in Bridge Road, Broseley, Shropshire dating from c1720 was



*Figure 7.1: Pipe bowl recovered from excavations at Queen Street, Hull (HQS90 (98)) showing two bore holes. Photograph by P Rayner.*

examined. This site produced a large number of joining fragments, which meant that the bore could be measured at intervals along the length of the stem. In total ten bowls with joining stem fragments were analysed, each pipe reconstructed to between 47mm and 260mm from the back of the spur to the end of the broken stem. In each case there were between two and five breaks at which point the bore could be measured. Every break produced a measurement of  $5/64''$ . A similar exercise was carried out with a group of mouthpieces and joining stem fragments from the same kiln group. A total of eight reconstructed mouthpiece and stems were examined, with overall lengths measuring between 23mm and 219mm. As with the bowls there were at least two and as many as six breaks in the reconstructed sections. The mouthpiece ends did show a slight variation in stem-bore diameter in that two of the examples measured  $5/64''$  at the very tip with an increase to  $6/64''$  at the first break before narrowing again to  $5/64''$  by the second break. In both instances, however, this variation occurred within 30mm of the tip and all of the other breaks measured  $5/64''$ . This sample suggests that the stem-bore tended to be uniform for all but its very last section. The mouthpiece end would have been handled as the moulding and trimming wires were withdrawn, which may have resulted in the bore becoming enlarged at this point as the clay was squeezed against the wire. Overall, however, the degrees of variation found within the stem-bore of any one pipe was very slight and supports Harrington's assertion that the bore was uniform apart from the tip.

Analysis of the material from Yorkshire has identified examples where bowls from the same mould, and therefore presumably produced by the same maker, have

different sized bores. For example two bowls were recorded in the Wilberforce House Museum Hull, both from the same mould (Pcode 8136 and Pcode 8138), one had a stem-bore of  $8/64$ " while the other had a bore of  $5/64$ ". Although this shows that one maker may have been using different sized wires in his workshop it does not, however, suggest that there was significant differences along the bore of a single pipe.

There is no doubt that the basic theory behind stem-bore analysis is sound, in that it identifies the gradual decrease in the size of the bore over time, although there are clearly some exceptions, as demonstrated by the Norwich group from St Stephens (Atkin and Davey 1985, 309-324). The main disadvantage of the theory, however, is that it tries to encompass a wide range of regional, chronological, production and human variables within a single mathematical formula. Pipe-makers were practical people who would have used whatever they could most easily find for the wires that would produce the stem-bores. Even as recently as the twentieth century pipe-makers are known to have been using the wires from old umbrellas to produce a stem-bore (Gordon Pollock, *pers comm.*). There is no reason to believe that the earlier makers would have been any less resourceful. In spite of these various drawbacks, however, stem-bore analysis can clearly contribute to the dating and interpretation of groups of clay tobacco pipes especially if it is used in conjunction with other techniques.

In order to consider the use of stem-bore analysis with regard to material from Yorkshire two studies have been carried out. The first looks at clay tobacco pipes recovered from excavations at Pontefract Castle, in particular those fragments recovered from the lower fills of a garderobe shaft (Contexts 97, 99, 103 and 106) and those from a countermineshaft (Contexts 113, 115 and 209) all dating to the Civil War occupation of the site (c1644-1649). The count of bowls (B), stems (S) and mouthpieces (M) for the stems bores  $9/64$ " to  $6/64$ " from each of these seven contexts is given in the Table 7.1.

	9/64"			8/64"			7/64"			6/64"			
Ctxt	B	S	M	B	S	M	B	S	M	B	S	M	Totals
097		1		2	2		5	4	1		1		16
099					13	3	26	100	3	16	24		185
103				3	6	1	29	55	3	3	6		106
113						1	4	10	1	1	4		21
115							2				3		5
209				1	2		15	14		8	11		51
<b>Totals</b>	<b>0</b>	<b>1</b>	<b>0</b>	<b>6</b>	<b>23</b>	<b>5</b>	<b>81</b>	<b>183</b>	<b>8</b>	<b>28</b>	<b>49</b>	<b>0</b>	<b>384</b>

*Table 7.1: Count of bowls, stems and mouthpieces for stems bores 9/64" to 6/64" for bowls from the Civil War countermine shaft and garderobe at Pontefract Castle.*

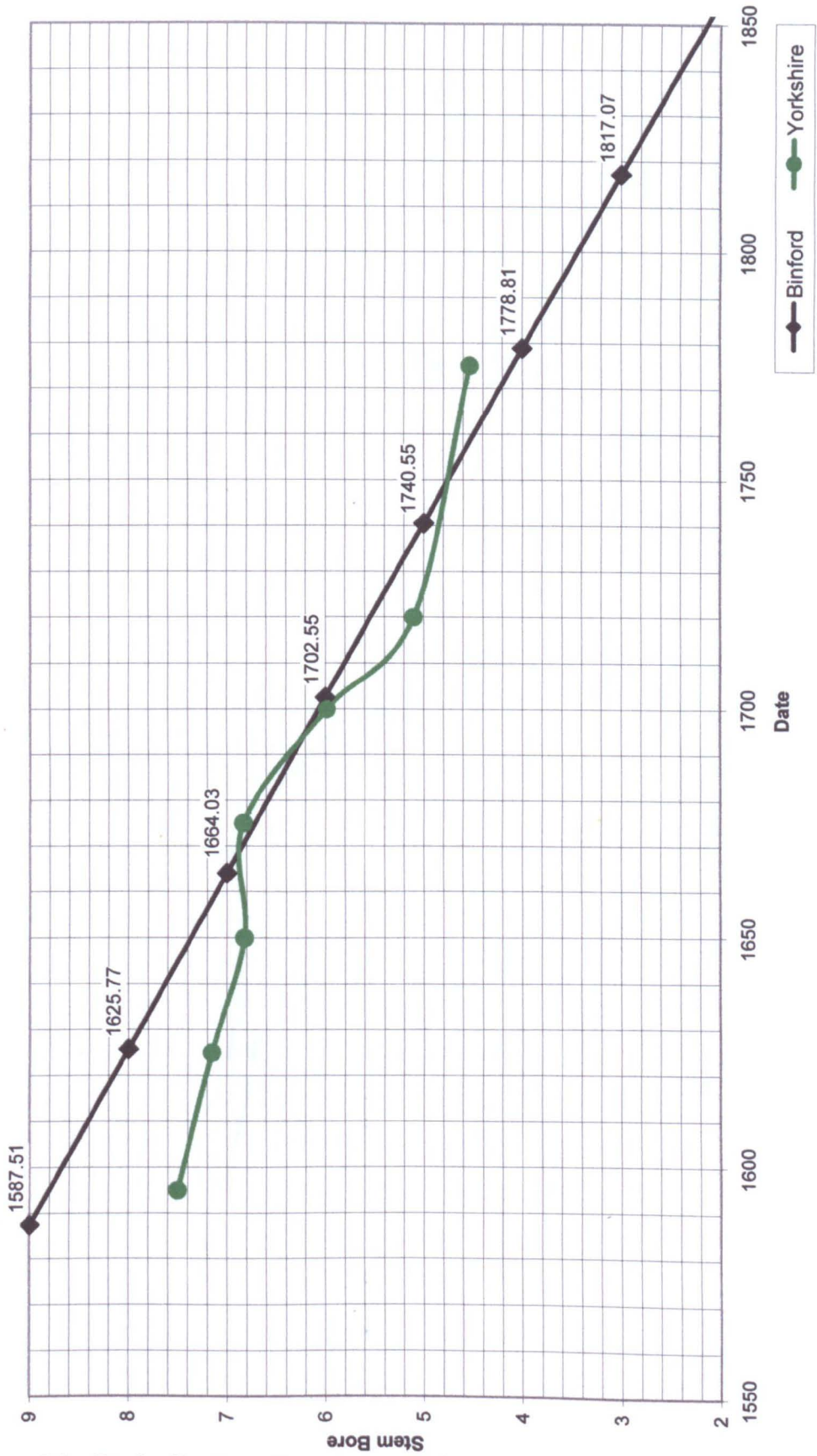
By using the figures in the above table it is possible to obtain an average stem-bore of 6.91/64" for all fragments. By using Binford's method this translates to a median date of 1667 ±15 (1659-1674). If the same calculation is done for the bowls only, an average stem-bore of 6.80/64" is obtained which translates into a median date of 1671 ±15 (1664-1679). Although both dates clearly fall outside of the Civil War period, it is clear that there is a difference of only 0.11/64", translating to a median date of four years, between the sample that contains all fragments and that which contains just the bowls. With the exception of the excavated material from Pontefract castle, few well-dated groups have been recorded for this present research. The examination of the Civil War sample from Pontefract suggests that there is very little difference between groups comprising bowls, stems and mouthpieces and those with just bowls. This shows that at Pontefract the stem-bore analysis produced a completely erroneous date for the pipe group. It also shows that there was a negligible difference between the median date produced by analysis of the whole group and from analysis of the bowls only.

The second test, therefore examined all the bowls and marked stems with measurable bores recorded from the county for this present research, excluding those fragments that were clearly imported. These counts were translated into percentages of the whole sample for the seven broad date ranges.

For ease of comparison, Binford's straight-line regression formula was used. In order to make the Yorkshire material comparable the mid-point of the date range for each bowl was chosen, for example for a bowl dated to 1640-1660 the mid-point date of 1650 was used, and for 1690-1720 the date of 1695 was used etc. The average bore for the Yorkshire material was calculated using the formula  $Z=XY+X$  where Z is the average bore, X is the number of examples for any given bore and Y is the size of the bore. Figure 7.2 shows the relationship between Binford's bores and dates and those for the county of Yorkshire as a whole. It is clear that the closest correlation between Binford's dates and those for the Yorkshire material only really occurs between about 1650 and 1700. The relatively small sample sizes for the earliest and latest pipes may skew the data slightly, but even if these figures are discounted there is still a marked difference between the bores and dates suggested by Binford method and those in the Yorkshire sample.

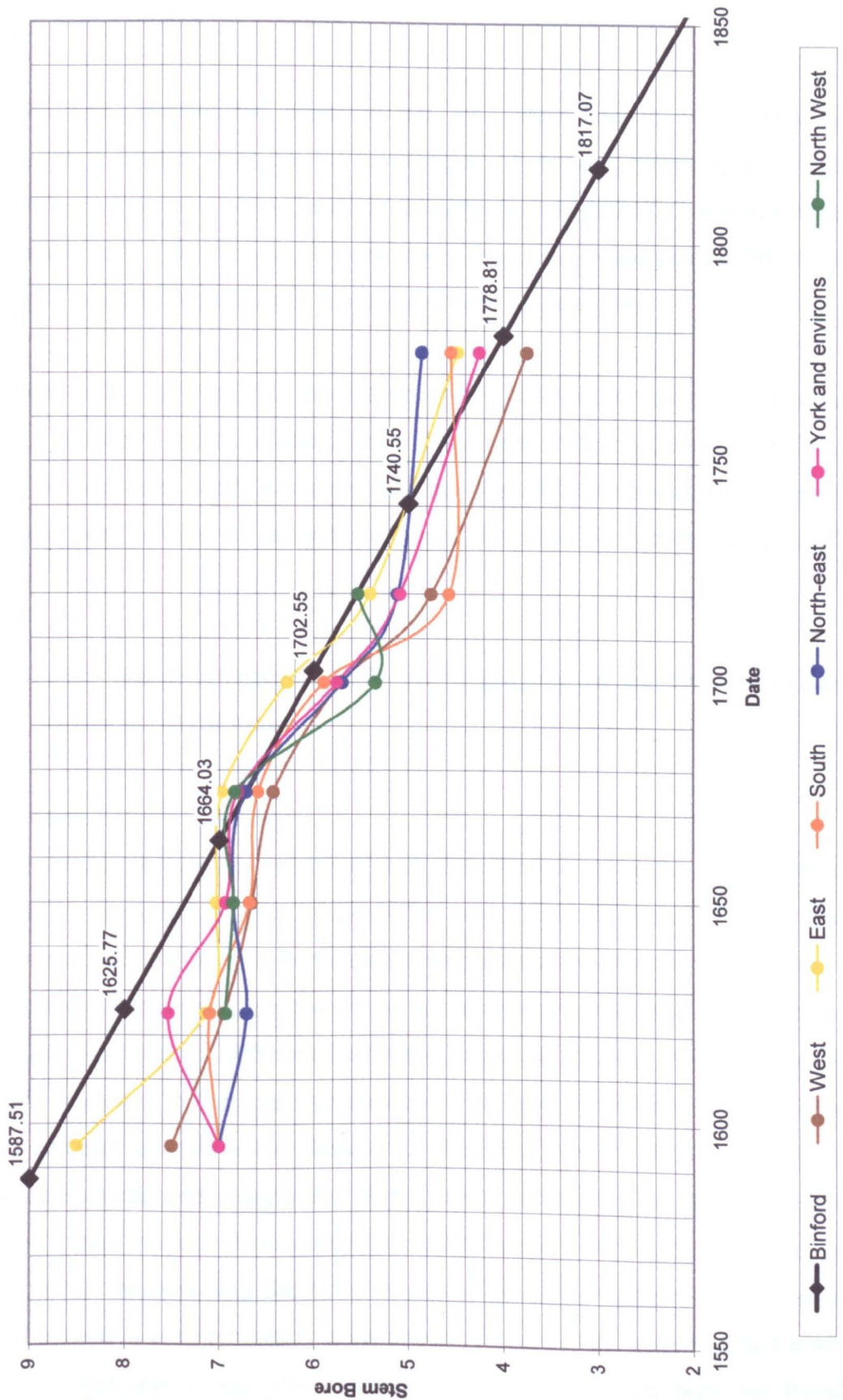
By treating the bores for each of the six geographical sub-divisions in the same way it is possible to see what the variation is within the county itself (Figure 7.3). This figure clearly shows that there is marked regional variation at any given period. For example the bore for a pipe dating from c1625 ranges from between 6/64" and 7/64", and for a pipe dating from c1700 between 5/64" and 6/64". Interestingly the graph shows that in Yorkshire, the same stem-bore occurs over a quite long time period. For example, this study has shown that pipes with a stem-bore of 7/64" were produced over a period of nearly a century between c1595 and 1675. In contrast, pipes with a 6/64" bore were only found from between c1690 and 1705.

The variation between the six geographical sub-divisions within Yorkshire becomes even more evident when the actual number of examples is plotted for each individual bore (Figures 7.4 and 7.5). If the figures for the earliest and latest date range are ignored on the grounds that they are too small to be statistically valid, general trends can still be seen. These charts highlight the use of a given bore over time for the different areas within the county. The chart for a bore of 8/64" for example (Figure 7.4, middle), shows that for the period 1610-1640 this particular bore size is most commonly being used by the makers in and around York, whereas



*Figure 7.2: Binford's Line Regression with the average bores for the whole of Yorkshire.*





**Figure 7.3** Binford's Line Regression with the average bores for each of the six geographical sub-divisions within Yorkshire.

those makers in the rest of the county are more commonly using a bore of 7/64” at the same period (Figure 7.4, bottom).

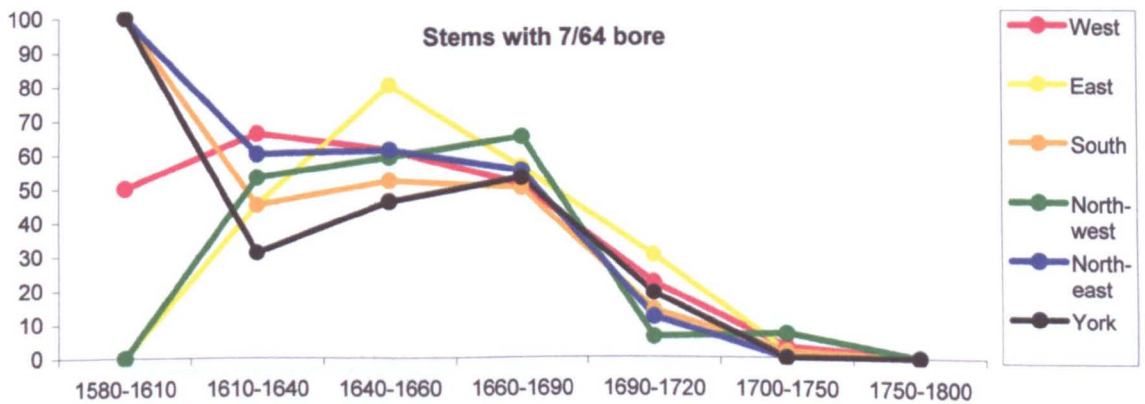
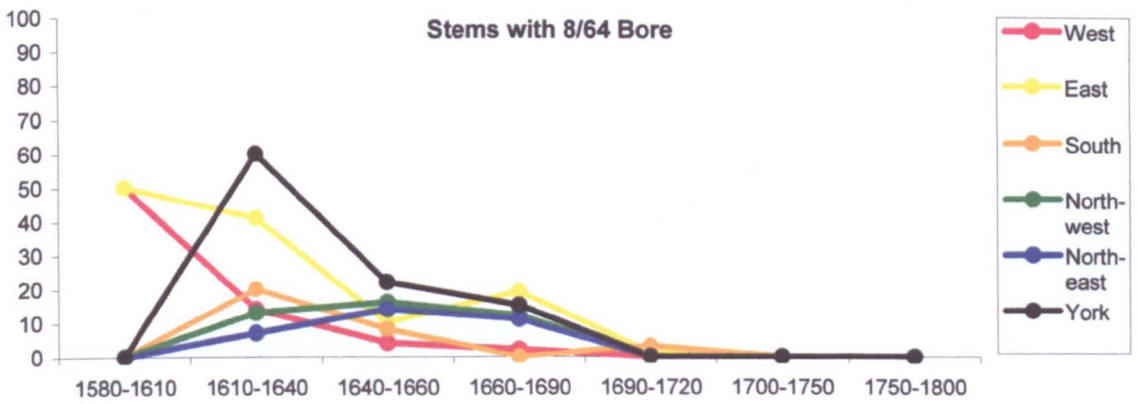
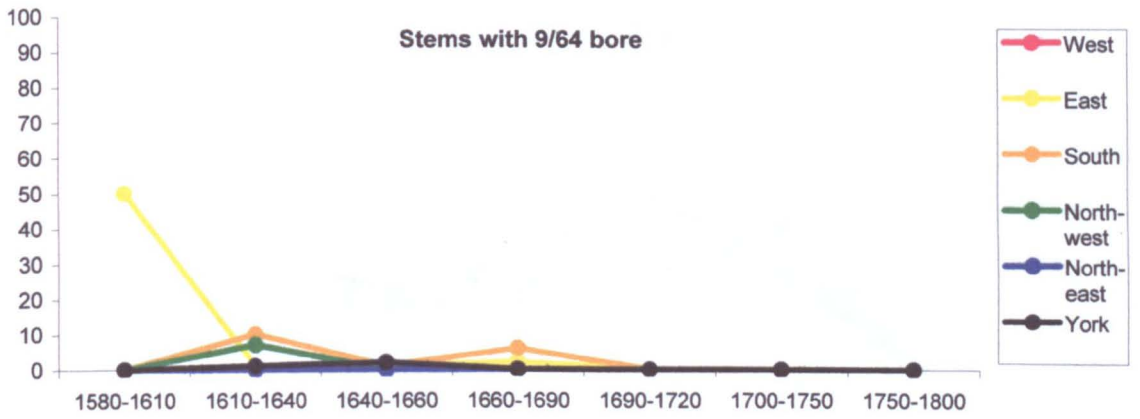
Using Binford’s method, the suggested date for a mean bore of 4/64” would be 1778.81, the Yorkshire graph for this bore (Figure 7.5, bottom) however, shows that there are some examples of this bore size from the period 1690-1720, particularly in and around York. The number of occurrences then rises in the period 1700-1750 with 4/64” being most common in the east and west of the county

Fragments with a bore of 3/64” are extremely rare and for the whole of Yorkshire only six examples were recorded, three from East Yorkshire, one from West Yorkshire, one from South Yorkshire and one from the north-east of the county. Given the small number of examples no individual chart was produced for 3/64” bore.

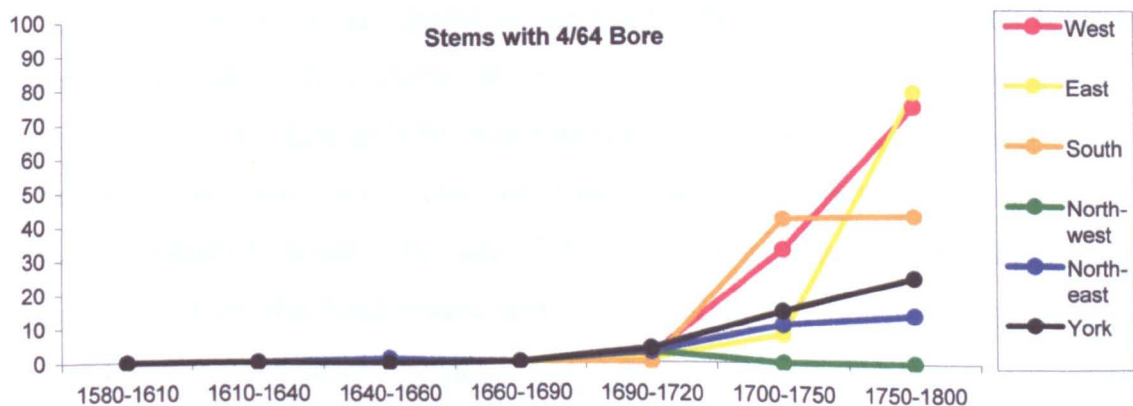
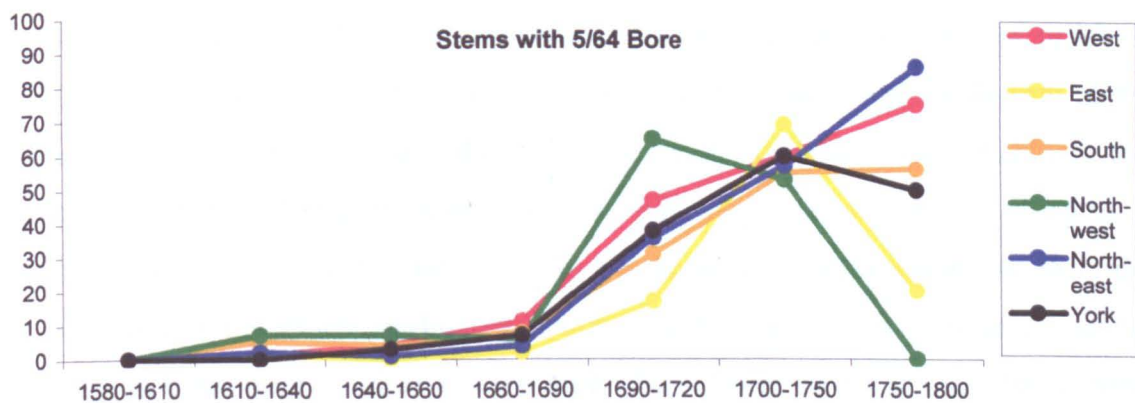
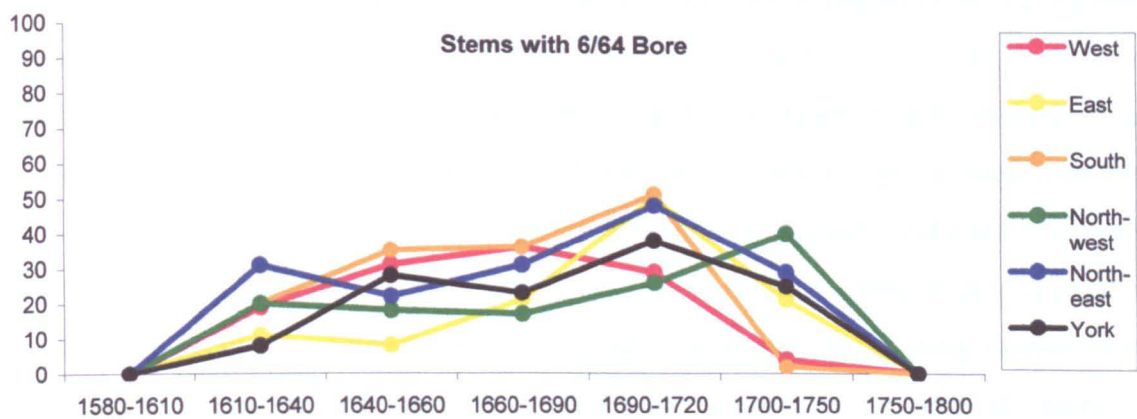
The full count and percentages for each bore by geographical sub-division is given in the Data Summaries in Appendix 7.

### **7.1.1 Stem-bores – summary**

The debate over the use and validity of stem-bore analysis is one that will no doubt continue in the world of pipe research for many years to come. The general consensus of opinion seems to be that large samples are required if the results are to be considered reliable and only then in particular areas. Researchers also appear to be in agreement over the different factors that can affect the bore itself, such as the methods employed in the actual production of the pipe and in the variability that almost certainly existed in the diameter of the wires used by the actual makers. There is also evidence to suggest that there is some variation in the bore of a single pipe and further work on these variations would clearly be useful. The evidence of the Pontefract analysis and the Broseley study, however, suggests that variation along the stem is not particularly pronounced. In particular, the Pontefract study has shown that only a very small difference in the median stem-bore was found when just the bowls as opposed to all the fragments were measured. This shows that comparable stem-bore data can be gathered from bowl fragments alone. As a



**Figure 7.4:** Plots of the percentages for each of the six geographical sub-divisions in Yorkshire for 9/64" bore (top), 8/64" bore (middle) and 7/64" bore (bottom).



**Figure 7.5:** Plots of the percentages for each of the six geographical sub-divisions in Yorkshire for 6/64" bore (top), 5/64" bore (middle) and 4/64" bore (bottom).

general rule, the dating of stems is not based simply on the size of the bore but on a number of contributing factors. If presented with a stem fragment for dating the overall appearance of the pipe is a contributing factor; how thick or thin is it? Is it circular or more oval in section? Does it have a marked taper? Is it burnished? If a stem is thick with a marked taper and is burnished it is most likely to date from the seventeenth century irrespective of the size of the bore. Equally if the stem is quite thin, with parallel sides and no burnish or taper it is most likely to date from the nineteenth century. Experience shows that it is these contributing factors that determine the age of a particular fragment not the diameter of the stem-bore alone.

By plotting the Yorkshire material against the straight-line suggested by Binford the intention was neither to prove nor disprove his basic theory, it was simply to show that for Yorkshire at least, this method of dating stem-bores is not very reliable. The purpose of this analysis was to examine the raw data from the present study area in order to try to reassess the validity of stem-bore theory. This study has, for the first time, looked at stem-bores over a wide geographical area. By doing so it has shown that Binford's theory is too simplistic and inappropriate for material from within the present study area, which exhibits regional variation and where a range of bores were in use at any one time. These bores do not change at a set pace over time and so a simple straight line regression will not work, a curved line provides much more realistic results.

As an alternative for the dating of stem-bores from Yorkshire, a date band is suggested (Figure 7.6) whereby for any given date or bore a likely range is given. For example for a date of 1650 an average bore size of between just over 6/64" and just over 7/64" could be expected, alternatively an average bore size of 6/64" would suggest a date of between 1682 and 1706. Rather than present a single date for any given stem-bore, this band system provides at date with a  $\pm$  figure in much the same way a radiocarbon dates. Suggested date ranges for Yorkshire during the period c1580-1775 are therefore presented in Table 7.2.

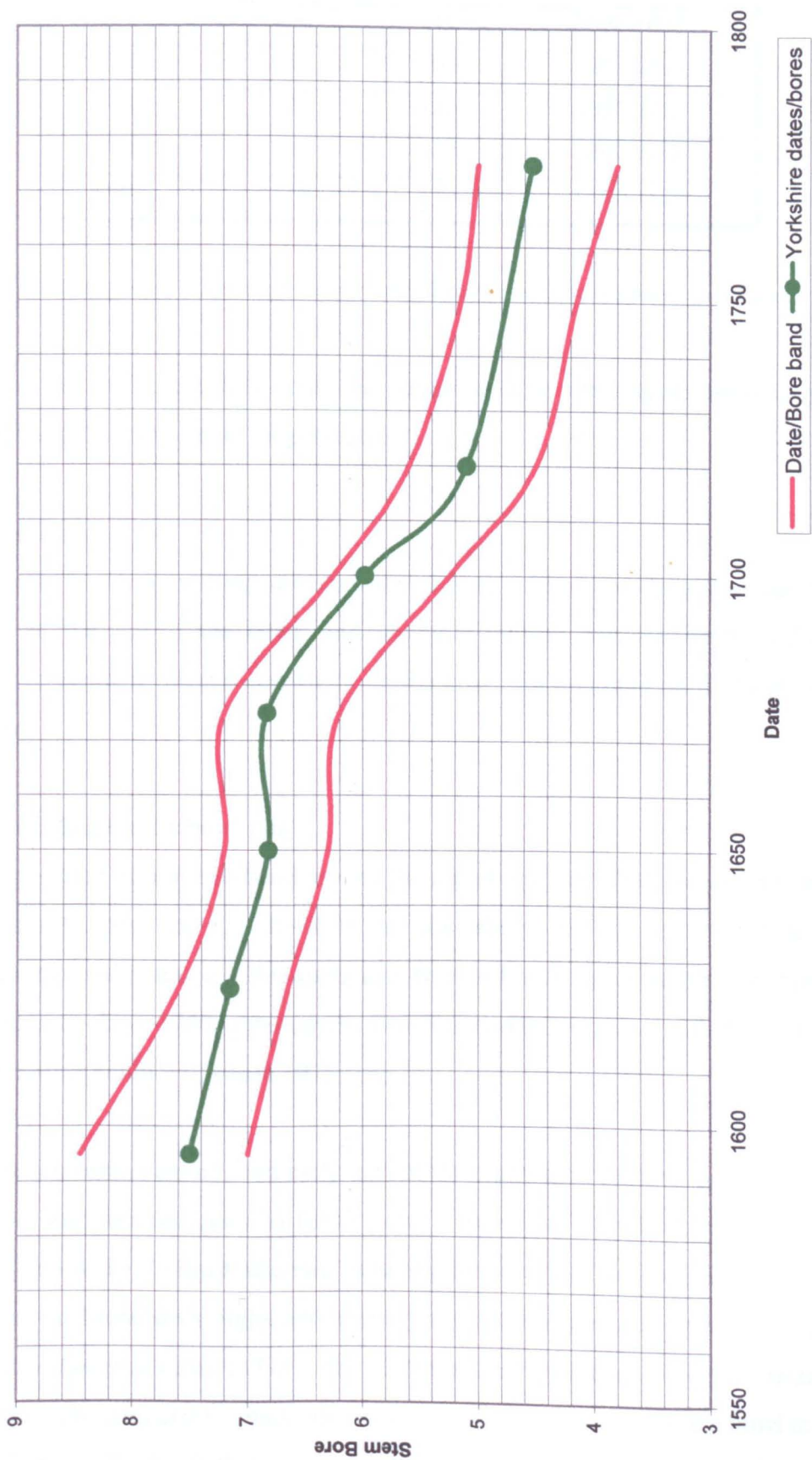


Figure 7.6: Suggested date/bore band diagram.

<b>Stem-bore</b>	<b>Median Date</b>	<b>± Years</b>	<b>Overall Date Range</b>
8/64"	1600	±15	1592-1607
7/64"	1650	±90	1605-1695
6/64"	1700	±25	1687-1712
5/64"	1720	±75	1682-1757
4/64"	1775	±15	1767-1782

*Table 7.2: Suggested date ranges over which particular bores were produced.*

Provided that sufficient data could be collected from other areas from England similar band diagrams could be generated.

## **7.2 Milling**

Two main forms of milling are considered here. Firstly milling that has been applied to the rim of the bowl, and secondly milling that has been used as a decorative element placed elsewhere on the bowl, for example on the heel, or on the stem.

### **7.2.1 Milling on the bowl rim**

The application of a milled band around the top of the bowl does not appear on the very earliest pipes, that is 1580-1610, but after about 1610 its use around the rim became standard practice. This particular type of finishing technique continued in England until about 1700, although the Dutch manufacturers used milling well in to the nineteenth century (Oswald 1975, 19).

In the seventeenth century, and early part of the eighteenth century, pipe rims were smoothed and rounded prior to firing using a technique called bottering. Walker (1977, 1563 & 1571) illustrates two bottering tools both of which first appeared in Duhamel du Monceau's eighteenth-century treaties on pipemaking *L'Art de faire les pipes à fumer le tabac* (1771). The first was used by French pipe-makers and is referred to a bouton and is 'made of copper or horn' and is 'set over the bowl mouth and turned to smooth off the bowl lip'. The second was used by pipe-makers from the Netherlands and is referred to as a button or botter. Although quite different in

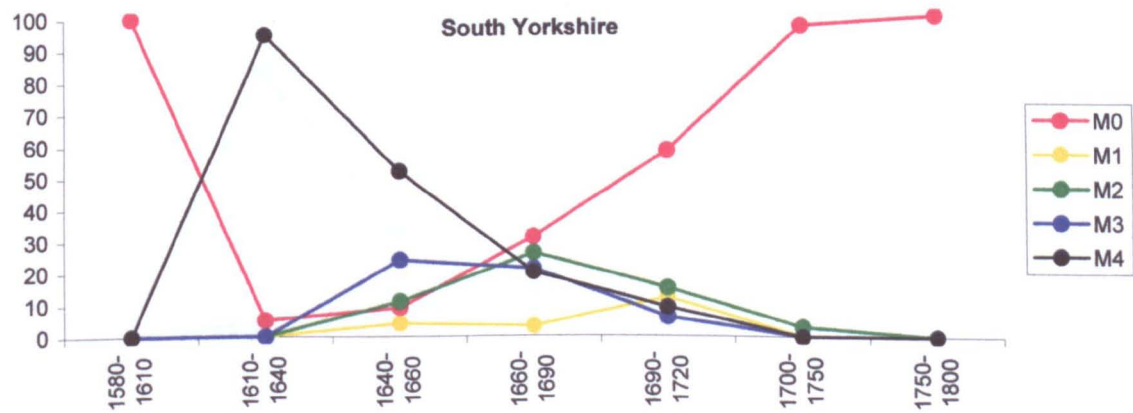
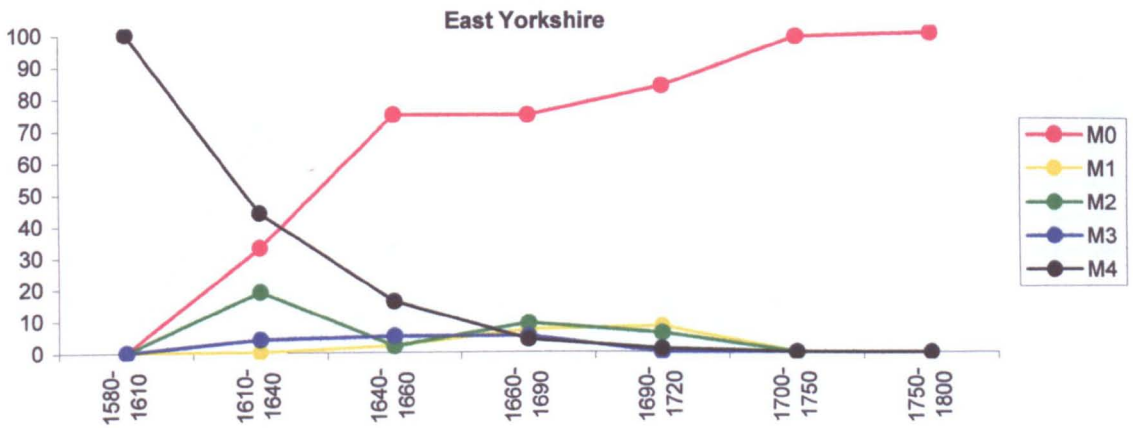
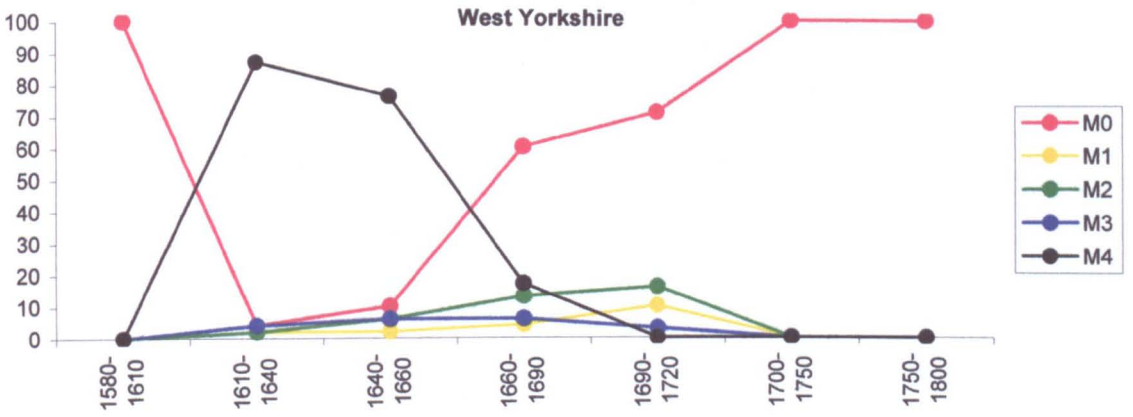
appearance both objects were used in the same way, that is, they were placed over the top of the pipe bowl and then rotated. This action had the effect of smoothing and shaping the clay to give a neat profile and regular finish to the rim of the pipe. When milling does occur on the pipe it is almost always associated with a bottered rim.

There do not appear to be any archaeologically excavated bottering or milling tools in the British Isles and it is a little unclear how milling was applied to the rim of the bowl. Oswald (1975, 19) suggests that the bottering tool illustrated by du Monceau may have had a milled edge that would have applied a milled band around the rim at the same time as smoothing off the top of the bowl. However, the description of the bottering tool clearly states that the tool had to be rotated over the top of the pipe bowl. If the tool had a milled edge the rotation action would create a groove rather than a clear band of milling. Walker (1977) illustrates a number of the du Monceau plates, one of which includes a knife used for trimming both the bowl and the stem. This particular tool also has a 'serrated edge on the back to make the denticulation round the rim of the bowl' (*ibid*, 1570), and this would seem to be the most likely means by which milling was applied.

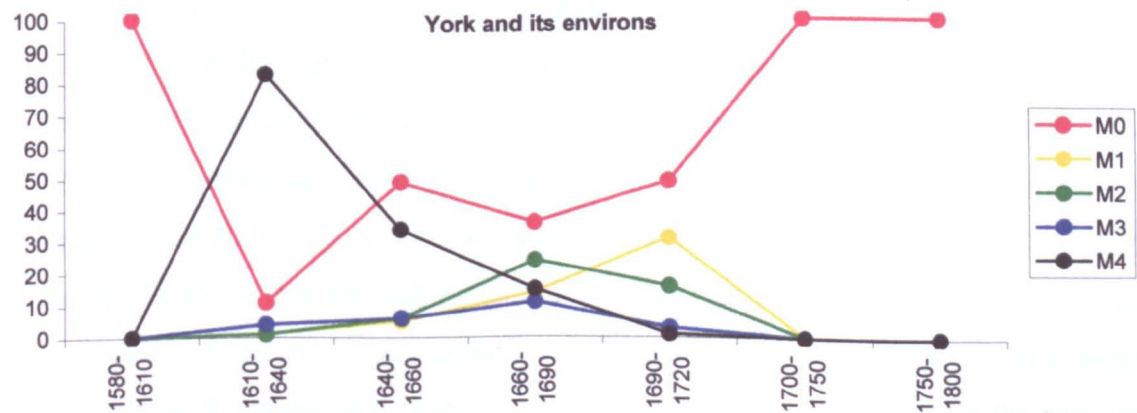
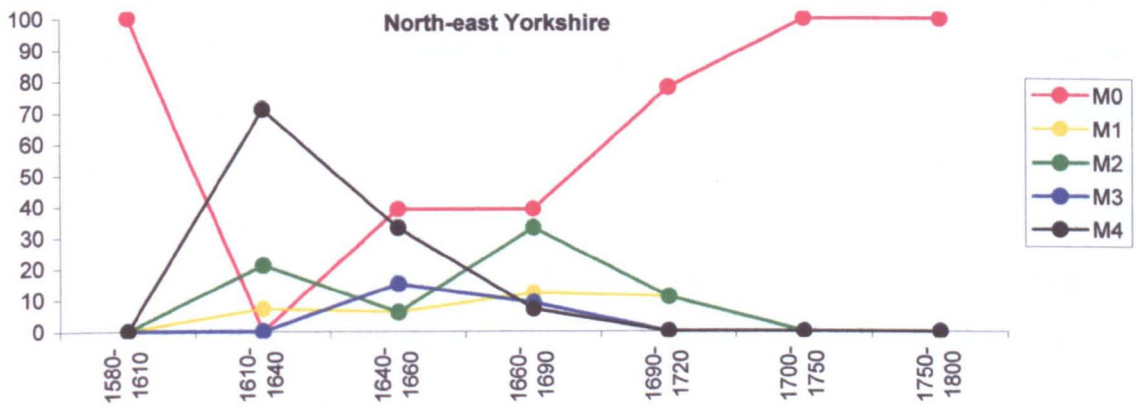
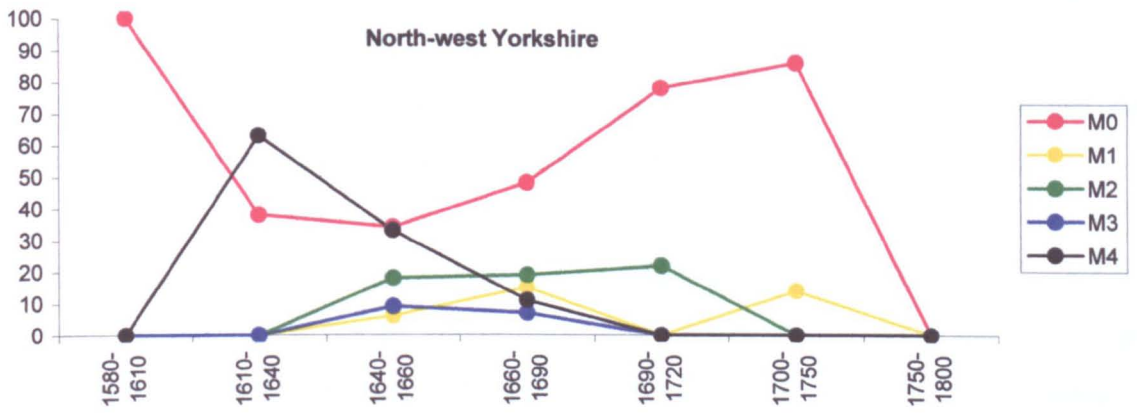
One of the attributes recorded for this study was the amount of milling present on the bowl rim. All the rims were examined and their milling index recorded. These indices are as follows:- (0) is no milling, (1) is one-quarter milled, (2) is half milled, (3) is three quarters milled and (4) is fully milled. For each geographical sub-division there are a number of bowl fragments where the rim is missing and therefore the milling cannot be determined, or where the rim is damaged making it difficult to determine the exact extent of milling. Therefore, for the purposes of this analysis only those rims that were complete and that are clearly not imports into the county are included.

By plotting the milling index for each period by area (Figures 7.7 and 7.8) it is possible to see how those indexes change over time. What these figures show is that, for each area, the amount of milling round the rim decreases over time and that from around 1700 onwards bowls are almost exclusively unmilled. The sample size





**Figure 7.7:** Plots of the percentages for each milling index from West Yorkshire (top), East Yorkshire (middle) and South Yorkshire (bottom).



**Figure 7.8:** Plots of the percentages for each milling index from North-west Yorkshire (top), North-east Yorkshire (middle) and York and its environs (bottom).

from both the earliest and latest date range is very small causing a skewing of the data. If these figures are removed, however, the general trend remains unchanged. The increase in unmilled bowls as milled examples decrease over time is a phenomenon that is seen throughout England. What is interesting about the samples from Yorkshire, however, is the regional variation that is exhibited.

The graph for East Yorkshire (Figure 7.7, middle) shows that around 1610-1640 the range of variation in the amount of milling applied to bowl rims is quite wide. The majority appear to be either fully milled (44%) or unmilled (33%). Interestingly a further 19% are half milled. It could be argued that if the milling was applied quickly or in a sloppy fashion a number of the rims would be approximately three-quarters milled but this accounts for only 4% of the sample from East Yorkshire. The implication of these results is, that in East Yorkshire, whenever milling was to be applied it was generally done well, so that it went all the way round the rim, and that where pipes are only half milled, that this was intentionally so. From around 1640-1650 the number of examples with rim milling drops away quite sharply. The number of rims with partial milling for this period are negligible with only 5% three-quarters milled, 2% for both half and one-quarter milled, only 16% being fully milled. By 1700-1750 almost all rims, 99%, from East Yorkshire are unmilled.

In contrast the graph for North-east Yorkshire (Figure 7.8, middle) shows that for the period 1610-1640 most of the bowl rims had some milling. The majority (71%) were fully milled with the remaining samples either half milled (21%) or one-quarter milled (7%). There are no unmilled bowls in the sample for North-east Yorkshire at this date. From around 1640-1660 the majority of the samples are either fully milled (33%) or unmilled (39%). In contrast to the samples from East Yorkshire, however, there is a reasonably high number of rims that are three-quarters milled (15%) which may indicate that there had been an intention to apply milling fully to the rim, but the speed of the action itself meant that only a three-quarter coverage of rim was actually achieved. By 1660-1690 this picture changes slightly for the north-east of the county. Although the same number as the previous period remains unmilled (39%), there is a marked decrease in the number of rims that are fully milled (7%) and an increase in those rims that are only half milled

(33%). In the north-east of the county by around 1690-1720 the number of fully milled rims has dropped to zero and by 1700-1750, as with the other areas in Yorkshire, rims are entirely unmilled.

The full count and percentages for each milling index by geographical sub-division is given in the Data Summaries in Appendix 7.

### **7.2.2 Milling elsewhere on the pipe**

In addition to milling around the rim, milling can occur elsewhere on the pipe either on the stem; across or immediately adjacent to the heel; or on the bowl itself. In order to place Yorkshire examples in some context it is necessary to consider the application of milling elsewhere on the bowl in England as a whole.

Throughout England milling, either on the stem, on or around the heel or spur, or elsewhere on the bowl, was confined to the seventeenth and early eighteenth century. This is perhaps unsurprising given that this was also the period when milling was applied around the bowl rims and, that it is generally accepted that the tool used to apply rim milling is most likely the same as that used to apply milling elsewhere on the pipe. A paucity of systematically and consistently recorded groups, however, means that inter-site comparison of data such as milling is very difficult. In addition, although the application of milling occurs throughout England it is often rather rare and therefore large groups are needed to make any realistic comparisons.

A small number of sites yielding reasonably sized assemblages of clay tobacco pipes that have been recorded in a systematic way, similar to the system employed in this current research, were selected to give an indication of the occurrence of milling on various part of the pipe. The following table presents the raw data that has been used. For each site the total number of pipe fragments in each assemblage is given (Tot As.), followed by a breakdown of bowls (Tot B), stems (Tot S) and mouthpieces (Tot M). These figures are followed by the number of bowls (B), stems (S) and mouthpieces (M) for the period 1600-1740, the period when the application of such milling is most likely to occur. The table then gives a count of

the number of milled stems (MS), bowls where the heels have been milled (MH) and bowls where milling occurs anywhere other than on the heel (MB). Each of these counts is followed by the percentage of the seventeenth-century material that that count represents for the milled stems (% S), milled heels (% H) and milled bowls (%B).

Site	Tot As.	Tot B	Tot S	Tot M	B	S	M	MS	% S	MH	% H	MB	% B
Reading Oracle, Berkshire	3749	828	2836	85	665	2502	78	2	0.08	0	0.00	0	0.00
Bewsey Old Hall, Cheshire	2687	397	2219	71	110	426	9	3	0.70	0	0.00	0	0.00
Launceston Castle, Cornwall	3438	501	2875	62	373	2614	36	14	0.54	0	0.00	0	0.00
Bestwall Quarry, Wareham, Dorset	1250	217	1009	24	216	984	21	6	0.61	3	1.39	0	0.00
Portland Castle, Dorset	149	20	121	8	18	109	7	0	0.00	0	0.00	0	0.00
Camber Castle, East Sussex	457	100	352	5	41	122	2	1	0.82	0	0.00	0	0.00
Southchurch Hall, Essex	724	116	598	10	50	461	4	1	0.22	0	0.00	0	0.00
Layers 18-20, Rainford, Merseyside	7536	1003	6007	526	1003	6007	526	23	0.35	0	0.00	2	0.19
Oxford Castle, Oxfordshire	763	186	564	13	139	541	12	1	0.18	0	0.00	0	0.00
Sackler Library, Oxford	163	34	120	9	17	97	6	0	0.00	0	0.00	0	0.00
Tutbury Castle, Staffordshire	274	49	217	8	44	173	7	0	0.00	0	0.00	0	0.00
Pontefract Castle, West Yorkshire	3420	766	2498	156	544	1486	61	6	0.40	79	14.52	0	0.00
Sandal Castle, West Yorkshire	1551	310	1200	41	310	1170	34	2	0.17	34	10.97	2	0.65
Wood Hall Moated Manor, West Yorkshire	1936	294	1606	36	221	2217	11	0	0.00	2	0.90	0	0.00

*Table 7.3: Number of seventeenth- and early eighteenth-century milled stems, heels and bowls from a selection of English sites.*

In the following sections the application of milled bands to the stem, on or around the heel or spur, and the bowl are considered in turn looking first, at the evidence for England and concluding with an analysis of the evidence from Yorkshire.

### 7.2.3 Milled stems

The application of milling on stems appears to occur either as a means of disguising damage caused to the stem during production (Higgins 1982, 204), or as a purely decorative element (Davey and White 2002, 226-249).

Occasionally pipes are recovered where a band, or bands, of milling have been applied over a distorted or bulging area on the stem in an attempt to disguise damaged caused to the stem prior to firing. Such examples have been recorded from Staines in Surrey (Higgins 1981, 286 Fig 45.9) and Gloucester (Peacey 1996).

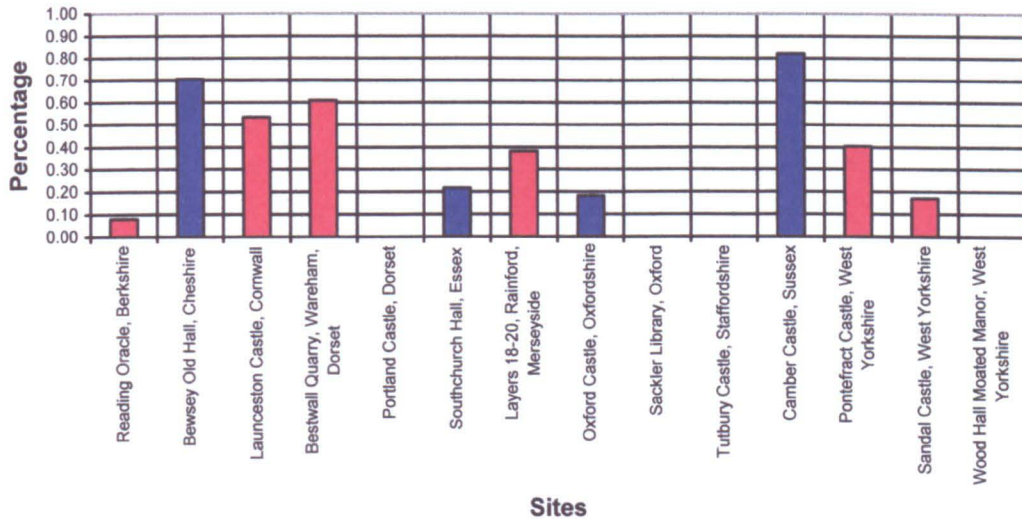
There are no known examples from Yorkshire where milling has been used in this way.

More commonly stems were milled to produce a decorative effect. This could range from a single band of milling to more elaborate designs comprising a combination of vertical and diagonal bands. Parsons (1964, 248) suggests that such designs may have been used as a means of indicating the balance point of the pipe. This is clearly not the case, however, with either a group from Quay Street, Gloucester (Peacey 1996, 243) or a group from Rainford (Higgins, 1982, 206). In both instances pipe fragments were recovered with milling occurring at various places along the full length of the stem.

By surveying published pipe reports it is clear that milled stems do occur throughout England with odd examples having been noted from Surrey (Higgins 1981), Lincoln (Mann 1977), Gloucester (Peacey 1996), Sussex (Higgins 2001a), Chelmsford (Peacey 1996), and Coventry (Muldoon 1979). Occasionally milled bands are applied to stems in conjunction with stamped marks thereby creating a much more elaborate decorative motif. For example, the excavations at Launceston Castle in Cornwall (Higgins, forthcoming C) produced two bowl fragments, both stamped with a CB mark on the heel. This is a previously unrecorded maker believed to have been working in or around Launceston. In addition to the stamped heel, the stems have a latticework of milled bands with a small stamped motif applied to the blank diamond-shaped areas on the stem created by the milling. This combination of milled bands and stamped marks appears to be rather rare and may well be an indication of a particular style of decoration peculiar to Cornwall.

The number of milled stems recorded from three sites in Yorkshire together with those from a number of sites in the rest of England is given in Table 7.3 above. By plotting these figures on a bar chart it is possible to get a clearer picture of how common this form of 'decoration' was. The bars in red are the samples where there are 800+ fragments, those bars that are in blue indicate the samples with fewer than 800 fragments.

It is clear from the chart below that the percentage of milled stems from a range of sites in England is very low, less than 1% for all the sites examined. If, on average there is less than one milled stem in every 100 plain stems then the larger the sample, the more reliable the results. As small samples could easily skew the data, samples of at least 800 to 1,000 fragments are required to give a reasonably accurate indication of frequency.



**Figure 7.9:** Percentage of milled stems for the period c1600-1740 from a range of sites throughout England. The different coloured bars denote sample size - blue is less than 800 and red is more than 800.

The three Yorkshire sites where all the fragments were available for study are all in West Yorkshire. They are Wood Hall Moated Manor, which yielded 933 seventeenth-century stems, Pontefract Castle, which yielded 1,486 seventeenth-century stems, and Sandal Castle, where there were 1,150 seventeenth-century stems.

In addition to the sites listed in Table 7.3 there is one site, which has yielded an unusually high number of milled stems, but that was not included in Figure 7.9 as the percentage was so much higher than the other sites, as to render them difficult to read. The site is Quay Street in Gloucester, which produced 6,415 clay pipe fragments of which 107, or 1.6%, had milled bands (Peacey *in litt.*). Given the figures that have been produced for other sites in England (see Figure 7.9) it is clear that this site stands out as being something quite different. A preliminary analysis of

milled stems in England does not suggest that a figure of 1.6% was the norm for Gloucestershire, but that something rather unusual was happening. The site at Quay Street is a kiln and the occurrence of milled stems in such high numbers would suggest that this may simply be a foible of the particular pipe-maker in question. Only further analysis of material from around Gloucester will determine whether or not this is the case.

During the course of this research where groups of stems were available, and when time permitted, a search was made for milled stems so that a record could be made. Regrettably, most of the museum collections that were visited had a bias towards complete bowls and very few stems were retained, unless they were part of a deposit from an archaeological unit. In contrast the collections held by archaeological units often retained large collections of stems and, with limited time available to record these collections, priority had to be given to the recording of bowls and pipe fragments with stamped marks.

A type series was devised in order to record the milled stems from Yorkshire as quickly and efficiently as possible. There are seven main types (Figure 7.10) covering the patterns of milled bands most commonly encountered in the study area. Of the 101 milled stems that were recorded from Yorkshire, all but 11 were assigned a specific type. The numbers and types recorded for each area appear in the following table. The column headed 0 denotes those stems where a specific type was not recorded.

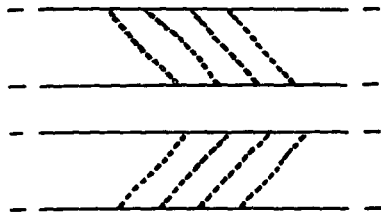
Type	W Yorks	E Yorks	S Yorks	NW Yorks	NE Yorks	York & environs
0		8	1		1	1
1		32	1			1
2	1	12				
3		2				
4	2	14			1	1
5	1	14			1	
6		3				
7						
<b>Total:</b>	<b>4</b>	<b>85</b>	<b>2</b>	<b>0</b>	<b>3</b>	<b>3</b>

*Table 7.4: Number of examples for each type of stem milling from the county of Yorkshire.*

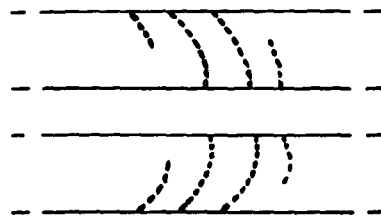




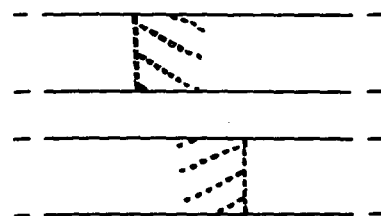
**Type 1: One or more vertical lines**



**Type 2: One or more diagonal lines (a) to the right, (b) to the left**



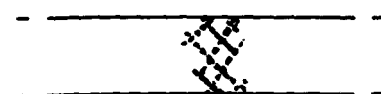
**Type 3: A spiral (a) to the right, (b) to the left**



**Type 4: One or more vertical lines with diagonal lines (a) to the right, (b) to the left**



**Type 5: Combination of vertical lines and crosses**



**Type 6: Crosses only**



**Type 7: Combination of vertical lines and a zig-zag line**

**Figure 7.10:** Type series for milled stem decoration.

The survey of milled stems in Yorkshire shows that there is a concentration in East Yorkshire. This concentration is more apparent than real as it includes a large collection recovered from fields around Beverley (The Rayner Collection). None of the plain stems recovered from these fields were retained therefore it is difficult to say with any certainty what the proportion of milled stems to plain stems would have been. The original number of stems, however, is estimated to be in the region of 19,000 (Rayner *pers comm.*), which would mean the milled stems only made up 0.4% of that total. This figure is directly comparable with those of other sites in England suggesting that although the actual count of milled stems from Beverley is very high it is not an indication that anything unusual was happening - the Rayner Collection is simply very large. What the Rayner Collection does provide, however, is an indication of the range of patterns that occurred on these milled stems.

This survey has shown that, although milled stems do occur in the county, they are neither more or less frequent than in any other part of England, and that higher numbers of examples may simply be either the result of a particular collecting policy, or the foible of one particular maker rather than a regional trend. A range of milled bowls and stems recovered from Yorkshire sites are illustrated in Figure 7.12.

#### **7.2.4 Milling on or near the heel or spur**

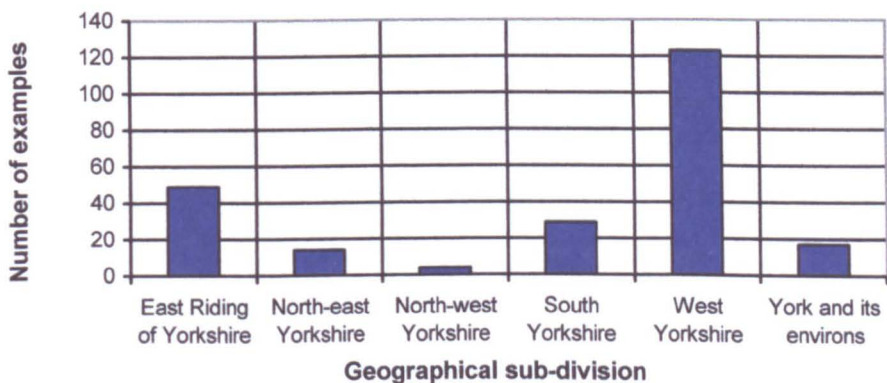
The milling on or immediately adjacent to the heel or spur appears to be far less common throughout England. In the survey of UK sites listed in Table 7.3 above the only site to yield milled heels, outside of Yorkshire, was Bestwell Quarry near Wareham in Dorset (Higgins, forthcoming D). This particular site produced just three examples, 1.39% of all the seventeenth-century bowls recovered, with a date range of 1610-1700.

A survey of published material revealed a group of pipes with milled heels from Vicars' Court, Lincoln (White 1979c). This group comprised a number of pipes recovered from the lowest fill of one of the garderobe towers to the rear of the college of Vicars Choral at the Cathedral. The group included seven bowls dating from 1660-1680, all with a single band of milling running across the line of the pipe

that is, from side to side. In her survey of clay tobacco pipes recovered from excavations in Lincoln, Mann (1977) includes in her catalogue eight milled heels ranging in date from 1660 to 1710, none of which are illustrated.

In addition to the Lincoln material there are a small number of isolated instances of milled heels - Horsham in Sussex (Higgins 1981, 253 fig 12.5) on a heel dating from 1680-1710; Spalding, Lincolnshire (Wells 1979, 124 fig 1.1) on a heel dating from 1660-1680; the Boston area (*ibid* fig 1.8) on a heel dating from 1680-1730 with the moulded initials of a unknown maker (TC) on the sides of the heel; Suffolk (Higgins 1985c, 297 fig 4.58) with a milled cross on the heel of a bowl dating from 1660-1680; and an unprovenanced bowl in the Newarke Houses Museum, Leicester (*ibid* fig 4.57) with a single band of milling on the heel of a bowl dating from 1660-1680.

The number of published milled heels contrasts quite markedly with the number recorded in Yorkshire for this present research, a total of 232 examples. A breakdown of that total by geographical sub-division site is illustrated in figure 7.11 below.



**Figure 7.11:** Number of milled heels for each of the six geographical sub-divisions for the period 1600-1750.

It is clear from the chart above that there are higher numbers of milled heels in West Yorkshire than in any other part of the county, with 123 examples. This high

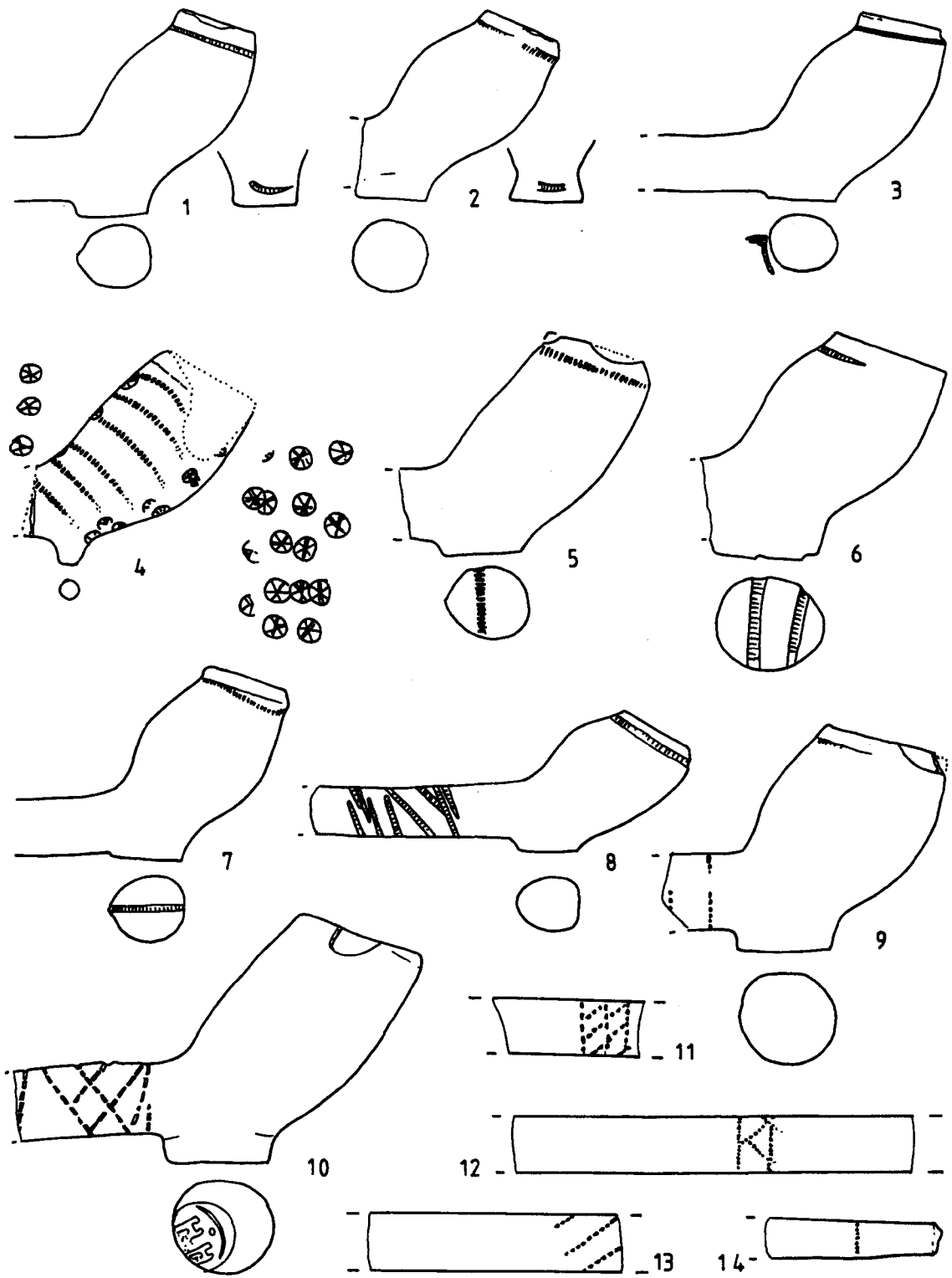
figure is due to the presence of two sites that yielded large numbers of milled heels – Pontefract Castle with 79 examples and Sandal Castle with 34 examples.

An analysis of the positioning of heel milling from Pontefract Castle and Sandal Castle show three positions where the milling was applied to the heel. The first, and most common, is across the line of the pipe, that is, from side to side. Normally a single band of milling was applied but occasionally there are two or more parallel bands (Figure 7.12, No.6). The second is along the line of the pipe, that is, from front to back (Figure 7.12, No.7). Finally, in a position that only seems to occur at Pontefract and Sandal, across the underside of the stem immediately behind the heel (Figure 7.12, No.3). There were 23 examples of this type of milling from Pontefract and 12 examples from Sandal, all on similar bowl forms, some of which may have been produced in the same mould. This is a very unusual place to apply a band of milling and appears, not only to be unique to Yorkshire, but unique to these two specific sites.

### **7.2.5 Milling on the bowl itself**

Having considered the application of milling to the stem and the heel or spur the final place where milling might occur is on the bowl itself. This is perhaps the least common of the places where milled bands occur. The definition of ‘elsewhere on the bowl’ is any position on the body of the bowl itself where milled bands have been deliberately applied as a means of decoration or in a position where it cannot be considered a sloppy application of rim milling.

There are very few published examples that show bowl milling. Higgins (1982, 205) illustrates three bowls from Rainford but in all three cases the milling is considered the result of ‘...obvious milling errors...’ rather than an attempt at decoration. From Chester, Rutter and Davey (1980, 61) illustrate a bowl with two bands of milling crossed on the bowl facing the smoker. A band of milling has been neatly applied around the rim and it is difficult to see how such an arrangements of the crossed milled bands could be considered a milling error. It is therefore most likely that this cross was a deliberate action on the part of the pipe-maker and an attempt at a simple form of decoration.



**Figure 7.12:** Examples of milled stems and bowls from Yorkshire. 1, 3, 7, & 11-14 from Pontefract Castle; 2 from Sandal Castle; 4, 5, 8 & 9 from the Rayner Collection; 6 from Doncaster; and 10 from Whitby. Scale 1:1.

In Yorkshire only nine examples where milling occurs on the bowl were recorded for this present research. Only one of these examples can clearly be called decorative. It is a spur bowl from the Rayner Collection (Figure 7.12, No.4) dating from 1650-1690. The bowl has a groove around the rim and on the stem and is decorated with seven bands of milling on the left-hand side of the bowl, and six bands of milling on the right-hand side of the bowl. In addition to the milled bands there are a number of small, randomly applied, wheel stamps. There are three of these stamped marks facing the smoker and a further 16 away from the smoker.

Of the remaining milled bowls from Yorkshire there are two with a simple band of milling facing the smoker, one from the Rayner Collection (Pcode 4084) and one from Tollesby (Pcode 25210). In both cases the additional band of milling appears to be deliberate. The milling on the remaining six bowls, however, stands out as being a little different. A small band of milling has been applied to the very base of the bowl away from the smoker. There are three examples from Pontefract Castle (Figure 7.12, No.1), two from Sandal Castle (Figure 7.12, No.2), and one unprovenanced pipe bowl from the Pontefract area. The positioning of these milled bands is rather unusual and appears to be unique to Yorkshire, more specifically to West Yorkshire.

### **7.2.6 Milling – summary**

The plots of the data collected for rim milling clearly show that, although Yorkshire follows the same basic pattern as other areas in England (i.e. the number of milled rims decreases over time to be replaced almost exclusively by unmilled rims around 1700), there are marked regional variations to be found within the county itself. Even if the low sample numbers at either end of the study period are discounted as being too small to be statistically valid, the regionalisation within Yorkshire is still very much in evidence.

With regard to milling as a possible decorative motif, it is clear that although the application of milling on stems, heels and the bowl, other than round the rim, does occur throughout England there are certain trends that appear to be unique to Yorkshire. The application of a band of milling immediately adjacent to the heel on

the underside of the stem has not been recorded anywhere else in England. It is a phenomenon that appears to occur only in Yorkshire, and more specifically only in West Yorkshire. The occurrence of such milling from just two sites in West Yorkshire, Pontefract Castle and Sandal Castle, with a proven link in the form of pipes from the same mould, strongly suggests that this particular positioning of milled bands may either be a means of keeping track of pipes finished by a particular worker, or it may simply be a foible of one particular pipe-maker.

No firm conclusions can be drawn with regard to the use of milling elsewhere on the bowl. The example from the Rayner Collection with its combination of milled bands and stamped marks (Figure 7.12 No.4) is very unusual and may simply be a one-off. It is hard to believe that any pipe-maker would find it cost effective to apply such decoration to more than a handful of pipes. As with the milled bands applied adjacent to the heel, those applied across the base of the bowl away from the smoker appear on pipes produced from a common mould with examples being recovered from both Pontefract Castle and Sandal Castle. It is therefore likely that these milled bowls were produced in the same workshop.

### **7.3 Burnishing**

The process of burnishing was carried out once the pipes had been trimmed and prior to firing. In his discussion of the manufacturing techniques used in continental Europe, Walker (1977, 125) refers to a conical 'pencil' of glass or agate set in a wooden handle that was used to burnish pipes. The process produced very fine lines and, if done well, the individual burnish lines are very difficult to see. This was a time consuming part of the manufacturing process and resulted in a more expensive pipe.

In their study of the Bristol pipe industry Jackson and Price (1974, 84) illustrate an advertisement for tobacco pipes. This advert offers for sale the best long tobacco pipes unglazed, that is not burnished, at 4s 6d per gross and glazed, that is burnished, at 5s 0d per gross, an increase in price of 6d (10%) per gross. The cheapest grade of burnished pipes being advertised were 2s 6d unglazed, or 3s 0d glazed, an increase of nearly 17%. These figures show that it always costs 6d per

gross to have the pipes glazed but the actual proportion of the cost that this represents varies because the most expensive pipes, which were presumably the longest, cost more initially. The Bristol advert provides a rare example where comparative prices are given, and from this it is possible to suggest that burnished pipes would have been between 10% and 20% more expensive ordinary ones.

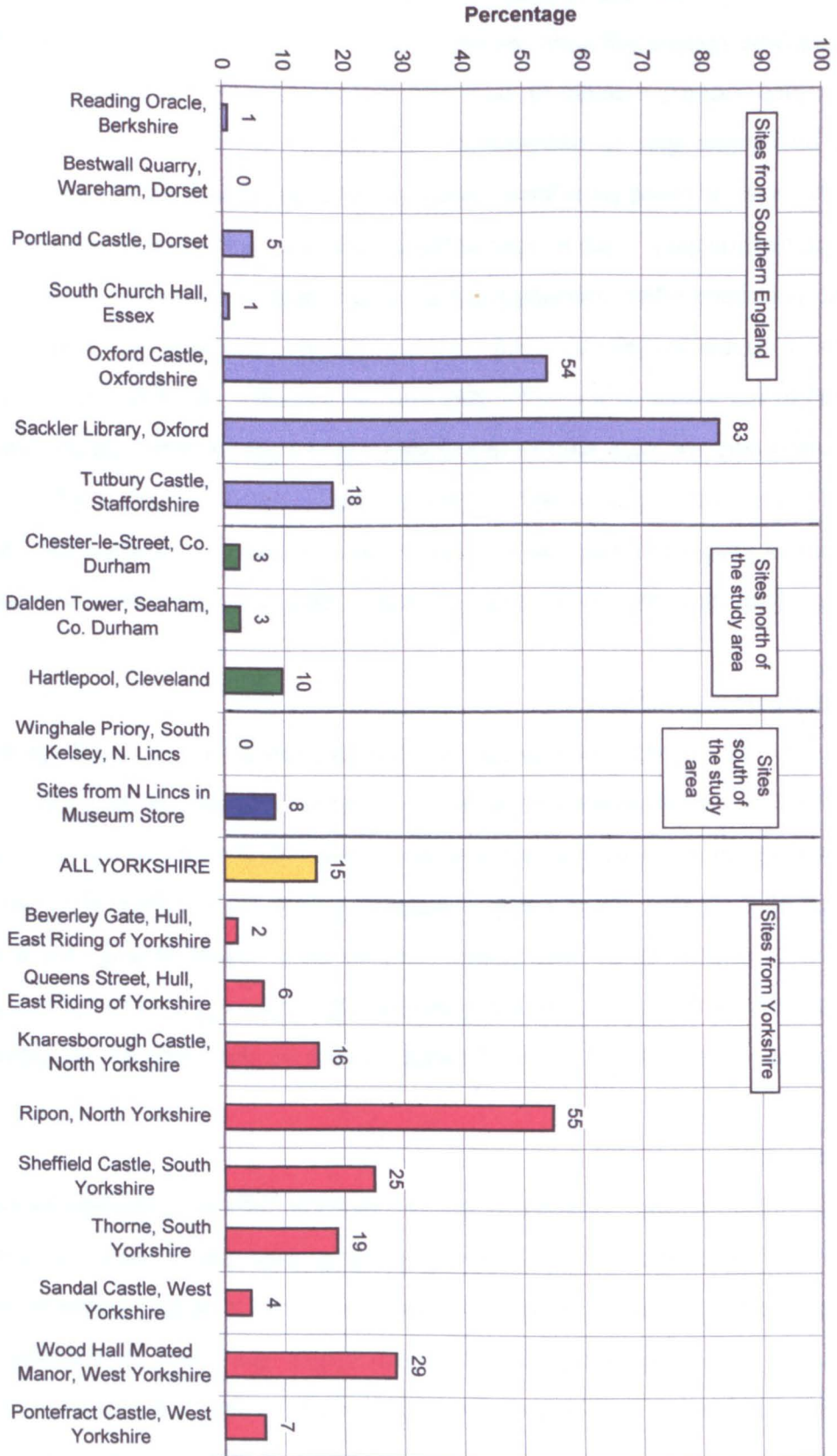
The presence or absence of burnishing and its quality may, in some production centres, be used as an indicator of social status. This is based on the assumption that more expensive pipes would have been purchased and used by individuals from a high status environment. Excavations at Norton in Cheshire provided pipe researchers with a unique opportunity to test if the number of burnished pipes recovered from a site could be used as an indicator of social status. The excavations focussed on two areas, the Manor House of Norton Priory and the village of Norton itself. Davey (1985) was able to compare the pipes recovered from each site and was able to show that the pipes used and discarded by the inhabitants of the Manor House were of a much higher quality than those used by the inhabitants of the village.

Although the study at Norton has shown that it is possible to relate different qualities of pipe to the social status of a site, the influence of regional variation also needs to be taken into consideration. In some areas the presence of high numbers of burnished pipes may indeed be an indication of a high status site but equally it may also indicate that burnished pipes were the norm and had nothing to do with status. In Shropshire, for example, almost all pipes are burnished from the seventeenth century right through to the nineteenth century (David Higgins *pers comm.*). In contrast the pipes produced in East Anglia are almost exclusively unburnished. In very general terms burnishing as a finishing technique was commonly practised in the north and west of England, whilst it was extremely rare in East Anglia, central and southern England, London and the Home Counties.

In an attempt to help illustrate this variation, a range of sites from England, where comparative data is available, have been selected and the percentage of burnished



*Figure 7.13: Percentage of burnished bowls for the period 1580-1800, from a range of sites in Southern England; three sites from north of the present study area; two sites south of the present study area; from Yorkshire as a whole and from nine sites within Yorkshire.*



bowls from each site has been plotted on the chart in Figure 7.13. In order to make the data comparable with that collected for Yorkshire only burnished bowls from the period 1580-1800 have been selected from each site. These sites include some from Southern England, a sample from immediately north of the present study area, two areas immediately to the south of the study area and a range of sites from within Yorkshire itself. In addition the overall percentage for Yorkshire as a county has been given.

The chart clearly shows a considerable range in the amount of burnishing encountered on sites from Southern England with values of between 1% and 5% for sites in Berkshire, Essex and Dorset, and up to as much as 83% for a site in Oxfordshire. There are a limited number of sites with comparable date from immediately to the north and south of the present study area but, of those that are available, the range appears to be much smaller, between 3% and 10%. These figures are, on average, considerably less than the figure of 15%, being the average for the whole of Yorkshire.

By analysing individual sites within Yorkshire itself it is clear that the average for the county (15%) is a little misleading as there is clearly a considerable variation from site to site. For example, Sandal Castle only produced a figure of 4% compared with the 29% seen at Wood Hall. This variation may, for the most part, be due to the nature of the individual site. For example, the material from Sandal Castle is almost exclusively Civil War and with the exception of a small group of highly burnished pipes imported from the Netherlands, almost all the pipes from the site are unburnished. This is what might be expected of a site that was occupied by soldiers who, it could be argued, would be more interested in the functionality of their pipe rather than its appearance. In contrast, Wood Hall is a moated-manor site, which yielded a range of very fine objects, including fragments of a multi-bowled pipe confirming that, during the sixteenth and early seventeenth century, this was a high status site of some importance.

One of the most striking features of the chart are the three sites with very high proportions of burnished pipes; Oxford Castle, Sackler Library and Ripon. One of

the main disadvantages of calculating the burnishing using only bowls is that the number of burnished stems and mouthpieces is not taken into account. Since the number of stems recovered is quite high for most archaeological excavations this could potentially skew the results. It could be argued, however, that if the bowl is burnished it is not unreasonable to assume that the stem would also have been burnished. Provided the sample has a sufficiently large number of bowls, an indication of burnishing for the site can be obtained irrespective of the number of stems. In theory the proportion of burnished to unburnished stems should be the same as that for the bowls.

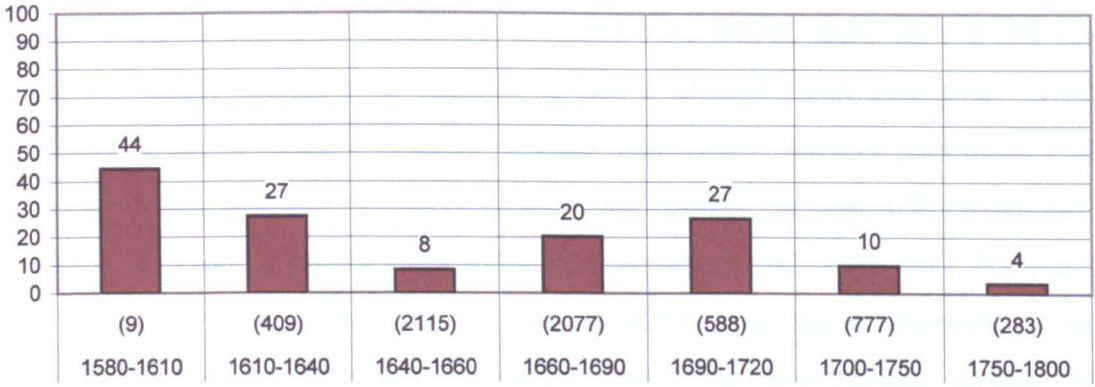
In order to test this hypothesis the three sites that produced the high burnishing figures were studied in detail. The results of this study are presented in the following table. For each site the number of fragments where the presence or absence of burnishing could be determined is given for bowls (B) and stems (S), including the mouthpieces. A figure is then given for the number of burnished bowls (BB), and for the number of burnished stems and mouthpieces (BS). These figures are followed by the percentage that each of these figures represents, therefore, %B is the percentage for the bowls, and %S is the percentages for stems and mouthpieces.

Site Name	B	S	BB	BS	%B	%S
Oxford Castle, Oxfordshire	179	562	97	258	54%	45%
Sackler Library, Oxford	28	103	23	60	82%	58%
Ripon, North Yorkshire	31	142	17	70	55%	49%

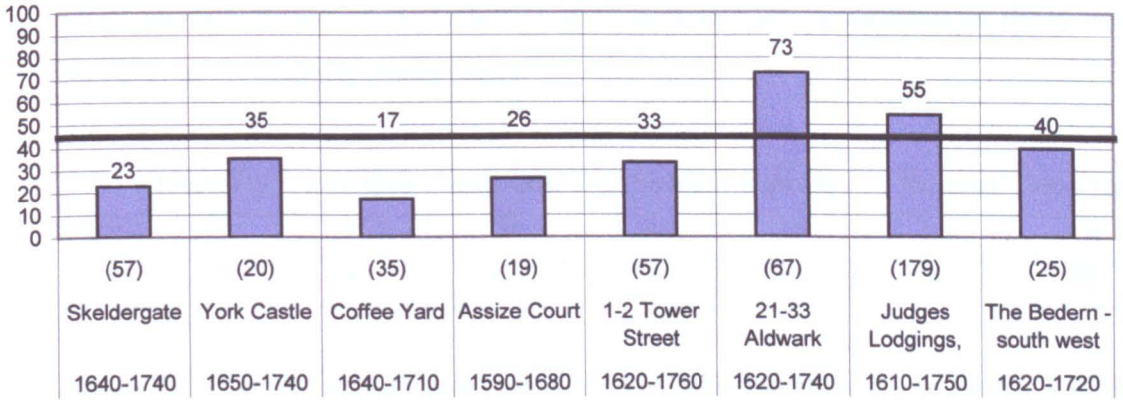
**Table 7.5:** Sites producing high numbers of burnished bowls and stems.

The table clearly shows that there is a mis-match in the proportions of burnished bowls and burnished stems, the implication of which is that only part of the stem was burnished. In order to get a clearer picture of the nature of burnishing on any given site or area it is, therefore, important that all fragments are recorded to the same level.

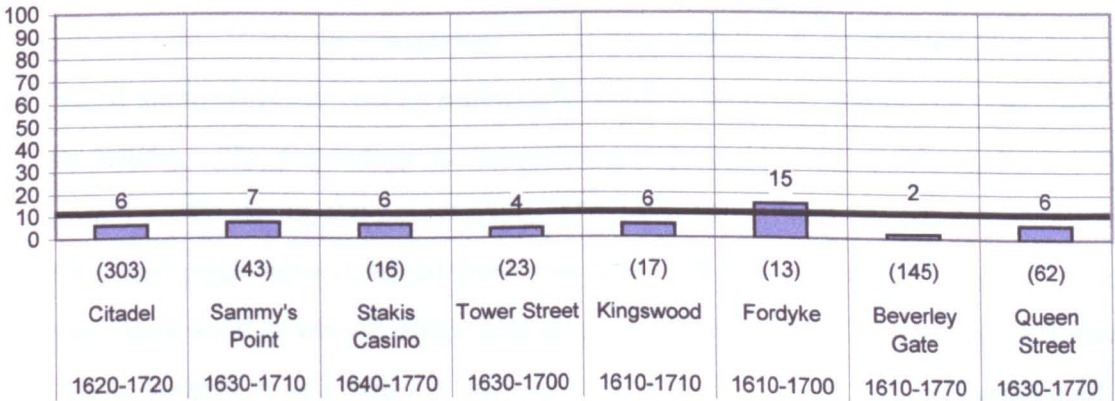
### Yorkshire



### Sites in York



### Sites in Hull



**Figure 7.14:** Percentage of burnished bowls for the period 1580-1800 for the whole of Yorkshire (top); a range of sites in York with the average line at 44% (middle) and for a range of sites in Hull with the average line at 11% (bottom).

The data collected for this present research has, for the first time, made a countywide analysis of attributes such as burnishing possible. By plotting the percentage of burnished bowls for Yorkshire as a whole, from each of the seven chronological periods, it is possible to see a general trend emerging. This is illustrated in the Figure 7.14 (top). The bar chart clearly shows a peak at the end of the sixteenth and into the early seventeenth century, around 1580-1610, before falling away quite sharply to the Civil War period, around 1640-1660. The number of examples then rises again to peak at the end of the seventeenth or early eighteenth century when the transitional bowl forms were popular, around 1690-1720. The numbers then fall away gradually from the early eighteenth century through to around 1800. Interestingly the number of fragments with stamped marks also follows a similar pattern during the seventeenth century. The following table gives the percentage of burnished bowls (%B) and the percentage of those bowls that also have stamped marks (%S).

	1580-1610	1610-1640	1640-1660	1660-1690	1690-1720	1700-1750	1750-1800
<b>% B</b>	38	27	9	20	26	10	4
<b>% S</b>	0	77	44	78	62	61	90

**Table 7.6:** Correlation between burnished and stamp-marked pipes for the whole of Yorkshire.

As can clearly be seen by the figures in the above table, there is a direct correlation between the pipes that are burnished and those that are stamped. In the Civil War period (1640-1660) the percentage of burnished bowls drops dramatically as does that of stamped pipes. In the eighteenth century, however, something interesting is happening. The percentage of burnished pipes drops away quite rapidly to little more than 4% during the period 1750-1800 but at the same time, some 90% of these burnished pipes have stamped marks on them. It could be argued, therefore, that when burnished bowls do occur they are most likely to also have a stamped mark. The development and range of marks in Yorkshire is discussed in more detail in Chapter 8.

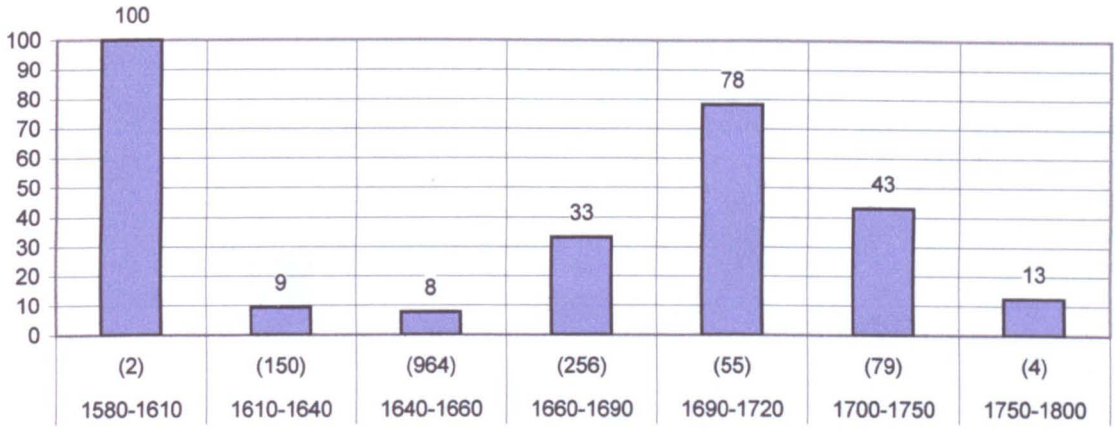
Having established a general trend for the whole of Yorkshire the figures for the six geographic sub-divisions were plotted in a similar way to see if there was any variation in this trend across the county. These charts are presented in Figures 7.15 and 7.16.

The initial impression is that all six of the geographical subdivisions follow the same basic trend as has been established for Yorkshire as a whole. The samples for 1580-1610 were very small and it could be argued, therefore, that the figures are not statistically valid. However, the earliest bowl forms throughout England are often very finely finished and, although quite rare, when found they do tend to be either burnished or polished. Even if these figures are taken out of the equation the general trend still holds true, that is, a with a drop in burnishing from the first half of the seventeenth century, immediately prior to the Civil War period.

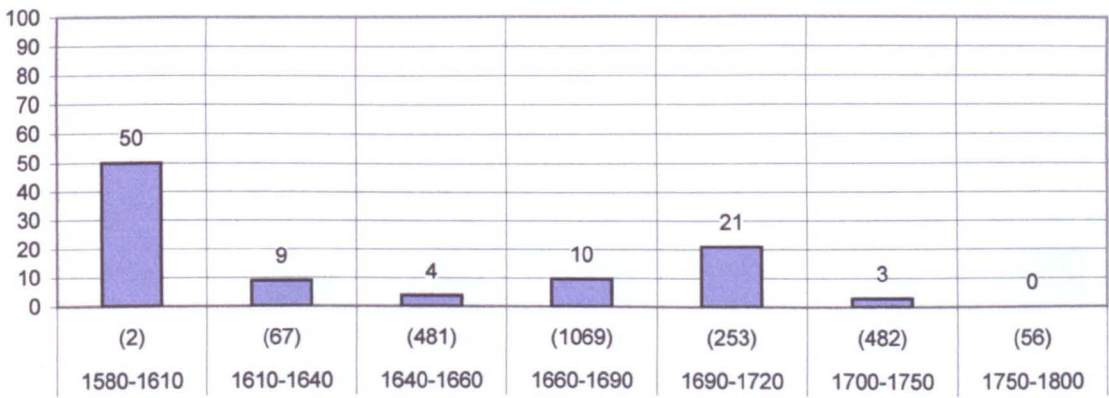
The fall in the number of burnished pipes during the date range 1640-1660 is evident in all six areas but it is most marked in South Yorkshire and around York. It is tempting to suggest that the reason for this was the Civil War itself. The political and economic instability caused by the Civil War affected every aspect of daily life including the production of clay tobacco pipes. It could be argued that the disruption to the clay pipe industry, particular in urban centres such as York, may have resulted in the production of cheaper, less finely finished, pipes. This suggestions is, however, purely speculative.

From around 1660 there appears to be a second peak with a gradual rise in the number of burnished pipes throughout the county. Around York and in North-east Yorkshire this second peak occurs in the date range 1660-1690. In the other areas of Yorkshire this peak does not occur until slightly later, around 1690-1720. The most dramatic rise is seen in West Yorkshire with an increase of just under 45%. Again, the reasons for this are speculative, but it could be hypothesised that the pipe-makers were experiencing a renewed vigour following the upheaval of the Civil War and were gradually returning to the production of finely finished pipes.

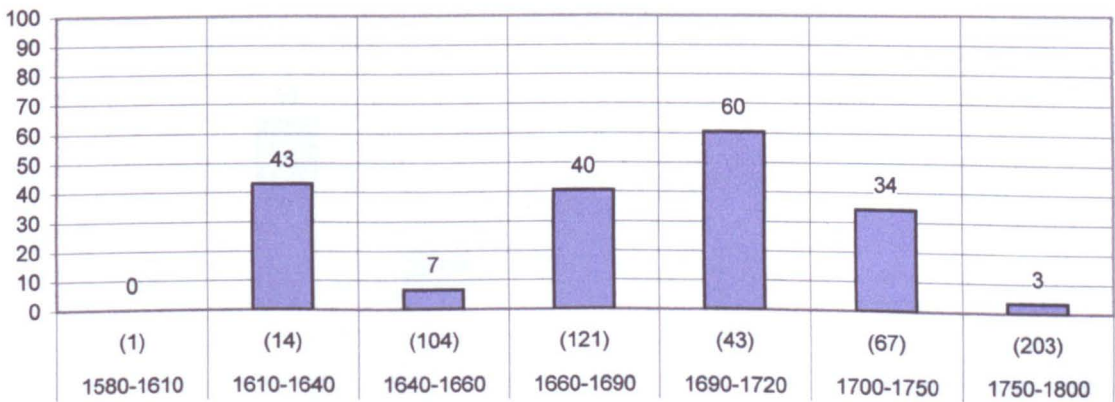
### West Yorkshire



### East Yorkshire

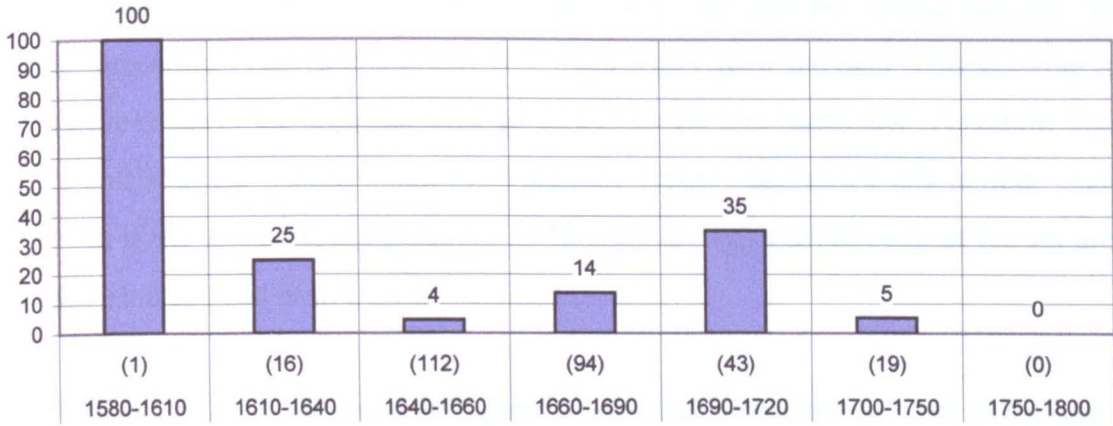


### South Yorkshire

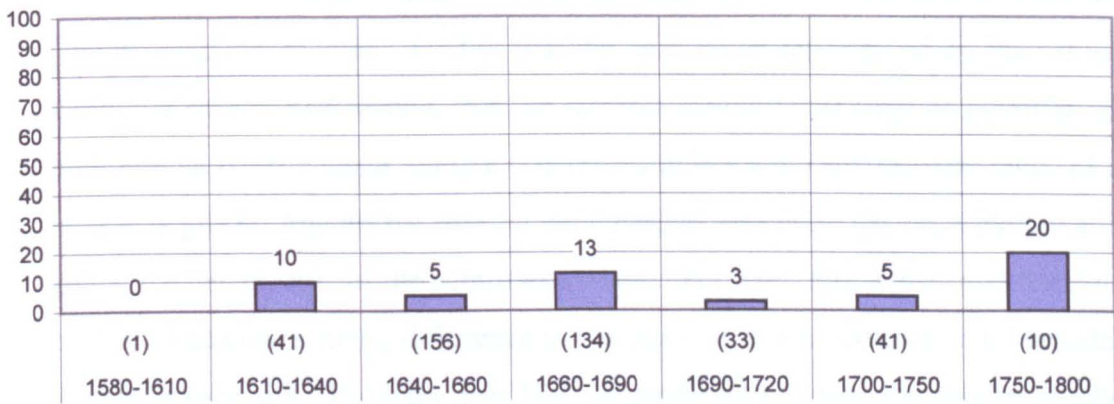


**Figure 7.15:** Plots of the percentage of burnishing for each of the six geographical sub-divisions in Yorkshire – West Yorkshire (top); East Yorkshire (middle) and South Yorkshire (bottom).

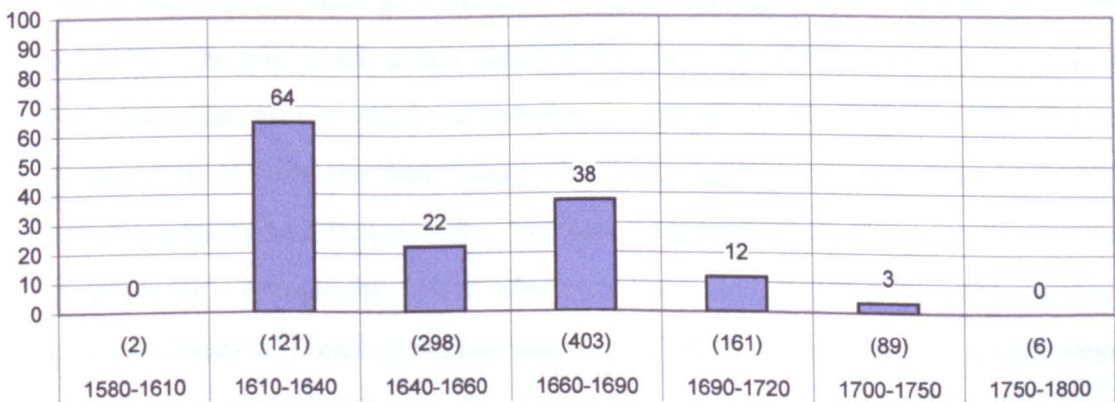
### North-West Yorkshire



### North-east Yorkshire



### York and its environs



**Figure 7.16:** Plots of the percentage of burnishing for each of the six geographical sub-divisions in Yorkshire – North-west Yorkshire (top); North-east Yorkshire (middle) and York and its environs (bottom).



By the early eighteenth century the number of burnished pipes in all six geographical sub-divisions gradually falls away. As with the earliest samples, those of the period 1750-1800 are very small and easily skew the data. This skewing may be the cause of the apparent peak around 1750-1800 in North-east Yorkshire, which is not what the general trend for Yorkshire would suggest for this period. Again, even if the low sample figures for 1750-1800 are ignored for each of the six areas, the general trend is still valid.

Analysis of the percentage of fragments with burnishing can be used to explore the overall trend for the county as a whole, as well as specific production centres. Details for eight sites from Hull and eight sites from York were extracted from the database and the percentage of burnished fragments from each site were plotted on the bar charts shown in Figure 7.14 (middle and bottom). Two criteria were used for the selection of sites. Firstly, that the date range represented by the samples should be similar and second, that the samples should be as large as possible. For each sample the site name, sample size (given in brackets) and the date range of the sample is given. Against the bars for each production centre has been plotted a line giving the percentage for the centre as a whole. For York this is 44% and for Hull it is 11%. The most striking difference in the charts is in the percentage of burnishing present at each site. The sites from Hull all produced substantially smaller numbers of burnished pipes than those from York.

Hull is the production centre that presents a slight problem in that, although the percentage for the centre as a whole is 11%, the average for the eight sample sites is only 5%. There is clearly a mis-match in this data. On closer examination of all the Hull data three groups stand out as being something a little different. The first is a group of finds from the Old Town. This group accounts for 20 fragments, 12 of which are burnished, that is, 60%. The second group is from the Kings Head, which accounts for 17 fragments, 11 of which are burnished, that is 64%. This particular group includes 12 Dutch pipes and one from York and may represent a single event specific to this particular site (for a discussion of imports see Chapter 10). These two groups produced figures that are clearly a lot higher than those which would be expected from Hull as a whole, since the high number of imported pipes clearly

skews the data quite dramatically. The final group accounts for 105 fragments, 35 of which are burnished, that is 32%. This is a group of unprovenanced material that is believed to have been recovered from sites in Hull. Again the high proportion of burnished pipes is not what is expected for the centre as a whole. By removing these obvious imports and unprovenanced fragments from the sample the percentage for Hull as a whole drops to 6%, which is more in keeping with the eight sample sites that produced a figure of 5%.

The contrast in the quality of finish between York and Hull is quite marked. This may be an indication of the status of these sites. York, with its Minster and rich merchant housing, could be considered a high status site and one where higher quality products might be expected. Certainly if burnishing is a mark of quality the figures would support this hypothesis. In contrast, Hull is a port, albeit a very important port, but one where higher numbers of sailors and dockworkers would be expected. It could be argued that in such an environment there would be more demand for cheaper utilitarian products rather than the more expensive luxury items. Again, the burnishing figures for Hull would seem to bear this out.

### **7.3.1 Burnishing –summary**

The analysis of burnishing from Yorkshire has allowed a number of case studies to be made. The most interesting of these studies has been the comparison of products from York and Hull. In his study of York pipes, Lawrence (1979, 67) suggested that ‘York pipes are not usually finely produced, few being polished.....some of those with better finishes may have been imported from Hull’. Analysis of the data, however, strongly suggests that this is not the case, rather it appears to be Hull that was importing the pipes with a better finish.

It is clear that regional variation exists not only in Yorkshire but also in the whole of England. The whole question of why burnishing was applied to clay tobacco pipes and how these burnished pipes were perceived and consumed are clearly areas of study within pipe research that warrant further work. Having suggested a basis for the analysis of burnished pipes from future excavated Yorkshire sites it is hoped that new groups can be more realistically assessed.

#### **7.4 Summary and conclusions**

Analysis of the data collected from Yorkshire relating to finishing techniques has allowed a number of conclusions to be drawn, which are outlined above under the relevant headings. Within the confines of this present research it has only been possible to carry out a small number of case studies in order to highlight certain aspects of those finishing techniques employed within Yorkshire. One of the main advantages of having a database that holds details of the various attributes of a clay tobacco pipe is that the data can be interrogated in a number of ways. There is great potential for more detailed analysis of these various attributes on a regional as well as national level once data is uniformly recorded in a comparable way.

Having now considered the product itself, the following chapters go on to look at the development and range of Yorkshire marks and the distribution of these products both in Yorkshire and beyond.

## **Chapter 8: Development and range of Yorkshire marks**

### **8.0 Introduction**

In this chapter the development and range of Yorkshire marks is considered. During the course of this study a total of 2,672 marked pipes have been recorded from sites within the county of Yorkshire, consisting of 2,189 marked bowls and 483 marked stems. The chapter begins with a definition of each of the five main classes of bowl mark identified within Yorkshire followed by a discussion of the type and range of the marks recorded. During the course of the data collection all bowls, both plain and marked were recorded in detail, but only marked stems were recorded, that is plain stems were not systematically recorded (see Chapter 3). The chronological and geographical analysis based on the proportion of marked to unmarked fragments is given for the bowls only. The marked stems are used simply as a means of presenting a range of the stem stamps present in Yorkshire and for the distributional analysis in Chapters 9 and 10.

### **8.1 Definition of the types of bowl marks recorded in Yorkshire**

Marks found on clay tobacco pipes fall in to two main types, stamped or moulded. Stamped marks were applied to the bowl by the means of a die after the moulding of the pipe but prior to firing. The dies that were used to produce these marks are extremely rare and only two dating from the seventeenth and eighteenth century, that have been positively identified as pipe-maker's dies, are known both made from pipe clay. The first, belonging to George Webb of Chard c1649-1685 (le Cheminant 1981c, 90) and the second belonging to Emanuel Drue of Swan Cove, Maryland, USA c1650-1699 (Luckenbach and Cox 2002, 50).

The Webb example appears to have been made from extruded clay that has been squashed at one end to produce a 'handle' in order that the die could be held between the thumb and forefinger. The other end bears the relief lettering GEO WEBB IN CHARD in four lines that would have produced an incuse mark when applied to the pipe. The head of the die only measures 1.6cm across, but the lettering is very finely executed suggesting that it was produced by means of an

incuse master, most likely made of metal. This method would allow a number of pipe clay dies to be produced from a single master.

The Drue example is quite different in that it is far less competently produced than that of George Webb. Rather than being produced from a master the Drue example appears to have been carved directly into a roll of pipe clay. The stamp has a lozenge with a dot at the centre and would have produced a relief mark when applied to the pipe.

The majority of the heel stamp marks recorded in Yorkshire are in relief, where the roll stamp marks are almost exclusively incuse. In the illustrations in the following sections, and in Appendix 3, all relief marks are shown in outline and all the incuse marks that are shown in solid black.

Moulded marks appear to have been introduced in the eighteenth century and continued in use into the twentieth century. This type of mark was created during the moulding process as the mould itself was engraved with the makers' initials, his name or an abstract motif. This method of marking had the advantage that the pipe was marked as part of the moulding process rather than having to be separately stamped as an additional task.

Within the two basic mark types, that is stamped and moulded, five main sub-types have been identified for the marks applied to the bowl itself – stamped on the heel, stamped on the bowl, moulded on the sides of the heel, moulded on the sides of the spur and moulded on the body of the bowl itself. These five sub-types are described in the following sections followed by a detailed analysis, which is presented both chronologically and geographically in section 8.3.

### **8.1.1 Stamped Heels**

Stamped heel marks were the earliest form of marking dating from the end of the sixteenth century and continuing through in to the eighteenth century. A very small number of early seventeenth-century bowls had an incuse heel mark, for example a single letter P from Wood Hall Moated Manor (Figure 8.9 No. 16) and a single

letter S from near Thorne, South Yorkshire (Appendix 3 Figure 142.01). The majority of the stamped heel marks recorded in Yorkshire, however, are in relief and were used throughout the seventeenth century and into the early eighteenth century.

A total of 1,734 stamped heel marks were recorded from within Yorkshire. A count by geographical sub-division is given in the following table.

Area	West	East	South	North-west	North-east	York & its environs
Qty	151	851	75	56	62	539

*Table 8.1: Count of stamped heel marks recorded from within Yorkshire*

### 8.1.2 Stamped bowl marks

This form of stamped mark was much more rare in Yorkshire than the stamped heels, with only 30 examples recorded from the whole of the county. The most common position for this type of mark was on the bowl facing the smoker. Examples can be seen from Rotherham, Doncaster and Hull (Appendix 3 Figure 22.04, 125.11, 133.5, 133.10 and 133.11). Both relief and incuse marks were recorded, occurring mainly in the late seventeenth and in to early eighteenth century pipes.

A total of 30 stamped bowl marks were recorded from within Yorkshire. A count by geographical sub-division is given in the following table.

Area	West	East	South	North-west	North-east	York & its environs
Qty	0	16	13	0	0	1

*Table 8.2: Count of stamped bowl marks recorded from within Yorkshire*

### 8.1.3 Moulded heels

This form of marking was introduced in the eighteenth century and continued in use into the twentieth century. The pipe-makers' initials, or occasionally abstract motifs, the most common of which were a flower, star or a dot and circle, were

moulded in relief on either side of the heel. Examples can be seen from Beverley and Doncaster (Appendix 3 Figures 37.10 to 12 and 128.02).

A total of 512 moulded heel marks were recorded from within Yorkshire. A count by geographical sub-division is given in the following table. The high number of examples from East Yorkshire is due in part to the very large number of moulded heel marks in the Rayner collection.

Area	West	East	South	North-west	North-east	York & its environs
Qty	10	451	5	12	17	17

*Table 8.3: Count of moulded heel marks recorded from within Yorkshire*

#### 8.1.4 Moulded spurs

Moulded spurs marks were made in exactly the same way as for the moulded heels. Examples from near Beverley can be seen in Appendix 3 Figure 39.9 to 11. A total of 64 moulded spur marks were recorded from within Yorkshire. A count by geographical sub-division is given in the following table.

Area	West	East	South	North-west	North-east	York & its environs
Qty	0	52	3	0	6	3

*Table 8.4: Count of moulded spur marks recorded from within Yorkshire*

#### 8.1.5 Moulded bowl marks

Moulded bowl marks are similar to those applied to the heel or spur and take the form of initials or lettering applied to the main body of the bowl itself, as with the William Wild armorial from Sheffield Castle (Appendix 3, Figure 140.5); around the rim, or on either side of the seam, away from the smoker as with the C Windle example (Appendix 3, Figure 162.7) and the Thomas Gill bowl (Appendix 3, Figure 167.01) both from Wakefield. This type of marking was never very common and is often associated with bowls of the later eighteenth century and into the nineteenth century, although occasionally earlier bowl forms appear with moulded bowl marks

for example a bowl with the initials RC from Beverley Gate, Hull, (Appendix 3, Figure 14.8).

During the course of the data collection exercise for this research only 11 moulded bowl marks were recorded from within Yorkshire. A count by geographical sub-division is given in the following table.

Area	West	East	South	North-west	North-east	York & its environs
Qty	1	4	6	0	0	0

*Table 8.5: Count of moulded bowl marks recorded from within Yorkshire*

## 8.2 Range of Yorkshire bowl marks

Having defined the different types of bowl marks, the following sections consider the diverse stylistic range of Yorkshire marks and looks at the main characteristics of each of the five bowl mark types.

During the course of this research impressions were made of every stamped mark recorded from the study area. These impressions were then cast in plaster to produce an exact copy. This method allowed similar marks from different collections within Yorkshire to be compared. By looking at the detail of each mark it is possible to identify individual dies which in turn, can give an indication of the number of different dies used by each maker thereby providing information as to the possible size of his workshop. Die analysis can also be used to trace products marked with the same die thereby providing a means of studying market areas as well as indicating the possible location of previously unrecorded makers. The analysis of stamped marks is therefore invaluable, not only in the identification of the makers' dies but also for the information this can reveal with regard to the movement of their finished products.

### 8.2.1 Range of stamped heel marks (Figures 8.1 – 8.6)

Detailed die analysis of the large number of stamped heel marks recorded from Yorkshire would be extremely time consuming and far beyond the scope of this

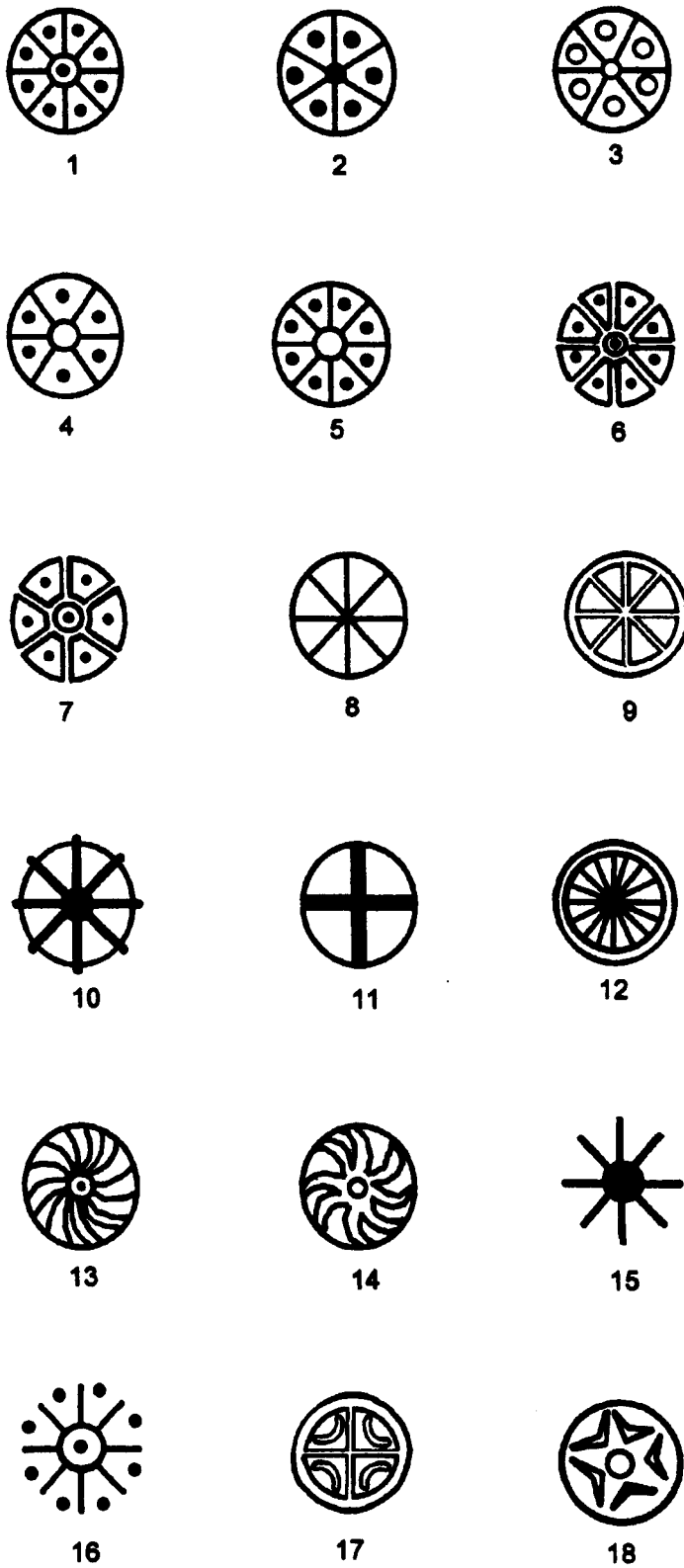


study. A decision was therefore made to outline in broad terms the nature and range of heel marks recorded in the county, essentially defining what a typical Yorkshire heel mark might look like from any given period.

In the period 1600-1640 stamped initial marks were very rare in most of Yorkshire. The majority of the marks from this period were symbol marks such as stars (Appendix 3 Figure 114.2), Tudor Roses (Appendix 3 Figure 100.5) and, most common of all, various forms of 'wheel' mark. Wheel marks are found throughout England from as early as the 1590s (Oswald 1975, 63) and continued in use to the early part of the eighteenth century, around 1710. To date no one has attempted to define the different types, but during the course of this study eighteenth basic 'wheel' motifs have been identified. A simplified type series has been illustrated in Figure 8.1 and a description of each mark is given in Table 8.1. These marks are not exclusive to Yorkshire and this type series forms the basis for a classification system that can be used nationally. Detailed analysis of the different dies may allow the location of previously unknown makers to be identified.

<b>'Wheel' Type</b>	<b>Description</b>
1	8-spoked wheel with a dot in a circle at the centre and dots between the spokes
2	6-spoked wheel with a dot at the centre and dots between the spokes
3	6-spoked wheel with a circle at the centre and small circles between the spokes
4	6-spoked wheel with a circle at the centre and dots between the spokes
5	8-spoked wheel with a circle at the centre and dots between the spokes
6	8 equal segments each containing a dot arranged around a central circle also containing a dot
7	6 equal segments each containing a dot arranged around a central circle also containing a dot
8	8-spoked wheel (incuse)
9	8-spoked wheel in relief
10	8-spoked wheel with a large central dot – similar to a ship's wheel
11	4-spoked wheel or cross
12	16-spoked wheel within a border – NB variants may have more spokes
13	16-spoked wheel with curved spokes around a central circle containing a dot
14	8-spoked wheel with curved spokes with a circle at the centre – similar to a star
15	8-spoked wheel with a large dot at the centre and no border
16	8-spoked wheel with a dot in a circle at the centre and dots between the spokes – similar to Number 1 but dots are smaller and there is no border
17	Possibly Dutch. Quartered circle with a crescent in each quarter in relief
18	Possibly Dutch. 5 chevrons around a central circle

**Table 8.6: 'Wheel' mark type series**



**Figure 8.1: Wheel mark type series.**

In addition to the symbol marks of the period 1600-1640, although much less common, are letter or initial marks. In York the pipes of the period 1610-1640 were dominated by a circular mark containing the initials GW. These pipes can be attributed to a prolific pipe-maker called Gabriel Westaby (Appendix 1). Of the 141 bowls recorded from in and around York at this date 77, or 55%, were marked GW (See Figure 8.10 Nos. 3 to 6). This is the exception rather than the rule and letter or initial marks are generally rare in Yorkshire in the first half of the seventeenth century.

Single letter marks are rarer still and only two have been recorded the first, an incuse S, from Thorne in South Yorkshire dating from 1600-1610 (Appendix 3, Figure 43.01). The second was an incuse P on the heel of a bowl from Wood Hall Moated Manor in West Yorkshire, dating from 1610-1640 (Appendix 3, Figure 142.01).

During the period 1640-1660 there appears to have been a fall in the number of marked to unmarked heels, which may be the result of the upheaval caused by the Civil War. Most that do occur are initial marks, although some symbol marks were still being produced in West Yorkshire and in and around York.

In the period of 1660-1690 the bowl forms underwent dramatic change in Yorkshire with the emergence of the Yorkshire bulbous with its large circular heel. It is perhaps no surprise, therefore, that the contemporary marks are large and round, employing almost exclusively initials. Pure symbol marks appear to have gone out of fashion. Some form of motif often accompanied these initials. The most common, particularly with the makers in York and Hull, was a tobacco plant, the quality of which varied considerably with some being neatly executed, for example Figure 8.6 Nos. 5 and 6, while others were rather more stylised, for example Figure 8.8 Nos. 9 & 10, and Figure 8.8 No. 12.

As with the tobacco plant motif, the use of stars in association with the makers' initials within the stamp design also appears to have been popular in York and Hull (for example Figures 8.6 No. 10, Figure 8.7 No. 20, Figure 8.8 No. 20, Figure 8.9

Nos. 4, 7, 10 and 21). In addition to tobacco plants and stars there were a number of other motifs that were less common but which appear to have been associated with a particular production centre the most common of these being anchors (Figure 8.2), castles (Figure 8.3), crowned initials (Figure 8.4) and fleur-de-lys within a lozenge (Figure 8.5). Analysis of the use of these less common motifs can indicate the presence of previously unrecorded makers. For example, a total of five marks with an anchor flanked by the initials IB or IH have been recorded in Yorkshire. All of these marks were recovered from in or around Pontefract strongly suggesting two previously unrecorded makers in the Pontefract area.



*Figure 8.2: IB and IH anchor marks (Scale 2:1)*

In the case of the castle motif, seven examples were recorded in Yorkshire. Four of these were recovered from in and around Pontefract with the other three from sites within 10 or 12 miles of Pontefract. The distribution of these marks and the use of a castle motif strongly points to a maker working in or around Pontefract. One of the two die types identified with the castle motif appears to have three letters - a P above the castle and the initials ON flanking the castle.



*Figure 8.3: IH and ON Castle marks. Scale 2:1.*

Although three-letter marks were quite common in Scotland they were rather rare in England. The Scottish examples had a set of initials, indicating the maker's name,

above the single letter, indicating the place of manufacture. For example the Scottish mark AW above a G has been attributed to Alexander Watson working in Glasgow. In his study of pipe making in Scotland, Gallagher (1987a, 50) suggests that makers in Glasgow, Edinburgh and Stirling were using this type of mark. It is possible that the P above the castle motif in the Yorkshire stamps stands for Pontefract. If this is the case it is a unique form of marking in Yorkshire. Siege coinage issued in Pontefract in 1648/9 depicts the letters PC either above or beside a castle motif, which bears a striking resemblance to the castle heel stamps (Mitchell & Reeds 1989, Figures 3149 and 3150). Although this siege coinage would have been in circulation slightly earlier than the castle heel stamps found at Pontefract they do depict motifs that would have been familiar to the pipe-makers in the town.

Only two other three-letter marks were recorded in Yorkshire. The first was recovered from Pontefract Castle and reads H above IM (Figure 8.8 No. 25). Although it is possible that the H in this case also indicates a place of manufacture, it is more likely that the single letter indicates a surname. In the late seventeenth and early eighteenth centuries the use of a single letter or the full surname placed above a set of initials indicated two people, often a married couple. This type of mark appeared on buildings, for example in Ribchester a house in the high street bears a plaque which reads FOX above WN above 1777; on trade tokens, for example that of Alexander Sharp with the letter S above AI (Berry 1982, 373) and John Twyne with the letter T above IR (*ibid*); as well as on clay tobacco pipes, for example William Langston of Plymouth whose mark appears as an L above the initials WM where W stands for William and M stands for his wife, Mary (Fox & Hall 1979, 27, Fig 4 No. 22). It is therefore possible that, unlike the Scottish examples, the three-letter IMH mark found in Yorkshire represents a maker with the initials IH who had a wife with a Christian name initial M.

The second three-letter mark recorded in Yorkshire comes from the Rayner Collection (Figure 8.10 No. 19) and reads ESX although it does not appear to be a Yorkshire product. Examples of the ESX marks have been found throughout

England and may be associated with the Earl of Essex and the Civil War (Oswald 1991, Vol 4 X1).

Another distinctive motif found in association with initials in Yorkshire is a crown. A total of 16 heel marks comprising crowned initials were recorded in Yorkshire, in addition to which are two noted by Lawrence from Ripon that cannot now be located (1979, 80). These marks were recovered from a range of sites within the county indicating that the crown motif was popular amongst pipe-makers. As with the tobacco plant motif, the quality of execution of the crown motif is variable as can be seen from the marks illustrated in Figure 8.4.



*Figure 8.4: IH, SH, IT and IW crowned initial marks. Scale 2:1*

A smaller number of marks with initials flanking a fleur-de-lys, all within a lozenge shaped border, were recorded from Yorkshire (Figure 8.5). These marks comprise two sets of initials IH with four examples recorded, and HF with ten examples recorded. Although clearly belonging to at least two different makers the similarity between the two marks is striking. Die analysis shows that all the IH marks were produced from the same die, as were the HF marks.



*Figure 8.5: HF and IH lozenge mark. Scale 2:1.*

For a more detailed discussion of the distribution of anchor, castle, crowned initials and fleur-de-lys marks within Yorkshire see Chapter 9.

The majority of the marks used during the period 1660-1690 were circular with the initials and motif at the centre of the mark, which may or may not have a border. These borders when they occurred, were most commonly either plain (for example Figure 8.7 No. 10), or beaded (for example Figure 8.8 Nos 1, 2 and 27). Occasionally the border took the form of a set of tram-lines (for example Figure 8.8 Nos 2 & 23). Slightly less common than the circular mark was a heart-shaped mark (for example Figure 8.7 Nos. 22 to 26, Figure 8.8 No. 19, and Figure 8.9 No. 30). As with the circular marks, the initials and motifs in the heart-shaped marks can occur with either plain or beaded borders.

Yet another change in bowl form at the end of the seventeenth century and into the early eighteenth prompted a change in the form of heel stamp. In place of the large round mark came a much smaller stamp mark often comprising of nothing more than a set of initials within a simple relief border. Occasionally these marks had dots or small stars either between the initials, or either side of them (for example Figure 8.6 Nos. 12 to 16, 26 and 30), and the use of borders far less common.

#### **8.2.1.1. Catalogue of selected heel marks from Yorkshire**

In addition to the anchor, castle, crown and lozenge illustrated above the following catalogue (Figures 8.6 to 8.10) presents a selection of other heel marks recorded in Yorkshire. This catalogue is by no means definitive but serves to give an indication of the range of heel marks in use during the seventeenth and early eighteenth century.

The marks are arranged alphabetically by surname initial, followed by the symbol marks. The accompanying catalogue gives the die number, where one exists, as recorded in the National Clay Tobacco Pipe Stamp Catalogue (NSC) together with details of the collection that now holds the pipe and the name of the site from which it was recovered. The pipe code (Pcode) is also given, which cross-refers to the Yorkshire database, as is the probably maker's name where it is known. Details of

all the makers can be found in Appendix 1. Unless otherwise stated the die drawings have been prepared by the author.

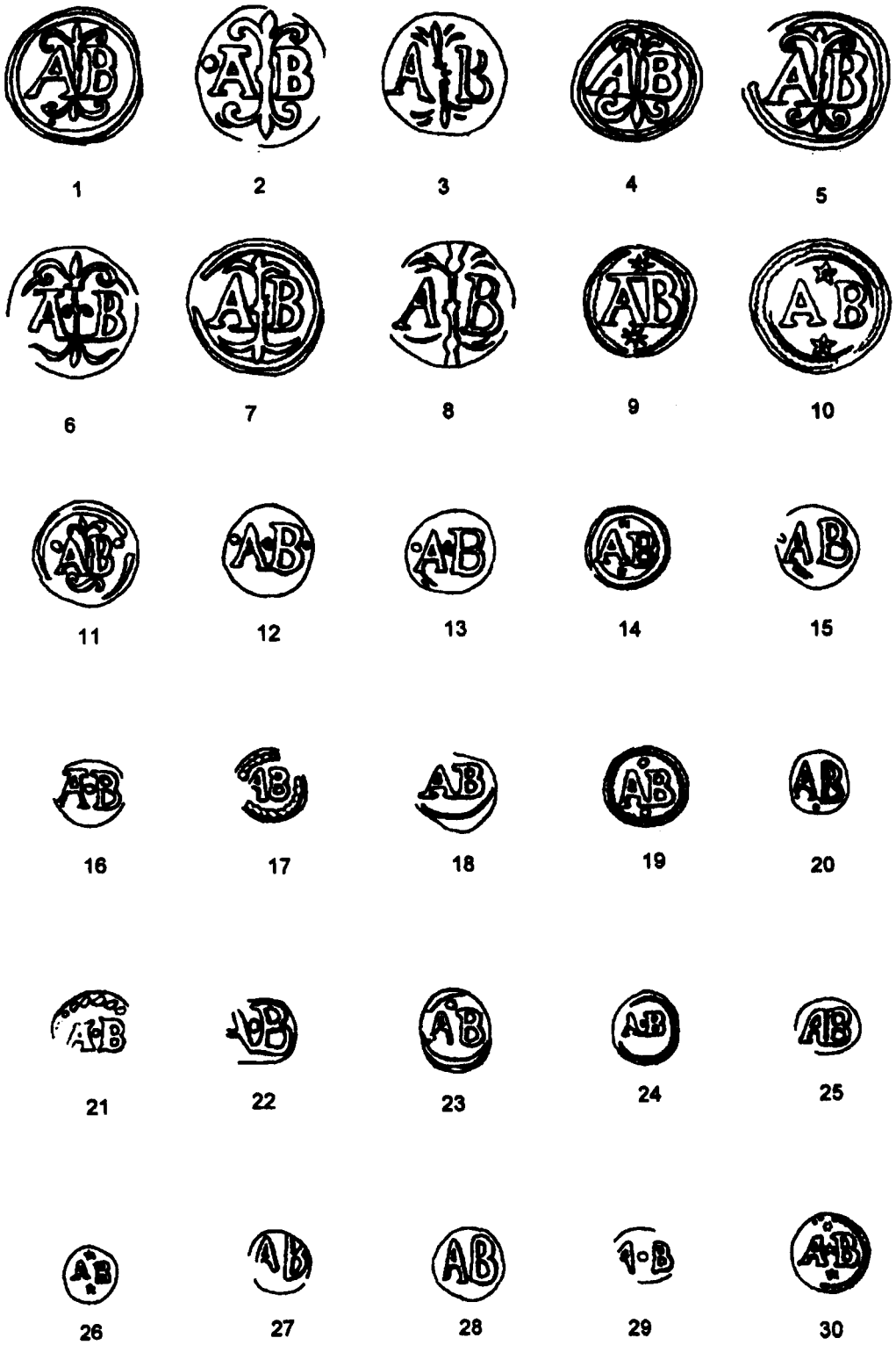
The AB marks illustrated in Figure 8.6 represents all the different dies indentified as possible Yorkshire products to date. The large round marks (Nos. 1 to 10) appear on bowl forms dating from 1660-1680 and can be attributed to Abraham Boyes (1) of York. The remaining AB marks date from the late seventeenth century through to 1720. These later pipes may be the product of Abraham Boyes (2) of which very little is known (Lawrence 1979, 72). Rather more information survives relating to Abraham Boyes (1) and documentary sources suggest that he took on at least three apprentices as well as having a journeyman (Appendix 1). The Hearth Tax Returns for 1671 lists six hearths for Abraham Boyes, although it is not clear if this refers to domestic hearths or to kilns (*ibid*). Analysis of the AB dies recorded in Yorkshire would indicate that Abraham Boyes (1) may have been using at least 12 different dies. If the documentary evidence is taken together with the evidence from the die analysis it is possible to get some idea of the size of Abraham Boyes' workshop. For a more detailed discussion of the distribution of AB marks within the county of Yorkshire see Chapter 9.

Fig 8.6 No. 1: NSC Die No. 1865; AB heel mark dating from 1660-1690. This example held by the York Castle Museum and is unprovenanced but probably from York (Acc No. pl 7k). Pcode 07816. Abraham Boyes (1) of York.

Fig 8.6 No. 2: NSC Die No. 1866; AB heel mark dating from 1660-1690. This example held by the English Heritage Archaeological Store at Helmsley and recovered from Rievaulx Abbey (Acc No. R282 85000366). Pcode 21103. Abraham Boyes (1) of York.

Fig 8.6 No.3: NSC Die No. 1867; AB heel mark dating from 1660-1680. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 402). Pcode 06882. Abraham Boyes (1) of York.





**Figure 8.6:** Selected Yorkshire heel marks: AB (Abraham Boyes). Scale 2:1.

Fig 8.6 No. 4: NSC Die No. 1868; AB heel mark dating from 1660-1690. This example held by the York Archaeological Trust and recovered from 21-33 Aldwark (Acc No. 1973.5VI 103). Pcode 01865. Abraham Boyes (1) of York

Fig 8.6 No. 5: NSC Die No. 1869; AB heel mark dating from 1660-1690. This example held by the York Archaeological Trust and recovered from 21-33 Aldwark (Acc No. 1973.5VII 405). Pcode 01866. Abraham Boyes (1) of York

Fig 8.6 No. 6: NSC Die No. 1870; AB heel mark dating from 1660-1680. This example held by the York Castle Museum and is unprovenanced but probably from York (Acc No. pl 8b). Pcode 07814. Abraham Boyes (1) of York.

Fig 8.6 No. 7: NSC Die No. 1871; AB heel mark dating from 1660-1680. This example held by the York Castle Museum and is unprovenanced but probably from York (Acc No. pl 7j). Pcode 07813. Abraham Boyes (1) of York.

Fig 8.6 No. 8: NSC Die No. 1872; AB heel mark dating from 1670-1700. This example held by the York Castle Museum and is unprovenanced but probably from York (Acc No. pl 6i). Pcode 07818. Abraham Boyes (1) of York.

Fig 8.6 No. 9: NSC Die No. 1887; AB heel mark dating from 1660-1680. This example held by the York Archaeological Trust and recovered from 21-33 Aldwark (Acc No. 1973.5VI 83). Pcode 01874. Abraham Boyes (1) of York

Fig 8.6 No. 10: NSC Die No. 1707; AB heel mark dating from 1670-1720. This example held by West Yorkshire Archaeological Services and recovered from Nun Appleton House (Acc No. NAH89 553) (Davey 1990a). Pcode 03348. ?Abraham Boyes (1) of York. Die drawn by D. Williams.

Fig 8.6 No. 11: NSC Die No. 1888; AB heel mark dating from 1660-1680. This example held by the York Archaeological Trust and recovered from 21-33 Aldwark (Acc No. 1973.5III 75). Pcode 01878. Abraham Boyes of York.

Fig 8.6 No. 12: NSC Die No. 1889; AB heel mark dating from 1660-1680. This example held by the York Archaeological Trust and recovered from County Hospital, Monkgate (Acc No. 1982.19 6009). Pcode 01960. ?Abraham Boyes (2).

Fig 8.6 No. 13: NSC Die No. 1897; AB heel mark dating from 1680-1710. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 378). Pcode 06858. ?Abraham Boyes (2).

Fig 8.6 No. 14: NSC Die No. 1896; AB heel mark dating from 1680-1710. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 342). Pcode 06821. ?Abraham Boyes (2).

Fig 8.6 No. 15: NSC Die No. 1891; AB heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from 58-59 Skeldergate (Acc No. 1973.14 288). Pcode 01974. ?Abraham Boyes (2).

Fig 8.6 No. 16: NSC Die No. 1900; AB heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from Albion Wharf, 23-28 Skeldergate (Acc No. 1989.1 2258). Pcode 01844. ?Abraham Boyes (2).

Fig 8.6 No. 17: NSC Die No. 1904; AB BF mark dating from 1690-1730. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 224). Pcode 06776.

Fig 8.6 No. 18: NSC Die No. 1901; AB heel mark dating from 1670-1680. This example held by the York Archaeological Trust and recovered from 6-28/21-7 Union Terrace (Acc No. 1972.18 5030). Pcode 01965. ?Abraham Boyes (2).

Fig 8.6 No. 19: NSC Die No. 1902; AB heel mark dating from 1670-1690 on a Yorkshire bulbous bowl. This example held by the Historic St Mary's City, Maryland, USA and recovered from John Hicks Site ST 1-22 (Acc No. ST 1-22 115). Pcode 22185. Probable Yorkshire product.

**Fig 8.6 No. 20: NSC Die No. 1890; AB heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from 58-59 Skeldergate (Acc No. 1973.14III 333). Pcode 01973.**

**Fig 8.6 No. 21: NSC Die No. 1708; AB heel mark dating from 1660-1680. This example held by West Yorkshire Archaeological Services and recovered from Nun Appleton House (Acc No. NAH88 168) (Davey 1990a). Pcode 03346. Die drawn by D. Williams.**

**Fig 8.6 No. 22: NSC Die No. 1892; AB heel mark dating from 1680-1720. This example held by the York Castle Museum and is unprovenanced but probably from York (Acc No. pl 7b). Pcode 07820.**

**Fig 8.6 No. 23: NSC Die No. 1905; AB heel mark dating from 1680-1710. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 366). Pcode 06845.**

**Fig 8.6 No. 24: NSC Die No. 1906; AB heel mark dating from 1700-1770. This example held by the York Archaeological Trust and recovered from 13-17 Coney Street (Acc No. 1991.3 U/S). Pcode 01798.**

**Fig 8.6 No. 25: NSC Die No. 1894; AB heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from Albion Wharf, 23-28 Skeldergate (Acc No. 1989.1 2001). Pcode 01843.**

**Fig 8.6 No. 26: NSC Die No. 1893; AB heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from 13-17 Coney Street (Acc No. 1991.3 1010). Pcode 01797.**

**Fig 8.6 No. 27: NSC Die No. 1899; AB heel mark dating from 1680-1710. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 416). Pcode 06895.**

Fig 8.6 No. 28: NSC Die No. 1898; AB heel mark dating from 1680-1710. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 348). Pcode 08332.

Fig 8.6 No. 29: NSC Die No. 1903; AB heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from County Hospital, Monkgate (Acc No. 1982.19 6009). Pcode 01958.

Fig 8.6 No. 30: NSC Die No. 1885; AB heel mark dating from 1680-1710. This example held by the Raines Collection and recovered from local fields around Acaster Malbis (Acc No. 359). Pcode 06838.

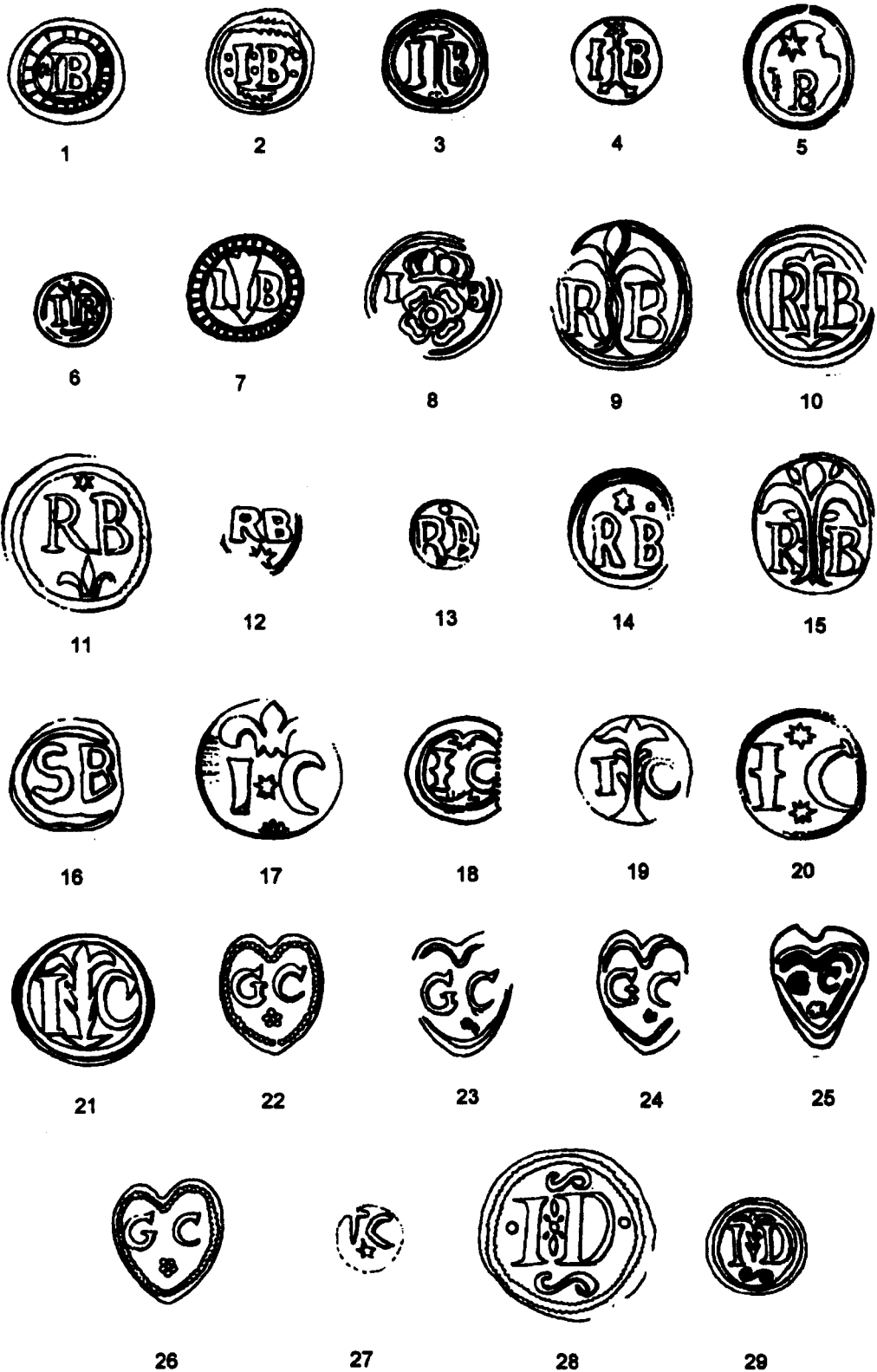
Fig 8.7. No. 1: NSC Die No. 1814; IB heel mark dating from 1650-1670. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 27 3461). (White forthcoming). Pcode 02694.

Fig 8.7. No. 2: NSC Die No. 1845; IB heel mark dating from 1650-1670. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC84 4435). (Davey and White 2002, 245, Fig 101, No. 38). Pcode 02102.

Fig 8.7. No. 3: NSC Die No. 1856; IB heel mark dating from 1650-1670. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC88 U/S). (*ibid*, 244, Fig 100, No. 35). Pcode 02117.

Fig 8.7. No. 4: NSC Die No. 1844; IB heel mark dating from 1650-1670. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC84 4351). (*ibid*, No. 36). Pcode 02101.

Fig 8.7. No. 5: NSC Die No. 1464; ?RB heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1867). Pcode 02822. ?Robert Burrill of Hull. Die drawn by D. Williams.



*Figure 8.7: Selected Yorkshire heel marks with initials. 1-8 IB; 9-15 RB; 16 SB; 17-21 IC; 22-26 GC; 27 TC, 28 & 29 ID. (Scale 2:1).*

**Fig 8.7. No. 6: NSC Die No. 1815; IB heel mark dating from 1660-1680. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH93 20 736) (White forthcoming). Pcode 02709.**

**Fig 8.7. No. 7: IB heel mark dating from 1660-1680. This example held by the Kelham Island Industrial Museum and recovered from Sheffield Castle. Pcode 07397.**

**Fig 8.7. No. 8: NSC Die No. 1880; IB(with a crowned rose) heel mark dating from 1660-1680. This example held by the York Archaeological Trust and recovered from Judges Lodging, Lendal (Acc No. 1983.45 1006). Pcode 01717.**

**Fig 8.7. No. 9: NSC Die No. 1468; RB heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1159). Pcode 02827. ?Robert Burrill of Hull. Die drawn by D. Williams.**

**Fig 8.7. No. 10: NSC Die No. 1467; RB heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1162). Pcode 02826. ?Robert Burrill of Hull. Die drawn by D. Williams.**

**Fig 8.7. No. 11: NSC Die No. 1465; RB heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1160). Pcode 02823. ?Robert Burrill of Hull. Die drawn by D. Williams.**

**Fig 8.7. No. 12: NSC Die No. 1452; RB heel mark dating from 1680-1720. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1267). Pcode 03226. ?Robert Burrill of Hull. Die drawn by D. Williams.**

**Fig 8.7. No. 13: NSC Die No. 1453; RB heel mark dating from 1700-1740. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1268). Pcode 03227. ?Robert Burrill of Hull. Die drawn by D. Williams.**

**Fig 8.7. No. 14: NSC Die No. 1466; RB heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1164). Pcode 02824. ?Robert Burrill of Hull. Die drawn by D. Williams.**

**Fig 8.7. No. 15: NSC Die No. 1469; RB heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1163). Pcode 02830. ?Robert Burrill of Hull. Die drawn by D. Williams.**

**Fig 8.7. No. 16: SB heel mark dating from 1660-1680. This example held by English Heritage and recovered from excavations at Scarborough Castle (Acc No. SA/AM T1 L8) (White 2001b). Pcode 24936.**

**Fig 8.7. No. 17: NSC Die No. 1460; IC heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1246). Pcode 02786. Die drawn by D. Williams.**

**Fig 8.7. No. 18: NSC Die No. 1847; IG heel mark dating from 1660-1690. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC88 U/S) (Davey and White 2002, 245, Fig 101, No. 46). Pcode 02118.**

**Fig 8.7. No. 19: NSC Die No. 1459; IC heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1254). Pcode 02776. Die drawn by D. Williams.**



**Fig 8.7. No. 20: NSC Die No. 1461; IC heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1261). Pcode 02791. Die drawn by D. Williams.**

**Fig 8.7. No. 21: NSC Die No. 1458; IC heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1253). Pcode 02774. Die drawn by D. Williams.**

**Fig 8.7. No. 22: NSC Die No. 1912; GC heel mark dating from 1630-1660. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1977). Pcode 03117.**

**Fig 8.7. No. 23: NSC Die No. 1911; GC heel mark dating from 1630-1660. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1461). Pcode 03033.**

**Fig 8.7. No. 24: NSC Die No. 1910; GC heel mark dating from 1630-1660. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1433). Pcode 02990.**

**Fig 8.7. No. 25: NSC Die No. 1809; GC heel mark dating from 1640-1660. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH91 20 509). (White forthcoming). Pcode 02715.**

**Fig 8.7. No. 26: NSC Die No. 1913; GC heel mark dating from 1630-1660. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1429). Pcode 02982.**

**Fig 8.7. No. 27: NSC Die No. 1476; TC heel mark dating from 1680-1710. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley. Pcode 02885. Die drawn by D. Williams.**

Fig 8.7. No. 28: NSC Die No. 1875; ID heel mark dating from 1660-1690. This example held by the York Castle Museum and is unprovenanced from Yorkshire Museum, York (Acc No. 26.71 pl15c). Pcode 07910.

Fig 8.7. No. 29: NSC Die No. 1909; ID heel mark dating from 1650-1670. This example held by the York Archaeological Trust and recovered from County Hospital, Monkgate (Acc No. 1982.19 6009). Pcode 01955.

Fig 8.8. No. 1: NSC Die No. 1475; IE heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1376). Pcode 02881. Die drawn by D. Williams.

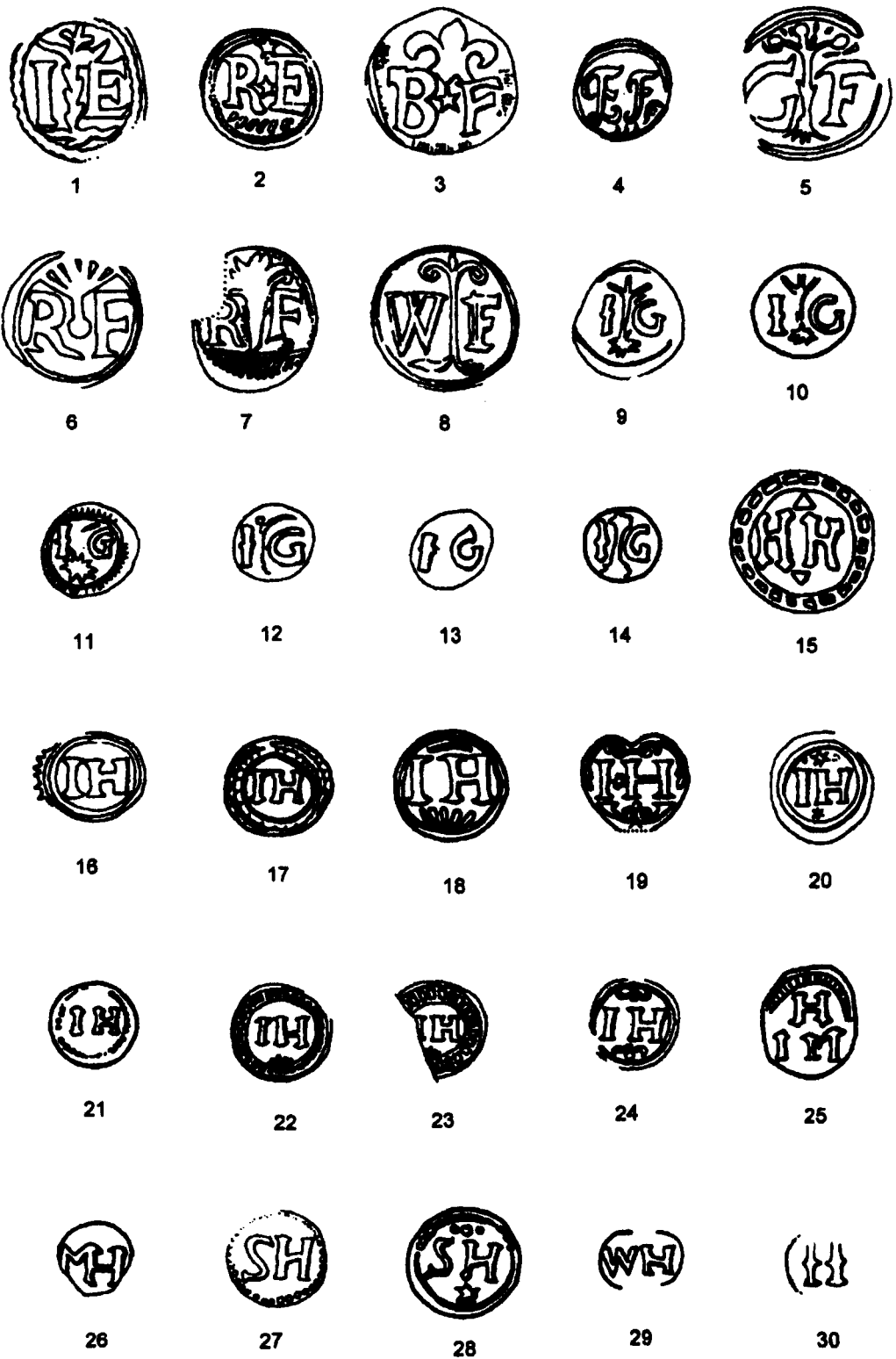
Fig 8.8. No. 2: NSC Die No. 1462; RE heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1134). Pcode 02802. Die drawn by D. Williams.

Fig 8.8. No. 3: NSC Die No. 1882; BF heel mark dating from 1660-1680. This example held by the NCTPA from Hull (Acc No. HY75.1.2). Pcode 24601.

Fig 8.8. No. 4: NSC Die No. 1948; EF heel mark dating from 1660-1680. This example held by the NCTPA from Hull (Acc No. HG76 U/S). Pcode 24603. Mark upside down

Fig 8.8. No. 5: NSC Die No. 1883; GF heel mark dating from 1660-1690. This example held by the York Castle Museum and is unprovenanced material from Yorkshire Museum, York (Acc No. 1292 26.71 pl19a). Pcode 07912.

Fig 8.8. No. 6: NSC Die No. 1881; RF heel mark dating from 1660-1690. This example held by the York Castle Museum and is unprovenanced material from Yorkshire Museum, York (Acc No. YM962/1 pl1g). Pcode 07943.



**Figure 8.8:** Selected Yorkshire heel marks with initials. 1 IE; 2 RE, 3 BF, 4 EF, 5 GF, 6 & 7 RF, 8 WF, 9-14 IG; 15 HH; 16-24 IH; 25 IMH; 26 MH; 27 & 28 SH, 29 WH, 30 II. (Scale 2:1).

Fig 8.8. No. 7: NSC Die No. 1472; RF heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1387). Pcode 02862. Die drawn by D. Williams.

Fig 8.8. No. 8: NSC Die No. 1463; WF heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1149). Pcode 02814. Die drawn by D. Williams.

Fig 8.8. No. 9: NSC Die No. 1944; IG heel mark dating from 1660-1690. This example held by the Tolson Memorial Museum and recovered from (Acc No. Emley). Pcode 07688. Presented by Rev E W Bartram, Elmley Lovett Rectory, Droitwich, March 1942; Yorkshire bulbous, nicely finished

Fig 8.8. No. 10: NSC Die No. 1817; IG heel mark dating from 1650-1670. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 27 3039). (White forthcoming). Pcode 02688.

Fig 8.8. No. 11: NSC Die No. 1945; IG heel mark dating from 1660-1680. This example held by the Tolson Memorial Museum and recovered from Lower George Yard (Acc No. Box 11143 A1d (2)). Pcode 07714. Yorkshire bulbous; nicely finished

Fig 8.8. No. 12: NSC Die No. 1942; IG heel mark dating from 1660-1680. This example held by the Pontefract Museum and is unprovenanced material from Pontefract (Acc No. 13). Pcode 08015.

Fig 8.8. No. 13: NSC Die No. 1943; IG heel mark dating from 1650-1670. This example held by the Pontefract Museum and is unprovenanced material from Pontefract (Acc No. 14). Pcode 08016.

Fig 8.8. No. 14: NSC Die No. 1846; IG heel mark dating from 1660-1680. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 087). (Davey and White 2002, 245, Fig 101, No.

40). Very similar stamp on a Yorkshire bulbous form from St Elphin's Rectory, Warrington (Davey and Pierce 1977, 107, Fig 41, No. 26). Pcode 02095.

Fig 8.8. No. 15: HH heel mark dating from 1660-1690. This example held by English Heritage and recovered from excavations at Scarborough Castle (Acc No. SA/AM T1 L8) (White 2001b). Pcode 24943.

Fig 8.8. No. 16: NSC Die No. 1827; IH heel mark dating from 1660-1680. This example held by West Yorkshire Archaeological Services and recovered from Old Hall Farm (Acc No. OHF96 2004) (White 2001a). Pcode 21361.

Fig 8.8. No. 17: NSC Die No. 1818; IH heel mark dating from 1660-1680. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH92 20 590). (White forthcoming). Pcode 02722.

Fig 8.8. No. 18: NSC Die No. 1819; IH heel mark dating from 1660-1680. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH U/S ?20). (White forthcoming). Pcode 02714.

Fig 8.8. No. 19: NSC Die No. 1807; IH heel mark dating from 1640-1660. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 103). (Davey and White 2002, 241, Fig 98, No. 11). Pcode 02111.

Fig 8.8. No. 20: NSC Die No. 1940; IH heel mark dating from 1660-1690. This example held by the York Castle Museum and is unprovenanced material from Yorkshire Museum, York (Acc No. pl23i). Pcode 07832.

Fig 8.8. No. 21: NSC Die No. 1821; IH heel mark dating from 1660-1680. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH95 26 2000). (White forthcoming). Pcode 02682.

**Fig 8.8. No. 22: NSC Die No. 1939; IH heel mark dating from 1660-1680. This example held by the Pontefract Museum and is unprovenanced material from Pontefract (Acc No. 20). Pcode 08023.**

**Fig 8.8. No. 23: NSC Die No. 1820; IH heel mark dating from 1660-1680. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH92 20 810). (White forthcoming) Pcode 02719.**

**Fig 8.8. No. 24: NSC Die No. 1941; IH heel mark dating from 1660-1690. This example held by the York Castle Museum and is unprovenanced but probably from York (Acc No. pl 2k). Pcode 07829. Old paper label "Pontefract maker IH"**

**Fig 8.8. No. 25: NSC Die No. 1852; IMH heel mark dating from 1660-1690. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 086). (Davey and White 2002, 246, Fig 102, No. 47). Pcode 02091. 3 letter mark**

**Fig 8.8. No. 26: NSC Die No. 1825; MH heel mark dating from 1690-1710. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 27 3003). (White forthcoming) Pcode 02687.**

**Fig 8.8. No. 27: NSC Die No. 1703; SH heel mark dating from 1650-1680. This example held by the Central Excavation Unit (HMBC) and recovered from Bedern Bank, Ripon (Acc No. 258.2675). (Davey 1990b) Pcode 03331.**

**Fig 8.8. No. 28: NSC Die No. 1808; SH heel mark dating from 1650-1670. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 27 3274). (White forthcoming) Pcode 02693.**

**Fig 8.8. No. 29: NSC Die No. 1849; WH heel mark dating from 1660-1690. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 098). (Davey and White 2002, 245, Fig 101, No. 41) Pcode 02106.**

**Fig 8.8. No. 30: NSC Die No. 1451; II heel mark dating from 1680-1710. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1269). Pcode 02732. Die drawn by D. Williams.**

**Fig 8.9. No. 1: NSC Die No. 1456; II heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1272). Pcode 02761. Die drawn by D. Williams.**

**Fig 8.9. No. 2: NSC Die No. 1457; II heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1276). Pcode 02766. Die drawn by D. Williams.**

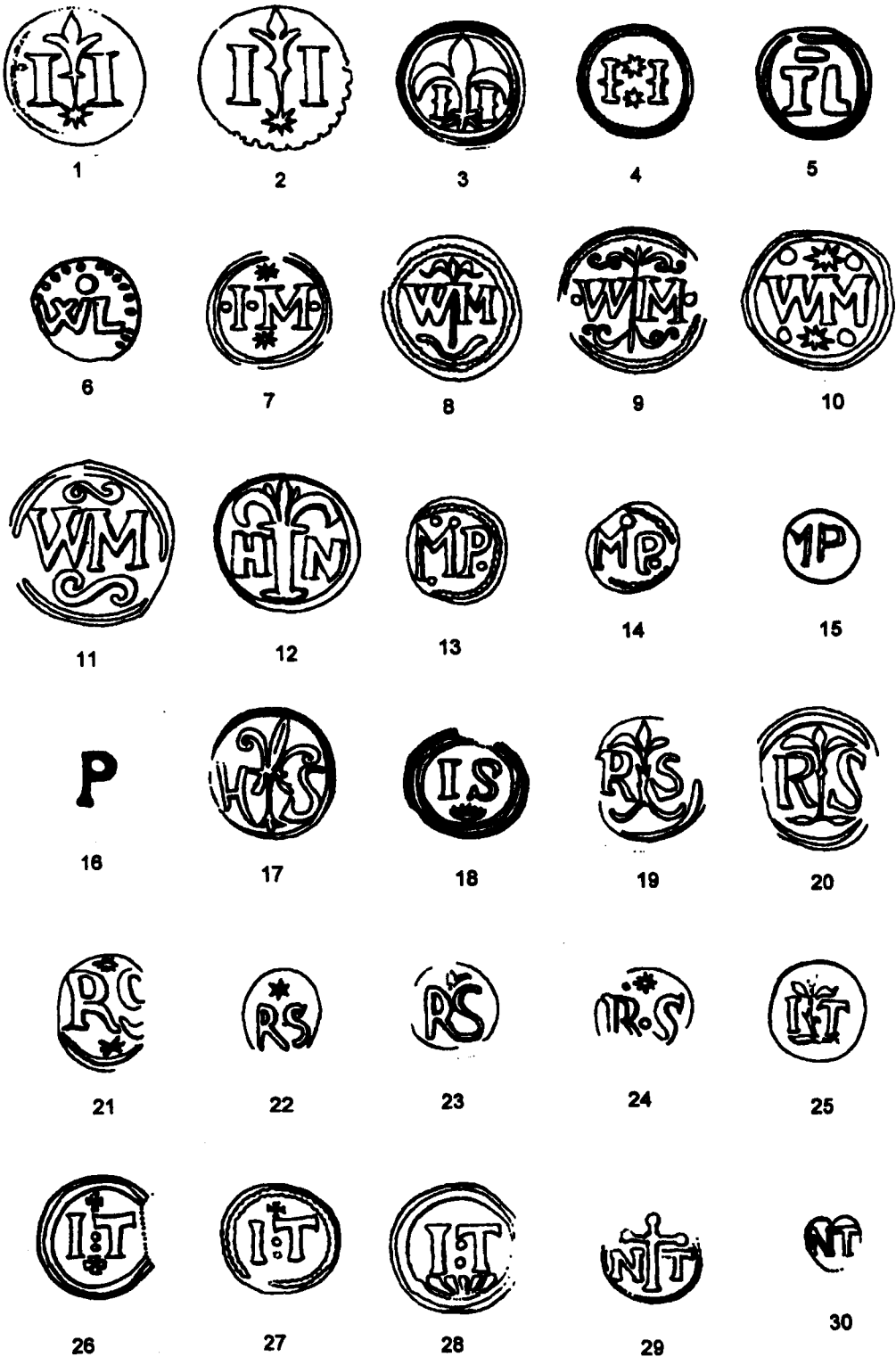
**Fig 8.9. No. 3: NSC Die No. 1455; II heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1384). Pcode 02745. Die drawn by D. Williams.**

**Fig 8.9. No. 4: NSC Die No. 1454; II heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1378). Pcode 02742. Die drawn by D. Williams.**

**Fig 8.9. No. 5: NSC Die No. 1855; TL heel mark dating from 1650-1670. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC83 240). (Davey and White 2002, 244, Fig 100, No. 34) Pcode 02099.**

**Fig 8.9. No. 6: NSC Die No. 1822; WL heel mark dating from 1660-1680. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 5 002). (White forthcoming) Pcode 02684.**

**Fig 8.9. No. 7: NSC Die No. 1884; IM heel mark dating from 1660-1680. This example held by the York Castle Museum and is unprovenanced from Yorkshire Museum, York (Acc No. 26.71 pl5g). Pcode 07918.**



**Figure 8.9: Selected Yorkshire heel marks with initials. 1-4 II; 5 IL; 6 WL; 7 IM; 8-11 WM; 12 HN; 13-15 MP; 16 P; 17 HS; 18 IS; 19-24 RS; 25-28 IT; 29-30 NT. (Scale 2:1).**



**Fig 8.9. No. 8: NSC Die No. 1877; WM heel mark dating from 1650-1670. This example held by the York Archaeological Trust and recovered from 1-2 Tower Street (Castle Garage), York (Acc No. 1981.3 1003). Pcode 01822.**

**Fig 8.9. No. 9: NSC Die No. 1878; WM heel mark dating from 1670-1700. This example held by the York Archaeological Trust and recovered from 21-33 Aldwark, York (Acc No. 1973.5VI 11). Pcode 01893.**

**Fig 8.9. No. 10: NSC Die No. 1876; WM heel mark dating from 1660-1690. This example held by the York Archaeological Trust and recovered from Judges Lodging, Lendal (Acc No. 1983.45 1006). Pcode 01718.**

**Fig 8.9. No. 11: NSC Die No. 1879; WM heel mark dating from 1660-1690. This example held by the York Archaeological Trust and recovered from Judges Lodging, Lendal (Acc No. 1983.45 1001). Pcode 01737. ?William Moore of York**

**Fig 8.9. No. 12: NSC Die No. 1473; HN heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1288). Pcode 02865. Henry Norman of Beverley. Die drawn by D. Williams.**

**Fig 8.9. No. 13: NSC Die No. 1947; MP heel mark dating from 1660-1680. This example held by the Wakefield Museum & Art Gallery and is from the Social History Collection (Acc No. SH 2057). ?Matthew Powell.**

**Fig 8.9. No. 14: NSC Die No. 1946; MP heel mark dating from 1650-1680. This example held by the York Castle Museum and is unprovenanced but probably from York (Acc No. pl 21). Pcode 07836. ?Matthew Powell.**

**Fig 8.9. No. 15: NSC Die No. 1816; MP heel mark dating from 1650-1670. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 27 3272). (White forthcoming) Pcode 02689. ?Matthew Powell.**

Fig 8.9. No. 16: NSC Die No.1802; P heel mark dating from 1580-1620. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH93 20 1059). (White forthcoming) Pcode 03415.

Fig 8.9. No. 17: NSC Die No. 1470; HS heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1183). Pcode 02833. Die drawn by D. Williams.

Fig 8.9. No. 18: NSC Die No. 1826; IS heel mark dating from 1660-1680. This example held by West Yorkshire Archaeological Services and recovered from Old Hall Farm (Acc No. OHF96 4083) (White 2001a). Pcode 21362.

Fig 8.9. No. 19: NSC Die No.1962; RS heel mark dating from 1660-1680. This example held by the York Archaeological Trust and recovered from The Bedern, (south-west), York (Acc No. 1974.13IV U/S). Pcode 01810. ?Richard Shaftoe

Fig 8.9. No. 20: NSC Die No. 1963; RS heel mark dating from 1660-1680. This example held by the York Archaeological Trust and recovered from 21-33 Aldwark, York (Acc No. 1973.5VII 1193). Pcode 01903. ?Richard Shaftoe

Fig 8.9. No. 21: NSC Die No. 1953; RS heel mark dating from 1690-1710. This example held by the York Archaeological Trust and recovered from St Georges Field car park, York (Acc No. 1990.17 1034). Pcode 01786. ?Richard Shaftoe of York

Fig 8.9. No. 22: NSC Die No. 1950; RS heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from 1-2 Tower Street (Castle Garage), York (Acc No. 1981.3III 3016). Pcode 01819. ?Richard Shaftoe

Fig 8.9. No. 23: NSC Die No. 1951; RS heel mark dating from 1680-1710. This example held by the York Archaeological Trust and recovered from 1-2 Tower

Street (Castle Garage), York (Acc No. 1981.3III 3052). Pcode 01832. ?Richard Shaftoe

Fig 8.9. No. 24: NSC Die No. 1952; RS heel mark dating from 1690-1710. This example held by the York Archaeological Trust and recovered from Judges Lodging, Lendal (Acc No. 1983.45 1093). Pcode 01679. ?Richard Shaftoe

Fig 8.9. No. 25: NSC Die No. 1704; IT heel mark dating from 1650-1680. This example held by the Central Excavation Unit (HMBC) and recovered from Bedern Bank, Ripon (Acc No. 258.2662) (Davey 1990b) Pcode 03332. Die drawn by D. Williams.

Fig 8.9. No. 26: NSC Die No. 1850; IT heel mark dating from 1660-1680. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC83 240) (Davey and White 2002, 246, Fig 102, No. 49). Pcode 02098.

Fig 8.9. No. 27: NSC Die No. 1705; IT heel mark dating from 1650-1675. This example held by the Central Excavation Unit (HMBC) and recovered from St Agnesgate, Ripon (Acc No. 258.102) (Davey 1990b). Pcode 03326. Die drawn by D. Williams.

Fig 8.9. No. 28: NSC Die No. 1709; IT heel mark dating from 1650-1680. This example held by the Central Excavation Unit (HMBC) and recovered from Bedern Bank, Ripon (Acc No. 258.2521) (*ibid*). Pcode 03337. Die drawn by D. Williams.

Fig 8.9. No. 29: NSC Die No. 1449; NT heel mark dating from 1680-1710. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1733). Pcode 02290. Die drawn by D. Williams.

Fig 8.9. No. 30: NSC Die No. 1447; NT heel mark dating from 1680-1710. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. ). Pcode 02300. Die drawn by D. Williams.

Fig 8.10. No. 1: NSC Die No. 1448; NT heel mark dating from 1680-1710. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. ). Pcode 03211. Die drawn by D. Williams.

Fig 8.10., No. 2: NSC Die No. 1471; FW heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1207). Pcode 02847. Die drawn by D. Williams.

Fig 8.10. No. 3: NSC Die No. 1938; GW heel mark dating from 1610-1640. This example held by the Wakefield Museum & Art Gallery and recovered from Sandal Castle (Acc No. SC W(1)66). Pcode 07654. Gabriel Westaby of York.

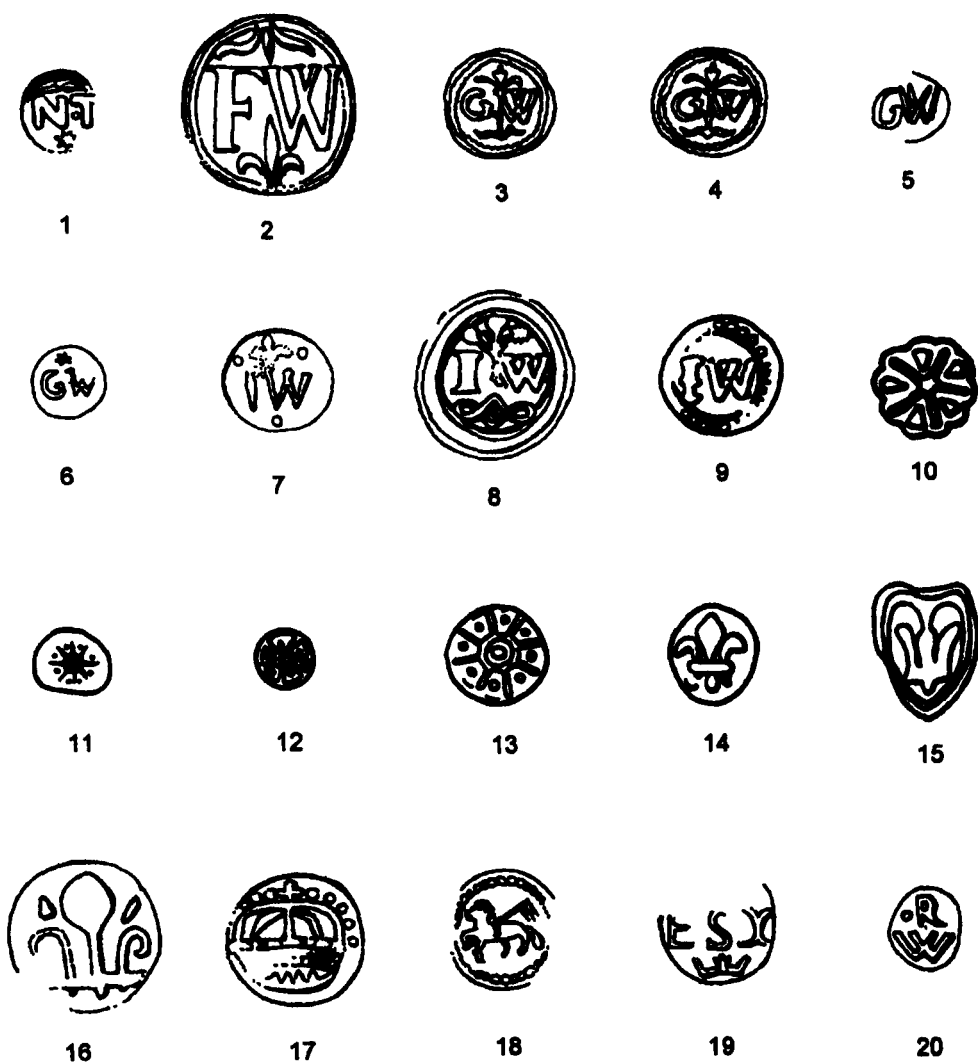
Fig 8.10. No. 4: NSC Die No. 1937; GW heel mark dating from 1620-1640. This example held by the York Archaeological Trust and recovered from Judges Lodging, Lendal (Acc No. 1983.45 1053). Pcode 01777. Gabriel Westaby of York

Fig 8.10. No. 5: NSC Die No. 1936; GW heel mark dating from 1620-1640. This example held by the York Archaeological Trust and recovered from Judges Lodging, Lendal (Acc No. 1983.45 1006). Pcode 01709. Gabriel Westaby of York

Fig 8.10. No. 6: NSC Die No. 1935; GW heel mark dating from 1620-1640. This example held by the York Archaeological Trust and recovered from Judges Lodging, Lendal (Acc No. 1983.45 1098). Pcode 01683. Gabriel Westaby of York

Fig 8.10. No. 7: NSC Die No. 1701; IW heel mark dating from 1680-1710. This example held by the Central Excavation Unit (HMBC) and recovered from Bedern Bank, Ripon (Acc No. 258.2564) (*ibid*). Pcode 03338. Die drawn by D. Williams.

Fig 8.10. No. 8: NSC Die No. 1874; IW heel mark dating from 1650-1670. This example held by the Sheffield City Museum and recovered from 7 Storth Lane, Sheffield (Acc No. 1985.817). Pcode 07335.



**Figure 8.10:** Selected Yorkshire heel marks. 1 NT; 2 FW; 3-6 GW; 7-9 IW; 10-13 Wheel; 14-16 Fleur-de-lys; 17 Crown; 18 Lamb; 19 ESX; 20 Dutch RW. (Scale 2:1).

Fig 8.10. No. 9: NSC Die No. 1810; IW heel mark dating from 1630-1650. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 116) (Davey and White 2002, 241, Fig 98, No. 7). Pcode 02113.

Fig 8.10. No. 10: NSC Die No. 1812; Wheel heel mark dating from 1630-1650. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 116) (Davey and White 2002, 241, Fig 98, No. 3). Pcode 02114.

**Fig 8.10. No. 11: NSC Die No. 1806; Wheel heel mark dating from 1640-1660. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 103) (*ibid*, No. 9). Pcode 02109.**

**Fig 8.10. No. 12: NSC Die No. 1805; Wheel heel mark dating from 1640-1660. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 103) (*ibid*, No. 8).. Pcode 02110.**

**Fig 8.10. No. 14: NSC Die No. 1804; Wheel heel mark dating from 1650-1670. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH94 20 1593) (White forthcoming). Pcode 02708.**

**Fig 8.10. No. 14: NSC Die No. 1803; Fleur-de-lys heel mark dating from 1620-1640. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH94 10 1599) (White forthcoming). Pcode 02716.**

**Fig 8.10. No. 15: NSC Die No. 1811; Fleur-de-lys heel mark dating from 1640-1660. This example held by West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC82 099) (Davey and White 2002, 241, Fig 98, No. 12). Pcode 02108.**

**Fig 8.10. No. 16: NSC Die No. 1474; Fleur-de-lys heel mark dating from 1660-1690. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1228). Pcode 02874. Die drawn by D. Williams.**

**Fig 8.10. No. 17: NSC Die No. 1477; Crown heel mark dating from 1660-1700. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1232). Pcode 02878. Die drawn by D. Williams.**

Fig 8.10. No. 18: NSC Die No. 1479; Ram heel mark dating from 1650-1690. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1229). Pcode 02876. Die drawn by D. Williams.

Fig 8.10. No. 19: NSC Die No. 1480; ESX heel mark dating from 1650-1690. This example held by the Rayner Collection and recovered from fieldwalking from around Beverley (Acc No. 1230). Pcode 02877.

Fig 8.10. No. 20: NSC Die No. 1954; .RW heel mark dating from 1640-1660. This example held by the Wakefield Museum & Art Gallery and recovered from Sandal Castle (Acc No. 1983.10.2) (Lawrence 1983, 285). Pcode 23302. Dutch. Attributed to Roger Wilkins who was born in York c1607.

The following table presents a summary of the main characteristics of stamped heel marks from Yorkshire.

Broad Period	Main characteristics of stamped heels
Early 17 <sup>th</sup> century (1600-1640)	Single letter, incuse marks Symbol marks, most commonly a wheel or wheel and dots, but also Tudor rose, stars, simple flowers and horseshoes. Some initial marks particularly in and around York
Civil War Period (1640-1660)	Mostly initial marks Small numbers of symbol marks only recorded in West Yorkshire and in and around York.
Post Civil War (1660-1690)	Large round heels often with initials flanking a motif, which may indicate regional variation. Most common are tobacco plant in York and Hull; anchors or castles in the Pontefract area; but also, stars or scrolls above and/or below initials, crowned initials and lozenge shaped marks with letters flanking a fleur-de-lys.
Late 17 <sup>th</sup> to early 18 <sup>th</sup> century (1690-1730)	Smaller heels with much simpler initial marks, occasionally in association with dots or small stars.

*Table 8.7: Main characteristics of stamped heel marks found in Yorkshire*

### **8.2.2 Range of stamped bowl marks**

Stamped bowl marks in Yorkshire are rare, with only 30 examples being recorded from the whole of the county. The majority of the stamped bowl marks recorded were found in the east or south of the county dating from the mid seventeenth century through to 1750, with just a single example from York dating from 1700-1750.

The earliest bowl stamps were recorded in South Yorkshire dating from the period 1660-1690. These marks take the form of initials applied in relief to the bowl facing the smoker. Only two of these relief marks were recorded, the first with the initials II on a bowl recovered from the Rotherham area, and the second with the initials PL on a bowl found in the Sheffield area.

Rarer still is a single bowl, also dating from 1660-1690 and recorded in East Yorkshire, stamped with a series of wheel marks which have been randomly applied all over the main body of the bowl, together with a series of milled bands (Appendix 3, Figure 31.07).

The remaining stamped bowl marks date from the very end of the seventeenth century and into the mid eighteenth. These marks are mostly incuse, although a small number in relief also appear, and all comprise initials applied to the bowl facing the smoker (for examples see Appendix 3, Figures 37.4, 122.03, 125.11, 131.05 and 131.11). Towards the end of this period a Doncaster maker, Lumley (see Appendix 1) was using an incuse full name mark, LUMLEY DONR, which he applied to the bowl facing the smoker, for an example see Appendix 3, Figure 124.08.

The following table presents a summary of the main characteristics of stamped bowl marks.



Broad Period	Main characteristics of stamped bowls
1660-1690	Initials marks in relief particularly in South Yorkshire rather rare. One example with wheel motifs and milled bands on a bowl from East Yorkshire around Beverley.
1690-1720	Bowl marks more common, mostly incuse, but some relief initials, on the bowl facing the smoker; occasional motifs such as wheel
1700-1750	Initials in relief on the bowl facing the smoker - rare, only one example found in York. Incuse initials and full name marks in east and south Yorkshire

*Table 8.8: Main characteristics of stamped bowl marks found in Yorkshire*

### **8.2.3 Range of moulded heel and spur marks**

Moulded heel marks, that is where the initials have been moulded on either side of the heel, first appear in the Transitional period (1690-1720). Although examples of this type of mark appear through into the second half of the eighteenth century, their use peaks in the first half of the eighteenth century. Moulded spur marks generally appear slightly later, although a single example was recorded in the north-east of the county dating from 1690-1720. The majority of the moulded heel and spur marks take the form of initials with the Christian name initial being placed on the smokers left and the surname initial on the smokers right. These initials are most commonly placed parallel to the stem, although there are some examples where the initial is placed at 90 degrees to the stem. For a selection of moulded initial marks see Appendix 3, Figures 2.03, 3.04, 11.10, 21.11, 35.01 and 36.5-12,

From the first half of the eighteenth century symbol marks were used either in place of the initial or in conjunction with it, for example stars or flowers, either on their own or surmounting the initial, and a crescent moon (Appendix 3, Figure 3.08). By the second half of the eighteenth century a dot and circle motif also appeared. In

Yorkshire only a small number of this type of symbol mark were recorded and these appear to be confined to the north and east of the county.

The following table presents a summary of the main characteristics of moulded heel and spur marks.

Broad Period	Main characteristics of stamped bowls
1690-1720	Moulded initials the majority of which occur on heels, although a small number of spurs recorded in north-east of the county. Initials applied either parallel to, or at 90 degrees to the stem.
1700-1750	Moulded heels still more popular but moulded spurs appear in the north-east of the county as well as in and around York. Some symbol marks either used alone or in conjunction with the initials. Most common symbols appear to be crescent moon, flowers and stars.
1750-1800+	Period dominated by moulded spur marks although moulded heels found in small numbers in the north and east of the county. Symbol marks continue to be used with dot and circle motif, in particular, appearing popular.

*Table 8.9: Main characteristics of moulded heel and spur marks found in Yorkshire*

#### 8.2.4 Range of moulded bowl marks

Moulded lettering around the rim and on the sides of the bowl becomes common at a number of production centres in Yorkshire, but particularly in Hull by the nineteenth century. For the purposes of this current research, however, there is a cut off period of 1800 and only a very small number of moulded bowl marks were recorded.

The earliest examples with moulded marks on the bowl were recorded from the study area dating from 1680-1710. Both came from Hull and have the large, and rather crudely executed, initials RC on the sides of the bowl (See Appendix 3, Figure 14.8 and Stothard 1983, 3 Fig 16).

Two bowls dating from 1700-1750, one from Beverley (Appendix 3, Figure 37.5) and one from Hull (Appendix 3, Figure 15.7), do not have lettering but have a series of pellets moulded on to the sides of the bowl in a lozenge pattern. This arrangement of pellets is reminiscent of Dutch bowls but these particular examples appear to be local Yorkshire products.

The remaining seven bowls bearing moulded bowl marks were found in West Yorkshire, six from Doncaster and one from Wakefield. The six examples from Doncaster were recovered from the Lumley kiln site and have the lettering WATSON ROTHERHAM (c1775-1800) moulded in relief up the bowl on either side of the mould seam away from the smoker. The example from Wakefield is similar but with the lettering THOS GILL REDHALL (Appendix 3, Figure 167.1). All seven bowls are decorated with Masonic motifs in addition to the lettering.

The following table presents a summary of the main characteristics of moulded bowl marks.

Broad Period	Main characteristics of stamped bowls
1680-1710	Large crudely executed initials on the side of the bowl in East Yorkshire.
1700-1750	Pellets in the form of a lozenge on the sides of the bowl found in East Yorkshire.
1750-1800+	Moulded lettering around the rim or on either side of the mould seam away from the smoker. Found in the south and east of the county often in association with a mould decorated bowl such as flutes or Masonic motifs.

*Table 8.10: Main characteristics of moulded bowl marks found in Yorkshire*

**8.3 Analysis of Yorkshire bowl marks**

Having considered the range of bowl marks recorded in Yorkshire the following sections go on to look at the proportion of marked to unmarked bowls in order to consider the changes in the use of bowl marks both chronologically and geographically, thereby highlighting any regional variation over time. A large proportion of the bowls from East Yorkshire came from the Rayner Collection

(Collection Code 0070). Although this collection is very large and covers the full study period for this thesis, there has been selective retention in favour of marked fragments. These factors created a serious skewing of the data, for example, for the period 1640-1660 the percentage of bowls with stamped heel marks from East Yorkshire was 68% when the Rayner Collection was included. When this material is not included, however, a more realistic figure of 12% is generated. It was decided, therefore to exclude the Rayner Collection for the purposes of the following analysis.

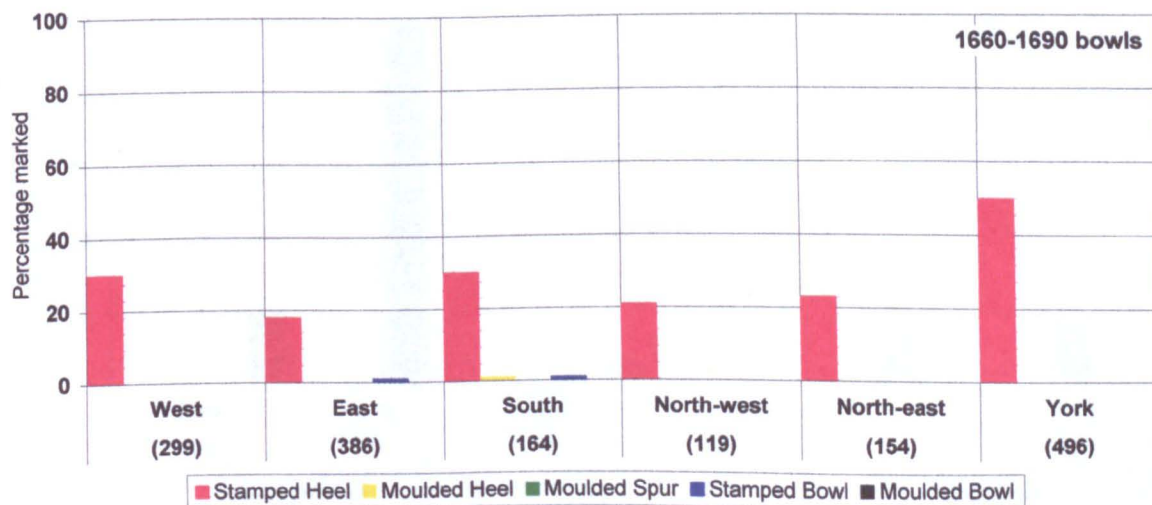
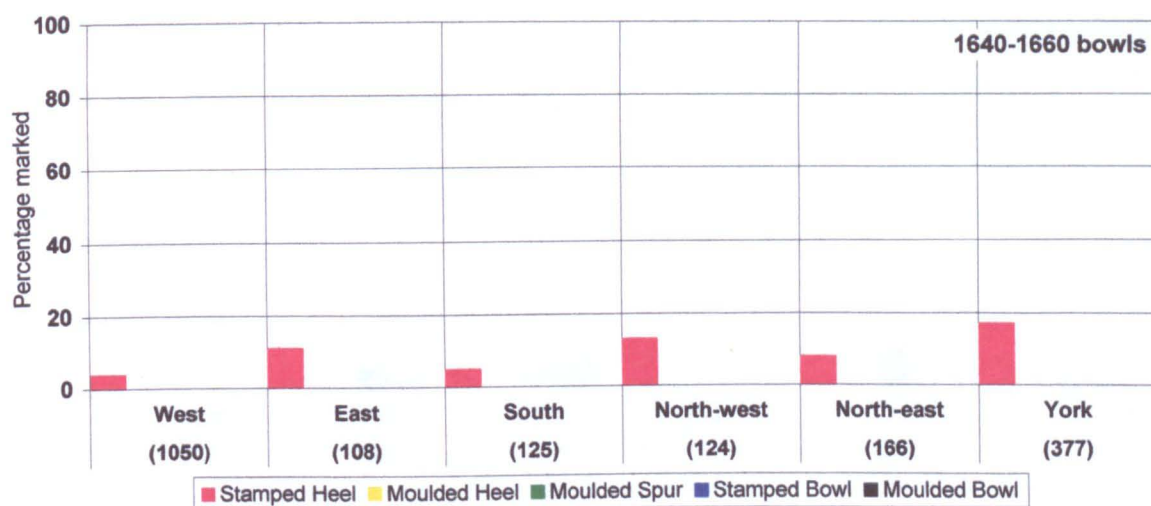
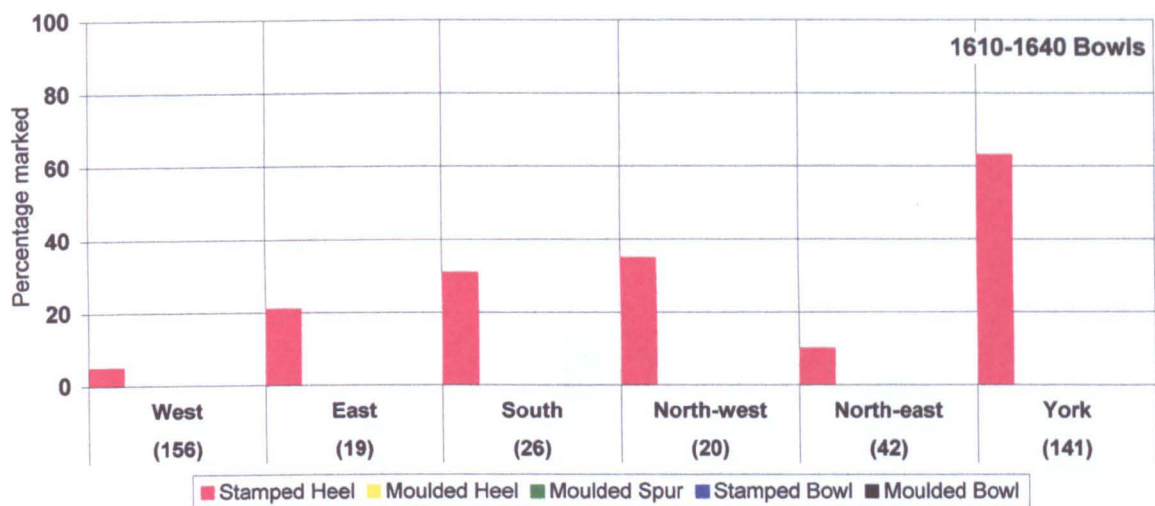
A count was made for each of the main mark types noted above, that is stamped heels, stamped bowl marks, moulded heel and spur marks and moulded bowl marks. This count was translated into a percentage of the total number of bowls for each of the six geographical sub-divisions within each of seven date ranges (1580-1610, 1610-1640, 1640-1660, 1660-1690, 1690-1720, 1700-1750 and 1750-1800). These percentages make the data from each region and period comparable.

This data is presented in a series of bar charts both chronologically and geographically in order to highlight any regional variation within the county of Yorkshire. For each chart the total number of bowl fragments in each sample, that is both marked and unmarked, is given in brackets.

### **8.3.1 Chronological analysis of Yorkshire bowl marks**

The chronological analysis of Yorkshire bowl marks is presented in a series of bar charts (Figures 8.11 and 8.12) for six out of the seven broad date ranges. The chart for 1580-1610 has been excluded as there were only ten bowls recorded from the whole of Yorkshire from this period, only one of which was marked – a stamped heel mark from South Yorkshire.

During the period 1610-1640 (Figure 8.11, top) only stamped heel marks occur. The highest proportion is found in and around York where 63% of the pipes were marked in this way. In contrast, in West Yorkshire during the same period only 5% of the bowls have stamped heel marks.



*Figure 8.11: Chronological analysis of bowl marks recorded in Yorkshire. 1610-1640 (top), 1640-1660 (middle) and 1660-1690 (bottom).*

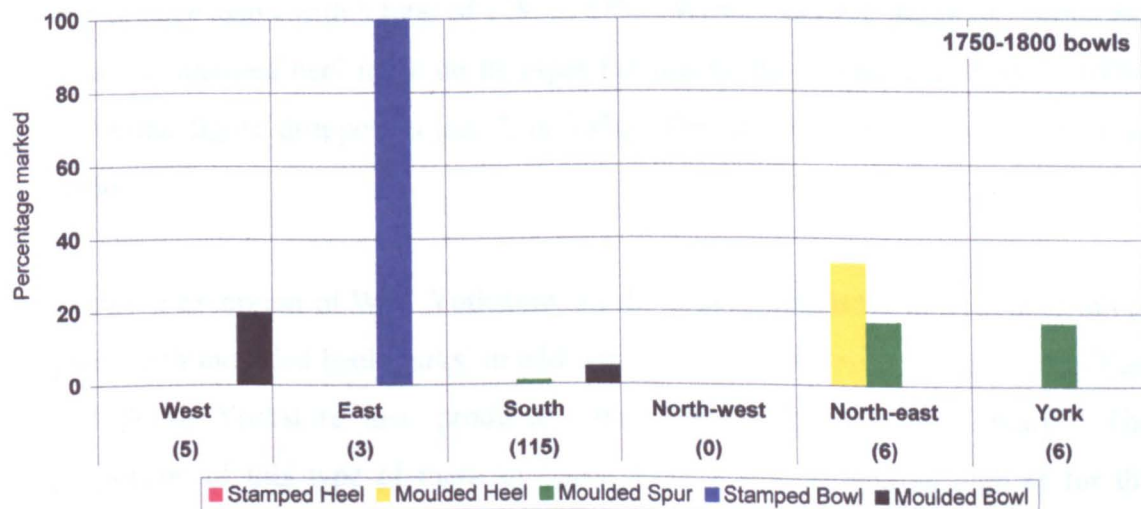
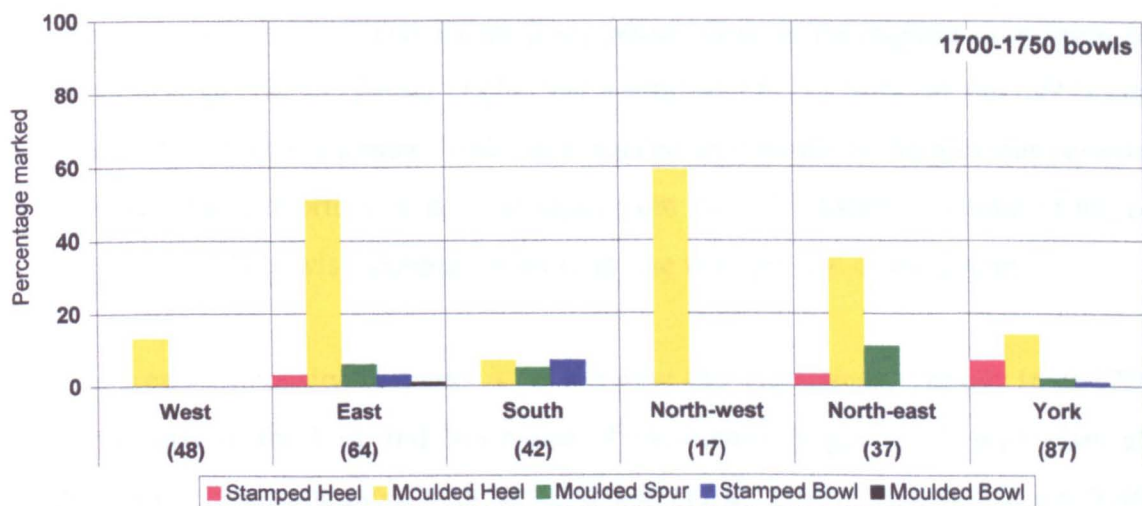
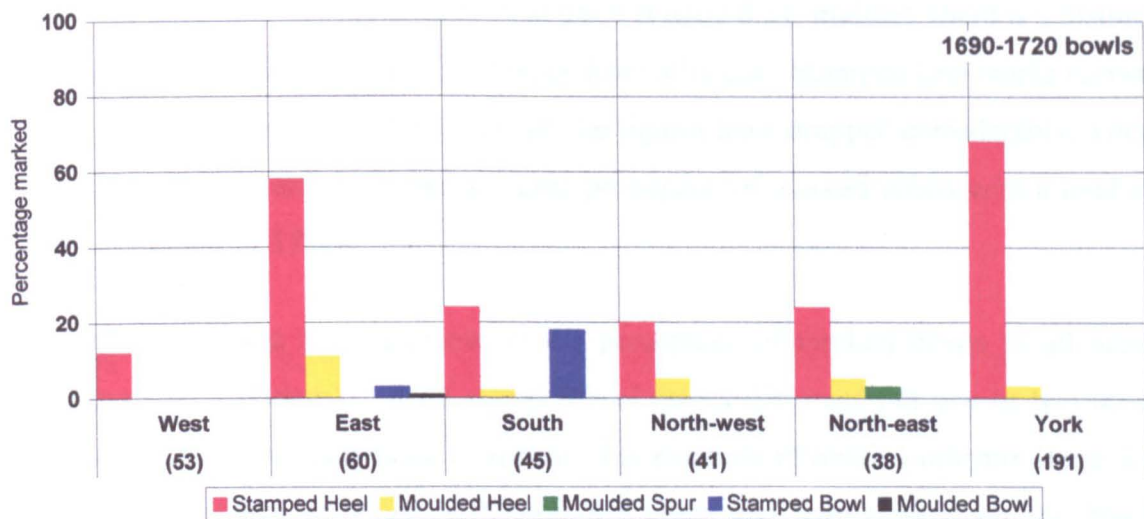


Figure 8.12: Chronological analysis of bowl marks recorded in Yorkshire. 1690-1720 (top), 1700-1750 (middle) and 1750-1800 (bottom).

By the Civil War period, around 1640-1660 (Figure 8.11, middle), there is a distinct drop in the percentage of marked pipes from all areas. Stamped heel marks remain the only type present. Although all the figures have dropped considerably, York and its environs still produced a higher proportion of marked bowls with a total of 65 examples, or 17%.

After 1660 there is an increase in the percentage of marked bowls in all areas (Figure 8.11, bottom). Again stamped heel marks dominate but one or two other types of marks are beginning to appear. For example in South Yorkshire there is a small percentage of pipes with moulded heels and with stamps on the bowl. Stamped bowl marks also begin to appear in East Yorkshire. As with the previous two periods it is York and its environs where there is the highest proportion of marked pipes. In the period 1660-1690 a total of 250, or 50%, of the 497 bowls recorded from in and around York were marked. In contrast to the previous periods, however, the proportion of marked pipes from West Yorkshire – a total of 90, or 30% of the 299 bowls recorded - is more in line with the rest of the county.

The greatest diversity of marks is seen during the Transitional Period, 1690-1720 particularly in the East and North-east of the county (Figure 8.12, top) when all areas were producing pipes with stamped heel marks. It is interesting that it is York and its environs that were producing the highest of proportion of stamped heel marks once again with a total of 129, or 68%. West Yorkshire, however, continued to use a stamped heel mark on its pipes but during the Transitional Period, 1690-1720, the figure dropped to just 7, or 13%. That is 18% lower than the previous period.

With the exception of West Yorkshire, all the areas produced a small proportion of pipes with moulded heel marks, in addition to those with stamped heels. Both East and South Yorkshire also produced pipes with a stamped bowl mark. The proportion of this type of mark in South Yorkshire is almost as high as for the stamped heel marks with a total of 8 examples, or 17%.

By the period 1700-1750 only three of the geographical sub-divisions produced pipes with stamped heel marks – East Yorkshire (1%), North-east Yorkshire (2%) and York and its environs (5%). The dominant method of marking in all areas is the moulded heel mark, particularly in the West and North-west where it is the only form of marking at this date.

With the exception of South Yorkshire, the sizes of the samples for the period 1750-1800 are rather small and are therefore misleading. The sample from South Yorkshire, with 115 examples, however would seem to indicate a significant decrease in the percentage of bowls that are marked. In this area only two types of marking occur, moulded spurs with only one example and moulded bowl marks with six examples, or 3% of the total.

### **8.3.2 Geographical analysis of Yorkshire bowl marks**

As with chronology, similar bar charts have been prepared to show the geographical distribution (Figures 8.13 and 8.14). Taken with the charts for the chronological distribution, it is possible to draw a more detailed picture of what was happening in terms of the marking of bowls across the county between 1580 and 1800. The size of the sample for each date range is given in brackets after the date.

Stamped heel marks have been recorded in all six geographical sub-divisions with the majority falling in the period 1610-1720. South Yorkshire (Figure 8.13 bottom) has one stamped heel for the period 1580-1610 which gives a misleading figure of 100% and should therefore be ignored. East Yorkshire, the North-east and York and its environs each have a small proportion of stamped heels for the period 1700-1750. It is interesting to note that in all areas there is a marked drop in the proportion of stamped heels in the Civil War period, that is 1640-1660. This is followed by a sudden increase after 1660.

The largest proportion of stamped bowls appears to occur in South Yorkshire during the period 1690-1720 (Figure 8.13, bottom). The 100% reading for East Yorkshire (Figure 8.13, middle) for the period 1750-1800 is given by just three examples and should therefore be ignored. Very small percentages of stamped bowls also occur



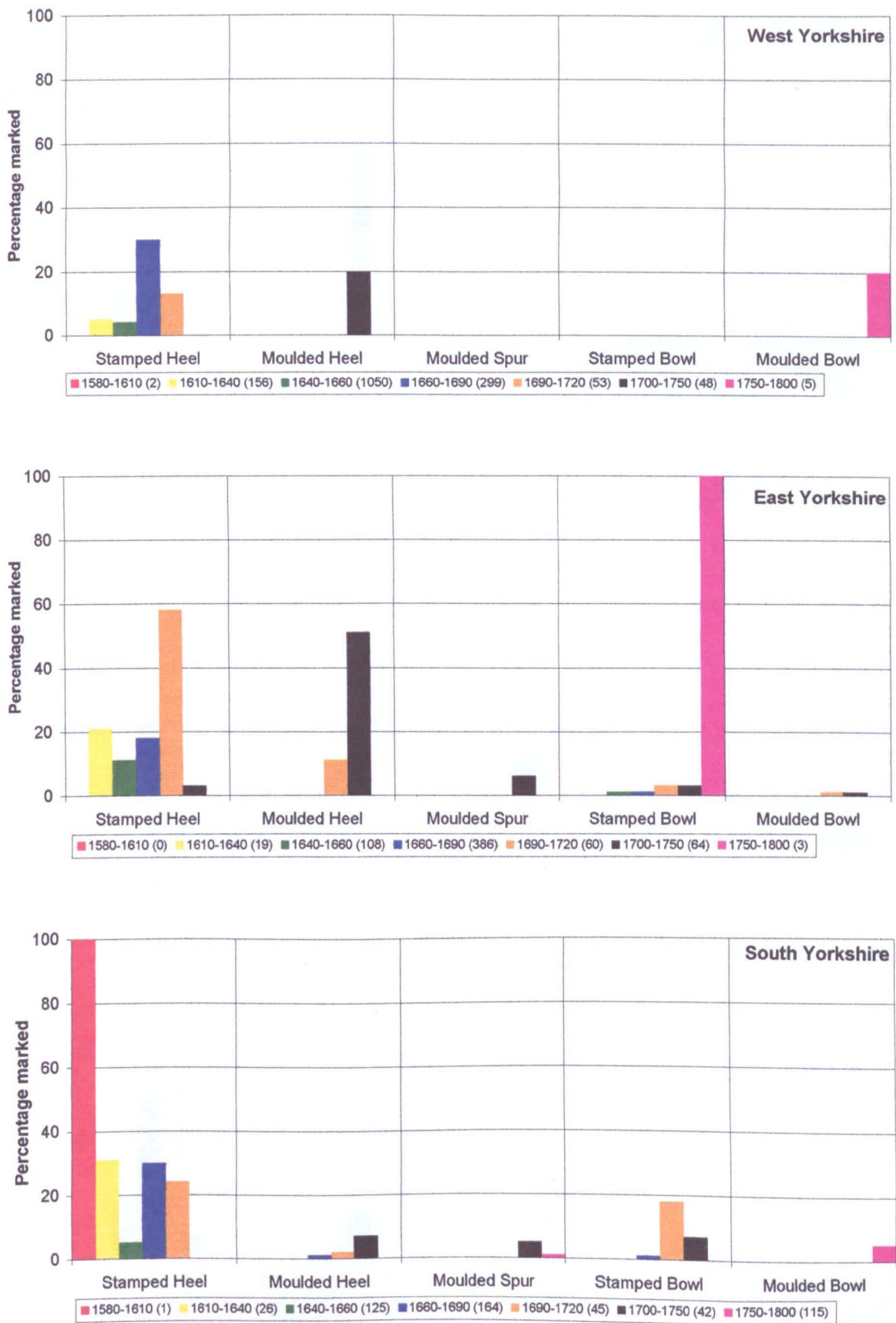
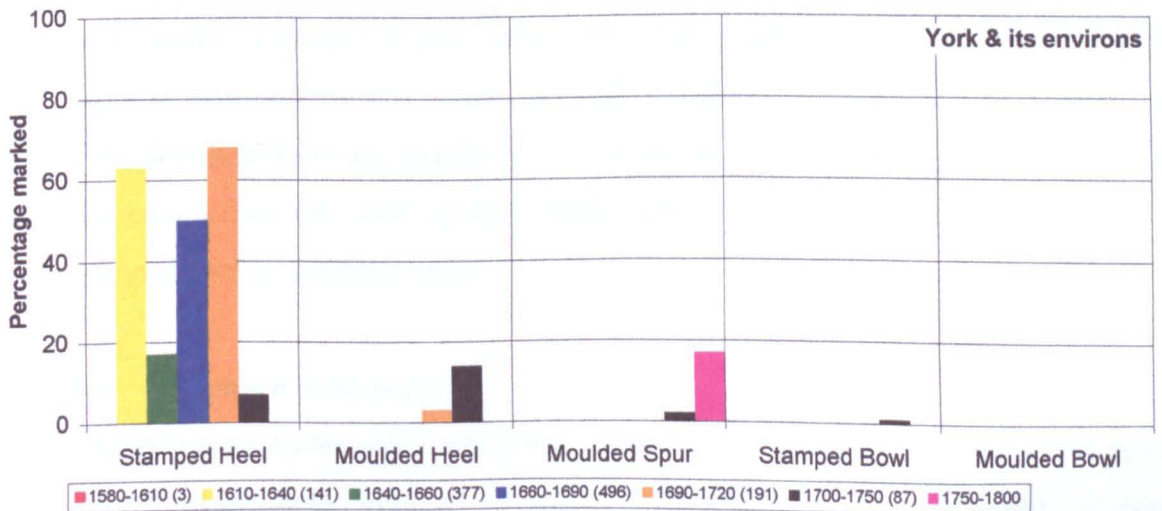
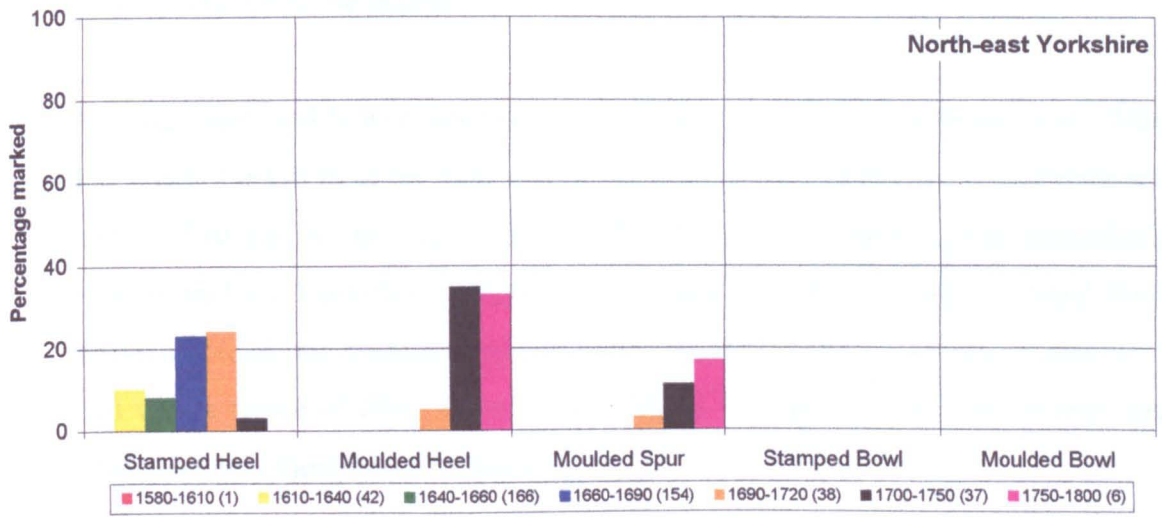
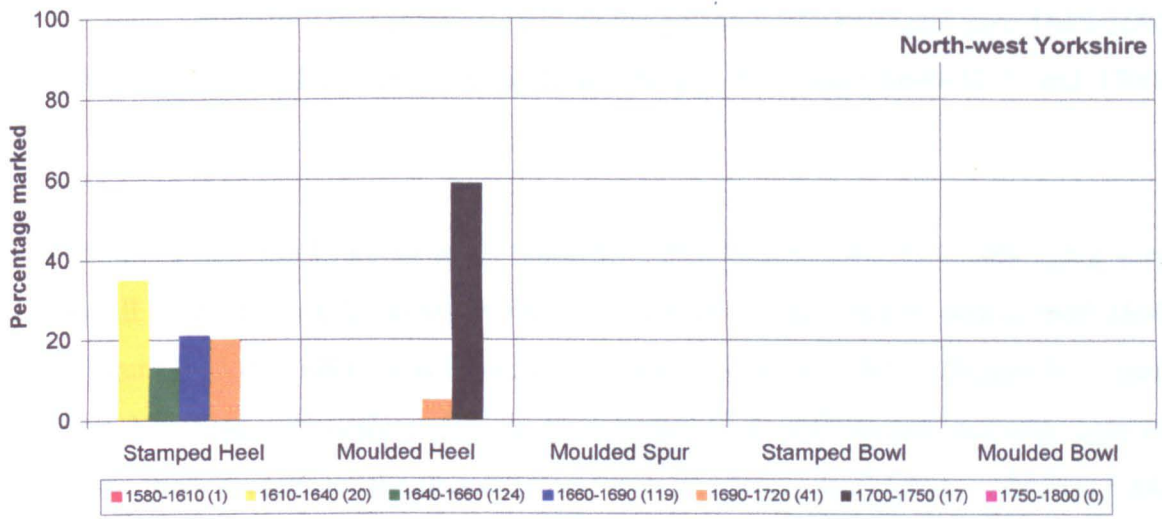


Figure 8.13: Geographical analysis of bowl marks recorded in Yorkshire. West Yorkshire (top), East Yorkshire (middle) and South Yorkshire (bottom).



**Figure 8.13:** Geographical analysis of bowl marks recorded in Yorkshire. North-west Yorkshire (top), North-east Yorkshire (middle) and York & its environs (bottom).

in East Yorkshire (1%) from as early as the period 1640-1660 and also 1660-1690 (Figure 8.13, middle), rising slightly to 3% for the period 1690-1720 and 1700-1750.

Moulded heel marks occur in all areas from the period 1690-1720, although a very small percentage, 1%, occurs in South Yorkshire as early as the period 1660-1690 (Figure 8.13, bottom). It is interesting to note that in both West (Figure 8.13, top) and North-west Yorkshire (Figure 8.14, top) moulded heels are the only type of bowl mark present for the period 1700-1750. In North-east Yorkshire (Figure 8.14, middle) moulded heels and spurs first occur in the period 1690-1720 and rise steadily through to the period 1750-1800.

Although moulded bowl marks were only recorded in small quantities from West and South Yorkshire at the very end of the eighteenth century, their use continued into the first half of the nineteenth century. This form of marking was particularly popular in East Yorkshire, around Hull (Watkins 1979). Of the moulded bowl marks recorded, the highest proportion was found in West Yorkshire (Figure 8.13 top) with a figure of 20%, however, this figure is based on a sample of only five bowls and may therefore be misleading.

It is East Yorkshire (Figure 8.13, middle) that appears to have the widest range of bowl marks. Certainly in the period 1700-1750 examples of each of the five main types of bowl marks have been recorded, although the moulded heel mark is the most dominant form accounting for 51% of the bowls. In contrast the North-west of the county has the least diverse range with all marked bowls either having a stamped heel or a moulded heel.

#### **8.4 Stamped stem marks**

Stamped stem marks could either be a small motif or initials similar to a heel mark but placed across the stem, or a broad band applied around the entire stem, referred to as a roll-stamp mark.

Roll-stamp marks fall into quite distinctive regional schools, the most elaborate of which were produced at Chester (Rutter and Davey 1980). Roll-stamp marks are a phenomenon that appears to have been used principally in the Midlands and the north of England. The examples recovered from Chester are almost entirely decorative and hardly any contain lettering or the maker's name, although the word CHESTER, in association with the Chester arms, was often placed within or between the roll-stamp borders. Those found in Yorkshire and parts of the North-east, however, are usually name marks that are sometimes associated with decorative borders. Examples of these marks have been previously noted as isolated examples but there has been no systematic study of them. Regional studies of this type of mark have been carried out for Tyneside (Edward 1988a), Chester (Rutter and Davey 1980) and Nottingham (Alvey, Laxton and Paechter 1979) but to date, not for Yorkshire.

From Yorkshire a total of 483 marked stems comprising 153 stem stamps and 330 roll-stamp marks were recorded and impressions made for the National Stamp Catalogue. A breakdown of the quantity of stem stamps (SS) and roll-stamp marks (RS) recorded, from each period for the six geographical sub-divisions is presented in the table below.

	1580-1610		1610-1640		1640-1660		1660-1690		1690-1720		1700-1750		1750-1800	
	SS	RS	SS	RS	SS	RS	SS	RS	SS	RS	SS	RS	SS	RS
West	0	0	0	0	3	0	1	0	10	1	4	39	0	4
East	0	0	6	0	21	0	15	0	61	2	2	89	0	15
South	0	0	0	0	3	0	0	0	3	0	0	36	0	88
North-west	0	0	0	0	1	0	0	0	6	3	9	5	0	2
North-east	0	0	0	0	0	1	1	0	1	0	0	5	0	18
York & its environs	0	0	0	0	1	0	2	0	0	0	1	21	0	1
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>29</b>	<b>1</b>	<b>19</b>	<b>0</b>	<b>81</b>	<b>6</b>	<b>16</b>	<b>195</b>	<b>0</b>	<b>128</b>

*Table 8.11: Count of stem stamps (SS) and roll-stamps (RS) for each area by period*

#### 8.4.1 Stem stamp marks (Figure 8.15)

A total of 153 stem stamps, where the initials or motif is stamped across the line of the pipe, were recorded in Yorkshire. A breakdown of the type of marks by geographical subdivision is given in the following table.

Initials	West	East	South	North-west	North-East	York & its environs	Total
??				2			2
?H	1		1	1			3
?W	1			2			3
C/G?					1		1
CB				1			1
TC		1					1
HS (**see note below)	1						1
?/HS	1						1
IG	6		1				7
IG (crowned)	1						1
I GILL		2					2
IH	1						1
IH (crowned)	1						1
IL			1				1
?MH	1						1
RF		1					1
RH				1			1
SH	1					1	2
SV	1	101	3		1		106
TH						3	3
WH	2			2			4
Crossed arrows motif						1	1
Crown motif						1	1
Roman numerals				5			5
Ship motif				2			2
<b>Totals</b>	<b>18</b>	<b>105</b>	<b>6</b>	<b>16</b>	<b>2</b>	<b>6</b>	<b>183</b>

**\*\* N.B:** the two stem stamps read as HS are very small and it is difficult to determine which way round the initials should be read, therefore the possibility that these marks read SH rather than HS should not be ruled out.

**Table 8.12:** Table giving the count for each type of stem stamp recorded from the six geographical sub-divisions in Yorkshire. A question mark (?) indicates an initial that is illegible

Of the 151 legible stem stamps 142, or 94%, comprised lettering or sets of initials and the remaining nine examples, or 6%, comprised abstract motifs such as crowns (Figure 8.15 No. 14) or Roman numerals (Appendix 3, Figure 59.3).

A selection of stem stamp marks from Yorkshire has been illustrated at twice life size in Figure 8.15. Full details of all pipe fragments bearing stem stamp marks have been recorded on the Yorkshire Database. The majority of the letter marks recorded in Yorkshire are initial marks, either in relief (for example Figure 8.15 Nos. 6 and 8) or incuse (for example Figure 8.15 Nos. 11 to 13), and stamped across

the line of the pipe. Often these marks were placed on top of the stem a short distance from the bowl. As with the heel stamps discussed above, these stem stamp marks occur with or without borders. When they do occur these borders could be circular (for example Figure 8.15 Nos. 1, 6 and 8 to 10), heart-shaped (for example Figure 8.15 Nos. 5 and 7) or simply follow the outline of the design as with the crowned IG mark in Figure 8.15 No. 2. Two of the stem stamps recorded bear a full name mark that reads I GILL. These marks can be attributed to one of the Gill family from near Wakefield. The Gills were a pipemaking family who had been working in and around Potovens, near Wakefield from the end of the seventeenth century right through to the nineteenth century (Brears 1967, 42).

Of the 142 letter marks 106, or 75% were the initials SV, 101 of which were recorded in East Yorkshire. These SV marks are quite different in that they are incuse. They are found throughout England on pipes dating from the seventeenth and eighteenth centuries. They occasionally occur on pipes that bear a second set of initials, which has given rise to the suggestion that these SV marks may be some kind of quality mark (for example Appendix 3, Figure 40.5). For a more detailed discussion of the distribution of SV marks in Yorkshire see Chapter 9

#### **8.4.1.1. Catalogue of selected stem stamp marks from Yorkshire**

In the following catalogue are presented a range of stem stamp marks recorded in Yorkshire. These marks are arranged alphabetically by surname initial, followed by the symbol marks. The accompanying catalogue gives the die number, where one exists, as recorded in the National Clay Tobacco Pipe Stamp Catalogue (NSC) together with details of the collection that now holds the pipe and the name of the site from which it was recovered. The pipe code (Pcode) is also given, which cross-refers to the Yorkshire database. Details of any makers mentioned in the catalogue can be found in Appendix 1.

Fig 8.15 No. 1: NSC Die No. 1476; TC stem mark dating from 1660-1700. This example held by the Rayner Collection and recovered from field walking around Beverley. Pcode 2885.



**Figure 8.15:** Selected stem stamps from Yorkshire. 1 TC; 2 IG; 3 I GILL; 4 IH; 5-7 WH; 8 H ROBINSON YARM; 9 HS (or SH); 10 ?IS; 11-14 SV; 15 Crown. (Scale 2:1)

Fig 8.15 No. 2: NSC Die No. 1828; IG stem mark dating from 1690-1720. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH94 20 1593) (White forthcoming). Pcode 02725. A Judith Gill is known to have been working at Potovens, near Wakefield c1692-1693 and a John Gill, also at Potovens, c1709-1717 (Brears 1967, 42). However, the published Gill marks all appear on the heels of their pipes. The closest parallel for the Wood Hall IG mark is a stem stamp from Barnard Castle, which takes the form of a stylised crown above the initials IG (Davey 1988a, Fig 33).

Fig 8.15 No. 3: NSC Die No. 1484; I GILL stem mark dating from 1700-1720. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1065). Pcode 03285. This mark may be attributed to one of the Gills working in and around Potovens.

**Fig 8.15 No. 4: NSC Die No. 1854; IH (Crowned) stem mark dating from 1660-1680. This example held by the West Yorkshire Archaeological Services and recovered from Pontefract Castle (Acc No. PC83 240) (Davey and White 2002, 246 Fig 102, No. 51). Pcode 02097.**

**Fig 8.15 No. 5: NSC Die No. 1700; WH stem mark dating from 1680-1700. This example held by the Central Excavation Unit (HMBC) and recovered from Bedern Bank, Ripon (Acc No. 258.2573) (Davey 1990b). Pcode 03340.**

**Fig 8.15 No. 6: NSC Die No. 1831; WH stem mark dating from 1600-1699. This example held by the West Yorkshire Archaeological Services and recovered from Sovereign Street (Acc No. SOV98 1000 U/S) (White 1999). Pcode 02142.**

**Fig 8.15 No. 7: NSC Die No. 1830; WH stem mark dating from 1600-1699. This example held by the West Yorkshire Archaeological Services and recovered from Sovereign Street (Acc No. SOV98 1008) (White 1999). Pcode 02143.**

**Fig 8.15 No. 8: H ROBINSON YARM stem mark dating from 1670-1700. This example held by the Tees Archaeology and recovered from Church Walk, Hartlepool (Acc No. HCW F15(b) D-8 1157.97). An unusual full-name stem stamp of a previously unrecorded maker from Yarm (Edwards 1985). Pcode 02024. Drawing after Edwards 1985.**

**Fig 8.15 No. 9: NSC Die No. 1824; HS stem mark dating from 1690-1710. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 14 1828) (White forthcoming). Pcode 02692.**

**Fig 8.15 No. 10: NSC Die No. 1823; ?H/IS stem mark dating from 1690-1720. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH92 20 590) (White forthcoming). Pcode 02723.**



Fig 8.15 No. 11: NSC Die No. 1483; SV stem mark dating from 1650-1680. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1326). Pcode 02927.

Fig 8.15 No. 12: SV stem mark dating from 1620-1650. This example held by the Rayner Collection and recovered from field walking around Beverley. Drawn by D. Higgins.

Fig 8.15 No. 13: SV stem mark dating from 1640-1660. This example held by the Rayner Collection and recovered from field walking around Beverley. Drawn by D. Higgins.

Fig 8.15 No. 14: SV stem mark dating from 1620-1650. This example held by the Rayner Collection and recovered from field walking around Beverley. Drawn by D. Higgins.

Fig 8.15 No. 15: Crown mark dating from 1650-1700. This example held by the York Archaeological Trust and recovered from 21-33 Aldwark, York.

The following table presents a summary of the main characteristics of roll-stamp marks from Yorkshire.

Broad Period	Main characteristics of stem-stamp marks
17 <sup>th</sup> and 18 <sup>th</sup> century	Use of SV marks on the stem widespread in Yorkshire as well as other parts of England. Rare examples found in association with other initials.
Late 17 <sup>th</sup> to early 18 <sup>th</sup> century (1660-1720)	Large initial marks similar to those seen on heel stamps earlier in the century. Small stamps with circular and heart-shaped borders placed on the stem a short distance from the bowl. Mostly initial marks although some abstract motifs such as crowns appear. Early 18 <sup>th</sup> century sees the use of name marks

**Table 8.13:** *Main characteristics of stem-stamp marks found in Yorkshire*

#### 8.4.2 Roll-stamp stem marks (Figures 8.16 to 8.19)

Of the total 330 roll-stamp marks recorded from Yorkshire only 15 were illegible. Of the remaining 315 roll-stamp marks the design of 190 comprised mainly of lettering, accounting for 60% of the total legible marks. A total of 125, or 40%, of the marks comprised abstract designs such as the Midland borders (Figure 8.19 No. 8) or diamond pattern (Appendix 3 Figure 148.3). More detailed analysis of the letter marks show that 150, or 76%, were attributable to known makers from South or West Yorkshire. A count for each maker is given in the table below.

Makers Name	Production Centre	Qty
? Hillary	Pontefract area	2
A Hillary	Pontefract area	1
Stephen Hillary	Pontefract area	8
Isaac Hodgson	Leeds	1
S Lumley	Doncaster	62
Benjamin Marsden	Rotherham	1
I Powell	?Wakefield	1
Richard Scora	Rawmarsh	49
Thomas Wild	Rotherham	15
William Wild	Rotherham	7

*Table 8.14: Count of roll-stamp marks recorded for known pipe-makers from south and west Yorkshire.*

A selection of roll-stamp marks from Yorkshire has been illustrated at twice life size in Figures 8.16 to 8.19. The roll stamp marks recorded in Yorkshire fall into two basic types. The majority are wrapped horizontally around the stem and bear the makers initials, or more commonly, the full name often surrounded by a decorative border. In some instances these decorative borders are extremely elaborate, for example the S. Lumley mark with its borders of scrolls, scallops and small flowers (Figure 8.17 No. 6) and the Richard Scora marks with its rows of animals, possibly foxes, above and below the lettering (Figure 8.18 No. 3).

The second, and more unusual type was wrapped diagonally around the pipe producing a spiral effect. In total six of these spiral marks were recorded, three

bearing the lettering YARM YORKSHIRE (for example see Figure 8.18 Nos. 9 & 11); two with the lettering VERNON (for example see Figure 8.8 No. 7) and one with the slogan NO EXCISE (Figure 8.8 No. 1). All these marks were either recovered from sites in and around Yarm or have the name Yarm in the mark, strongly suggesting that this rather unusual form of spiral roll-stamp mark was popular with pipe-makers in that town. This type of mark is also unusual in that the VERNON and NO EXCISE marks appear to be of a political nature. The VERNON marks may be associated with Admiral Vernon who won a great naval battle at Porto Bello in 1739. Pipes commemorating the Admiral's victory are known from the second quarter of the eighteenth century (le Cheminant 1981d, 88) and, although much later than Vernon's famous naval battle, it is possible that the Yorkshire stem marks also refer to the Admiral. Although rare, pipe stamps bearing the names of political figures do occur, for example Atkinson (1975, 38) illustrates a mark that reads WILKES NO.45. Atkinson associated this mark with John Wilkes and edition number 45 of his paper North Briton, in which, in 1763, he attacked the monarchy and the establishment making him a 'hero of the working classes' (*ibid* 42). It is interesting that the form of the Wilkes mark is very similar to that of the Vernon marks.

#### **8.4.2.1 Catalogue of selected roll-stamp marks from Yorkshire**

As with the stem-stamp marks discussed above, the following catalogue presents a selection of the roll-stamp marks recorded in Yorkshire. Full details of all pipe fragments bearing roll-stamp marks have been recorded on the Yorkshire Database and details of the individual makers can be found in Appendix 1.

Fig 8.16 No. 1: NSC Die No. 1837; A HILLARY roll stamp stem mark dating from 1740-1780. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH90 15 370) (White forthcoming). Pcode 02697. Possibly a Pontefract maker.

Fig 8.16 No. 2: NSC Die No. 1916; S HILLARY roll stamp stem mark dating from 1740-1780. This example held by the White Collection and recovered from Thorne Area (Acc No. 160300). Pcode 08421. Possibly Stephen Hillary of Pontefract.

~~MISSISSIPPI~~  
A+HILLARY

1

\* \*  
S·HILLARY  
\* \* \*

2

\*  
♥ S·HILLARY

3

S·HILLAR  
~~~~~

4

S·HILLARY

5

~~~~~  
:Hillary

6

STEPHEN  
HILLARY  
~~~~~

7

Figure 8.16: Selected roll stamp stem marks. Members of the Hillary family (Scale 2:1)

**Fig 8.16 No. 3: NSC Die No. 1917; S HILLARY roll stamp stem mark dating from c1700-1750. This example held by the Pontefract Museum and is unprovenanced material from Pontefract (Acc No. 3). Pcode 08000. Possibly Stephen Hillary of Pontefract.**

**Fig 8.16 No. 4: NSC Die No. 1836; S HILLARY roll stamp stem mark dating from 1740-1770. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH97 27 3233) (White forthcoming). Pcode 02690. Possibly Stephen Hillary of Pontefract.**

**Fig 8.16 No. 5: NSC Die No. 1512; S HILLARY roll stamp stem mark dating from 1720-1760. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1015). Pcode 03241. Possibly Stephen Hillary of Pontefract. Die drawn by D. Williams.**

**Fig 8.16 No. 6: NSC Die No. 1915 HILLARY roll stamp stem mark dating from 1720-1780. This example held by Wakefield Museum and Art Gallery and recovered from excavations in Castleford. Pcode 24745. Although the Christian name initial is missing, it is possible this is another Hillary mark from Pontefract.**

**Fig 8.16 No. 7: NSC Die No. 1840; STEPHEN HILLARY roll stamp stem mark dating from 1740-1780. This example held by the West Yorkshire Archaeological Services and recovered from Old Hall Farm (Acc No. OHF96 2043) (White 2001a). Pcode 21363. N reversed. Possibly Stephen Hillary of Pontefract.**

**Fig 8.17 No. 1: NSC Die No. 1920; I CROSLAND roll stamp stem mark dating from 1710-1770. This example held by the Doncaster Museum & Art Gallery and recovered from North side of Church Way (St. George's), Site DT (Acc No. DT/NAH 75/42). Pcode 08340.**

**Fig 8.17 No. 2: NSC Die No. 1507; FLEETWOOD roll stamp stem mark dating from 1700-1750. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1017). Pcode 03245. Large numbers of**

Fleetwood marks have been recorded in Yorkshire and this may be the name of a pipe-maker rather than referring to the town of Fleetwood in Lancashire. Die drawn by D. Williams.

Fig 8.17 No. 3: NSC Die No. 1926; ISSAC HODGSON MAKER IN LEEDS roll stamp stem mark dating from 1740-1760. This example held by English Heritage and recovered from Wharram Percy (Acc No. WP88/74/106). Pcode 23535. This mark is rather unusual in that it also gives the place name as well as the maker's full name.

Fig 8.17 No. 4: NSC Die No. 1918; HUDSON roll stamp stem mark dating from c1740-1790. This example held by the White Collection and recovered from Thorne Area (Acc No. 160300). Pcode 08422.

Fig 8.17 No. 5: NSC Die No. 1919; I LAXTON roll stamp stem mark dating from c1700-1799. This example held by the York Excavation Group and recovered from Orchard Field, Skelton (Acc No. SK/1021) (Davey 1992d). Pcode 08516.

Fig 8.17 No. 6: NSC Die No. 1929; S LUMLEY roll stamp stem mark dating from c1760-1780. This example held by the Doncaster Museum & Art Gallery and recovered from Church Street, Site DC, DY, DX and DCH (Acc No. DC/AGA). Pcode 24797. Mark stamped below traces of tendril moulded decoration

Fig 8.17 No. 7: NSC Die No. 1922; GL roll stamp stem mark dating from c1700-1740. This example currently being held by the NCTPA, on loan from Tees Archaeology, and recovered from Southgate, Hartlepool (Acc No. HP81/SG 41A). Pcode 20953. Although this particular example was recovered from outside Yorkshire an example produced from the same die was recovered from excavations in Scarborough.

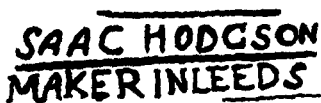
Fig 8.17 No. 8: NSC Die No. 1834; BENJAMIN MAZDEN roll stamp stem mark dating from 1760-1800. This example held by ARCUS and recovered from Riverside Exchange, Sheffield (Acc No. 11402) (White 2002a). Pcode 08399.



1



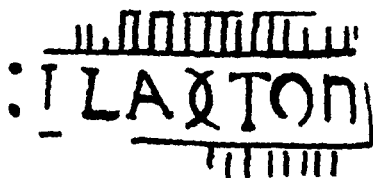
2



3



4



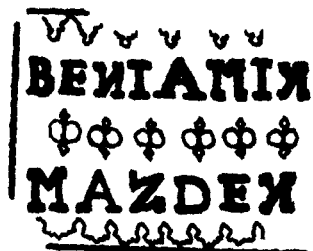
5



6



7



8

Figure 8.17: Selected roll stamp stem marks (Scale 2:1)

Fig 8.18 No. 1: NSC Die No. 1923; NO EXCISE roll stamp stem mark dating from 1760-1810. This example held by the Tees Archaeology and recovered from the Yarm (Acc No. Y80 30) (Davey 1983). Pcode 02016. Possible political slogan.

Fig 8.18 No. 2: NSC Die No. 1838; ?I POWELL roll stamp stem mark dating from 1740-1780. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH90 15 298) (White forthcoming). Pcode 02704.

Fig 8.18 No. 3: NSC Die No. 1508; RIH:SCORA (ROMARSH) roll stamp stem mark dating from c1740-1780. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1028). Pcode 03259.

Fig 8.18 No. 4: NSC Die No. 1509; R SCORA (ROMARSH) roll stamp stem mark dating from c1740-1780. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1025). Pcode 03273. Die drawn by D. Williams.

Fig 8.18 No. 5: NSC Die No. 1510; RICH<sup>D</sup> SCORA (ROMARSH) roll stamp stem mark dating from c1740-1780. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1042). Pcode 03264. Die drawn by D. Williams.

Fig 8.18 No. 6: NSC Die No. 1511; R SCORA (ROMARSH) roll stamp stem mark dating from c1740-1780. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1029). Pcode 03272. Die drawn by D. Williams.

Fig 8.18 No. 7: Midland style border dating from 1740-1790. This example held by ARCUS and recovered from Riverside Exchange, Sheffield (Acc No. 240F [14] (11424)) (White 2002a). Pcode. 08391.



NO EXCISE

1

POWELL

2

RICH SCORA  
ROMARSH

3

R SCORA

4

RICH SCOR  
OMARSH

5

RICH SCORA  
MARSH

6

VERNON

7

VERNON

8

YARM YORK

9

YARM YORKSHIRE

10

YARM YORKSHIRE

11

Figure 8.18: Selected roll stamp stem marks (Scale 2:1)

Fig 8.18 No. 8: NSC Die No. 1924; VERNON roll stamp stem mark dating from c1760-1810. This example held by the Tees Archaeology and recovered from The Yarm area (Acc No. Y77 0). Pcode 02013. Possibly associated with Admiral Vernon and commemorating his famous naval battle at Porto Bello in 1739. Similar partial mark also from Yarm noted by Davey (1983).

Fig 8.18 No. 9: NSC Die No. 1956; YARM YORKSHIRE roll stamp stem mark dating from 1770-1820. This example in a private collection in Stockton and recovered from the Stockton area. Pcode 24958. Similar examples of this mark have been recovered from Piercebridge and from Richmond.

Fig 8.18 No. 10: Part of a roll stamp mark showing a heart border. This example held by ARCUS and recovered from Riverside Exchange, Sheffield (Acc No. 240F [11] 11424 SF No. 0417) (White 2002a). Pcode 08392.

Fig 8.18 No. 11: NSC Die No. 1955; YARM YORKSHIRE roll stamp stem mark dating from 1750-1850. This example held by the Bowes Museum and recovered from Piercebridge (Acc No. PB/TV78 24 2AB1). Pcode 02129.

Fig 8.19 No. 1: NSC Die No. 1928; IS roll stamp stem mark dating from 1740-1790. This example held by the Scarborough Borough Council and recovered from St Thomas' Street, Scarborough (Acc No. STS93 T.1 103). Pcode 02598.

Fig 8.19 No. 2: NSC Die No. 1839; TT roll stamp stem mark dating from 1690-1720. This example held by the Wood Hall Archaeological Trust and recovered from Wood Hall Moated Manor (Acc No. WH94 20 764) (White forthcoming). Pcode 02726.

Fig 8.19 No. 3: NSC Die No. 1921; WATSON roll stamp stem mark dating from 1760-1810. This example held by the Scarborough Borough Council and recovered from Springfield, Scarborough (Acc No. SP900 Trench 9). Pcode 02597. Although a pipe-maker called James Watson is listed in the Rotherham directories for 1818, stylistically this mark is quite different from the other roll stamps found in

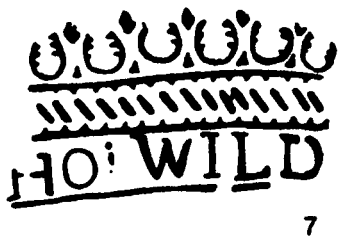
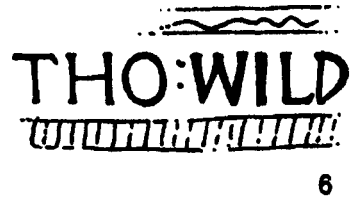
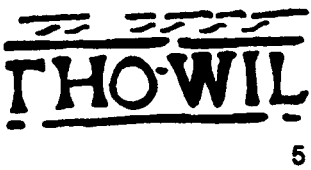
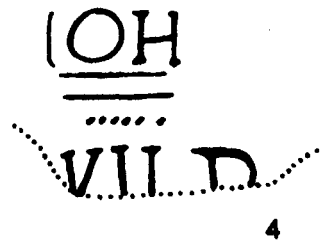
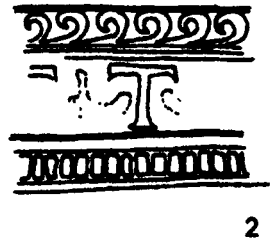
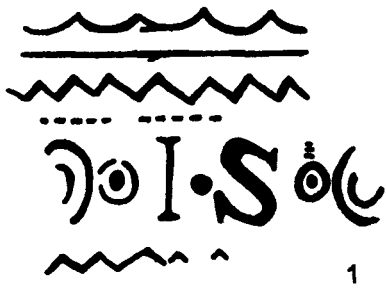


Figure 8.19: Selected roll stamp stem marks (Scale 2:1)

Yorkshire. It is most closely paralleled with a mark bearing the name DENTON (Oswald 1991, Vol 1 D1). Oswald attributes this mark to either J Denton of Sunderland c1865, or to Joshua Denton of Bradford c1822. The use of scrolls in association with the makers name is a style of mark found in north-east England, for example Hugh Coats of Gateshead c1792-1810 (Edwards 1988a, 33), William Coates of Sunderland c1821-1827 (Parsons 1964, 250) and Caleb Wilson of Sunderland c1827-1841 (*ibid*, 254). The Watson mark recovered from Scarborough, therefore, is most likely to have originated from the Gateshead/Sunderland area.

Fig 8.19 No. 4: NSC Die No. 1927; JOHN WILD roll stamp stem mark dating from 1730-1790. This example held by the Department of Archaeology, Sheffield and recovered from Bolsover Church (Acc No. BOL92 150) (Davey 1992,d). Pcode 01938.

Fig 8.19 No. 5: NSC Die No. 1832; THO WILD roll stamp stem mark dating from 1750-1800. This example held by the ARCUS and recovered from Riverside Exchange, Sheffield (Acc No. 11451) (White 2002a). Pcode 08400. Thomas Wild of Rotherham.

Fig 8.19 No. 6: NSC Die No. 1513; THO WILD (with a Midland border) roll stamp stem mark dating from c1720-1760. This example held by the Rayner Collection and recovered from field walking around Beverley (Acc No. 1058). Pcode 03279. Thomas Wild of Rotherham.

Fig 8.19 No. 7: NSC Die No. 1833; THO WILD roll stamp stem mark dating from c1760-1800. This example held by the ARCUS and recovered from Riverside Exchange, Sheffield (Acc No. 1187) (White 2002a). Pcode 08398. Thomas Wild of Rotherham.

Fig 8.19 No. 8: NSC Die No. 1925; WILLM WILD roll stamp stem mark dating from c1760-1780. This example held by the Doncaster Museum & Art Gallery and recovered from Lord Street, Site DF (Acc No. BF/BG). Pcode 24794. Mark 24mm from bowl/stem junction. William Wild of Rotherham.

The following table presents a summary of the main characteristics of roll-stamp marks from Yorkshire.

| <b>Broad Period</b>                               | <b>Main characteristics of roll-stamp marks</b>                                                                                                                                                                                                            |
|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Early to mid 18 <sup>th</sup> century (1700-1760) | Full name marks common particularly in South and West Yorkshire, often in association with decorative borders such as hearts, dots and circles, stars etc. Some examples also have place of manufacture but this is rather rare.                           |
| Late 18 <sup>th</sup> century (1760+)             | More elaborate borders and more finely executed. In the north-east of the county, particularly around Yarm, spiral stamps appear to be popular. Some of this spiral marks have political connections and slogan or place names rather than markers' names. |

*Table 8.15: Main characteristics of roll-stamp marks found in Yorkshire*

## 8.5 Summary

This chapter has focused on the range of marks in use in Yorkshire during the seventeenth and eighteenth centuries. Rather than discuss every mark recorded from Yorkshire in detail the aim of this chapter has been to present a summary of the main characteristics of each of the five main types of bowl marks together with a selection of stem marks.

Analysis of the individual dies recorded from the county helps in the identification of previously unknown makers as well as providing more information with regard to the size and nature of the workshops of those that are already documented. The use of die analysis together with the chronological and geographical analysis of the five main bowl mark types has charted the development of a range of mark types found in Yorkshire. This analysis has shown that regional variation clearly exists within the county and it has been possible to identify particular motifs, such as anchors, castles and crowns that are unique to specific areas within the county.

By using methods such as die analysis, and the identification of possible makers and their products through the use of mould flaw analysis, the movement of products

within the county of Yorkshire can be charted. In the following chapter a series of case studies are presented to show how such analysis can help with the identification of possible trade patterns within Yorkshire during the seventeenth and eighteenth centuries.

## **Chapter 9: The distribution of Yorkshire clay tobacco pipes**

### **9.0 Introduction**

This chapter will focus on the distribution of specific groups of Yorkshire clay tobacco pipes dating from the seventeenth and eighteenth centuries, as a means of identifying particular market or trade patterns. These groups will either be Yorkshire products that can be linked to a specific maker whether by means of a stamped mark or through products that have been produced in the same mould, or large groups of a particular mark that have been found in Yorkshire.

Chapter 8 looked at the analysis of individual dies as a means of identifying the range of marks used by a specific maker. It also introduced the idea that previously unrecorded makers could be identified by looking at the distribution patterns of marks with distinctive decorative motifs. In this chapter a series of case studies will be presented that will expand on these ideas in order to illustrate how die analysis can be used to define the market area of a particular maker. This chapter also considers how plain, unmarked, pipes can be used to identify distribution patterns through the analysis of mould flaws. Finally, the mechanisms by which these goods were distributed are considered.

### **9.1 Distribution of marked Yorkshire products within the county**

During the course of this research more than 2,000 clay tobacco pipes with stamped or moulded marks have been recorded. In the following sections information obtained from die analysis is used to outline the extent of the market area of a selection of stamped heel and stem marks. Although it has not been possible to map distribution patterns for every mark recorded in Yorkshire a number of key groups of pipes with stamped heel or stem marks have been identified. In the following sections a number of case studies are presented in order to give an indication of either: -

- the extent of the market area of a known maker

OR

- the possible location of a previously unrecorded maker and the extent of their market area

Of a total of 1,917 stamped heel, bowl or stem marks recorded from Yorkshire, a selection is discussed in detail in the following case studies accounting for 805 individual stamped pipes, or 42% of the total stamped marks from the county.

### 9.1.1 AB heel marks

A total of 170 heel-stamp marks with the initials AB was recorded during this study 14 of which are published examples for which no impressions exist and 22 that were so damaged that they could not be identified to individual die level. The remaining 134 were clear marks that could be directly compared with one another. Analysis of these marks identified 31 individual dies, a range of which has been illustrated in Chapter 8, Figure 8.6.








The AB marks can be divided into two main groups. The first dates from 1660-1690 and comprises 69 examples amongst which 12 individual dies can be identified. All of these can be attributed to Abraham Boyes of York who was recorded from 1645-1681 (Appendix 1). In Table 9.1 a twice life size drawing of each of the 12 die types is presented together with the die number, the number of recorded examples and the find spots from which they have been recovered. This is followed by the date range of the associated bowl forms.






In addition to the marks listed in Table 9.1, AB marks dating from the period 1660-1690 and also attributed to Abraham Boyes have also been recorded from Rainford, Merseyside (Davey *et al* 1982, 195, Fig 12, No. 13), The Hubbard Collection in Richmond, Yorkshire (Oswald 1991, AB (1) 10b), St. Mary's City, Maryland USA (*ibid* 10c) and Port Royal, Jamaica (Marx 1968, 17).

The documentary evidence relating to Abraham Boyes suggests that he successfully operated a sizeable workshop during his 36 years as a pipe-maker. During his working life he took on at least three apprentices and it is highly likely that his son Christopher, later to become a pipe-maker in his own right, also worked for him.



The Hearth Tax Returns for 1671 listed six hearths for Abraham Boyes (Appendix 1), suggesting that Boyes was a man of some status and wealth.

| NSC die number | Image                                                                               | Qty & place found                                  | Date range |
|----------------|-------------------------------------------------------------------------------------|----------------------------------------------------|------------|
| 1708           |    | 1 - Acaster Malbis<br>3 - Nun Appleton<br>4 - York | 1650-1680  |
| 1865           |    | 2 - York<br>1 - Rievaulx Abbey                     | 1660-1690  |
| 1866           |    | 1 - York<br>1 - Rievaulx Abbey                     | 1660-1690  |
| 1867           |  | 1 - Acaster Malbis                                 | 1660-1690  |
| 1868           |  | 1 - Nethergreen<br>3 - York                        | 1660-1690  |
| 1869           |  | 1 - Malton<br>11 - York                            | 1660-1690  |
| 1870           |  | 3 - Acaster Malbis<br>1 - Hull<br>5 - York         | 1660-1690  |














| NSC die number | Image                                                                              | Qty & place found                                                   | Date range |
|----------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------|
| 1871           |   | 1 - Carlisle<br>1 - Malton<br>1 - Middleton, Derybshire<br>7 - York | 1660-1690  |
| 1872           |   | 1 - York                                                            | 1670-1700  |
| 1887           |   | 1 - Carlisle<br>1 - Scarborough<br>5 - York                         | 1650-1680  |
| 1888           |   | 1 - Acaster Malbis<br>1 - Ripon<br>7 - York                         | 1660-1690  |
| 1902           |  | 3 - West coast of America                                           | 1670-1700  |








**Table 9.1:** Die number and image of each of the 1660-1690 AB dies identified in Yorkshire with the number of examples and find spots for each die and the overall date range of the associated bowl forms.

Analysis of the AB marks would suggest that Boyes was using at least 12 different dies and yet only 69 examples of his products have been recorded. This figure puts into perspective the small size of the sample that has been recovered from the archaeological record.

The second group of AB marks dates from 1690-1730. A total of 65 AB marks dating from this period have been recorded from which 20 individual dies have been identified. As with the AB marks attributed to Abraham Boyes, Table 9.2 presents a twice life size drawing of each die together with the die number, if allocated, the number of examples and the find spot recorded for each die followed by the date range of the associated bowl forms. It is interesting to note that, as with

their earlier counterparts, very low numbers of examples from each of the 1690-1720 dies has been recovered from the archaeological record.

| NSC die number | Image                                                                               | Qty & place found                                    | Date range                                                                                                                  |
|----------------|-------------------------------------------------------------------------------------|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| 1707           |    | 6 – Acaster Malbis<br>1 – Nun Appleton<br>4 – York   | 1680-1710                                                                                                                   |
| 1885           |    | 1 – Acaster Malbis<br>5 – York                       | 1670-1700                                                                                                                   |
| 1889           |    | 2 – Acaster Malbis<br>1 – Malton<br>2 – York         | 1680-1710                                                                                                                   |
| 1890           |    | 1 – York                                             | 1680-1710                                                                                                                   |
| 1891           |    | 1 – Acaster Malbis<br>2 – York                       | 1680-1710                                                                                                                   |
| 1892           |  | 2 – York                                             | 1680-1710                                                                                                                   |
| 1893           |  | 4 – York                                             | 1680-1710                                                                                                                   |
| 1894           |  | 2 – York                                             | 1680-1710                                                                                                                   |
| 1896           |  | 3 – Acaster Malbis                                   | 1680-1710                                                                                                                   |
| 1897           |  | 3 – Acaster Malbis<br>5 – York                       | 1680-1710<br>(NB: All of this date with exception of one heel fragment, which may have been incorrectly dated to 1650-1670) |
| 1898           |  | 1 – Acaster Malbis                                   | 1680-1710                                                                                                                   |
| 1899           |  | 3 – Acaster Malbis<br>1 – Wharram Percy<br>1 – York  | 1680-1710                                                                                                                   |
| 1900           |  | 2 – Acaster Malbis<br>1 – Rievaulx Abbey<br>1 – York | 1680-1710                                                                                                                   |

| NSC die number | Image                                                                               | Qty & place found      | Date range |
|----------------|-------------------------------------------------------------------------------------|------------------------|------------|
| 1901           |    | 2 – York               | 1670-1710  |
| 1903           |    | 2 – York               | 1680-1710  |
| 1904           |    | 1 – Acaster Malbis     | 1700-1740  |
| 1905           |    | 1 – Acaster Malbis     | 1680-1710  |
| 1906           |    | 2 – York               | 1700-1730  |
| 1640           |    | 1 – Queenhithe, London | 1680-1710  |
| N/A            |  | 1 – Escrick            | 1690-1720  |

**Table 9.2:** Die number, if allocated, and image of each of the 1690-1710 AB dies identified in Yorkshire with the number of examples and find spots for each die and the overall date range of the associated bowl forms.

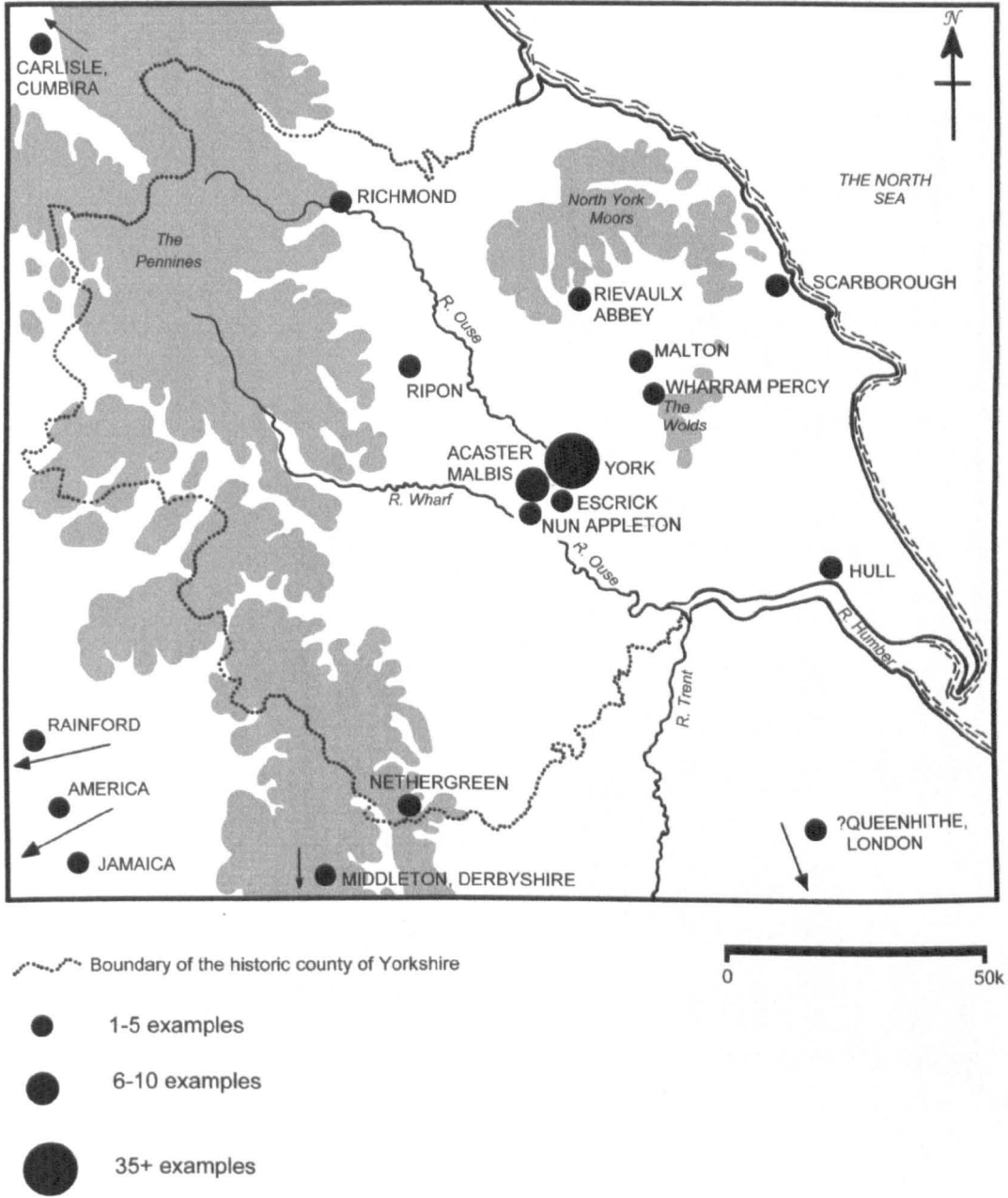
In addition to those marks detailed in Table 9.2 Oswald lists further examples from Queenhithe in London (The Cheminant Collection) as well as from The Hubbard Collection, Richmond (Oswald 1991, AB (2) 11a & b). Stylistically all these later pipe stamps are very similar and there is no reason to believe that they are not the products of a single maker. In his study of York pipes, Lawrence attributed all these 1690-1710 AB marks to a second Abraham Boyes, also from York, who was working as a trunk maker in 1711 when his son took his freedom (1979, 80). Trunk making was occasionally used by York pipe-makers as a parent trade (*ibid* 72) and the earlier Abraham Boyes was listed as a trunk and tobacco pipe-maker when he took his freedom in 1645 (Andrews 1991, 70). Lawrence does not give the name of the son who became free in 1711 nor does he suggest any family ties with the

earlier Abraham Boyes. From the parish register evidence it would appear that although the earlier Abraham Boyes had a son called Abraham, he died in 1663 aged just 1 year. To date there is no documentary evidence to suggest that there was a second, surviving son called Abraham, although the possibility cannot be ruled out. The reference to the 1711 freedom may, however, be a misreading of the evidence as Andrew's work on York makers in the 1980s makes no mention of a second Abraham Boyes but notes that Christopher Boyes, son of the earlier Abraham Boyes was freed *per patres* in 1711 at the age of 40. If this is the correct reading of the records used by Lawrence in 1979 it would suggest that there is in fact no second Abraham Boyes. If there was no later Abraham Boyes, and since there is no other known York pipe-maker of 1690-1720 with the initials AB, then another explanation for the archaeological evidence needs to be found. The most likely explanation is that Frances Boyes, the widow of Abraham Boyes (Appendix 1) took over the workshop and continued producing pipes after her husband's death since she subsequently took on a further five apprentices. No pipes with a stamped FB mark have been recorded from Yorkshire, and it seems likely that Frances continued to use her husband's initials to mark her pipes. It was not unusual for a widow to continue to use the moulds and stamps formerly used by their deceased husband. A contemporary example can be found in Scotland where Jean Wemyss, the widow of Edinburgh maker Patrick Crawford who died in 1682, continued to trade under her husband's name until at least 1699 (Gallagher 1987e, 10-11). Not only did Wemyss continue to use her husband's moulds and stamps but she also commissioned new moulds specifically for the export market with his initials on them (Horton, Higgins & Oswald 1987, 249).

Analysis of the AB stamped pipes from Yorkshire would indicate that large numbers of dies were being used by Abraham Boyes and later by his widow for the 1690-1710 period pipes. This would suggest that the Boyes family had a sizeable workshop capable of producing many thousands of pipes.

By looking at the find spots for all the AB marks it is clear that the home market did not extend far beyond York and sites immediately adjacent to it, such as Acaster Malbis, Escrick and Nun Appleton (Figure 9.1). Although AB marks have been

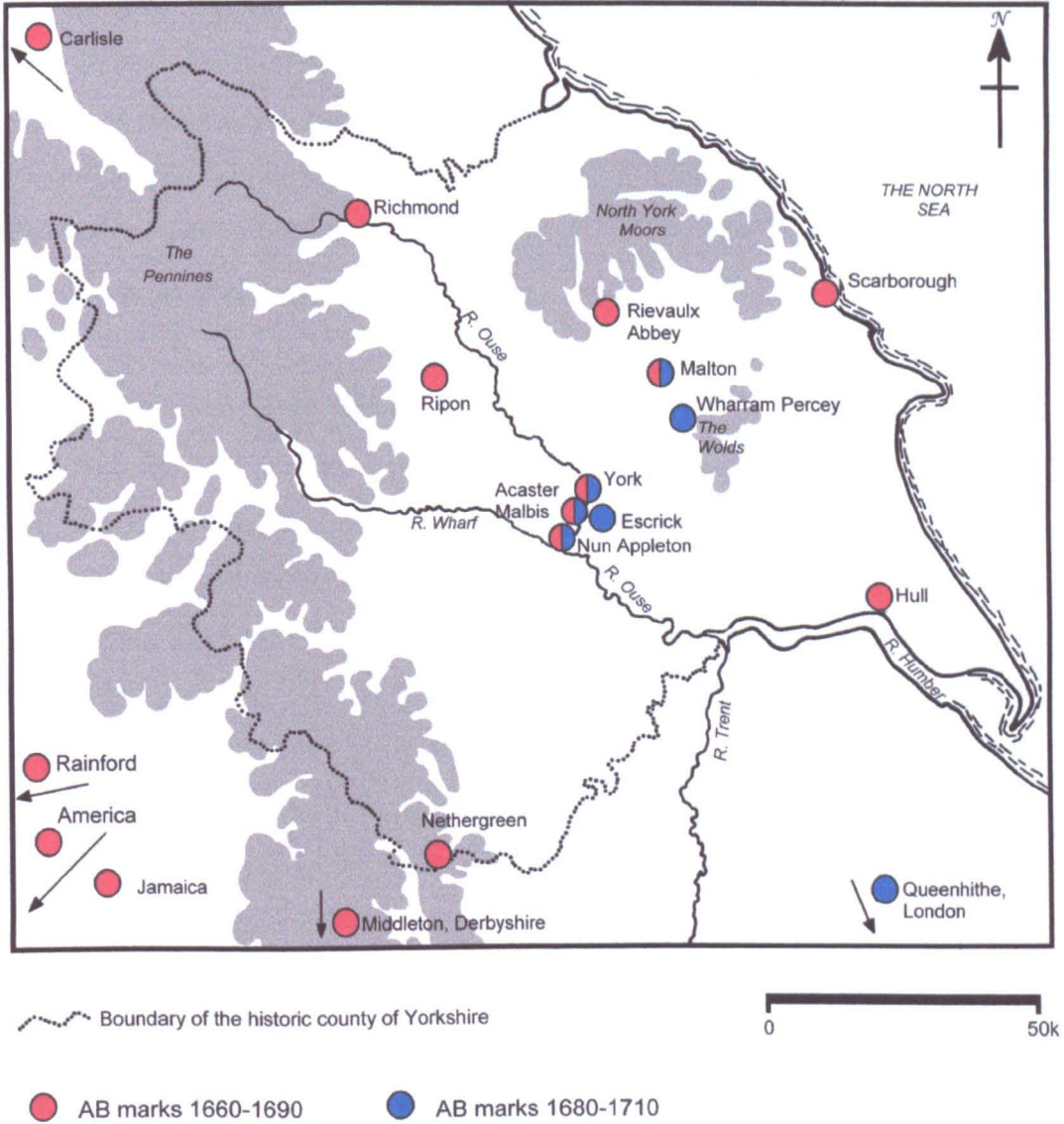
found at sites further a field, such as Wharram Percy, Rievaulx Abbey, Malton, and Richmond, these are isolated instances and single examples are more likely to indicate a casual loss rather than pipes that have been traded in bulk.



**Figure 9.1:** Distribution map of AB heel stamp marks from all periods.

Five of the 1660-1690 AB marks were recovered from Port Royal in Jamaica, three of which were types with the distinctive tobacco leaf motif. The 1966 excavations at Port Royal focussed on a very small part of the site and yet yielded a staggering

6, 264 bowls and in excess of 30,000 stems (Marx 1966, 10; Oswald 1983, 255-7). The AB bowls account for only some 0.08% of the bowls from that assemblage. This shows that these pipes were not being traded to Jamaica in significant numbers and they may even have been casual losses of personal items by the sailors or English colonists living in Port Royal itself.



**Figure 9.2:** Distribution map of AB heel stamp marks by period.

A further three 1660-1690 AB marks have been recovered from sites on the east coast of America. All of these examples are of Die No. 1902 and no examples of this die have been recorded from Yorkshire itself. The bowl forms associated with

this particular die appear to be Yorkshire types raising the possibility that this die may have been used specifically for the export market.

In Figure 9.2 the find spots for both the 1660-1690 marks and those from the period 1690-1710 have been plotted. From this map it is clear that the earlier AB marks were much more widely dispersed and centred on York. The later AB marks, however, with the exception of single example from Queenhithe in London, have a much tighter distribution but which also appears to be centred on York. If the hypothesis that Frances Boyes took over the business following her husband's death is correct, the distribution pattern would suggest that her pipes were not being dispersed as widely as those of her husband, in spite of the fact that Frances appears to have produced just as many pipes.

#### **9.1.2 SB stamped heel marks**

Only five SB heel stamps were recorded from Yorkshire, all produced with the same die and occurring on bowl forms dating from 1650-1690. Examples of the bowl forms associated with these marks can be seen from Scarborough (Appendix 3, Figure 76.11) and from Whitby (Appendix 3, Figure 83.3). Four of these SB marks were found at sites in Scarborough with the remaining mark being found in Whitby but there are no known makers with the initials SB working either in Scarborough or Whitby. The distribution of these marks would strongly suggest that they were the product of a previously unrecorded maker, most likely based in or around Scarborough.

#### **9.1.3 GC stamped heel marks**

The largest group of heel stamps recorded from Yorkshire were the GC marks, which occur on bowl forms with a date range of 1630-1680. A total of 364 examples from at least six different dies were recorded. These have a heart shaped border, either beaded or plain, with the initials GC at the centre below which appears either a five-pointed star or, more commonly a flower with five petals. Examples of five of these stamps can be seen in Chapter 8, Figure 8.7 Nos. 22 to 26. Small numbers of these marks have been found at York (4 examples), Hull (3 examples), Doncaster (1 example) and at Wood Hall Moated Manor (1 example).



The rest (355 examples) come from the Rayner collection and were all recovered from fields around Beverley. Examples have also been recorded from outside the county from Carlisle, Chester-le-Street, Chester and Lindisfarne. In addition, Oswald lists similar GC marks from Newcastle, London, Durham, Berwick on Tweed, and Boston (Oswald 1991, GC).

One of the greatest concentrations of these GC marks outside of Yorkshire is in Newcastle where large numbers have been recovered from excavations in and around the city. Edwards (1988a, 18) thought that they had been influenced by the heart-shaped marks of London and the Thames Valley, but suggested that the Tyneside examples were the products of an unknown Newcastle maker. Stylistically the GC marks are very similar to those used by at least three known makers from the Tyneside area. These were William Sewell of Gateshead, working 1645-1651; John Bowman, also of Gateshead, working 1645-1689; and John Grayson of Newcastle, working 1653-1654 (*ibid* 29, 32 & 54).

To date there is no documentary evidence for a pipe-maker with the initials GC working in the mid seventeenth century either in Tyneside or around Beverley. The high number of GC marks found in Yorkshire, in particular near Beverley, is very difficult to explain especially since the mark is not typical of other Yorkshire styles. Such a concentration of pipes bearing the same mark would normally suggest that the person responsible for these products was based nearby. The GC marks are a puzzle in that there are two concentrations both of which include examples of the very similar dies. This distribution would suggest two possible explanations. Given that the GC marks bear closer resemblance stylistically to marks from Newcastle and Gateshead than they do to marks in Yorkshire, it would not be unreasonable to suggest that they originated in the Tyneside area. The high number of examples found near Beverley could therefore be explained by either the maker moving from Tyneside to work in Yorkshire, or by these products being extensively traded to Yorkshire. Any traded goods travelling between Tyneside and Beverley would have been carried by coastal shipping, which would have had to pass through Hull. Given that only three GC marks have been found in Hull this scenario seems unlikely.

During the course of this research it has been possible to compare directly a small group of eight GC pipes, involving a further six marks from Tyneside, with the group from the Rayner Collection from Beverley. The most striking aspect of both groups is the similarity in the bowl form and the fact that almost all the bowls lack any milling around the rim. None of the eight Tyneside examples and only five of the 355 from Beverley had milled rims. Illustrated examples of GC pipes from elsewhere also lack milled rims making it clear that the plain rim was a distinctive characteristic. All of the marks examined from Tyneside and Beverley have a heart shaped border and the initials GC above a small motif. In the case of Beverley this motif is almost always a flower with five petals. There are a greater variety of motifs in the Tyneside group and, although the majority are flowers, there are also single examples with a five-pointed star, a fleur-de-lys and a cross below the initials.

Detailed die analysis was carried out on the marks with the flower motif from both groups and showed them superficially to be identical, raising the possibility that they were produced with the same die. Under a microscope, however, minute scratches and defects within the die itself can be identified. For example, the Rayner Collection has a group of six pipes that have been marked with the same die, in this case a GC above a flower motif. This die has as thick plain heart-shaped border with a very thin, but clearly defined, inner line shadowing the border. The Tyneside group includes two bowls with a very similar mark but with a very faint inner line. In all other respects these marks appear identical - the size and spacing of the lettering and the orientation of the flower (Figure 9.3). In his study of a pit group from Epsom Higgins (1987, 428) was able to demonstrate that the Guildford maker Laurence Geale was using a number of dies produced from a single master. Higgins suggested that a metal master would have been used to impress a clay blank that, once fired, would provide a permanent die (*ibid*). In this way a number of dies could be produced from the same master. Although, in theory, all the dies produced from the master should be identical, it is clear that very subtle differences can occur either as a result of the master not being pressed evenly into the clay blank or as a result of the blank being trimmed too closely to the edge of the mark. It seems highly likely that a similar situation exists with the GC marks and that examples

from both the Rayner Collection and from Tyneside have been stamped with dies produced from the same master.



**Figure 9.3:** Details of the GC mark from the Rayner Collection (left) Pcode 2220 and the Tyneside example (right) Acc. No. CC91 (22). Photograph by the author.

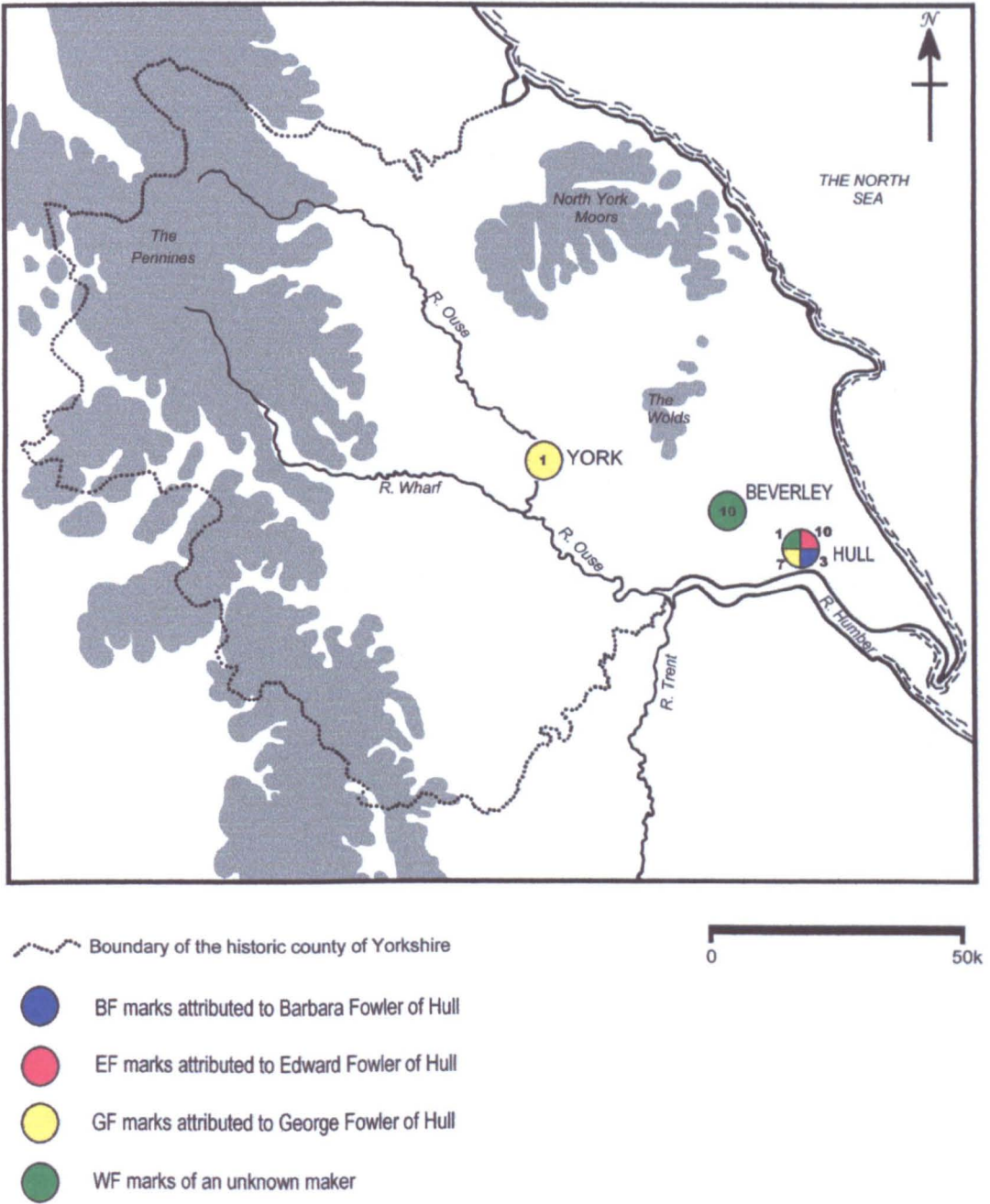
This raises a number of interesting questions, not least of which is the relationship between the Beverley and Tyneside groups. Having noted that examples of GC pipes from both Beverley and the Tyneside group have the same bowl form, the same bowl finish and that they are marked with dies produced from the same master, why do they appear both in Tyneside and Beverley? The suggestion that these products were traded has already been shown to be unlikely, as only a handful of examples appear in the coastal port of Hull, which would be the most obvious route for any goods travelling between Beverley and Tyneside. Given the size of the sample from Beverley a wider range of the GC marks might be expected, rather than just those with the floral motif, if the products were being traded. Also, if the maker had moved from one centre to another then chronological differences would be expected, but the bowl forms and the marks from both centres appear to be contemporary. As a result, the suggestion that these pipes were made by a Tyneside maker who later moved to set up a workshop in Beverley can also be ruled out as unlikely.

Given all the evidence the most likely explanation for the occurrence of large numbers of GC marks in both Beverley and Tyneside is that there was a highly successful and well-established pipe-maker based in Tyneside, who also operated a second workshop in Beverley. It would appear that the Tyneside maker was providing both moulds and dies, produced from a common master, for the manufacture of his products in Beverley. If this is the case then it is unique, not only in Yorkshire but also in England, as it is the only known example of single pipe-maker successfully operating a dual-centre workshop at this date.

#### **9.1.4 Stamped heel marks with an F surname**

A total of 56 heel stamps with an F surname were recorded from Yorkshire. Twenty-one of these marks have been linked to the Fowler family who were working in Hull in the second half of the seventeenth century. The first Fowler was Edward who became free in 1663 and died around 1676 (Appendix 1). Ten pipes marked with an EF heel stamp, all found in Hull, have been attributed to this maker. Edward Fowler appears to have been using at least three different dies. Edward's brother, George, also worked in Hull from around 1670 when he took his freedom following his apprenticeship with Elizabeth Atkinson, the widow of pipe-maker Hugh Atkinson (*ibid*). A total of eight pipes with the initials GF have been found, seven in Hull and one in York, all attributed to George Fowler. The GF marks appear to have originated from at least two, and possibly three, different dies. The third Fowler was Barbara, who may have been the daughter of Elizabeth and Hugh Atkinson and the wife of Edward Fowler. Barbara took over from her husband following his death in 1676. Three pipes with the initials BF, all found in Hull, and all marked with the same die have been attributed to this maker.

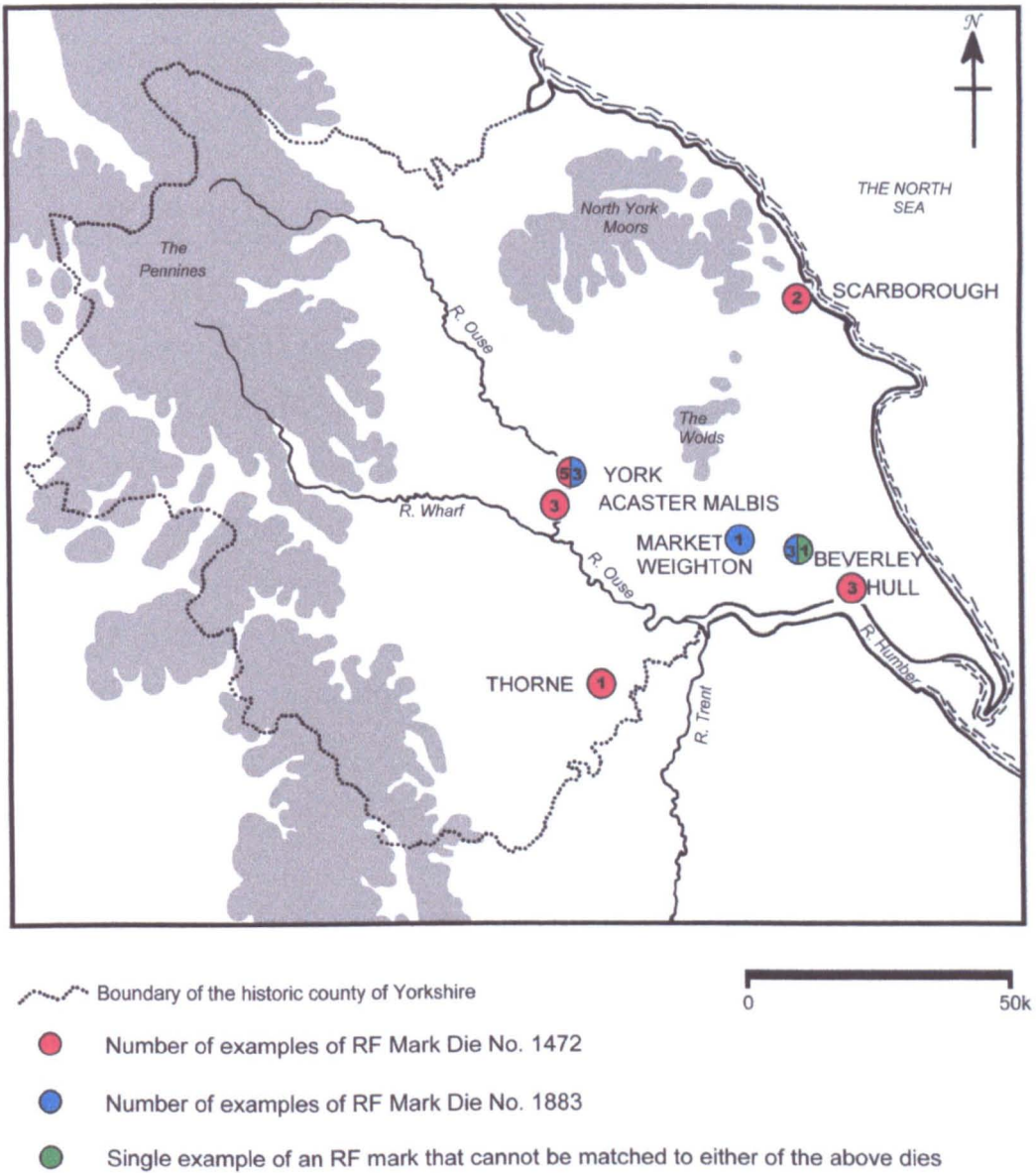
In addition to the heel stamps that can be attributed to known members of the Fowler family there are 11 pipes marked with the initials WF, all produced by the same die, and 24 with the initials RF, from two different dies. To date it has not been possible to identify the makers responsible for these products. In Figure 9.4 the finds spots of all the BF, EF, GF and WF marks have been plotted. The numbers in each coloured dot being the number of examples recovered from each site. As can clearly be seen all the BF and EF marks and most of the GF marks are found in



**Figure 9.4:** Distribution map of heel stamp marks attributed to members of the Fowler family together with marks of an unknown maker with the initials WF.

Hull, which is a distribution pattern that would be expected for makers working in that city. The one example of a GF mark found in York could be a casual loss. What is interesting however is the distribution of the WF marks, which centres on Beverley and it would appear from this evidence that the WF maker was working in or around Beverley. This person may well have been a member of the Fowler

family, but given that at least three members of that family were working in Hull at this time, it might have proved more lucrative to work outside of Hull where they were not competing directly with members of their own family.



**Figure 9.5:** *Distribution map of RF heel stamp marks.*

The RF heel stamp marks can be divided into two distinct die types. The finds spots of these dies have been plotted in Figure 9.5. The numbers in each coloured dot being the number of examples recovered from each site. When compared with the map of the other F surname find spots a very different distribution pattern can be seen. Instead of Hull or Beverley, the RF marks appear to be centred on York, which yielded a total of eight marks. There are no known makers with the initials

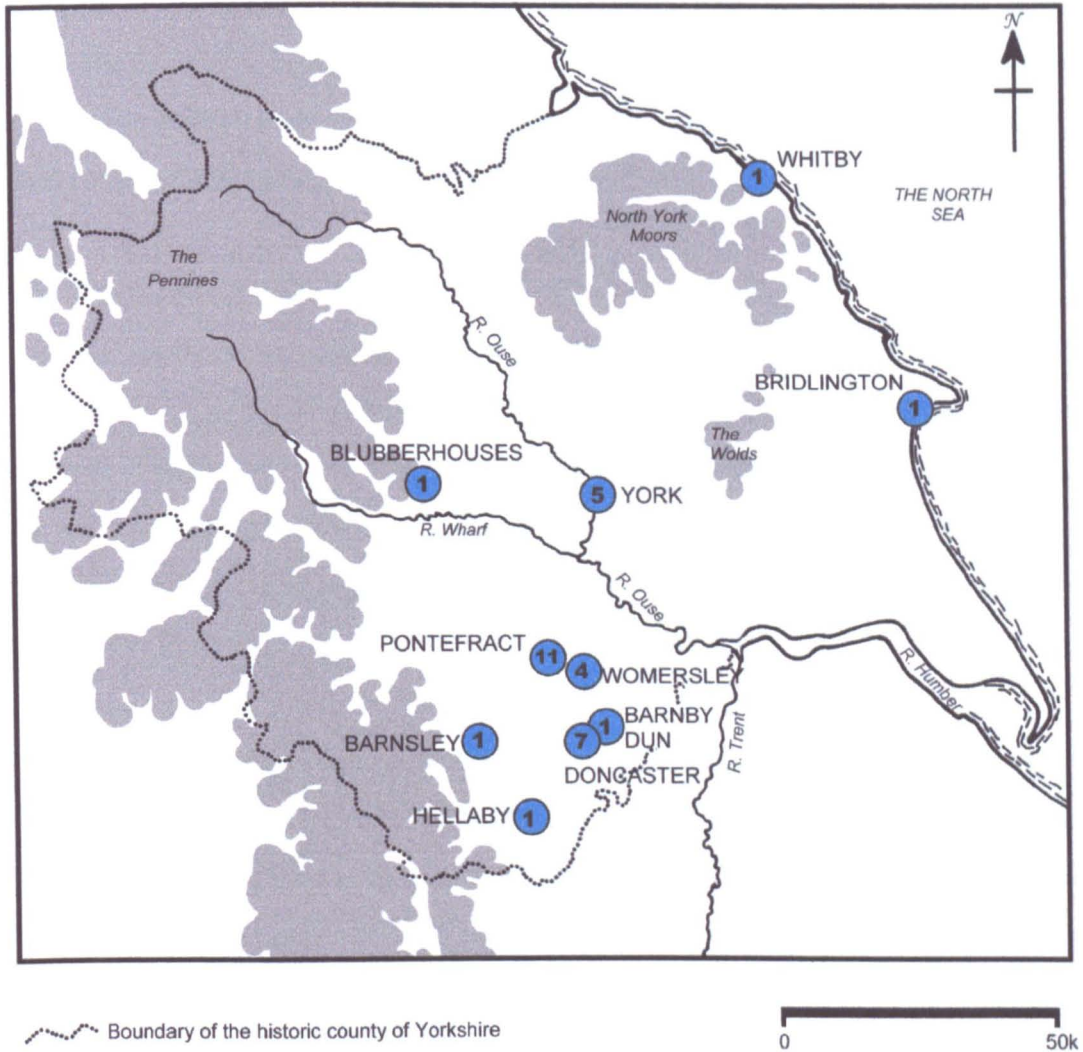
RF working in York at this date. Given the similarity of the style of the RF mark to those of known Hull makers, however, and the presence of so many members of the Fowler family operating in and around Hull at this date, it is likely that the RF maker is yet another member of the Fowler family. As with the WF maker it is possible that the RF maker chose to be based away from Hull, in this case York, to avoid direct competition with the other members of his family.

#### **9.1.5 IH stamped heel marks**

A total of 32 heel stamps with the initials IH were recorded in Yorkshire all associated with bowls dating from 1650-1720. Analysis of these marks has identified at least 20 different dies, nine of which have been illustrated in Chapter 8, Figure 8.8 Nos. 16 to 25. In Figure 9.6 the finds spots of all the IH heel marks have been plotted. The numbers in each coloured dot being the number of examples recovered from each site. By looking at this distribution map it is clear that the majority of the IH marks are concentrated in the south of the county with the majority coming from sites in and around Pontefract. To date there are no known makers with the initials IH from the Pontefract area suggesting that these pipes are the products of a previously un-recorded maker.

The single IH stamp from Kirkgate, Bridlington is stylistically rather different from the other IH heel marks found in the south of the county in that it appears on a bowl that also has moulded initials on the side of the heel (Appendix 3, Figure 11.07). A similar example was recovered from Whitby Abbey that appears to have been produced in the same mould and stamped with the same die. Moulded IH marks have been recorded on pipes from Scarborough, Hartlepool and Seaham and appear to have a coastal distribution that is quite different from the main group of IH heel stamps. This shows that stylistic and distributional considerations must be taken into account when interpreting pipe marks. In this instance the IH marks can be divided into two basic types. A large number of different dies, but on a similar theme, occur around Pontefract. These suggest a well-established and prolific workshop in South Yorkshire. At the same time another unidentified IH maker appears to have been working somewhere on the east coast of Yorkshire using a

slightly different style of mark. (See also the anchor, castle, crowned and fleur-de-lys marks discussed below).



*Figure 9.6: Distribution map of IH heel stamp marks.*

### 9.1.6 Anchor motif with initials

A total of just five marks comprising initials flanking an anchor were recorded during the study, all of which were recovered from West Yorkshire. Two sets of initials are represented with IH accounting for four of the marks, and IB for one.

All five marks were found on bowls dating to around 1650-1690. An example of one of these bowl forms can be seen in Appendix 3, Figure 155.03. All the IH marks appear to have been produced by the same die. The IB mark, however, is stylistically different with the engraving being rather cruder than the IH examples, and in place of the single relief border around the initials it has a double border that



has been divided into segments. These anchor marks have only been recorded from in and around Pontefract, despite the fact that there are no known makers with the initials IB or IH in this area during the mid seventeenth century. It seems highly likely, therefore, that these are the products of two previously unrecorded makers from the Pontefract area. (See also the other IH marks discussed above, and the castle, crowned and fleur-de-lys marks below)

#### **9.1.7 Castle motif with initials**

A total of seven marks, six in West Yorkshire and one in South Yorkshire, with initials flanking a castle tower, all within an oval border, were recorded from Yorkshire. Three have the lettering IH flanking the castle whilst the remaining three have the initials ON either side of the castle with a P, possibly denoting Pontefract, above (see Chapter 8, Section 8.2.1 for a discussion of three-letter marks).

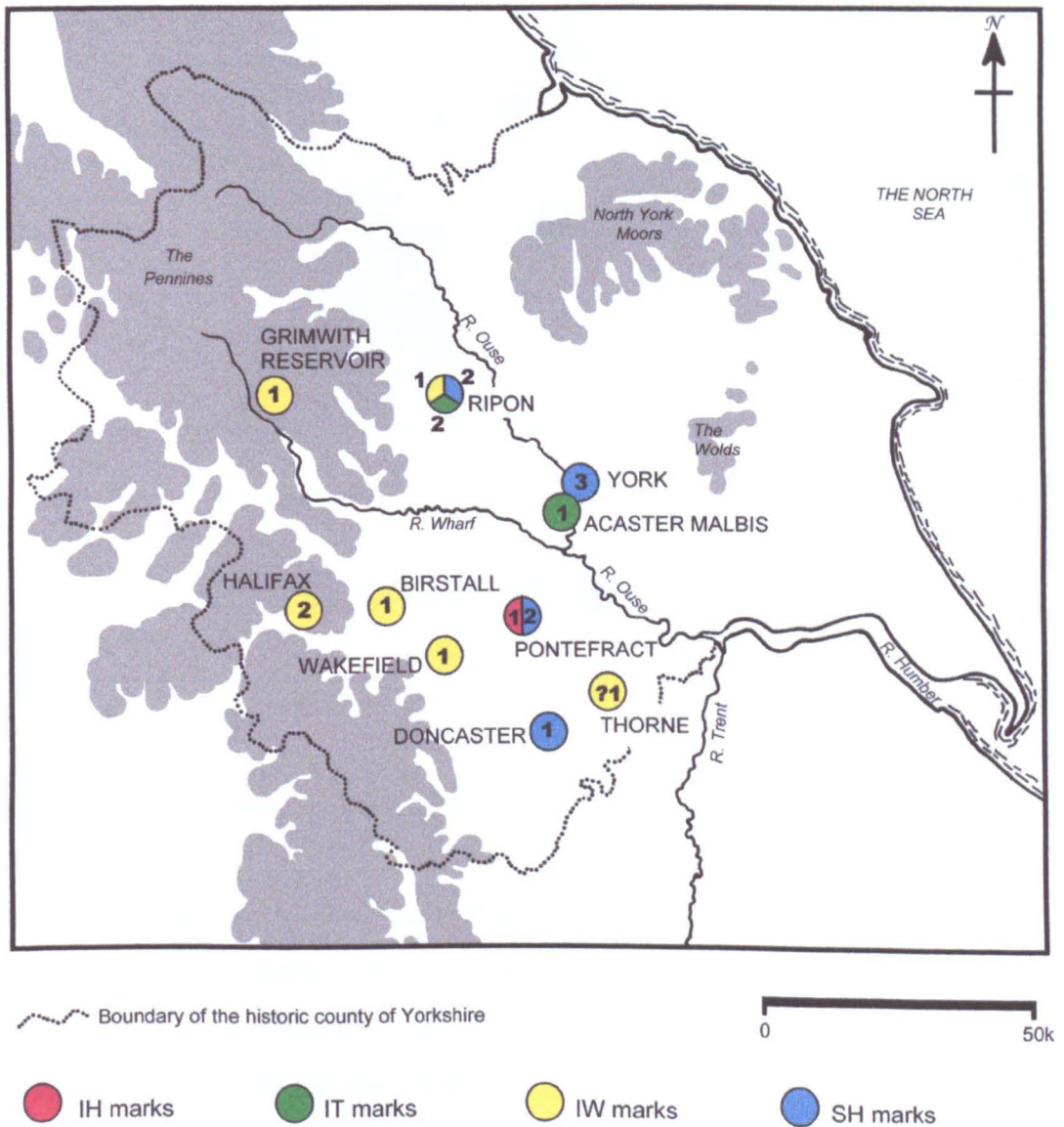
Examples of the bowl forms associated with these marks can be seen in Appendix 3, Figures 125.02, 145.08, 146.05 and 155.07. All are of a bulbous type dating from 1650-1690. Four of the seven examples were recovered from sites in and around Pontefract with a further two from excavations at Wood Hall Moated Manor, less than 5 miles from Pontefract. The one remaining mark was recovered from excavations in Doncaster, approximately 13 miles from Pontefract. There are no known makers with these initials but the concentration of marks found around Pontefract, and the use of a castle motif, would strongly suggest two previously unrecorded makers in the Pontefract area. (See also anchor and IH marks discussed above and crowned and fleur-de-lys marks below).

#### **9.1.8 Crowned initials**

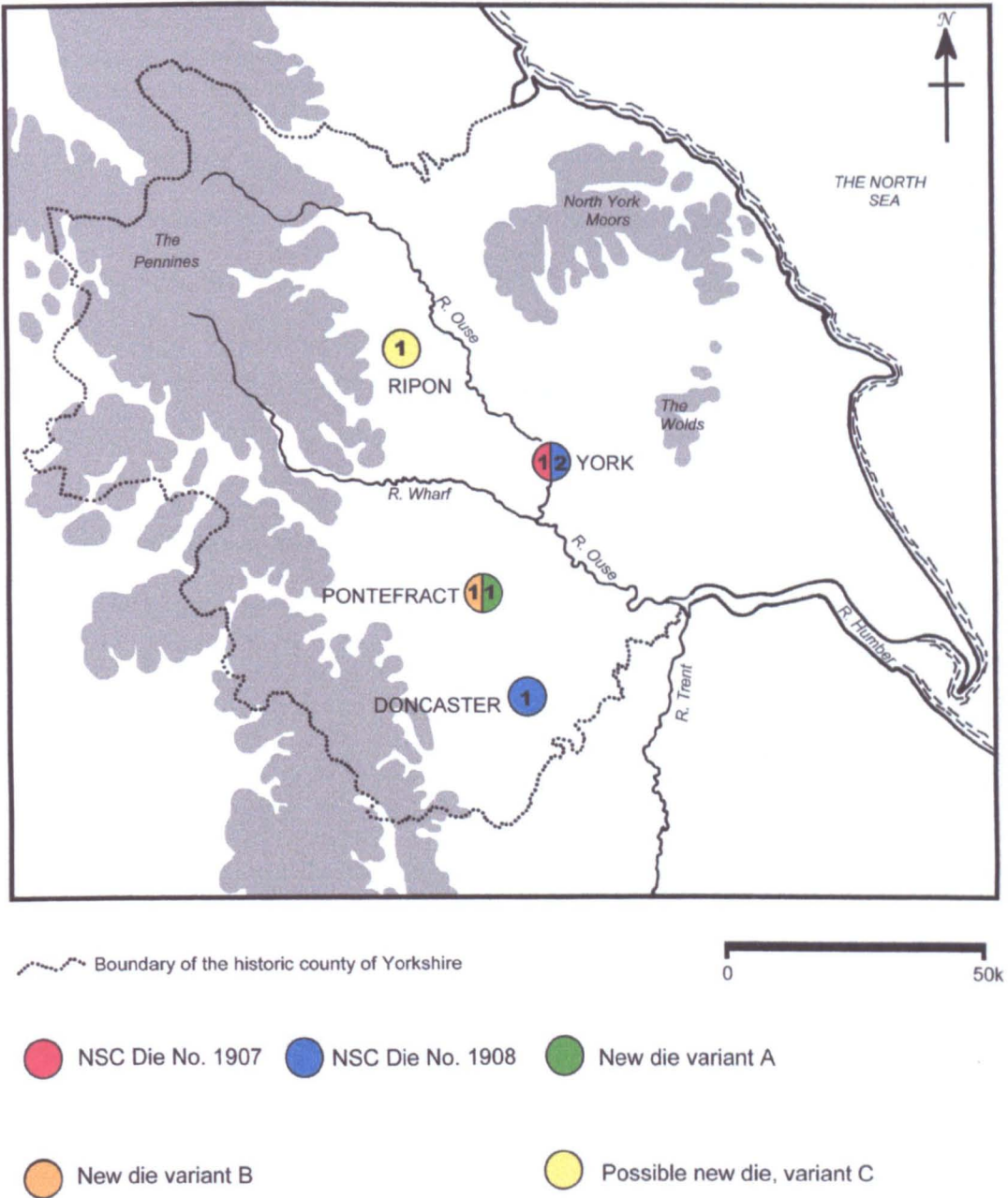
A total of 18 heel marks comprising crowned initials are known from Yorkshire, 16 recorded during the course of this research and two noted by Oswald from Ripon (1975, 45 Figure 5 NE, Nos 1 and 3). All of these marks comprise a set of initials below a crown. Four sets of initials are represented IH, SH, IT, and IW. All of the associated bowl forms fall within the date range 1650-1690. Examples of these

bowl forms can be seen in Appendix 3, Figures 49.10, 90.01, 112.6, 125.06, 126.13, 150.11 and 158.08.

By plotting the finds spots for each of these marks it is possible to see if any of the marks cluster around a particular production centre (Figure 9.7). It is clear from the map that all of the crowned marks recorded fall well within the county boundary and that they are concentrated in an area to the west of the River Ouse. Given the large numbers of pipes recorded from Hull and Beverley it is interesting to note that



**Figure 9.7:** Distribution map of crowned initial heel stamp marks.



**Figure 9.8:** Distribution map of different crowned SH dies.

no crowned initial marks were recorded from these areas. The highest concentration of crowned marks appears to be centred on Ripon, which yielded a total of five examples made up of SH, IT and IW marks. With the exception of York and Pontefract, both yielding three examples, and Halifax with two examples, all the remaining sites produced single examples of crowned initials. From Thorne a damaged crowned mark was recorded and it is unclear what the correct reading of the initials should be although it appears to be IW. There is a very broad division in the find spots for these crowned marks with the majority of the IW's being found in

the west of the county and the remaining marks concentrated in a band approximately 20-30km wide along the west of the River Ouse.

Analysis of the dies show that for the SH crowned marks, as many as five different dies can be identified. Only two of these have been allocated NSC die number, 1907 and 1908, the remaining three dies have yet to be processed and have been given temporary numbers, die variant A, B and C. There appears to be a single die for the IH mark, two dies for the IT marks and as many as four for those with the initials IW.

By taking one of these groups of initials, the SH marks, it is possible to plot the find spots of individual dies (Figure 9.8). The central corridor within which these SH marks fall is quite clear. Three of the find spots, Ripon, York and Pontefract, yielded die types that are not seen elsewhere. There is a link between York and Doncaster both of which produced examples of NSC Die No. 1908, but it is unclear if either of these sites were the original place of manufacture. (See also the discussion of other IH marks, anchor and castle marks above, and fleur-de-lys marks below).

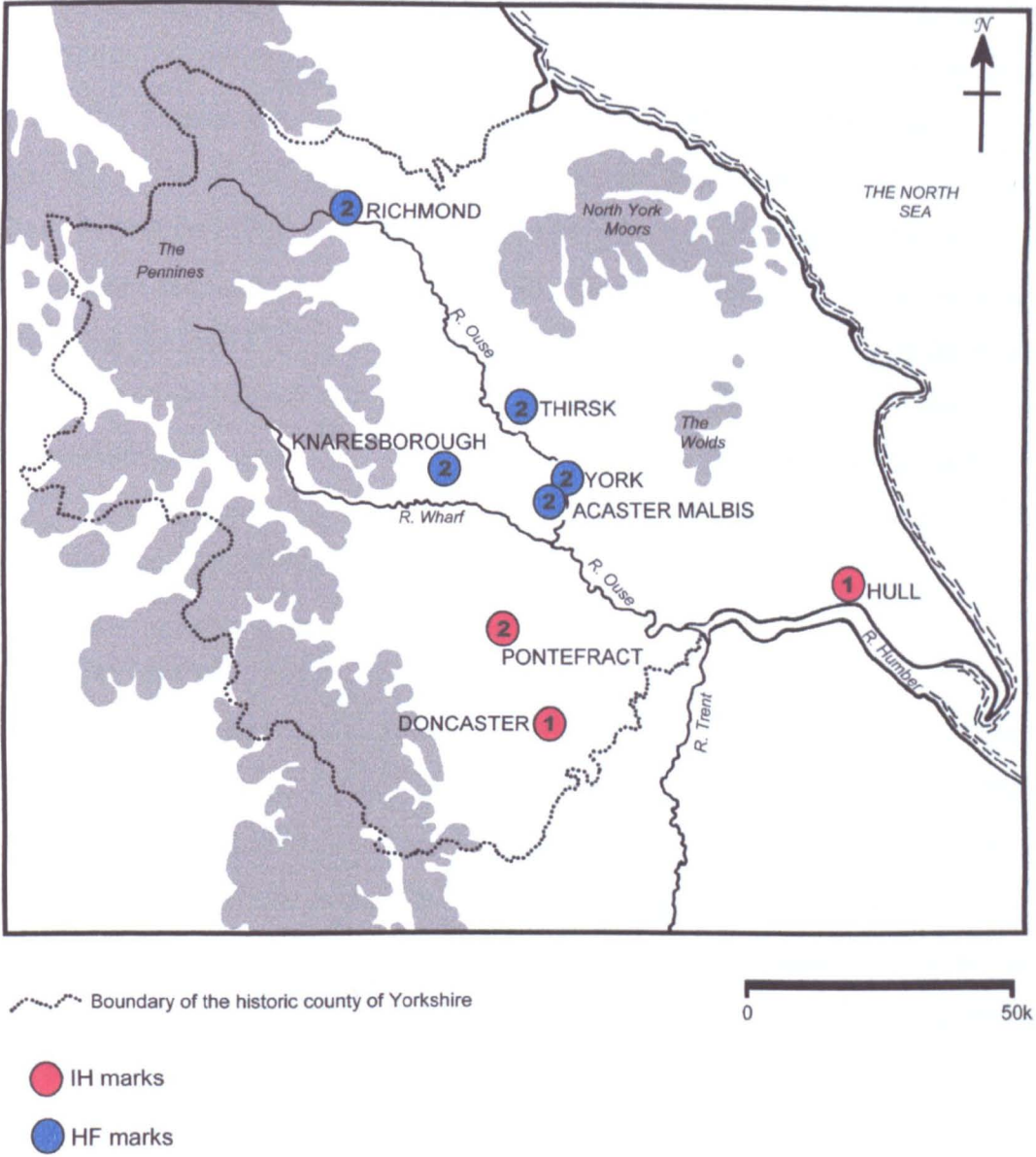
### 9.1.9 Fleur-de-lys within a lozenge

A total of 14 pipes marked on the heel with initials flanking a fleur-de-lys, all within a lozenge shaped border, were recorded from Yorkshire.

Examples of this type of mark were recorded in each of the six geographical subdivisions but with two different sets of initials, HF and IH. The following table gives a breakdown of the count for each set of initials.

| Initials | West | East | South | North-west | North-east | York & its environs |
|----------|------|------|-------|------------|------------|---------------------|
| HF       | 0    | 0    | 0     | 4          | 2          | 4                   |
| IH       | 2    | 1    | 1     | 0          | 0          | 0                   |

*Table 9.3: Count of lozenge shaped marks with initials and fleur-de-lys.*



**Figure 9.9:** *Distribution map of lozenge shaped fleur-de-lys heel stamp marks.*

Both marks are very similar but clearly belong to makers' with different initials. Closer examination shows that all those with the initials HF originate from the same die, as do the IH marks. Sheppard (1912, Fig 17) illustrates a similar mark with the initials IH, which was found during excavations in Hull and Lawrence (1979, 80) also notes similar marks found in York, although he does not say how many. He goes on to say that similar examples have been found in Cambridge but he does not give a reference therefore it is not possible to check these examples against those recorded in Yorkshire.

All the lozenge marks with the HF and IH initials appear on bowls dating from 1640-1680. A selection has been illustrated and can be found in Appendix 3, Figures 58.2, 63.3, 63.4, 72.8, 72.9 and 116.11. When the find spots of this particular group of marks are plotted it is clear that there is no overlap in the areas where they occur (Figure 9.9). The IH marks are concentrated in the south and south-east of the county and the HF marks in the north. There are no known makers with either the initials IH or HF for the period 1640-1680 suggesting that there must be two previously unrecorded makers using lozenge shaped fleur-de-lys marks, one with the initials IH operating in the south of the county and one with the initials HF with a market area in the north. (See also discussion of other IH marks, anchor, castle and crowned initials marks above).

#### **9.1.10 HN stamped heel marks**

A total of 12 HN heel stamps are recorded on the Yorkshire database. Eleven of these can be dated to the period 1660-1700 and can be attributed to Henry Norman (1) of Hull. From documentary records it is known that Henry Norman (1) took his freedom in 1674 and he worked in Hull until his death in 1708 (Appendix 1). The remaining HN mark was recorded on a heel fragment of a transitional bowl form dated typologically to 1690-1710. This mark takes the form of a ligatured HN and can be attributed to Henry Norman (2) who was the son of Henry Norman (1) and who was working as a pipe-maker in Hull until at least 1759 (*ibid*).

Of the 12 HN heel stamps ten were found in either Hull or Beverley. The remaining two, both dating to the period 1660-1700, were found overseas. The first was recovered from the Stockholm Archipelago (Akerhagen Collection) and can be matched to NSC Die No. 1473, as can all of the marks found in Yorkshire of this date. The second possible export was recovered from excavations at Nominy Plantation, Virginia, USA (held by the Virginia Department of Historic Resources). This latter stamp is quite different from its contemporaries and yet comprises initials in association with a tobacco plant motif, which is a very 'Yorkshire' feature. The American mark cannot be matched to any known example from Yorkshire. However, given that it appears on a bulbous bowl form and that it is of a style reminiscent of other Hull marks, it is possible that it is of Yorkshire origin. It

is possible that the American HN example was a mark used specifically for the export market. The excavations at Nominy Plantation produced a number of very 'Yorkshire' looking bowl fragments including one marked with the initials AB.

#### **9.1.11 SV stamped heel and stem marks**

One of the largest, but more unusual, groups recorded in Yorkshire are the SV bowl and stem marks. During the course of this study a total of 122 SV marks were recorded, 109 from Yorkshire with an additional 13 examples from sites in North Lincolnshire. Of the 109 examples from Yorkshire 97 (89%) were recovered from the fields around Beverley in East Yorkshire and range in date from 1620 through to the end of the transitional period, around 1710. A total of 105, 96%, are stem stamps with just four examples or 4% being heel marks. All of the heel marks and just one of the stem marks are in relief, all the other SV marks are incuse.

What is interesting about this particular class of mark is that it occurs over a very wide geographical area (Oswald 1975, 104-5, Fig 20, 0 and 1) and is not confined to Yorkshire with examples recovered from sites ranging from Surrey (Higgins 1981, 198), and London (Oswald 1984, 37) in the south, Newcastle (Edwards 1987, 118) and Durham (Edwards 1988c, 6) in the north and Bristol and Plymouth (Oswald 1984, 37) in the west. Examples have even been noted on the east coast of America (Sharpe *et al* 2002, 33). Oswald (1975, 104-105; 1984, 37-38 and 1991) lists a range of English sites that have yielded SV marks. In Table 9.4 the sites and quantities noted by Oswald have been given in addition to those recorded from the Yorkshire and north Lincolnshire sites during the course of this research.

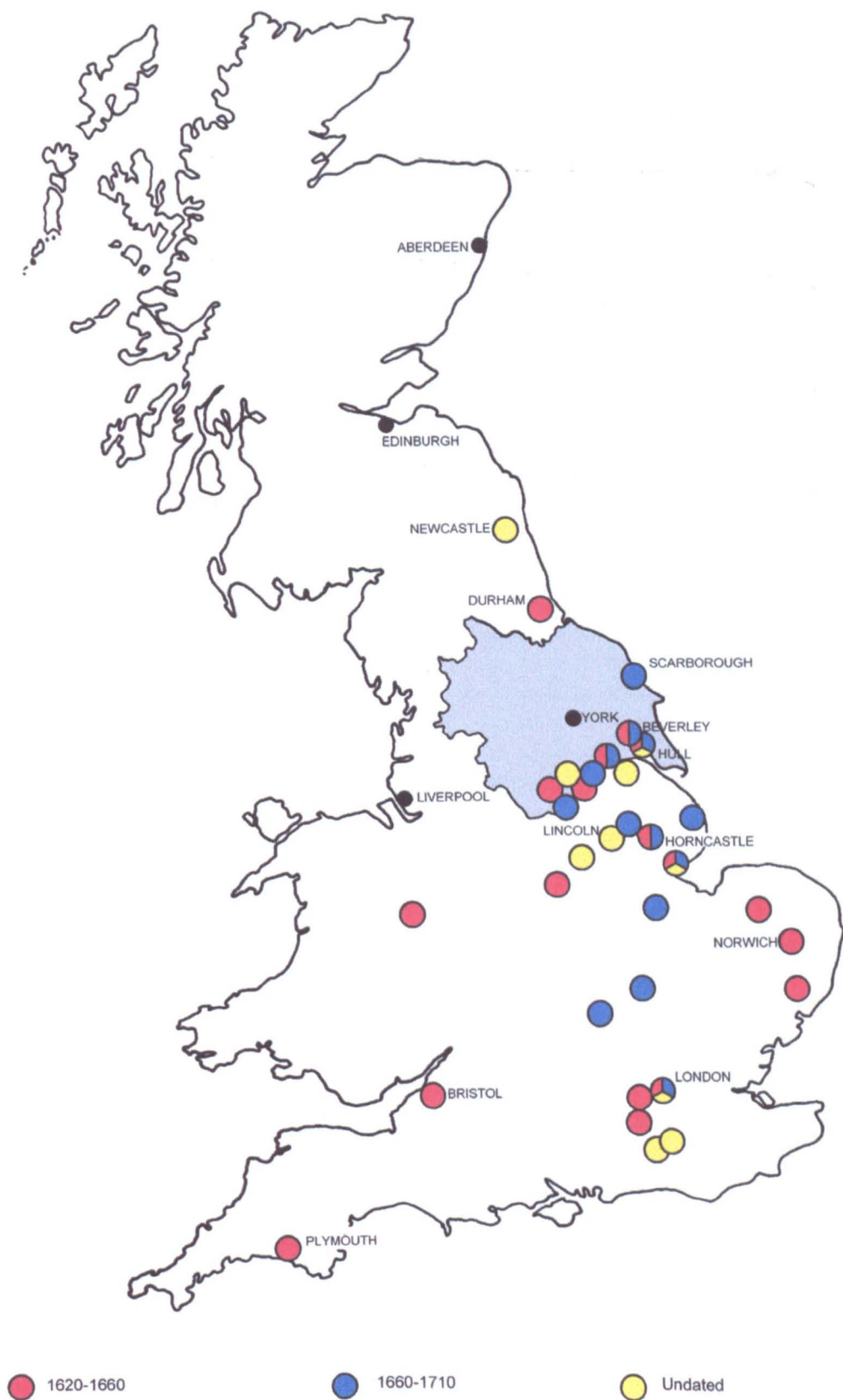
Not only do they occur over a very large area geographically, but also over a period of time, in excess of 100 years, which is far too long for them to be the products of a single maker. The map in Figure 9.10 presents the find spots by broad date range based on the work of Oswald (1975, 104-105; 1984, 37-38 and 1991) and current research. In London some of the earliest SV marks occur on bowl forms dating from as early as 1610-1630 (Oswald 1984, 37) whilst in parts of Lincolnshire these marks have been found on local bowl forms dating from the transitional period of 1690-1720 (*ibid*).

| 1620-1660                 |             | 1660-1710                    |             | Undated                        |           |
|---------------------------|-------------|------------------------------|-------------|--------------------------------|-----------|
| Place                     | Qty         | Place                        | Qty         | Place                          | Qty       |
| Bristol                   | 1           | St Neots, Beds               | 1           | Hull, Humberside               | 2         |
| Durham                    | 1           | Milton Keynes, Bucks         | 1           | Alkborough, Lincs              | 1         |
| Plymouth, Devon           | 1           | Beverley, E. Yorks           | 74          | Burgh le Marsh, Lincs          | 2         |
| Beverley, E. Yorks        | 23          | Howden, E. Yorks             | 4           | Fishtoft, Lincs                | 1         |
| Howden, E. Yorks          | 1           | Hull, Humberside             | 2           | Freiston, Lincs                | 1         |
| Hull, Humberside          | 1           | Bolingbroke Castle, Lincs    | 1           | Halton Holgate, Lincs          | 1         |
| Fishtoft, Lincs           | 1           | Brinkhill, Lincs             | 2           | Leiston, Lincs                 | 1         |
| Halton Holgate, Lincs     | 1           | Burgh le Marsh, Lincs        | 2           | Lincoln, Lincs                 | 1         |
| Horncastle, Lincs         | 40+         | Eresby, Lincs                | 1           | Old Leake, Nr. Boston, Lincs   | 2         |
| Kettleby Thorpe, Lincs    | 1           | Holton Nr. Wragby, Lincs     | 1           | Worlaby, Lincs                 | 1         |
| New York, Lincs           | 1           | Horncastle, Lincs            | 100+        | London                         | 8         |
| Spilsby, Lincs            | 1           | Kettleby Thorpe, Lincs       | 1           | Newark, Notts                  | 1         |
| Toynton All Saints, Lincs | 1           | Langton on Wragby, Lincs     | 1           | Leigh, Surrey                  | 1         |
| London                    | 54          | Louth, Lincs                 | 1           | Reigate, Surrey                | 1         |
| Heydon, Norfolk           | 1           | Old Leake, Nr. Boston, Lincs | 1           | Newcastle, Tyneside            | 2         |
| Norwich, Norfolk          | 2           | Pawton Nr. Wragby, Lincs     | 1           | Wood Hall, Nr. Cridling Stubbs | 1         |
| Nottingham, Notts         | 3           | Spilsby, Lincs               | 1           |                                |           |
| Shrewsbury, Shropshire    | 1           | Stamford, Lincs              | 1           |                                |           |
| Doncaster, S. Yorks       | 1           | Wainfleet, Lincs             | 1           |                                |           |
| Hellaby, S. Yorks         | 1           | Wragholme, Lincs             | 1           |                                |           |
| Ipswich, Suffolk          | 1           | London                       | 22          |                                |           |
| Staines, Surrey           | 1           | Scarborough, NE Yorks        | 1           |                                |           |
| Weybridge, Surrey         | 1           | Rotherham, S. Yorks          | 1           |                                |           |
|                           |             | Thorne, S. Yorks             | 1           |                                |           |
| <b>Total:</b>             | <b>139+</b> | <b>Total:</b>                | <b>223+</b> | <b>Total:</b>                  | <b>27</b> |

*Table 9.4: Number of SV marked pipes found at English site based on the work of Oswald and current research.*

The majority of the SV marks can be divided into one of three distinct types. The first comprises an incuse stem stamp where the S is inside the V, for example, Appendix 3, Figure 27.10. The second takes the form of an incuse stem stamp where the S is above the V, for example, Appendix 3, Figure 28.15. The third, and final form is a relief mark where the S is inside the V, for example Appendix 3, Figure 31.4. This third form can occur either across the stem or, occasionally, on the heel of the pipe, for example, Appendix 3, Figure 35.4.





**Figure 9.10:** National distribution of SV marks. Shaded area is the current study area. Red dots denote pipes dated to the period 1620-1660; blue dots to the period 1660-1710 and yellow dots denote SV marks that are undatable.

Oswald has suggested that each letter in the SV mark was stamped separately, based on examples where the S appeared to be superimposed over the V (Oswald 1984, 38). Detailed examination of the 122 examples recorded for this study, together with almost 60 examples from the Elkins collection in London, however strongly suggests that the S and the V were in fact impressed simultaneously. For example, a pipe bowl from London has an SV stamp on the heel together with a least eight other SV marks around the stem, all of which are identical in appearance and spacing, leading to the conclusion that they were stamped with a single SV die. The nature of the SV marks makes it very difficult to allocate individual die types to them. This is because the mark consists of two simply formed initials that are impressed into the clay. They do not have a surrounding 'field' or border, as most other stamped marks do, and they are particularly prone to slight distortion if the mark is not impressed squarely. Furthermore, 'double stamping' can lead to distortion of the mark, perhaps resulting in over-stamping of the initials noted by Oswald. These factors make it difficult to compare the marks and so to identify how many individual dies were used to make them. A detailed analysis of the SV marks in the Rayner Collection from Beverley has, however, identified a small number of examples that appear to have been made using the same die. Similarly, analysis of stem marks in the Elkins Collection has identified a number of examples that also appear to be the same. What it has not been possible to do is to show whether the same die types occur in both the London and Beverley groups.

In addition to the large number of pipes with the initials SV there are a small number bearing the initials WV and GV. The Elkins Collection includes at least three WV marks from London that take a similar form to the SV marks, that is they are incuse with the W placed inside the V (Oswald 1984, 37). From Guildford in Surrey Higgins (1981, 248) has recorded an incuse GV heel mark with the G and the V placed side by side. Although the arrangement of the initials on the Guildford example is different to the SV or WV marks, it is similar in that it is an incuse mark and has the uncommon surname initial V.

In his survey of SV marks, Oswald (1984, 38) suggested that the distribution of these marks might be explained by a family, with a surname beginning with V, of at

least three generations. He suggested that they originated in London in the early part of the seventeenth century before moving to Lincolnshire by the early eighteenth century. Although this theory would also explain the occurrence of the WV and GV marks, as being members of the same family, the chronological distribution of these marks is not as clearly defined as Oswald implies. The earlier examples from both London and Beverley appear on bowl forms that are clearly of a 'London' type, some of which date from as early as 1610. The examples from Lincolnshire, however, are quite different in that the SV marks appear on a distinctive Lincolnshire bowl forms dating from 1690-1720. These marks cluster around Horncastle in Lincolnshire, which has been suggested as a production centre for them (Wells 1979, 163).

One of the more unusual uses of the SV mark is its application on bowls that are also marked with a second set of different initials. Although there are no known examples from Yorkshire, pipes with two sets of initials have been found in Lincolnshire. For example, a bowl dating from 1680-1730 from near Boston, which also bears the relief moulded initials TC on either side of the heel (Wells 1979, 163). From Louth in Lincolnshire there is a spur form dating from 1660-1680 with the moulded initials WL on the sides of the spur (Appendix 3, Figure 40.5) and from Winghale Priory, South Kelsey a bowl dating from 1680-1700 with the moulded initials HI on the side of the heel (Appendix 3, Figure 47.10).

Baker (1986) suggested that the SV letters represented quality marks such as are found on silver, which were 'intended to act as a mark of quality for those smiths unable or unwilling to submit their wares to one of the official assay offices,' (*ibid* 30). If this is the use of a specific mark on a clay tobacco pipe as an indicator of quality it is rare but not without parallel. During the seventeenth century in Amesbury, Wiltshire, the Gauntlet family were producing pipes stamped with a mark in the form of a glove, or gauntlet. These pipes were considered to be of the best quality and sold for vastly more than pipes of 'ordinary' quality. In 1641/2, for example, the Marquis of Hertford purchased Gauntlet pipes at a cost of 1s. 1 ¼ d. a dozen, and in 1651 the Duke of Bedford purchased one gross for the sum of 18s. 6d., or 1s. 6 ½ d. a dozen (Walker 1977, 417). To put this into context, other

contemporary pipes were selling for 2d. or 3d. a dozen (*ibid*, 418). In his survey of the pipes and pipe-makers of Salisbury, Wiltshire, Atkinson (1970) noted that the quality of the Gauntlet marks was of such a high standard that their pipes had become famous and suggested that the gauntlet came to be considered a mark of excellence that 'was unashamedly copied by makers far and wide' (*ibid* 179). In the mid 1660s a contemporary writer called Fuller noted a court case where a pipe-maker was being sued for pirating the gauntlet mark (Brown 1959, 243). As with the SV marks, pipes bearing a gauntlet mark were also occasionally marked with the maker's initials and were widely distributed, with examples being found in Broseley, Bristol, and London (Atkinson 1970). Atkinson notes that the majority of the gauntlet marks date from the period 'after the Gauntlet family of Amesbury had ceased work, c1700' by which time presumably 'any copyright could no longer be infringed'. It is quite probable that by using the gauntlet mark other makers were able to charge slightly more for their products. A similar situation occurred in Potovens, near Wakefield in 1692/3 when Judith Gill accused other pipe-makers of copying her IG mark in an attempt to improve their sales (Brears 1967, 42). In the Netherlands during the eighteenth century, makers were using a mark to show the quality of a pipe. In Gouda, however, a letter S, standing for *slegte*, the Dutch word meaning ordinary, was added to pipe to indicate that it was of lesser quality (Walker 1977, 268).

The debate over the true meaning, or identification of the maker, or makers, using SV marks is clearly something that will continue. A survey of the available evidence, however, does allow a number of hypotheses to be put forward. It is clear from their distribution that whoever, or whatever SV was it was a phenomenon that was confined to the eastern half of England. One argument that could be put forward is for a maker based in London shipping his goods en masse northwards via the coastal ports. The major port of Hull, however, has only yielded one SV mark as opposed to Beverley where 97 examples have been recorded. Any products arriving in Beverley via a coastal route would have to pass through Hull, in which case more SV pipes might be expected to have been circulating in Hull itself. It is possible that the absence of SV pipes in Hull is the result of the local makers deliberately boycotting the trade of these pipes in the town. There appears to be a similar

situation in Liverpool in the early eighteenth century when local pipe-makers petitioned the Council to stop the products of makers from outside Liverpool being sold in the city (Berry 1963, 7).

Barker's suggestion that these pipes were not the product of an individual maker or family, but that they were a mark of quality, also has its problems, however, for two main reasons. Firstly, if the SV was a quality mark why does it not appear on all the different styles of pipe of a particular quality in a centre such as London? Secondly, if it is the SV that is a quality mark what is the meaning of similar marks with the initials WV and GV? Are these also to be considered quality marks? Although the Gauntlet mark, used by the family of that name in Wiltshire, and the IG mark used by Judith Gill, appears to have become synonymous with quality, they do not appear to have been used as 'quality' marks at the outset. The fact that the marks were later 'hijacked' by other makers may simply have been a marketing ploy on their part. Motifs used purely and simply as a mark of quality are not known on any English pipes of this period and so it seems unlikely that the SV mark was used in that way.

The third, and perhaps most likely hypothesis, is that these marks represent the products of a least two or three generations of a prolific pipe-making family with a surname initial V. This family may well have been working in London in the early part of the seventeenth century but with a family link to Beverley in Yorkshire from around the same date, that is from 1620. This would explain the similarity in forms at both centres and the quantities found there. The family may have had their mark copied by other makers in the same way in which the Gauntlet and IG marks were copied. Examples of a relief version of the SV mark are known, three from Beverley and two from Hull (for example see Appendix 3 Figure 31.4 & 35.4), which are particularly interesting as they appear on local bowl forms. By the late seventeenth century there appears to have been a member of the family working in Lincolnshire, possibly based around Horncastle where large numbers of SV marks have been found in a local form that is quite different from those that continued to be produced in London and Beverley at this date (Wells 1979, 163). Perhaps as the family fortunes declined they were forced to use second-hand moulds, or could not

stop other makers pirating their marks, which may explain the presence of other initials on some of the SV pipes.

## **9.2 Die analysis – summary**

The case studies presented above have demonstrated the value of die analysis as a means of identifying the likely production centres for previously unrecorded makers. They also provide a tool by which the stylistic and market areas of Yorkshire pipes can be examined.

Some of the misconceptions that can be created when interpreting archaeological and documentary evidence have also been highlighted. For example, a tremendous amount of archaeological excavation has taken place in York and pipe researchers have tended to focus their attention on the documentary records associated with such an important centre. As a result certain fallacies have grown up around pipe-makers such as Abraham Boyes. Study of the documentary evidence gives the impression that Boyes was a major producer but the archaeological evidence does not support this. There is no doubt that he was a very well documented pipe-maker and large numbers of pipes bearing his initials have been recovered from excavations in and around York. However, the chronological analysis of the AB marks would suggest that almost half of those were produced after Abraham's death in 1681 and are most likely the products of his widow, Frances Boyes. A total of 325 clay tobacco pipes dating from the period 1660-1690, have been recorded from excavations in York and only 49 of those, or 15%, are stamped AB. When placed in context like this, it is clear that Boyes was only one of a number of makers who were supplying York at this time.

By contrast, the distributional analysis of the IH stamped marks for the same period (1660-1690), would suggest a previously unrecorded maker working in or around Pontefract. To date there has been no systematic survey of the documentary evidence from Pontefract to try and identify this maker. Similarly, there has not been the same level of excavation in Pontefract as has been seen in York, therefore the quantity of material is much smaller. In spite of this, it has been possible to record 79 clay tobacco pipes of 1660-1690, from sites in Pontefract, approximately

one quarter of the number recorded for York. Of these 17 examples, or 21% are marked IH. These figures would strongly suggest that, in spite of the fact that Pontefract is much smaller than York, had a similar quantity of material been recovered and the same level of documentary research been carried out it might show that the mystery IH maker from Pontefract was equally as 'prolific' if not more so, than Abraham Boyes of York is reputed to have been.

### **9.3 Mould flaw analysis**

Die analysis is one means of identifying individual makers and their market areas but another method that can be used is mould flaw analysis, which can be particularly useful in the study of unmarked pipes.

In chapter 6 the development and evolution of the basic bowl forms, both geographically and chronologically, was discussed. Closer examination of the bowls can reveal tiny flaws in the mould that were used to create the pipes themselves. These individualising marks can provide a means of identifying bowls produced in the same mould or at the same workshop and can therefore be used as another means by which the movement of products can be mapped.

In order to understand the way in which these marks occurred it is necessary to say a few words about the way in which pipes were made in a two-part mould.

#### **9.3.1 Pipe production using a two-part mould**

In 1975 Oswald presented a summary account of the processes involved in the production of clay tobacco pipes. The earliest account of the methods and processes involved was written by Randle Holme in 1688 (*ibid*, 16) with the latest being that written by Gordon Pollock in 1992 (Jung, forthcoming). Interestingly both accounts are very similar and it is clear that the methods described by Holme in the seventeenth century are almost identical to those employed by the last family run business in the late twentieth-century. Essentially, clay tobacco pipes were produced by means of a two-part metal mould that was pressed together in a type of vice, sometimes referred to as a chest. Each mould had its own stopper to form the bowl cavity, which was suspended from a lever that was pulled down forcing it into

the top of the mould. The clay rolls that were placed in the mould were reasonably firm and the moulds were kept oiled to prevent the clay from sticking to them as the stopper forced the pipes into shape.

Walker (1977) describes the pipe production process more fully for a number of centres in Europe, including Great Britain. Walker's survey showed that the only real difference between continental methods and those employed by the English makers', was in the forming of the bowl cavity. The English used a stopper suspended from a lever, sometimes referred to as gin handle, where the Continental method employed a hand-held stopper that was usually twisted from side to side as it was pushed to make the bowl cavity.

For the purposes of this research it is not necessary to discuss the process in more detail, as perfectly adequate published accounts already exist. The main point to note is that pliable clay was being forced against a metal mould that was kept oiled to prevent adhesion. A direct result of this manufacturing process was that the clay took up any small nicks, scratches or surface defects on the mould, thereby producing a unique 'fingerprint' for that particular mould.

### **9.3.2 Mould flaws**

In the field of pipe research the subject of pipe moulds has been much debated. Later moulds were made from cast iron but it is not clear what the earlier moulds were made from as none have survived or been recovered from the archaeological record. It has been suggested that brass or bronze may have been used for early moulds, as was the case on the continent (Oswald 1985, 6). The life expectancy of a mould has never truly been calculated. There is evidence to show that the later cast iron moulds often underwent a number of repairs. Examples have been recorded where stem lengths have been modified; the tops of the mould have been fitted with metal plates to repair the damage caused by trimming the bowl rim; and internal faces of the mould have been filed to remove the worn edges that have developed as a result of use. It is clear from documentary sources that moulds were passed down from father to son. In his will of 1705, Richard Shaftoe gives to his son, also called Richard, '...all my worke tooles belonging to the Pipe making



Traide in my backe shop' (Appendix 2). Although this particular example shows that moulds were being handed down, it would appear that during the seventeenth and eighteenth century, at least, it was fashion that dictated the speed of change in the bowl forms. It only appears to be during the industry's declining years of the late nineteenth and early twentieth centuries that old moulds continued in use. Many of the moulds used by Gordon Pollock in Manchester until the 1990s, for example, had originally been produced by his grandfather a century before.

The evidence for the life expectancy and of the number of moulds in use by any one maker has been considered by Oswald (1985, 5). Oswald suggested that during the eighteenth and nineteenth centuries, the period when iron moulds were in use, the maximum life for a mould would have been no more than 50 years (*ibid*, 11). For the seventeenth century, however, a shorter life might be expected, particularly if the mould was made from a softer metal (*ibid*, 12). In terms of the number of moulds in use by a maker at any given time, Oswald quotes a number of documentary sources such as wills and inventories that make specific reference to pipe moulds. In the Inventory of John Nevill of Peterborough, dated 1689, for example, '8 pairs of moulds' are listed while in 1671 the inventory of John Fox of Spalding listed six pairs (*ibid* 7). In the will of William Lee of Rotherham, dated 1680, 'six pairs of tobacco pipe moulds and two screws' are left to his son Francis (Appendix 2). Oswald also cites Randle Holme who, in 1688, published an account of pipe-making. In his description, Holme speaks of 'seuerall Molds for seuerall fashions ...' and goes on to list at least eight different styles of pipe. Oswald concludes by listing the estimated number of moulds for a range of pipe-makers including Abraham Boyes of York, for whom he estimated 15 different moulds in use between 1645 and 1670, and for Robert Burrill of Hull for whom he estimated a minimum of 12 moulds between 1683 and 1724.

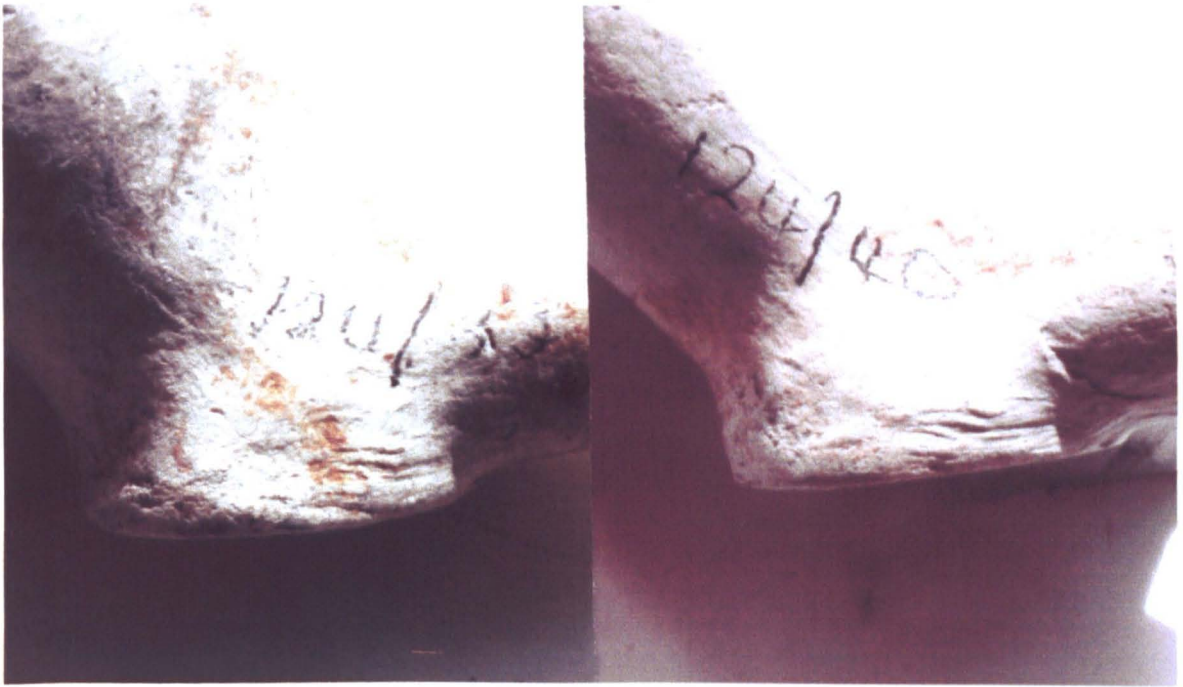
The method Oswald used in determining the number of moulds used by Boyes and Burrill was through the identification of different bowl profiles. This method is fraught with difficulty as distortion can occur during the moulding, trimming or firing stages of the production process. A more accurate and reliable method is through the analysis of the small flaws that are unique to a particular mould. These

flaws, caused either during the manufacturing process or by subsequent re-filing and repairing of the mould, can be used to help identify individual bowls that were produced from the same mould. Mould flaws may help to identify the number of moulds used by a particular maker or, in the absence of any mark on the pipes themselves, to identify the presence of previously un-recorded makers through the distribution of their products.

This type of analysis has been carried out on a number of pipe groups including Rainford, Merseyside (Higgins 1982, 199), Hemel Hempstead, Hertfordshire (Higgins 1985d, 340), Pittenweem, Fife (Martin 1987, 206-207, Figs 15, 16 and 17), Polesworth, Warwickshire (Melton 1997, 58) and Pipe Aston, Herefordshire (Peacey 1999, 7). Often these flaws are very difficult to see and a strong, angled light is required to see them clearly. To be sure of a positive mould match at least two flaws should be identified. Figures 9.11 and 9.12 illustrate two examples from a group of pipes from the Rayner Collection marked GC, where two distinctive mould flaws are clearly visible.



**Figure 9.11:** Rayner Collection (Pcodes 03052 and 03069) showing a distinctive mould flaw on the side of the heel on the smoker's right. Photograph by the author.



*Figure 9.12: Rayner Collection (Pcodes 03052 and 03069) showing a distinctive mould flaw on the side of the heel on the smoker's left. Photograph by the author.*

Pontefract Castle and Sandal Castle, both in West Yorkshire, produced very large and closely datable Civil War groups. Through the study of tiny flaws on the surface of the bowls from these two sites, it has been possible to identify individual mould groups, that is, groups of pipes that can be shown to have been produced in the same mould. It has been possible to identify 12 mould groups from Pontefract and 13 from Sandal. The details of each mould group is as follows:

### **9.3.2.1 Mould groups from Pontefract Castle (Figure 9.13)**

The Civil War assemblage from Pontefract Castle produced 12 identifiable mould groups, details of which are given below. For each group the number of examples is given followed by a description of the mould flaws used to identify that particular group. The position of any flaw is described as viewed by the smoker and a description of the fabric in terms of inclusions visible with a X20 hand lens. Finally the colour of that fabric is given together with a description of the range of heel finish that occurs.

**Group 1:** Sixteen examples (Figure 9.13.1); two small parallel flaws visible at the bowl/stem junction on the right-hand side of the bowl and a small line in the form

of a wide inverted V on the left-hand side of the heel; very few inclusions visible; the majority of the bowls appear creamy-white, however some have an orangey/brown colouration which may be the result of the firing conditions; five examples with milling on the heel; four with milling immediately adjacent to the heel on the underside of the stem; seven heels with no milling. Same mould type as Sandal Group 1.

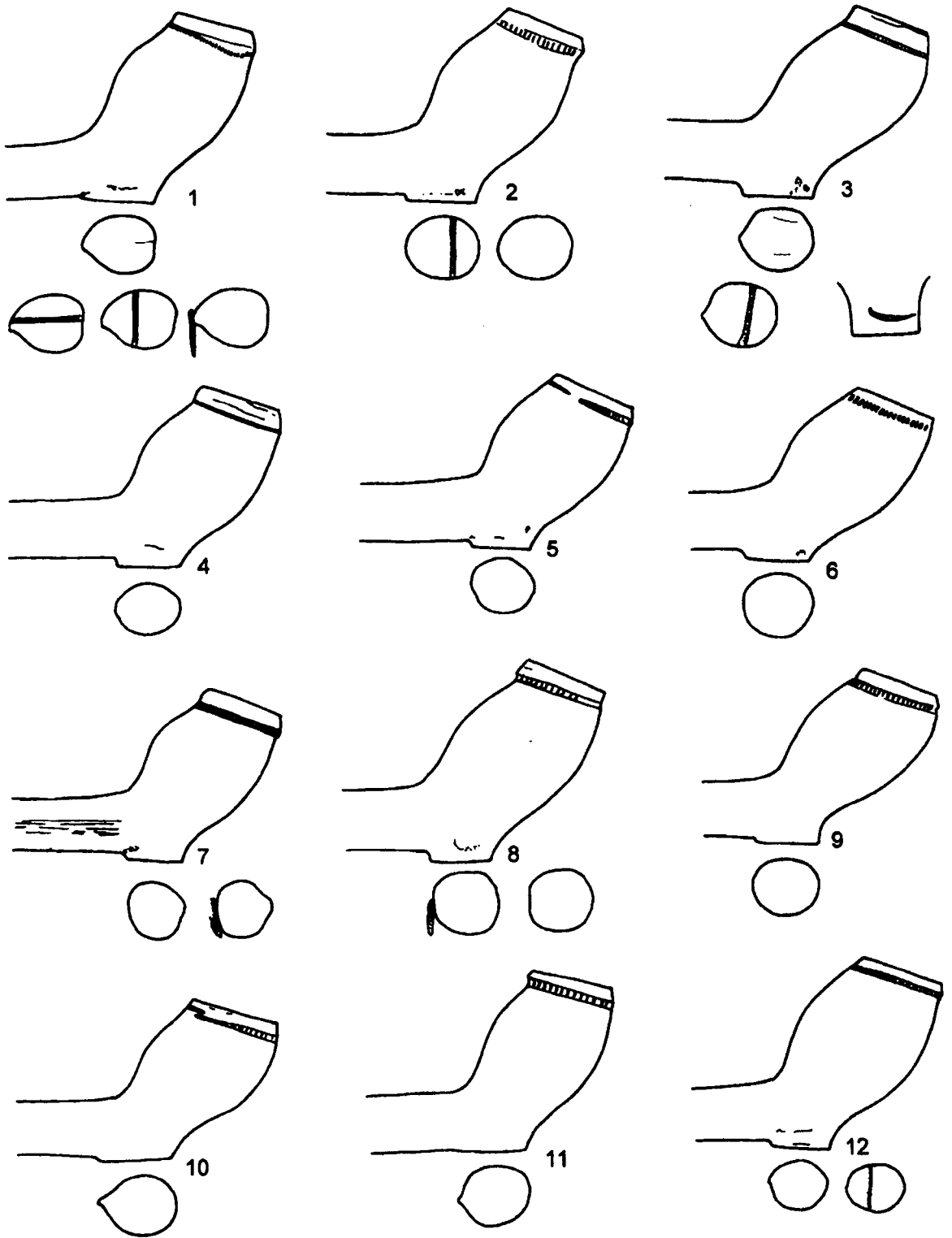
**Group 2:** Thirteen examples (Figure 9.13.2 and 9.14); two parallel lines above a small pimple clearly visible on the right-hand side of the heel with two parallel lines below a slight bulge on the left-hand side of the bowl; no inclusions visible; fabric very similar to Group 1; five examples with a milled heel and eight heels with no milling.

**Group 3:** Eleven examples (Figure 9.13.3); a vertical line and a small pimple clearly visible on the right-hand side of the bowl; no inclusions visible; fabric very similar to Groups 1 and 2; five examples with a milled heel; two with a band of milling at the base of the bowl away from the smoker and four heels with no milling.

**Group 4:** Eight examples (Figure 9.13.4); a small flaw on the right-hand side of the heel and a line running parallel with the base of the heel on the left-hand side; no inclusions visible; similar fabric to previous groups; small round heel none of which are milled. One example of this mould type was recovered from Sandal.

**Group 5:** Four examples (Figure 9.13.5); two sets of short parallel nicks clearly visible at the bowl/stem junction on the right-hand side and a very distinct line running parallel to the base of the heel on the left-hand side; no inclusions visible but the fabric colour is quite mixed ranging from a mottled white through cream to a pale orange; none of the heels are milled.

**Group 6:** Two examples (Figure 9.13.6); rather difficult to identify the mould flaws as they are very slight indeed. There appears to be a slight pimple at the base



**Figure 9.13:** Mould Groups 1 to 12 from Pontefract Castle. Mould Groups 1, 2, 3, 7, 8 and 12 heel plans and bowl details have been given to show the different finishes found within these group (Scale 1:1).



**Figure 9.14:** Two examples from Pontefract Castle's Mould Group 2 clearly showing the 'pimple' flaw on the smoker's right. Scale 3cm. Photograph by the author.

of the heel on the right-hand side, on the left-hand side there is a vertical line; no inclusions are visible; one bowl is white in colour the other is orange, both have been heavily smoked; neither of the heels are milled.

**Group 7:** Two examples (Figure 9.13.7); a line running parallel to the base of the heel positioned at the bowl/stem junction on the right-hand side; very distinct parallel lines running along the right-hand side of the stem for a distance of approximately 12mm; no obvious inclusions; one of the bowls is cream coloured, the other is orange; both have a neat round heel, one is milled immediately adjacent to the heel on the underside of the stem, the other is not milled. One example from this mould group was recovered from Sandal.

**Group 8:** Three examples (Figure 9.13.8); a bulge is clearly visible just above the heel on the right-hand side, there are also three short parallel marks on the left-hand side of the heel; no inclusions visible; one bowl is orange coloured the other two are cream; one bowl has a band of milling immediately adjacent to the heel on the underside of the stem, the other two are not milled.

**Group 9:** Two examples (Figure 9.13.9); two small flaws visible on the left-hand side of the heel only; no inclusions visible; the surviving stem on both bowls has broken off; one bowl and its adjoining stem are an orange colour, the other bowl is badly blackened by burning whilst its adjoining stem is a pale orange colour; neither heel is milled.

**Group 10:** Two examples (Figure 9.13.10); two small parallel lines on the right-hand side of the bowl almost under the stem and on the left-hand side a short line along the stem and two parallel marks on the side of the heel; no obvious inclusions visible; slightly orange coloured fabric; neither heel is milled.

**Group 11:** Four examples (Figure 9.13.11); a very lumpy and distinct flaw clearly visible on the left-hand side of the heel together with a small pimple; iron coloured flecks clearly visible in the break; fabric colour variable with one example a pale cream colour, one pink and two a pale orange; none of the heels are milled. One example from this mould group was recovered from Sandal.

**Group 12:** Six examples (Figure 9.13.12); small line parallel to the base of the heel visible on the right-hand side and on the left-hand side a short line, approximately 10mm in length, running along the stem; no inclusions visible; fabric pale orange colour; one example with a milled heel and five heels with no milling. One example from this mould group was recovered from Sandal.

### **9.3.2.2 Mould groups from Sandal Castle (Figure 9.15)**

As with the Pontefract groups described above the 13 mould groups from Sandal are as follows:-

**Group 1:** Fourteen examples, the same as Pontefract Group 1 (Figure 9.15.1); mould flaws as Pontefract Group 1 (above); no visible inclusions; cream coloured fabric, one example burnt; one heel has an incised line along the line of the pipe (front to back); four examples milled immediately adjacent to the heel on the underside of the stem; nine heels not milled.

**Group 2:** Three examples (Figure 9.15.2); two parallel lines clearly visible on the right-hand side just above the base of the heel; no obvious inclusions visible; cream coloured fabric; none of the heels is milled.

**Group 3:** Three examples (Figure 9.15.3); a very slight but definite mould flaw on the right-hand side of the heel; no obvious inclusions visible; cream coloured fabric; one example with a milled heel and two examples not milled.

**Group 4:** Three examples (Figure 9.15.4); very distinct line clearly visible on the right-hand side of the heel; no obvious inclusions visible; two examples cream coloured, the other slightly grey and appears to have been burnt; none of the heels is milled.

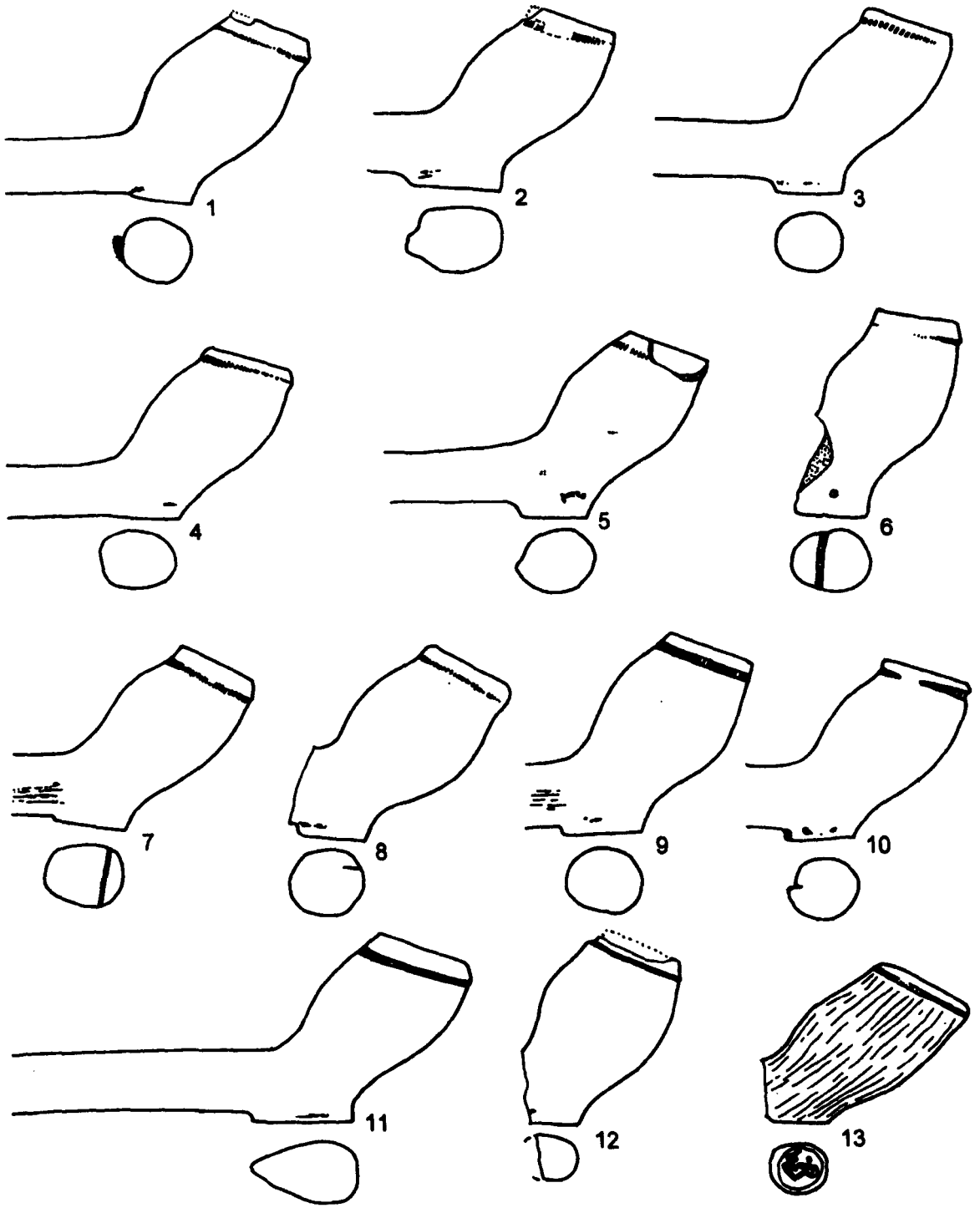
**Group 5:** Two examples (Figure 9.15.5); a quite large and very distinctive mould flaw clearly visible on the right-hand side of the heel; no obvious inclusions visible; white fabric; neither heel is milled.

**Group 6:** Three examples (Figure 9.15.6); a very waisted bowl form with a distinct pimple on the right-hand side of the heel and a series of parallel lines running along the right-hand side of the stem; no obvious inclusions visible; cream coloured fabric; one example with a milled heel the remaining two not milled.

**Group 7:** Three examples (Figure 9.15.7); very distinctive parallel lines running along the right-hand side of the stem; although clearly from the same mould two of there is a very marked difference in the height of two of the examples (Pcode 23429 and Pcode 23433); no obvious inclusions however Pcode 23390 has specks of lead on the surface that have fluxed creating patches of a light green glaze on the surface of the pipe; the heels of all three examples are milled.

**Group 8:** Two examples (Figure 9.15.8); slight flaw in the form of a line running parallel to the heel on the right-hand side; no obvious inclusions; cream coloured fabric; one heel milled, one not milled.





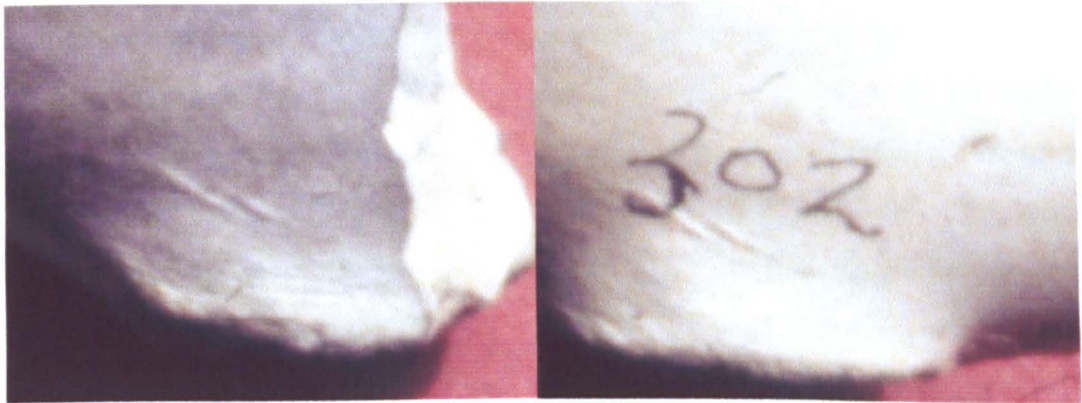
**Figure 9.15:** Mould Groups 1 to 13 from Sandal Castle (Scale 1:1)

**Group 9:** Two examples (Figure 9.15.9); three short parallel marks on the right-hand side of the stem close to the bowl; no obvious inclusions; one example white, the other orange; small round heels, one heel milled, one not milled.

**Group 10:** Two examples (Figure 9.15.10); two small vertical marks on the right-hand side of the heel, there is a very distinctive lumpy flaw on the left-hand side, also there is a distinctive step visible in the heel plan caused by a poorly fitting mould; no obvious inclusions; orange coloured fabric; quite distinctive deeply milled rims; neither heel is milled.

**Group 11:** Two examples (Figure 9.15.11); two parallel lines on the right-hand side of the heart-shaped heel; no obvious inclusions visible; both bowls are burnt; neither heel is milled.

**Group 12:** Five examples (Figure 9.15.12 and 9.16); two parallel marks and a small pimple on the right-hand side of the heel; these are Dutch bowls all marked RW and all clearly from the same mould and stamped with the same die; possibly part of a single consignment of pipes to an individual stationed at the castle.



*Figure 9.16: Two examples from Sandal Castle's Mould Group 12 clearly showing the mould flaw on the smokers left. Photograph by the author.*

**Group 13:** Two examples (Figure 9.15.13); small line at the bowl/stem junction clearly visible on the right-hand side; no obvious inclusions; neither heel milled.

In addition to the 13 mould groups described above, Sandal also yielded four individual pipes that could be matched with groups from Pontefract Castle with one example from each of Groups 4, 7, 11 and 12.

### **9.3.2.3 Discussion of the Civil War mould groups**

One of the most striking characteristics of the mould groups from both Pontefract and Sandal is the number of pipes that have milled bands on or near the heel. This is a phenomenon that appears to occur only in West Yorkshire and more specifically around the Pontefract and Sandal area (see discussion of milling in Chapter 7 Section 7.2). There are three main factors that point to a common source for these Civil War pipes. First, and most obviously, the identification of mould flaws showing that large groups of these pipes were produced in the same mould. The second factor is the similarity of the bowl forms from all the moulds and finally, the distinctive milled bands that occur on pipes from a number of the mould groups. Given this evidence, it would not be unreasonable to suggest that they were the products of an as yet unidentified maker, with a number of moulds at his disposal, working in the Pontefract/Sandal area.

### **9.3.2.4 Other groups**

Mould flaw analysis is only possible where large numbers of contemporary pipes with fresh surfaces can be compared. This is generally not possible with most museum collections where the objects are, more often than not, individual examples of mixed date, often with abraded surfaces. Large excavated groups offer much better potential for this type of analysis as they often produce fragments that are less likely to have been repeatedly disturbed by ploughing. During the course of this current research only one other group was suitable and available for mould flaw analysis. The Rayner Collection includes a large group of pipes with moulded initials for the period 1680-1770 and although most were recovered from fieldwalking and were therefore quite badly abraded, it was still possible to identify 69 different mould groups accounting for 203 pipes produced by 14 different makers. Although these pipes can all be attributed to known makers from Hull and Beverley, the number of moulds they represent help to give an indication not only of

the size of individual workshops but also provide a means by which products from a specific workshop can be identified.

#### **9.4 Mechanisms of distribution**

Having considered the identification of distribution patterns through the analysis of dies and mould flaws, the mechanisms by which these patterns were produced will now be considered. There is no direct documentary evidence to show how the pipe-makers in Yorkshire actually distributed their products. In order to piece together a picture of the possible distribution mechanisms it is first necessary to consider the transport systems that would have been available during the seventeenth and eighteenth centuries. By combining this information with clues from pipe-makers wills and inventories, it is possible to suggest the ways in which the distribution patterns observed in the archaeological record could have been created.

As a general rule it would appear that, in both the seventeenth and eighteenth centuries, it was easier to transport the raw clay rather than the finished pipes, which were more prone to breakage whilst being moved. This may partly explain why pipes tended not to be traded very far. During the seventeenth century only two main methods of transport would have been available to the pipe-makers – overland, via the roads, or on water, either via the navigable rivers or on coastwise shipping. The roads in the seventeenth century were notoriously bad, particularly during the winter months when many of the main routes would have been impassable for wheeled carts and wagons. One of the hazards of moving pipes on wheeled transport would have been damage caused by any jolting motion as they travelled along rutted and unsurfaced roads. Such conditions would not, however, have been a problem for packhorses that could have negotiated rougher terrain and their gentle swaying motion would have caused little or no damage to the pipes themselves. Although there are no known documentary references to Yorkshire pipe-makers owning pack horses, instances from other parts of England exist, for example, the inventory of Hugh Lyon, pipe-maker of Windle (Lancashire), dated 1663 which includes ‘two horses and one mare’ as well as ‘three packsaddles’ (Pope 1982, 302). Similarly the inventory of John Newell, pipe-maker of Cleobury Mortimer, dated 1719 lists a horse and pack saddle (Higgins 2001b, 12).

Packhorses would have allowed the pipe-makers to move their products overland with relative ease, usually to destinations that could be reached within a single day.

In the later eighteenth- and nineteenth centuries transport systems improved and pipe-makers would have had the benefit of using canals, railways and turnpike roads to transport their products. Evidence from the nineteenth century, however, suggests that the smaller workshops may have continued to use the more traditional packhorse method. Although improved roads from the eighteenth century onwards would have made the use of carts and wagons a more viable option, the introduction of tolls as a means of raising funds to pay for the building and repair of these roads prompted a series of countrywide riots. In 1740, for example the town crier at Selby encouraged a mob to destroy a new turnpike and there were also violent riots around Harrogate and Wharfedale (Speakman 1969, 29). In Leeds in 1753, following a carter's failure to pay a toll, a brawl broke out which claimed eight lives (*ibid*).

By using these packhorses or wagons the pipe-makers would have been able to transport their products to local markets, generally within a days travel of their workshop. Alternatively, goods could be carried much more safely and cheaply by water. This method also allowed goods to be carried much greater distances as part of a mixed cargo than would have been practicable for a single pipe-maker on a horse. Where pipe-makers had access to navigable rivers or to the coast, this would have enabled them to transport their pipes to destinations further a field.

Having established a model by which the distribution of pipes could have been achieved, it is possible to compare this with what is known from the archaeological evidence. The larger workshops, for example Abraham Boyes from York, may well have used both of the principal mechanisms for trade outlined above. Documentary evidence has shown Boyes to have been a successful and, by all accounts, wealthy pipe-maker (Appendix 1). His market area, and to a lesser extent that of his widow Francis, extended over the whole of the historic county of Yorkshire but was centred on the city of York. As well as utilising the established overland routes to reach market towns such as Ripon and Malton, it is most likely that Boyes also

made the most of his access to the navigable river system, which in turn would have given him access to the coastal port of Hull. It is highly probable that the larger workshops would have had a more complex and highly organised distribution system than that of their smaller contemporaries. The maker of the SB pipes found on the east coast of Yorkshire is one such example. All the known examples of pipes marked SB are confined to the east coast of Yorkshire with a distribution pattern that strongly suggests Scarborough as the centre of manufacture. In this particular instance there is no distribution inland with all of the SB pipes being confined to the coastal towns of Scarborough and Whitby. Such a distribution would suggest that, in this case, the principal mechanism for trade was via coastal shipping. During the seventeenth century goods were regularly shipped via the coastal ports on the east coast of Yorkshire including Scarborough and Whitby (Willan 1938, 122). Coastal shipping provided a relatively cheap means of transporting bulky commodities and although it was normally only the bulk cargoes that appeared in the port books, it is probable that clay tobacco pipes would have formed part of the 'miscellaneous goods' that would also have been transported.

It is assumed that the consumer was able to obtain clay tobacco pipes either from a shop, the tavern or purchased direct from a hawker or even the pipe-maker himself. Although there is very little evidence for any of these outlets from Yorkshire during the seventeenth and eighteenth centuries, it is possible to get some idea of the form these outlet might have taken by looking at contemporary examples from other parts of England or from examples from the nineteenth and twentieth centuries.

In Priestly and Fenner's publication on shops and shop-keepers in Norwich in the seventeenth and eighteenth centuries, (1985, 10), there is a very fine reproduction of an engraving of 'an early seventeenth-century tobacconist shop' from a book by Braithwaite dating from 1618, which is held by the Bodlean library. This engraving clearly shows a display of an assortment of clay tobacco pipes hanging in the window together with a number of other smoking related items. The evidence from probate inventories suggests that specialised shops were quite rare and that most, particularly in smaller towns, would have had a wide variety of mixed stock (Willan 1976, 80). One such shop belonged to John Webester of Doncaster, Alderman and his inventory dated 1674 lists the range of goods in his 'shopp and sellar' that he

had for sale (Brears 1972,143). Amongst these goods are items such as gunpowder, sugar and spices, paper and pins, but also 'tenn gross of Plaine pipes' as well as 'ordinary tobacco' (*ibid*).

The tavern would have been another outlet for the clay tobacco pipes produced in Yorkshire. Although there is no direct evidence from the seventeenth and eighteenth centuries, examples do exist for the nineteenth and twentieth centuries. The Leeds maker Samson Strong, for example, would take 'off with the horse...and a cart-load of pipes...and travelled from town to town in North Yorkshire. Or he took pipes round to local inns, where they were given free with a pint of beer' (Hartley and Ingilby 1976, 141).

In the seventeenth century goods of all kinds were often sold by hawkers or pedlars (Thirsk 1978, 123). From as early as the mid sixteenth century 'tynkens, pedlers and suche like vagrant persones' were considered a nuisance for taking business away from the tradesmen in the towns and cities (Willan1976, 54). As a result pedlars and hawkers were required to have a licence in order to could move from one town to another selling their assorted wares, if they were caught without a licence they would be fined. This implies that it would have been difficult for pedlars to operate between towns and may have resulted in them serving rural rather than urban areas (*ibid*). Although there are no seventeenth-century examples of actual hawkers or pedlars being fined for selling pipes without a licence they do exist for the nineteenth century. In the *Wellington Journal* on the 24<sup>th</sup> August 1872 the case of a Harriet Tonkiss, of Broseley Shropshire, is reported. She was fined 8s. for hawking pipes in Madeley without a license.

To summarise, most, if not all, Yorkshire pipe-makers of the seventeenth century, including those presented in the case studies above, are likely to have had one or more packhorses to transport their goods overland. Those with easy access to the rivers or the coast are most likely to have transported their products by water. Larger workshops may well have used a combination of these methods in order to increase their market area whilst the smaller workshops are most likely to have opted for the method that was cheapest and easiest for them. Goods could have

been transported short distances to local shops, inns and taverns, or sold direct to the consumer, via hawkers and pedlars or even the pipe-maker himself.

## **9.5 Summary**

This chapter has focussed on the ways in which detailed analysis of the stamped marks applied to pipes, and of those individualising marks left by the mould during the production process can be used to identify previously unrecorded makers. Through this analysis not only has it been possible to identify a number of previously unrecorded makers but also to define the extent of their market areas. It has also revealed how individual marks, such as the SVs, can be tied into a broader national picture and how particular motifs, such as the crown, castle and anchor marks, can be related to particular areas of Yorkshire.

This analysis has highlighted a number of issues not least of which is how few clay tobacco pipes have been recovered from the archaeological record. Makers who are known to have had long working lives with large workshops often employing a number of apprentices, must have produced many thousands of pipes every week and yet only a handful survive. Analysis of groups such as the AB marks have shown that it is possible to identify large numbers of different dies but that only a very small number of examples for each die have been recovered. Larger samples would undoubtedly provide more die types. It has also been possible to illustrate the role women played in the pipe-making profession, not simply as assistants and trimmers, but at management level. Frances Boyes, for example, not only seems to have continued her husband's business for many years after his death, but she also went on to introduce new ranges of bowl forms and marks to keep abreast of stylistic developments.

The detailed analysis of the GC dies has also identified what may be the first example of a dual-centre workshop operating in Yorkshire in the seventeenth century. This arrangement would be unique not only to Yorkshire but to England and provides vital information with regard to the organisation of the pipe-making industry as a whole and to the relationships between pipe production centres.



This study has shown how analysis of Yorkshire marks can be related to the broader national and international study of pipes. AB marks, for example, have often been attributed to Abraham Boyes without pausing to look at the dies in detail. Some of the AB marks from London and America cannot be paralleled with Yorkshire examples. As with the IH pipes, this may be because other, as yet unrecognised AB makers exist. Or it may be because specific marks were used by Boyes for the export trade. Much larger samples of his products, combined with detailed die identification and analysis are needed to explore fully and understand the complexities of the production and marketing of these products.

With regard to the identification of makers through the analysis of mould flaws the present survey has been able to identify a number of mould groups where pipe groups of sufficient size were available for detailed study. From the Pontefract/Sandal area in West Yorkshire during the Civil War period, with the exception of Mould Group 12 from Sandal, which is clearly Dutch in origin, there are as many as 24 separate mould groups accounting for 108 pipes, represented in the assemblages at Pontefract Castle and Sandal Castle. The two castles are approximately 10 miles apart and documentary sources show that there was certainly some movement of troops between them (Mayes & Butler 1983, 6). There are no known makers working in this area at the time of the Civil War, but the presence of so many mould groups, and the total number of pipes they represent, strongly suggests that either a single pipe-maker with a number of moulds, or a number of pipe-makers each with their own mould, were working in the area supplying both castles with pipes.

In addition, this chapter has outlined a basic model for the mechanisms of trade that may have been utilised by Yorkshire's pipe-makers and has shown how the identification of market patterns can help to indicate which of those mechanisms a particular maker may have used. Having considered the distribution of Yorkshire products both within the county itself as well as overseas, the following chapter goes on to look at products that have been imported.

## **Chapter 10: The distribution of non-Yorkshire products**

### **10.0 Introduction**

This chapter considers the clay tobacco pipes from production centres outside the county that have been found in Yorkshire. Documentary evidence for the importation of goods is considered first, followed by the evidence provided by the objects themselves. It concludes with sections examining some of the external production centres from which pipes have been identified during the course of this study.

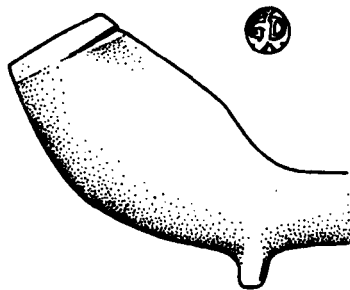
### **10.1 Documentary evidence for importation of pipes to Yorkshire**

The use of the word import might imply that large numbers of pipes were being brought into the county on a regular basis. The archaeological evidence however, suggests that this is not the case. For the most part only single examples of products produced outside Yorkshire have been recovered. Higher numbers and more consistent types might be expected if importation of pipes from outside the county was truly taking place on an organised and regular basis. These single examples and small groups might be best explained as casual losses or the result of single 'importation events'.

Occasionally these single events can be identified from documentary sources. A series of account books belonging to Charles Wharton, of Beverley Parks, for the years 1709-1714, for example provide valuable information with regard to the purchase of pipes (Sheppard 1912, 4). Not only do these accounts provide a surprising amount of detail with regard to the type of pipes that were being purchased, but also to the prices paid and the method by which they were to be transported. In 1714 Wharton refers to the purchase of two gross of clay tobacco pipes from Nottingham, through an agent, Edward Webster, who appears to have been based in Hull. The pipes were to be bought in Gainsborough and shipped to Hull, presumably down the Trent, before being moved by water to Beverley. The cost of these pipes was 5s 6d, a price that prompted Wharton to note in the margin 'very dear, very dear'. In addition there was a charge of 1s 1d for a box and cord

and 8d for freight. It is interesting to note that Nottingham pipes were available in Gainsborough but not in Hull or Beverley.

Although this record clearly shows that at least two gross of Nottingham pipes found their way to Beverley none has been found there and only one Nottingham product has been identified from the whole of Yorkshire (Figure 10.1). This particular example was recovered during excavations at Beverley Gate, Hull and can be attributed to George Doughtie of Nottingham who was working between 1670 and 1690 (Alvey 1967, 30). Wharton's account books show how the landed gentry could acquire pipes that were not normally available in the local markets.



**Figure 10.1:** *Spur bowl dated 1660-1680 with the initials GD in relief on the bowl facing the smoker. Recovered from excavations at Beverley Gate, Hull (Acc No. BEG88 1). Drawn by J Marshall, Humber Archaeological Partnership. (Pcode 02572).*

In Wharton's account books there are several other references to the purchase of pipes, including 456 Dutch pipes between 1<sup>st</sup> June 1711 and 28<sup>th</sup> April 1714, for which he paid between 2s 3d and 4s a gross (*ibid*, 5). The ordering of Nottingham and Dutch pipes provides good examples of single 'importation events' into Yorkshire.

## 10.2 Archaeological evidence for the importation of pipes to Yorkshire

During the course of this research a total of 7,694 clay tobacco pipe fragments have been recorded from sites in Yorkshire. This total is made up almost exclusively of bowl fragments and decorated or marked stems and includes 220 fragments, or 2.85%, that were identified as being products that had been imported from production centres outside the county. These imports were identified either through

the mark or the bowl form. In most instances a known production centre could be identified but there were eight fragments where the place of origin can not be identified and the product was either not a typical Yorkshire bowl form or mark type. In these eight instances the source is given as 'unknown'.

Of the total 220 imported fragments, 114 originated from other English production centres, whilst the remaining 106 fragments came from the Netherlands. In the previous chapters the analysis of certain attributes has excluded the Rayner Collection as there was a collection bias in favour of marked fragments. If the Rayner material is excluded from the analysis of imported products, the total number of fragments drops to 5,274 of which 164, or 3.10%, are imported. It is interesting to note that in this particular instance the exclusion of the Rayner Collection makes a negligible difference to the percentage of imported fragments, just 0.38%. This may be explained by the fact that the majority of the imported material has been identified on the basis of mark rather than bowl form. In the following sections, therefore, the material from the Rayner Collection has been included.

### **10.2.1 Imports from English production centres outside Yorkshire**

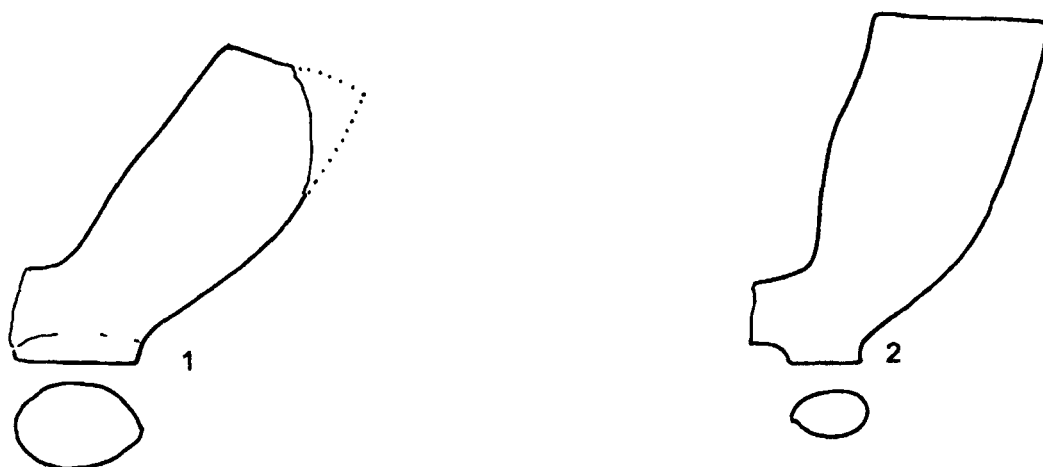
A total of 114 clay pipe fragments, comprising, 71 bowls and 43 marked stems, appear to have originated from English production centres outside of the county of Yorkshire. Figure 10.2 shows a map of the Great Britain marked with the various production centres whose products have been recorded in Yorkshire. In the following sections the clay pipe fragments from these production centres will be discussed in more detail.

### **10.2.2 Chester**

Chester was renowned for high quality pipes with their distinctive decorative borders. A total of 18 fragments, comprising two bowls and 16 marked stems, recorded in Yorkshire appear to have originated in Chester. These include two bowls, one Chester Type 82 from Acaster Malbis (Figure 10.3 No. 1) and one Chester Type 90 from Thorne, in South Yorkshire (Figure 10.3 No. 2).



**Figure 10.2:** Map showing the production centres whose products have been recorded in Yorkshire. The numbers given in brackets are the total number of pipe fragments recorded from each centre. NB. The figures for Gateshead and Newcastle have been combined to give a total of 55 for Tyneside. The county of Yorkshire is shaded.



**Figure 10.3:** 1. Chester Bowl Type 82 from Acaster Malbis (Pcode 06767); 2. Chester Bowl Type 90 from Thorne, South Yorkshire (Pcode 08486). Scale 1:1.

The remaining 16 fragments are all stems the majority of which, 14 examples, having been recovered from fields around Beverley in East Yorkshire with just two stem fragments from York. Table 10.1 presents a breakdown of the number of Chester fragments recorded from each of the six geographical sub-divisions for each of the seven broad date ranges.

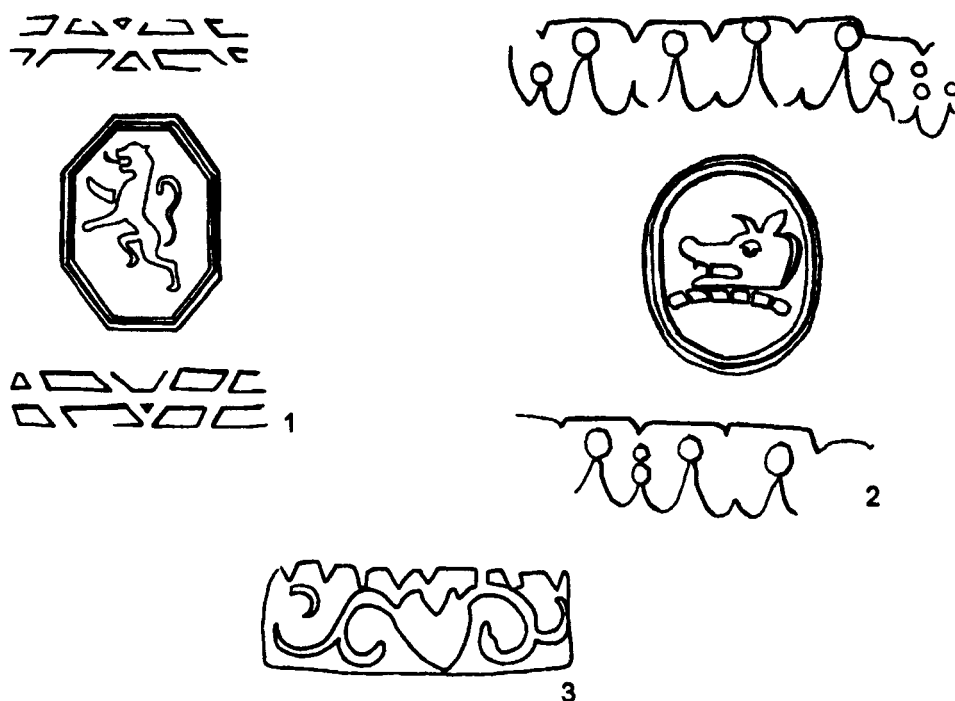
| Area            | 1580-1610 | 1610-1640 | 1640-1660 | 1660-1690 | 1690-1720 | 1700-1750 | 1750-1800 | Totals    |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| West            |           |           |           |           |           |           |           | 0         |
| East            |           |           |           |           | 9         | 3         | 2         | 14        |
| South           |           |           |           |           |           | 1         |           | 1         |
| North-west      |           |           |           |           |           |           |           | 0         |
| North-east      |           |           |           |           |           |           |           | 0         |
| York & environs |           |           |           | 1         |           | 2         |           | 3         |
| <b>Totals:</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>1</b>  | <b>9</b>  | <b>6</b>  | <b>3</b>  | <b>18</b> |

**Table 10.1** Table showing the total number of fragments imported from Chester, for each of the seven broad date ranges.

Chester stems were often stamped with elaborate roll-stamp borders often in association with an oval, lozenge, or octagonal stamp applied across the stem (Rutter and Davey 1980). The various roll-stamp borders and stem stamps could occur in a variety of combinations.

There were two Chester stems recovered from York. The first (Pcode 1847) consists of a Chester oval (Type 11) flanked by two pinnacle-and-dot borders (Type 16) and includes a stem twist (Type 3). The second York example consists of a Chester oval similar to Type 6 flanked by a heart and fleur-de-lys border (Type 50).

Twelve of the 14 Chester stems were recovered from fields near Beverley are clearly Chester products since their style and quality closely matches other finds from that city (*ibid*), but they all appear to be from previously unrecorded dies. There are five examples of a simple geometric border, which occurs flanking a rampant lion in an octagon (Figure 10.4 No. 1) There are four examples of a pinnacle-and-dot border that occurs flanking a boars head in an oval (Figure 10.4 No. 2) and three examples of a heart and tendril design (Figure 10.4 No. 3).



**Figure 10.4:** Examples of the Chester roll-stamp border and stem marks recovered from near Beverley. 1. rampant lion (Pcode 03318); 2. boars head with a pinnacle and dot border (Pcode 03319) and 3. heart and tendril design (Pcode 03308). Scale 2:1.

The presence of so many examples of the same combination of marks, particularly those elements that had not been previously recorded in Chester, might suggest that

The two remaining stems, also recovered from fields near Beverley, have very elaborate floral borders with elements that closely resemble some of the Chester examples. They do, however, also bear close resemblance to elements seen in the Lumley stems from Doncaster.

### 10.2.3 South Lancashire, centred on Rainford

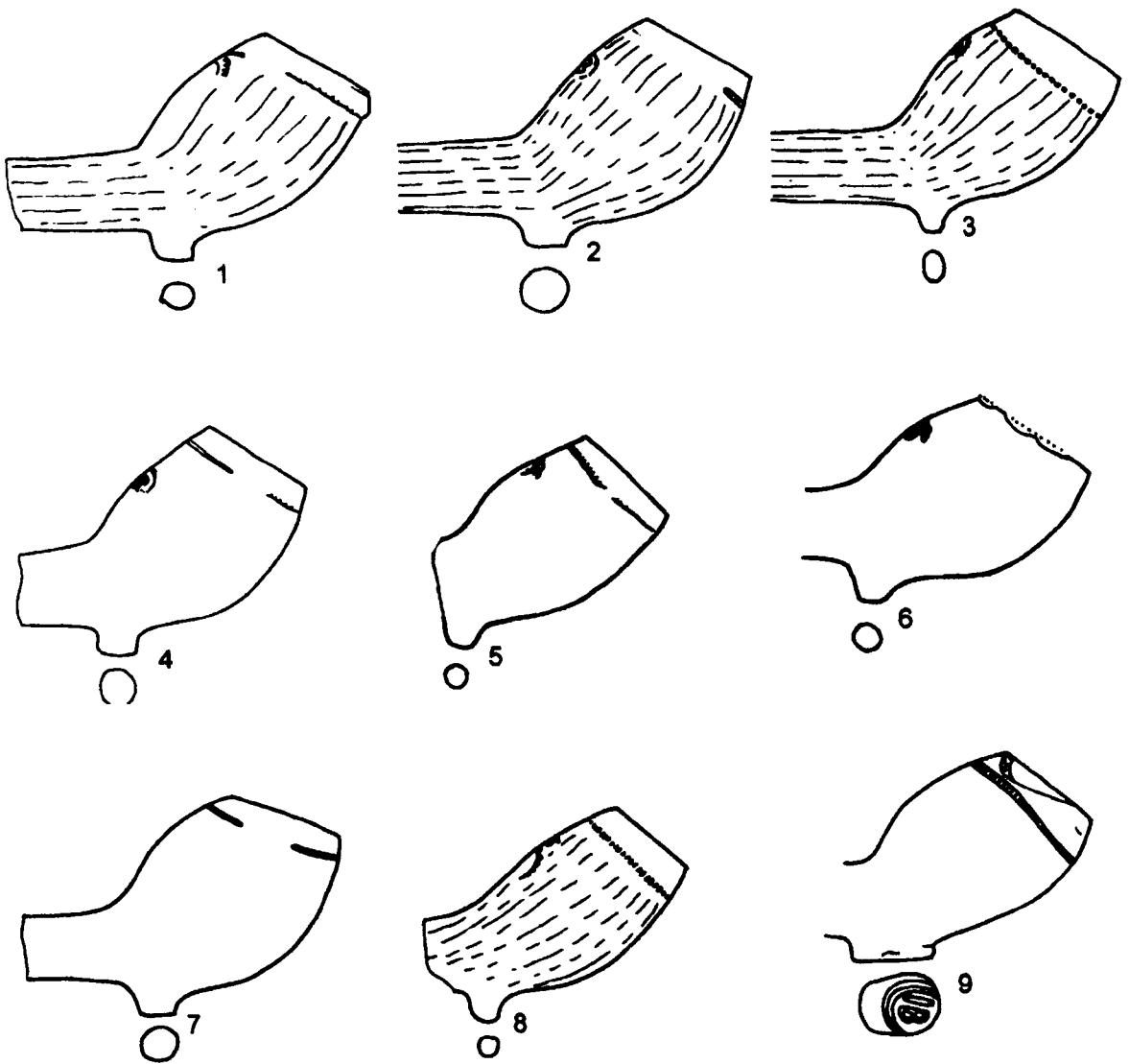
A total of 16 fragments, all bowls, were recorded in Yorkshire appear to have originated in South Lancashire, most likely from Rainford. All of these fragments date from between 1640 and 1720. Table 10.2 presents a breakdown of the number of South Lancashire fragments recorded from each of the six geographical subdivisions for each of the seven broad date ranges.

| Area            | 1580-1610 | 1610-1640 | 1640-1660 | 1660-1690 | 1690-1720 | 1700-1750 | 1750-1800 | Totals    |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| West            |           |           | 4         | 3         | 1         |           |           | 8         |
| East            |           |           |           | 1         |           |           |           | 1         |
| South           |           |           | 1         | 1         |           |           |           | 2         |
| North-west      |           |           | 3         | 1         |           |           |           | 4         |
| North-east      |           |           |           |           |           |           |           |           |
| York & environs |           |           | 1         |           |           |           |           | 1         |
| <b>Totals:</b>  | <b>0</b>  | <b>0</b>  | <b>9</b>  | <b>6</b>  | <b>1</b>  | <b>0</b>  | <b>0</b>  | <b>16</b> |

*Table 10.2 Table showing the total number of fragments imported from South Lancashire, centred on Rainford, for each of the seven broad date ranges.*

The majority of the South Lancashire material was recovered from sites in West Yorkshire. All of these fragments are bowls with a distinctive crescent shaped mark on the bowl facing the smoker, typical of Rainford products. It is interesting to note that the two geographical areas producing the highest number of South Lancashire forms are the west and north-west of the Yorkshire. This would suggest either that the market area for the South Lancashire products just crossed the Pennines into West and North-west Yorkshire, or that they are the casual losses of travellers and traders moving across the Pennines into Yorkshire.





**Figure 10.5:** Selection of Rainford style bowls recovered from sites in Yorkshire. 1. from Blubberhouses Moor (Pcode 07039); 2. from Brushes Moor (Pcode 07714); 3. from Lepton (Pcode 07741); 4. from York (Pcode 07802); 5. from Settle (Pcode 25135); 6. unprovenanced material in the Craven Museum, Skipton (Pcode 25147); 7. from Ewden reservoir (Pcode 07364); 8. & 9. from Wrenthorpe (Pcodes 211923 and 21186). Scale 1:1.

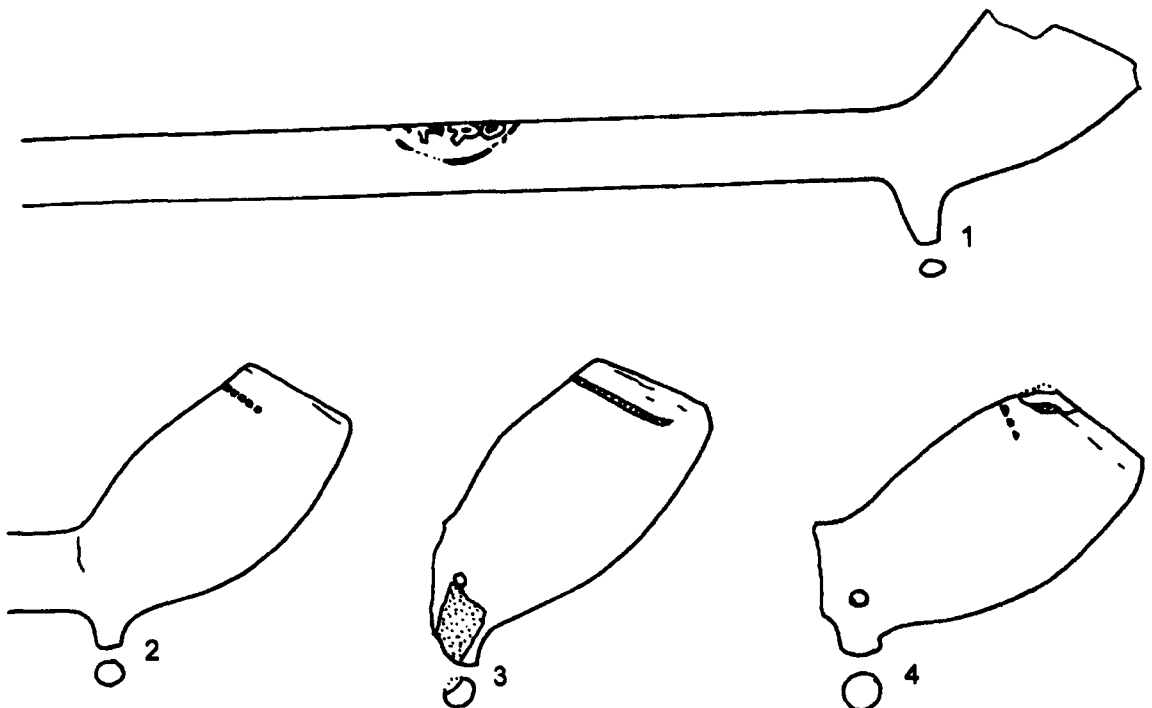
#### 10.2.4 Tyneside

By far the largest group of imported British products is from Tyneside with 55 examples, comprising 30 bowls and 25 stems, recorded in Yorkshire. A total of 34 of these fragments can be attributed to known Gateshead makers with a further three to makers from Newcastle. These include Leonard Holmes, John Holmes, Michael Parke, John Hastings, Joseph Fawell, Edward Craggs and John Rodchester

(Edwards 1988). The remaining fragments are either distinctive Tyneside bowl forms or with marks typical of the North-east. Table 10.3 presents a breakdown of the number of Tyneside fragments recorded from each of the six geographical subdivisions for each of the seven broad date ranges.

| Area            | 1580-1610 | 1610-1640 | 1640-1660 | 1660-1690 | 1690-1720 | 1700-1750 | 1750-1800 | Totals    |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| West            |           |           |           |           | 1         | 2         |           | 3         |
| East            |           |           |           |           | 1         |           |           | 1         |
| South           |           |           |           |           |           |           |           | 0         |
| North-west      |           |           | 17        | 8         | 10        | 6         |           | 41        |
| North-east      |           |           |           | 6         | 4         |           |           | 10        |
| York & environs |           |           |           |           |           |           |           | 0         |
| <b>Totals:</b>  | <b>0</b>  | <b>0</b>  | <b>17</b> | <b>14</b> | <b>16</b> | <b>8</b>  | <b>0</b>  | <b>55</b> |

*Table 10.3 Table showing the total number of fragments imported from Tyneside for each of the seven broad date ranges.*



*Figure 10.6: Selection of Tyneside bowl forms recorded from sites in Yorkshire. 1. from Ravensdown Barracks, marked LEONARD HOLMES (Pcode 20199); 2, 3 & 4. from Piercebridge (Pcodes 07202, 07200 and 07189). Scale 1:1.*

By far the largest group of Tyneside products, 41 fragments, were recorded in North-west Yorkshire. As with the South Lancashire examples discussed above, this distribution would suggest that the market area for the Tyneside makers extended into the north of Yorkshire. It is interesting to note that no Tyneside products have been recorded in South Yorkshire or in and around York.

### 10.2.5 London

A total of seven fragments, all bowls, were recorded in Yorkshire are of possible London origin and are confined to the north of the county. Table 10.4 presents a breakdown of the number of possible London fragments recorded from each of the six geographical sub-divisions for each of the seven broad date ranges.

| Area            | 1580-1610 | 1610-1640 | 1640-1660 | 1660-1690 | 1690-1720 | 1700-1750 | 1750-1800 | Totals   |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| West            |           |           |           |           |           |           |           | 0        |
| East            |           |           |           |           |           |           |           | 0        |
| South           |           |           |           |           |           |           |           | 0        |
| North-west      |           |           |           |           | 2         |           |           | 2        |
| North-east      |           |           |           |           |           | 5         |           | 5        |
| York & environs |           |           |           |           |           |           |           | 0        |
| <b>Totals:</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>0</b>  | <b>2</b>  | <b>5</b>  | <b>0</b>  | <b>7</b> |

*Table 10.4 Table showing the total number of fragments imported from London for each of the seven broad date ranges.*

This figure is very low and goes against previously held beliefs put forward by Parsons (1912) and Oswald (1975) who suggested that the majority of the clay pipes found in the parts of Yorkshire and the north-east in the first half of the seventeenth century were London products. Analysis of the bowl forms recorded in Yorkshire for this current research, however, would suggest that although there was some influence from London in the early part of the seventeenth century local production was very quickly established.

The five fragments from North-east Yorkshire were all recovered from excavations in Scarborough and appear to be examples of a London Type 26 form (Atkinson and

Oswald 1969, 180). The two fragments from North-west Yorkshire appear to be a London Type 19 from Piercebridge and a London Type 22 from Skipton (*ibid*).

In addition to those seven fragments that appear to be of London origin there is a group of nine pipes dating from the period 1620-1660 that are stamped with the initials BC on the heel. These pipes have come from a number of sites in Yorkshire – four from York, and one each from Acaster Malbis, Wakefield, Doncaster, Skelton and Hull. All nine bowls are of a form found throughout Yorkshire in the first half of the seventeenth century and, with the exception of just one bowl, all are finely burnished. At least four different dies are represented including the example from Doncaster Museum (Pcode 08378), which has the initials BC flanking a tobacco plant motif. This is very similar to the style of mark used by the York maker Gabriel Westaby.

Prior to the Civil War bowl forms in Yorkshire followed the styles set by London. It is therefore difficult to determine whether these BC marked bowls are Yorkshire products copying the bowl forms from the capital, or London products that have found their way to Yorkshire. The similarity of the bowl forms and the style of some of the marks would suggest that there were clearly links between London and Yorkshire. What is not clear, however, is whether these BC marked bowls are the products of just one maker and whether they are London products that have found their way to Yorkshire, or Yorkshire products moving south to London.

#### **10.2.6 Other English production centres**

In addition to the imported pipes discussed in the previous sections, products from a number of other English production centres have been recorded in Yorkshire. In total a further 18 pipe fragments, comprising 16 bowls and two marked stems, have been recorded as originating from outside of the county of Yorkshire. Table 10.5 presents a breakdown of the number of fragments recorded from each of the six geographical sub-divisions for each of the seven broad date ranges giving their possible place of origin. For eight of these remaining 18 fragments, however, the place of origin is given as unknown. This is due to the fact that, although they are not typical of Yorkshire, in terms of either the bowl form or the style of mark, it has

not been possible to find close parallels for them. They have, however, been placed within their most likely area of origin.

| Geographical area              | Place of origin          | 1580-1610 | 1610-1640 | 1640-1660 | 1660-1690 | 1690-1720 | 1700-1750 | 1750-1800 | Totals |
|--------------------------------|--------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
| <b>West Yorkshire</b>          | Staffordshire            |           |           |           | 1         |           |           |           | 1      |
|                                | Unknown                  |           |           |           | 1         |           |           |           | 1      |
| <b>Totals:</b>                 |                          | 0         | 0         | 0         | 2         | 0         | 0         | 0         | 2      |
| <b>East Yorkshire</b>          | ?Lincoln                 |           |           |           |           | 1         |           |           | 1      |
|                                | Central/Southern England |           |           |           | 2         |           |           |           | 2      |
|                                | Nottingham               |           |           |           | 1         |           |           |           | 1      |
|                                | Unknown                  |           |           |           |           | 1         |           |           | 1      |
| <b>Totals:</b>                 |                          | 0         | 0         | 0         | 3         | 2         | 0         | 0         | 5      |
| <b>South Yorkshire</b>         | Broseley                 |           |           |           | 1         | 2         |           |           | 3      |
|                                | Unknown                  |           |           | 2         |           | 1         |           |           | 3      |
| <b>Totals:</b>                 |                          | 0         | 0         | 2         | 1         | 3         | 0         | 0         | 6      |
| <b>North-west Yorkshire</b>    |                          |           |           |           |           |           |           |           |        |
| <b>Totals:</b>                 |                          | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0      |
| <b>North-east Yorkshire</b>    | Southampton              |           |           |           |           | 1         |           |           | 1      |
|                                | Sunderland               |           |           |           |           |           |           | 2         | 2      |
| <b>Totals:</b>                 |                          | 0         | 0         | 0         | 0         | 1         | 0         | 2         | 3      |
| <b>York &amp; its environs</b> | ?Cambridge               |           | 1         |           |           |           |           |           | 1      |
|                                | Unknown                  |           |           |           | 1         |           |           |           | 1      |
| <b>Totals:</b>                 |                          | 0         | 1         | 0         | 1         | 0         | 0         | 0         | 2      |

*Table 10.5: Table showing the total number of fragments found in each of the six geographical sub-divisions within Yorkshire that originated from other production centres outside the county. Unknown indicates that the place of origin is not known but that the product does not appear to have been produced in Yorkshire.*

In most instances only one or two examples from each production centre have been recorded. This strongly suggests that these fragments were casual losses rather than representing organised importation.

### 10.3 Dutch pipes

Dutch imports account for 106 fragments, comprising 56 bowls and 50 marked stems, recorded in Yorkshire. The vast majority of these fragments are generic Dutch-types and therefore few can be confidently attributed a production centre. In his survey of Dutch pipes found in Scotland, Davey noted the difficulties in sourcing Dutch material found in the British Isles, due to 'the large numbers of early centres throughout the Low Countries, the mobility of the makers [and] the

similarity of their products' (1992, 283). In Table 10.6 the number of examples of each type of mark (Qty) is given together with the Christian name or initial (Cname), Surname initial (Sname) as it appears on the pipe fragment. This is followed by details of any other mark or a description of the decoration. Any other comments, including the name of the likely maker, is then given followed by the source where known.

| Qty | Cname | Sname | Other mark/decoration                | Comments                                                                                                     | Source     |
|-----|-------|-------|--------------------------------------|--------------------------------------------------------------------------------------------------------------|------------|
| 1?  |       | ?     |                                      | Only traces of heel stamp survive; moulded pellets on RHS of bowl                                            | Unknown    |
| 1A  |       | B     |                                      |                                                                                                              | Unknown    |
| 1T  |       | C     |                                      |                                                                                                              | Unknown    |
| 1   |       |       | Lettering '- CVERZY/GOUDA'           | C Verzijl of Gouda – this fragment published by Evans & Heslop, 1985                                         | Gouda      |
| 1H  |       | I     | Baroque pipe                         |                                                                                                              | Unknown    |
| 1I  |       | I     |                                      | Lettering flanking a heart                                                                                   | Unknown    |
| 5R  |       | W     |                                      | Roger Wilkins                                                                                                | ?Amsterdam |
| 2   |       |       | ?flower motif                        | One stamped on the heel of a Jonah pipe                                                                      | Unknown    |
| 8   |       |       | Lettering '4TS'                      | Merchant's mark                                                                                              | Unknown    |
| 1   |       |       | Cross motif                          |                                                                                                              | Unknown    |
| 6   |       |       | Crowned rose motif                   |                                                                                                              | Unknown    |
| 1   |       |       | Diamond motifs                       | With a stem twist                                                                                            | Unknown    |
| 14  |       |       | Fleur de lys motifs                  | All stem stamps                                                                                              | Unknown    |
| 2   |       |       | Lettering 'I.VERS..Y' and 'IN GOUDA' | Two joining fragments                                                                                        | Gouda      |
| 1   |       |       | Milled band                          | Possibly Dutch; rim fragment only; small line of milling facing the smoker but slightly to LHS of mould seam | Unknown    |
| 2   |       |       | Moulded decoration                   |                                                                                                              | Unknown    |
| 8   |       |       | Moulded decoration                   |                                                                                                              | Unknown    |
| 1   |       |       | Scale patterned stem                 |                                                                                                              | Unknown    |
| 19  |       |       | String of pearls motif               |                                                                                                              | Unknown    |
| 5   |       |       | Toothed band motif                   |                                                                                                              | Unknown    |
| 9   |       |       | Tudor rose motif                     |                                                                                                              | Unknown    |
| 2   |       |       | Wheel motif                          |                                                                                                              | Unknown    |
| 14  |       |       |                                      | Various Dutch style bowls without marks or decoration                                                        | Unknown    |

**Table 10.6:** Table showing the number of examples for each type of Dutch mark or decoration and the source if known.

Table 10.7 presents a breakdown of the total number of Dutch fragments recorded in Yorkshire from each of the six geographical sub-divisions for each of the seven broad date ranges. The figures in Table 10.7 show two interesting features. The first is the gradual decline of Dutch material found in Yorkshire from the early

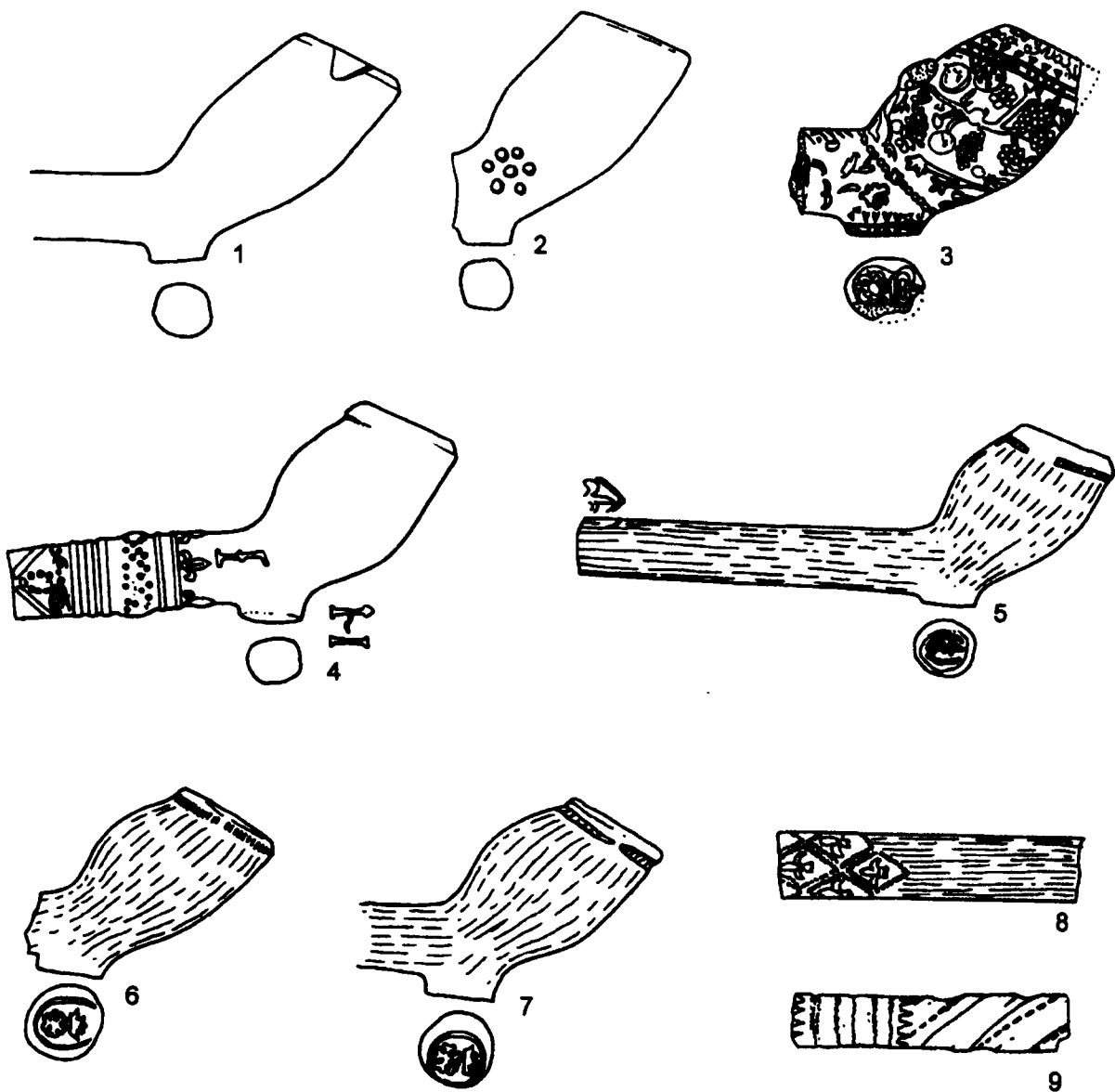
seventeenth century through to the end of the eighteenth century. Second, and perhaps most interesting, is the dramatic fall in the number of Dutch fragments recovered during the period 1660-1690 before rising again in the period 1690-1720.

| Area            | 1580-1610 | 1610-1640 | 1640-1660 | 1660-1690 | 1690-1720 | 1700-1750 | 1750-1800 | Totals     |
|-----------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|
| West            |           | 6         | 1         |           |           |           |           | 7          |
| East            |           | 29        | 5         | 1         | 12        | 1         |           | 48         |
| South           |           |           | 1         |           |           |           |           | 1          |
| North-west      | 71        |           |           |           | 1         | 1         |           | 3          |
| North-east      |           | 4         | 21        |           | 9         | 4         |           | 38         |
| York & environs |           | 3         | 2         |           | 2         |           | 2         | 9          |
| <b>Totals:</b>  | <b>71</b> | <b>42</b> | <b>30</b> | <b>1</b>  | <b>24</b> | <b>6</b>  | <b>2</b>  | <b>106</b> |

*Table 10.7 Table showing the total number of fragments imported from the Netherlands for each of the seven broad date ranges.*

It is possible that this is an indication of the political situation at the time. The dramatic fall in the number of Dutch pipes at the start of the period 1660-1690 may be a result of the Anglo-Dutch wars. There were three main wars in the years 1652-54, 1664-67 and 1672-74 (Gardiner & Wenborn 1995,252-253). In his study of a group of pipes from Pittenweem in Scotland, Martin (1987, 185) also notes a dramatic drop in the number of Dutch pipes. Martin notes that the import of Dutch material did not continue much into the 1640s and suggests that this may have been due to 'economic and other pressures' (*ibid*), although this appears to be a result of the Civil War and Covenant rather than the effects of the Anglo-Dutch wars. In the period 1690-1720 the number of Dutch pipes rises again, which may mark the beginning of improved relations between the English and the Dutch with the crowning of William of Orange (William III) in 1689 (*ibid* 811). Dutch bowl forms and decorated stems are very distinctive and a selection has been illustrated in Figure 10.7.

In Figure 10.8 the distribution of Dutch pipe fragments found in Yorkshire is illustrated. The numbers in the coloured dots represents the total number of fragments recovered with the number of bowls followed by the number of stems, the figures being separated by an oblique stroke (/).

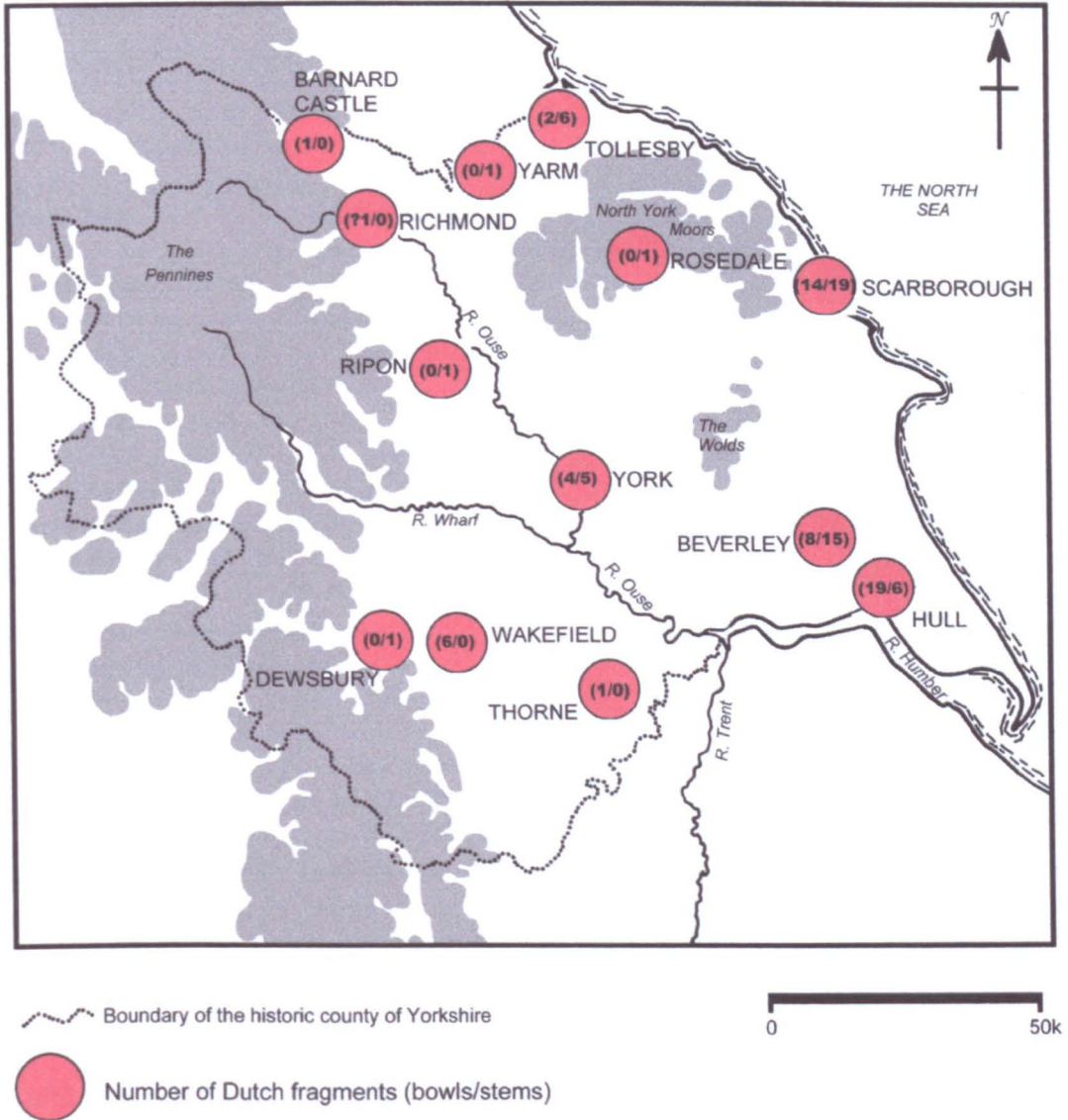


**Figure 10.7:** Selection of Dutch bowls and stems. 1 & 2. Castle Hill, Scarborough, (Pcodes 6008 & 5959); 3. Longwestgate, Scarborough (Pcode 2056); 4.-6. The King's Head, Hull (Pcodes 21321, 21315 & 23124); 8. Scarborough Barbican (Pcode 03517) & 9. Scarborough Castle (Pcode 24941). Scale 1:1.

In order to try and assess how common these Dutch fragments are in relation to other clay pipe fragments from any given site, the absolute figures for the bowl fragments shown in Figure 10.8 need to be converted to percentages. The bowl figures alone are to be used as all bowl fragments were systematically recorded for this research unlike the stems where only those that were either marked or decorated were recorded. In Figure 10.9 the percentage bowl figures for each of the nine find spots that yielded Dutch bowl fragments has been plotted. Three of these



sites produced very small pipe assemblages of less than 100 bowl fragments and these sites have been marked with a circle on the map. The remaining six sites



**Figure 10.8:** Map showing the distribution of Dutch clay pipe fragments in Yorkshire. The numbers in the coloured dots represents the total number of bowls/stem fragments recovered.

yielded groups of pipe bowls in excess of 100 fragments and these have been marked as a square. A breakdown of the total number of bowl fragments from each site, the number of Dutch bowl fragments and the percentage that they represent is given in Table 10.8.

There is clearly a problem with the samples of less than 100 fragments since they are not large enough to provided reliable percentages. Tollesby in north-east

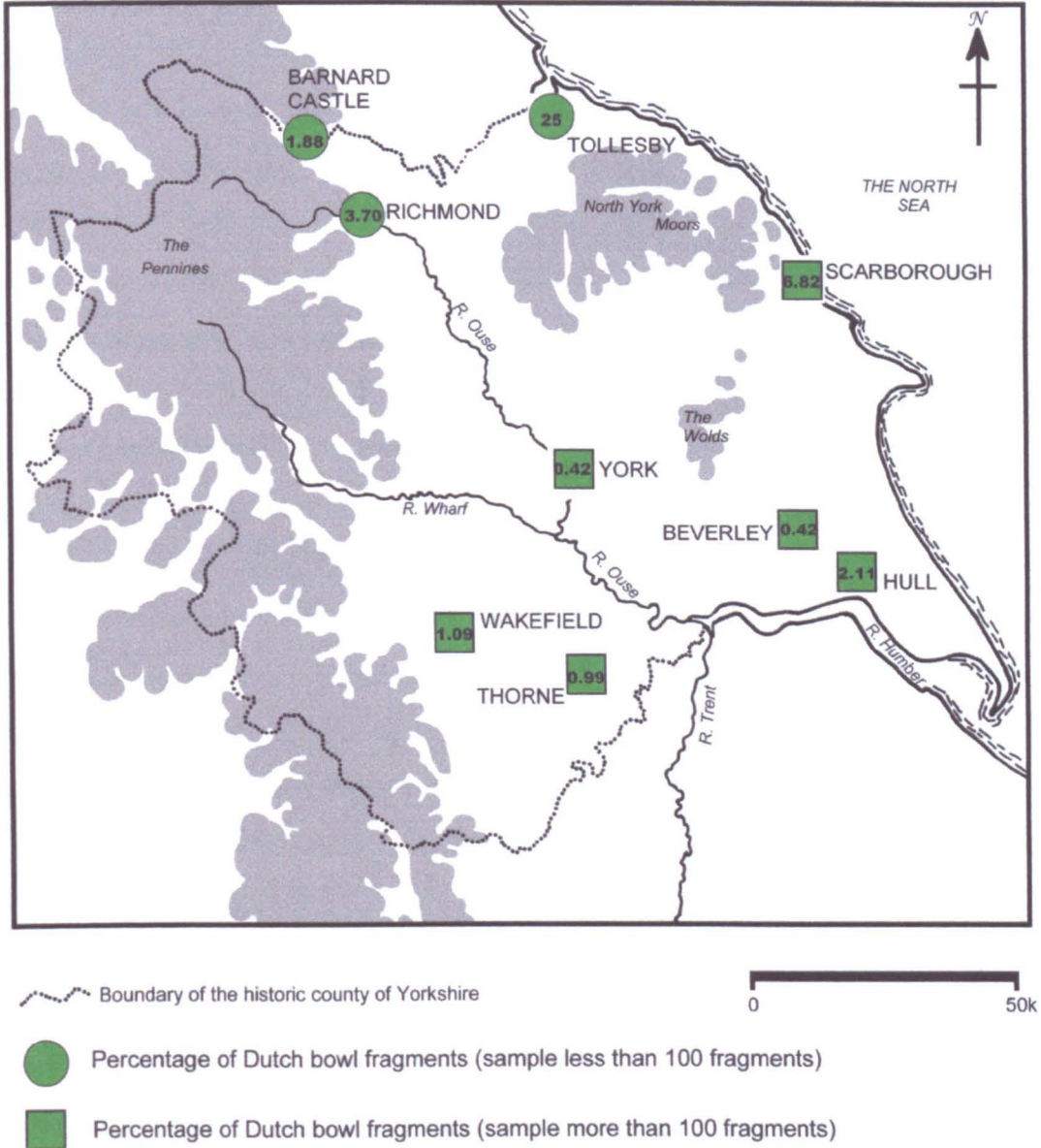
Yorkshire, for example, only yielded a total of eight fragments, two of which were of Dutch origin, but this produces a figure of over 25%. Although the presence of Dutch material at Tollesby should not be ignored, the sample itself is too small to be considered statistically valid.

| Site            | Total number of bowl fragments | Qty Dutch bowl fragments | Percentage |
|-----------------|--------------------------------|--------------------------|------------|
| Barnard Castle  | 53                             | 1                        | 1.88%      |
| Beverley        | 1,888                          | 8                        | 0.42%      |
| Hull            | 897                            | 19                       | 2.11%      |
| Richmond Castle | 27                             | 1                        | 3.70%      |
| Scarborough     | 205                            | 14                       | 6.82%      |
| Thorne          | 101                            | 1                        | 0.99%      |
| Tollesby        | 8                              | 2                        | 25.00%     |
| Wakefield       | 550                            | 6                        | 1.09%      |
| York            | 949                            | 4                        | 0.42%      |

*Table 10.8: Table showing the total number of bowl fragments from each of the sites producing Dutch material giving the number of Dutch bowl fragments recovered and the percentage that figure represents.*

There are, however, six sites that yielded groups of material in excess of 100 fragments, that is Scarborough, Beverley, Hull, Thorne, Wakefield and York. In these instances it is possible to look at the percentage of Dutch fragments within each of those groups in order to assess the extent of the Dutch imports to a particular town or site. It is interesting to note that in both Beverley and York the percentage of Dutch material is a little over half a percent (0.42%) while in Wakefield and Thorne the figure is hovering around 1%. This indicates that the Dutch material makes up a very small proportion of the total assemblage from each of these sites. In Hull the percentage is a little higher, 2.11%, and this may be due to the fact that Hull is a busy port through which any Dutch material is likely to have passed. There is, however, one group of material from a site in Hull, which may have skewed the figures slightly. The site of The King's Head public house in Hull yielded a total of 15 Dutch pipe fragments, comprising 12 bowls and three stems all dating to between 1620 and 1640. This group included five examples with a crowned Tudor rose and four with a Merchants mark possibly reading 4TS. If all the Dutch material from the King's Head is removed from the Hull figures a percentage of 0.79% is produced, which is much more in line with the other sites.

These figures strongly suggest that something unusual is happening at the site of the King's Head as the high proportion of Dutch pipes is contrary to what is happening



**Figure 10.9:** Map showing the distribution of Dutch bowl fragments in Yorkshire. The figures in the dots and squares represent the proportion of Dutch pipes as a percentage of the total number of bowl fragments recovered from each site. The circles represent sites producing a sample of less than 100 bowls and the squares represent sites producing a sample of more than 100 bowls.

in the rest of Yorkshire. A number of suggestions could be put forward to explain this. It is possible that this particular public house in Hull was a favourite of the Dutch sailors coming into the port or that it was run by a Dutch landlord. Alternatively, it could be that the landlord was particularly partial to Dutch pipes. Either way, this group appears to be anomalous within Hull, which otherwise has a

similar low occurrence of Dutch pipes to the majority of the county. A similar situation is seen at Sandal Castle, near Wakefield. A total of 311 bowl fragments were recorded from Sandal Castle, which included five, or 1.60%, pipes from the Netherlands. This particular group of Dutch pipes is interesting in that they were all produced in the same mould and are all marked with the same RW die. This may suggest a one-off event, a single consignment of pipes for one of the officers serving at the castle during the Civil War. The RW mark can be attributed to Roger Wilkins who was born in York around 1607 but emigrated to Holland where he took up pipe-making (Appendix 1). It is tempting to suggest that this particular maker retained links with his Yorkshire roots and that the group from Sandal is a consignment sent to a friend or family member.

The King's Head public house in Hull also yielded four bowls that date from 1620 to 1640 that are stamped on the heel with a possible Merchant's mark, which may be read 4TS (Figure 10.7 No. 5). Although these four marks constitute part of a group that may be considered a single 'importation event' bowls with the 4TS marks have also been recovered from the Old Town, Hull (1 example), York (2 examples) and Scarborough (1 example). These eight 4TS marks make up one of the largest single groups of Dutch pipes from the county of Yorkshire suggesting that the maker responsible for these products had a much wider market area that was not confined to the coast.

The site that stands out above all the others, however, is Scarborough, which yielded a total of 205 bowl fragments of which 14, or 6.82%, were of Dutch origin. This figure is considerably higher than any other site in Yorkshire and would suggest that something rather unusual was happening in Scarborough. If the figure simply represented a coastal distribution of Dutch material then high percentages would also be expected at sites such as Whitby and Bridlington. Although both sites only produced small samples, with 33 and 15 fragments respectively, none of these originated in the Netherlands. Unlike the Dutch pipes from Hull and Sandal, which were recovered from a single site, the examples from Scarborough were recovered from no less than eight different sites around the town. Furthermore, they represent a range of different marks and styles, suggesting the repeated arrival of

Dutch pipes rather than the isolated group from the Kings Head in Hull, or the consignment to Sandal. This would indicate that the level of Dutch material in the town in general was higher than is seen at other towns and cities in Yorkshire perhaps suggesting either a strong link with the Netherlands or the presence of a Dutch community within the town.

Although excavations in Scarborough have produced reasonably high proportions of Dutch pipes, this is clearly not typical of Yorkshire as a whole. This contrasts quite markedly with Scotland where a survey of a number of sites in the north and north-east shows that pipe assemblages were dominated by Dutch material (Davey 1987b, 323; Davey 1987d, 312; Davey and Gallagher 1987, 278; Gallagher 1987c and Davey 1992c, 284). Clearly there was significantly more Dutch influence in Scotland than is seen in Yorkshire which may be explained by better trading links. There is evidence that Dutch pipes were being traded with parts of Scotland from at least 1635 as salvage from the wreck of a Dundee barque carrying products bought in Holland and Zeeland included ‘...seven barrell pypes’ (Martin 1987, 185). Also, the number of pipes being imported into Scotland by the mid seventeenth century was clearly sufficient enough to prompt the Scottish Parliament to impose a duty on imported pipes 1661 (Gallagher 1987e, 8).

#### **10.4 Summary and conclusions**

This chapter has considered the presence of imported clay tobacco pipes that have found their way into the county of Yorkshire. The total number of imported products is very small and accounts for only 220 fragments of all those pipes recorded from sites in the county. A little over half of these imports, 51%, originated from other English production centres with the remaining 49% being imported from the Netherlands.

In spite of the small number of examples the analysis of these products has allowed a number of conclusions to be drawn. The English imports appear to be confined to the neighbouring parts of the county, such as the Tyneside material in the north or the South Lancashire products in the west. These may be the ‘tail end’ of local distribution rather than specific trade. They may also be the result of casual losses

by people travelling to markets, or by sailors coming in on ships from coastal ports or from overseas.

A combination of documentary and artefactual analysis has shown the importance of single 'importation events' as illustrated by the Wharton account books or the Dutch pipes from the King's head in Hull and Sandal Castle near Wakefield. These examples illustrate the need for caution when drawing any conclusions about imported material. Such events need to be taken into consideration when looking at any given assemblage and even the nature of the site itself plays a vital roll in the interpretation of the archaeological evidence.

This survey of the imported products recorded in Yorkshire has reinforced the picture that each region was primarily self-sufficient in pipes and this may well be one of the factors that allowed regional styles to develop.

This chapter concludes the survey and analysis of clay tobacco pipes recorded in Yorkshire. The following, and final chapter, goes on to discuss the ways in which this analysis has contributed to pipe research, not only in Yorkshire but also in England as a whole, and puts forward some suggestions for future research.

## **Chapter 11: Discussion of findings and proposals for future research**

### **11.0 Introduction**

The main aims of this study were not only to try and characterise Yorkshire pipes from the seventeenth and eighteenth centuries but also to use the pipe evidence to explore regionalisation and trade within a given geographical area. In order to do this one of the largest bodies of systematically collected pipe data ever assembled has been created, which unlike most previous studies, has been gathered from a defined geographical area rather than from a specific site or production centre. The chosen study area was of sufficient size to allow both regional variation and for market areas or trade patterns to be present within it.

The recording system used for this research was based on one developed at the University of Liverpool by Higgins and Davey (1994), which allows field data to be systematically collected using a series of A3 paper recording forms (see Appendix 4). The computerised version of this system allows the data to be manipulated in a variety of ways as well as providing a means by which individual groups and sites can more easily be compared.

This study has, for the first time, attempted to plot both the chronological and geographical evolution of various attributes relating to the pipes, such as burnishing, milling, bowl forms and makers' marks. This has made it possible to identify regional variation within the study area as well as providing a bench-mark against which neighbouring groups can be compared. The geographical and chronological analysis of the stem bores recorded in the county has also provided indications of regional variations.

In the following sections the findings of this research are discussed together with the implications that they have for the future analysis of pipe groups.

## **11.1 Regionalisation**

Regionalisation, as defined at the outset of this study, was the identification of any group of artefacts that could be assigned to a specific region by virtue of their form. The present study set out to examine the various attributes of the clay tobacco pipes produced in Yorkshire such as bowl form, style and position of mark, degree of burnishing, and the extent of any milling. It was hoped that by looking at these attributes it would be possible to define what constituted a typical Yorkshire pipe as well as identifying regional variations both chronologically and geographically within the study area. Every attribute studied has shown that regionalisation, to some degree, did exist within the county of Yorkshire during the seventeenth and eighteenth centuries.

The social upheavals created by the Civil War appear to have had a profound affect on regionalisation. The established characteristics of pipes dating from before 1640 were overturned during the 1640s, enabling new regional styles to develop during the Commonwealth and Restoration periods. The influence of the war on the material culture and stylistic development of pipes does not appear to have been previously considered.

### **11.1.1 Bowl form**

By studying the development of the bowl form in Yorkshire it has been possible to consider the extent of influence that the county's pipe-makers may have had on the workshops in neighbouring areas. Equally, it has been possible to look for any influencing factors from nearby centres that might have influenced Yorkshire products.

For the most part the development of the bowl forms seen in Yorkshire throughout the seventeenth and eighteenth centuries broadly follows that of other parts of England. The picture that has emerged from this research is that, although London set the basic trend and style of bowl form, there were local variations. During the seventeenth and eighteenth centuries there were periods when this national influence was quite strong and local forms fall more in line with those styles set by



London. At other times, however, there is a break from the constraints of the capital and a flourishing of local types.

In the early part of the seventeenth century Yorkshire bowls were small with thick walls and of a form that quite closely followed the styles set in London. Many of the earlier pipe scholars believed these products had been imported into the county from production centres such as London, and to a lesser extent Bristol (Sheppard 1912, Oswald 1975, Laurence 1983). This research has shown that no identifiable Bristol products have been recorded from Yorkshire and that, although London styles do occur in the county, there are very few pipes that can be confidently attributed to that production centre. If London products were being traded regularly with Yorkshire then a small but regular percentage of identifiable London marks would have been expected.

This research has also shown that the Yorkshire pipe industry developed quite early in the seventeenth century. In York, for example, a number of the 1620-1640 bowls are marked with a GW stamp, which can be attributed to the York maker, Gabriel Westaby (Appendix 1). Detailed analysis of material from the castles at Pontefract and Sandal has shown that, by the Civil War, pipes were being produced and traded in sufficient numbers to meet almost all of the not inconsiderable demand for them.

The Civil War marked a turning point in the development of the bowl form in Yorkshire and it can be seen as the catalyst for similar changes nationwide. It was during the 1640s and 1650s that the seeds were being sown for more distinctive regional forms, such as the 'Yorkshire bulbous'. Around 1660 the full bulbous form appears in Yorkshire and it remained dominant for around the next 30 years. The bulbous form has been shown to occur in a broad band, which includes parts of Lancashire, south Cumbria and Yorkshire suggesting close affinities between these areas. These links would not immediately be expected particularly given the natural barrier of the Pennines, but clearly very similar forms developed on both sides of this nature divide. Clearly more work is needed to define the nature and extent of the links between the Yorkshire, Lancashire and Cumbria bulbous traditions.

By the 1690s the upheaval caused by the Civil War appears to have settled down and Yorkshire falls under the national influence once again. Although superficially the bowl forms of this transitional period (1690-1720) follow the styles set by London, they do have a Yorkshire twist, and regional variation is evident.

During the period 1710-1750 the bowl forms became larger and more upright with thinner walls. Due to their fragile nature the few that have survived into the archaeological record appear to be of a basic form found nationwide but with local interpretations. In parts of Yorkshire this is characterised by bowls that have been burnished and have incuse stamps on the bowl facing the smoker.

Towards the end of the eighteenth century and into the early nineteenth, mould-decorated bowls became popular and the styles that developed exhibit regional variation. In this instance, however, these differences appear to have occurred over much wider areas than was the case with the seventeenth century.

### **11.1.2 Marks**

Having identified some evidence for regionalisation in Yorkshire through the bowl forms, it is the style of the makers' marks and their positioning that showed the clearest regional variations. A discussion of every mark recorded in Yorkshire was clearly not practical and far beyond the scope of this present study. What was possible, however, was to present a summary of the main characteristics of each of the five main types of bowl mark together with a selection of the stamped stem marks.

Analysis of the marks has shown that, as with the bowl forms, Yorkshire initially followed the styles set by London. The very earliest marks consist of symbol or single letter marks such as are found in the capital but by the end of the Civil War period Yorkshire had developed distinctive heel marks. These were large circular marks on the base of the heel with the makers' initials at the centre, often in association with a decorative motif, the most common of which was the tobacco plant. Others included crowns, castles and anchors. Analysis of these particular motifs has shown that regional variation clearly existed within the county and that

most of these motifs were unique to specific areas making it possible to identify the location and market areas of previously un-recorded pipe-makers.

In the south of the county elaborate stem stamps and incuse marks on the bowl facing the smoker were being adopted. The development of these styles appears to have been influenced by production centres to the south, such as Nottingham and Derby. Along the east coast of Yorkshire, however, it appears to have been London and Tyneside that were the influencing factors as moulded initials on the side of the heel were commonly found.

The analysis of all the marks, but particularly the stamped heel marks, has identified far more makers than are currently known from documentary sources. Although almost 300 documented Yorkshire makers have been bought together during the course of this study, it is clear that many more remain unidentified. This gap between the current documentary and artefactual record highlights the need for a systematic documentary search to compliment this study and to flesh out the bones of these previously un-recorded makers.

### **11.1.3 Burnishing**

The analysis of burnishing produced some very interesting results. The appearance of a well-burnished pipe immediately suggests a high status, costly product. The whole process was relatively time consuming and would have added to the cost of the pipe. The review of burnished pipes across England, however, has shown that in certain areas burnishing was the norm. Pipe-makers at Broseley in Shropshire, for example, burnished almost all of their pipes and not just those considered to be of a higher quality. Likewise, the occurrence of more fine quality burnished pipes from the coastal port of Hull rather than from the Minster city of York shows that preconceived ideas with regard to burnishing need to be tested. This study has shown that there are clearly correlations between the quality of burnishing and the presence of a stamped mark. Burnishing alone did not necessarily indicate a high quality product, but when that burnishing occurred in combination with a stamped mark and a fully milled rim then the pipe appears to have been regarded as a high quality product.

The use of burnishing as an indicator of social status is still valid as there can be little doubt that the action of applying burnishing to a pipe did indeed take longer and therefore resulted in a more expensive end product. What this survey has shown however, is the importance of taking regional variations with regard to burnishing into consideration. Having considered the question of how these burnished pipes were perceived and consumed in Yorkshire it would be useful to be able to see how this model fits into the broader national picture.

#### **11.1.4 Milling**

The various forms of milling found in Yorkshire were analysed and, once again, regional variations were identified. One of the more interesting aspects to come out of this analysis relates to the application of a band of milling immediately adjacent to the heel on the underside of the stem. This rather unusual placing appears to occur only in Yorkshire, and more specifically only in West Yorkshire from just two sites - Pontefract Castle and Sandal Castle. Pipes with bands of milling across the heel and across the base of the bowl away from the smoker were also noted from these castle sites on pipes that were produced from a common mould. Such idiosyncrasies, which link pipes to a particular workshop, can be used to look at distribution patterns in much the same way as a specific maker's mark.

#### **11.1.5 Summary**

By drawing together the evidence from the bowl forms, the marks, the use of burnishing and the application of milling, it is possible to see that regionalisation operated on a number of levels.

At the first, and most basic level, is the production of white clay tobacco pipes, which are found throughout north-west Europe. At the second level there are national variations, with each country exhibiting their own style. In England these styles were set by London and are characterised by the basic barrel shaped bowls of the seventeenth century, which developed into the more up-right bowl forms, with the rims cut parallel to the stem, in the eighteenth century.

The third level is the regional interpretation of these national trends that occurs throughout the seventeenth, eighteenth and into the nineteenth centuries. These regions can be defined as either a county, or groups of neighbouring counties. In the seventeenth century, for example, there are the pronounced chinned, or overhanging bowl forms of the West Country and the bulbous forms found in Yorkshire and parts of Lancashire and Cumbria. In the eighteenth century this regional interpretation is seen in the form of stem stamps such as the decorative Midland style borders found in Nottinghamshire. Similarly in the late eighteenth and early nineteenth centuries the makers names moulded around the rim of the bowl can be seen in Nottinghamshire, Lincolnshire and south Yorkshire and slavery motifs are found on mould-decorated bowls from Lincolnshire.

The fourth tier is seen at the production centre level and once again occurs throughout the seventeenth, eighteenth and nineteenth centuries. In the seventeenth century examples of this type of regionalisation can be seen throughout England, for example, at Broseley in Shropshire with the introduction of the distinctive tailed heel. In Yorkshire variations at this level are found in the east and south of the county during the period 1660-1690, for example, where makers showed a preference for spur rather than heel forms. Also, in the Transitional Period of 1690-1720, the makers in east Yorkshire opted for a long, wide bowl form with a pronounced forward lean as opposed to their counterparts in the south of the county who preferred a shorter, narrower form. The marks themselves also exhibit regional variation at this production centre level, for example the use of particular motifs on a heel stamp, such as crowns in Ripon or castles in Pontefract. In the late eighteenth and early nineteenth century mould-decorated bowls exhibit this fourth level of regionalisation, for example the ship and sailor motifs found around Pontefract.

The fifth and final tier of regionalisation is exhibited at the level of the individual maker. The analysis of the Yorkshire material has identified only one particular example of this level of regionalisation in the seventeenth century, which is the maker who was applying bands of milling behind the heels of his pipes.

## **11.2 Trade**

By studying the find spots of marked pipes and pipes identified through mould flaw analysis as having been produced from the same mould, it has been possible to look at the extent of trade and the market areas of particular makers or workshops. By plotting the data geographically it would appear that the majority of pipe-makers were selling their pipes locally, within a very tight market area. One of the interesting points to come out of this study has been the variation in the market area achieved by a few of the makers. Abraham Boyes, and subsequently his widow Frances, for example, appear to have operated a highly successful and reasonably large pipe workshop in York in the seventeenth century. It has been possible to show that their products were distributed widely in Yorkshire and may even have reached the east coast of America and the Caribbean. This contrasts with the larger number of small makers, many of them previously un-recorded, who appear to have operated workshops with a much smaller output and market area.

When the data is plotted chronologically it is possible to see how major political events affected the trade in pipes. It is interesting to note that of the 114 imports that have been identified as coming from other English production centres, only one dates from before the Civil War period suggesting that there was little in the way of home trade from outside the county in the early seventeenth century. Overseas material imported from the Netherlands does occur prior to the Civil War, but drops off dramatically in the period 1660-1690, the period of the Anglo-Dutch Wars. These examples show that events such as the Civil War and Anglo-Dutch wars seem to have affected the supply and consumption of pipes within the study area.

Perhaps one of the most valuable contributions to pipe research, however, is the identification of a possible two-centre workshop. Preliminary analysis of the GC marks and bowl forms found from Beverley would strongly suggest that they were being made by the same manufacturer who was producing pipes in Tyneside. The occurrence of a two-centre workshop would be unique not only in Yorkshire but in England. Clearly detailed analysis of comparative material from Tyneside is required to confirm this hypothesis, but if it proves to be correct it will change the way in which manufacturers and production centres are viewed in the future.

### **11.3 Future research**

The range and scope of this study has changed our understanding of the Yorkshire clay tobacco pipe industry. Never before has such a large body of data been pulled together and analysed. The study has shown the value of systematic recording, which has enabled the various attributes of the clay pipe to be explored in more detail than ever before. The data assembled has by no means been exhausted and as other groups become available they can only enhance the existing material. The systematic recording of pipe groups in a standardised format enables material to be compared more easily as well as allowing regional trends to be more readily identified. The recording systems and methods of analysis employed on the Yorkshire data can be applied to any pipe assemblage. Having opened a window on the Yorkshire pipe industry it would be interesting to see how this fits into the broader national picture.

This study has also acted as a pilot study for the National Clay Tobacco Pipe Stamp Catalogue by computerising the data relating to the individual dies from one area of the country. The identification of individual die types allows movement of products to be plotted. If this data could be made available on line it would prove to be an invaluable resource for archaeological units and pipe researchers alike.

This research has highlighted the rarity of seventeenth- and eighteenth-century kiln sites in Yorkshire. As a result it has not been possible to assess whether the kilns in this area are any different to those found in other parts of England. It is important that the uniqueness and value of such sites is fully appreciated so that they can be protected where possible and adequately recorded if they are threatened by redevelopment. What is needed are good kiln groups with stratified deposits so that a full analysis of the regional kiln technology as well as the mould and die types can be carried out.

Analysis of the die types and bowls, through mould flaw analysis, has made it possible to suggest the likely location of previously un-recorded workshops. These add to the emerging distribution pattern of production centres provided by documentary sources. Many of these appear to cluster around coalfield areas where

clay and fuels would have been readily available. Local fabrics are evident amongst the pipes examined but, within the confines of this study, no analysis of the clay used to produce these products has been carried out. Further study of this aspect is needed to see if production took place primarily in response to a demand for clay pipes in a particular area, or as a result of the availability of the raw materials required to establish production sites.

From the outset a decision was made to make this an artefact based study. It was not practical to carry out a detailed documentary survey over such a large area in addition of looking at such a large number of objects themselves. What the study of these objects has shown is that there is clearly a mis-match with the existing information recovered from the documentary sources. What is needed is a systematic search of the available documentary sources to allow pipe-makers to be identified. As with the data regarding the pipes themselves, all details obtained from these documentary sources should be in an easily accessible format with full references noted in order to allow researchers to get back to the source material.

What this study has shown is that regional variation clearly does exist. This makes it important that any future publications or archaeological reports accurately depict the range of bowl profiles present so that these variations can be seen and compared. Bowl forms need to be reproduced for publication at 1:1 with the marks drawn at 2:1.

At the outset five main questions were put forward. These were as follows:-

1. Is it possible to define a style of pipe that is typical of a given study area?
2. Is it possible to define products of individual centres within a given study area?
3. Can trading dynamics of production centres within a given study area be assessed?
4. Can the influence of external production centres be assessed?
5. If any patterns can be identified in 1-4 above, to what extent can they be explained from the historic record?



All five questions have been answered. Regional styles can be identified within a defined study area, as can the products from specific makers or workshops. The dynamics of both regionalisation and trade have been assessed and historical events such as the Civil War and the Anglo-Dutch wars can be shown to have had a marked impact on the production and trade of clay tobacco pipes. The value of this research has clearly been demonstrated. A standardised recording system specifically set up to record large groups of pipes has been utilised and proved to be worthwhile. The field test for the National Clay Tobacco Pipe Stamp Catalogue has proved invaluable in sorting and comparing the marked pipes and the possibilities of having such a system available nationally are endless. The range of information that can be teased out of groups of pipes with relation to regional variation, trade and market patterns, the identification of previously un-recorded makers and workshops, and more importantly the interaction between those workshops, has been clearly demonstrated but by no means exhausted. The results presented in this thesis are the tip of the iceberg and have addressed just two particular aspects of pipe research – those of regionalisation and trade. Having set a standard for the recording and analysis of pipe assemblages from England it is hoped that future studies will continue to build on foundations laid by this research and take pipe studies forward into the twenty-first century.

## BIBLIOGRAPHY.

- Aberg, F A, and Smith, A M, (1988) 'Excavations on the castle site, Stockton-on-Tees', in T G Manby (Ed.) *Archaeology in Eastern Yorkshire: Essays in honour of T C M Brewster*, Department of Archaeology and Prehistory, University of Sheffield, 176-188.
- Akerhagen, A, (1998) *Clay pipes from the man-of-war Kronan*, privately published.
- Akerhagen, A, (2001) 'Clay pipes from the man-of-war Kronan', *Society for Clay Pipe Research Newsletter*, **56**, 29-35.
- Alexander, L T, (1979) 'More light on the theory of dating clay pipes by measuring stem hole diameters' *Quarterly Bulletin*, Archaeological Society of Virginia, **33:3**, 81-86.
- Alexander, L T, (1983) 'More light on the theory of dating clay pipes by measuring stem hole diameters' in P Davey (ed.) *The archaeology of the clay tobacco pipe*, **VIII**, British Archaeological Reports (International Series 175), Oxford, 235-244.
- Alvey, R C, (1972) 'Clay tobacco pipes' in M W Ponsford 'Nottingham town wall: Park Row excavations 1967' *Trans Thoroton Soc*, **75**, 30 (5-31).
- Alvey, R C, (1973) 'Clay pipe makers of Nottingham' *Trans Thoroton Soc*, **76**, 35-45.
- Alvey, R C, (1974) 'A cesspit excavations at 26-28 High Pavement, Nottingham' *Trans Thoroton Soc*, **77**, 53-73.
- Alvey, R C, (1975) 'Clay pipes' in M Todd 'Excavations on the medieval defences of Newark 1972' *Trans Thoroton Soc*, **78**, 50-51 (27-53).
- Alvey, R C, (1977) 'Clay pipes' in G Fairclough 'Excavations of two medieval and post-medieval sites at Newark, 1975' *Trans Thoroton Soc*, **80**, 28-30 (1-34).
- Alvey, R C, (1978) 'The clay pipes' in P Borne, T Courtney and P Dixon 'The Peacock Inn, Chesterfield' *Derbyshire Arch J*, **98**, 49-52.
- Alvey, R C, (1980) 'The clay pipes' in G Fairclough 'Clifton Hall excavations 1977-79' *Trans Cumberland & Westmoreland Antiq & Archaeol Soc*, **80**, 59-61 (45-68).
- Alvey, R C, and Laxton, R R, (1978) 'A note on the chemical analysis of some Nottingham clay tobacco pipes' *Archaeometry*, **20:2**, 189-196.
- Alvey, R C, Laxton, R R, and Paechter, G F, (1979) 'Statistical analysis of some Nottingham clay pipes', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **I**, British Archaeological Reports (British Series 63) Oxford, 229-53.
- Andrews, J, (nd ?1980s) *Pipemakers of the city of York 1643-1921*, unpublished manuscript.

- Andrews, J, (1987a) 'Christopher Boyes, 1671-1725, pipe and trunkmaker of York', *Society for Clay Pipe Research Newsletter*, **14**, 29-31.
- Andrews, J, (1987b) 'The 17<sup>th</sup> century pipemakers of York', *Society for Clay Pipe Research Newsletter*, **13**, 2-9.
- Andrews, J, (1987c) *The Castle Museum, York: clay tobacco pipe collection*, unpublished manuscript.
- Andrews, J, (1987d) *Pipemakers of York: a list with evidences*, unpublished manuscript.
- Andrews, J, (1988) 'The eighteenth-century pipemakers of York', *Clay Pipe Research*, **1**, 87-93.
- Andrews, J, (1991) 'Pipemakers of the City of York 1643-1921', *Clay Pipe Research*, **2**, 67-95.
- Andrews, J, (1992) 'Indenture of John Shafton of York to John Goldwell of Hull, 1721', *Society for Clay Pipe Research Newsletter*, **34**, 6.
- Andrews, J E, (1993) *The Doncaster clay tobacco pipemakers and the Doncaster Museum clay tobacco pipe collection*, unpublished manuscript. Copy held by the NCTPA (Acc No. 1998.37.01).
- Anon (1793) in *Anthologia Hibernica* **1**, 352.
- Anon (1974) 'Featherstone, W R (SE 428206)', in 'The Yorkshire archaeological registers: 1973', *Yorks Arch J*, **46**, 150.
- Anon (1975) 'Kildale (NZ 604096)', in 'The Yorkshire archaeological registers: 1974', *Yorks Arch J*, **47**, 8.
- Anon (2000) 'Leidse pijpenmakers ten voeten uit (4)' *Pijpelogische Kring Nederland*, **88**, 1197-1200.
- Armstrong, A L, (1928) 'Sheffield Castle', in 'Notes', *Antiq J*, **8** 365-366 (354-367).
- Arnold, C J, (1977) 'The clay tobacco pipe industry: an economic study' in D P S Peacock (Ed.) *Pottery and early commerce*, Academic Press, London, 313-336.
- Ashurst, D, (1970) 'Excavations at Gawber Glasshouse, near Barnsley, Yorkshire', *Post-med Arch*, **4**, 92-140.
- Ashurst, D, (1987) 'Excavations at the 17th-18th century glasshouse at Bolsterstone and the 18th century Bolsterstone Pothouse, Stocksbridge, Yorks', *Post-med Arch*, **21**, 147-226.
- Atkin, S, (1985a) 'Clay pipes', in B S Ayres 'Excavations in the north-east bailey of

Norwich castle', *East Anglian Archaeol*, **28**, 47-48.

Atkin, S, (1985b) 'The clay pipe-making industry in Norfolk', *Norfolk Archaeology*, **39:2**, 118-149.

Atkin, S, (Ed.) (1989) *Bibliography of clay pipe studies*, Society for Clay Pipe Research, 63 pages.

Atkin, S, and Davey, P J, (1985) 'Clay tobacco pipes from a 17<sup>th</sup>-century well/cesspit on St. Stephen's Street, Norwich' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **IX**, British Archaeological Reports (British Series 146(i)), Oxford, 309-324.

Atkinson, D R, (1970) 'Clay tobacco pipes and pipemakers of Salisbury, Wiltshire' *Wiltshire Archaeol and Nat Hist Mag*, **65**, 177-189.

Atkinson, D R, (1975) *Tobacco pipes of Broseley, Shropshire*, 92 pages.

Atkinson, D and Oswald, A, (1969) 'London clay tobacco pipes', *J Archaeol Assoc* 3<sup>rd</sup> Series, **32**, 171-227.

Atkinson, D R, and Oswald, A, (1980) 'The dating and typology of clay pipes bearing the Royal Arms' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **III**, British Archaeological Reports (British Series 78), Oxford, 363-391.

Barker, D, (1986) 'The SV mark: a silversmithing connection?' *Society for Clay Pipe Research Newsletter*, **10**, 30-32.

Belcher, J, and Jarrett, M, (1971) 'Stem-bore diameters of English clay pipes: some northern evidence' *Post-Med Arch*, **5**, 191-193.

Berry, C J, (1963) *The manufacture of clay tobacco pipes in Rainford: a survey of a defunct industry*, Upholland Grammar School, 1-13.

Berry, G, (1982) 'Seventeenth-century tokens of pipe-makers, tobacconists, and other dealers in tobacco and pipes', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **VII**, British Archaeological Reports (British Series 100) Oxford, 355-76.

Binford, L R, (1962) 'New method of calculating dates from kaolin pipe stem samples' *South-eastern Archaeological Conference News Letter*, **9:1**, 19-21.

Bonds, G, (1980) 'Clay pipes from Ryssviken', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **IV**, British Archaeological Reports (International Series 92) Oxford, 273-298.

Brears, P C D, (1967) 'Appendix 3: Clay pipe making', in P D C Brears 'Excavations at Potovens, near Wakefield', *Post-med Arch* **1**, 40-43 (3-43).

Brears, P C D, (1971) 'Appendix 3: clay pipes', in K S Bartlett 'Excavation at Potovens

near Wakefield', *Post-med Arch* 5, 31, 33 (1-34).

Brears, P C D, (ed.) (1972) 'Yorkshire probate inventories 1542-1689' *The Yorks Archaeol Soc, Record Series*, 134.

Brears, P C D, (1978) 'pipes', in P C D Brears 'Clarke Hall, Wakefield: architectural innovations in 17th Century, West Yorkshire', *Post-med Arch* 12, 97, 99 (86-100).

Brears, P C D, (1991) *The Pipemaker*, Museum of Leeds Publication, 8 pages.

Brongers, G A, (1964) *Nicotiana Tabacum: the history of tobacco and tobacco smoking in the Netherlands*, Theodorus Niemeyer NV, Groningen, Netherlands, 259 pages.

Brook, H, (1989) 'Joseph Dodson of Birstall - tobacco pipe maker', *Old West Riding* 9, 3-6.

Brown, M M, and Gallagher, D B, (1980) 'A study of the clay tobacco pipes from Hartlepool', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, III, British Archaeological Reports (British Series 78) Oxford, 19-27.

Brown, W E, (1959) 'Tobacco and clay pipes' in 'A history of Wiltshire' *Victoria County History Wiltshire*, 4, 240-244.

Buckland, P C, Magilton, J R, and Hayfield, C (1989) *The archaeology of Doncaster: the medieval and later town*, British Archaeological Reports (British Series 202(i) and (ii)), Oxford, 488 pages.

Butler, L A S, (1978) 'St Martin's Church, Allerton Mauleverer', *Yorks Arch J*, 50, 177-188.

Carver, M O H, (1974) 'Excavations in New Elvet, Durham City, 1961-1973', *Archaeologia Aeliana* (5<sup>th</sup> series) 2, 91-148.

Chartres, J A, (1977) *Internal trade in England 1500-1700*, Economic History Society, Macmillan Press Ltd, 79 pages.

le Cheminant, R, (1981a) 'Armorial from Paul's Wharf' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VI, British Archaeological Reports (British Series 97), Oxford, 102-126.

le Cheminant, R, (1981b) 'Clay pipes bearing the Prince of Wales' Feathers' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VI, British Archaeological Reports (British Series 97), Oxford, 92-101.

le Cheminant, R, (1981c) 'A London pipemaker's stamper' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VI, British Archaeological Reports (British Series 97), Oxford, 90-91.

le Cheminant, R, (1981d) 'A note on the Vernon bowl' in P Davey (Ed.) *The*

*archaeology of the clay tobacco pipe*, VI, British Archaeological Reports (British Series 97), Oxford, 87-89.

le Cheminant, R, (1985) 'The Dick Whittington pipe' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, IX, British Archaeological Reports (British Series 146(ii)), Oxford, 401-404.

Comrie, A C, (1979) 'The clay pipe industry in Stamford, Lincs' in P Davey (ed) *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63), Oxford, 187-228.

Coney, A P, (1979) *Excavations on the site of a 17<sup>th</sup> century pipe kiln at Rainford – interim report*. Unpublished report, copy held by the NCTPA (Acc No. 1997.61.19)

Cooksey, A J A, (1980) 'The clay tobacco pipe in the Poole Area' in P Davey (Ed.) *The archaeology of the clay tobacco pipe* British Archaeological Reports 78 (British Series), 337-349, Oxford.

Coppack, G, (1974) 'Low Caythorpe, East Yorkshire: the manor site', *Yorks Arch J*, 46, 34-41.

Crass, D C (nd but post 1985) 'The clay pipes from Green Spring Plantation (44JC9), Virginia', *Historical Archaeology*, 22, 83-97.

Crocker, T C, (1835) 'Ancient tobacco pipes' *Penny Journal*, 4.160, 28-30.

Crossley, D, and Ashurst, D, (1968) 'Excavations at Rockley Smithies, a water-powered bloomery of the sixteenth and seventeenth centuries', *Post-med Arch* 2, 10-54.

Dagnall, R, (1982a) 'Primrose Hill: a search for the site of a 17<sup>th</sup> century tobacco pipe manufactory from documentary sources' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VII, British Archaeological Reports (British Series 100), Oxford, 145-178.

Dagnall, R, (1982b) 'Rookery Farm, Rainford' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VII, British Archaeological Reports (British Series 100), Oxford, 179-188.

Dagnall, R, (1985) 'Industry in Rainford – clay pipes' in M Rigby *A history of Rainford*, 2<sup>nd</sup> Edition, privately published, 24, 29-30.

Dagnall, R, (1991) 'Rainford pipes in the collection of Winchester Museum Service' in R & P Jackson (eds.) *Clay pipe research*, 2, 25-30.

Dagnall, R, (2001) *Shell House, Rainford: an early nineteenth century clay tobacco pipe works*, privately published, 38 pages.

Davey, P J, (1975) 'Stem bore analysis of Chester clay tobacco pipes' *Cheshire Arch Bulletin*, 3, 29-34.

Davey, P J, (1978) *Rainford clay pipes 1650-1750*, Archaeological Survey of Merseyside Report, 3, 12 pages.

Davey, P J, (1981) 'Guidelines for the processing and publication of clay-pipes from excavations', *Medieval and Later Pottery in Wales*, 4, 65-88.

Davey, P J, et al (1982a) 'The Rainford clay pipe industry: some archaeological evidence', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VII, British Archaeological Reports (British Series 100), Oxford, 91-306.

Davey, P J, et al (1982b) 'Excavations on the site of a 17<sup>th</sup> century clay pipe kiln in Rainford, Merseyside' in P Davey et al 'The Rainford clay pipe industry: some archaeological evidence' in P Davey (Ed.) *The archaeology of the clay tobacco pipe* British Archaeological Reports 100 (British Series), 189-196 (91-306), Oxford

Davey, P J, (1983) 'The clay pipes from Yarm Y80' unpublished report for Yorkshire Archaeological Journal, 5 pages. Copy held by the NCTPA (Acc No. 1997.23.08).

Davey, P J, (nd) 'Clay pipes from excavations in Yarm, Cleveland 1983' unpublished report for Cleveland Archaeology, 2 pages. Copy held by the NCTPA (Acc No. 1997.23.08).

Davey, P J, (1985) 'Clay pipes from Norton Priory, Cheshire' in P Davey (Ed.) *The archaeology of the clay tobacco pipe* IX, British Archaeological Reports (British Series 146 (i)), 157-236.

Davey, P J, (1987a) 'Scotland' *The archaeology of the clay tobacco pipe*, X, British Archaeological Reports (British Series 178), Oxford.

Davey, P J, (1987b) 'Site Summary - Scallaway Castle, Shetland' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, X, British Archaeological Reports (British Series 178), Oxford, 315-324.

Davey, P J, (1987c) 'The clay tobacco pipes', in R D Bell and M W Beresford et al 'Wharram Percy: the church of St Martin', *Soc Medieval Archaeol monograph*, 11, 167-168.

Davey, P J, (1987d) 'Site Summary - Perth' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, X, British Archaeological Reports (British Series 178), Oxford, 306-314.

Davey, P J, (1987e) *Clay pipes from excavations in Tollesby* unpublished manuscript. Copy held by the NCTPA (Acc No. 1997.23.07).

Davey, P J, (1988a) 'Clay pipes from Barnard Castle, County Durham', unpublished report for English Heritage, 25 pages. Copy held by the NCTPA (Acc No. 1997.31.02).

Davey, P J, (1988b) 'The clay pipes', in F A Aberg and A N Smith 'Excavations at the

medieval village of Boulby, Cleveland', in T G Manby (Ed.) *Archaeology in Eastern Yorkshire: Essays in honour of T C M Brewster*, Department of Archaeology and Prehistory, University of Sheffield, 173.

Davey, P J, (1990a) 'The clay pipes from Nun Appleton House, North Yorkshire (NAH 88 & 89)', unpublished report for the West Yorkshire Archaeological Service, 21 pages. Copy held by the NCTPA (Acc No. 1997.66.02).

Davey, P J, (1990b) 'Clay pipes from recent excavations in Ripon' unpublished report for the Central Excavations Unit, English Heritage, 20 pages. Copy held by the NCTPA (Acc No. 1997.66.04).

Davey, P J, (1992a) 'The clay pipes' in P Ellis (Ed.) *Beeston Castle, Cheshire: a report on the excavations 1968-85 by Laurence Keen and Peter Hough*, London, 172-180.

Davey, P J, (1992b) 'Clay tobacco pipes', in S Moorhouse and I Roberts 'Wrenthorpe Potteries: excavations of 16th and 17th-century potting tenements near Wakefield, 1983-86', *Yorks Arch* 2, 150-160.

Davey, P J, (1992c) 'Dutch clay tobacco pipes from Scotland' in D Gaimster & M Redknap (eds.) *Everyday and exotic pottery from Europe c.650-1900: studies in honour of John G Hurst*, Oxbow, 279-289.

Davey, P J, (1992d) 'Clay pipes from excavations in Orchard Field, Skelton, North Yorkshire' unpublished manuscript. Copy held by the NCTPA (Acc No. 1997.66.6)

Davey, P J, (1993a) 'Clay tobacco pipes', in P Ellis (Ed.) *Excavations at Chester: Chester Castle the seventeenth-century armoury and mint Excavation and building recording in the inner ward 1979-82*, Chester Archaeology, Excavation and Survey Reports, 10, Chester, 172-180.

Davey, P J, (1993b) 'Clay pipes from excavations at Bolsover Church' unpublished manuscript. Copy held by the NCTPA (Acc No. 2001.16.02)

Davey, P J, (1996) 'The archaeology of the clay tobacco pipe' in D. Davison & M Henig (eds.) *British Archaeological Reports: past, present and future*, Oxford, 65-72.

Davey, P J, and Gallagher, D B, (1987) 'Site Summary – Elgin' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, X, British Archaeological Reports (British Series 178), Oxford, 272-278.

Davey, P J, and Pierce, T J, (1977) 'The clay pipes' in A Leigh 'Excavations at St Elphin's Rectory, Warrington' *J Chester Archaeol Soc* 60, 94-128.

Davey, P, and Pogue, D J, (1991) 'Chesapeake Bay' *The archaeology of the clay tobacco pipe*, XII, British Archaeological Reports (International Series 566), Oxford.

Davey, P J, and White, S D, (2002) 'The clay tobacco pipes' in I Roberts (*et al*)



'Pontefract Castle: archaeological excavations 1982-86', *Yorkshire Archaeology*, **8**, West Yorkshire Archaeological Services, 226-249.

Davidson, L S, and Davey, P J, (1982) 'Thin section analysis of clay used in five British clay pipe production centres', in P Davey *The archaeology of the clay tobacco pipe*, **VII**, British Archaeological Reports (British Series 100) Oxford, 311-344.

Davies, R, (1978) *The trade and shipping of Hull 1500-1700*, East Yorkshire Local History Society, Stokeld & Sons Ltd, Guisborough, 30 pages.

Drinkall, G, (1997) 'Clay pipes', in D H Evans 'Excavations and watching briefs on the site of the Knights Hospitallers preceptory, Beverley, 1991-4', *East Riding Archaeologist*, **9**, 100-102 (65-115).

Duco, D H, (1981) 'The clay tobacco pipe in seventeenth-century Netherlands', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **V**, British Archaeological Reports (International Series 106 (ii)), 368-468

Dunham, A C, (1992) 'Developments in industrial mineralogy: II. archaeological mineralogy' *Proc Yorks Geol Soc*, **49:2**, 105-115.

Dunnell, R C, (1971) *Systematics in prehistory*, Free Press, New York, USA.

Earnshaw, J R, (1988) 'Clay tobacco pipes from Bridlington', in T G Manby (Ed.) *Archaeology in Eastern Yorkshire: Essays in honour of T C M Brewster*, Department of Archaeology and Prehistory, University of Sheffield, 197-202.

Earnshaw, J R, (1998) 'Clay tobacco pipes from Bridlington', *Yorkshire History Quarterly* **3 4**, 133-137.

Edwards, L, (1985) 'The clay pipes from Church Walk, Hartlepool' unpublished report prepared for Cleveland Archaeology, 4 pages. Copy held by the NCTPA (Acc No. 1997.23.04).

Edwards, L, (1986) 'A seventeenth century pipemaker's house in Gateshead' *Society for Clay Pipe Research Newsletter*, **11**, 21-24.

Edwards, L, (1987) 'The clay tobacco pipes' in Harbottle R B and Fraser R 'Black Friars, Newcastle upon Tyne, after the dissolution of the monasteries' *Archaeologia Aeliana* 5<sup>th</sup> Series, **15**, 105-120 (23-149).

Edwards, L, (1988a) 'Seventeenth- and eighteenth-century Tyneside tobacco-pipemakers', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **XI**, British Archaeological Reports (British Series 192) Oxford, 3-108.

Edwards, L, (1988b) 'Seventeenth- and eighteenth-century Tyneside tobaccoconists', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **XI**, British Archaeological Reports (British Series 192) Oxford, 109-164.

Edwards, L J, (1988c) 'Clay pipes from the refectory of Durham Cathedral', in R

Jackson and P Jackson (eds) *Clay Pipe Research*, 1, 1-14.

Evans, D H, and Heslop, D H, (1985) 'Two medieval sites in Yarm' *Yorks Arch J*, 57, 43-77.

Fairholt, F W, (1859) *Tobacco: its history and associations*, London.

Fletcher, W, (1982) *The clay tobacco-pipe industry in West Cumbria*, published by the Friends of Whitehaven Museum.

Fletcher, W, (1984) 'Clay pipe makers in West Cumberland' *Cumbria*, 38:11, 601.

Fowler, F, Day, J E, and Smith, L (1979) *Edward Miller, Organist of Doncaster: his life and times*, Doncaster M B C.

Fox, R T, and Hall, R B, (1979) *The clay tobacco pipes of the Portsmouth Harbour region 1680-1932*, privately published, 55 pages.

Gallagher, D B, (1984) 'Scottish three-letter basal stamps', *Society for Clay Tobacco Pipe Research Newsletter* 3, 9-10.

Gallagher, D.B. (1987a) 'Tobacco pipemaking in Glasgow 1667-1967' in P Davey (Ed.) *The archaeology of the clay tobacco pipe* British Archaeological Reports 178 (British Series), 35-109, Oxford.

Gallagher, D B, (1987b) 'Site Summary - Edinburgh, Tron Kirk', in P Davey (Ed.) *The archaeology of the clay tobacco pipe X*, British Archaeological Reports (British Series 178) Oxford, 269-271.

Gallagher, D B, (1987c) 'Site Summary – Stirling Castle', in P Davey (Ed.) *The archaeology of the clay tobacco pipe X*, British Archaeological Reports (British Series 178) Oxford, 325-335.

Gallagher, D B, (1987d) 'Site Summary – Linlithgow', in P Davey (Ed.) *The archaeology of the clay tobacco pipe X*, British Archaeological Reports (British Series 178) Oxford, 299-305.

Gallagher, D B, (1987e) 'Edinburgh pipemakers in the seventeenth century: the documentary evidence' in P Davey (ed.) *The archaeology of the clay tobacco pipe*, X, British Archaeological Reports (British Series 178), Oxford, 3-13.

Gardiner, J, and Wenborn, N, (eds.) *The history today companion to British History*, 840 pages.

Gault, W R, and Alvey, R C, (1979) 'County lists of clay tobacco pipe makers', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63) Oxford, 363-411.

Grant, A, and Jemmett, D, (1985) 'Pipes and pipe-making in Barnstaple, Devon' in

- P Davey (Ed.) *The archaeology of the clay tobacco pipe* British Archaeological Reports 146(ii) (British Series), 439-553, Oxford.
- Hall, T M, (1890) 'On Barum tobacco pipes and north Devon clays' *Transactions Devonshire Assoc. for the Advancement of Science, Literature and Art*, **22**, 317-333.
- Hammond, P J, (1985) *Halifax Place: report on clay tobacco pipes*, unpublished manuscript, 18 pages.
- Hanson, L H, (1971) 'Kaolin pipe stems – boring in on the fallacy' *The Conference on Historic Site Archaeology Papers 1969*, **4**, 2-15.
- Harrington, J C, (1954) 'Dating stem fragments of seventeenth and eighteenth century clay tobacco pipes' *Bulletin of the Arch Soc Virginia*, **9:1**, 5 pages.
- Hartley, M, and Ingilby, J, (1976) *Life and tradition in West Yorkshire*.
- Hayfield, C, (1988) 'Cowlam deserted village: a case study of post-medieval village desertion Excavations by T C M Brewster 1971/1972', *Post Med Arch*, **22**, 21-109.
- Heighton, R F, and Deagan, K A, (1972) 'A new formula for dating kaolin clay pipestems' *The conference on Historic Site Archaeology Papers 1971*, **6**, 220-229.
- Hey, D, (1980) *Packmen, Carriers and Packhorse Roads: trade and communications in North Derbyshire and South Yorkshire*, Leicester University Press, 279pp.
- Higgins, D, (1981), 'Surrey clay tobacco pipes', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **VI**, British Archaeological Reports (British Series 97) Oxford, 189-293.
- Higgins, D A, (1982) 'Reconstruction and interpretation of the pipes', in P J Davey *et al* 'The Rainford clay pipe industry: some archaeological evidence', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **VII**, British Archaeological Reports (British Series 100) Oxford, 197-209 (91-306).
- Higgins, D A, (1984) 'Casting pipe stamps', *Society for Clay Pipe Res Newsletter*, **4**, 35-36.
- Higgins, D A, (1985a) 'Mathematical approaches to recording the stem curvature of clay tobacco pipes', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **IX**, British Archaeological Reports (British Series 146 (i)) Oxford, 23-27.
- Higgins, D A, (1985b) 'National Stamp Catalogue', *Society for Clay Pipe Research Newsletter*, **8**, 5-6.
- Higgins, D A, (1985c) 'Leicester clay tobacco pipes', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **IX**, British Archaeological Reports (British Series 146 (ii)) Oxford, 291-307.

- Higgins, D A, (1985d) 'Clay tobacco pipes from 27 George Street, Hemel Hempstead' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, IX, British Archaeological Reports (British Series 146 (ii)) Oxford, 337-362.
- Higgins, D A, (1986) 'National Stamp Catalogue', *Society for Clay Pipe Research Newsletter*, 11, 25-26.
- Higgins, D A, (1987) *The interpretation and regional study of clay tobacco pipes: a case study of the Broseley District*, PhD Thesis, University of Liverpool, 628 pages.
- Higgins, D A, (1988) 'A catalogue of clay tobacco pipe stamps found in England', *Society for Clay Pipe Research Newsletter*, 18, 19-20.
- Higgins, D A, (1990) 'Another Moulded Bowl Mark from Rainford', *Society for Clay Pipe Research Newsletter*, 27, 18-19
- Higgins, D A, (1992) 'Appendix I: The clay tobacco pipes', in J Allan and J Barber 'A seventeenth-century pottery group from Kitto Institute, Plymouth', in D Gaimster and M Redknap (eds) *Everyday and exotic pottery from Europe c 650-1900 Studies in honour of John G Hurst*, Oxbow Books, Oxford, 241-244 (225-245).
- Higgins, D A, (1995a) 'Clay tobacco pipes: a valuable commodity' *International Journal of Nautical Archaeology*, 24, 47-52.
- Higgins, D A, (1995b) 'Clay tobacco pipes', in D Crossley 'The blast furnace at Rockley, South Yorkshire', *Arch J* 152, 418-420 (381-421).
- Higgins, D A, (1996) 'Clay tobacco pipes', in C G Cumberpatch, I D Latham and R Thorpe (eds) 'Excavations at 16-20 Church Street, Bawtry, South Yorkshire', *South Yorkshire Archaeology Field and Research Unit 1996: Country Archaeological Monograph*, 3, British Archaeological Reports (British Series 248) Oxford, 154-159.
- Higgins, D A, (1997) 'A group of clay tobacco pipes from Marrick, North Yorkshire', *Society for Clay Pipe Research Newsletter*, 52, 40-43.
- Higgins, D A, (1999) 'Little tubes of mighty power: a review of British clay tobacco pipe studies', in G Egan and R L Michael (eds) *Old and New Worlds*, Oxbow, 310-321.
- Higgins, D A, (2001a), 'Clay Tobacco Pipes' in M Biddle, J Hiller, I Scott and A Streeten, *Henry VIII's Coastal Artillery Fort at Camber Castle, Rye, East Sussex*, English Heritage / Oxford Archaeological Unit, 292-300 (xx + 374 pages).
- Higgins, D A, (2001b), *Trail excavations on the site of a seventeenth-century clay tobacco pipe kiln near Cleobury Mortimer, Shropshire 2001*, privately published. Copy held by the NCTPA (Acc No. 2001.21.01)
- Higgins, D A, (2002a) *Derbyshire County Summary*, unpublished manuscript held

by the NCTPA (Acc No. 2002.01.04).

Higgins, D A, (2002b) *Lincolnshire County Summary*, unpublished manuscript held by the NCTPA (Acc No. 2002.01.01).

Higgins, D A, (2002c) *Nottinghamshire County Summary*, unpublished manuscript held by the NCTPA (Acc No. 2002.01.02).

Higgins, D A, (2002d) *Lancashire County Summary*, unpublished manuscript held by the NCTPA (Acc No. 2002.01.05).

Higgins, D A, (2002e) *Cumbria County Summary*, unpublished manuscript held by the NCTPA (Acc No. 2002.01.03).

Higgins, D A, (forthcoming A) *Clay tobacco pipes from Tutbury Castle, Staffordshire*

Higgins, D A, (forthcoming B) *Clay tobacco pipes from Portland Castle, Dorset*

Higgins, D A, (forthcoming C) *Clay tobacco pipes from Launceston Castle.*

Higgins, D A, (forthcoming D) *Clay tobacco pipes from Bestwall Quarry, Wareham, Dorset.*

Higgins, D A, (forthcoming E) *Clay tobacco pipes from Southchurch Hall, Essex*

Higgins, D A, and Davey, P J, (1994) *Draft guidelines for using the clay tobacco pipe record sheets*, unpublished manuscript, 28 pages. Copy held by the NCTPA (Acc No. 1999.02.01).

Hilton-Price, F G, (1900) 'Notes upon some early clay tobacco pipes ... found in the City of London...' *Arch J*, 57, 224-240.

Horton, M C, Higgins, D A, and Oswald, A, (1987), 'Clay Tobacco Pipes From the Scottish Darien Colony (1698-1700)' in P J Davey (Ed) *The Archaeology of the Clay Tobacco Pipe*, X, British Archaeological Reports, Oxford, British Series No 178, 239-252.

Jackson, R, (1986) 'Pipemaking in Cumbria' *Society for Clay Pipe Research Newsletter*, 9, 4-9.

Jackson, R, and Jackson, P, (1988) 'George and Anna Viner of Bristol' *Clay Pipe Research*, 1, 53-65.

Jackson, R G, and Price, R H, (1974) 'Bristol clay pipes: a study of makers and their marks' *Bristol City Museum Research Monograph*, 1, 152 pages.

Jarzembowski, E and B, (1985) 'Internal bowl marks in pipes from London' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, IX, British Archaeological

Reports (British Series 146 (ii)), Oxford, 389-399.

Jung, P, (forthcoming) *Pollocks of Manchester: three generations of pipe makers*

Kilmurry, K, (1980) *The pottery industry of Stamford, Lincolnshire, c.A.D. 850-1250*, British Archaeological Reports (British Series 84), Oxford, 348 pages.

Lamb, A J, (1851) 'Notes on the use of the tobacco pip in England' *Proceedings of the Historical Soc. Of Lancashire and Cheshire*, 3, 29-31.

Lawrence, S, (1973) 'Clay tobacco pipe makers in West Yorkshire', *Yorks Arch J*, 45, 189-193.

Lawrence, S, (1979) 'York pipes and their makers', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63), Oxford, 67-84.

Lawrence, S, (1983) 'Clay tobacco pipes', in P Mayes and L A S Butler *Sandal Castle Excavations*, Wakefield Historical Publications, 285.

Laws, A, and Oswald, A, (1981) 'The kiln of William Heath, eighteenth century Brentford pipemaker' in P Davey (Ed.) *The archaeology of the clay tobacco pipe* British Archaeological Reports (British Series 97), 15-66, Oxford.

Lewcun, M, (1998) 'An A-Z of documentary sources for finding pipemakers in the historical record', *Society for Clay Pipe Research Newsletter*, 54, 20-40.

Luckenbach, A, and Cox, C J, (2002) 'Tobacco-pipe manufacturing in early Maryland: The Swan Cove Site (ca. 1660-1669)' in A Luckenbach, C J Cox and J Kille (eds.) *The clay tobacco-pipe in Anne Arundel County, Maryland (1650-1730)*, Anne Arundel County's Lost Towns Project, Annapolis, Maryland, 46-63.

Mann, J E, (1977) *Clay tobacco pipes from excavations in Lincoln 1970-74*, Lincoln Archaeological Trust Monograph Series XV-I, 60 pages.

Marx, R F, (1968) *Clay smoking pipes recovered from the sunken city of Port Royal: May 1, 1966 – September 30, 1967*, published by the Jamaica National Trust Commission, Kingston, Jamaica.

Martin, C J M, (1987) 'A group of pipes from mid shore, Pittenweem, Fife' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, X, British Archaeological Reports (British Series 178) Oxford, 183-209.

Mayes, P, and Butler, L A S, (1983) *Sandal Castle Excavations 1964-1973: a detailed archaeological report*, Wakefield Historical Publications, 372 pages.

Melton, N, (1997) *Clay tobacco pipes and pipemaking in northern Warwickshire*, MPhil Thesis, University of Liverpool, 392 pages.

- Miller, H M, (1986) 'The Smith's Townland Excavations', in 'Discovering Maryland's first city: a summary report on the 1981-1984 archaeological excavations in St Mary's City, Maryland', *St Mary's City Archaeological Series*, 2, 67-104.
- Mitchell, S, and Reeds, B, (Eds) (1989) *Coins of England and the United Kingdom*, 25<sup>th</sup> Edition, 352pp.
- Moore, R, (1988) 'Leaving for America', *Society for Clay Pipe Research Newsletter*, 18, 12-13.
- Moorhouse, S, (1972 for 1971) 'Clay tobacco pipes' in 'Excavations at Burton-in-Lonsdale: a reconsideration', *Yorks Arch J*, 43, 97.
- Muldoon, S, (1979) 'Marked clay pipes from Coventry', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63), Oxford, 3255-293.
- Noel Hume, A, (1963) 'Clay tobacco pipe dating in the light of recent excavations' *Quarterly Bulletin*, Archaeological Society of Virginia, 18:2, 22-25.
- Oak-Rhind, H, (1980) 'Distribution of clay tobacco pipes around their place of manufacture', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, III, British Archaeological Reports (British Series 78) Oxford, 349-61.
- Omwake, H G, (1967) 'An evaluation of an assortment of white kaolin pipe bowls and stem fragments surface-collected from an apparent Colonial Period refuse areas near Chestertown, Maryland' *Bulletin of Arch Soc of Delaware*, 6, 3-30.
- O'Neil, B H St J, (1961) 'A note on clay pipes from Hungate, York', *Yorks Arch J*, 40, pt 159, 378-381.
- Oswald, A, (1951) 'English Clay Tobacco Pipes', *The Arch Newsletter*, 3:10, 153-159
- Oswald, A, (1955) 'The evolution and chronology of English clay tobacco pipes', *The Arch Newsletter*, 5:12, 243-250 (revision of *English Clay Tobacco Pipes* (1951)).
- Oswald, A, (1961) 'The chronology of the clay tobacco pipe in England', *Archaeol Newsletter*, 7:3, 56-62 (revision of *The Evolution and Chronology of English Clay Tobacco Pipes* (1955)).
- Oswald, A, (1960, repr 1967) 'The archaeological and economic history of English clay tobacco pipes', *J Brit Archaeol Assoc*, 23, 40-102; reprinted 1967.
- Oswald, A, (1975) *Clay pipes for the archaeologist*, British Archaeological Reports (British Series 14), Oxford, 207 pages.
- Oswald, A, (1979) 'The clay pipes' in B Harbottle *et al* 'The excavations of a 17<sup>th</sup>

- century pit at the Black Gate, Newcastle upon Tyne, 1975' *Post Med Archaeol*, **13**, 175-177.
- Oswald, A, (1980) 'Tobacco pipe collections in Exeter Museum', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **III**, British Archaeological Reports (British Series 78) Oxford, 325-336.
- Oswald, A, (1981) 'The clay pipes' in B Harbottle and M Ellison 'An excavation in the castle ditch, Newcastle upon Tyne, 1974-76' *Archaeologia Aeliana*, 5<sup>th</sup> Series, **9**, 170-171.
- Oswald, A, (1983) 'Clay tobacco pipes' in M Ellison and B Harbottle 'The excavation of a 17<sup>th</sup> century bastion in the castle of Newcastle upon Tyne, 1976-91' *Archaeologia Aeliana* 5<sup>th</sup> Series, **11**, 186-195 (135-263).
- Oswald, A, (1984) 'The mystery of the SV maker' *Society for Clay Pipe Research Newsletter* **4**, 37-38.
- Oswald, A, (1985) 'On the life of clay pipe moulds', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **IX**, British Archaeological Reports (British Series 146 (i)) Oxford, 5-22.
- Oswald, A, (1991) *Pipe Stamp Index* unpublished typescript held by the NCTPA, 4 vols (Acc No. 1997.08.01).
- Parsons, J E, (1964) 'The archaeology of the clay tobacco-pipe in North-East England', *Archaeologia Aeliana*, 4<sup>th</sup> Series, **42**, 231-254.
- Parsons, J E, (1966) 'Clay pipes' in B Harbottle 'Excavations at the south curtain wall of the castle, Newcastle upon Tyne 1960-61' *Archaeologia Aeliana*, 4<sup>th</sup> Series, **44**, 142.
- Parsons, J E, (1967) 'Clay pipes' in B Harbottle 'An excavation at the Gunner Tower, Newcastle upon Tyne 1964' *Archaeologia Aeliana*, 4<sup>th</sup> Series, **45**, 137.
- Peacey, A, (1982) 'The structural development of clay tobacco pipe kilns in England: a preliminary study', in P Davey (ed.) *The archaeology of the clay tobacco pipe*, **VII**, British Archaeological Reports (British Series 100) Oxford, 3-17.
- Peacey, A, (1996) 'The development of the clay tobacco pipe kiln in the British Isles', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, **XIV**, British Archaeological Reports (British Series 246) Oxford, 295 pages.
- Peacey, A, (1999) 'Moulds' *Pipe Aston Project Newsletter*, **2**, 7.
- Place, A H, (nd) 'Clay tobacco pipes of Hull', unpublished manuscript. Copy held by the NCTPA (Acc No. 1998.43.01).
- Pope, F R, (1982) 'Pipemakers and potters wills and inventories from the Rainford



- area' in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VII, British Archaeological Reports (British Series 100) Oxford, 292-306.
- Priestley, U, and Fenner, A, (1985) 'Shops and shop keepers in Norwich 1660-1730' *Centre of East Anglian Studies*, 31pp.
- Ramm, H G, (1976) 'The church of St Mary Bishophill Senior, York: excavations 1964', *Yorks Arch J*, 48, 35-68.
- Rayner, P, (1992) 'Indenture of Joseph Scott to Thomas Westerdell of Hull, 1788', *Society for Clay Pipe Research Newsletter*, 34, 7.
- Renfrew, C, and Bahn, P, (1993) *Archaeology: theories, methods and practice*, Thames & Hudson, London, 543 pages.
- Riordan, T B, (1991) 'Seventeenth Century Clay Tobacco Pipes from Smith's Townland, St Mary City, Maryland', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, XII, British Archaeological Reports (International Series 566) Oxford, 89-98.
- Roth, H L, (1906) *The Yorkshire Coiners 1767-1783, and notes on old and prehistoric Halifax*, F King & Son, Halifax, 322 pages.
- Rutter, J A, and Davey, P J, (1980) 'Clay Pipes from Chester', in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, III, British Archaeological Reports (British Series 78) Oxford, 41-272.
- Sharer, R J, and Ashmore, W, (1987) *Archaeology: discovering our past*, Mayfield, Palo Alto, California, USA.
- Sharpe, J A, (1997) *Early modern England: a social history 1550-1760*, 387 pages.
- Sharpe, S, Luckenbach A, and Kille J, (2002) 'Burle's Town Lane (ca. 1649-1676): a marked abundance of pipes' in A Luckenback, C J Cox and J Kille (eds.) *The clay tobacco-pipe in Anne Arundel County, Maryland (1650-1730)*, Anne Arundel County's Lost Towns Project, Annapolis, Maryland, 28-44.
- Sheppard, T, (1902a) 'Early Hull tobacco pipes and their makers', *Hull Museum Publications*, 6, 28 pages.
- Sheppard, T, (1902b) 'Recent additions', *Hull Museum Publications*, 2, 6.
- Sheppard, T, (1902c) 'Recent additions', *Hull Museum Publications*, 5, 8-9.
- Sheppard, T, (1903a) 'Recent additions', *Hull Museum Publications*, 13, 23.
- Sheppard, T, (1903b) 'Quarterly records of additions, No V', *Hull Museum Publications*, 15, 15.

- Sheppard, T, (1903c) 'Quarterly records of additions, No VI', *Hull Museum Publications*, 16, 21.
- Sheppard, T, (1903d) 'Quarterly records of additions, No VII', *Hull Museum Publications*, 17, 22.
- Sheppard, T, (1904a) 'Guild to the Municipal Museum', *Hull Museum Publications*, 18, 19-20, 22.
- Sheppard, T, (1904b) 'Quarterly records of additions, No IX', *Hull Museum Publications*, 20, 30.
- Sheppard, T, (1905a) 'Quarterly records of additions No XII', *Hull Museum Publications*, 24, 30 & 33.
- Sheppard, T, (1905b) 'Quarterly records of additions, No XIII', *Hull Museum Publications*, 25, 31.
- Sheppard, T, (1905c) 'Early Hull tobacco pipes', *Hull Museum Publications*, 25, 33-34.
- Sheppard, T, (1912) 'Early Hull tobacco pipes and their makers', *Hull Museum Publications*, 6, 2<sup>nd</sup> Edition, 39 pages .
- Sherlock, S J, (1992) *Excavations at Castle Hill, Castleton, North Yorkshire*, 64, 41-47.
- Speakman, C, (1969) *Transport in Yorkshire*, Dalesman, Clapham, 94 pages.
- Stead, I M, (1957) 'Clay pipes' in 'Excavations at the south corner tower of the Roman fortress at York, 1956', *Yorks Arch J*, 39, 523-525 (515-538).
- Stothard, M, (1983) *Artifacts found in the 'old town', area of Hull*, privately published, 29 pages.
- Tengnagel, P, (1984) 'Clay pipes found in York, England', *Society for Clay Pipe Research Newsletter*, 2 (April), 16.
- Thompson, A, (1981) 'The Aldgate clay pipe kiln, in P Davey (Ed.) *The archaeology of the clay tobacco pipe*, VI, British Archaeological Reports (British Series 97) Oxford, 3-13.
- Thursfield, T H, (1907) 'Early Salopian pipes', *Trans Shropshire Archaeol and Nat Hist Soc*, 3<sup>rd</sup> Series 7, 160-165.
- Todd, M, (1978) 'Clay pipes' in 'Excavations on the medieval defences of Newark, 1976' *Trans Thoroton Soc*, 81, 51-52.
- Walker, C, and Wells, P K, (1979) 'Regional varieties of clay tobacco pipe markings in eastern England', in *The archaeology of the clay tobacco pipe*, I, British

Archaeological Report (British Series 63) Oxford, 3-66.

Walker, I C, (1968 for 1967) 'Statistical methods for dating clay pipe fragments' *Post-Med Arch*, 1, 90-101.

Walker, I C, (1977) 'Clay tobacco pipes, with particular reference to the British industry', *History and Archaeology*, 4 volumes, Parks Canada, 1837 pages.

Walker, J W, (1939) *Wakefield: its history and people*, Second Edition, privately published, 735 pages.

Watkins, G, (1979) 'Hull Pipes - a typology', in *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63) Oxford, 85-121.

Weatherill, L, and Edwards, R, (1971) 'Pottery making in London and white haven in the late seventeenth century' *Post Med Arch*, 5, 160-181.

Webster, P, (1982) 'Record forms for marked and unmarked clay pipes: a user's comment' *Medieval and Later Pottery in Wales*, 5, 73-75.

Wells, P K, (1979) 'The pipemakers of Lincolnshire', in *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63) Oxford, 123-169.

Whitaker, A, (1973) 'Clay pipe', in H E J le Patourel and P Wood 'Excavations at the Archbishop of York's house at Otley', *Yorks Arch J*, 45, 140 (114-141).

White, A J, (1975) 'Lancaster clay tobacco pipes' *Contrebis*, 3:2, 58-68.

White, A J, (1979a) 'Clay Pipes associated with a 17th century kiln at Boston, Lincs', in P Davey (ed) *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63) Oxford, 179-84.

White, A J, (1979b) 'A group of clay pipes from Langton-by-Wragby, Lincs' in P Davey (ed) *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63), Oxford, 185-186.

White, A J, (1979c) 'Clay pipes from Vicar's Court, Lincoln' in P Davey (ed) *The archaeology of the clay tobacco pipe*, I, British Archaeological Reports (British Series 63), Oxford, 171-179.

White, S D, (1999) 'Clay tobacco pipes from excavations at Sovereign Street, Leeds 1998' unpublished report for the West Yorkshire Archaeological Services, 13 pages. Copy held by the NCTPA (Acc No. 1999.86.01).

White, S D, (2001a) 'Clay tobacco pipes from excavations at Old Hall Farm, Pontefract, 1996' unpublished report for West Yorkshire Archaeological Services, 7 pages. Copy held by the NCTPA (Acc No. 2002.09.01).

White, S D, (2001b) 'Clay tobacco pipes from the excavations at Scarborough Castle'

unpublished report for English Heritage, 17 pages. Copy held by the NCTPA (Acc No. 2002.04.01).

White, S D, (2001c) 'Clay tobacco pipes from excavations at Malton, North Yorkshire' 5 pages. Copy held by the NCTPA (Acc No. 2002.07.01).

White, S D, (2002a) 'Clay tobacco pipes from excavations at the Riverside Exchange, Sheffield 1999-2001' unpublished report for the Archaeological Research and Consultancy at the University of Sheffield (ARCUS), 31 pages. Copy held by the NCTPA (Acc No. 2002.06.01).

White, S D, (2002b) 'Clay tobacco pipes from excavations at Spink Lane, Pontefract, 2001' unpublished report for West Yorkshire Archaeological Services, 4 pages. Copy held by the NCTPA (Acc No. 2002.08.01).

White, S D, (2002c) 'Clay tobacco pipes from excavations at Knaresborough Bus Station', unpublished report for West Yorkshire Archaeological Services, 4 pages. Copy held by the NCTPA (Acc No. 2002.10.01).

White, S D, (forthcoming) 'The clay tobacco pipes from Wood Hall Moated Manor'. Draft held by the NCTPA (Acc No. 2002.05.01).

White, S D, and Davey, P J, (forthcoming) 'Eighteenth and nineteenth century clay tobacco pipes from Pontefract Castle'. Draft held by the NCTPA (Acc No. 2002.03.01).

Willan, T S, (1938) *The English coasting trade 1600-1750*, Manchester University Press, 234 pages.

Willan, T S, (1976) *The inland trade: studies in English internal trade in the sixteenth and seventeenth centuries*, Manchester University Press, 154 pages.

Williams, R A H, (1977) 'An excavation at Neville Castle, Kirbymoorside, N Yorks, 1974', *Yorks Arch J*, 49, 87-96.

Wynne, A, (1996) 'Clay tobacco pipe fragments from Chesterfield' *Derbyshire Archaeol J*, 116, 93-100.

Young, B R, (1982) 'A note on the provenance of pipe-clays from three archaeological sites in London', in P Davey (ed.) *The archaeology of the clay tobacco pipe*, VII, British Archaeological Reports (British Series 100) Oxford, 307-310.