

Leather and Leatherworking in Anglo-Scandinavian and Medieval York

Quita Mould, Ian Carlisle
and Esther Cameron



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CRAFT, INDUSTRY AND EVERYDAY LIFE

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Craft, Industry and Everyday Life:
Leather and Leatherworking in
Anglo-Scandinavian and Medieval York

By Quita Mould, Ian Carlisle and Esther Cameron

Contents

General Introduction	3185
Introduction to the sites and their dating <i>by R.A. Hall, N.F. Pearson and R. Finlayson</i>	3187
The nature of the assemblages	3203
Conservation of the Leatherwork <i>by J.A. Spriggs</i>	3213
Craft and Industry	3222
The surviving evidence	3222
The leatherworking trades	3222
Current documentary knowledge <i>by Lisa Liddy</i>	3222
The street-name evidence <i>by Gillian Fellows-Jensen</i>	3226
The physical evidence	3227
Environmental evidence <i>by Allan Hall and Harry Kenward</i>	3230
The osteological evidence <i>by T.P. O'Connor</i>	3231
The leatherworking tools recovered <i>by Patrick Ottaway and Carole A. Morris</i>	3235
The waste leather <i>with a contribution by Ailsa Mainman</i>	3245
The craft of the leatherworker	3256
The shoe-maker	3256
Shoe construction <i>with a contribution by Penelope Walton Rogers</i>	3256
The sheath- and scabbard-maker	3261
Decorative techniques employed on leather	3262
Teeth marks	3264
Types of leather used	3265
Conclusion	3267
Everyday Life	3268
Introduction	3268
Shoes	3268
Constructions	3268
Anglo-Scandinavian styles	3274
Medieval styles	3312
Sizes	3336
Decoration <i>with a contribution by Penelope Walton Rogers</i>	3340
Refurbishment and repair	3346
Foot pathologies	3351
Sheaths and scabbards <i>with a contribution by John A. Goodall</i>	3354
Other leather objects	3392
Wealth and status reflected in the leather from York	3415
The Wider Picture	3418
Anglo-Scandinavian and medieval leather found at York	3418
Comparable assemblages from elsewhere in Britain	3426
Possible cultural influences	3428
International relations <i>by Carol van Driel-Murray</i>	3431
The significance of the York assemblage <i>by R.A. Hall</i>	3436
Catalogue	3439
Appendix: Quantifications of shoes of each style	3533

List of Figures

1559	Plan showing position of (1) 16–22 Coppergate; (2) area of Watching Brief, zones 1–7; (3) 22 Piccadilly; (4) St Mary, Castlegate; (5) All Saints, Pavement.....	3188
1560	Plans of the site at 16–22 Coppergate showing the area of deposits excavated for Periods 2–5	3192–3
1561	Plans of the site at 16–22 Coppergate showing the area of deposits excavated for Period 6	3194–5
1562	Plan showing the location of excavations, and building recording in the Bedern area	3200
1563	Recording leather before conservation	3214
1564	The freeze-drier in use with leather	3216
1565	Conservator in the process of reconstructing a shoe	3217
1566	Scabbard 15661: (a) before conservation; (b) during conservation (gap filling); (c) during conservation (painting gap-filled sections)	3218
1567	Reconstructed leather footwear	3219
1568	Shoe uppers which received different conservation treatments: (a) Pliantine (15880–1); (b) Bavon (15498 and 15509); (c) freeze-drying (15507 and 15510)	3220
1569	Untanned calfskin 15823	3220
1570	Plan of York showing streets and parishes associated with leatherworking	3225
1571	Possible stretcher frame from 6–8 Pavement	3228
1572	Currier’s knives from 16–22 Coppergate and slicker from Bedern Foundry	3236
1573	Double-armed leather creasers from Anglo-Scandinavian contexts at Coppergate	3237
1574	Awls from Anglo-Scandinavian contexts at Coppergate	3237
1575	Awls from medieval contexts at Coppergate and Bedern	3238
1576	Iron shears from Anglo-Scandinavian contexts at Coppergate	3239
1577	Iron shears from medieval contexts at Coppergate and Bedern	3240
1578	Map of Britain and Ireland showing the main sites referred to in the text.....	3241
1579	Map of northern Europe showing the main sites referred to in the text	3242
1580	Willow last from Coppergate for shoe- or patten-making.....	3244
1581	Primary, secondary and tertiary waste from 16–22 Coppergate	3245
1582	Distribution of primary waste from 16–22 Coppergate: Period 4B	3248
1583	Distribution of secondary waste from 16–22 Coppergate: Period 4B	3249
1584	Distribution of tertiary waste from 16–22 Coppergate: Period 4B	3250
1585	Distribution of primary waste from 16–22 Coppergate: Period 5B	3251
1586	Distribution of secondary waste from 16–22 Coppergate: Period 5B	3252
1587	Distribution of tertiary waste from 16–22 Coppergate: Period 5B	3253
1588	Group of flesh shavings and primary waste	3254
1589	Seams used in leatherworking	3257
1590	The stitch most commonly used in shoe and strap construction	3259
1591	Leather secondary waste: sf18099 with a single bite mark and sf17546 with multiple bite marks, both from 16–22 Coppergate	3264

1592	Diagram of shoe constructions found	3269
1593	Sole measurements taken	3272
1594	Sole types	3273
1595	Diagram showing the range of shoe styles represented by the leather shoe components found at York	<i>facing</i> 3274
1596	Stitch conventions used in illustrations	3275
1597	Diagrams to explain terminology used to describe shoe parts: (a) shoe soles; (b) shoe uppers of principally one-piece construction; (c) shoe uppers with separate vamp and quarters; (d) terms used to describe shoe vamps and quarters	3276–7
1598	15357, shoe Style 1, made from a single piece of leather	3278
1599	15354, shoe Style 1, made from a single piece of leather	3279
1600	15354, shoe Style 1, after reconstruction	3279
1601	15353, shoe Style 1, made from a single piece of leather	3280
1602	15355, shoe Style 1, made from a single piece of leather	3281
1603	Map of Europe showing places mentioned in the discussion of shoes made of a single piece of leather	3282
1604	15371, shoe Style 2, after reconstruction	3282
1605	15372, shoe Style 2, construction type 1	3283
1606	15372, shoe Style 2, after reconstruction	3283
1607	15359, shoe Style 2, with wide top band	3284
1608	15358, shoe Style 2, with upper made in two halves	3284
1609	15374, shoe Style 2, with insert and narrow top band	3285
1610	15365, shoe Style 2, with narrow top band	3285
1611	15367, shoe Style 2	3286
1612	15361, shoe Style 2	3286
1613	Map of Europe showing places where low-cut slip-on shoes with a seam at centre back have been found	3287
1614	15381, shoe Style 3b1 after reconstruction, with later slits to hold a drawstring	3289
1615	15395, shoe Style 3b1, with the heel area of the uppers supported internally by a heel stiffener	3290
1616	15385, shoe Style 3b1	3291
1617	15376, shoe Style 3a1	3292
1618	15382, shoe Style 3b1, modified with a single slash at the throat	3292
1619	15397, shoe Style 3b1, modified with a double slash at the throat	3293
1620	15387, shoe Style 3b1, with a slash across the instep	3293
1621	15390, shoe Style 3b1, with a slash across the instep	3293
1622	15386, shoe Style 3b1, with a small rectangular tongue at the centre of the throat	3294
1623	15398, shoe Style 3a2, with widely spaced slots around the upper to hold the drawstring in place	3295
1624	15404, shoe Style 3b2, with widely spaced slots around the upper to hold the drawstring in place	3296

1625	15399, shoe Style 3a2, with fine and closely spaced drawstring slots	3297
1626	15408, top edge of upper with fine drawstring slots	3297
1627	15413, shoe Style 3b3, with separate drawstring sewn to the centre of the throat of the upper	3298
1628	15413 after reconstruction	3298
1629	15414, shoe Style 3b3, with separate drawstring sewn to the centre of the throat of the upper	3299
1630	15419, variant Style 3b4, with a rectangular insert between the quarter and the vamp wing at the side seam	3299
1631	15418, shoe Style 3a4, with crescent-shaped insert sewn to the throat	3300
1632	15423, shoe Style 3b4, with crescent-shaped insert sewn to the throat	3301
1633	15424, shoe Style 3b5, with a peak at the centre of the throat	3301
1634	15425, shoe Style 3b5, with a peak at the centre of the throat	3302
1635	15429, shoe Style 4a1, with a single wide flap with a toggle and loop fastening	3303
1636	15430, shoe Style 4a1, with a single wide flap with a toggle and loop fastening	3304
1637	15880, shoe Style 4a2, fastened with two toggles on a single flap	3305
1638	15881, shoe Style 4a2, fastened with two toggles on a single flap	3306
1639	15439, shoe Style 4a3, fastened with a double flap and toggles	3306
1640	15438, shoe Style 4a3, fastened with a double flap and toggles	3306
1641	15436, shoe Style 4a3, fastened with a double flap and toggles	3307
1642	Map of Europe showing places where one-piece ankle-shoes fastened with flaps and toggles have been found	3308
1643	15442, shoe Style 4a4, fastened with double top band flap and toggles	3308
1644	15447, shoe Style 4a4, fastened with double top band flap and toggles	3309
1645	15444, shoe Style 4a4, with either single or double top band flap and toggles	3310
1646	15847, shoe Style 5, one-piece upper with flap and toggle fastening	3311
1647	15453, remains of another Anglo-Scandinavian style shoe	3312
1648	15454, shoe Style 6, fastening at the front with integral laces	3313
1649	15459, shoe Style 7a, with integral front flaps	3315
1650	15460, shoe Style 7a, with integral front flaps and top band decorated with embroidery	3316
1651	15468, shoe Style 7b1, with one front flap integral and the other an insert stitched to the quarter	3317
1652	15479, shoe Style 7c1, with one front flap integral and the other an insert stitched to a projection on top of the vamp wing	3318
1653	15485, shoe Style 7b2, with drawstring passing through multiple slots	3320
1654	15487, shoe Style 7b/c3, with drawstring passing though vertical thronged loops	3321
1655	15489, Style 7c3, with drawstring passing though vertical thronged loops	3322
1656	15490, shoe Style 7b/c3, with drawstring passing though vertical thronged loops	3323
1657	15495, Style 8a, a front toggle-fastened ankle-shoe	3324
1658	15496, Style 8b, a front toggle-fastened boot	3324
1659	15497, Style 8c, a front toggle- and lace-fastened boot	3325
1660	Two views of reconstructed boot 15497	3326

1661	15498, Style 8d, a front-lacing one-piece ankle-boot	3327
1662	15833, Style 8e, a one-piece ankle-boot fastening at the front with a buckle and strap	3228
1663	15500, Style 9a, a boot of one-piece construction lacing at the side	3329
1664	15501, Style 9b, a shoe of two-piece construction lacing at the side	3330
1665	15504, Style 9b, a boot of two-piece construction lacing at the side	3331
1666	15505, Style 10, a shoe of two-piece construction lacing at the front	3332
1667	15511, Style 11-, with moss stuffing in the toe	3333
1668	15507, Style 11a, a front latchet-fastened shoe	3334
1669	15508, Style 11a, a front latchet-fastened shoe	3334
1670	15509, Style 11b, a front buckle- and strap-fastened shoe	3335
1671	Diagram showing numbers of shoes of Styles 2, 3, 4 and 7 in sizes worn by children, males and females	3339
1672	Tooled decoration on shoe sole heel extensions	3341
1673	Detail of 15524, showing single line of tunnel stitching for a vamp stripe	3342
1674	Two examples of three rows of stitching between scored lines for a vamp strip	3342
1675	Top band 15540, with double row of embroidery between scored lines	3343
1676	Top band 15543, with triple row of embroidery between scored lines	3344
1677	Top band 15410, with rows of slits for decorative thonging	3344
1678	Detail of 15457, Style 7a1, with lightly scraped decoration	3345
1679	Detail of 15483, Style 7c1, with scraped decoration	3346
1680	15426, with the vamp slashed close to the lateral joint to relieve pressure perhaps from hammer toe	3352
1681	Sole of 15487 showing hole worn through by the great toe as a result of <i>hallus rigidus</i>	3352
1682	Distribution of sheaths at 16–22 Coppergate in Period 4B	3356
1683	Distribution of sheaths at 16–22 Coppergate in Period 5B	3357
1684	Distribution of scabbards at 16–22 Coppergate in Period 4B	3358
1685	Distribution of scabbards at 16–22 Coppergate in Period 5B	3359
1686	Three unprovenanced scabbard leathers from York	3360–1
1687	Scabbards of the 10th and 11th century from 16–22 Coppergate	3362
1688	Diagram to explain what a strap-slide was and showing four types of strap-slides for scabbards ...	3363
1689	Detail of scabbard 15545 showing outline for strap-slide and circular impression	3366
1690	Post-Conquest scabbard 15601 from 16–22 Coppergate	3366
1691	Belts and straps used for the suspension of scabbards in the medieval period	3368
1692	Sheaths of knives and seaxes from Anglo-Scandinavian York: Type A1	3370
1693	Front and back view of knife sheath 15890, of Anglo-Scandinavian Type A1	3371
1694	Sheaths of knives and seaxes from Anglo-Scandinavian York: Type A2	3372
1695	Front and back view of sheath 15617 of Type B1	3373
1696	Detail of sheath 15617 showing seam	3373
1697	Sheaths of knives and seaxes from Anglo-Scandinavian York: Type B1	3374–5

1698 Sheath 15625, Type B2	3375
1699 Front and back view of sheath 15625	3376
1700 Sheaths of knives and seaxes from Anglo-Scandinavian York: Type B3	3378–9
1701 Sheath 15648, Type C	3379
1702 Seax sheath 15659, Group 1	3380
1703 Seax sheath 15660, Group 1	3381
1704 Seax sheath 15661, Group 1	3382
1705 Front and back view of sheath 15661	3383
1706 Detail of sheath 15661 showing metal fittings	3383
1707 Sheaths of seaxes from 10th- and 11th-century York, Group 3	3384
1708 Detail of sheath 15662	3384
1709 Detail of the decoration on the front and back of sheath 15889	3385
1710 Sheaths of knives from medieval York: Type E	3386
1711 Sheath 15658 from medieval York: Type F	3388
1712 Decorated straps or girdles	3393
1713 Detail of girdle 15872 with red-painted punched and impressed decoration	3393
1714 Straps 15888 with decorative mounts	3394
1715 Straps 15888 with decorative mounts	3394
1716 Straps with decorative mounts	3395
1717 Flat straps, perhaps from horse equipment	3396
1718 Folded straps	3398
1719 Folded strap with back seam and two rows of imitation stitching, 15708	3399
1720 Plain strap folded longitudinally, 15712	3399
1721 Buckled straps	3400
1722 Slotted strip 15715 and suspension fastening 15729	3401
1723 Pouch and belt purse	3402–3
1724 Archer's bracer 15748	3404
1725 Front and rear view of archer's bracer 15748, made from re-used shoe parts	3404
1726 Diagram showing how an archer's bracer was used	3405
1727 Leather panels possibly from balls of two-, three- and multi-part construction	3406
1728 Diagram showing the construction of (a) circular pads, (b) balls of two parts, (c) balls of three parts, (d) balls of multiple parts	3407
1729 Selection of plain elliptical panels	3408
1730 Plain elliptical panels, some with stitching	3409
1731 Elliptical panels with internal slashes	3410
1732 Discs, vessel bases and washers	3411
1733 Decorated fragments of leather	3413
1734 Cut-down pieces of leather	3414–15
1735 Other sites in York which have produced leather finds	3420

List of Tables

348	Summary of archaeological development at 16–22 Coppergate	3191
349	Summary of archaeological development at 22 Piccadilly	3199
350	Summary of phasing at sites within the College of Vicars Choral at Bedern (including Bedern long trench, Bedern south-west and Bedern north-east)	3202
351	Summary of phasing at the Bedern Foundry site	3203
352	16–22 Coppergate: numbers of objects by functional type within each tenement in Period 4B	3205
353	16–22 Coppergate: numbers of objects by functional type within each tenement in Period 5A	3206
354	16–22 Coppergate: numbers of objects by functional type within each tenement in Period 5B	3207
355	16–22 Coppergate: numbers of objects by functional type within each tenement in Period 6	3208
356	Coppergate watching brief: numbers of objects by functional type and by period	3210
357	22 Piccadilly: numbers of objects by functional type and by period	3211
358	Bedern Foundry: numbers of objects by functional type and by period	3211
359	College of Vicars Choral: numbers of objects by functional type and by period	3212
360	Period 3 leatherworking waste from 16–22 Coppergate by tenement	3246
361	Period 4A leatherworking waste from 16–22 Coppergate by tenement	3246
362	Period 4B leatherworking waste from 16–22 Coppergate by tenement	3246
363	Period 5A leatherworking waste from 16–22 Coppergate by tenement	3246
364	Period 5B leatherworking waste from 16–22 Coppergate by tenement	3246
365	Period 5C leatherworking waste from 16–22 Coppergate by tenement	3246
366	Period 6 leatherworking waste from 16–22 Coppergate by tenement	3246
367	All types of leather waste by tenement and the percentage of total waste they represent: Period 4B	3247
368	All types of leather waste by tenement and the percentage of total waste they represent: Period 5B	3247
369	Sewing threads in leatherwork from 16–22 Coppergate and Bedern Foundry	3260
370	16–22 Coppergate: construction type 1 by shoe type and period	3270
371	16–22 Coppergate: construction type 2 by shoe type and period (Anglo-Scandinavian period only)	3271
372	Modern English and Continental shoe sizes	3336
373	Shoe measurements expressed in equivalent modern English shoe sizes: child sizes	3337
374	Shoe measurements expressed in equivalent modern English shoe sizes: adult sizes	3337
375	Sizes of shoe found in each shoe style: child sizes	3337
376	Sizes of shoe found in each shoe style: adult sizes	3338
377	The number of clump repair pieces found at 16–22 Coppergate by period and the percentage of total shoe finds they represent	3347
378	The number of soles repaired at 16–22 Coppergate by period and the percentage of total sole finds they represent	3349

379	The number of times shoes were repaired at 16–22 Coppergate by period	3350
380	The number of cut-down shoes from Anglo-Scandinavian period at 16–22 Coppergate and the percentage of total shoe finds they represent	3350
381	Anglo-Scandinavian scabbard leathers from 16–22 Coppergate by period	3360
382	Anglo-Scandinavian knife sheaths from 16–22 Coppergate by period	3369
383	Sheaths of knives from medieval York	3387
384	Soles and uppers with pointed backs from selected Scandinavian sites as a percentage of all soles and uppers	3435
385	Shoe Styles 1 and 2 by period within site	3533
386	Shoe Style 3 by period within site	3533
387	Shoe Styles 4 and 5 by period within site	3534
388	Shoe Styles 6–8 by period within site	3534
389	Shoe styles 9–11 by period within site	3535

Craft, Industry and Everyday Life: Leather and Leatherworking in Anglo- Scandinavian and Medieval York

By Quita Mould, Ian Carlisle and Esther Cameron

With contributions by G. Fellows-Jensen, R. Finlayson, J.A. Goodall, A. Hall, R.A. Hall, H. Kenward, L. Liddy, A.J. Mainman, C.A. Morris, T.P. O'Connor, P.J. Ottaway, N.F. Pearson, J.A. Spriggs, P. Walton Rogers

Key words: Anglo-Scandinavian, archer's bracer, balls, craft, elliptical panels, industry, leather, leatherworking, medieval, pouches, purses, scabbards, sheaths, shoes, sling cradles, straps, York

General Introduction

Leather was one of the most important materials used by pre-industrial societies. The raw materials, hides and skins, were readily available as a by-product of meat provision. After processing, the resultant leather was a highly versatile material, being both strong and flexible, and could be made into a wide range of items. The remains of a large number of these items have been found at York, along with waste material from both the processing of hides and the production of artefacts. All were preserved by the unusual anoxic burial environment. The leather described here spans a range of 600 years and provides an insight into one of York's principal trades during the Anglo-Scandinavian and medieval periods. It is clear that leatherworking was a major component of the local economy during these years. By the late 13th century the leather trades were numerically the most important in York in terms of admissions of freemen of the city (Cherry 1991, 308), though this was to diminish over the following centuries.

The Anglo-Scandinavian leatherwork from York, and in particular from the excavations at 16–22 Coppergate, is famous. The results of the study of this material are presented here along with the medieval material recovered from the same excavations.

The Anglo-Scandinavian leather assemblage is the largest yet to be recovered from England and its close dating ensures that it is of national and international importance.

The format of the publication

'Leather and Leatherworking in Anglo-Scandinavian and Medieval York' is the fifth report in the series entitled 'Craft, Industry and Everyday Life'. The impetus to investigate this major topic was given principally by the opportunity to study the large and important corpus of leather recovered from the excavations at 16–22 Coppergate. To this was added material from the watching brief at Coppergate, the adjacent site of 22 Piccadilly and complementary sites at Bedern. To consider such a wide-ranging subject required an interdisciplinary approach, employing the knowledge of a large number of experts, and the resulting work has benefited greatly from their individual contributions.

We begin with a description of the background to the present study. This is followed by an introduction to the individual excavations and their dating, incorporating a brief explanation of the nature of the

related individual assemblages of leather recovered. The conservation of the leather is then described.

The main body of the text is divided into three sections: Craft and Industry; Everyday Life; and a concluding Discussion. This is followed by a catalogue of the complete corpus of leather recovered from each site considered in this study.

Craft and Industry considers the evidence for leatherworking in York to the end of 1999 and describes the technology of leatherworking employed. Street name and documentary evidence is summarised, followed by a consideration of the structural, bio-environmental, osteological and other physical evidence. The general methods of manufacturing and decorating the principal functional categories of leather are then described and the choice of leather species employed is briefly considered.

Everyday Life describes in detail the individual types of leather objects found, principally footwear, knife sheaths and sword scabbards. In addition, a range of other items of dress and equipment was recognised, as well as items for which a specific use has yet to be convincingly identified. The separate categories of object and their methods of manufacture are described; their dating is presented and the occurrence of comparable material from elsewhere noted. This section is supported by a catalogue of the complete corpus of leather recovered from each site listed by functional category. Those items occurring in large numbers have one example fully described; the others are presented in tabular form.

A more general discussion then follows regarding what the leather may tell us of other aspects of life in York during the Anglo-Scandinavian and medieval periods. We begin with a survey of the leather recovered from elsewhere in the city over the past century, followed by a brief outline of leather of the 8th–mid 11th century recovered from the rest of the country and slightly further afield. Possible cultural implications and trading contacts suggested by the leatherwork from York are then considered. The text concludes with an overview placing the leather found at York in a wider setting.

A very large body of material has been considered here, comprising manufactured items and waste from processing and production. Numerically the

manufactured leather finds are dominated by shoe leather. An important collection of leather deriving from knife sheaths and sword scabbards is also represented. The differences in the quantities of shoe leather on the one hand and sheath and scabbard leathers on the other has resulted in the adoption of differing, but compatible, approaches to the description and discussion of these two major components of the corpus.

Similarly, the Anglo-Scandinavian material has been considered in more detail than that from the medieval period. The nature of the excavations at 16–22 Coppergate, described more fully by Hall below (pp.3187–97), resulted in better preservation and closer dating of features from the earlier levels. The medieval period at Coppergate (Period 6, the later 11th century through to the 16th century) provides a complicated picture of urban living and the number of well-preserved leather objects falls. Consequently, it is difficult to gain an overview of activity across the four tenements during a particular century as represented by the leather recovered. For this reason no general discussion of the wider issues that might be drawn from the medieval leather has been attempted here.

Background to the publication

A basic paper record of the majority of the leather recovered from the excavations at 16–22 Coppergate was compiled by David Hooley in 1990. The record comprised a description with dimensions accompanied by a sketch where appropriate. He also wrote a research design for internal circulation that summarised the potential of the 16–22 Coppergate leather for analysis and subsequent publication.

In 1996 Quita Mould, with the help of York Archaeological Trust, devised a project design for the research and publication of leather from excavations at 16–22 Coppergate, related sites adjacent (the Coppergate watching brief and 22 Piccadilly), and from excavations at Bedern Foundry and the medieval College of the Vicars Choral of York Minster at Bedern. The publication sought not only to consider material from these sites but to provide a wider discussion of Anglo-Scandinavian and medieval leather and leatherworking from the City of York. The resulting work is the product of a collaboration of three principal authors as well as a range of specialists in

various fields whose contributions are individually accredited.

During 1997 Ian Carlisle completed the basic record of the remaining leather from 16–22 Coppergate, and recorded all the leather from the watching brief at Coppergate and the excavations at 22 Piccadilly, Bedern Foundry and the College of Vicars Choral. This information was then recorded on York Archaeological Trust's computerised small finds recording system (IADB). Ian Carlisle provided the majority of the catalogue, the quantification, the description of the foot pathologies represented, and information on the leather from unpublished YAT (York Archaeological Trust) excavations, and he drafted much of the original text.

Esther Cameron studied the sheaths and scabbards from Anglo-Scandinavian York as part of her doctoral thesis and was ideally placed to undertake the cataloguing and publication of the sheaths and scabbards of Anglo-Scandinavian and medieval date from the sites specified above. Quita Mould and Esther Cameron have discussed the leather from York in order to place it in a wider setting. Quita Mould has been responsible for drafting the text not attributed to the other specialists involved in the project and has endeavoured to integrate all these various sections into the present publication.

Introduction to the Sites and their Dating

16–22 Coppergate

By R.A. Hall

The main north–south route through medieval York ran along the street called Pavement to its southernmost end, where stood the church of All Saints, Pavement (Fig.1559, 5). The direct route to Ouse Bridge, the only crossing point of the River Ouse, continued via Ousegate, along the north-western side of the church. On the other side of the church, approximately parallel, ran Coppergate. Properties on the All Saints' side of Coppergate were back to back with those in Ousegate, but on the other side of Coppergate the relatively long tenements ran uninterrupted downslope to the King's Pool, an artificial enlargement of the lower reaches of the River Foss. Part of this area, within the centre of the medieval city, was known as Marketshire; the relative density

of Anglo-Scandinavian objects recovered in the vicinity also suggests that this was a significant sector of the pre-Norman city (Radley 1971; AY 8/3).

A sample 1000m² of a redevelopment site at 16–22 Coppergate (SE 6044 5168), running from the modern building line at the street frontage down towards the River Foss, was excavated by a team from York Archaeological Trust, under this writer's direction, in a continuous archaeological campaign of five years and four months in 1976–81 (Fig.1559, 1). Resources were provided principally by the Ancient Monuments Inspectorate of the Department of the Environment (now English Heritage), the Manpower Services Commission, the British Academy and a host of private individuals, corporations and charitable trusts. The characteristics of the demolition site that was handed over for investigation, notably the varying extent of modern intrusions, coupled with the logistics of excavation and the continual financial uncertainties, dictated the tactics employed throughout the excavation process. Viking Age deposits were revealed below modern cellars within a few days of excavation commencing, yet elsewhere on the site later medieval deposits were still being investigated in 1978.

During the redevelopment of 1981–3 a continuous watching brief over an extended area, running down to the present edge of the River Foss (Fig.1559, 2), was maintained under the direction of N.F. Pearson. The results of this exercise are incorporated into the summary given below (pp.3197–8).

The riverside from the Roman period through to the 16th century was investigated in four small trenches excavated at 22 Piccadilly in 1987 (Fig.1559, 3), in advance of redevelopment there. Results from that excavation are summarised below (pp.3198–9).

At 16–22 Coppergate the latest reasonably intact and intelligible deposits were of 15th-/16th-century date. They, and earlier deposits back to the mid 10th century, were investigated over the entire excavated area. A shortage of funds required that earlier levels, dating from the Roman period to the early/mid 10th century (i.e. up to and including what is described below as Period 4A), were examined in a strip measuring approximately 20 × 7m across the Coppergate street frontage and a contiguous strip up to 12m wide and 37m long, running down the southern half of

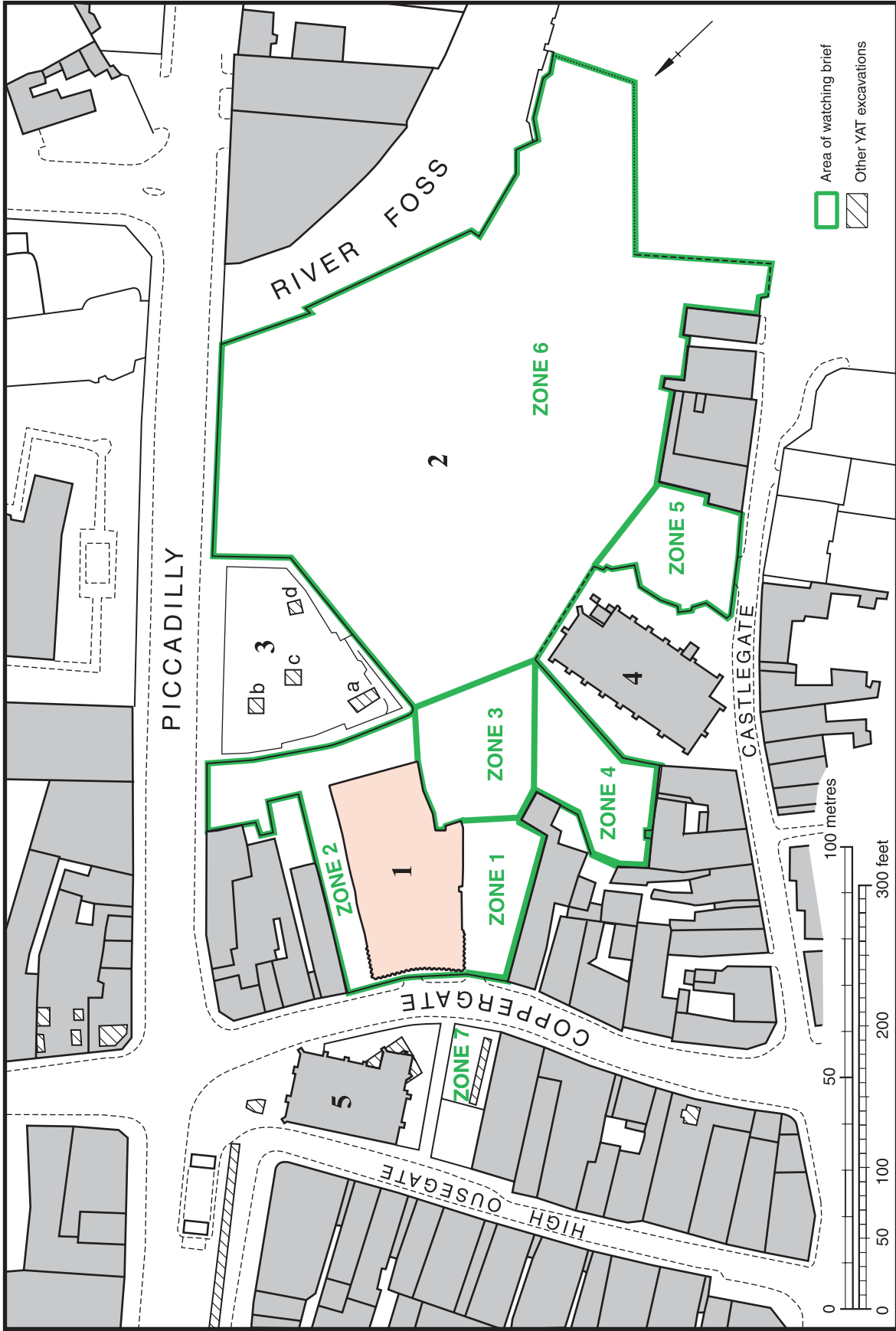


Fig.1559 Plan showing position of (1) 16–22 Coppergate; (2) area of Watching Brief, zones 1–7 (shown in green); (3) 22 Piccadilly, a–d correspond to Trenches 1–4; (4) St Mary, Castlegate; (5) All Saints, Pavement. (Based on the 1982 Ordnance Survey 1:1250 National Grid Plans. Reproduced from Ordnance Survey mapping on behalf of The Controller of Her Majesty's Stationery Office, © Crown copyright. Licence number 1000122225.) Scale 1:1250

the site towards the River Foss. These variations in the area excavated must be borne in mind in any chronological/quantitative analysis of the evidence.

Natural soils were reached in each of the strips, and layers attributable to Periods 1 and 3 were recorded throughout them. A well-defined Period 2 horizon existed only in the street frontage strip; elsewhere, because of stratigraphic interruptions and an overall thinning of these earlier layers as they ran eastwards from the street frontage, Period 2 contexts could not be isolated with certainty. Therefore, although some deposition of soil must have taken place throughout Period 2, remains of this period are shown as of limited extent. Similarly, the Period 4A horizon, while extending right across the frontage, could not be traced convincingly down the southern strip beyond a point where diagnostic features petered out. It is thus conceivable that a small amount of soil build up that took place during Period 4A on that part of the southern strip to the east of the limit of identifiable 4A features has been subsumed into Period 4B, which was investigated over the entire excavated area. For reasons outlined below, the deposits designated as Period 5A were limited in extent to the front part of the site. Deposits of Period 5B were traced across the entire area excavated. Deposits of Periods 5Cf and 5Cr were limited to the front- and rear-most portions of the excavation respectively, and no contemporary levels could be stratigraphically isolated in the central part of the excavation.

Layers of Period 6, a designation that encompasses all deposits of the Anglo-Norman to post-medieval/early modern eras, were investigated over the entire excavated area. The most complete stratigraphic sequence from Period 6 survived at the River Foss end of the site, and was over 3m thick. Most of this considerable volume of material comprised levelling/dumps, which appeared to have been laid down at frequent intervals during the medieval period. Very little medieval material was found at the Coppergate end of the site. This is partly due to the construction of modern cellars, which had removed most of the material post-dating the 14th century. However, enough survived to show that there was very little accumulation of deposits towards the Coppergate frontage for much of the medieval period. Activity was largely confined to the

gradual build up of occupation deposits along the Coppergate frontage.

The cause of such a contrast in the nature of deposit formation between one end of the site and the other is the slope down eastwards from Coppergate towards the river; the concentrated Anglo-Scandinavian activity along the Coppergate frontage accentuated the natural prevailing ground slope down into the valley of the River Foss. This slope was most pronounced to the rear of the Anglo-Scandinavian buildings, where there was a 3m fall in ground level over a distance of 11m, with a steepness of 1:3 in places. In approximately the 10th–14th centuries, therefore, the topography of the site was effectively divided into three elements: the flat, high ground adjacent to Coppergate; the steep slope down to the east; and the relatively flat, low-lying ground not far from the King's Pool, an artificial lake formed by the damming of the River Foss to create a moat around York castle. Consequently, much of the land was too steep to be built upon. Even in the latest Anglo-Scandinavian phase (P5C) there seems to have been an effort to rectify this situation by raising the ground level of the low-lying land. The continuation of this process is evident during the medieval period — levelling/dumping on the low-lying land, accompanied by a conscious effort to avoid raising the ground level along the Coppergate frontage. The levelling of the ground surface was not completed until well into the later medieval period. In the meantime, there was evidently a dichotomy of land use between the Coppergate and King's Pool ends of the tenements; apart from the concentration of levelling/dumping (and pit-digging) at the riverward end of the site, there were also phases of structural activity which were restricted to the land closer to Coppergate at the bottom of the terrace slope. The non-structural phases usually comprised alternating sequences of pits and dumps. Much of this activity seems to have taken place on such a large scale as to suggest a degree of organised, concerted effort, rather than being simply the product of casual waste disposal from activity within each tenement.

The structures and strata recorded in the Coppergate excavations will be published in AY 6, 7, 8 and 10. Biological evidence from the Anglo-Scandinavian deposits has been published in AY 14/7 and the Anglo-Scandinavian and medieval animal bones have been published in AY 15/3 and AY 15/5

respectively. The Anglo-Scandinavian pottery has been published in AY 16/5, and a series of finds reports is being published in AY 17. AY 17/5, *Textiles, Cordage and Raw Fibre from Coppergate*, AY 17/6, *Anglo-Scandinavian Ironwork from Coppergate*, AY 17/7, *Anglo-Scandinavian Non-Ferrous Metalworking from Coppergate*, AY 17/8, *The Anglian Helmet from Coppergate*, AY 17/11, *Textile Production at 16–22 Coppergate*, AY 17/12, *Bone, Antler, Ivory and Horn from Anglo-Scandinavian and Medieval York*, AY 17/13, *Wood and Woodworking in Anglo-Scandinavian and Medieval York*, AY 17/14, *Anglo-Scandinavian Finds from York*, and AY 17/15, *Medieval Finds from York*, are already available. The post-Roman coins and numismata from this site are included in AY 18/1. Roman coins will appear in AY 18/2. A synthesis of the entire Anglo-Scandinavian assemblage will appear in AY 8/4.

Site history and a summary

The earliest occupation on the site, designated Period 1, was in the Roman era. At that time the legionary fortress lay 160m to the north-west; the immediate vicinity was certainly occupied in part by temples, and it probably also contained a variety of commercial establishments. Evidence for Roman buildings constructed of both timber and stone was recovered, but the functions of these structures could not be deduced. The site also contained a small late Roman cemetery. The admixtures of silt, clay and loam that characterised soil conditions associated with Period 1 did not permit the survival of any organic-based artefacts except the very fragmentary remains of some wooden coffins and items made of bone.

There seems no reason to suppose that Romano-British activity continued here beyond the conventional date of c. AD 400 or shortly after, and from then until the mid 9th century the site seems to have been unoccupied (Period 2). This period was marked stratigraphically by the accumulation of up to 1m of grey silty clay loam soils, interpreted as the result of natural agencies; there was no evidence for structures, domestic or otherwise. All the pottery in these layers was Roman with the exception of a small quantity of Anglo-Scandinavian sherds that are believed to be intrusive; the contexts from which they were recovered were adjacent either to upstanding baulks incorporating later material, or to later down-cutting features that may have been the source of obviously

later sherds. Although, once again, soil conditions would not have preserved organic-based artefacts other than those made of bone, the dearth of other, more durable, artefactual evidence for contemporary activity indicated that this absence reflects accurately the site's apparent desertion at this time. Nevertheless, an 8th-century helmet was found in a wood-lined shaft only 9m beyond the excavation's perimeter during construction work in 1982 (AY 17/8).

Above the clean grey loams that mark the four and a half centuries interpreted as Anglian desertion of the site, a band of dirtier grey silty clay loams was recognised. Into these layers was cut a series of features, including a sequence of hearth/oven/kiln bases represented by a horizontal setting of re-used Roman tiles, perhaps used in glassworking, as well as several pits containing domestic debris. Some pits also contained human skeletal remains; one of the skeletons had traces of textile adhering to it (pp.331–2, AY 17/5). The latest features of this period consisted of a series of post-holes, some apparently forming alignments at an angle to the later tenement lines, and an accompanying cobble spread at the south-west of the area. It is conceivable that these features represent the remains of a building, although this is not certain. This entire horizon, Period 3, is dated to c.850–900 on the basis of a combination of archaeomagnetic and numismatic evidence; for later periods, dendrochronological data provide a greater level of chronological precision.

Sealing the post-holes, cobble spread and other features of Period 3 were deposits into which were inserted wattle alignments that anticipated the alignment of the subsequent tenements and structures, but did not themselves form obviously coherent structures. These alignments, together with underlying and associated layers and features, are assigned to Period 4A and dated to c.900–930/5. Characteristic of the layers of this period were dark grey silty clay loams, very similar to those of Period 3, but differentiated by the inclusion of patches of grey clay, brown ash, scatters of charcoal and occasional very small fragments and slivers of wood. These conditions, like those of Period 3, were not particularly conducive to the survival of organic artefacts.

The next phase on the site, Period 4B, is marked by the division of the area into four tenements, designated A–D (Fig.1560), and if the street Coppergate

Table 348 Summary of archaeological development at 16–22 Coppergate

Period	Date	Characteristics
1	late 1st–late 4th century or later	Roman timber and stone buildings; late Roman cemetery. Limited survival of organic materials
2	5th–mid 9th century	Apparent desertion. Homogeneous loamy deposits which did not preserve organic materials
3	mid 9th–late 9th/early 10th century	Rubbish disposal, suggesting occupation close by. Post/stake and wattle alignments, possibly boundaries. Organic materials preserved only in pit cuts
4A	late 9th/early 10th century–c.930/5	Realignment of boundaries, suggesting that Coppergate was laid out by this period. Possible buildings at Coppergate frontage. Organic materials preserved mainly in pit cuts
4B	c.930/5–c.975	Four tenements distinguishable, with post and wattle buildings at Coppergate frontage. Evidence for ironworking and other trades on a commercial scale. Organic-rich deposits nearer to Coppergate; organic content thinning to zero towards River Foss
5A	c.975	Near Coppergate frontage only. Layers between structures of Periods 4B and 5B; probably mixture of occupation deposits, dump deposits and soil from 5B semi-basements
5B	c.975–early/mid 11th century	Perpetuation of boundaries. Introduction of sunken-featured structures in double row at street frontage. Organic-rich deposits as in Period 4B
5Cf	mid–later 11th century	Organic-rich deposits at street frontage, associated with buildings which survive only in Tenement D
5Cr	mid–later 11th century	Post-built structure closest to River Foss sealed by earliest in a succession of dump deposits. Little organic material surviving
6	later 11th–16th century	No remains surviving at street frontage, but area to rear increasingly built up above later dump deposits. New methods of building and rubbish disposal, leading to reduction in organic content of deposits

was not in being before it must have been laid out at this time. The tenements were defined by wattle fences and the boundary lines, once established, fluctuated only very slightly over the succeeding millennium. Towards the River Foss end of the site, however, there was no trace of any continuation of the fences discovered nearer to Coppergate. Whether this should be attributed to the nature of the soil conditions in this area, or whether tenement divisions never extended this far, is not clear. Each tenement contained buildings of post and wattle construction, positioned with their gable-ends facing the street. All had been truncated towards their front by the subsequent widening of Coppergate; the greatest surviving length was 6.8m, and the average width 4.4m. The buildings on Tenements A and B had been substantially disturbed by the digging of semi-basements

for the Period 5B buildings, but those on Tenements C and D were very largely intact. The buildings had to be repaired or replaced frequently, for they were vulnerable to fire as well as to natural decay, but successive refurbishments varied little in their dimensions and position. Hearths were found on the long axes of the buildings in Tenements B, C and D; any trace of a hearth in A was destroyed by later intrusion, and even in B only vestiges remained. In C and D the hearths measured up to 2.4m × 1.3m and consisted of a clay base, sometimes resting on a stone slab underpinning, surrounded by a revetment of horizontal timbers, limestone rubble, or re-used Roman tiles. Discolouration of the clay base by burning was quite restricted, and the large size of the hearths appears to reflect a desire for a margin of safety for embers rather than the size of the fire itself.

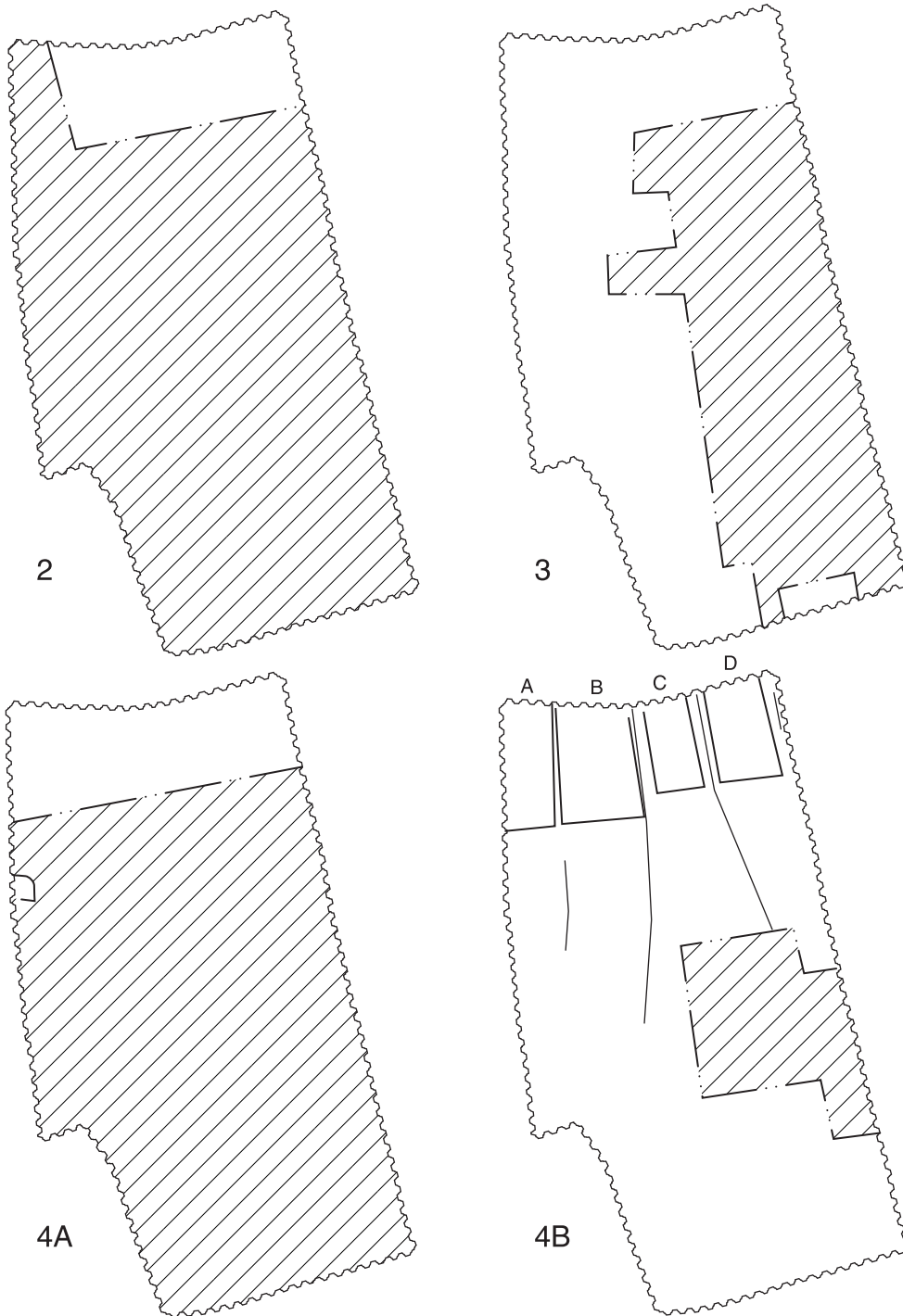
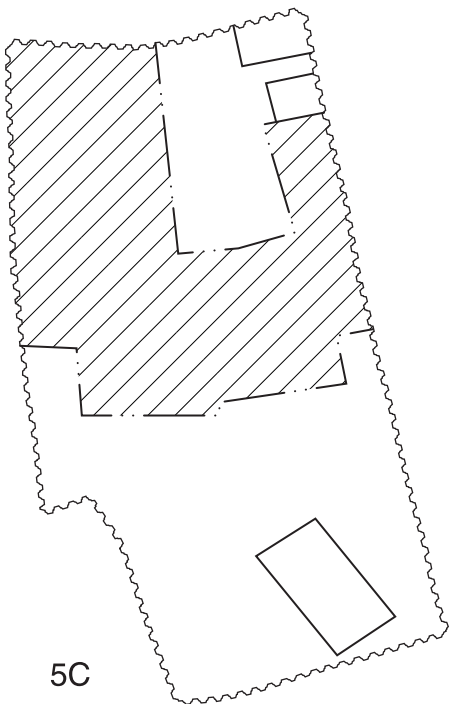
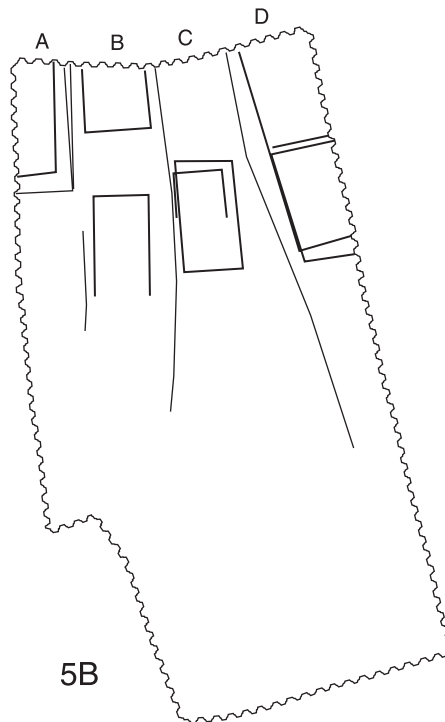
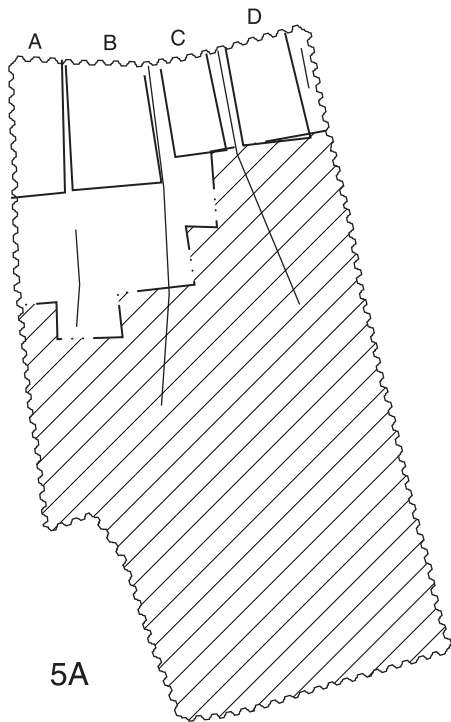



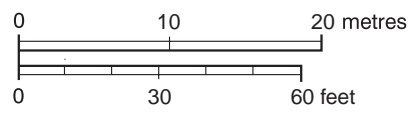
Fig.1560 (above and facing) Plans of the site at 16–22 Coppergate showing the area of deposits excavated for Periods 2–5. The variation is due either to restricted excavation or to the limited occurrence or survival of the relevant deposits. Scale 1:500.

Only one rank of buildings stood in each tenement and their lengthy backyards were not built upon but used for rubbish disposal and other ancillary functions. Although sometimes difficult to differentiate, the sequence of superimposed floor levels that

had built up by gradual accumulation within each building, and their accompanying artefacts, allow the activities within each tenement to be followed with varying degrees of assurance. Metalworking seems to have been the predominant activity, with the



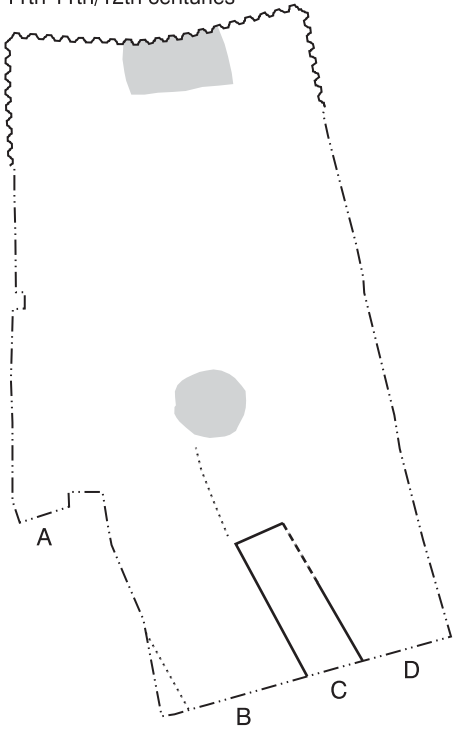
-  Shoring
-  Edge of excavation
-  Unexcavated area
-  Buildings
-  Boundaries of tenements A-D



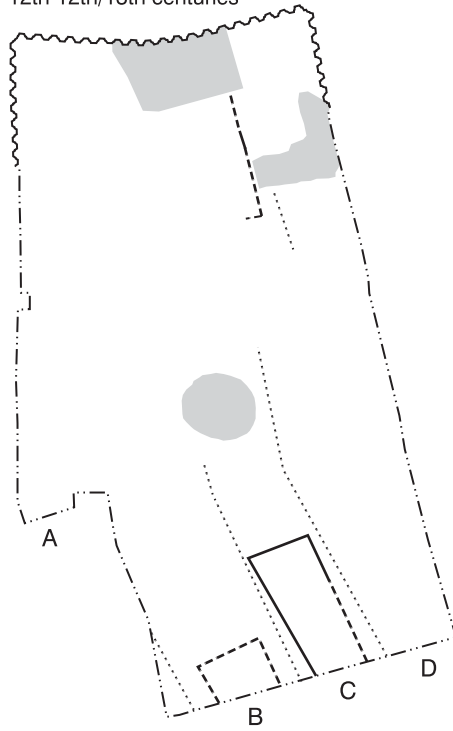
manufacture of items in iron, copper alloy, lead alloy, silver and gold. A notable feature was the quantity of crucibles recovered, with their important corroborative evidence for the range and variety of metalworking techniques (AY 17/6; AY 17/7). Occu-

pation was evidently intensive, generating organic-rich deposits that accumulated rapidly, in particular within and around the buildings, accounting for a continual rise in ground level. Deposits that were rich in organic remains extended to approximately half

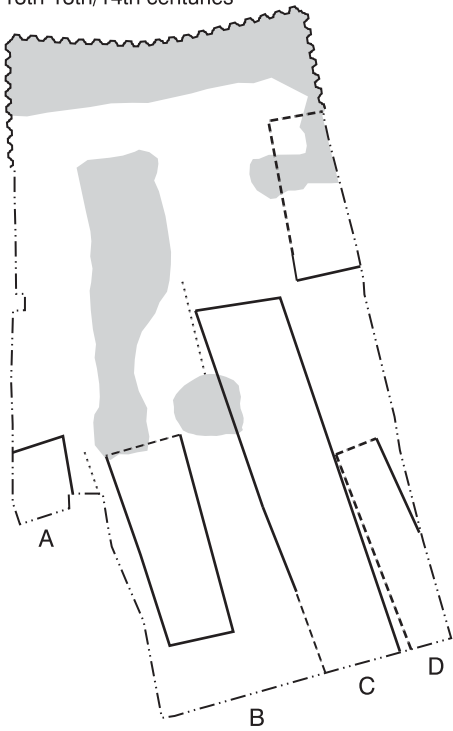
11th-11th/12th centuries



12th-12th/13th centuries



13th-13th/14th centuries



14th-14th/15th centuries

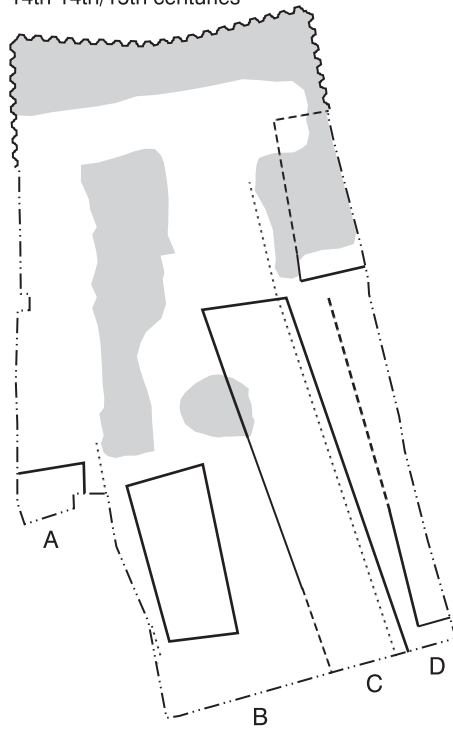
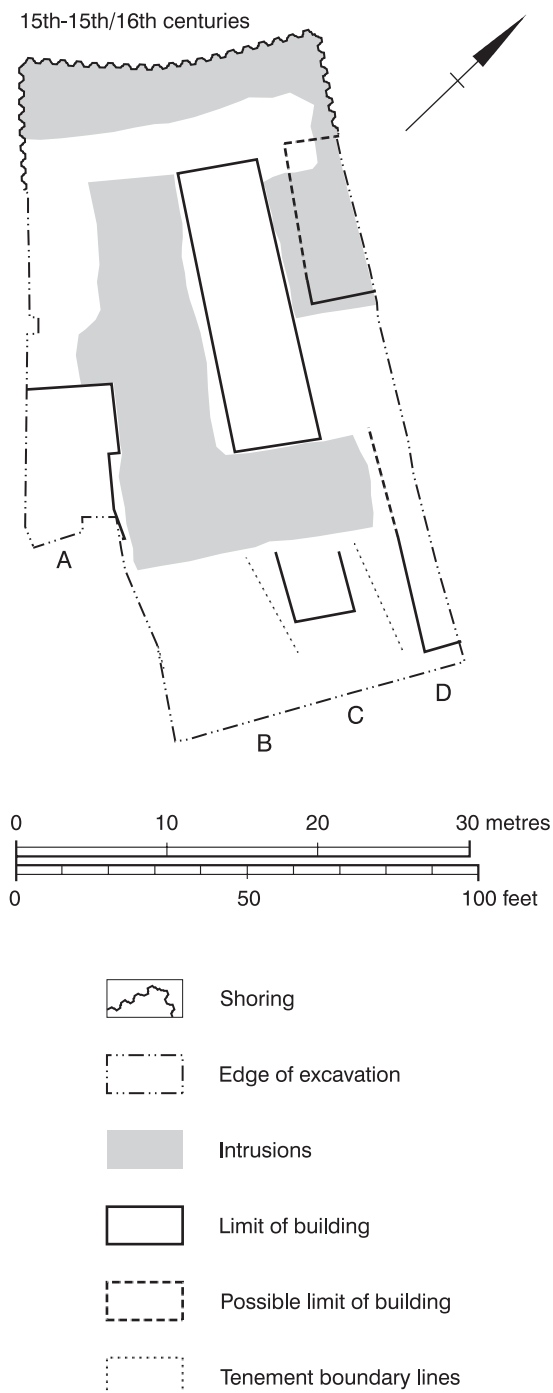


Fig.1561 (above and facing) Plans of the site at 16–22 Coppergate showing the area of deposits excavated for Period 6. Scale 1:500. The insertion of perimeter shoring after the removal of most Period 6 deposits slightly lessened the excavated area



way down the excavated area in the direction of the River Foss. From this point their organic component lessened until, in the south-easternmost quarter of the excavation furthest from the Coppergate street frontage, organic materials other than bone/antler did not survive except in the fills of pits and other cuts.

In the later 10th century the surviving remains of the latest phase of post and wattle structures at the street frontage were covered to a depth of up to 1m. This horizon, which was not traced in the yard areas behind the buildings, is interpreted as resulting in part from the upcast created by digging out the sunken semi-basement floors for the structures of Period 5B, and partly as a deliberate dump of make-up or levelling material. It thus accumulated very quickly, probably within a period of weeks or months, and contained a mixture of material of c.975 and before.

The dating of Period 5A relies on the dendrochronological analysis of timbers from the plank-built semi-basement structures of Period 5B that immediately succeeded the Period 5A horizon. These were erected at the Coppergate end of each tenement, sometimes in two closely spaced ranks (Fig.1560); as in Period 4B, organic-rich deposits were concentrated in the vicinity of these buildings, and the organic content of the deposits decreased riverwards. Also, as in the buildings of Period 4B, successive layers and lenses of silty loam usually characterised the superimposed floors. Metalworking continued during this period, although new trades were also practised.

On Tenement D sufficient overlying stratification remained undisturbed to show that the latest of the Period 5B buildings were eventually replaced by structures built at ground level. The chronology of these subsequent buildings is imprecise: they can be assigned only approximately to the mid 11th century. They and their associated stratification are designated as belonging to Period 5Cf. A series of approximately contemporary mid 11th-century levels was also identified at the rear of the site, associated with and sealing a post-built structure, the latest timber of which has been dated through dendrochronology to 1014–54. These levels, which did not preserve their organic component, are designated Period 5Cr. They were themselves covered by a series of dumps of very dark grey silty clay loam interleaved with evidence for sporadic activity, and dated to the Norman period.

Within the Anglo-Scandinavian stratification there is clear evidence from coins and pottery for the displacement of objects from the context in which they were originally deposited and their redeposition in later, often appreciably later, layers. The principal mechanism of this movement was the cutting of pits,

wells and the like, and, more particularly, the digging out of the sunken element in the Period 5B buildings, which penetrated earlier levels and redistributed the soil removed from them. In the case of the precisely dated coins it can be seen that, in the Anglo-Scandinavian levels, coins sometimes occur in contexts dated 75–100 years later than their striking (AY 18/1, 24), although their wear patterns do not suggest circulation for this length of time and there is no evidence that they were hoarded. Less precisely, but nonetheless clearly, study of the pottery from Anglo-Scandinavian levels has shown, for example, that sherds both of Roman wares and also of handmade middle Saxon type which are unlikely to have been produced after c.850–900 are found residually throughout the era, another testimony to the redistribution of earlier material (AY 16/5, fig.144).

At the Coppergate street frontage, no buildings survived later than those attributed to Period 5C, but at least 28 medieval buildings can be identified across the remainder of the four plots. A series of dendro-chronological and archaeomagnetic determinations provide a fairly precise chronology for a majority of the buildings; ceramic and numismatic data support and extend this information.

The earliest surviving building of Period 6 was a late 11th-/12th-century post and wattle structure incorporating a hearth at the rear of Tenement C (Fig.1561). It adjoined the only length of contemporaneous property boundary which could be identified. Other, probably structural, features attributed to this time include a hearth and a group of large posts at the excavated rear limit of Tenement A.

In the later 12th–12th/13th century (Fig.1561) the building at the rear of Tenement C was replaced with a series of superimposed post and wattle structures incorporating hearths/ovens. This complex, which stood within well-defined fenced property boundaries which could be traced towards the middle of the site, is tentatively interpreted as a bakery or malting house. The end of a post and wattle structure on the adjacent Tenement B was also recorded, as was a further set of possibly structural features, including hearths, at the rear limit of excavation on Tenement A. A very fragmentary possible structure, represented by a post alignment, was noted towards the front end of Tenement C.

The tenement plots were occupied more extensively in the 13th–13th/14th centuries, although the only evidence for buildings on Tenement A was, once more, from its rear, where a series of post-holes and sill walls defined a structure (Fig.1561). Towards the rear of Tenement B a building was erected which had its principal uprights supported by padstones; alongside it a cobbled surface providing an access way replaced and extended over the fence line that had earlier separated Tenement B from Tenement C. A relatively long building, constructed on pile-cluster foundations, now stood on Tenement C; it is unclear whether it extended to the riverside limit of excavation, or whether a separate structure occupied that part of the tenement plot. Meanwhile, at the riverward end of Tenement D, there is some evidence for a structure represented most tangibly by a line of posts to the north-east of a series of deposits which have the character of internal floor deposits. It is the combination of these two sets of features which define the structure shown on Fig.1561. Towards the Coppergate end of the plot a stone-built structure with substantial horizontal timber foundations in parts may also have been erected within this period.

A very similar layout of buildings was maintained into the 14th–14th/15th centuries, although most individual structures were rebuilt during this time (Fig.1561). A new building represented by post-holes now occupied the rear of Tenement A, and the Tenement B padstone building was also rebuilt. The long building on Tenement C continued in use initially but was then demolished; an alley surface was laid down between it and the building on Tenement D. Later, a ditch, redefining the Tenement C-D property boundary, was cut within the limits of the earlier long Tenement C building. Evidence for a contemporary building over the rear of Tenement D was now unequivocal, with the construction of a rubble sill wall. The stone building nearer the frontage may have remained in use.

The latest coherent archaeological evidence is dated to the 15th–15th/16th centuries. A much more substantial, stone-built structure was now erected in the centre/rear of Tenement A; its full extent is not known. More recent disturbance has removed contemporary stratification from most of Tenement B, and there was no trace of any building within the undisturbed portion at the riverward end of this property. A new, relatively long building represented

by rubble sill walls was built at the centre/front of Tenement C, and there were also robbed out traces of another, smaller structure nearer to the river, with a ditch defining the property boundary on one side and a wall on the other. The earlier Tenement D buildings continued in use at this time.

Although the number and size of these buildings varied throughout the later medieval and earlier post-medieval centuries, their intermittent presence sealed the deposits below and temporarily protected them from damage caused by intrusive pits. Furthermore, the introduction both of levelling deposits before the erection of some of the buildings, and of dump deposits which indicate the disposal of a quantity of rubbish in a single event, served to raise the ground level and offer some protective cloak or masking against erosion and disturbance. Conversely, changes in building techniques and materials, notably the increasing use of stone and then brick wall footings, and tiled roofs, contributed to a gradual diminution in the amount of organic debris being generated and deposited on the site during the later medieval period. From the 13th–13th/14th century onwards, access alleyways rather than fence lines sometimes marked the boundaries of tenement plots. Concomitantly, these stone surfaces also sealed underlying deposits, temporarily protecting them from intrusion and degradation. Nonetheless, the digging of wells, cess-pits and other features throughout the medieval and post-medieval centuries did bring some earlier material to the surface.

Objects of leather, including both offcut debris and finished products which had been lost or discarded, were well preserved and relatively common discoveries. This was thanks to the anoxic soil conditions which were prevalent in deposits of the 10th–14th centuries, as well as occurring more locally within earlier and later strata. The leather objects were found widely spread across the site, principally outside the houses and workshops, within deposits which built up by gradual accumulation or which were deliberately dumped in the backyards, or in the many pits which were dug there.

The most notable concentration from the pre-Norman period was a collection of some 670 offcuts, debris from hide preparation and manufacturing, found towards the centre of the site in a dump deposit which is dated c.950–75. An early 15th-century

cask-lined well at the riverward edge of the excavation [context 10908 = 15333] also contained a concentration of leather within its backfill layers, although in this case they seem to represent domestic rubbish. The most intriguing feature to contain unusually large quantities of leather was a substantial late 14th-century pit [4812 = 10480 = 10549]. This was a remarkably big, relatively narrow and shallow cut with a flat base, approximately rectangular in shape, measuring 14.6 × 3.0 × 0.75m. Its sides sloped steeply; a few posts set in the base at the edge may possibly indicate that the sides of the pit were originally revetted. This feature had been backfilled with a series of layers which consisted mainly of organic-rich, silty clay loams. Their configuration suggests that they had been deposited over a relatively short period, and that they represent the rapid infilling of the cut. The approximately 7,000 leather items from the feature, including 6,700 flesh surface shavings and 225 primary offcuts, were distributed throughout these backfill layers from the very top downwards, and so appear not to be simply a residue from the feature's use. Their homogeneity and quantity does suggest, however, that they derive from a single, nearby source, and they may indeed indicate that leatherworking processes took place in this part of the site (see p.3230).

The Watching Brief

By N.F. Pearson

The Coppergate watching brief embraced the whole of the 2.02ha area of the Coppergate Shopping Centre redevelopment from the Castlegate frontage in the west to Piccadilly in the east. Observations were also made in the areas of 16–22 Coppergate not explored during the main excavation campaign, that is, strips to the west, east and south of the open area (Fig.1559, 2). A watch was also kept at 14 Coppergate, where the rear of the property was redeveloped in 1984 only after the construction of the rest of the shopping centre had been completed. Recording also took place to the rear of the former Market Tavern, 24 Coppergate, where a medieval building on the Coppergate street frontage was refurbished as part of the development.

Observation and recording was carried out in often adverse conditions during ground preparation and building works undertaken by Wimpey Construction plc. The ground preparation works were

undertaken largely by machine, under archaeological supervision. Where significant archaeological deposits were disturbed, work was suspended to allow recording, or, where appropriate, small-scale excavation. To facilitate recording the redevelopment area was split into discrete zones (Fig.1559).

The principal Roman features encountered included the fragmentary remains of a largely robbed-out stone building recorded between the Coppergate excavation and 14 Coppergate (Zone 1). This has tentatively been interpreted as a warehouse, on the basis of its proximity to the River Foss. In the helmet pit area (Zone 3), four pits and a linear feature were excavated. In the Fossbank area (Zone 6), a red gritstone wall was observed briefly during machine clearance. It was well constructed with individual blocks measuring 0.8 × 0.6 × 0.4m. No other associated material was seen and although it was clearly structural in nature its north-east/south-west alignment precludes it from being interpreted as a river wall. The only feature from the site which may be attributable to the Anglian period is the pit containing the Coppergate helmet.

From the Anglo-Scandinavian period, the west wall of Structure 5/1 (Period 5B), which had already been examined during the main excavation, was uncovered in the area between the Coppergate excavation and 14 Coppergate (Zone 1). Associated tenement boundaries and pits were also recorded. Between the Coppergate excavation and the Market Tavern public house (Zone 2) further well-preserved timber buildings and associated features, attributed to Periods 4B and 5B, were recorded.

The recorded medieval features included structural remains, fence lines, riverside reclamation, the outer defences of York castle, and parts of the cemetery of All Saints, Pavement (Fig.1559, 5). From the post-medieval and early modern periods the most significant discoveries were part of the cemetery of St Mary, Castlegate (Fig.1559, 4), traces of the canalisation of the River Foss, and part of the footings for the Victorian prison in the Castle Yard.

Excavation at 22 Piccadilly

By R. Finlayson

When the site of the ABC Cinema at 22 Piccadilly was to be developed an excavation was carried out

to examine, in four trenches, some of the material which would be destroyed by the new development (Fig.1559, 3). The site lay to the east of the tenements excavated on Coppergate, in an area between them and the River Foss. From these limited areas of excavation some interpretation of the changes in topography and depositional regimes relating to the River Foss could be made. Trench 4 was within the course of the River Foss prior to its canalisation in or after 1793. A steeply sloping bank of natural sandy clay in Trench 3 is likely to have been a part of the river bank. Trenches 1 and 2 were located to the west of this bank and demonstrated intensive occupation of the area from the 1st century to the 16th century; later deposits had been truncated by the foundation of the ABC Cinema (Table 349). Many of the deposits were dumps and build-up material containing domestic and industrial waste which provided important information about craft activities, the utilisation of resources, diet and living conditions.

Roman activity comprised what was probably a drainage ditch, aligned at right angles to the modern day River Foss. The cut silted up and filled with material c. AD 280 (AY 16/8). During the 9th–12th centuries there were a series of attempts to make the area close to the Foss usable. Periods when the area was in use and timber features were built were interspersed with periods when activity declined. Flood deposition, the decay of vegetation, and the dumping of domestic and industrial waste material all resulted in an accumulation of deposits. Particular evidence was found of a glass industry, small pelt preparation, horn and antler working, and butchery on a commercial as well as a domestic scale.

The first timber feature in Trench 1 was a fence parallel to the present course of the River Foss. This fence was no longer in use when a dump and build up of organic material covered the whole area. Environmental evidence suggests the area was wet grassland, and associated pottery is consonant with a 9th-century date. A further series of fences were constructed with two elements aligned parallel to the River Foss, and an alignment intersecting them at right angles. Pottery in associated dump and build-up deposits also dates from the first half of the 9th century.

In Trench 3 there were indications of an attempt at revetment to try to prevent soils slumping towards

Table 349 Summary of archaeological development at 22 Piccadilly

Period	Date	Description
Natural		Sandy clay
1	Roman	Riverine deposition, drainage ditch at right angles to the Foss, silting of ditch and dumping
2	9th century	Small pit and fill, riverine deposition, fence parallel to the Foss, dump and build-up material, two fence lines at right angles to each other, peaty and silty clay build up and dump
3	10th century	Riverine deposition, silty clay, organic build up and dump, timber revetment of river bank, silty clay, organic build up and dump
4.1	975–early/mid 11th century	U-shaped timber revetment and wattle fence on river bank, silty clay and organic build up and dump, fence
4.2	later 11th century	Renewal of intersecting fences, organic build up and dumped large sawn timbers, timber revetment of river bank, silty clay build up and dump
4.3	mid–late 12th century	Riverine deposition, compact peat build up, small pit cuts, river bank timber revetment, silty clay build up and dump, clay levelling on river bank
5.1	13th century	Pit cut with organic fill, drainage channel, possible soak-away, peaty build up, levelling
5.2	early–mid 14th century	Clay and peaty build up and dump, rubbish pits
6	15th–early 16th century	Possible drainage cut, organic build up and dump, pit cut, cask-lined well
7	16th century–modern	Levelling, concrete

the sloping bank in the second half of the 10th century. A second phase of constructional activity in Trench 3 is represented by wattle which broadly followed the contour of the land, forming an open U shape. A similar U-shaped construction was found on the south-west bank of the River Ouse at North Street (YAT 1993.1; Fig.1735, 20, p.3420), also dated to the 11th century.

In Trench 2 timber fences and revetments indicate that some land management and manipulation of the course of the River Foss is likely to have taken place during the late 10th–early 11th century. There was evidence for the natural accumulation of material, for a deliberate raising of the ground surface, for fences and for possible revetments, but there was evidently continued periodic waterlogging of the area. Dumped material included concentrations of smashed crucibles with glass-making waste (AY 17/14), a number of glass beads (*ibid.*) and antler waste (AY 17/12).

A broadly similar series of activities and structures continued into the later 11th century. Glass

beads, numerous worked goat horncores, antler waste, two bone skates, an increased amount of crucible waste, and a dump of large sawn timbers were recovered from this material and reflect the continuation and range of craft activity (AY 17/12 and AY 17/14). A series of revetment timbers found closer to the river in Trench 3, and a fence line in Trench 1, both dated to the same period.

In the 12th century the area continued to be used for the disposal of rubbish although glass industry waste ceases to appear. However, the soil now included a higher proportion of inorganic material, including demolition debris, although peaty deposits also continued to accumulate. The area continued to be used for the disposal of domestic and industrial waste throughout the medieval period, with some evidence for drainage in the form of cuts and a large soakaway. The latest significant feature found on the site was a cask-lined well dating to the 15th or 16th century (9190–2, AY 17/13). Later deposits had been truncated by the foundations of the ABC Cinema.

Excavations at Bedern (Fig.1562)

By R.A. Hall

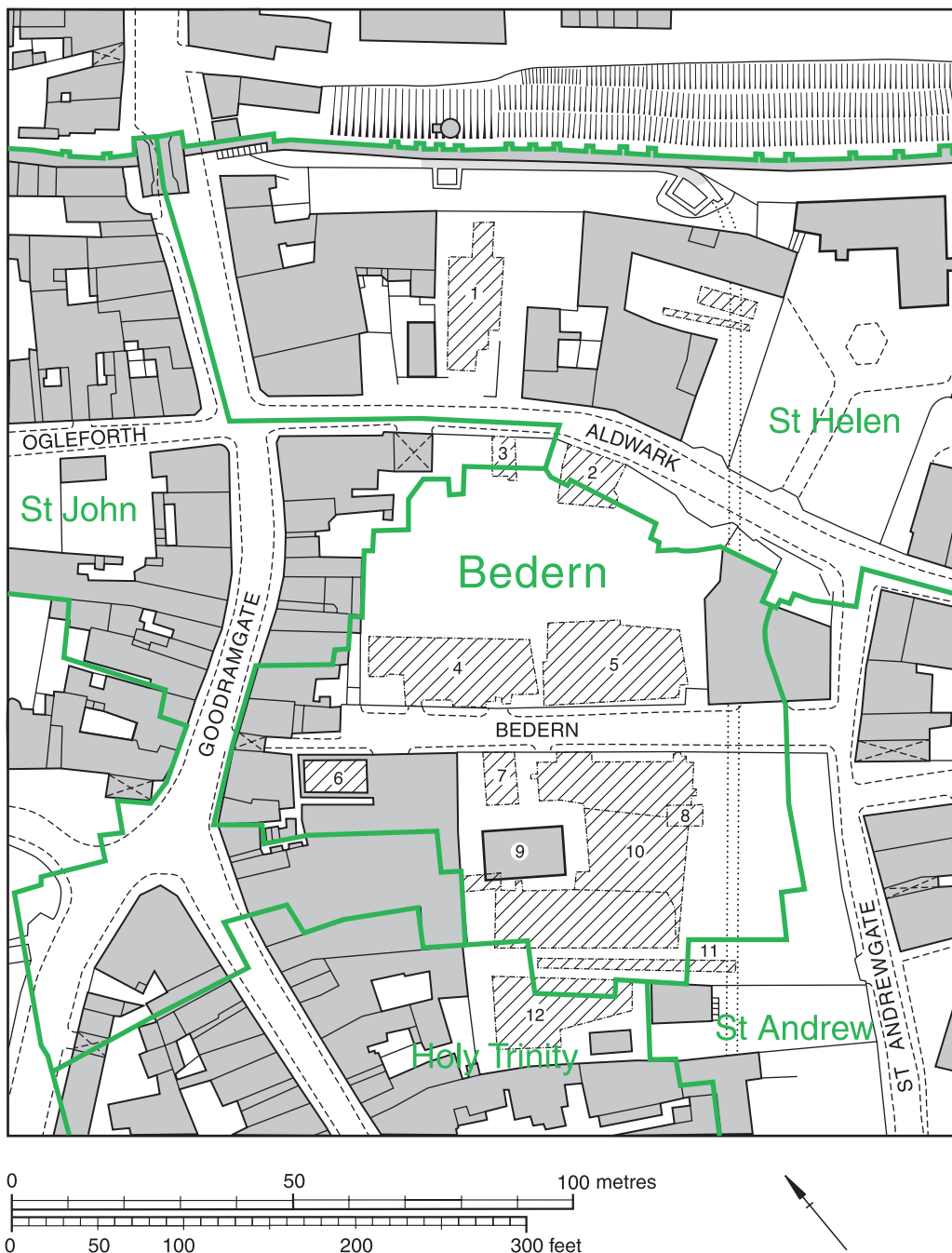


Fig.1562 Plan showing the location of excavations, and building recording in the Bedern area. The outline of the parish boundaries (in green) defining the precinct of the College of the Vicars Choral is based on the 1852 Ordnance Survey map. (1) 1–5 Aldwick; (2) 2 Aldwick; (3) Cellar, 1976.14.I; (4) Bedern north-east, 1978–9.14.II; (5) Bedern north-east, 1979–80.14.IV; (6) Bedern Chapel, 1980.20.I/II; (7) Cellar, 1976.13.IV; (8) Cellar, 1976.13.VI; (9) Bedern Hall, 1980.13.XV; (10) Bedern south-west, 1976–9.13.X (11) Bedern Trench III/IV (long trench), 1973–5.13.III/IV; (12) Bedern Foundry, 1973.13.I/II. (Reproduced from Ordnance Survey mapping on behalf of The Controller of Her Majesty's Stationery Office, © Crown copyright. Licence number 100012225.) Scale 1:1250

The College of the Vicars Choral at Bedern

Bedern, an area of notorious slums in the 19th century, lies c.105m south-east of York Minster. The name survived into the 1970s as that of a minor street, formerly a cul-de-sac, approached through a medieval gatehouse fronting on to Goodramgate, and giving access to the obvious remains of Bedern Chapel and the considerably less obvious traces of a medieval stone and timber hall. These three structures were the only survivals from the College of the Vicars Choral of York Minster. The college was established in 1252. The office of Vicar Choral derived from the obligation upon absentee canons to appoint personal deputies (vicars) to take their place in the choir of York Minster. Throughout the 14th century the college housed 36 vicars but it began to decline from the end of the 15th century. In 1574 the vicars ceased to dine in common, although the college was not formally dissolved until 1936.

An important documentary archive provides evidence for diverse aspects of the college, both as an institution and as a group of men (with, after the Reformation, wives and families) living a communal life (Harrison 1952; Tringham 1993). However, much remained undocumented about the college's topographical and structural development, and about the daily lives of the vicars. In 1968 Lord Esher recommended that the existing light industrial usage of the area be replaced by housing. York City Council subsequently purchased land in Bedern and promulgated redevelopment of the vicinity. It was this which prompted the initiation by York Archaeological Trust of a campaign of excavations which eventually lasted from 1973 to 1980.

The total depth of stratification hereabouts, and the nature of Roman-early Norman occupation and activity, was tested in excavations of a long trench (see below), and beneath some modern cellars (AY 3/3; AY 14/5). The upper levels of the long trench contained a sequence of deposits and structures which can often be firmly linked either with those in the area to the north-east occupied by the Vicars Choral or those to the south-west in the area occupied by a foundry. Clay-loam layers dating to the 11th and 12th century were seen only in the long trench, however. Here too was evidence for the robbing of the Roman fortress wall in the 12th century, and for a series of pits, clay floors and other features indicating 12th-century occupation (Period 1A). See Table 350.

The largest portion of available resources and effort was devoted to the precinct of the College of Vicars Choral, as defined on the 1852 Ordnance Survey map of York. In total, an area of 2,500m² was investigated, representing about 30% of the estimated college precinct at its maximum extent and including a large part of its central core. Various parts of the site were designated different area codes. These are used in the catalogue and may be summarised as follows:

Bedern long trench (1973–5.13.III/IV; SE 60545207)
Bedern Foundry (1973–6.13.I/II; SE 60515208)
Bedern south-west (1976–9.13.X; SE 60535209)
Bedern north-east (1978–9.14.II; SE 60535213)
Bedern north-east (1979–80.14.IV; SE 60555212)

Modern deposits were usually machined off; excavation by hand then continued to a fairly uniform depth of 1.5m below the modern ground surface. This self-imposed limit was designed to allow the recording of all deposits which would be destroyed by the redevelopment campaign. Fortunately, this depth of strata encompassed all archaeological remains from the 13th century onwards and thus included the entire span of the archaeological record for the College of the Vicars Choral. Virtually all material was recovered by hand, the excavation pre-dating the introduction of routine riddling/sieving on York sites.

During the first half of the 13th century it appears that Bedern was subject to light agricultural usage, with a series of drainage gullies and ditches representing property boundaries running back from Goodramgate, and some slight garden structures (Period 1). In the mid 13th century this land was acquired by the college, which erected its first buildings on either side of an open courtyard, running back from Goodramgate, which was to become Bedern Close. On the north-east side of the close a large building — the great hall — was constructed; on the south-west side a stone building and a smaller timber-framed structure were built (Period 2). As the college expanded, the vicars required more accommodation. A second hall was constructed along the south-west side of the close, although this appears to have been short-lived, and a smaller structure was built behind it (Period 3). By the late 13th century (Period 4) there were further buildings at the south-west end of Bedern. In the early 14th century the chapel was constructed and there were major changes to the buildings on the south-west side of the close

Table 350 Summary of phasing at sites within the College of Vicars Choral at Bedern (including Bedern long trench, Bedern south-west and Bedern north-east)

Period	Date
Period 0	Roman, Anglian, Anglo-Scandinavian
Period 1A	11th–12th century (applies only to the long trench)
Period 1	early–mid 13th century
Period 2	mid 13th century
Period 3	mid–late 13th century
Period 4	late 13th century
Period 5	early 14th century
Period 6	mid 14th century
Period 7	mid 14th–early 15th century
Period 8	mid 15th–early 17th century
Period 9	mid 17th century onwards

(Period 5). In the middle of the 14th century the college reached the peak of its prosperity. An early timber-framed common hall was established, the great hall was rebuilt, apparently to provide separate residences, and new individual residences were also built on the south-west side of the close (Period 6). There was major building activity throughout the precinct from the mid 14th to the early 15th century (Period 7), creating a second courtyard to the south-west, and coinciding with attempts to revive the corporate life of the college. The great hall was now rebuilt in stone, and a new stone-built communal hall was constructed south-west of the close, with adjacent service accommodation, kitchen block, archive room and college gardens. The chapel was enlarged and a number of new houses were built. A bridge may also have been built across Goodramgate at this time. A stone wall now marked the limit of the precinct to the south-east, whilst the south-western development of the college was constrained by the continued presence of a foundry. From the mid 15th to the early 17th century (Period 8) there was less new building work although the existing structures continued to be modified as the vicars increasingly lived away and sub-let their houses to lay tenants. During the post-medieval period Bedern became a notorious slum (Period 9).

Analysis of the record of complex floor deposits has shown that there was considerable reworking of many contexts, and much disturbance of earlier lay-

ers by subsequent activities. Nonetheless, the development of the buildings — their sub-divisions, rebuildings and renovations — can be clearly traced. Furthermore, they can normally be dated to within 50 years, and sometimes can be equated with building campaigns precisely dated on the basis of documentary evidence. Medieval buildings survived, albeit in increasingly remodelled forms, until the early 17th century. By the mid 17th century, however, many of the medieval buildings had been demolished and replaced.

Some buildings within the college precinct, such as the chapel, continued in collegiate use into the post-medieval period. As the number of vicars in the college shrank, and as the remaining vicars increasingly lived outside the precinct, more buildings in Bedern were put to secular uses. This post-medieval/early modern stratification was often recorded to different standards from those employed when dealing with the medieval strata, depending upon the nature, integrity and perceived value of the deposits.

Bedern Foundry

An area of medieval and post-medieval industrial activity adjacent to the college precinct was examined in detail (SE 60515208; Fig.1562, 12), concentrating on a former narrow lane running off Goodramgate. From the mid–late 13th century to the late 15th–early 16th century the site was occupied by a complex of workshops, which were frequently repaired, remodelled or rebuilt. Many of them were associated with walls, pits and hearths. This occupation and activity was separately phased, and was designated Periods 1–5 (Table 351). From Period 2, the late 13th–early 14th century onwards, deposits of clay mould fragments and other casting debris were sometimes found. These indicate that founding was carried out, and that the foundry's main products were cauldrons and other domestic vessels. Structures with substantial stone walls were erected c.1300 and remained in use throughout the 14th century (Period 3). In c.1400 all the buildings in the foundry complex were rebuilt and the alleyway was both extended and linked, via a 90° continuation, to the property of the adjacent College of the Vicars Choral (Period 4). In the later 15th–early 16th century (Period 5) there was another phase of building development; the earlier ground plan was, however, retained. During Period 6 (mid 16th–mid 17th century) metal-

Table 351 Summary of phasing at the Bedern Foundry site

Period	Date
Period 0	late 12th–early 13th century
Period 1	mid–late 13th century
Period 2	late 13th–early 14th century
Period 3	14th century
Phase 1	early 14th century
Phase 2	early–mid 14th century
Phases 3–5	mid–late 14th century
Phase 6	late 14th century
Period 4	15th century
Phases 1–2	early 15th century
Phases 3–4	early–mid 15th century
Phases 5–9	mid–late 15th century
Period 5	late 15th–early 16th century
Phase 1	late 15th century
Phases 2–4	late 15th–early 16th century
Period 6	mid 16th–mid 17th century
Period 7	mid 17th–20th century

working furnaces and hearths were replaced by a series of ovens, and the deposition of foundry waste ceased. Some parts of the complex apparently became derelict, but the remainder functioned as a bakery, a usage attested in the name Baker’s Lane. From the mid 17th to the 20th century (Period 7) light industrial usage dominated the area.

Bedern Foundry has been published in AY 10/3. Roman occupation in the Bedern area has been discussed in AY 3/3. The coins have been published in AY 18/1; the pottery will be published in AY 16/9. The structural report for the site of the College of Vicars Choral has been published in AY 10/5. The considerable number of re-used architectural fragments recovered from the excavations have been published in AY 10/4. Historical research on the tenemental history of the Bedern and Aldwark area will be published in AY 20.

The Nature of the Assemblages

Since the recovery of large amounts of leather from the excavations at 16–22 Coppergate it has been generally accepted that leatherworking was under-

taken there during the Anglo-Scandinavian and medieval periods. In the course of the research undertaken to produce this fascicule considerable effort has been made to try to establish the nature of the activities represented by this leather.

To this end the leather from each context group within the individual chronological phases has been studied. Whilst some deposits clearly are the result of the disposal of domestic rubbish, the quantities of waste leather found indicate that others derive from the disposal of manufacturing debris. The types, features and the condition of the leather objects found and the types of leatherworking waste recovered have been used to assess the character of the assemblages. The proportion of complete or near complete items and different components represented, the extent of wear and repair, along with the presence of items deliberately cut up to salvage re-usable leather, have been used to categorise domestic rubbish, cobbling debris or the debris from the refurbishment of other items. The nature and relative quantities of the different waste leather offcuts found have been used to suggest the possible types of leatherworking that were undertaken. Waste leather cannot be independently dated and dates have been attributed to groups of waste only when associated with datable shoe types and/or accompanying pottery. The waste leather recovered and how it has been categorised for the purposes of this study are fully described in the Craft and Industry section (pp.3245–6).

The original location of the leatherworking activities represented by the leather recovered from the site is problematic. Much of the leather derives from large deposits of build-up or dump material, or from pits. Dump material is likely to have been deliberately deposited in one episode, usually to make up a level ground surface or raise the ground surface; it is likely to have been brought from elsewhere. Build-up material accumulated gradually; the content of pits may have accumulated slowly or may be the result of a single episode of back-filling but both are more likely to contain local rather than dumped material. A small amount of leather was recovered from occupation floors and this, perhaps, is the best evidence for activities being undertaken on site. Though much of the material may have been brought from elsewhere in the city to raise the ground level, it is unlikely that it would have been carted very far and probably derives from close by.

The excavations at 16–22 Coppergate recovered 3,886 leather finds from contexts of Anglo-Scandinavian or medieval date. A further 163 were found during the watching brief and 263 came from excavations at the ABC Cinema site at 22 Piccadilly, adjacent to Coppergate. The material from these excavations will be considered in turn by period. Within this basic chronological framework the leather from Coppergate is described according to the tenement plot in which it was found. The individual shoe styles, sheaths, scabbards and other categories of object mentioned are fully described in the Everyday Life section of this report.

16–22 Coppergate

Anglo-Scandinavian Coppergate

Period 3: mid 9th–late 9th/early 10th century

Excavation was limited to two strips on the western and southern site boundaries. The tenement boundaries were not laid out at this time and tenement designations are given simply to aid geographical location of the finds. Leather was recovered from all areas of the excavation, the majority from the area approximating to Tenements B and C, occurring in small quantities in pit fills, build-up and dump deposits. It comprised a small amount of leather-working waste and manufactured items, primarily shoes and knife sheaths. The latter categories, being heavily worn, are likely to be domestic rubbish.

Period 4A: late 9th/early 10th century–c.930/5

Deposits of this date were only identified in a strip of land along the western site boundary. Leather, chiefly leatherworking waste, was recovered from the areas of what was to become all four tenements. The majority of the leather came from build-up and dump deposits from the area of Tenement D. The proportion of scrap leather (that is, small featureless fragments with all the edges torn, broken from manufactured items) was notable, possibly indicating some reworking of the deposits in this area.

Period 4B: c.930/5–c.975

During this period post and wattle buildings were erected at the street frontage and were subsequently repaired and reconstructed several times.

Tenement A

The majority of the leather from Tenement A came from build-up and dump contexts in the immediate backyard area and represents cobbling and manufacturing waste. A shoe (Style 4a 15449) and seven pieces of shoe-making waste came from occupation floor contexts within the wattle building at the street frontage.

Tenement B

The majority of leather finds of all types derives from build-up and dump deposits in the backyard area behind the wattle building and in pits towards the middle of the site. A small amount of primary waste and much secondary and tertiary waste from pattern cutting and trimming during the manufacture of shoes and other leather items (described pp.3245–6) were recovered. Of the shoe parts found, 12% were cut down, suggesting the presence of cobbling waste in the assemblage. Most notably, a mass of flesh shavings were found (sf10596) in build-up context 28092, indicating a dump of debris from the currying process (p.3254).

A small though significant amount of material came from occupation floors within the building itself. These included 21 shoe components, half of which could be categorised by type (Styles 2, 3 and 4 were represented), a strap (15672) and a relatively large quantity of waste leather, chiefly secondary waste (128 pieces) from pattern cutting, and scrap. The shoe parts were worn, and a single component had been cut down. This appears to be the trampled debris from a leather workshop.

Evidence for shoe-making, cobbling and currying was found in this tenement. The shoe components recovered were relatively well preserved (41% of the 155 shoe parts recovered could be identified to a particular style); only three finds showed signs of repair. Only two shoes, both Style 2 (15360 and 15364), were found to be complete, suggesting that the disposal of domestic rubbish did not represent a large proportion of the total assemblage.

Tenement C

The vast majority of the leather finds derive from dump deposits in the immediate backyard of the front building with a smaller quantity from in and around the building itself, mainly from occupation

Table 352 Numbers of objects by functional type within each tenement in Period 4B

Please note that in this and subsequent tables figures for manufactured items (shoe parts, scabbards, sheaths, straps etc.) are numbers of small finds and may represent several individual components, whilst waste and scrap figures represent individual counts.

	Tenement A	Tenement B	Tenement C	Tenement D
Shoe parts	33	155	157	75
Scabbards	1	7	16	5
Sheaths	1	7	13	4
Straps	3	4	4	1
Other manufactured items	5	15	16	9
Primary waste	24	67	46	29
Secondary waste	111	1043	537	137
Tertiary waste	87	1280	516	155
Other waste	4	599	107	33
Scrap	117	729	713	230

floors and scoops. The evidence showed a constant though small presence of leather throughout the succession of floors within the wattle buildings spanning the entire 40 year period.

Together the occupation floors produced a small assemblage of seven shoe parts, a sheath (15636), a scabbard (15578), shoe-making waste (37 secondary, 29 tertiary, 25 other) and scrap. The amount of scrap recovered (106 pieces) together with the more fragmentary nature of the shoe parts (only one could be categorised, to Style 3b4) suggests that the deposits may have been more disturbed or reworked than those of Tenement B.

Tenement D

This tenement was not fully excavated, which may in part explain the smaller size of the total assemblage compared to Tenements B and C (see Table 352). The majority of the leather came from dumps in the immediate backyard. A build-up or dump deposit (context 9450) contained 129 offcuts (18 primary, 23 secondary, 88 tertiary) and other items, apparently a dump of workshop debris: three shoes (complete Style 3b2 15402; Style 7b1 15463 and one unclassifiable 15527), a strap (15700) and 24 items of scrap. The highest concentration of leather occurred immediately behind the building, petering out to-

ward the rear of the site. Of the shoe parts recovered (75), three complete shoes were present (Style 2 15361; Style 3b2 15402; Style 3b3 15415), five had been cut down, and the majority were heavily worn.

Occupation floors within the building produced a small assemblage comprising a complete sheath (15659), a cut-down scabbard (15544), a disc (15782), five shoe parts (two cut down), a cut-down item, a small amount of leatherworking waste (32 pieces) and a relatively large quantity of scrap (108 pieces, sf16749 from one context 25934). This also appears to be trampled workshop debris rather than domestic rubbish.

Period 5A: c.975

This period dated to c.975 is transitional between the 4B occupation and 5B buildings. Several large pits were cut into the abandoned 4B buildings. Subsequent deposits consist principally of build up over the post and wattle buildings and material upcast by construction of the semi-basements for the 5B structures. As a result the Period 5A finds consist of material from the previous periods, chiefly Period 4B. Leather was recovered from all four tenements deriving from pit fills, build-up deposits and dumps in the area of the previous buildings and the immediate backyards.

Table 353 Numbers of objects by functional type within each tenement in Period 5A

	Tenement A	Tenement B	Tenement C	Tenement D
Shoe parts	9	38	9	42
Scabbards	–	3	–	7
Sheaths	–	–	–	4
Straps	1	1	–	2
Other manufactured items	1	4	3	5
Primary waste	1	25	4	4
Secondary waste	29	263	22	107
Tertiary waste	22	282	20	26
Other waste	3	40	1	9
Scrap	31	280	36	51

Period 5B: c.975–early/mid 11th century

This is the second major building phase. A number of contemporary and successive plank-built structures with semi-basement features were built on each tenement.

Tenement A

Two successive structures, 5/1 and 5/2, occupied Tenement A during this period. A small amount of leather was found principally in the front half of the site from backfills in the semi-basement of Structure 5/1 and backfills and floors in 5/2. Shoe components from backfills in the sunken-floored Building 5/1 appear to be intrusive, dating typologically to the 13th century and suggesting a substantial amount of disturbance. A shoe of Style 2 (15370), a clump sole repair piece (15539) and a single fragment of primary waste (sf18731) were found in occupation floor deposits (contexts 15192 and 15494).

Tenement B

Evidence for two probably contemporaneous structures, 5/3 at the street frontage and 5/4 immediately behind it, was found in Tenement B. The majority of the leather was found in build-up deposits in the immediate backyard area of Building 5/4. Leatherworking waste was well represented.

Occupation floor surfaces of the front building, 5/3, produced a cut-down sheath (15662), worn shoe parts, two lozenge-shaped panels (15756 and 15761), a very small quantity of leatherworking waste (four

primary, four secondary, one tertiary) and some scrap. Occupation floors in 5/4 produced a small assemblage of leather pattern-cutting waste (one primary, 42 secondary, 67 tertiary) and scrap (200 fragments from context 8110), suggesting the trample of workshop debris.

Tenement C

No surviving evidence for a street front structure was found but two structures were excavated 5–7m back from the street frontage, 5/5 with a planked floor and 5/6 which was interpreted as a workshop. The majority of the leather came from build-up and dump deposits around and immediately behind the two successive buildings, with some from pits in the back yard. A large amount of waste leather indicative of manufacture was recovered. A single backfill (context 1473) from the end of the occupation of Structure 5/6 produced 970 offcuts (118 primary, 130 secondary, 722 tertiary) and 434 scrap fragments, as well as other manufactured items (two cut-down scabbards 15550 and 15586; a torn strap 15697; shoes of Style 3 15390, 15406, 15427; and unclassifiable shoe 15538).

It is tempting to interpret the leather from this tenement as coming from a leatherworker operating out of workshop 5/6. Half of the waste derived from a single backfill context (1473) deposited after the occupation had ended, however, and while the material may well be the clearance of workshop waste originating on site, it could have been dumped there subsequently.

Table 354 Numbers of objects by functional type within each tenement in Period 5B

	Tenement A	Tenement B	Tenement C	Tenement D
Shoe parts	15	29	164	67
Scabbards	–	3	14	1
Sheaths	–	2	6	5
Straps	–	–	4	2
Other manufactured items	–	6	9	10
Primary waste	3	14	180	29
Secondary waste	12	402	532	188
Tertiary waste	17	564	1125	280
Other waste	4	15	77	32
Scrap	21	967	846	336

A relatively large group of leather was disposed of in a series of pits in Tenement C. This included two cut-down scabbards (15588 and 15598) and a cut-down sheath (15645) along with shoes (two cut down 15391, 15536), eight of which could be categorised (one Style 2, two Style 3b1, one Style 3b4, one Style 3b5, two Style 3, one Style 4a3) and a small quantity of waste leather (six primary, 31 secondary, twelve tertiary, eighteen other) and scrap (39).

Tenement D

Two successive structures were identified: 5/7 some 7m back from the street frontage, which was replaced by a two-roomed Structure 5/8, whose rear room stood in the area formerly occupied by 5/7. Most of the material from the tenement derives from backfills in pits and gullies occurring throughout the tenement and in the semi-basements of both structures. The backfills in Structure 5/7 presumably were deposited following the occupation and in preparation for the construction of 5/8, those in 5/8 following the end of its occupation. Cobbling debris was a component of the leather recovered. Of the shoe components found (67), 15% had been cut down, while one sole had been repaired at least six times before being finally discarded.

No occupation layers could positively be identified in either structure. A very small amount of leather came from contexts tentatively interpreted as possible occupation floors in 5/8, comprising a fragmentary shoe upper and a small quantity of shoe-making waste (thirteen secondary, nine tertiary, seven other).

Periods 5Cf and 5Cr: mid–later 11th century

These periods were identified on two broadly contemporary, but spatially separated areas, which cannot be linked stratigraphically. Only a very small amount of leather was recovered at the front of the site in Tenements C and D (Period 5Cf). A single Structure 5/12, represented by posts and post-hole alignments, was found at the rear of the site (Period 5Cr). A small quantity of leather, both manufactured items and waste, was recovered from this period from all four tenements. A relatively high proportion of scrap leather was found (96 fragments from Tenement C and 94 from Tenement D) possibly indicating reworking of the deposits. The leather from Tenement C derived chiefly from five pits toward the rear of the site, with a small amount coming from dumps in the same area. The shoe components recovered were suggestive of cobbling waste. In Tenement D leather was recovered mainly from pits toward the rear of the site. Manufacturing waste was relatively well represented (four primary, 42 secondary, 104 tertiary).

Medieval Coppergate

The groups of leather from medieval levels at 16–22 Coppergate have been discussed in chronological order by tenement. Much of the leather derives from dump and levelling deposits. The discussion has been limited to the more significant groups and those associated with buildings. Later building activity had removed much of the medieval evidence from the

Table 355 Numbers of objects by functional type within each tenement in Period 6

	Tenement A	Tenement B	Tenement C	Tenement D
Shoe parts	21	297	284	223
Scabbards	–	1	4	2
Sheaths	2	1	2	4
Straps	1	7	10	10
Other manufactured items	1	21	16	7
Primary waste	1	255	528	162
Secondary waste	96	996	439	1506
Tertiary waste	55	1397	401	1849
Other waste	5	95	110	48
Scrap	32	1266	8687	881

street frontage so that little leather was recovered from medieval deposits at the Coppergate end of the site. The features described below were located at the opposite end of the excavations, toward the River Foss.

Tenement A

A very small quantity of leather was recovered from Tenement A throughout the medieval period (late 11th–mid 15th century), occurring chiefly in levelling dumps. A small group of leather from pits (in sequence A6z4) dated by association with pottery to the 13th century appears to be cobbling debris.

Tenement B

Much of the leather from the River Foss end of the excavations came from the episodes of levelling, dumping and pit digging. The majority recovered from levelling may have been brought from elsewhere. The pit fills in the intervening episodes may have come from the tenement itself or have been redeposited from the surrounding area.

Alternating episodes of levelling/dumping and pit digging (B6c) dating to the 12th–early 13th century produced a substantial quantity of shoe finds, other manufactured items and leatherworking waste. Diagnostic shoe finds of later date, however, suggest the presence of intrusive material. The repeated pit-digging and redeposition of the material made interpretation extremely difficult.

Occupation deposits within a building occupied throughout the 14th century (B6f) contained a very small assemblage of shoe components likely to represent cobbling debris, and a very small amount of waste leather (two primary, four secondary, two tertiary, one other). A small quantity of leather from other features associated with the building also suggests a scattering of cobbling waste.

In marked contrast to earlier dumps, later dumps dating to the 15th and 16th century (B6g) contained very little leather. A large, deep, circular well (context 10908 = 15333) contained shoe parts of 14th- and 15th-century date, a sheath, a scabbard and a purse but very little waste leather; this appears to be domestic rubbish. Other wells and cuts from this phase also contained leather from domestic rubbish disposal.

Tenement C

Leather found associated with the bakery (C6d) of later 12th-century date occurred in small numbers within individual contexts and may represent redeposited material for the most part. A small amount of cobbling waste was recovered from occupation floors within the building (C6d2, C6d9, C6d12, C6d22). A packing deposit associated with the construction of the building (C6d8) contained a complete turnshoe sole. It is possible that this represents the remains of a shoe deliberately concealed during building; the shoe may have had an upper of tawed leather or textile that subsequently decayed, although

no indication of there having been an upper of a different material was recognisable. Contexts associated with the reconstruction of the building following fire (C6d11, C6d20) also contained shoe components which all appeared to have been accidentally incorporated into the deposit rather than deliberately placed. No complete shoes were represented.

The levelling dumps of 13th-century date (C6e) contained shoe components principally of contemporary date but with a small amount of residual material also present. Leatherworking waste was present in small quantities, and workshop waste seems to be better represented in two deposits (C6a1/D6e16 and a single context 9224 in C6e9). Context 9224 also contained a cut-down scabbard (15604), a strap (15703) and shoe parts with features indicative of cobbling. Pits cut into the levelling dumps contained smaller quantities of leather, and features in sequence C6e6 also contained cobbling waste.

The five-bayed timber-framed building (C6f) dating c.1300–c.1400 may have been a shop with an undercroft and a solar. A complete shoe (Style 10) of late 14th-/early 15th-century date was recorded in association with a plank (15505, context 4772, C6f1). If the shoe was found under or behind the plank it may be an early example of a deliberate concealment. Unfortunately, the exact position of the find cannot be verified. A use deposit in the bay 1 cellar (C6f5) contained a complete shoe (Style 9) of early 15th-century type and the fragmentary remains of another indicating domestic rubbish disposal.

Tenement C saw alternating episodes of dumping and pit digging during the late 14th–late 15th century. The dumps do not seem to have had much of a levelling function and may simply represent refuse disposal. A large rectilinear feature 14.6m by 3m but only 0.75m deep was found cutting one of these dumped deposits (C6g6). The feature had vertical sides and a flat base. It is described more fully in a consideration of the possible physical evidence for leather processing in the Craft and Industry section. The backfill of this tank-like feature contained 27 shoe components of late 14th-/15th-century date (including one complete shoe), a small range of other manufactured items and a large quantity of waste leather. The waste leather consisted principally of primary waste (225) and a large quantity of 'scrap' (c.6,700) identified as flesh surface shavings, a waste

product from paring down the thickness of the hides during the currying process. Dumped material that completed the backfilling of the tank (C6g7, context 10464) and extended beyond the limit of the feature itself contained a similar assemblage of leather with a predominance of primary waste and a large quantity of flesh shavings. Five of the eleven shoe components found in the same context had been cut to salvage re-usable leather before being discarded; they may derive from the clearing of a cobbler's workshop.

The leather in pits of this same period (in C6g10 and C6g12) also appears to be cobbling waste, while the backfill of the C6f1 cellar in sequence C6g19 produced a small group of turnshoe soles likely to be cobbling debris.

Tenement D

Leather was found in levelling dumps on the low-lying land east of the terrace slope and in the intervening episodes of pit-digging dating from the late 11th–early 13th century (D6a). The dumps, some of which were extensive, contained relatively little leather. Only dumps in sequences D6a9, D6a14 and D6a24 contained significant amounts of leatherworking waste. A large rubbish pit (in D6a17) contained shoe parts of later 12th-/mid 13th-century date and leatherworking waste, apparently cobbling debris. Similar leather assemblages occurred in pits in sequences D6a17–23. A large shallow, sub-rectangular cut (D6a19) had two fills containing an assemblage of 12th-/13th-century shoe parts and a quantity of waste leather principally deriving from shoe-making (fifteen primary, 579 secondary, 774 tertiary, eighteen other) and 63 scrap. Shoe-making waste, probably workshop debris, came from the fills of a recut pit (contexts 9334 and 9348, D6a25) which produced an assemblage of leather comprising seventeen shoe parts, principally turnshoe soles, a possible garment fragment, and 23 pieces of primary waste, 147 secondary, 288 tertiary and 295 scrap.

A small group of cobbling debris was included as part of a levelling dump of 13th-century date (D6c). Leatherworking waste and manufactured items came from pits of later 13th-century date to the west of the building (D6d). The dumps of domestic waste with some industrial content were used to level off land near the Foss, reducing the slope of the terrace. The small groups of leather deriving from dumps and

Table 356 Coppergate watching brief: numbers of objects by functional type and by period

	Anglian	A-Scan.	A-Norm.	14th cent.	15th/16th cent.	16th cent.	Medieval	u/s
Shoe parts	1	9	3	1	2	55	39	9
Scabbards	–	1	1	–	–	–	–	–
Sheaths	–	–	–	–	–	–	–	–
Straps	–	–	–	–	–	1	1	–
Other manuf. items	–	–	–	–	1	4	5	1
Primary waste	–	17	1	–	1	10	5	1
Secondary waste	–	32	6	–	9	9	48	9
Tertiary waste	–	31	–	–	6	5	85	12
Other waste	–	–	–	–	–	–	–	–
Scrap	–	27	1	–	–	10	61	32

pits dating to the late 13th–mid 14th century all represent cobbling debris. A welted insole amongst the material in dump deposits (D6e9) indicates the presence of intrusive 16th-century material. Few leather finds came from buildings dating to the mid 14th–earlier 16th century (D6f), and all are likely to be the result of redeposition.

Coppergate Watching Brief

The leather from the Anglo-Scandinavian and medieval levels was recovered in very small quantities only and may have been redeposited or have spread from the large accumulations nearby. A small amount of leather, probably workshop waste, occurred in a dump deposit (context 1205, zone 1) of late medieval/post-medieval date. Dump deposits from a massive ground-raising scheme dating to the 16th century (zone 6) contained shoes of 15th-century style, a small quantity of waste and scrap. More leather was collected by hand from unstratified deposits and represents a comparable assemblage. The leather comprised a relatively small component of these large ground-raising deposits. It appears to date to the 15th rather than the 16th century and may be redeposited from elsewhere.

22 Piccadilly

A small amount of leather was recovered from Trench 1 dating to the 9th century (Period 2). It had accumulated against fences and was apparently brought in on flood water from elsewhere. It com-

prised leatherworking waste and a shoe (Style 5, 15847) of unusual form, with characteristics of Carolingian shoes found on the opposite side of the North Sea.

A small quantity of leather was recovered from build-up deposits in Trench 2 and build-up deposits and stake-holes in Trench 3 dating to the 10th century (Period 3). The first clear evidence for occupation on the adjacent Coppergate site occurs at this time (Period 4B) with substantial deposits of leatherworking waste; this is likely to be associated with it, representing either overspill or flood debris.

A larger amount of leather, comprising principally leatherworking waste and highly fragmentary shoe components, was found in Trenches 2 and 3, occurring in small numbers within individual contexts dating to 975–early/mid 11th century (Period 4.1). Again the leather-bearing contexts are for the most part build-up deposits suggesting a fairly localised origin, although no buildings have been identified on the site during this period. Smaller groups dated to the later 11th–early 12th century (Period 4.2) and mid–late 12th century (Period 4.3) were also found in build-up material. The small amount of leather recovered in Trenches 3 and 4 dating to the 13th century (Period 5.1) is likely to represent the disposal of domestic rubbish. Shoe parts, apparently domestic refuse, and a small amount of waste leather, were recovered from the fills of a cut, cess-pit and a cask-lined well of 15th-/early 16th-century date in Trench 2 (Period 6). The fragmentary nature of the shoe parts

Table 357 22 Piccadilly: numbers of objects by functional type and by period

	Roman	1	2	3	4.1	4.2	4.3	5.1	6	7	u/s
Shoe parts	–	–	1	3	22	6	6	9	20	1	2
Scabbards	–	–	–	–	1	–	–	–	–	–	–
Sheaths	–	–	–	–	–	1	–	–	–	–	–
Straps	–	–	–	–	2	–	–	2	–	–	1
Other manuf. items	–	–	–	–	–	–	–	–	4	–	–
Primary waste	–	–	–	52	43	6	–	1	5	–	–
Secondary waste	–	–	1	95	108	40	3	17	32	–	2
Tertiary waste	–	–	4	216	184	32	8	10	3	–	19
Other waste	1	1	4	131	49	2	2	3	5	–	12
Scrap	–	–	3	174	389	55	3	14	73	1	13

and the small amount of waste leather present suggests a degree of redeposition.

Bedern Foundry

Very small groups of leather were recovered from the earlier deposits dating from the late 12th–early 14th century (Periods 0–2). Leather from late 13th-/early 14th-century pit fills (Period 2) appeared to be cobbling waste.

A leather strap (15874) with decorative baluster-shaped copper alloy mounts was found in an early–mid 14th-century context. Leather was recovered

from a cask-lined well in Bay H within a substantial structure, part of the foundry complex, constructed in the early 14th century (Period 3.2). The well assemblage included a fragment of a fine girdle (15872) with impressed decoration painted with red cinnabar, fragments of side-lacing boots, other shoe components and a small amount of waste leather. The shoe parts were torn and many were heavily worn; two of the 27 manufactured items had been deliberately cut to salvage re-usable leather. Most of the finds were recovered from basal fills in the bottom cask and are likely to represent rubbish disposal during the early–mid 14th century. The leather also seems primarily to represent rubbish disposal. Most

Table 358 Bedern Foundry: numbers of objects by functional type and by period

	0.1	1.1	1.2	2.1	2.2	2.3	3.1	3.2	3.3	3.4	4.1	4.2
Shoe parts	1	–	12	2	–	10	–	24	2	–	–	–
Scabbards	–	–	–	–	–	–	–	–	–	–	–	–
Sheaths	–	–	1	–	–	–	–	–	–	–	–	–
Straps	–	–	1	–	–	–	–	2	1	–	–	2
Other manuf. items	1	–	–	–	–	–	–	–	–	–	–	–
Primary waste	1	–	1	26	–	26	–	3	5	–	–	–
Secondary waste	1	1	1	7	–	1	–	18	1	1	1	–
Tertiary waste	–	–	2	9	1	–	–	–	1	1	–	–
Other waste	–	–	–	4	–	–	–	152	–	–	–	2
Scrap	–	–	–	14	–	–	–	52	–	–	–	–

Table 359 College of Vicars Choral: numbers of objects by functional type and by period

	Roman	A-Scan.	1	2	3	4	5	6	7	8	9	u/s
Shoe parts	6	1	32	1	1	–	–	13	18	18	–	6
Scabbards	–	–	–	–	–	–	–	–	–	–	–	–
Sheaths	–	–	–	–	–	–	–	–	–	1	–	–
Straps	–	–	–	–	–	–	–	–	2	–	–	–
Other manuf. items	–	–	–	–	–	–	–	–	–	–	–	–
Primary waste	–	–	14	–	–	–	–	–	29	–	–	–
Secondary waste	1	–	10	–	–	–	–	1	7	1	1	–
Tertiary waste	–	–	13	–	–	–	–	–	13	–	–	–
Other waste	19	–	2	–	–	–	2	5	20	2	–	1
Scrap	20	13	14	–	–	–	–	–	21	6	–	–

items were torn and the presence of unclassifiable fragments suggests that it may be redeposited material, perhaps the result of site clearance or cleaning. The fine quality of the girdle and the decorated strap seem incongruous in an industrial area, suggesting that the rubbish derived from beyond the immediate vicinity.

A pit fill of 15th-century date (context 2439, Period 4.2) contained a small quantity of leather including a buckled strap (15875), which appears to be the result of casual rubbish disposal.

The College of the Vicars Choral

The relatively little leather that was recovered from the excavation of this site appears principally to comprise small groups of cobbling debris. During the early–mid 13th century (Period 1) the ground may have served an agricultural function with the few related buildings being cleared prior to the foundation of the college. Some dumping seems to have taken place at this time. The dumped material was presumably from the surrounding properties but could consist of rubbish cleared from the demolished buildings on the site. Pits contained a small quantity of waste leather and shoe components. Pit fill 1643 contained a small group of leather, consisting predominantly of soles and clump sole repairs, which appears to be cobbling waste.

No significant finds of leather were recovered from contexts dating to the 13th and early 14th centuries (Periods 2–5). A series of intercutting pits of mid 14th-century date (Period 6), in the north-west of the garden area, and features of mid 14th-/early 15th-century date (Period 7) in the south-western courtyard contained small quantities of shoe components and waste leather likely to be cobbling debris. Straps with decorative copper alloy mounts were also found (15887–8), one (15887) occurring in a tiled hearth within Building 5 (context 1154). A small assemblage of cobbling debris was also found in a pit in the north-west of the site in a fill of mid 15th-/early 16th-century date (Period 8).

Other leather crafts are indicated by the faunal skeletal remains from the College of the Vicars Choral. The presence of large numbers of squirrel foot bones suggests the preparation of red squirrel pelts possibly for the trimming of vestments (see AY 10/5, 616–17). The white belly skin of the red squirrel is known as miniver. The squirrel bones were found in the backfill (context 1505) of a cess pit dating to the mid 14th century (Period 6). Three fragments of leather shoe sole were found in the same deposit. There is also skeletal evidence for the skinning of cats which suggests that skinning and the curing of furs was carried out in the vicinity. This is discussed by O'Connor, along with other osteological evidence, in the Craft and Industry section (pp.3233–4).

Conservation of the Leatherwork

By J.A. Spriggs

Introduction

This overview considers the conservation of the leather from a group of five sites, all of which have in common the presence of deeply stratified, highly organic, waterlogged, anoxic deposits. The broad aims of the conservation work were principally to ensure the preservation of the leatherwork from these sites through the application of both preventive and interventive conservation techniques, and to provide well-documented and well-packaged collections for the purposes of study and research. YAT has always maintained a policy of retaining and conserving leather where it survives, and from these five sites c.5,000 recorded finds of leather were produced, many in multiple groups. These finds varied greatly in their completeness as objects and their state of preservation but, with one or two exceptions noted below, had one thing in common — they were all of vegetable-tanned hides from cow and calf, with lesser numbers from sheep, goat and pig. Extended periods of burial had left much of the leather in an altered state, showing signs of structural disruption due to the effects of biological, chemical and physical degradation.

The work of conserving this large corpus of material was spread over a long period of time, starting with the commencement of the Bedern excavations in 1973, and finishing with the completion of work on the finds from 22 Piccadilly in 1995. Over such an extended period of time, the methods and materials used in the conservation of leather at the YAT Conservation Laboratories changed dramatically, as did the policies relating to temporary storage, recording, packaging, and other aspects of the care and curation of leather. Reporting on the treatment and curation of this corpus of leather therefore presents an ideal opportunity to chart some of these changes and review the comparative success of the main processes employed.

Storage

Because of the irreversible shrinkage and embrittlement caused by uncontrolled drying, leather has always been packed wet from the moment of its

discovery (Spriggs 1980). Leather finds, still dirty from the ground, were double wrapped in polythene with a little water and dilute fungicide, and stored in plastic boxes or tubs with airtight lids. These boxes were themselves stored in cool, dark conditions. Unless the leather was due for conservation soon after discovery, the boxes were checked annually to ensure that their contents were still wet, and the fungicide solution was replenished as necessary. Much of the Coppergate leather was stored in this way for anything up to eight years without observable deterioration taking place. The fungicide used throughout most of the period was Panacide® (*Dichlorophen*) employed as a 0.2% solution in water (Spriggs 1980). Effective waterproof and fade-proof labelling for wet-packed materials was quickly established using Tyvek® (spun-bonded polythene) labels with solvent-based waterproof markers (Jones et al. 1980).

Condition, degradation

As might be expected with such a large corpus of material, the condition of individual objects varied widely. Factors which would have influenced the physical condition of any one piece on excavation would certainly include pre-depositional history (wear and tear) and degree of protection from decay whilst in the ground (taphonomy). Other factors, such as imperfect tanning, and the animal species and body area that the leather derived from, also influenced condition on discovery. In general, the leatherwork was preserved in a good enough state to permit both ease of handling without loss or damage, and a blanket approach to treatment. The one type of degradation that did cause difficulty was that of delamination, where the leather is split into two separate layers which fall apart once the leather is dried. This annoying condition, a widely reported feature of archaeological leatherwork, seemed to affect the thinner leathers, particularly those used for the uppers of shoes. It also affected many of the offcuts of thinner leather. This has sometimes been blamed on poor tannage, but it is more likely to be the result of partial degradation at a point of weakness of the collagen fibre weave in the leather structure (Ganiaris et al. 1982). More recent in-depth research on this topic undertaken at YAT was not able to reach any major conclusions except to demonstrate that delamination occurs variously across all periods, sites, object types and leather-producing animal species (Hucklesby 2000).

Washing and recording

The vast majority of the leather was in sound enough condition physically to be washed manually using a gentle stream of running water and soft brushes. Some of the more fragile objects, which could be damaged even by gentle brushing, were sometimes cleaned by immersion in an ultrasonic tank. Some of the more complete items, and especially the shoes that were to be reconstructed for exhibition, were put through dilute hydrochloric acid in order to lighten their colour (Peacock 1983, 19). This was a common procedure at the time (Ganiaris et al. 1982, 12) but, as any judgements about the original colour were likely to be subjective, the practice was discontinued by the mid 1980s. Once washed free of loose dirt and silt, the leather could be examined and recorded.

As leather was often bagged in context groups, it was sorted into three categories: objects and object



Fig.1563 Recording leather before conservation

parts; offcuts and leather production debris; and featureless scraps. Because of the quantities involved, only the object category was recorded at this stage. The primary purpose of making tracings was to determine the degree of shrinkage that the leather had undergone during the course of the treatment, as it was appreciated that shoes sizes were of interest to leather researchers. Each object was traced in pencil onto plastic drafting film before treatment and again in red crayon after stabilisation. The shrinkage could then be calculated as a function of either dimensional change, or area change depending on the wish of the researcher (Ibbs 1990). As time went by, aspects of condition and technological detail were also recorded using pencil and coloured crayons, following a series of conventions developed at YAT (Spriggs 1987), but based on a system devised in Holland (Goubitz 1984). These drawings now serve to record any shrinkage during treatment and visible technological features on the leather; they also provide a quick visual way of auditing the collections, and their condition. Many small but important and interesting details were observed during the cleaning and drawing of the leather collections, and the written conservation reports contain notes of these observations, backed up by the drawings.

Active conservation

If archaeological leather is allowed to dry naturally from the wet state, it will shrink dramatically and become very stiff and hard, a state which is almost impossible to reverse. The aim of any stabilisation treatment for leather is to render it suitable for handling, study and storage, whilst preserving its size and shape, and rendering the leather both strong and flexible. It may also be desirable to improve the appearance of the leather from the rather uniform grey/black colour that it usually acquires during its period of burial. Creased and crushed pieces can be flattened and other remedial work undertaken on important pieces including, for example, the reconstruction of complete shoes.

Waterlogged leather has been treated at the YAT laboratories since the early 1970s, the methods and materials tending to mirror techniques being employed at other laboratories, both in the UK and in Scandinavia (e.g. Peacock 2001). Before the advent of freeze-drying as a 'safe' method of drying leather, most treatments used at YAT were based on solvent

dehydration. These were always regarded as experimental, and improvements to both method and materials used were regularly introduced.

Solvent dehydration techniques

The first methods employed were based on the staged replacement of water in the leather with a solvent of a lower surface tension in which various proprietary leather dressings might also be dissolved. These treatments tended to follow contemporary published methods (e.g. Reed 1972; Rector 1975) but were also based on consultation with other workers in the discipline, as well as our own tests and experiments. These techniques were applied successfully (as it was thought at the time) on assemblages of leather from 6–8 Pavement (pp.155–7, AY 17/3), and 58–9 Skeldergate, York (AY 17/2). A pre-treatment of either dilute hydrochloric acid or of a chelating agent (the disodium salt of ethyl di-ammonium tetraacetic acid) was regularly used in order to lighten the colour of the leather by removing some of the humic materials that tend impregnate and discolour it during burial, a process thought necessary owing to the further darkening of the leather through the use of oils and waxes in this type of treatment.

Acetone was the preferred dewatering reagent as it was readily available and not too costly, despite the potential hazards of its use in bulk quantities. Fear that acetone might remove some of the original tannage from the leather was allayed when our own tests using organic solvents following published guidelines (Reed 1972) failed to identify or extract tannins, substantiated subsequently when the same tests were carried out at the Museum of London (Ganiaris et al. 1982). Similar fears were current about loss of colouring evidence but since, to the best of our knowledge, there was then no evidence of dye-stuffs or other additives being found preserved in waterlogged vegetable-tanned leathers, the danger of loss of dyeing evidence through acetone immersion was not considered a serious risk (but see de Neergaard 1987).

In practice, the leather was passed through several baths of acetone until, by measuring the density of the acetone with a floating hydrometer, removal of water from the leather was complete. The leather would then be passed through a tank of proprietary leather dressing, dissolved in an appropriate solvent,

such as mineral spirits (known as white spirit) and 1.1.1. trichloroethane (Genklene®), both being miscible with acetone. Of the dressings used, products such as 'Guildhall Leather Dressing', 'British Museum Leather Dressing' (BMLD) and 'Pliantine' were used, the latter becoming, for a while, the favoured material at the YAT laboratories (p.155, AY 17/3). These were all based on lanolin with varying quantities of other wax or oil constituents, in hexane solvent. The dressings were applied both by immersion and by subsequent brushing or wiping on, in order to plump up the surfaces and improve the rather dry, starved appearance that resulted after the evaporation of the solvent. Care was always taken to allow the solvent-wet leather to dry out in a fume cupboard. Combinations of 'Pliantine Special G' (normal Pliantine minus the beeswax additive) by immersion and BMLD by surface application were sometimes found effective and gave a satisfactory result. Although some shrinkage was always experienced with these treatments (5–10% reduction in length and breadth being typical), the properties of texture, feel, flexibility and weight were all considered satisfactory. However, there was a feeling of unease at the time that the dressings being applied had been formulated for use on historical and ethnographic leathers, rather than archaeological leather. Only in retrospect, many years later, have these treatments been found to have had a seriously deleterious effect on the objects (see p.3219).

Tests continued with different water-based compounds as a retreatment for waterlogged leather prior to freeze-drying. The most promising product, Bavon, was 'borrowed' from the leather processing industry. Bavon was said, at the time of use, to be a mix of alkylated succinic acid and mineral oils (but see Peacock 2001, 14) which was developed as a lubricant and waterproofing agent for chrome-tanned leathers (Pearson 1987). It was available in two forms: Bavon ASAK/ABP, the solvent-based version, and Bavon ASAK 520S, its emulsified form. A water-based treatment using the 520S form was a highly attractive proposition but, despite its successful use on ethnographic leathers (e.g. Ganiaris et al. 1982, 16), our own tests concurred with others (e.g. Sturge 1973; Ganiaris et al. 1982) that the results were unsatisfactory. Severe shrinkage and embrittlement occurred, and a white deposit of emulsified oils remained on the surface after freeze-drying which was very difficult to remove (Anon 1980).

However, test results on the use the solvent-based ABP version were more promising (Sturge 1975), and a system using Bavon ASAK/ABP was developed and used extensively during the period between 1976 and 1980 for leather from sites excavated between or prior to those dates. With only minor variations, the system developed commenced with a pre-treatment in dilute hydrochloric acid (to remove silt and concretions and to improve colour), followed by rinsing in tap water and finally distilled water. Leather was then dehydrated through baths of acetone, using floating hydrometers to monitor progress. Acetone in the leather was then replaced with white spirits (two changes) followed by immersion in a bath containing 10% Bavon ASAK/ABP plus 5% pure lanolin in white spirit (wt/vol). The leather was removed after several days, and neat Bavon ABP was rubbed into the surface as necessary. The leather was then set aside to dry before packaging for storage.

The quantities of leather being excavated in York by the late 1970s and mounting concerns about both the risk to health and the cost of these solvent-based treatments led to increased efforts to find alternatives which did not involve the use of organic solvents.

Water-based treatments

As early as 1973, tests had been carried out in York with techniques based on poly-ethylene glycol (p.e.g.) which was applied to leather in hot baths, using the method developed at the British Museum (Muhlethaler 1973). One of the semi-soft grades, p.e.g. 1500, was used in one set of tests, and the results based on dimensional change were judged to be good, although the pieces were dark and sticky to the touch due to the very high p.e.g. content. The pieces had also warped badly, presumably due to the heat applied during the treatment to drive off water from the p.e.g. bath, but this was corrected by warming them, and placing them between sheets of glass to flatten out (Spriggs 1973). Water-soluble materials, such as the p.e.g.s and glycerol, were not regularly used for leather treatment at York until the acquisition of a freeze-drying unit.

Freeze-drying

The occasional publication of investigations and treatments involving vacuum freeze-drying (e.g. Organ 1958; Sturge 1973; Rosenquist 1975), plus contacts with conservators working with the technique



Fig.1564 The freeze-drier in use with leather

in Scandinavia and elsewhere, spurred the conservators at YAT to gain access to equipment for experimental purposes. Tests started in 1976, using equipment made available in the Department of Biology at the University of Bradford. Samples of leather were freeze-dried from a range of products, including glycerol, low molecular weight poly-ethylene glycols and Bavon 520S. Early tests showed that successful results could be obtained with both glycerol and the p.e.g.s, once the optimum quantity of these materials had been introduced into the leather. On the basis of these trials and similar success with the freeze-drying of small items of waterlogged wood, a freeze-drying unit was acquired in 1979, making YAT one of the first archaeological laboratories in the UK to use the technique on a routine basis. Built to our own specification by Heto Ltd of Denmark, the unit was designed to be flexible and used in a variety of configurations (Spriggs 1981). The unit, with a chamber volume of 0.15m³, proved ideal for the freeze-drying of batches of leather, and is still serving this purpose today, over 20 years later (see Fig.1564).

Freeze-drying seems to meet all conservation requirements, including minimal intervention, the leather being conserved in a state virtually identical to that in which it was found. Just enough glycerol is used to ensure effective dimensional stability dur-

ing freeze-drying (2–3% being the average anticipated shrinkage) and also to ensure some flexibility and cohesion to the leather structure. It is also cost-effective, as it allows a batch approach to treatment as opposed to each piece being dealt with separately at every stage of treatment — a great boon, given the quantities of material involved. Since 1979 the standard treatment for almost all waterlogged leather coming through the YAT laboratories has been to pre-treat with glycerol at a concentration of around 25% in water, prior to freeze-drying. The process itself has proved fast and inexpensive to apply, especially in terms of materials and time, most time being expended on initial cleaning of the leather and final bagging. The Heto freeze-drying equipment itself is simple to operate and low on maintenance. The freeze-dried leather surfaces look dry, but not starved, and fine detail of decoration, manufacture and wear are well preserved and highly visible. Leather freeze-dried with 25% glycerol will accept adhesives readily if requiring reconstruction, and reshaping and flattening is also possible by partial rehumidification. Further dressings (e.g. p.e.g. 1500) can be applied to the surface for cosmetic purposes.

Reshaping and reconstruction

The larger shoe components and other finds of sheet leather were often recovered in a crushed or otherwise bent or creased state. For the purposes of recording and study, and for ease of storage, such leather had normally been flattened during the treatment process, unless the leather was so fragile that the action of unfolding the piece would cause unacceptable damage. It was found best to flatten the piece between sheets of card or Correx® fluted plastic board after the glycerol pre-treatment, and the new shape will become 'set' during freeze-drying. Often, creases on the uppers of shoes are related to original wear and not just the vagaries of burial. Such pieces were drawn, and sometimes also photographed, in their creased state, before attempts were made to flatten them.

A number of shoes from the Coppergate excavations have been reconstructed from their component parts where enough has survived to permit this. Leather reconstruction is a delicate and time-consuming business, and is only undertaken for a specific purpose. Six shoes were prepared for the 'Vikings in England' exhibition which took place at three venues in 1981–2 (Anon. 1981). Much work was done on four of these



Fig.1565 Conservator in the process of reconstructing a shoe

(15392, 15439, 15458–9; see Figs.1639, 1649) to identify the techniques and materials best suited to adhering, lining, supporting, stitching and padding out these objects, resulting in some very fine display items (Peacock 1983) (Fig.1567). Despite attempts at flattening the uppers during the stabilisation process, creases persisted. These were successfully removed by gently stretching the leather pieces between modified 'bulldog' clips, after relaxing the leather in a high-humidity environment (see Fig.1565). The possibility of remoistening, and so relaxing, the leather structure is one of the advantages of employing a water-based lubricant such as glycerol in the initial treatment. Remedial work on a very fragmentary Anglo-Scandinavian decorated sea sheath (15661), incorporating iron elements, was undertaken using a similar approach, but requiring the development of further gap-filling and colouring techniques (Montebault 1986) (Fig.1566). Most recently, two more shoes (15367 and 15447; see Figs.1611, 1644) were reconstructed for the 'Vikings' exhibition at several venues in the USA, further developing the approach and materials employed (Hucklesby 2000).

Packaging and storage

It was always appreciated that leather, an organic material, would be moisture sensitive, and that reasonably dry and stable storage conditions would be necessary. The extensive use of glycerol (also hygroscopic) as a pre-treatment further reinforced this necessity. This requirement has, by and large, been met through the provision of clean, dry storage areas. Treated leather was always stored in clear polythene, which latterly has always been pierced or rouletted



Fig.1566 Seax sheath 15661: (a) top left, before conservation; (b) left, during conservation (gap filling); (c) above, during conservation (painting gap-filled sections)

in order to prevent condensation forming within the packaging. A major repackaging project involving all the leather in this report was undertaken in 1997–8 to replace old and faulty packaging, to address the problems identified in the condition survey (Griffin 1983, see below) and bring the collection up to a modern standard (Edwards and Mould 1995). A risk assessment was undertaken under Health and Safety Executive regulations and appropriate safety precautions were taken in handling the still mouldy pieces and to protect against dust inhalation. The repackaging process also provided the opportunity to examine some of the leather items to assess the long-term effects of their original conservation treatment.

Assessment of the condition of the treated leather

A pilot collections condition assessment study undertaken in 1983 (Griffin 1983) looked at approximately 40% of the leather then in store, and identified the fact that the conditions under which the collection was being kept needed to be improved in a number of ways. It was noted that much of the leather appeared to be inherently fragile, and that much of the packaging was not providing the level of physical protection required to prevent fragmentation. Furthermore, the effects of biodeterioration (mould growth), some of it still active, were noted in about 40% of the boxes examined. This was ascribed

to high humidity in the areas being used to store leather at the time, exacerbated by the leather finds being overcrowded in their boxes, so cutting down the chance of air circulation. Finally, the leather that had been treated before 1976, using the early solvent and dressing-based treatments, was moist and sticky, causing it to adhere to its packaging.

Recent examination of leather treated before 1976 with Pliantine®, Pliantine Special G® and BMLD®, principally from Bedern, indicates that these treatments do not stand the test of time. The leather has become hard and brittle, with a black, shiny surface which is sometimes still sticky and is prone to picking up dirt and adhering to packaging (Fig.1568a). This material should ideally be retreated since it is both difficult and unpleasant to handle in its current state. Such material can sometimes be retreated successfully (e.g. Spriggs 1987, 44) but at some risk to the object and only for a good reason such as display.

Examination of some of the pieces treated with Bavon ASAK/ABP show them to vary widely in their current state, dependent on original recovery condition. However, many pieces are still soft, pliable, dry in feel and appearance, and a rich brown colour (Fig.1568b). There has been no undue crumbling or fragmentation, and the original packaging is unstained. Their current condition and appearance is therefore in no way inferior to leather treated by the later freeze-drying technique. Dimensional shrinkage was between 3% and 10%, as measured against tracings made before treatment, results which also compare favourably with freeze-drying.

There have occasionally been adverse comments made in print about the freeze-drying of leather, both in terms of the unnecessary complexity of the freeze-drying process and equipment (Goubitz 1997a), and, more importantly perhaps, concerning the condition and appearance of the leather (Swann 1997). However, twenty years on, we at YAT are still convinced that we made the right decision in switching to this process to stabilise our important collections of waterlogged leather from Coppergate and other sites, whilst having the satisfaction of knowing that earlier batches of leather treated with the Bavon ASAK/ABP system have also stood the test of time.

Most of the collection of leather from 16–22 Coppergate and from the Coppergate watching brief



Fig.1567 Reconstructed leather footwear

site and all the 22 Piccadilly leather were treated by freeze-drying with 25% glycerol. Recent research on these collections found the majority of the material to be in a satisfactory state (Fig.1568c). The actual condition of the leather relates directly to the degree of wear, fragmentation and degradation on discovery, but no marked post-conservation deterioration was detected, apart from some dusting within the packaging. It is believed that this is mainly residual silt lodged in the leather surfaces gradually working loose as the leather is flexed during handling.

Special items

Around twenty composite items combining leather with metal attachments (principally buckles and studs) were noted during the conservation process. Both the conservation treatments and the storage environments for leather and metals tend to be incompatible, leather normally being given the priority. At the time, it was felt that the solvent-based treatments for leather would not adversely affect metals, whereas the aqueous p.e.g.-based treatments were likely to be more cause for concern. Some simple tests (Little 1988) were made with corrosion inhibitors such as tri-ethanolamine and Pluracol® on iron/leather composites from other excavations in York but were not employed on the objects under consideration here. A survey of sixteen items undertaken in 2002 indicated that, of the six items with iron fittings, the three treated with solvent-based systems had survived very well, and all three treated with glycerol and then freeze-dried showed signs of corrosion damage post-conservation. The remaining ten items examined had either copper alloy, or tin



Fig.1568 Shoe uppers which received different conservation treatments: (a) top, Pliantine (15880–1); (b) centre, Bavon (15498 and 15509); (c) above, freeze-drying (15507 and 15510)

and lead/tin alloy attachments. None of these had suffered any obvious post-conservation corrosion damage. This small-scale survey suggests, at least, that an alternative to water-based treatments should be sought for leather with iron attachments.

Decorated items, such as the Anglo-Scandinavian scabbards, were always carefully examined before treatment to see if there might be associated colouring materials which could be affected by the standard treatments. Items of this type are extremely rare in our collections, but two are worth mentioning here. The threads on the embroidered leather shoe top-band (15543, see Fig.1676, p.3344) were noted as being dyed only after freeze-drying and a possible strap or girdle fragment (15872) has embossed decoration still containing a red pigment, identified as cinnabar (mercuric sulphide). This girdle required special treatment because the leather, although visually in good condition, was delaminating and extremely brittle. It was consolidated and dehydrated simultaneously by submersion in water soluble p.e.g. 4000, gradually raising the concentration of polymer to water by evaporation in a laboratory oven until virtually all the water was removed. During cooling, the leather was flattened. Since it was still rather fragile, it was mounted onto a tinted balsa-wood support using reversible adhesive, itself adhered to a clear perspex base, for the purposes of storage and display. After 23 years, examination shows the mounting system to be intact, the leather still in sound condition, and the red pigmentation bright and clearly visible (see Fig.1713, p.3393).



Fig.1569 Untanned calfskin 15823

Mention should be made of the survival of a small number of pieces of rawhide. In particular, a concreted and crumpled mass of calfskin complete with hair was recorded from Coppergate (15823), which was found wrapped around the base of a wooden post in a Period 5B building (Fig.1569). Analysis of a fragment of this hide using infra-red spectrophotometry (Crawshaw 1989) showed that it was heavily

impregnated with Stockholm tar (softwood resins), the bactericidal properties of which may well explain its survival. The hide required repeated immersions in a chelating agent to release the folds, a process that was finally only partially successful, followed by treatment with p.e.g. 1500 and freeze-drying (Little 1989).

Craft and Industry

In this section evidence from York for the various leatherworking crafts is investigated. We begin with a summary of the current knowledge of documentary and street name evidence. This is followed by a survey of what evidence survives in the archaeological record: the structural evidence seen in the ground, environmental evidence from animal bones, insects and plant remains, and the information to be gained from the leather objects themselves. The craft of the leatherworker is then described. The various seams, constructions and decorative techniques used, the tools employed and choice of leather species are outlined, and changes over time are summarised. Detailed descriptions of the individual types of leather object recovered are the subject of the section on 'Everyday Life' that follows.

The surviving evidence

The leatherworking trades

Some readers may be unfamiliar with a number of terms that appear in the following discussions of the documentary and street name evidence and a brief explanation may prove useful here. Leatherworking has been used in its broadest term here to include the preparing and working of hides, skins and furs. At its simplest those engaged in the leatherworking trades may be divided into two groups: those that turn the hides and skins into leather and those that work the leather into articles for sale. Tanners produced vegetable-tanned leather from cattle hide and curriers worked these vegetable-tanned hides into leathers with various properties suitable for manufacture into finished goods. Whitawayers or tawers minerally tanned skins of smaller animals and skimmers produced furs for the furrier (parmenter). Other traders such as butchers, fellmongers and barkers supplied the necessary raw materials to these leatherworkers. Shoe-makers or cordwainers made footwear (shoes and boots), while cobblers both repaired shoes and bought old shoes, refurbished them and sold them on. Girdlers, belt-makers, purse-makers, sheathers, harness-makers, bottle-makers and parchment-makers were all engaged in making the finished products. Other craftsmen such as the scabbard-makers, bucklers (shield-makers), saddlers, bookbinders and cofferers (makers of leather-covered travelling trunks) used

leather as one of their principal raw materials. Glovers both processed sheepskin and made it into gloves. Leathersellers processed the skins of roe deer and regulated all those who produced anything other than the 'heavy leathers' of the tanners. They also sold the wide range of small leather articles made from these 'light leathers'. The nature of the major individual crafts detailed above and the methods they used have been comprehensively described elsewhere (Cherry 1991, 295–318; Thomson 1998, 1–9; MacGregor 1998, 11–26). To add confusion to this already complicated nomenclature, certain trade names appear to have been used interchangeably on occasion. Paul Dare's study of Leicester tallage rolls has found that in the later 14th century in that city all the tanners were called barkers (Cherry 1991, 307). Cordwainers originally made shoes of fine Spanish leather (Cordovan leather or *cordwain*), but by the later medieval period the term was used to describe all shoe-makers.

The individual trades named above are known from medieval documents. Any craft specialisations that existed in the Anglo-Scandinavian period are unverified by written sources; however, the research undertaken to produce this volume has identified the work of particular craftsmen not previously recorded.

Current documentary knowledge

(Fig.1570)

By Lisa Liddy

The documentary evidence for leatherworking in the City of York prior to the 13th century is relatively scant, but it is clear from both the archaeological evidence and the few documents which have survived that members of various leatherworking crafts were practising in York at this time.

By 1181 there was a guild of glovers and leatherworkers (*corariorum*) in the City of York, as well as a craft of saddlers (Pipe, 41). In a collection of 12th-century charters pertaining to the City of York (*EYC* 1, 202–349), there are eleven charters which include a total of eighteen references to members of leather-related crafts. Johannes corarius (currier) witnesses a grant of land in Monkgate, 1150–60 (*EYC* 1, 288); Samson sellarius (saddler) witnesses a grant of two

messuages in Coney Street, c.1160–78 (EYC 1, 234); Alanus corveisor (cordwainer) witnesses a grant of land in Walmgate in the parish of St Margaret, undated (EYC 1, 322); Gaufridus le Bucler (buckler-maker) witnesses a quitclaim of land in Petergate and Blake Street, 1203–c.1212 (EYC 1, 257); and Odo sellator (saddler) witnesses a grant of land in Ousegate in the parish of St Crux, 1170–6 (EYC 1, 209). Unfortunately, in urban areas such as Anglo-Scandinavian and medieval York, such references cannot be used as proof that these craftsmen lived in the same street or even parish as the land for which they served as a witness. The Odo sellator mentioned above, for example, is probably the same man who, almost twenty years later, surrenders land of his own in Lounelithe near Micklegate and the Baile to Gaufridus sellator in a transaction witnessed by Uhtredus and Rogerus sellatores and Nicholaus lorimer (EYC 1, 209). Several other leatherworkers of the period can also be located within the city: Ricardus sellator is granted a toft in Walmgate, 1161–84 (EYC 1, 316); a grant is made of land in the Marsh which is next to the land of Thomas le cainturer (girdler), 1180–90 (EYC 1, 296); Beatrix filia Nicholai Cordewaner (cordwainer) quitclaims land in Gillygate which Edwinus tanur (tanner) witnesses, 1190–1210 (EYC 1, 278); and a grant is made of land in Monkgate which extends from the street to the land of Radulfus Fleeth allutor (cordwainer), 1195–1210 (EYC 1, 289). Finally, land in Davygate is demised to farm to Reginaldus Feltere (skinner), witnessed by Nicholaus allutarius (cordwainer) and Arnaldus allutarius, undated (EYC 1, 244).

In contrast to this earlier period, surviving documentary evidence of York leatherworkers in the late 13th to early 16th century is extremely plentiful. The survival of probate material, especially from 1389 when the probate registers of the Archbishop of York's Exchequer and Prerogative Courts begin, and the commencement of the City of York's Freeman's Roll in 1272, as well as various tax returns and civic ordinances, shed an extraordinary amount of light on the craft of leatherworking and leatherworkers in York.

The following leatherworking crafts appear in York's Freeman's Roll, 1272–1671, and/or in the probate records of medieval York, 1389–1534: tanner (including barker; Latin *tannator*); currier (Latin *coriarius*); skinner (including felter and pelterer; Latin

pelleparius); tawer; cordwainer (including shoemaker; Latin *alutarius*, *corvesor*, *sutor*); saddler (including seler; Latin *sellarius*, *sellator*); glover (Latin *cirothecarius*); girdler (Latin *zonarius*); parchmener; lorimer (Latin *lorimarius*); bookbinder; bottle-maker; buckler-maker; sheather; patoner; point-maker; and pouch-maker. In the mid 15th century at least two York cordwainers, William Tesedale and William Bellamy, make bequests to their craft's maison dieu (YPR 2 fos.134r and 148v–149r), the 'hospital or maison dieu of the shoe-makers, near Walmgate Bar' (VCH, 352).

In 1298 Edward I moved the Exchequer and the Court of Common Pleas to York. Local business was disrupted as a consequence, which resulted in the production of a lengthy set of ordinances by the royal council in co-operation with the civic authorities in 1301. The ordinances concerning the tanners were as follows:

No tanner shall put hides he has bought into water or tannin before the hide has been viewed by two of the keepers of the ordinances, and he shall swear before them as to the price for which he bought it. They, together with two honest tanners sworn for the purpose, shall set a price for which it is to be sold when tanned. The price is to be enrolled on the rolls kept by the keepers of the ordinances, so that if a tanner sells leather for more than the price assigned to him, he can be punished by the keepers (Prestwich 1976, 14).

Punishment consisted of a fine of 6s. 8d. for the first offence, 13s. 4d. for the second, and for the third offence, a beating or a fine of 20s. with a promise to abjure the craft forever (Prestwich 1976, 12). According to the same ordinances, skimmers were to have their skins viewed every week and were forbidden to work old skins in with new. Each offender was to have 'his skins burned in the middle of the street, and . . . to be heavily fined, the money to go to the common profit of the city' (ibid., 16). It was also forbidden to 'sell sheepskin shoes for tanned leather, or tanned leather shoes containing any piece of sheepskin' (ibid., 15).

The earliest ordinances of a craft guild in the York records belong to the girdlers and were made in 1307 (YMB 1, 180–1). Later versions of these ordinances are also found in the York Memorandum Book, as are 14th- and 15th-century ordinances for buckler-

makers and sheathers (YMB 1, 29), glovers (YMB 1, 48–9), skimmers (YMB 1, 60–1, 63–4), curriers (YMB 1, 65–7), parchmenters (YMB 1, 67), cordwainers (YMB 1, 72–4, 187–97), saddlers (YMB 1, 88–93), and spurriers and lorimers (YMB 1, 101–4). There are also regulations pertaining to the crafts of patoners, bottle-makers and pouch-makers dating from 1471. These crafts, however, were probably an artificial grouping since ‘the manufacture of such goods was pretty well divided among everyone who could lay their hands on a piece of tanned leather’ (Swanson 1989, 57). Although such ordinances set the standards by which these crafts were to be practised within the city, problems occasionally arose between the practitioners of related crafts. In 1428, for example, trouble erupted between the tanners and the cordwainers over the cordwainers’ right to search the quality of tanned leather. ‘As a result a leather seld was established in the common hall where a committee of two tanners, two cordwainers, two girdlers and two curriers were to examine all leather for sale. The decision was so unpopular with the tanners that they reacted with physical violence’ (Swanson 1989, 55; YMB 2, 162–6).

An extremely thorough study of medieval leatherworkers in York was made by Heather Swanson in her 1980 doctoral thesis at the University of York entitled ‘Craftsmen and Industry in Late Medieval York’ and, later, in Chapter 5 of her book, *Medieval Artisans: An Urban Class in Late Medieval England* (1989). In addition to describing the processes of tanning and tawing and the crafts of curriers, cordwainers, saddlers, glovers, skimmers and girdlers, and discussing civic and national ordinances which pertained to the leather trade, Swanson provides a useful statistical analysis of not only the number of leatherworkers gaining the freedom of the city between 1272 and 1534, both as a whole (Swanson 1980, 23–5) and by individual craft (ibid., 119–21), but also the number of craftsmen in the leather industry, and their female relatives, who left a last will or testament between 1320 and 1534 (ibid., 406).

Swanson also investigates the geographical concentration of the leatherworking industry in the city, based on evidence found mainly in wills and tax returns (ibid., 452–8). She begins by emphasising that ‘the fact that the York parishes were so small meant that in the city centre craftsmen apparently scattered over four or five parishes could in fact be living vir-

tually next door to each other, or only a short street away’ (ibid., 456). The parishes around King’s Court, for example, were the centre of an important section of the leather industry: according to the York poll tax returns of 1381, thirteen of the nineteen girdlers recorded lived in the parishes of St Sampson, Holy Trinity King’s Court and St Crux, and of the seventeen girdlers’ wills that survive, thirteen were made in Holy Trinity King’s Court, St Crux or Holy Trinity Goodramgate. Sixteen glovers’ wills were made in the same three parishes, whilst parchmenters were based in Holy Trinity Goodramgate and the adjacent parishes around Monk Bar (Fig. 1570).

Four leather crafts — the tanners, skimmers, saddlers and cordwainers (York did not have a significant number of tawers during this period) — were not based in the King’s Court area. Of the 61 tanners whose wills survive, over half lived in the parish of All Saints North Street where lies the street now called Tanner Row. According to the poll tax returns of 1381, 41 of the 43 tanners listed were resident in this parish (Swanson 1980, 457–8). Ten tanners’ wills also survive from along the River Foss in the parishes of St Margaret, St Lawrence, St Peter le Willows and St Denys, although Swanson notes that, as these date from the late 15th and early 16th centuries (the earliest dated 1459), the tanners’ removal to this location was a fairly recent one (ibid., 458). Skimmers showed a certain concentration in the parishes of St Martin Coney Street, St Michael Spurriergate and St Peter the Little, all adjacent to each other and lying close to Ouse Bridge and the River Ouse. Over half of the saddlers whose wills survive were located with the spurriers, lorimers and armourers in the parishes around Spurriergate and Coney Street (ibid., 458). Finally, Swanson notes that craftsmen such as cordwainers (along with bakers, cooks, innkeepers, tailors and smiths) ‘who practised those industries and services that were in greatest demand . . . [were] widely scattered and found in most parishes’ (ibid., 452).

Documentation also survives regarding the leatherworkers’ participation in the York cycle of mystery plays which were performed in the city each Corpus Christi day from at least 1376. The tanners were responsible for the play of the ‘Creation of Heaven and Hell’. As the opening pageant of the cycle, this was an important and visually impressive play, performed as it was against the first promise of

tor in 1392. Several leatherworkers also served as mayor of the City of York, such as John Baude, saddler, in 1462, John Hall, tanner, in 1516, Thomas Mason, glover, in 1528, and John North, tanner, in 1538 and again in 1554 (Carpenter 2000, app.1).

Whilst the amount of surviving documentary evidence increases dramatically as the period in question progresses, as this survey shows, leatherworkers were a significant and continuous presence within the City of York throughout the entire Anglo-Scandinavian and medieval period.

The street-name evidence (Fig.1570)

By Gillian Fellows-Jensen

The harvest of information to be drawn from the street-names of York for leatherworking in the city in the Anglo-Scandinavian period is admittedly meagre. Since the archaeological evidence for the relevant crafts at the period in question has so far been even less rewarding, however, it has seemed worthwhile to look once again at the street-names. While Richard Hall has noted that the only early evidence for the smelly trade of tanning in York has come from Walmgate (Fig.1570, 9), close to the edge of the town, and that this is dated to the 16th century (Hall 1996, 89), there is much earlier evidence for tanning in the street-names, as recorded by Lindkvist 1926, Smith 1935 and Palliser 1978, from whose works the forms cited below have been excerpted.

The street-name Barker Hill (now St Maurice's Road, outside the north-eastern wall of the fortress area; Fig.1570, 8), for instance, is first recorded in its Scandinavian form Barkergate c.1230. It was originally a compound of the Scandinavian occupational term *barkari* 'tanner' (from the verb *barka* 'to tan with an infusion of bark', Middle English *barkere*), and the Scandinavian word *gata* 'town street'. The Scandinavian occupational term also occurs in the older name Barker rawes 1524 of Tanner Row (Fig.1570, 1), first recorded in this form in 1574. This street south of the Ouse originally formed part of North Street and it has been suggested that the new name reflected a concentration of tanners here. Since the names Barker Row and Tanner Row are both included in a list of streets from c.1639, Angelo Raine has suggested that Barker Row might be the short lane leading to Barker Tower (Raine 1955, 254–5). The modern Barker

Lane (Fig.1570, 2) was originally known as Gregorelayne c.1408 from its proximity to the parish church of St Gregory but it was given its present name in the 16th century or later from the tanning industry in the neighbourhood or perhaps from its proximity to Barker Row.

The York street-names thus point to tanning taking place in two areas in the Anglo-Scandinavian period. The first of these lay between the city wall and the River Foss in the vicinity of Monk Bar (Barker Hill) and the second to the south of the River Ouse. Tanning is, as noted above, an evil-smelling process and it requires access to running water so it is natural for it to have been located away from the centre of the city and close to the rivers. The dates of the records of the street-names might at first glance suggest that the northern area came into use before the southern one. The earliest record of Barkergate is c.1230 and the last record of the name containing the Scandinavian occupational term is from 1546, while the earliest record of any of the relevant street-names south of the Ouse is from 1524. That tanning might have been carried out in this latter area long before this, however, is suggested by the finding of 150 Roman leather shoes in an excavation at Tanner Row (Hall 1996, 55).

The presence of another Scandinavian street-name in the area south of the Ouse, Skeldergate, also points to leatherworking here in the Scandinavian period. Skeldergate runs along the south bank of the Ouse from Micklegate to the *colonia* wall (Fig.1570, 3). Its earliest records are as Sceldergate in a document written c.1147 x 1154 and Skeldergata in one from c.1150 x 1169. The most satisfactory interpretation of this name is that it contains the Scandinavian occupational term *skjaldari* 'shield-maker'. Leather was certainly employed in large amounts by shield-makers for covering the front and possibly also the back of a shield to give added resistance to blows and to keep the wooden planks together (Härke 1992, 51). The skin used was normally cattle hide. In Athelstan's laws issued at Grately (924 x 939), it is stated that 'no shield-maker is to put any sheepskin on a shield, and if he does so, he is to pay 30 shillings' (EHD 1, 384). The leather was probably put on the wooden shields wet and left to dry in position. It would have been convenient for the shield-makers to have had such easy access to running water from the River Ouse.

The only street-name in the area originally occupied by the Roman fortress which might be said to be even loosely associated with leatherworking is Hornpot Lane (Fig.1570, 6), Hornepottelane 1295, now Tongue's Court running between Petergate and the west end of Holy Trinity Church. This name was associated by Lindkvist, Smith and Raine with the horner's craft but without explaining the exact significance of the name. It has been pointed out by L.P. Wenham (1960), however, that in modern English the word pot can have the significance 'pit, tan pit' and that a pit excavated at a site in Hornpot Lane, which could be dated to c.1350–1400, had probably been used by a horner for soaking horns. The location of the pit here rather than near the tanners' pits is perhaps to be explained by the proximity of Hornpot Lane to The Shambles or meat-market.

The only other street-names in York to contain occupational terms associated with leatherworking are found close together in the centre of the city, presumably where the craftsmen concerned offered their products for sale. Girdlergate (Girdelergate 1381 x 1384) contains the Middle English term *girdeler* 'belt-maker' and Scandinavian *gata*. It was earlier known as Glovergail c.1250, from Middle English *glover* 'glove-maker' and Scandinavian *geil* 'alley'; it was renamed Church Street in the 19th century (Fig.1570, 4). It has been suggested by Palliser (1978, 10) that the street was named and renamed from successive concentrations of the two groups of craftsmen but it seems at least as likely that these two crafts were carried on here side by side. Perhaps the one craft was dominant in the early period, the other in the later one. Not far away in Saddler Lane (now Three Cranes Lane off St Sampson's Square; Fig.1570, 5), another group of leatherworkers, the saddlers (Middle English *sadlere*), plied their trade, at least from c.1541, when the name was first recorded as Sadler Layn. Strangely enough, there is no street-name in York containing a term for 'shoe-makers', unless hosier-rawe 1373 (now Hosier Lane; Fig.1570, 7) contains the Middle English term *hosier* in the sense 'shoe-maker' (cf. Fransson 1935, 115).

The scarcity of references to leatherworkers in the street-names is rather strange in the light of the much more numerous and varied references to such craftsmen in the street-names of Norwich (Sandred and Lindström 1989). It seems highly unlikely, however, that any records of early street-names in York should

have escaped the notice of all four of such experienced scholars as Harald Lindkvist, A.H. Smith, Angelo Raine and David Palliser.

The physical evidence

During the long history of archaeological excavation and antiquarian observation in York, a small number of structural features of Anglo-Scandinavian date have been found which have been thought to be associated with leather processing. The interpretation of these individual features appears to have been prompted as much by the quantities of leather found associated with them as by the structures themselves. Each is open to differing interpretations and, in the light of the particular relevance to this study, the arguments for their reinterpretation are given in some detail here.

Structural evidence from High Ousegate and 5–7 Coppergate

During the winter of 1902/3, George Benson observed a series of cellars being dug at 25–7 High Ousegate and 5–7 Coppergate. He recorded Roman and Anglo-Scandinavian artefacts and structural evidence that included a post alignment, and three features with timber structures above that he thought to be tanning pits. This interpretation has become widely accepted and has appeared frequently in the literature, including that by Richardson (1959, 60), Radley (1971, 43), Ramm (1972, 248), the Royal Commission on Historic Monuments (RCHMY 2, 8; 4, xxxii), MacGregor (1978, 51), Cherry (1991, 296) and MacGregor in Cameron (1998, 14–15). Many may be unaware that Benson's interpretation of these features as tanning pits has been subject to reconsideration.

A reappraisal of the evidence was undertaken by R.A. Hall (AY 8/3, 238–50) whilst reporting on structures seen at 5–7 Coppergate, in the same area as Benson's excavations. After examination of Benson's drawings and recorded observations, Hall reinterpreted the Anglo-Scandinavian features recorded by Benson in the light of his own observations at 5–7 Coppergate and the adjacent site at 16–22 Coppergate. The construction and dimensions of the pits were found to be comparable to the sunken-floored buildings of 10th-century date present at 16–22 Coppergate. Hall has concluded that the weight of evidence, considering the limitations of Benson's drawings, suggests that the three rectangular features

are more likely to be sunken-floored buildings than tanning pits.

It is likely that Benson based his interpretation of the three pits on the deposits found within them. One pit contained sand, another puddled clay, neither diagnostic of leather processing. The third contained a five-inch thick layer of lime, which has been taken by Radley (1971, 51) and others to indicate a slaking pit, employed to remove the hair from fresh hides. Hall (AY 8/3, 249) has suggested that this deposit is more likely to represent a crushed mortar floor, a feature found in comparable structures at 16–22 Coppergate, though admittedly in neither so thick nor so extensive a layer.

A final consideration should be made here. As Hall (ibid., 249) has so rightly pointed out, the pits were located on the frontage of two of the main streets in York during the Anglo-Scandinavian and Norman period, so it is perhaps more likely that they represent structures for general habitation than such a noisome activity as tanning.

Structural evidence from Lloyds Bank, 6–8 Pavement

The recovery of leather artefacts, shoe-making waste (543–63, AY 17/3) and wooden shoe lasts (492–4, AY 17/3) provide evidence that leatherworking was undertaken during the Anglo-Scandinavian period at 6–8 Pavement. It has also been suggested that hide processing may have taken place on the site.

This suggestion is based on the large number of leather offcuts found, the presence of quantities of eggshell and elderberry seeds (MacGregor 1998, 15) and a feature interpreted, at the suggestion of the late John Waterer, as a stretcher frame (AY 8/3, 211).

The stretcher frame

This feature, part of Structure II/3 (ibid.), is described as ‘two converging poles of round cross-section’ driven into the main wall, and ‘held apart by two small upright stakes, one large post and a chock stone at the mid point’. After further consideration, however, the evidence for such an interpretation seems somewhat tenuous. Firstly, the two main poles are said to be driven into the wall of a structure, but the accompanying figure does not support this (AY 8/3, fig.49c, reproduced here as Fig.1571). The poles could equally be lying next to the wall. The post, stone and stakes that are said to be chocking them apart are not convincing in this role. There is a scattering of similar structural features in this area of the trench and it could simply be fortuitous that the poles are lying in this relative position. Further, the whole frame is lying on the line of a former return alignment, and it seems more likely that it is simply a structural element associated with a continuation of this. Even so, it is possible that this arrangement formed part of a stretcher frame, but it seems odd that it would be inserted into a structure and that it is lying horizontally rather than leaning against the wall. On balance, it seems probable that a leather-related function was originally sought for

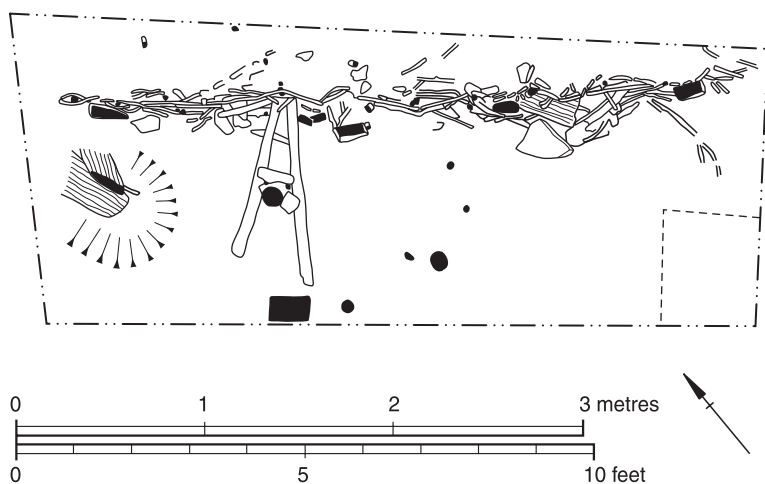


Fig.1571 Possible stretcher frame from 6–8 Pavement

this feature simply because so much other leather-working evidence was found, but that in fact there is little to support this assertion.

Uses of a stretcher frame

Stretcher frames are not used during the processing of vegetable-tanned leather but are used in the mineral-tanning or tawing process of skins. The original suggestion for the use of the frame was that 'treated leather would be pegged across the free ends of the poles to dry under tension'. The structure does not conform to the rectangular stretcher frames usually employed in the processing of leather. To apply even tension a skin would have to be pegged around the entire edge, favouring a rectangular-shaped frame. The distance between the two poles would allow for only the smallest of skins to be hung. While Waterer's suggestion may be correct, the process represented here could have involved the mineral-tanning of very small skins but not the vegetable-tanning of hides. It is interesting to note the presence of quantities of eggshell also recovered from the same site. MacGregor (1998, 15) has suggested that the eggshell may represent the remains of sweepings from the hen house, as chicken manure was one of the ingredients of the alkaline solution in which hides were infused during vegetable-tanning. Egg yolk was a component of the preparation in which tawers trampled the skins during mineral-tanning, and the presence of eggshell on site is more likely to be indicative of mineral- than vegetable-tanning. Indeed, the two diverging poles of the 'stretcher frame' bear more than a passing resemblance to the supporting legs of the beam on which skins were scraped to remove the last traces of wool or hair and lime during the cleaning process prior to trampling or 'tubbing' the skins. A beam supported on a simple 'A-frame' leg is often depicted in scenes of the tawer at work from the 15th century onwards (Thomson 1998, 6 and fig.3 of a tawer dated 1473).

Structural evidence from 16–22 Coppergate

More recently, a large rectangular feature (C6g6, context 4812) excavated at 16–22 Coppergate, dating to the late 14th century, has been interpreted as a possible tanning pit. The large, possibly timber-lined, feature contained leather artefacts and a large quantity of leatherworking waste amongst its backfill.

The feature is sub-rectangular in shape with a flat base and vertical sides. The wider, western end, is stepped whilst the eastern end tapers to a point. The feature is large, measuring 14.6m by 3m, but shallow, being only 0.75m deep. This shape is not consistent with that of pits traditionally used in the tanning industry, neither with the slaking pits and handling pits used during the initial stages of hide preparation, nor the 'layaway' pits in which the hides were finally placed with layers of oak bark for an extended period of anything over a year. It is possible that the pit served as a handling pit; being shallow with steps at one end it would provide the easy access required for the hides to be moved daily. Against this interpretation, however, is the large size of the pit. If the pit were associated with an aspect of the leather tanning trade its large size would represent hide processing on an enormous scale, for which one might reasonably expect abundant additional evidence to be present on the site (Roy Thomson, pers. comm.).

A number of environmental samples were taken from deposits within the feature in the hope that they might help elucidate its function. Analysis by Hall and Kenward (Reports from the Environmental Archaeology Unit, York, 99/27) failed to find any evidence that tanning had taken place in the vicinity, and their conclusions are quoted verbatim here.

'The evidence from the plant, invertebrate and other components of these samples offers no support for the suggestion that leather-related activities like the storage or tanning of hides took place in or near the pit where these deposits formed. The small amounts of bark present are likely to have come from small structural timber, brushwood or perhaps from woodworking or material used as litter, whilst the white efflorescence (perhaps calcium sulphate, cf. Carrott et al. 1995) noted in some of the samples after nearly two decades in store (but not noted during excavation) seems unlikely to represent concentrations of lime from a slaking pit, used for loosening the hair on the raw hides. Such efflorescence is rather frequently observed in samples which have been stored for long periods. Overall, the deposits appear to be a somewhat heterogeneous mixture of occupation material, particularly stable manure, with leather fragments merely part of the waste discarded into the pit.'

Amongst the material used to backfill this feature was a large quantity of waste leather comprising 225 pieces of primary waste (unusable areas of the hide discarded during the initial processing) and approximately 6,700 scraps that appear to be shavings from the flesh side of tanned hides (see Fig.1588, p.3254). Such shavings are produced when a hide is pared down to the required thickness during the currying process. Currying converts the rough, freshly tanned leathers to a material of uniform thickness with properties appropriate to its intended use, so that thick, firm leathers are produced to make shoe soles, and softer, thinner leathers for the uppers. Currying does not, however, require the use of pits, as all the processes involved may take place above ground. The recovery of flesh shavings here may be the only trace left by the currying trade to be found in the archaeological record. The flesh shavings may represent the final clearance of the workshop when work had ceased.

It is interesting that flesh shavings and primary waste, hide edges and unusable areas of hide were found together in the backfill. While most of the unusable parts of the hide would be removed during the tanning and subsequent currying processes, some areas remained. It is possible that we have the workshop debris of someone engaged in the currying trade who was also selling on pieces of leather to leatherworkers. The remaining parts of the hide unsuitable for manufacture were removed before sale as the individual leatherworkers either did not want, or could not afford, to buy complete hides.

Environmental evidence

Evidence for tanning from plant and insect remains

By Allan Hall and Harry Kenward

It is suggested elsewhere (Hall and Kenward forthcoming) that a bioarchaeological 'indicator group' (*sensu* Kenward and Hall 1997) for tanning may be recognisable. The material giving rise to this hypothesis was discovered during assessment of samples from Anglo-Scandinavian and early post-Conquest riverside deposits at Layerthorpe Bridge, York (Carrott et al. 1997). Here, large quantities of bark fragments (and the sclereids — small clumps of lignified cells characteristic of certain trees, notably oak — left when bark decays) were recorded in many

samples. These gave the suspicion that the bark was being employed for some purpose, since there was usually very little wood present with it. Much the most likely process to have required bark in bulk is tanning (taken here to represent the steeping of hides in pits or vats with tree bark). Support for this came from a somewhat surprising direction. The beetle *Trox scaber* was unusually abundant (it was found in 30 of the samples, at a frequency of 3.6 per sample when present; five samples contained 'several' individuals and one 'many', on the semi-quantitative scale used for recording). This contrasts with the evidence from Anglo-Scandinavian Coppergate, where it was present in a large proportion (242) of the samples but was never abundant. There were only eight cases where three or four individuals were noted, the rest being ones or twos, and the mean number of individuals per sample where the beetle was present was 1.2 (AY 14/7; Kenward, unpublished database). Thus *T. scaber* was significantly more abundant at the Layerthorpe Bridge site than at Coppergate.

A statistical test on the data from Layerthorpe Bridge strongly supported the subjectively recognised association between *Trox* and bark ($p < 0.01$ for correlations of bark and bark sclereids with *Trox*, using Spearman's rank-order correlation). By contrast, there was no correlation between records of bark and *Trox* in the 301 contexts from 16–22 Coppergate for which there were analyses of both plant and insect macrofossils ($p = 0.62$). This accords well with the broad range of biological, artefactual and structural evidence for this period at Coppergate, which gives no reason to suppose that tanning was carried out. A similar exercise for post-Conquest deposits at Coppergate cannot be carried out because analysis of insects has not progressed beyond the assessment stage (which produced no records of abundant *Trox*; Carrott et al. 1996).

Trox scaber is a scavenger now typically associated with birds' nests but sometimes found in habitats created by human activity. It is possible that it sometimes built up populations in piles of old bones or skins, and at Layerthorpe Bridge, bearing in mind the presence of large quantities of comminuted bark, it may be that tanning is indicated, though any supporting evidence from vertebrate remains was lacking (Carrott et al. 1997). The area excavated at Layerthorpe Bridge might well have been far enough away

from centres of population to be an acceptable location for such a vile-smelling activity, too.

This is the first time that such direct evidence for an area devoted to tanning has been detected in York. Five sites have yielded medieval or post-medieval assemblages of sheep limb bones which have been interpreted as waste from hide preparation: 118–126 Walmgate (AY 15/1), 148 Lawrence Street (Carrott et al. 1994a), North Street (Dobney and Jaques 1993), St Andrewgate (Carrott et al. 1993) and Bedern (AY 10/5, 617). Confirmation would represent a significant contribution to our understanding of zonation in medieval York. As an aside, it is worth mentioning that although other sites, particularly that at 6–8 Pavement (AY 8/3; AY 14/4), have provided ample evidence of leatherworking, leather production sites have not yet been located.

We would strongly warn against using abundance of either *Trox scaber* or bark alone as indicators of tanning. Bark may have accumulated from decay of timber used for any number of other purposes. *T. scaber* is occasionally abundant in general occupation deposits, for example, in a late 14th-century 'organic dump' from High Street, Hull (Carrott et al. 1994b), though no association with tanning is suspected. Some other cases are less clear: *T. scaber* was abundant in a dump of material containing much leather in a late or post-medieval deposit at Palmer Lane, York (Carrott et al. 1993), and another dump of similar date at the nearby Adams Hydraulics II site at Peasholme Green also produced unusually large numbers of *T. scaber* (Allison et al. 1991). In this latter case, too, there was much leather and it was uncertain whether the beetle may have lived in it or have been in some way associated with its production (or of course neither!). There is also a record of several tens of individuals from a sample of unknown size from the Chaucer House site, Southwark, London (Kenward 1990).

Fragments of small strips of tightly rolled birch bark (*Betula* sp.) were found in levels from Period 4A onwards at 16–22 Coppergate, although not in any concentrations. These are discussed by Morris in AY 17/13 (pp.2348–9) and material of this kind may have been used in the tanning of hides.

The osteological evidence

Skin and bones: correlating the osteological and artefactual evidence

By T.P. O'Connor

The aim of this text is to review the osteological evidence from Anglo-Scandinavian and medieval York for the retrieval and working of skins and hides, and to cross-correlate that evidence with the data obtained from studies of leather artefacts. Although much of the animal bone debris from excavations in York appears to have derived from the butchering of animals for meat, and from their domestic consumption, some evidence of the retrieval of useful body parts, such as hides and horns, might be apparent. The text begins by discussing the nature of such evidence, and then reviews the available data.

What are we looking for?

The first, obvious, piece of information for which to search is to see whether the pattern of relative abundance of species observed in leather artefacts matches that observed in the animal bone debris, site by site or period by period. In fact, this is not as simple as it may seem. Both bones and leather will be subject to patterns of differential preservation, and the biases that distort the animal bone data will probably be quite different from those that affect the artefact data. Not least, the hides and skins of different species might have been treated in quite different ways, rendering them more or less likely to survive prolonged burial. Another complication is that of equating numbers of bones with numbers of potentially available hides. The relative (de)merits of different bone quantification methods have been worked over at length elsewhere (e.g. see AY 15/1, 6–7; O'Connor 2000, 54–67), and will not be reiterated. Suffice to say that the predominance of one species in terms of identifiable bone fragments need not indicate predominance in terms of numbers of individuals, and that the predominance of one species in terms of meat-weight contribution need not be the same as predominance in terms of available hide, one being a volume measure, the other an area measure. Thus if one ox equals eight sheep in terms of meat, it might only represent four sheep in terms of hide, and even that simple calculation makes no allowance for the value placed upon their respective hides. We need to compare measures of bone and

leather predominance with some care, therefore, and be prepared to use a broad brush.

A second line of enquiry is to look for bone assemblages diagnostic of the recovery of hide from animal carcasses. Because their skin is relatively thick and hairy, bovids such as cattle and sheep are generally skinned in the course of butchering them for meat. This process can be observed in cultures as different as post-medieval England (Sabine 1933) and North American Plains Indians (White 1953), and can probably be assumed for most bovids at most times and places. It follows, therefore, that recovering the hides of cattle and sheep for working into leather need not be a deliberate activity: the hides are made available by routine butchering of the animals. The same cannot be assumed for pigs, which, at least in northern Europe, have traditionally been butchered without skinning (An Roinn Talmhaidheachta 1941). The recovery of pig skin might, therefore, be a more deliberate process.

If the collection of cattle and sheep skins is bound up with the butchering process, it is likely that the archaeological evidence for the two activities will also be closely associated. O'Connor (1993) discusses a theoretical sequence of butchering events through which a large bovid carcass might pass if the aim were to optimise the use of all parts of the carcass, including the skin. The initial stage of primary butchering has the live animal as input, a 'dressed' carcass as the intended product, and a mixture of skin, entrails, tail, head and foot bones as waste. The immediate resorting of the 'waste' component then allows the useful hide, horns and perhaps some larger bones to be retrieved for use. If the carcass is being used parsimoniously, relatively little material might remain to be deposited as the assemblage characteristic of the skinning and primary butchering: perhaps only some skull bones (but probably not the horn cores) and the tail vertebrae. More diagnostic evidence might result if the hide is removed from the butchering area with some bones still attached, so that those bones become the diagnostic assemblage at the place where hides are accumulated, trimmed and prepared. The most obvious bones to be deposited in this way are those of the feet, as there is little meat value distal to the carpus and tarsus, and retention of the feet on the hide might be useful in subsequent handling of the hide, or as a form of tally. Something of this nature clearly underlies the enor-

mous quantity of sheep foot bones recovered from post-medieval deposits at 118–26 Walmgate (AY 15/1, 30–54), and perhaps the smaller deposits noted at Bedern Foundry (AY 15/5, 367–8). Deposits with a high proportion of foot bones (i.e. metacarpals, metatarsals, phalanges) might therefore indicate the processing of hides, whereas deposits with a high proportion of foot and skull bones are more likely to derive from primary butchering, a process that might have included the recovery of hides. Our problem is likely to be one of visibility. If hides were recovered systematically, on a large scale, it is likely that they, and any diagnostic attached bones, were removed to locations at some distance from domestic occupation: tanning is notoriously malodorous. The most characteristic deposits, therefore, are likely to be at peripheral locations. On the other hand, if hides were recovered piecemeal, as a part of the butchering process, distinctive assemblages might not be deposited, or might become re-associated with other bones during refuse deposition, so losing their identity.

The available evidence

The great majority of the leather artefacts identified in this survey are of cattle or calf leather, and this is certainly consistent with the overwhelming predominance of cattle bones in Anglo-Scandinavian and medieval bone assemblages from York (AY 15/3, 149–51; AY 15/5, 378–83). Keeping in mind the points made above, we should not expect to see a match in terms of the degree of predominance, but the direction of it is certainly consistent. In the medieval leathers from Coppergate, there is a higher proportion of sheep/goat identifications in the late 11th- to early 13th-century material (mostly shoes) than in earlier periods, but a predominance of bovine leathers is apparent in later medieval groups. To some extent, this is matched in the animal bone debris. The relative abundance of sheep bones is higher in 11th- to 13th-century groups than in Anglo-Scandinavian material (AY 15/5, tables 90–1). However, this higher relative abundance persists or increases in later medieval bone samples at some sites (16–22 Coppergate; 58–9 Skeldergate), or is not really apparent in the earlier material at others (1–2 Tower Street; 9 Blake Street). What we can infer from the data is some increase in the amount of sheep bone deposited in the 11th to 13th century at sites where the excavated contexts seem to be directly associated with occupation (58–9 Skeldergate; 46–54 Fishergate; Bedern), rather than at sites where the deposited material might in-

clude a higher proportion of non-domestic debris (1–2 Tower Street; 9 Blake Street, see below).

The general dearth of objects made in pigskin is consistent with the point made above about the more deliberate procurement of pigskin. One deposit from Coppergate could be interpreted as including a dump of bones from the primary butchering (and so possibly the skinning) of pigs: context 30352, a Period 4A layer towards the front of the site, gave an assemblage with an unusually high proportion of pig skulls and foot bones. Some concentration of pig metapodials has also been noted in Period 5B deposits in Tenement B at Coppergate, probably indicating that pigs were slaughtered and butchered here during that particular period of occupation (AY 15/3, 179–80). However, for the reasons already given, even fairly large-scale primary butchering of pigs need not indicate the accumulation of pigskin. The shortage of pigskin artefacts might be a consequence of differential survival, but could equally indicate that cattle and sheep skins were available anyway, and thus were the hides most commonly used.

Apart from the post-medieval material from Walmgate, only a few deposits have given bone assemblages with a sufficiently high proportion of foot bones to indicate the accumulation of skins. Some late medieval assemblages from Period 3 and 4 contexts at the Bedern Foundry site included large numbers of sheep metapodials, though very few phalanges (AY 15/5, 367–8), and similar assemblages have been noted from post-medieval deposits at Bedern. Given the paucity of any bones other than metapodials in these assemblages, they have the appearance of deliberate collections of a particular bone element, rather than debris from primary butchering or skinning. However, even if the bones were actually collected as raw material for bone working, the fact that such quantities could be assembled indicates systematic carcass processing on a scale commensurate with the collection of skins.

Similar evidence of systematic butchering, this time of cattle, comes from medieval material from 9 Blake Street (AY 15/5, 376–7). The high proportion of cattle bones, mentioned above, can in most Blake Street medieval contexts be attributed to poor preservation of the assemblages, with robust cattle teeth and jaw fragments predominating amongst the surviving fragments. However, in context 4373, the fill

of scoop 4395, the bone assemblage consisted largely of cattle skulls, metapodials and phalanges: a good candidate for primary butchering debris. Again, this is not *prima facie* evidence for the collection of cattle hide, but it is certainly debris from systematic butchering during which hides would almost inevitably have become available.

Goats present an interesting problem, with only a few examples of goatskin positively identified amongst the artefacts. A number of medieval sites in York, along the south-west bank of the Ouse and on Aldwark, have given evidence that goat horns were being collected on quite a large scale (AY 15/1, 28–9; AY 15/5, 371). Elsewhere in Europe, it has been argued that the collection of goat horn and of goatskins went on together (Schmid 1973; Prummel 1982). In her delightful exegesis on goats, Noddle (1994) draws attention to several 13th- and 14th-century sites in Germany at which goat bones were particularly abundant, sometimes matched by abundant finds of goatskin artefacts. Apart from the horncore accumulations, goat bones are scarce in Anglo-Scandinavian and medieval samples from York, and the scarcity of goatskin objects would seem to match this general lack of goat bones. On a parsimonious interpretation, that would suggest that the goat horncore accumulations represent the collection of horn, not horns and hides. Perhaps the lack of goatskins is unsurprising. As Noddle points out, goats were of greatest importance to the rural economy in those regions where rough hill grazing abounded — Wales, Northumberland and the Scottish Highlands — rather than the comparatively lush Vale of York. However, if craftsmen in York provided a steady market for the raw material, horn could be easily transported over considerable distances, still attached to part-skulls and chopped-off horncores, and would degrade far less during a week's overland travel than would the corresponding number of goats-worth of skins.

Smaller animals may have provided skins that have not been identified amongst the artefacts. Anglo-Scandinavian Coppergate yielded some cat skulls from Period 4 and 5 deposits with knife-cuts consistent with the cats having been skinned, and some groups of cat metapodials and phalanges (AY 15/3, 186). However, these are only a few specimens from a site that yielded quite a lot of cat bones, particularly from Tenements A and B. The use of cat skins in medieval York was probably small-scale and op-

opportunistic. McCormick (1988; 1997) interprets cat mortality data from Dublin and Waterford to indicate the deliberate culling of town cats for their skins, and the mortality profiles for cats from Anglo-Scandinavian and medieval York are not markedly different to those tabulated by McCormick. However, there is copious documentary evidence from Ireland of the collection and export of cat skins to support the tenuous osteological data, and the same support does not exist for York. The mortality profiles are equally consistent with adolescent cats dying through misadventure during their first few months of independence, rather than young cats being culled for their skins (O'Connor in AY 8/4 in prep.). The difference between the deliberate culling of young cats and the opportunistic use of animals that died without human intervention is quite a subtle one, and is unlikely to be easily resolved from the osteological evidence alone.

There is less ambiguous evidence for the use of red squirrel skins. Several contexts from Coppergate yielded specimens of squirrel, all of them metapodials or phalanges (AY 15/3, 191; AY 15/5, 362), and a 14th-century pit-fill from Bedern (context 1505) yielded 267 identified fragments of squirrel, the great majority of which were metapodials and phalanges (ibid., 365–6). This material is interpreted as being the debris from the working of squirrel pelts that came into York with the feet still appended. Just one of the bones from the Bedern assemblage, a cuboid, bore a faint transverse knife-cut, consistent with cutting around the hind foot. Bones of rabbit are found only infrequently in medieval deposits in York, and none has yet given any evidence that rabbit skins were systematically collected or used.

Brown bear was represented in Period 4B deposits at Coppergate by several specimens of third phalanges (AY 15/3, 187, 190, pl.XIa), which were probably derived from bear skins to which the claws were still attached. Given the uncertain status of bears in medieval Britain (Yalden 1999), the skins might have been locally obtained or imported, with importation seeming the more likely. Several other wild mammals that might have been valued for their fur have been recorded from sites in York in small numbers. Period 3 deposits at Coppergate gave a single specimen of otter, a humerus bearing no marks of butchering or skinning (AY 15/3, 187, pl.XIb).

Although earlier in date than the remit of this survey, note should be made of the 8th-century records of beaver and pine marten from 46–54 Fishergate (AY 15/4, 256, 259, pls.XIIa–b, XIIIa–b). Although there was no direct evidence that the beaver had been skinned, the pine marten bones included a calcaneum with transverse knife-cuts reminiscent of the squirrel cuboid from Bedern, and consisted entirely of foot bones.

Discussion

In so far as the different forms of data can be directly compared, the animal bone evidence and the leather artefact evidence are broadly consistent. Just one apparent disparity requires further discussion. Most of the Anglo-Scandinavian leather artefacts from Coppergate are identified as 'calf' rather than 'cattle', with 'cattle' identifications becoming more common in the medieval period. If we follow agricultural practice and limit the term 'calf' to animals of a year old or less, then that age category would be approximately equivalent to the 'juvenile' and 'immature' categories used in age at death analyses in AY 15. However, in Anglo-Scandinavian contexts, only 19 out of 293 mandibles fall into those two categories (6.5%), with the great majority classed as 'adult' (53.9%) or 'elderly' (14.7%). Even if we stretch the definition of 'calf' to include the dentally 'subadult' category (probably 2–2½ years), there is still quite a disparity between the leather artefacts and the dental data.

One possibility to consider is that the bone assemblages might be heavily biased against the younger animals through differential destruction of their less mineralised bones, so that the artefacts are giving a better reflection of the age at death distribution. However, it would take a quite remarkable degree of taphonomic bias to account for leather artefact identifications in which three-quarters of the specimens are of calf leather whilst less than one-tenth of the recovered mandibles are from calves, particularly for Coppergate where bone preservation was good and samples recovered by sieving were available to check the quality of recovery on site. Differential preservation of bones seems an unlikely explanation. It is more probable simply that there was a degree of selection going on, not taking any hide that butchering made available, but selecting the younger hides for their particular working properties. If that was the case, then perhaps supply exceeded demand, or at least

met demand sufficiently that it was not necessary to use more than a small proportion of the thicker hides obtained from adult animals. The later medieval artefact samples show a shift away from calf to cattle leather. This does not appear to be matched by anything in the bone data. If anything, the bone data would lead one to expect more calf leather to have been available, as there is some evidence for the emergence of specialist milking herds and thus the slaughter of veal calves (AY 15/5, 383–7). However, if the osteological evidence for an increased proportion of sheep in this later period actually reflects an increase in numbers of sheep at the expense of cattle, it is just possible that demand came to exceed supply, requiring increased use of thicker cattle leather where calf would be preferable were it available. Any further discussion of this point would require a more precise correlation of calf and cattle leathers with the age categories derived from dental data.

Of course, all of the above is predicated on the great majority of the leather artefacts having been made from locally derived material. If a high proportion were imported to York as finished artefacts, then the link between skins and bones is broken, and no correlation should be expected. One means of testing this would be to undertake detailed study of the leather offcuts, as these pieces surely represent the leathers that were worked in York, rather than leather artefacts that might or might not have been locally manufactured.

Though not particularly conclusive, this has been an interesting and useful comparison, putting together the data from a particular class of artefacts with other evidence for the animals from which their raw material was derived. What it has mostly brought to light is the degree of uncertainty over, for example, means of quantification or correlation of age categories. Some closely focused research on these issues is necessary if future analyses of skin and bones are to be made more meaty.

Limitations of the precision of the leather species identification in this study

Professor O'Connor's thought-provoking discussion above concerning the correlation of the bone evidence and the leather remains raises a number of interesting questions. The limitations of the leather species identifications made in this study, however,

must be stated here. These limitations apply not only to this study, but to all archaeological leather assemblages. The difficulties of distinguishing between the grain pattern of the skins of sheep and goat are well known to all those who attempt it. A general identification of sheep/goat has been made during this study, unless a positive identification of sheep or goat was possible. Similarly the criteria used to distinguish calfskin from cattle hide was rather more subjective than that used by Professor O'Connor and his colleagues engaged in the study of bone assemblages. The size of the hair follicles, the appearance in section and the thickness of the leather were all considered. The terms 'calf' and 'cattle' were used to convey a notion of the maturity of the animal but no idea of a specific age range was implied. Much archaeologically recovered leather, including these assemblages, has heavily worn surfaces and the structure may be degraded, so that the subtleties which would allow more precise identification of a hide or skin are often well beyond our reach. A consideration of the leather species identified during this study and the selective use of particular leathers through time are provided elsewhere in this section (pp.3265–7).

The leatherworking tools recovered

Iron leatherworking tools from Anglo-Scandinavian and medieval York

By Patrick Ottaway

A number of iron tools associated with various stages in the manufacture of leather objects were found in both Anglo-Scandinavian and medieval contexts at the sites included in this fascicule.

A tool used in the early stages of the leatherworking process is the slicker (or sleaker) of which an incomplete example comes from a late 14th-/early 15th-century context at Bedern Foundry (13165, AY 17/15; Fig.1572). It originally had a flat blade with at each end tangs for wooden handles at 90° to the back. Slickers were employed during tanning to force out the dirt retained under the hair roots just below the grain layer and to shave the flesh side until the surface was smooth and the leather was of even thickness (Goodall 1980, 58).

There are twelve carrier's knives from medieval contexts at Coppergate (Fig.1572), specialised tools used for cutting and paring leather. They are distin-

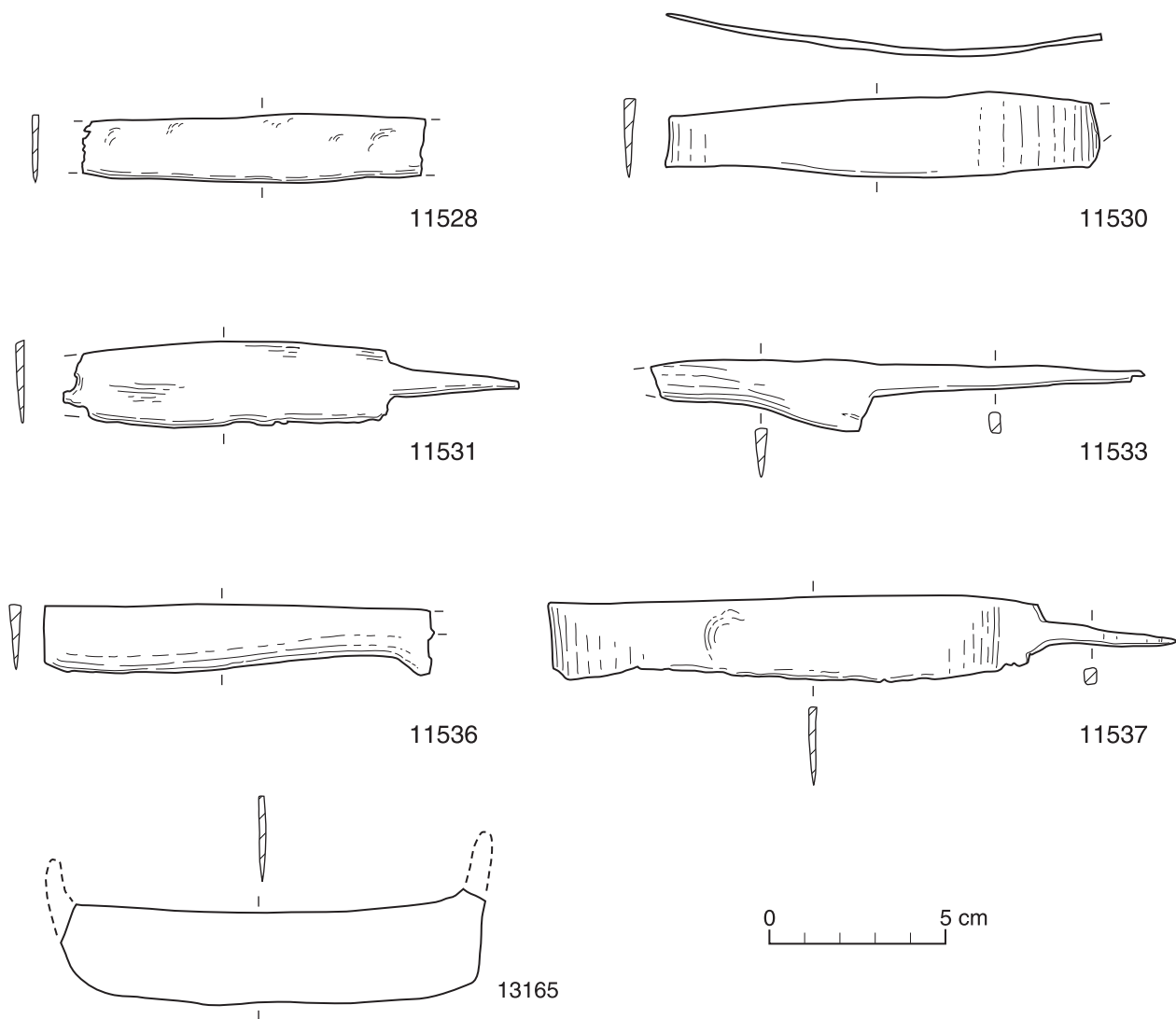


Fig.1572 *Carrier's knives from 16–22 Coppergate and slicker (13165) from Bedern Foundry. Scale 1:2*

guished from other knives by having blades which are unusually thin, but relatively wide, and there is usually little or no shoulder between the blade and tang. The Coppergate examples all have blades with straight ends; no example has the projecting spike sometimes seen on these objects (Goodall 1980, 59). The cutting edges often show signs of heavy wear, being markedly S-shaped or concave. Examples of carrier's knives were found in all four Coppergate tenements. The earliest contexts to produce them were late 11th–12th century (11533 and 11536, AY 17/15) and the remainder come from contexts dated up to as late as the 15th–16th century (11527). No comparable knives come from pre-Conquest contexts

at York or elsewhere and the type appears to be a post-Conquest innovation.

Four objects from Anglo-Scandinavian contexts at Coppergate were identified as double-armed leather creasers (2744–7, AY 17/6; Fig.1573). They each have a tapering tang which would have been set in a wooden handle and two arms which curve near the tip. In use one arm would have compressed the edge of the leather to prevent it tearing and would have created a dark line which might be considered decorative, while the other arm regulated the distance of the crease line from the edge (Attwater 1961, 5; Salaman 1986, 247).

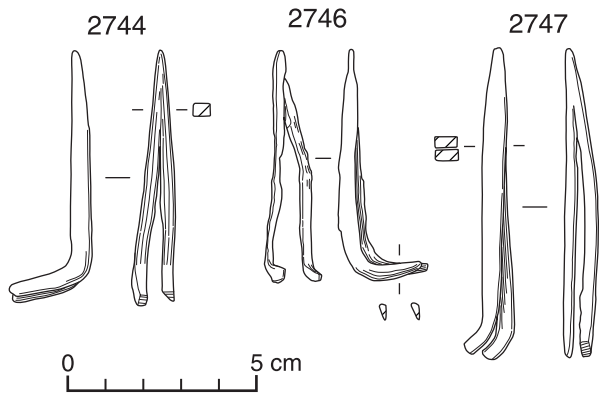


Fig.1573 Double-armed leather creasers from Anglo-Scandinavian contexts at Coppergate. Scale 1:2

The most numerous tools associated with leatherworking are awls used for piercing the material, although some of them could have been used in woodworking, bone working or other crafts. Anglo-Scandinavian contexts at Coppergate produced 40 awls (pp.552-4, AY 17/6; Fig.1574) and medieval contexts 32 (AY 17/15; Fig.1575). In addition, medieval contexts at 22 Piccadilly produced two, those at Bedern Foundry one, and those at the College of Vicars Choral at Bedern seven (AY 17/15) (Fig.1575).

An awl has two tapering arms usually of equal length, although on occasions one arm may be shorter than the other. One arm served as a tang and would have been set in a wooden handle, but if the work-

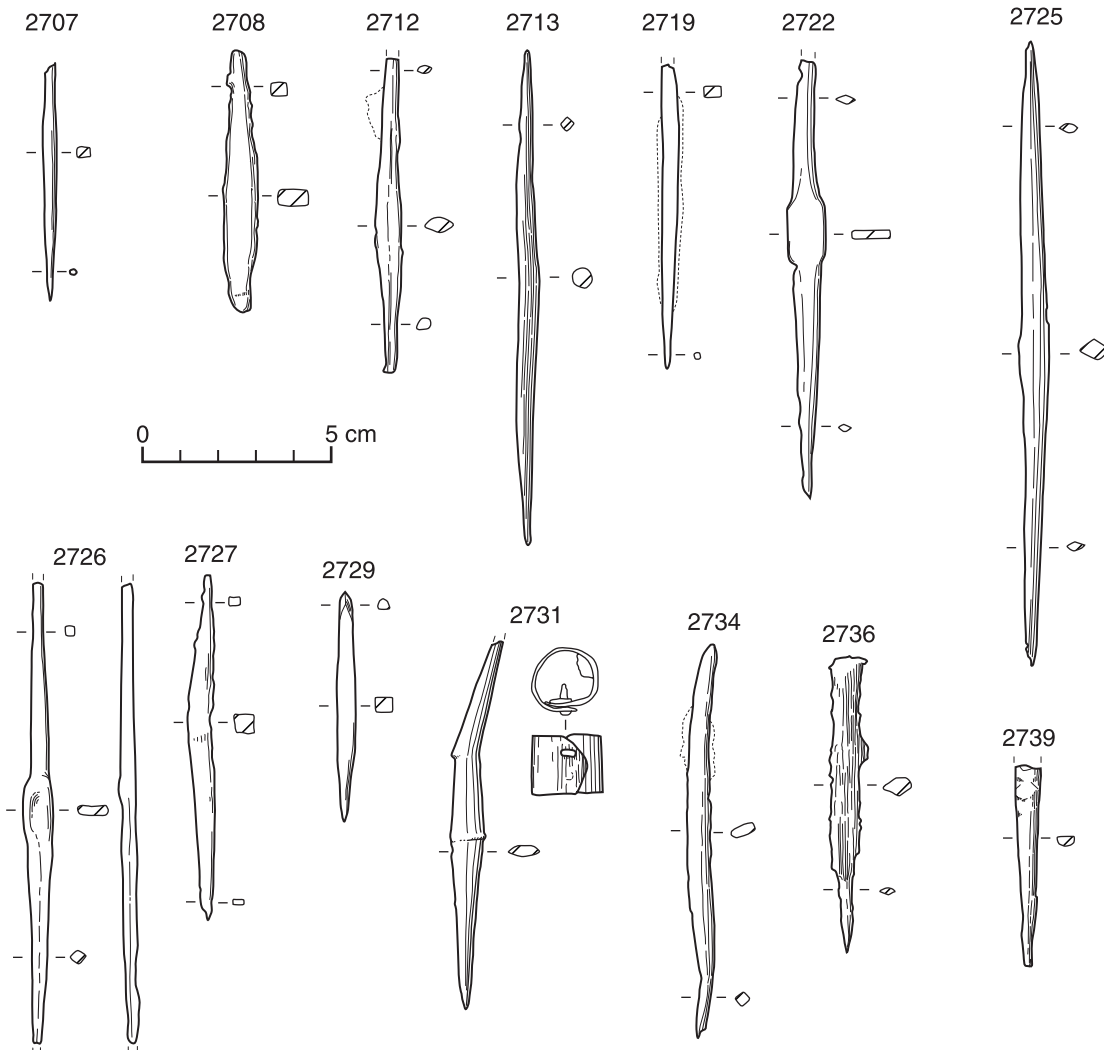


Fig.1574 Awls from Anglo-Scandinavian contexts at Coppergate. Scale 1:2

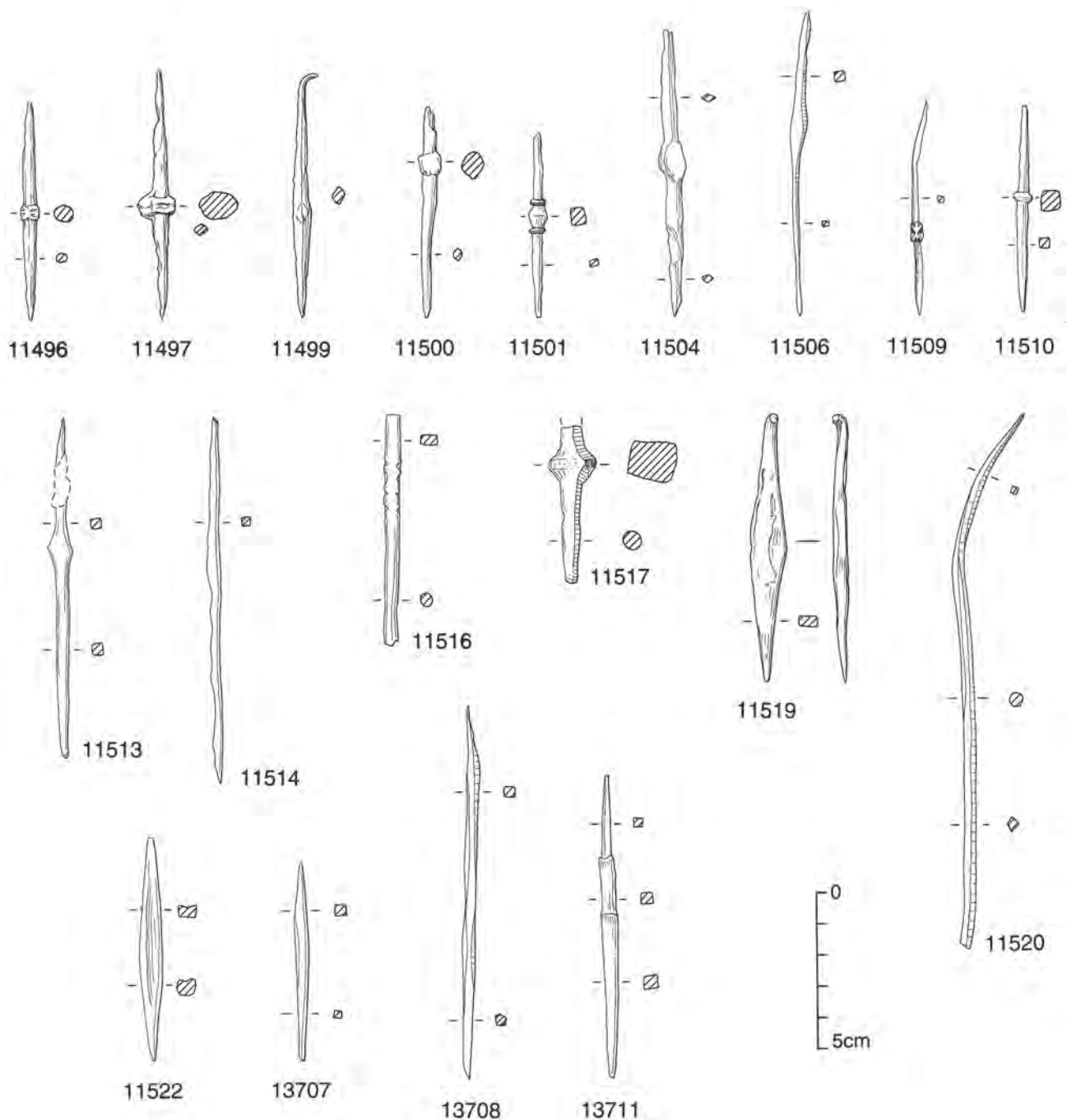


Fig.1575 Awls from medieval contexts at Coppergate and Bedern. Scale 1:2

ing arm tip broke the arms could have been reversed as happened to an awl from an Anglo-Scandinavian context from Coppergate (2736, p.552, AY 17/6). A wooden awl handle was found in an Anglo-Scandinavian context at Coppergate (9017, AY 17/13) and two Anglo-Scandinavian awls with wooden handles surviving were found at 6-8 Pavement, York (422-3, Fig.41, AY 17/3), and are discussed by Morris below.

The cross-section form of the awls under discussion varies; many are rectangular or rounded in cross-section, but those which are diamond-shaped in cross-section are thought to be particularly suitable for leatherworking as they enable a clean cut to be made in the material without splitting it (Attwater 1961, 28). There are 25 awls from the sites included in this fascicule which have diamond-shaped cross-sections, the earliest being from a Period 4A context

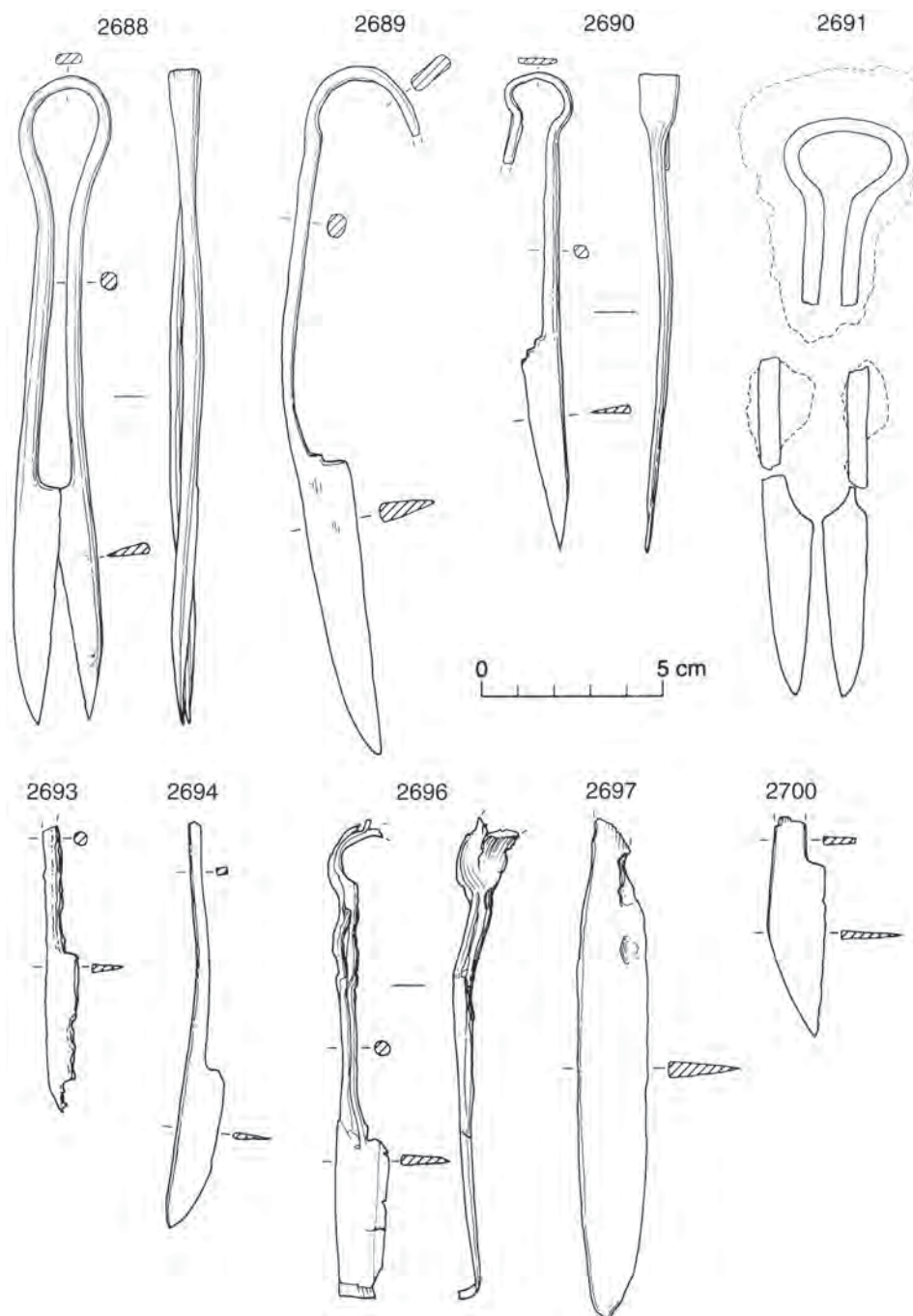


Fig.1576 Iron shears from Anglo-Scandinavian contexts at Coppergate. Scale 1:2

at Coppergate (2712–13, AY 17/6). They continue to occur in later contexts of the Anglo-Scandinavian period and in those of medieval date at Coppergate, but not at the Bedern sites. Some of these awls are unusually long compared to those with other cross-sections, the greatest length being 164mm (2725, AY 17/6), and this feature may relate in some way to their function. It may be noted, finally, that two awls

with diamond-shaped cross-sections were found in Anglo-Scandinavian contexts at 6–8 Pavement (424–5, Fig.41, AY 17/3) where other evidence for leatherworking was found.

A number of iron shears or parts of shears were recovered from Anglo-Scandinavian contexts at Coppergate (twelve; pp.548–50, AY 17/6; Fig.1576)

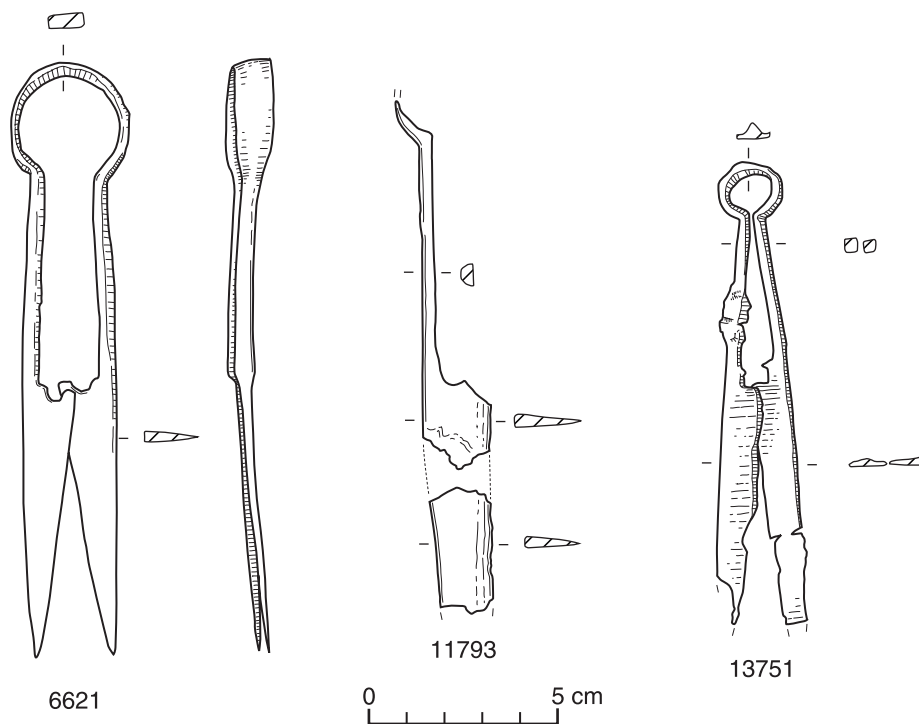


Fig.1577 Iron shears from medieval contexts at Coppergate and Bedern. Scale 1:2

and 22 Piccadilly (one; p.3005, AY 17/15). Others were recovered from medieval contexts at Coppergate (six) and Bedern (nine) (pp.2749–51, AY 17/15; Fig.1577). It is often assumed that shears were primarily used for textile manufacture, but they may equally well have been used for leatherworking and other tasks.

Size must to some extent relate to function, and the largest Anglo-Scandinavian examples from Coppergate of which complete length can be determined was 2689 (188mm; blade 84mm) although blade 2697 (138mm) must have come from a pair over 200mm in length. Shears of this size may have been used for shearing sheep, but a craft use in leatherworking or textile manufacture is also possible. The six examples from medieval contexts at Coppergate come from contexts dated 11th/12th–14th/15th century, but the nine examples from Bedern cluster in late 14th- and 15th-century contexts. The Bedern blades are 52–80mm long, while the Coppergate shear blades are 35–125mm long. The smallest shears may well have been used in fine leatherworking or in such textile crafts as needlework or hand-spinning.

A pair of iron scissors, 13741, was found in early 14th-century levels at Bedern, and this could also have been used in leatherworking. Scissors were a comparative rarity in the medieval period (Øye 1988, 107–9), although there is already an example of a pair from late 12th-century Lurk Lane, Beverley, E. Yorkshire (Armstrong and Tomlinson 1991, 136).

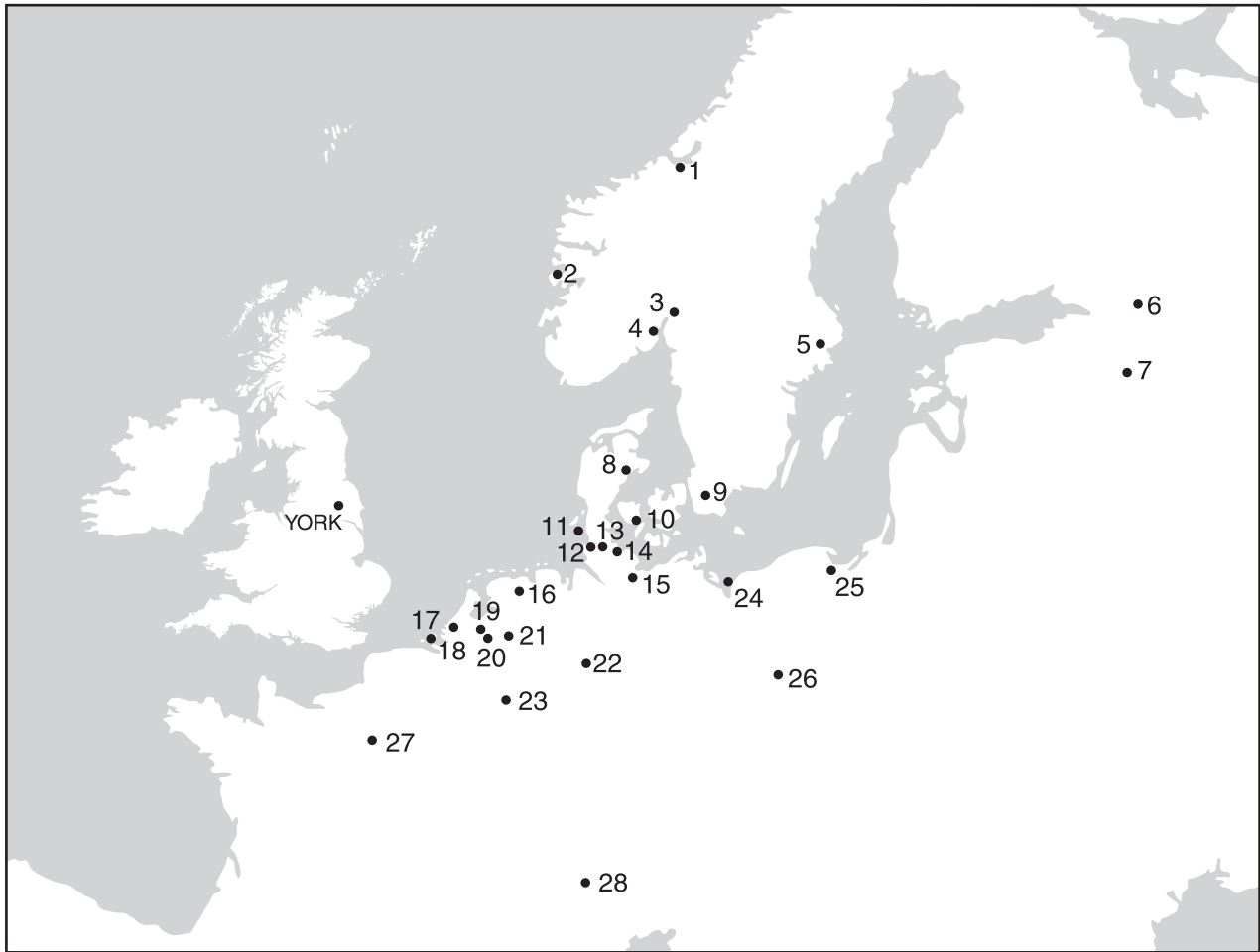
Wooden artefacts used in leatherworking

By Carole A. Morris

Tools made of wood or incorporating wooden elements were used by leatherworkers (and many other non-woodworking craftsmen). Two of these have been found at two sites in York: awls with narrow iron points and with their tangs set in small circular holes in wooden handles used as general leatherworkers' tools, and lasts used specifically by shoe-makers as blocks for shaping leather shoes and boots (9017–19, 2339–41, AY 17/13). Many other leatherworking tools such as specialised cutting knives would usually have been set in wooden handles (e.g. modern examples in Geraint Jenkins 1978, figs.44–5, 51–2), but examples



Fig.1578 Map of Britain and Ireland showing the main sites referred to in the text



- | | | | |
|--------------|------------------|----------------|--------------|
| 1. Trondheim | 8. Århus | 15. Lübeck | 22. Liebenau |
| 2. Bergen | 9. Lund | 16. Groningen | 23. Aachen |
| 3. Oslo | 10. Svendborg | 17. Middelburg | 24. Wolin |
| 4. Oseberg | 11. Lembecksburg | 18. Leiden | 25. Gdansk |
| 5. Stockholm | 12. Elisenhof | 19. Dorestad | 26. Wrocław |
| 6. Ladoga | 13. Schleswig | 20. Tiel | 27. Paris |
| 7. Novgorod | 14. Hedeby | 21. Deventer | 28. Konstanz |

Fig.1579 Map of northern Europe showing the main sites referred to in the text

of these handles have not been found in the York excavations.

From 16–22 Coppergate, 9017 is a small Anglo-Scandinavian wooden awl handle made of beech or *Prunus* sp. with a circular hole for the tang of an iron awl which is now missing. 9018 is 12th-/13th-century in date but is a type of iron awl whose form was the same from the Roman period to the present day, and would have been the type originally fitted into 9017.

On 9018, only traces of the wooden handle survive, and the species is unidentifiable. Similar Anglo-Scandinavian awls have been found at 6–8 Pavement (Fig.41, 422–6, AY 17/3), two of which were complete with their wooden handles. Forty Anglo-Scandinavian iron awls without handles have been found on the 16–22 Coppergate site and have been discussed above. A Viking-Age awl with a complete wooden handle and suspension loop, and another awl handle, were found in the 9th-century Oseberg

(Norway) ship burial (Brøgger and Shetelig 1928, figs.146–7). Viking-Age and 13th-century awls with wooden handles were found at Fishamble Street and Winetavern Street, Dublin (Lang 1988, pl.XII; National Museum of Ireland 1973, 41). Anglo-Scandinavian and medieval wooden awl handles without their iron points have been found at Lagore Crannog, Co. Meath, Ireland (Hencken 1950, fig.84); High Street, Dublin; Norton Priory, Runcorn (Morris 1984, fig.80, M242–3 and M253); King's Lynn (Clarke and Carter 1977, fig.171, 3); Westgate, Oxford (Henig 1976, fig.16, 2); and six sites in London — Custom House, Milk Street, Trig Lane, Blossoms Inn, Worship Street and Seal House (Henig 1974, fig.42, 247; Morris 1984, fig.80, M247–51). Some awls may have been fitted with antler or bone handles, like the antler handle on an awl found in Århus, Denmark (Andersen et al. 1971, 220, BCS). Iron awl points without handles have been found at many other sites in England, some with other leatherworking tools and heavy concentrations of manufacturing waste, for example, at Eastgate, Beverley (Atkinson and Foreman 1992, 175, fig.80, 303–11).

Most of the wooden handles were made from small roundwood and were whittled or lathe-turned. It is not possible to identify whether 9017 was lathe-turned since it is too abraded.

9019 (Fig.1580) is a post-medieval last carved from a split section of willow. It has a narrow, rounded toe end, a wide body with curved sides and is waisted at the instep with vertical grooves cut down each side. The heel end is square and rounded, and narrows vertically to a flat top with no provision for a peg or socket to attach it to a bench. It was presumably held between the knees, a method shown in a 15th-century illustration in fo.48v of the Mendel Housebook (Treue et al. 1965, pl.84). The overall outline of 9019 with its sharply cinched waist is very different from the three Anglo-Scandinavian lasts found at 6–8 Pavement (Figs.74 and 77, 492–4, AY 17/3), and other earlier medieval lasts such as those from Charavines (Colardelle and Colardelle 1980, fig.47, 3), Hedeby in Schleswig-Holstein (Graham-Campbell 1980, pl.476), Wolin in Poland (Kostrzewski 1949, fig.149), Lagore Crannog (Hencken 1950, fig.86) and Oslo in Norway (Schia 1977, fig.36). This, along with its date, suggests that 9019 was used in the production of later designs of shoes with entirely different shapes of leather sole. The closest parallels for 9019 come from

Novgorod (Russia), where 102 lasts were found dating from the 10th to the 15th century (Kolchin 1989, 28–30). Several have narrow waists and shaped in-steps like 9019 (*ibid.*, pl.16, 5).

Although the Coppergate last has a slightly rounded toe, it could probably still have been used to make narrow waisted shoes with pointed toes as well as rounded ones. Two more 15th-century illustrations from the Mendel Housebook (fos.68v and 93v) show pairs of lasts with narrow waists and pointed toes in racks on the wall (Treue et al. 1965, pls.108 and 142). Shoes with this distinct waisted sole outline constructed using the turnshoe method (Thomas 1980, 8–10; Grew and de Neergaard 1988, 47–8) have been found at many medieval sites in England including the sites studied here, Parliament Street in York (Fig.110, AY 17/4), Coventry (Thomas 1980, figs.1, 5, 7, 9–18), Austin Friars, Leicester (Mellor and Pearce 1981, figs.55–60), Southampton (Platt and Coleman-Smith 1975, figs.260–1, 264), Eastgate, Beverley (Atkinson and Foreman 1992, figs.87 and 89–90), London (Grew and de Neergaard 1988, figs.106–8) and Hull (Armstrong 1977, figs.20–4; 1980, figs.29–30). It is a common medieval shoe sole shape with wide joint, narrow waist, small seat and an oval or rounded toe (Thomas 1980, 10).

Lasts were often used in pairs and were asymmetrical to make distinct left- and right-foot shoe shapes. 9019 is symmetrical, however, and could have been used to make shoes for both feet. Lasts were not necessarily the exact outline of the finished product, although some were probably made to fit a particular person's feet. 9019 has the letters 'AR' branded into the side at the toe end, which may be the initials of the person for whom it was made or who owned it. The last is only one of many wooden objects of a similar date which were found in 16th- to 19th-century layers in the same well, but three of these objects were branded with the initials 'SR' — lathe-turned bowl 8586, fragment 8694 and rake 8977 (Figs.1023, 1065 and 1140, AY 17/13). These initials are probably owner's marks on wooden items used by the same household, possibly the same household which marked the last with 'AR'.

Leatherworkers illustrated in medieval and later documents (e.g. Grew and de Neergaard 1988, frontispiece and figs 71a–d; Rifkin 1973, 58, fig.25), as with most other small artefact craftsmen, are surrounded

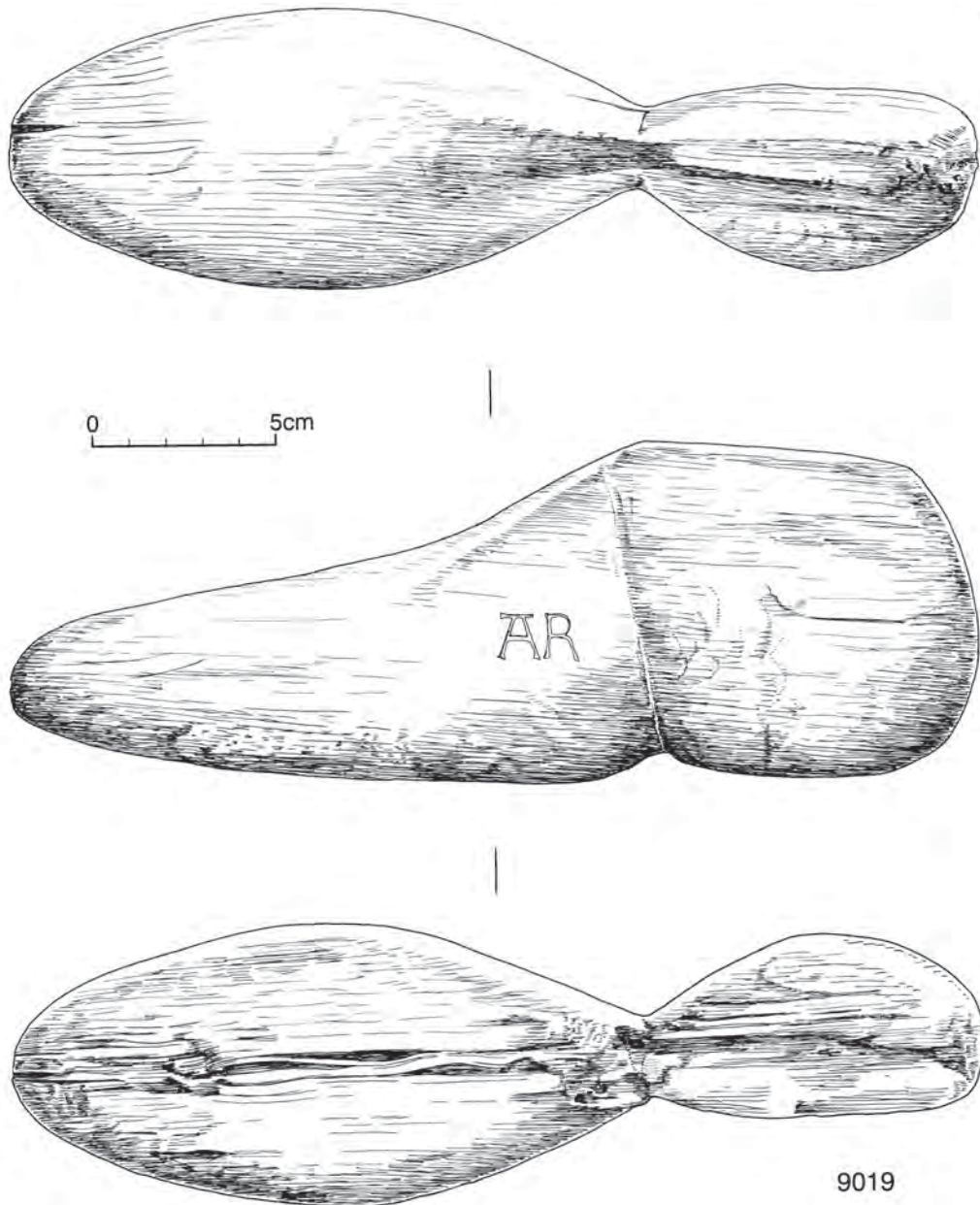


Fig.1580 Willow last from Coppergate for shoe-making. Scale 1:2

by wooden material. They sit on wooden stools, benches or even a chair, they work at wooden benches or tables which sometimes have wooden blocks upon them, their wall racks and poles to hold footwear and lasts are made of wood, and most of the tools they use have wooden components of some kind, mostly handles. Obviously, at Coppergate much of this kind of evidence has not survived. Some idea of the wooden items of value which belonged to leather-

workers, however, comes from the belongings of a Winchester shoe-maker seized on account of debt in 1408-9 (Cherry 1991, 309). Among lots of other leather items, he owned carving knives, drawknives, a paring knife, a shaver, a chisel, stools, benches, tables and a chest. Curiously, no mention is made of lasts (which may have belonged to individual patrons and been repossessed) or awls (which may not have been valuable enough to assess).

The waste leather

Leatherworking waste

Perhaps the most compelling evidence for leatherworking is the recovery of offcuts of waste leather, discarded unusable debris from either the processing of hides and skins or the manufacture of different types of leather goods. The processing of hides and skins and the making of leather goods produce distinctive waste that, in some cases, allows individual trades to be distinguished.

Primary waste derives from the initial trimming of hides during and following tanning and currying to remove unusable parts of the skin or hide such as

the areas around the head and legs, bellyskin, udders and hide edges. Deposits of these offcuts point to the presence of these leather processing trades. Secondary waste describes the offcuts of leather from cutting out pattern pieces. These offcuts are frequently triangular or elliptical in shape. Certain triangular pieces, known as intersectional cutting pieces, are produced when a series of soles are cut from a hide; these are characteristic of shoe-making. Occasionally secondary waste leather can be seen with hide edges present, indicating that the leatherworker was cutting out pattern pieces from a complete hide rather than from a piece of leather from which the hide edges had been trimmed prior to sale. The final trimmings of the pattern pieces during their assembly into finished goods can be recognised as



Fig.1581 Group of waste from 16–22 Coppergate; the bundle at bottom left is tertiary waste

long, thin, often irregular strips. These have been called tertiary waste here (see Fig.1581). Recovery of secondary and tertiary waste is indicative of the presence of manufacturing trades. All these categories of waste leather have been found in quantity at 16–22 Coppergate in Anglo-Scandinavian and medieval deposits, and have also been found at the other sites

Table 360 Period 3 leatherworking waste from 16–22 Coppergate by tenement (mid 9th–late 9th/early 10th century)

Tenement	Primary	Secondary	Tertiary	Other
A	1	12	8	13
B	11	69	29	5
C	–	25	63	–
D	3	3	2	–

Table 361 Period 4A leatherworking waste from 16–22 Coppergate by tenement (late 9th/early 10th century–c.930–5)

Tenement	Primary	Secondary	Tertiary	Other
A	2	9	11	1
B	–	3	11	–
C	3	40	56	52
D	9	92	174	33

Table 362 Period 4B leatherworking waste from 16–22 Coppergate by tenement (c.930/5–c.975)

Tenement	Primary	Secondary	Tertiary	Other
A	24	111	87	4
B	67	1043	1280	599
C	46	537	516	107
D	29	137	155	33

Table 363 Period 5A leatherworking waste from 16–22 Coppergate by tenement (c.975)

Note: Much of Period 5A comprises spoil thrown up during construction of Period 5B buildings, and so derives from Period 4B and earlier material.

Tenement	Primary	Secondary	Tertiary	Other
A	1	29	22	3
B	25	263	282	40
C	4	22	20	1
D	4	107	26	9

Table 364 Period 5B leatherworking waste from 16–22 Coppergate by tenement (c.975–early/mid 11th century)

Tenement	Primary	Secondary	Tertiary	Other
A	3	12	17	4
B	14	402	564	15
C	180	532	1125	77
D	29	188	280	32

Table 365 Period 5C (5Cf and 5Cr) leatherworking waste from 16–22 Coppergate by tenement (mid–later 11th century)

Tenement	Primary	Secondary	Tertiary	Other
A	1	5	5	–
B	1	1	–	–
C	6	35	24	5
D	4	43	107	1

Table 366 Period 6 leatherworking waste from 16–22 Coppergate by tenement (late 11th–16th century)

Tenement	Primary	Secondary	Tertiary	Other
A	1	96	55	5
B	255	996	1397	95
C	528	439	401	110
D	162	1506	1849	48

considered here. The waste leather recovered from 16–22 Coppergate is presented in Tables 360–6 by tenement and period.

The distribution of leather waste

By Ailsa Mainman

The distribution pattern of the leather waste at 16–22 Coppergate is of interest as it gives insights into where the leather manufacturers might have operated at different times, especially during the Anglo-Scandinavian period. Leatherworking was just one activity which was carried out by the occupants of the four properties on the site; other activities included wood turning, blacksmithing, non-ferrous metalworking, textile production, antler and bone working and glass working, as well as minor crafts such as amber and jet working. The larger picture of how these different crafts were organised spatially and chronologically is reviewed in AY 8/4.

The quantity of leather waste indicates the presence of leather manufacturers. Tables 360–4 quantify the different amounts of waste in the various categories in the Anglo-Scandinavian period. The totals for all waste types are given below, and allow several points to be made. Firstly it is clear that although the amount of primary waste, as opposed to

other categories of waste, is small, some of the initial trimming of hides took place on site. Secondly, the majority of every category of waste comes from Tenements B and C (88% in Period 4B and 84% in Period 5B). In Period 4B the emphasis is on Tenement B, and in Period 5B this predominance changes to Tenement C. Finally, it is clear that there was more leatherworking activity in Period 4B than in Period 5B; the overall amount of waste drops by c.27% in Period 5B.

Distribution plots were produced for primary, secondary and tertiary waste; these add more detail to the general picture provided by the tables. The plots for Periods 3, 4A and 5A are not included here as they showed little patterning and only small groups were recovered from the limited areas excavated. Those for Periods 4B and 5B, the main periods of occupation, however, show a consistent and interesting pattern (Figs.1582–7).

In Period 4B all three categories of waste were concentrated in Tenement B, with most of the material coming from the zone immediately behind the post and wattle structure, although some material was recovered from inside the structure itself. Little primary waste was recovered from the floor deposits but significant amounts of secondary waste and lesser quantities of tertiary waste were recovered

Table 367 All types of leather waste by tenement and the percentage of total waste they represent: Period 4B

Tenement A	Tenement B	Tenement C	Tenement D	Total
226	2989	1206	354	4775
4.75%	62.5%	25.25%	7.5%	

Table 368 All types of leather waste by tenement and the percentage of total waste they represent: Period 5B

Tenement A	Tenement B	Tenement C	Tenement D	Total
36	995	1914	529	3474
1%	29%	55%	15%	

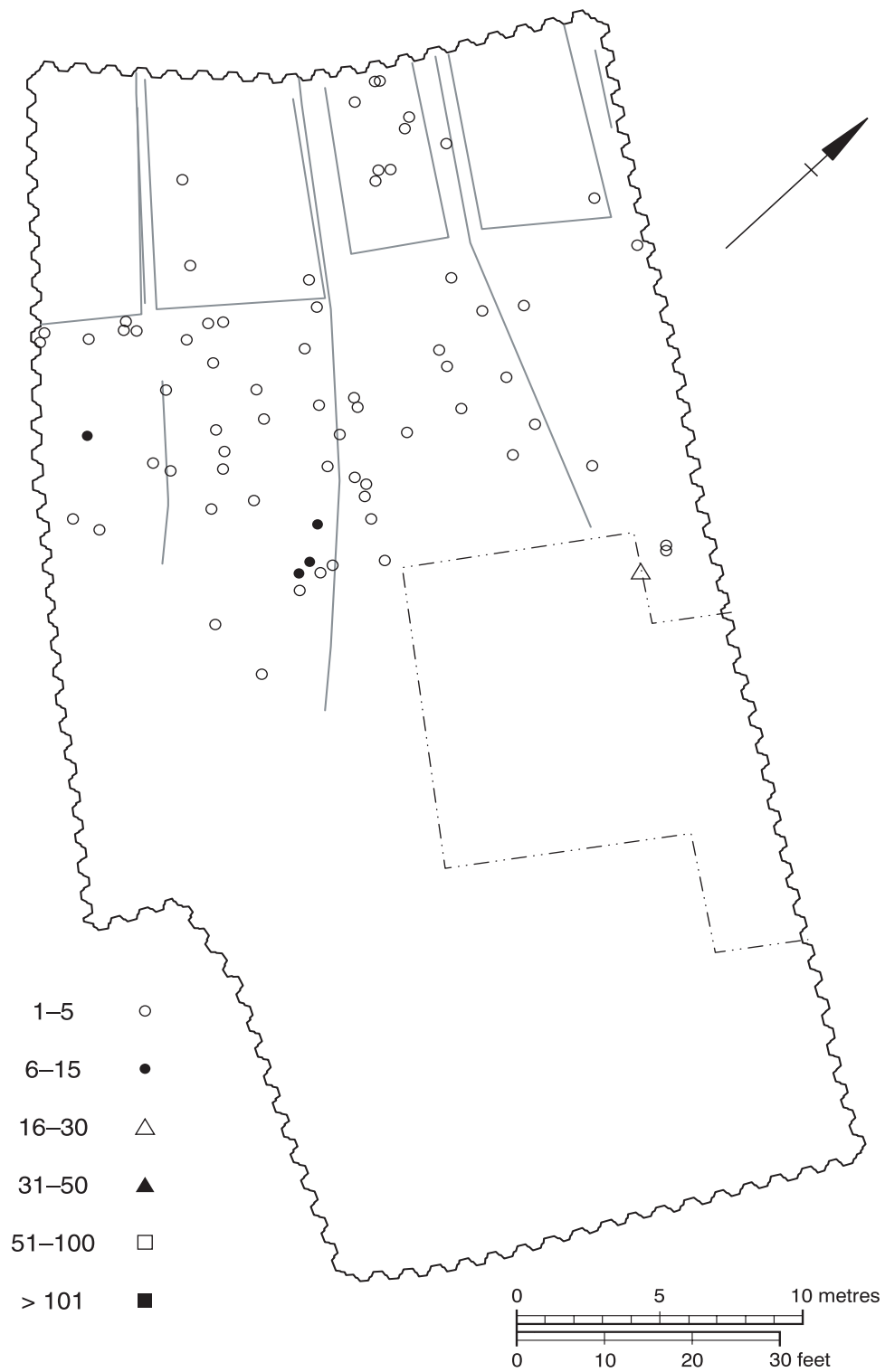


Fig.1582 Distribution of primary waste from 16-22 Coppergate: Period 4B

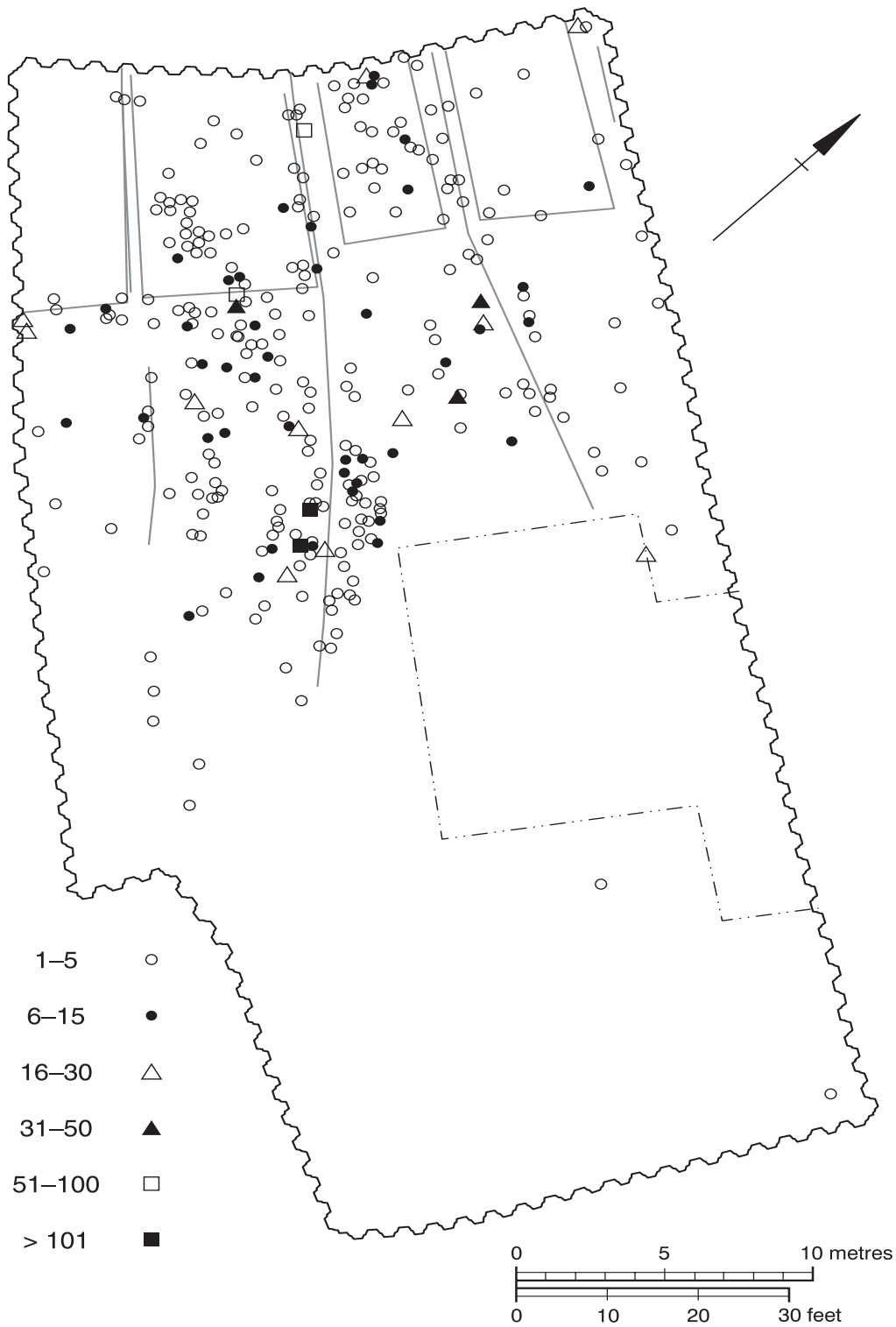


Fig.1583 Distribution of secondary waste from 16-22 Coppergate: Period 4B



Fig.1584 Distribution of tertiary waste from 16-22 Coppergate: Period 4B



Fig.1585 Distribution of primary waste from 16-22 Coppergate: Period 5B

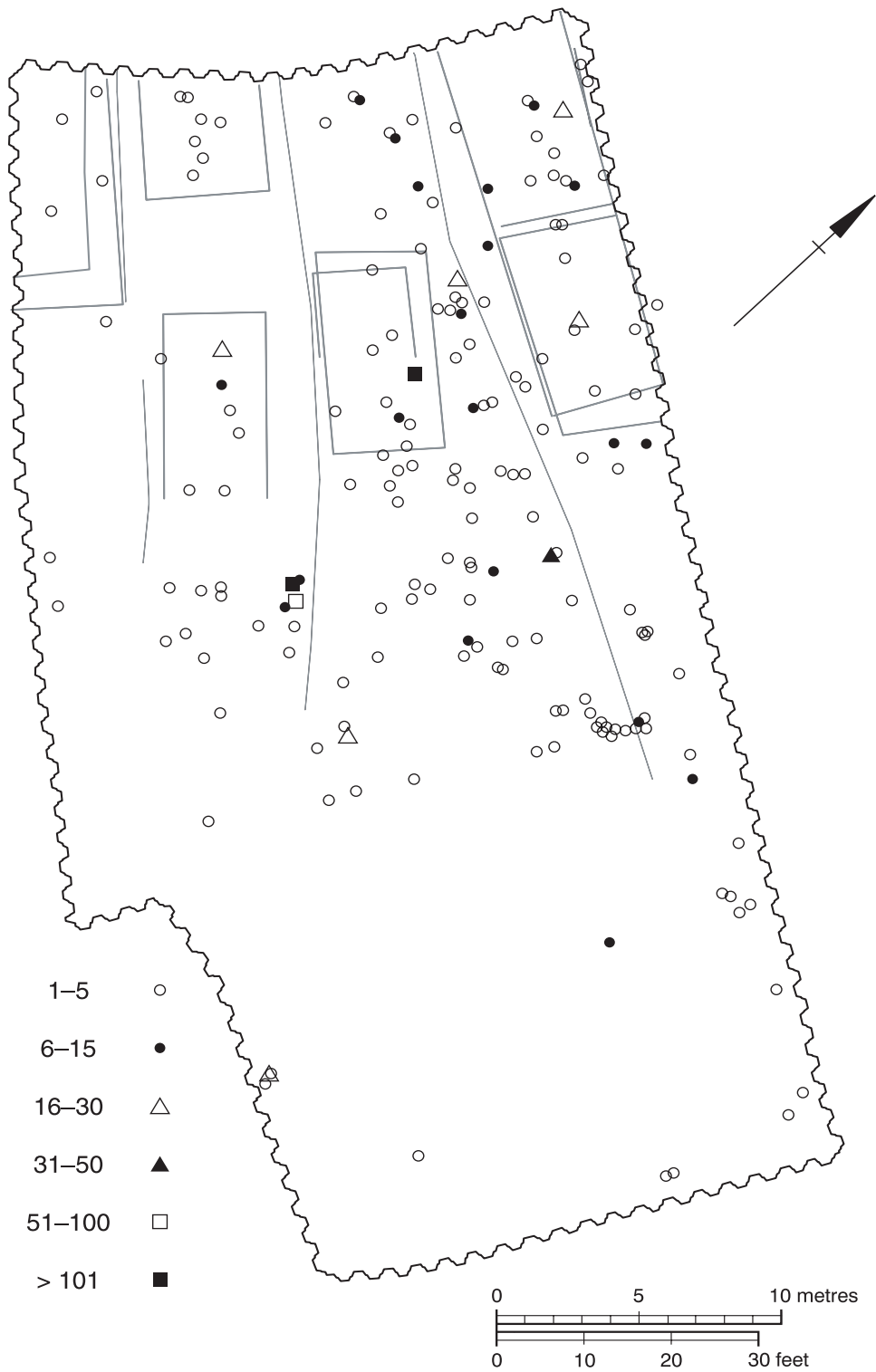


Fig.1586 Distribution of secondary waste from 16-22 Coppergate: Period 5B

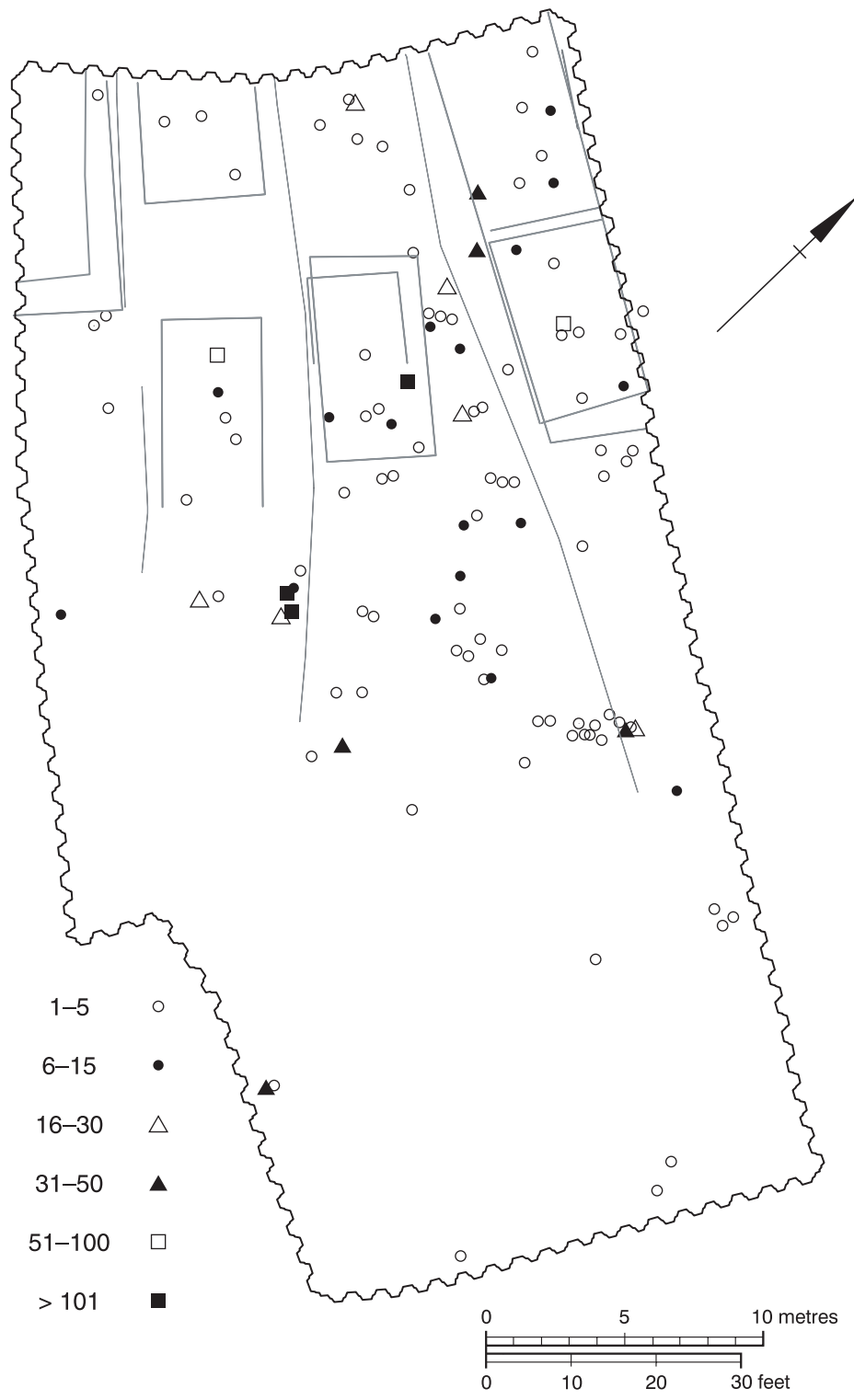


Fig.1587 Distribution of tertiary waste from 16-22 Coppergate: Period 5B

from there. Little material was recovered from further down the backyard towards the River Foss, but this is due largely to different preservation conditions. The waterlogged organic deposits were thinner in this part of the site so little was preserved, except in isolated pockets where deep-cut features provided the right environment.

In Tenement C there are also significant quantities of all the different categories of waste, though less than from Tenement B. Greater quantities of all types come from the post and wattle structure itself but there is a less dense concentration from immediately outside the structure. Pits along the fence line which separated Tenements B and C produced some concentrations. Much smaller amounts of waste were recovered from Tenements A and D in Period 4B.

The distribution pattern of the waste is strikingly different in Period 5B. There is less material overall and noticeably less from Tenement B. The post and wattle building had been replaced by two plank-built structures from which some waste was recovered. What waste there was came from behind the rear building, Structure 5/4. The majority of the waste was recovered from Tenement C where it was distributed down three-quarters of the length of property but again is absent from the River Foss end of the site. All categories of waste were found within the two successive buildings (Structures 5/5 and 5/6) which stood back from the street frontage on Tenement C, but most was recovered from the central part of the backyard behind the structures. There was more material from Tenement D in Period 5B (15%), mostly in Structures 5/7 and 5/8 but also down the full length of the surviving backyard.

The conclusion from these plots must be that leatherworking was carried out on all the properties throughout the Anglo-Scandinavian period but that it was concentrated in Tenements B and C, with a change of emphasis from Tenement B to Tenement C (and to a more limited extent Tenement D) towards the end of the 10th century.

Untanned skin

Of particular interest was the recovery of a piece of untanned calfskin (15823; see Fig.1569, p.3220) from Tenement C at 16–22 Coppergate in a context dated to c.975–early/mid 11th century. Untanned

skins and hides decay in the burial environment and the unusual survival of this piece is attributed to its being covered in Stockholm tar (see p.3221). Stockholm tar was used as a waterproofing agent and applied to the interior of vessels used to store liquids to keep them watertight (J.A. Spriggs, pers. comm.). The waste fragment may have been used to apply the tar to the inside of a vessel or may simply have come into contact with the substance by chance. The recovery of untanned hide at Coppergate provides direct evidence for the initial preparation of hides in the vicinity and allows a glimpse of a category of organic material that rarely survives in the archaeological record.

Currying waste

At York another distinctive type of waste leather has been recovered, the shavings produced when paring down the thickness of tanned hides during the currying process. Deposits of these shavings have been found at 16–22 Coppergate in Tenement B during the mid 10th century and in Tenement C during the late 14th/15th century (Fig.1588).

Also from 10th-century deposits at 16–22 Coppergate were two pieces of leather with a distinctive ‘creased or corrugated’ appearance to the grain sur-



Fig.1588 Group of flesh shavings and primary waste sf17446 from late 14th-century context 4879, a fill of pit 4812

face (15819–20) which may be evidence for boarding. Boarding was a finishing process undertaken by the currier. The currier worked over the grain surface of the leather with a curved wooden board using a rocking action. This served to accentuate the grain pattern in a decorative manner and increased the leather's flexibility. Leather that has been rolled up may take on a similar appearance, however, so that this identification of boarded leather can only be tentative.

Cobbling waste

Cobblers traditionally repaired footwear but the trade was also concerned with the refurbishment of old shoes for resale, an undertaking later to be known as translation. Groups of leather containing shoe components which have been cut up to salvage re-usable leather before being discarded, and a high percentage of heavily worn and repaired soles and clump repairs, may represent rubbish from a cobbler's workshop. Such cobbling debris occurs frequently in leather assemblages of medieval date from York and, indeed, the entire country. Many of the shoes themselves, both of Anglo-Scandinavian and medieval date, show repairs by the cobbler or other modifications that are discussed elsewhere in this fascicule (pp.3346–9).

Knife sheaths: roughouts

By Esther Cameron

Three knife sheaths of Anglo-Scandinavian date have no seams (15631, 15636, 15640), and may have been discarded at the roughout stage of their manufacture. Interestingly, one of them (15631; Fig.1700, p.3378) shows signs of secondary use and may have been discarded after having been cut from an older artefact of leather and found to be unsuitable. Similarly, sheaths 15649 and 15588 are also the result of redesign and recutting, the latter having been remodelled from a scabbard. It is possible, therefore, that the other two sheaths without seams (15636 and 15640) are not simply roughouts, but failed redesigns of older sheaths from which the seam edges have been removed. The contexts of these five examples span a date range from the mid 10th to the mid/late 11th centuries. The re-use of sheath leather in the Anglo-Scandinavian period is not unexpected but seems to have been undertaken less frequently than the cobbling of shoes.

Quality control in the production of sheaths and scabbards

By Esther Cameron

Cobbling

Cobbling of sheaths was not widely practised in York; the five examples cited above amount to less than 4% of the entire sheath and scabbard assemblage. This may indicate that measures were taken to control quality through discouragement of cobbling.

Disposal of old sheaths and scabbards

The present condition of leather from 16–22 Coppergate documents its origin, tannage, usage and disposal. The majority of 10th- and 11th-century knife sheaths and sword scabbards from York are incomplete, having been torn and cut before being discarded. While it might be argued that the cutting of scabbard leathers was necessary to separate them from other wooden and metallic parts, the same cannot be said of sheaths. It is possible that the slashing of old sheaths, and to some extent scabbards, was a deliberate measure taken by sheathers to prevent re-use of the discarded leather by cobblers, and to protect the quality of their own products.

It is evident from signs of abrasion and thinning at the edges of scabbard leathers that they were all very worn before being discarded. Ragged holes indicate in some cases that edges opposite the suspension slits received more wear than other areas, presumably due to the rubbing of straps. Other signs of wear are concentrated on raised surfaces such as seams, decorative lines and the positions and outlines of strap slides. Many of the fragments from 16–22 Coppergate had been torn along folds already weakened by wear, but the use of a knife to facilitate the removal of old leather, and in some cases the retrieval of strap slides, is evident on every piece. Since an empty scabbard could be broken across the knee and disposed of in the domestic hearth, the evidence from Coppergate points to refurbishment of old wooden scabbards with new leather covers. They might also have been relined with fresh fleece, but if old linings had been discarded here we should not expect to find them because, being semi-tanned, only

the hair fibres would have survived burial. Raw wool staples, with fibre roots, amounted to one-third of the total raw wool recovered from 16–22 Coppergate (p.308, AY 17/5). This may be a product of fell-mongering, involving the pulling of hair from semi-decayed skins. Equally, the wool staples might have derived from the discarded linings of sword scabbards and other small items of semi-tanned sheepskin and, indeed, scabbard leathers and wool staples were recovered from the same context at Coppergate. Wool staples from context 1473 were found with two scabbard leathers (15550 and 15586). However, the fibres were not rubbed or worn as might be expected of old linings (P. Rogers, pers. comm.) and we can but speculate on reasons for their presence there.

The salvaging of re-usable leather from other items

The salvaging of leather for re-use was common and a range of discarded seams and other unusable pieces cut from a number of objects was recovered (15806–15). In addition, a small number of repair patches from items other than shoes were identified (15800–5). They are described under *Everyday Life* (pp.3413–15) It would seem that all manner of leather items were being repaired and re-used to make other goods when they had come to the end of their useful life.

Other evidence for leatherworking

Other direct evidence for leatherworking has been recovered from 10th-century contexts at 16–22 Coppergate. Two pieces of sheet cut down from larger calfskin items were found each with a series of crossing incised lines present on the grain surface (15817–18). Rather than being a deliberate decorative pattern the incised lines appear in each case to be the result of the leather having been re-used by a leatherworker as a cutting surface on the work bench. In addition, a fragment of thick bovine leather (15816) covered with a series of apparently random holes may be another ‘working surface’ or a hand leather used to protect the palm of the hand when working leather. It is similar to a fragment thought to have been a shoe-maker’s hand leather made from a re-used shoe upper component found at Trichay Street, Exeter (Friendship-Taylor 1984, 330 L43 and fig.186), thought to be of 15th-century date (ibid., 325).

The craft of the leatherworker

The shoe-maker

Three principal methods of shoe manufacture are represented amongst the shoes from York dating to the periods under consideration. The simplest shoes were constructed using a single piece of leather to form the sole and integral uppers; these date to the pre-Conquest period. The other two constructions found, the turnshoe and the welted constructions, were made using separate sole and upper components, and can be distinguished one from the other by the way in which the soles and uppers were joined together. The vast majority of the shoes dating to both the Anglo-Scandinavian and the medieval periods were made using the turnshoe construction. A small number of shoes were constructed using the turnwelted and welted methods. These shoes date to the 15th century. None were sufficiently well preserved to allow their upper styles to be recognised. The turnwelt, a development of the turnshoe construction, was itself superseded by the welted construction that was to become the principal method of shoe construction used throughout the post-medieval period. From the earliest shoe finds recovered dating from the later 9th century through to the end of the 15th century when our period of study ends, the main method of shoe construction was the turnshoe. Although individual shoe styles changed, seams varied and minor innovations were introduced, the basic method of construction remained the same over this long period of time. The turnshoe constructions identified are described in detail in the shoes section of *Everyday Life* and appear in the accompanying catalogue as turnshoe constructions 1, 2, 2a, 3 and 4 (Fig.1592).

Shoe construction

The pattern pieces of the individual shoe components were first cut out (clicked) using a sharp knife; traditionally a semi-circular (half moon) blade was used for this purpose. The sole and upper pieces were then secured, inside-out, to a foot-shaped wooden last and stitched together. The stitch holes were made before stitching using a sharp point, the awl, which often had a lozenge-shaped section (see pp.3237–9). In the earlier period the components were sewn together with leather thong; later, waxed thread of animal fibres or vegetable fibres were used, tipped by a flexible point made from a pig’s bristle. Once the individual components were stitched together the shoe

was removed from the last and turned right side out, thus protecting and hiding the seams inside the shoe. It is assumed that the uppers were soaked briefly in water before turning as experimentation has shown that this makes the operation much easier, particularly with pointed toes. The shoe could then be trimmed and finished.

The making of a shoe was described thus by John de Garlande, writing in the early 13th century of what he had seen of the trade:

Qui alutarii secant cum rasorio vel ansorio corium atramentario denigratum, et consuunt calciamenta cum subula et licino et seta porcina.

‘These leatherworkers, after having darkened the [tawed] leather with a colouring matter, cut it with a razor or cobbler’s knife, and they put together the footwear with an awl and thread and pig bristles’ (*Dictionarius*, 26–9).

The seams used (Fig.1589)

The construction seam and the use of the rand

The principal seam joining the shoe sole to the uppers is known as the construction seam or sole seam. The different methods of sewing the sole to the uppers identified amongst the shoes from the sites considered here are described in detail below. Dur-



butted seam edge/flesh stitching



closed seam with grain/flesh stitching



butted seam with edge/flesh stitching on one side, grain/flesh on the other



lapped seam with whip stitching



tunnel stitched seam to attach clump repairs



seam joining a double thickness with grain/flesh stitching used on straps



tunnel stitched or concealed seam used on sheaths and scabbards



binding seam (whipped seam) used on sheaths and scabbards

Fig.1589 Seams used in leatherworking

ing the medieval period a rand, a narrow strip of leather, often skived (bevelled) to give a triangular section, was inserted into the construction seam between the sole and the upper. The use of a rand is said to provide a more watertight seam (Grew and de Neergaard 1988, 47), but this may not be the primary function. The rand hides and protects the stitch in the vulnerable gap between the sole and upper. It also lengthens the stitch, allowing it more 'give' during wear. As the construction seam is the most vulnerable to damage from repeated contact with the ground and undergoes a great deal of stress and strain during use, these are both valuable properties.

In medieval shoe assemblages the use of a rand is usually adopted during the early 12th century and continues to the end of the period. This is the case at York. Occasionally, a rand was also used in the construction of shoes of much earlier date. A small fragment of rand was found with the other shoe parts from the 7th-century Sutton Hoo ship burial (East 1983, 793), for example. A small number of shoes of Anglo-Scandinavian date from York have also been found to have strips of leather between the sole and uppers seam that may be rands. These possible rands occurred lying between the soles and uppers of shoes made in different styles (sf13306, Style 2; 15420-1, Style 3b4; 15435, Style 4a3) and of two different constructions (turnshoe constructions 1 and 2, described on pp.3268-70). Two shoes had a 'proto-rand' made from a strip, folded longitudinally (15420 and 15435); one shoe had a flat strip present (15421). In each case these 'proto-rands' had apparently been placed around the seat or the V-shaped heel extension of the sole only and did not appear to have continued around the rest of the sole. The earliest example (15435) occurred in a context dating to the mid 9th-late 9th/early 10th century, the rest came from contexts dated c.930/5-c.975. The use of rands in shoes of the same date has been found elsewhere in Britain. The possible use of rands in shoes of 9th- and 10th-century date has been recorded at Winchester (Thornton 1990a, 593), while at London two 10th-century shoes from Milk Street and another from 1 Poultry had a thin rand (Pritchard 1991, 217, 271, 274 and 3.101), and other examples of slightly later date are also cited.

Uppers seams (Fig.1589)

In the medieval period the individual components of the uppers were usually joined using butted edge/

flesh seams. Many of the Anglo-Scandinavian shoes were found to employ a fundamentally grain/flesh seam; however, in order to make the seam lie flat one of the edges was skived so that the stitching on that side took on the appearance of an edge/flesh seam. This combination of stitching occurs when the seam was sewn with thong. Occasionally a grain/flesh closed seam or a combination of seams was employed and their use is highlighted in the descriptions of the various shoe styles represented, below. Shoes with soles with rounded seats frequently had the area at the back of the heel supported internally by the addition of a separate heel stiffener. Heel stiffeners, along with other internal linings, tongues and top bands, were held in place with whipped stitching. In the later medieval period a strengthening cord was attached along the interior edge at points prone to particular strain, and lace holes were strengthened by the addition of internal linings (facings). Decorative stitching using silk yarn was used on shoes of 12th- and 13th-century date, discussed fully below by Penelope Walton Rogers. Embroidery was also noted on shoes of earlier date but no thread was preserved.

Repairs

Heavily worn shoe soles were frequently repaired by the addition of separate repair pieces, known as clump soles, to the worn areas. The earlier repairs were crudely sewn to the shoe soles by leather thongs; later the clumps were sewn with thread using a characteristic tunnel stitch. The clump was loosely tunnel stitched into position and then the threads pulled tight to draw it against the sole. Shoe repairs and refurbishment are fully described in the shoes section in *Everyday Life* (pp.3346-9).

The sewing medium

Many of the shoes of Anglo-Scandinavian date were sewn with a fine thong of leather, fragments of which sometimes remained. A few shoes had large, round stitch holes and it is assumed that they were sewn with animal fibre thread. When the sewing medium did not survive it was often difficult to be certain whether thong or thread had been used, and for this reason quantification of this feature was not attempted. Observation suggests, however, that the use of thong as a sewing medium, common in the Anglo-Scandinavian period both to sew soles to uppers and to join the upper components, did not sur-

vive long after the Norman Conquest. This also appears to have been the case in London (Pritchard 1991, 217). Pritchard has suggested the possible association in London between the use of the tunnel-stitched construction seam (turnshoe construction 1) and the use of wool thread to sew the seam (ibid., 218), but noted the use of tunnel stitching sewn with leather thongs at Oxford (Thornton 1977, 160). At Anglo-Scandinavian York the use of thong or thread was not exclusive to either type of shoe construction. Shoes using both thong and thread were found, the sole sewn with thong and uppers sewn with thread.

The sewing medium has been preserved in a small number of leather items. It has been examined by Penelope Walton Rogers, who describes the constructional stitching below and the decorative silkwork on pp.3343–4.

Sewing threads on leatherwork from 16–22 Coppergate and Bedern Foundry

By Penelope Walton Rogers, Textile Research, York (UK)

The survival of stitching in leather goods is comparatively rare (Goubitz 1984, 187) and only eighteen examples of sewing thread have been found in the large collection of leatherwork from 16–22 Coppergate, with a further two examples in the smaller group from Bedern (Table 369). The sewing threads are on shoes, with the exception of two straps,

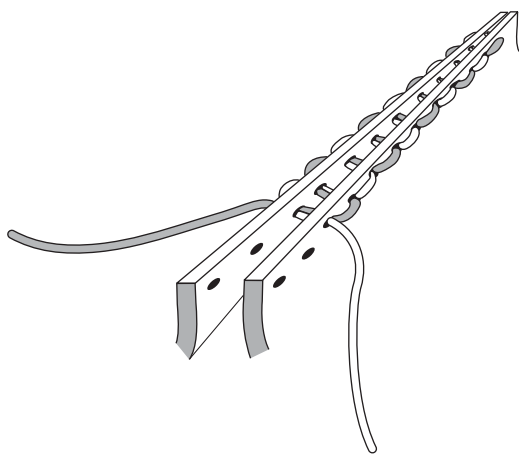


Fig.1590 The stitch commonly used in leather shoe and strap construction

one with stitching along the outer edges (15688), and the other looped through an iron ring or buckle and sewn to itself, flesh to flesh (15875). The seams on the straps are executed in a kind of double running stitch in which two threads change places through the same stitch hole (Fig.1590). The same type of stitch has been used on the shoes, to join the soles to the uppers. More fragmentary remains of sewing thread have been found in other seams in the shoes, in tunnel stitching on the soles and in the side seam and top edge of uppers. This is all functional stitching, but decorative needlework is also present on two top bands, which would have been used to finish off the throat opening of ankle-boots (see pp.3343–4).

The fibres of the sewing threads were examined as cross-section and whole mount preparations, at $\times 400$ magnification, using a transmitted-light microscope fitted with a polarising analyser. Fine plant roots in 15370, 15521, 15523 and perhaps also 15518 could be excluded from the study at this stage: root systems tend to follow the line of least resistance and this means that they often run along the seam line and invade the stitch holes so that, to the naked eye, they resemble stitching. The real sewing threads can be divided on the basis of microscopy into plant-stem fibres and animal coat fibres in the functional seams, and silk in the two embroidered top bands.

The plant-stem fibres are not well enough preserved to allow confident identification of species, although one thread in a 14th-century child's shoe (15870) showed long tapering cell ends and other features which suggest flax, *Linum usitatissimum* L. (Catling and Grayson 1982). The other fibres are flax or hemp, *Cannabis sativa* L. In each case, the fibres are in intact bundles, which means that they have not been fully processed by 'heckling' (p.1727, AY 17/11). This lack of final processing results in a strong, relatively stiff thread, unlike the more flexible thread used to sew linen textiles (pp.408–9, AY 17/5).

The animal coat fibres are also poorly preserved, except for 15382, which shows the cross-section, cuticular scale-pattern and pigment distribution of grey wool (that is, white wool with some black fibres). The others can be identified only as animal coat fibres, although it is likely that they are also wool. In at least two cases, 15366 and 15522, the fibre is moderately pigmented, indicating a naturally brown fibre.

Table 369 Sewing threads in leatherwork from 16–22 Coppergate and Bedern Foundry

Find	Thread Structure	Fibre	Object and position
<i>Coppergate Period 4A</i>			
sf17614	Z2S, 2.0mm diam.	animal fibre	shoe upper: lasting margin and side seam
<i>Coppergate Period 4B</i>			
sf7925	Z, several strands	flax/hemp, part-processed	shoe upper: lasting margin and top edge
15366	Z2S, ≥ 1.5mm diam.	brown animal fibre, ? wool	shoe sole: lasting margin
15382	Z2S, 3–4mm diam.	grey wool	shoe: lasting margin and side seam
15421	double	–	shoe upper: lasting margin
<i>Coppergate Period 5A</i>			
sf10663	–	flax/hemp, part-processed	shoe: tunnel stitching
sf16295	–	possibly animal fibre	shoe upper: lasting margin
<i>Coppergate Period 5B</i>			
sf18071	Z (double ?)	animal fibre	shoe sole: tunnel stitching
<i>Coppergate Period 6, medieval, in chronological order</i>			
early 12th century			
15522	Z2S, 1.3mm diam.	brown animal fibre, ? wool	large shoe sole: lasting margin
12th to 13th century			
15540	weak Z, 0.8mm diam.	silk, undyed	shoe top band: embroidered cross stitch on scored lines 3–4mm apart. 3 crosses per cm
sf1992	–	flax/hemp	shoe sole
sf2263	–	flax/hemp	shoe sole
sf3934	Z2S	animal fibre	shoe sole and rand
13th to 14th century			
sf860	S-ply	flax/hemp, part-processed	shoe sole: lasting margin
15688	Z2S, 1.0mm diam.	flax/hemp, part-processed	strap: 8mm long stitches at edges
late 15th to 16th century			
15498	–	flax/hemp, part-processed	shoe upper
17th to 18th century			
sf488	–	probably flax/hemp	shoe sole
<i>Coppergate unstratified</i>			
15543	no twist, 0.8mm diam.	silk	shoe top band: embroidered satin stitch on incised lines 1.0–1.5mm apart, 8–10 stitches per cm
<i>Bedern Foundry Period 3.2, 14th century</i>			
15870	Z, double	flax/hemp, part-processed (probably flax)	child's shoe: sole
<i>Bedern Foundry Period 4.2, late 14th–early 15th century</i>			
15875	double (spin not clear)	flax/hemp, part-processed	? harness strap: stitches flesh to flesh

Where the structure of the thread can be identified, it has always been spun in the Z direction (for explanation of Z and S, see p.317, AY 17/5). The yarn has been used double, or loosely plied in the S direc-

tion. This is the same construction as was used for wool and linen threads stitching textiles from Coppergate (pp.404–11, AY 17/5).

When arranged chronologically, the material suggests an increase in the use of linen (flax/hemp) in the medieval period. Of the seven Anglo-Scandinavian examples in which the fibre can be identified, five are animal fibre and two are linen. Of the twelve later examples (Period 6 at Coppergate and Periods 3 and 4 at Bedern Foundry), two are animal fibre and ten are linen (this excludes the silk needlework).

As this is a small amount of data, it needs to be checked at other sites. Wool has already been reported in a child's shoe from 6–8 Pavement, dated by context and shoe technology to c.1150–1200 (544, AY 17/3). Linen fibres have also been recorded in an Anglo-Scandinavian shoe at Feasegate, York (Dyer and Wenham 1958, 422). At High Street, Perth, leather shoes ranging in date from the 12th to the mid 14th century include some stitched with animal fibre (Thomas 1986, 6), but flax was used in late 14th-century shoes from London (Pritchard in Grew and de Neergaard 1988, 48). Linen threads were also found in late medieval shoes from High Street, Hull (Walton Rogers 1994a), and Monnow Street, Monmouth (Walton Rogers 1994b). There was clearly a considerable period of overlap between animal fibres and linen thread, but the evidence suggests that linen became increasingly common in the medieval period and was probably regarded as the standard material for stitching shoes by the end of the 14th century.

The sheath- and the scabbard-maker

The construction of sheaths and scabbards

By Esther Cameron

For the most part, techniques employed in shoe-making were also used in the manufacture of sheaths and scabbards. Sheaths and scabbards were made from single pieces of leather and had one seam apiece. The cut-out shape therefore dictated the style of a sheath, although this could be developed by stretching and moulding. Sheaths may have been made individually by being shaped around either knives or wooden forms (templates), but no form has been found. Scabbards of wood provided sufficient form for the preparation of leather covers by similar means, but the construction of an entire scabbard involved other stages as well as different materials and was a more complex operation than that of sheath-making.

Seams and stitching (Fig.1589)

Scabbards of 9th- to 11th-century date at York had centre (or off-centre) seams on the back face, never at the edge, using either a closed seam, involving grain/flesh stitching, or a butted (and sometimes bevelled) seam, stitched edge/flesh. Before c.975 the majority of seams were butted and used a stitch frequency of 5–7mm, but the closed seam with a stitch frequency of 4–5mm was used most commonly after that date. Evidence for the use of diamond-shaped awls occurs in all periods at Coppergate. The substance of the stitches is unknown because in most cases it has not survived. In all probability the leather was stitched with alum-tawed leather thongs or with linen thread. Traces in situ were recorded in two instances, with inconclusive results: one (15545) appears to be stitched with thong, another (15896) with untwisted yarn consisting of six threads. Threads or thongs generally failed to survive burial at Coppergate and it is therefore supposed that they were either of plant fibre, or untanned or semi-tanned animal products. Preservation of fibres on site was animal-biased while those of vegetable origin, unless charred, survived as fragile traces if at all (p.300, AY 17/5).

Types of stitching on sheaths include tunnel and running stitch for seams positioned at the edge, and binding or whipped stitch for butted seams at the back. In most cases stitch holes were made with awls, including some which are clearly triangular in shape, but a few such as 15618 and 15623 (Fig.1696) have slits rather than holes and one knife sheath was riveted (15615, Fig.1694). Stitching has not survived except in one case (15613, Fig.1692) where exceptionally thick leather thong was used. Judging by the size of the awl holes most of the other sheaths had been stitched with thong but, as with the stitches of scabbards, their failure to survive suggests that they had not been vegetable-tanned. The advantages of alum-tawed over vegetable-tanned thongs are greater flexibility and tensile strength, and they were used by preference in bindings of Late Saxon books. Indeed, in researching medieval materials, it was concluded that alum-dressed leather made the most suitable thongs for lashing together the wooden frame of a leather-hulled boat which subsequently crossed the Atlantic (Severin 1978, 286–7, table III). Linen thread, used by Roman craftsmen for fine leatherwork, appears rarely among A and B type sheaths (for example 15614, Fig.1692) but becomes

widespread among type C and later sheaths. It is probable that sheaths of seaxes were seamed with thong along the edge using tunnel stitch and that, in addition, metal reinforcers were fitted over the seams and riveted.

Moulding

Not all the techniques of sheathers, however, were employed by the shoe-makers of York; on eleven sheaths moulded leather was used to produce a three-dimensional effect. How the leather was moulded is unclear. Although stretching and shaping were necessary first steps, it is not known if this was followed by applications of hot resin and wax to introduce rigidity — or, in other words, to make *cuir bouilli* (Cameron 2000, 25–33). The earliest example of moulding in the leather assemblage at York appears on a 9th-century sheath from the Parliament Street sewer trench (755, AY 17/4) while the latest is of 14th-century date. The majority, however, are from 10th-/11th-century contexts: type B (15621, 15625, Fig.1698; 15627, 15646; 681, AY 17/3); type F (15658, Fig.1711); sheaths of seaxes (753, AY 17/4; 15659 Fig.1702; 15660, Fig.1703; 15662, Fig.1707). Items of moulded leather, notably armour, masks and containers of various sorts, were commonplace in 15th-century England yet are so poorly documented that little is known of the history and development of the technique. It is for this reason that this early group of moulded sheaths from York holds such special significance.

Indentations

Other aspects of craft technique exhibited by sheaths include a series of sub-rectangular marks along the edges of seax sheath 15659 (Fig.1702). These are similar to others recorded on the edges of leather offcuts from Coppergate, which had been thought to derive from clamps, possibly used in conjunction with drying frames. In this particular instance, however, in view of the fact that this sheath has no rivet holes along the seam edge, it is possible that the marks relate to the attachment, by pressure, of a metal frame for suspension. Unique among marks left upon sheaths is the impression of a set of human teeth upon the type B sheath (15641). Other objects of leather from York bearing marks of human teeth are discussed on pp.3264–5.

Marking-out lines, impressed onto the grain side, incised on the flesh side, survive on a single sheath (15631, Fig.1700). Since this unfinished item may have been in process of change at the hands of a cobbler (see p.3255) the marking-out, which is not found on any other sheaths, cannot be regarded as typical practice. Other marks, resulting from pricks with a pointed instrument, are unique to the seax sheath 15659. These tiny holes, which appear to have been made in the leather as guides prior to marking out an interlace design, serve to throw a little light on workshop practice of the 10th and 11th centuries.

Decorative techniques employed on leather

Leather objects may be decorated in a variety of ways and those from York display a range of ornamentation. Patterns were impressed, incised or scraped into the surface of the leather or raised by embossing or modelling. Evidence for the use of decorative thonging, stitching and painting has also been found. Some of the most highly decorated leather items were the sheaths and scabbards, described below, while 74 shoe components exhibited some form of decoration.

Tooling and incising

The most commonly used decorative device on leather was tooling, whereby a design was impressed on to the surface of dampened leather using a blunt point. This method was used on shoes, sheaths and scabbards of Anglo-Scandinavian and medieval date. A group of shoes of Anglo-Scandinavian date were ornamented by tooling, having impressed geometric designs on the V-shaped back of the sole which extended up the back of the heel. The back of the heel is not the most obvious area for decoration but it is difficult to see the tooled design here in a functional role. Such decoration would only be really obvious to the observer when the wearer of the shoe was kneeling, and would not be visible to the wearer at all.

A small strip (15792, see Fig.1733) cut down from another object, decorated with an incised design of geometric lines and curved motifs, was found in a context dating to c.975 at 16–22 Coppergate. It may be a trial piece or perhaps an idle moment's doodling

on a piece of scrap leather. Two small triangular cut-outs were present at one end of this piece and appear to be the only example of cut-out decoration to be found. No examples of openwork (cut-out) decoration, so popular on late medieval shoes, were seen on the leather from the sites under consideration here, no doubt because relatively few shoe finds of this date were recovered.

A fragment of sheep or goat skin (15793, see Fig.1733), from a medieval–early post-medieval context, possibly the corner torn from a bookbinding, was decorated with tooling and stamped floral motifs. The use of stamped decoration is best seen on the heavily decorated knife sheaths of late and post-medieval date, but this was not a major feature of the sheaths studied here (see pp.3377, 3379, 3382–3).

Decorative stitching and other ornamentation

Ankle-boots of late 11th- to early 13th-century date were decorated with silk embroidery on the vamp and around the top band. Decorative stitching was also noted on the vamp of a boot of Anglo-Scandinavian date (15453, Fig.1647). The small fragments of medieval girdles found appear also to have had lines of decorative stitching, as did the later medieval flap-closing purses. A girdle found at Bedern Foundry (15872, Figs.1712–13) had punched and tooled decoration, and was painted red with cinabar. No painted decoration was found on the footwear, though elaborately painted shoes of medieval date have been found in the Netherlands (Goubitz 1997b, 441–2). A range of straps probably from girdles, spur leathers and harness were ornamented by the addition of decorative mounts of copper alloy or iron. All these decorated items are described fully below (pp.3392–5).

The decorative juxtaposition of the grain side and the flesh side of the leather was occasionally exploited on shoes of Anglo-Scandinavian date. Similarly a small number of shoe components had been decorated by having the grain surface of the leather scraped away to exploit the contrast between the smooth, shiny grain surface and the underlying roughened, matt appearance beneath. This decorative technique is better illustrated on the shoes of late 14th-century date from London which have been thus decorated with geometric and foliate designs (Grew and de Neergaard 1988, figs.119–21).

Decorative techniques seen on sheaths and scabbards

By Esther Cameron

Drawing a blunt-ended tool with downward pressure across wet leather leaves a permanent mark, impressed and darker than the surrounding area, on the leather when dry. Impressing (also called tooling and engraving) is so amenable to expression that it has always been the most commonly used decorative technique on leather. Tooled work found on sheaths at York from the 9th through to the 14th century appears most frequently as field dividers and decorative space-fillers within those fields. The motifs applied include conventional linear cross-hatching, chevrons and interlace typical of the Anglo-Scandinavian period, although related designs continued to be used in London until the 14th century (Cowgill et al. 1987). From the Norman Conquest to the 14th century, perhaps in consequence of specialised guilds having been set up, decoration on the present assemblage of sheaths from York becomes increasingly more formalised (Cherry 1991, 314–15). The final effect is crisply executed and more crowded, dominated in the course of the 13th and 14th centuries by outlines of beasts, birds and foliage. The resemblance of these motifs to others in manuscripts and decorative stonework of similar date has been remarked upon by earlier scholars (Richardson 1959, 103; Cowgill et al. 1987, 42).

Some sheaths at York, notably among types A2, B2, B3 and E, were also decorated by techniques other than tooling — such as stabbing and incising. These methods, like tooling, had been part of craft repertoire in the Late Roman period and it is not surprising to find them in evidence at this later date. Incised work tends to be associated with decorative leatherwork of the late medieval period but it must be said that this simple technique, involving superficial cuts to the leather, seems to be timeless. Embossing, where a design is pushed out from the flesh side so that it stands proud of the original grain surface, makes its first appearance at York on one of the sheaths of seaxes (754, AY 17/4) of 10th-/11th-century date. Russell (1939, 134) ascribed the earliest English embossed work to the 7th-century binding of the *Gospel of St John*, recovered from the coffin of St Cuthbert, but research has shown that this is in fact an example of relief moulding (Cameron 2000, 2–3, 39) and an

11th-century date for the advent of embossing is reaffirmed by parallels found in London.

Another decorative technique introduced in the 11th to 12th century was modelling, by which means a design would be finely outlined and left in low relief, the surrounding surface having been reduced by tooling. Early and later examples of modelling may be seen on the Armagh budget (Waterer 1968, 80) and on a fragment of 14th-century armour in the British Museum (BM 56, 7-1, 1665).

Teeth marks (Fig.1591)

An interesting phenomenon seen in the leather from York and elsewhere is the occurrence of bite marks. At York these occur principally on pieces of secondary waste leather, though an example was also noted on the suspension flap of a knife sheath of Anglo-Scandinavian date found unstratified at 16-22 Coppergate (15641). The marks comprise semi-circular groups of small indentations; some pieces of waste leather have a single set of marks present (e.g.



Fig.1591 *Leather secondary waste: sf18099 with a single bite mark and sf17546 with multiple bite marks, both from 16-22 Coppergate*

sf18099), while others exhibit several groups, often overlapping or merging (e.g. sf17546). Measurement and study of the York examples by Ian Carlisle and Amy Sullivan (Bradford University) have confirmed that the marks were made by human teeth. Indeed, scrutiny of the impressions allowed different human tooth types to be identified (Carlisle 1998, 7).

Five examples of secondary waste leather with human bite marks were found at 16–22 Coppergate, all likely to be of 10th-century date. Four pieces came from contexts of mid 10th-century date. While two of these (sfs17546, 17836) came from build-up/dump deposits and another (sf17600) from a pit fill, one (sf17629) was found in a floor level in the wattle building in Tenement B, suggesting it was the result of an activity occurring on site. A single fragment (sf18099) came from late 10th-/early-mid 11th-century dumping (Period 5B). The example on the possible scramasax sheath (15641) runs along the open edge and would probably have been covered by a metal strip in the finished article, so it is likely that these marks were created during the hide preparation process or manufacture of the sheath rather than in use.

Such marks have also been found on waste leather from various London assemblages, including the recent Guildhall Yard excavations (Jackie Keily, pers. comm.). It seems to have been a widespread practice as examples from other assemblages in England, Perth in Scotland (Thomas and Bogdan in prep., fig.44, sf421) and the old centre of Schleswig (the Schild), Germany (Schnack 1992, taf.1, 9–10) have been noted. Occasional examples appear in the published literature, where various explanations have been proposed. The marks on waste leather from Whithorn, Galloway, were interpreted as tool impressions (Nicholson 1997, 501, LR14, figs.10.139, 14.6, 14.8). Others have regarded them as clamp marks.

Now that the marks have been identified as being made by human teeth a number of interesting theories have been proposed as to how and why the marks were made. No process during the tanning or currying of leather is known that would necessitate the leather being gripped between the teeth, though Diderot tells of a 'thumb-nail' test to gauge certain properties of a piece of leather to which it might be compared (Roy Thomson, pers. comm.). An attractive explanation is that the marks are the result of the leather being held between the teeth in the man-

ner of a 'third hand', holding the work whilst the hands were otherwise occupied. Experimentation on new leather by Ian Carlisle has shown that a high degree of pressure is required to produce such marks and it would be difficult to reproduce the marks in this manner (Carlisle 1998). Disturbing pictures spring to mind of the leather being bitten down on during childbirth or an operation without the benefit of anaesthetic. Human bite marks appear to occur primarily on pieces of secondary waste, and as a component of groups of manufacturing waste. This suggests they were the result of some aspect of the production of leather goods; which aspect has yet to be established.

Types of leather used

Choice of leather species over time

The leather species were identified by hair follicle pattern and differing thickness of the grain and corium layers using low-powered magnification. The grain pattern of sheep and goat skins are difficult to distinguish and have been grouped together as sheep/goat (ovri-caprid) when the distinction could not be made. Similarly the distinction between calfskin (immature) and cattle hide (mature) is not always easy to determine and the term calf/cattle or bovine has been used.

The leather studied showed that the use of cattle and calf leather predominated from the late 9th to the mid 11th century after which sheep/goat leather, previously present in small quantities, began to increase. During the late 11th through to the early 13th century sheep/goat and calf/cattle leather was used in roughly equal quantities, after which the bovine leathers again predominated. This is clearly shown in the numbers of shoe upper components recovered from 16–22 Coppergate for which the leather species could be identified.

This conforms to findings elsewhere. Medieval shoe assemblages from London also showed a change from the use of a mix of sheep/goatskin and calfskin to that of principally calfskin sometime during the 13th century (Grew and de Neergaard 1988, 44–6, table 13). The increase in the use of bovine leather in shoe manufacture may have been due to the increasing difficulties in obtaining goatskin. Grew and de Neergaard (1988, 46) have suggested that in London, it may have been partly due to the stricter control

exerted by the leather-makers' guilds and partly the general decline in the amount of imported goatskin, cordwain, from Spain following the expulsion of the Moors. Whatever the cause, the effect was experienced in London and York and, therefore, probably nationwide.

The selection of leather to make particular styles of shoe

At York there is a clear correlation between shoe style and leather species used, but this appears to be simply a reflection of date rather than the deliberate selection of leather to make a particular style of shoe. All the shoe styles represented, with the exception of ankle- and higher boots with one-piece uppers occasionally with additional inserts (Style 7), were made chiefly in cattle/calfskin. In contrast, approximately two-thirds of the shoes and boots with one-piece uppers (Style 7) were made in sheep/goatskin, while the other one-third were of cattle/calfskin. Style 7 footwear has a date range of late 11th to mid 13th century and the predominance of sheep/goatskin at this time coincides with the period of popularity of cordwain. Cordwain was the name given to vegetable-tanned goatskin made using a tanning technique that was developed in Cordoba, Spain. The term became debased over time and was eventually used to describe any fine leather. From the 12th century onwards the name cordwainer was used to denote a shoe-maker who worked with this fine leather (Veale 1966, 36–56).

Five toggle-fastening shoes (Style 8a) were found at 16–22 Coppergate of which two were made of sheep/goatskin and three of calfskin. At York, London (Grew and de Neergaard 1988, 4) and, no doubt nationally, this style was popular during the late 13th and early 14th centuries. Though the sample is small it may suggest that at York the decline in the use of sheep/goatskin leather was not felt until the end of the 13th century or the beginning of the next.

While certain styles of shoe were made exclusively of a particular leather species this only occurs when relatively small numbers have been recovered and appears to be the result of the small size of the individual sample. Where a larger shoe population is represented one leather species may dominate but examples in other leathers are also found. The large number of low-cut slip-on shoes (Style 2) recovered were predominantly made of calfskin, though two

examples (15359, Fig.1607; 15363) had an upper of sheep/goatskin, one (15359) with a wide top band of calfskin. Similarly, the shoes with one-piece uppers joining with a side seam (Style 3) were made predominantly of calfskin but a small number, under 2%, could be identified as sheep/goatskin (e.g. 15383; 15401). It would appear that occasionally the shoe-maker used whatever leather was to hand or was readily available rather than deliberately selecting a particular hide for a certain style of shoe.

Of interest in this regard are two shoes of sheep/goatskin (15880–1, Figs.1637–8), thought to represent a pair, fastening with a flap across the instep with a pair of toggles (Style 4a2), found associated with other objects of 10th-century date at Bedern. The fact that they were the only flap- and toggle-fastening shoes not to be made of calfskin (bovine leather), and that they were also the only examples to fasten with a double toggle on a single flap, may suggest they were the product of a particular workshop.

The selection of leather for particular shoe components

It has been suggested that hides with particular properties were selected for the construction of different shoe components. Olaf Goubitz has suggested that sheep/goatskin was used to make latchet and toggle fastenings because of its strength and flexibility (Grew and de Neergaard 1988, 46). This was not the case with the City of London material (*ibid.*), however; nor was it the case at York, where shoe uppers of this general style (Style 8) were made of calfskin and of sheep/goatskin (see above). Similarly, latchet- and buckle-fastening shoes (Style 11) found at York which might be expected to have been made in goatskin to exploit its strength and flexibility, occurred only in bovine leather. It must be admitted, however, that at York the sample size for both styles of shoe was small.

Selection of leather in the production of sheaths and scabbards

By Esther Cameron

The animal species of leather of 34 knife sheaths from 16–22 Coppergate were identified as calf, five as possibly/probably calf, and three as possibly sheep or goat. Two seax sheaths were identified as calf and one as probably calf. The species of 49 fragments of

scabbard leather was identified (by D. Hooley, I. Panter and E. Cameron) as calf, four as possibly/probably calf, and seven as sheep or goat. The remainder could not be identified. The thickness of leather for sheaths was consistently 1.5mm, except for the larger sheaths, leather for which was up to 3mm thick. The thickness of all leather from scabbards was in the range 1 to 2mm in thickness. There is no evidence that hides used for either sheaths or scabbards were split or severely shaved down. This suggests that in the production of sheaths and scabbards at York standards were in part maintained through selective purchase of leather, probably by type of tannage and finish, as well as by species and animal age at death.

Selection of leather in the production of other leather items

Straps of all kinds appear to have been made of cattle hide, no doubt because of the strength and durability required. Similarly, the elliptical panels are also of bovine leather. Pouches and purses were made in softer leathers of calfskin and sheep/goatskin.

Other skins identified

The difficulties in differentiating between goatskin and sheepskin have already been mentioned (p.3235). It has been possible to recognise individual examples of each skin type on a small number of objects, including shoe uppers of goatskin (for example, low slip-on shoe 15359 and one-piece ankle-boots Style 7 15473 and 15476) and small lenticular panels of sheepskin (15863–4). Few other leather species have been identified. A small amount of pigskin was recovered from medieval deposits (15821–2). Small lengths of seam were present indicating that the pigskin had been used in manufac-

ture. Fragments with whip stitching (15821) suggested they had been torn from an internal lining. A length cut down from an unknown item (15809), possibly of deer-skin, was found in a late 12th-century context at 16–22 Coppergate.

Conclusion

Many strands of evidence have been investigated to build a picture of the leatherworking trades undertaken in York during the Anglo-Scandinavian and medieval periods. Little unequivocal structural evidence for leatherworking has been found to date. The nature of the environmental evidence as exemplified by bone deposits and by plant and beetle assemblages have been discussed by specialists in these fields. A number of leatherworking tools have been recovered from excavations of Anglo-Scandinavian and medieval date but it is arguably the leather objects themselves that provide the best evidence for a range of leatherworking trades being conducted in the city. The leather recovered represents leather processing, the manufacture of a variety of items and their repair. Whilst the evidence for tanning is perhaps circumstantial, that for currying is clear. Evidence is plentiful for shoemaking, shoe repairing and 'reconditioning' for resale. Of great interest is the evidence for the manufacture of knife sheaths and the refurbishment of scabbards during the Anglo-Scandinavian period, both trades not previously recognised amongst assemblages of leather from Britain. Many other types of leather object have been recovered and there is no reason to suppose that they were not also being made within the city. This is supported by documentary evidence and that gained from study of the street names of York which have survived into the recent past and many to the present day.

Everyday Life

Introduction

In this section the various types of leather product recovered from the sites under consideration here are described in detail and discussed with reference to comparable material from other excavations in York and further afield. The section begins with the better represented classes of leather object, that is, the shoes, sheaths and scabbards. This is followed by descriptions of the wide range of other leather items recovered in smaller numbers. This includes various categories of dress accessories, recreational items, harness fittings and, inevitably, a number of items whose original purpose is uncertain at present.

Shoes

Introduction

The footwear discussed here spans a considerable period, beginning in the mid 9th century and ending in the later 15th century. While a small number of shoes of the simplest construction, using a single piece of leather, were recovered from the earlier levels, the vast majority of the footwear recovered was of turnshoe construction. In the Anglo-Scandinavian and Anglo-Norman periods, different turnshoe construction seams were employed (Types 1, 2, 2a and 3) but from the end of the 12th century the same basic method of turnshoe construction (Type 2) was employed until the end of our period. Though contexts of later 15th- and 16th-century date were excavated, only a very small number of shoe components of turn-welted (Type 4) or welted (Type 5) construction were recovered and none was sufficiently well preserved to allow the shoe style to be described.

The nature of the excavations and the quantities of shoe components recovered has allowed close dating for the shoes of Anglo-Scandinavian date, which will be of great value to future work in shoe studies. The medieval, particularly the later medieval, shoes were less well represented or closely dated. Even so, it has been possible to create a detailed record of the shoe styles worn in York throughout the period, which has not been available previously. The medieval styles recovered at York appear to have been popular throughout this country and also most of northern Europe. What is more surprising perhaps

is that the same appears to be true for much of the earlier, Anglo-Scandinavian, footwear.

One-piece shoe construction

Five shoes made entirely from a single piece of leather were recognised. They vary in their techniques of manufacture, employing different cutting patterns and seams, which are described in detail on pp.3274–81. These shoes belong to the Anglo-Scandinavian period and may represent exotic footwear from other parts of north-western Europe.

Turnshoe construction seams (Fig.1592)

Two principal methods of joining the sole to the upper were found amongst the shoes of turnshoe construction studied here, with a further two variations also represented. The different construction seams employed can be seen in the sole seam. The corresponding seam stitching on the upper, known as the lasting margin, was, in all but one construction (Type 3), a grain/flesh stitch, with the stitching passing through the full thickness of the leather. The two chief methods of construction seam used either a tunnel-stitched seam (Type 1) around the edge of the sole, or an edge/flesh seam (Type 2). In addition, two further variations were observed, occurring on a small number of shoes only. In one the sole was joined with a grain/flesh seam (Type 2a); in the other both the sole and the upper were stitched with an edge/flesh seam (Type 3).

Most turnshoe constructions can only be identified definitely if both the sole and its corresponding upper are found associated. Type 1 and Type 3 constructions, however, require only the sole or the upper to be present, respectively. This may have led to under-representation of the turnshoe construction variants (Types 2a and 3).

Type 1 turnshoe construction

In Type 1 construction the sole was tunnel stitched to the upper. The stitch enters and leaves from the flesh (inner face) of the sole to form a tunnel, not passing through the full thickness of the leather. The seam runs around the perimeter of the sole, a small distance in from the edge. The individual tunnel stitches are orientated at a right angle to the edge of

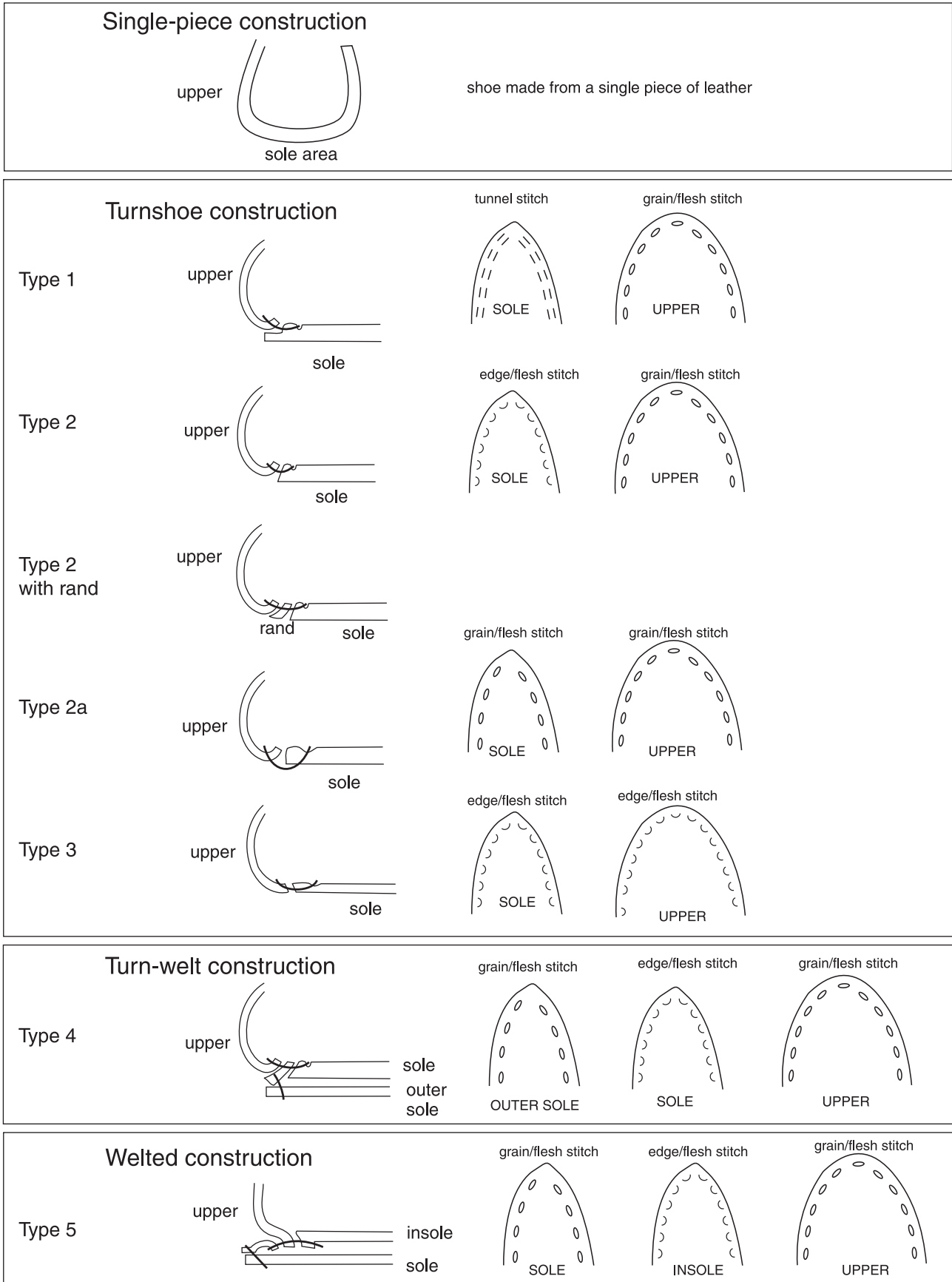


Fig.1592 Diagram of shoe constructions found

the sole. The seam was sewn with leather thong or waxed thread of wool or flax. Two hundred and two finds with tunnel-stitched construction seams could be identified in the assemblages studied, the majority from 16–22 Coppergate and seven from the other sites. Those from 16–22 Coppergate (Table 370) show that this construction dates to the Anglo-Scandinavian period, occurring in deposits dating from the earliest occupation of the site, and in large numbers during the 10th and early/mid 11th century. Three basic shoe styles (2–4 and their variants, itemised in the left-hand column of Table 370) were made using this construction and are described in detail below.

Type 2 turnshoe construction

In Type 2 construction the sole is stitched to the upper with an edge/flesh seam by which the thread passes through the thickness of the edge of the sole and exits through the flesh face. The uppers have a corresponding grain/flesh seam at the lasting margin, as they do in Type 1 construction. By the middle of the 12th century this construction frequently in-

cluded a rand between the sole and upper. This construction was by far the most commonly used and was employed during both the Anglo-Scandinavian and the medieval periods. It came to predominate with time and was used almost exclusively during the medieval period, both at York and throughout the British Isles. Table 371 shows that, like the tunnel-stitched construction seam (Type 1), this edge/flesh construction was used throughout the Anglo-Scandinavian period at 16–22 Coppergate. This construction first occurs in contexts dating to mid–late 9th/early 10th century. It appears to have been less popular in the earlier 11th century than Type 1 before becoming the principal construction in use thereafter.

The table omits Period 6 (late 11th to 16th century), when construction Type 2 was almost exclusively employed. Including Period 6, there are a total of 618 finds with Type 2 construction from 16–22 Coppergate. There are also 57 from the Coppergate watching brief site, 56 from the College of Vicars Choral at Bedern, 22 from Bedern Foundry and fifteen from 22 Piccadilly.

Table 370 16–22 Coppergate: Construction Type 1 by shoe type and period

	3	4A	4B	5A	5B	5C	6	u/s	Total
2	3	–	15	2	17	1	–	2	40
3a1	–	–	1	–	1	–	–	–	2
3b1	1	–	5	3	11	–	1	–	21
3-1	–	–	–	–	–	1	–	–	1
3a2	–	–	1	–	–	–	–	–	1
3b2	–	–	5	–	2	–	–	–	7
3b3	–	–	2	–	1	–	–	–	3
3a4	1	–	–	–	–	–	–	–	1
3b4	1	–	5	–	6	–	–	–	12
3b-	1	–	2	–	2	–	–	–	5
3--	1	–	2	–	1	–	–	–	4
4a1	1	–	3	–	1	–	–	1	6
4a3	3	–	2	–	1	–	–	–	6
4a4	–	–	3	1	1	–	–	–	5
4a-	–	–	4	–	–	–	–	1	5
4--	–	–	–	1	–	–	–	–	1
Untyped	6	–	33	5	29	1	1	–	75
Total	18	–	83	12	73	3	2	4	195

Table 371 16–22 Coppergate: Construction Type 2 by shoe type and period (Anglo-Scandinavian period only)

	3	4A	4B	5A	5B	5C	u/s	Total
2	3	–	10	3	1	–	–	17
3	–	–	3	1	1	–	–	5
3b	–	–	2	–	–	–	–	2
3a1	–	–	1	–	–	–	–	1
3b1	2	–	7	2	–	–	–	11
3-2	–	–	1	1	–	–	–	2
3a2	–	–	–	–	–	1	–	1
3b2	–	–	–	1	–	–	–	1
3b3	–	1	5	–	1	–	–	7
3b4	–	–	4	–	–	–	–	4
4	–	–	1	–	–	–	–	1
4a	–	2	–	1	–	–	–	3
4a1	–	–	4	–	–	–	–	4
4a3	–	–	4	–	–	–	–	4
4a4	3	–	2	1	–	–	–	6
Untyped	5	1	30	3	17	4	–	60
Total	13	4	74	13	20	5	–	129

Type 2a turnshoe construction

This seam appears to be a variant of the commonly used Type 2 seam in which both the sole and upper have grain/flesh stitching. Five examples only have been recognised, all from contexts dating to the mid 10th century at 16–22 Coppergate. The shoes are of differing styles (Style 3b1 15386 and 15389; Style 3--15428; Style 4a- 15451; and sf9192, an unclassifiable shoe) but were all sewn with thong.

Type 3 turnshoe construction

This type also appears to be a variant of the Type 2 seam whereby edge/flesh stitching is used on both the sole and upper. Whilst the finish would be neater than the standard Type 2 seam having less gape, perhaps the seam would not be as strong since the stitches would be more likely to pull through the thinner stuff of the uppers. This construction was used for only a short period around the 12th century at York. Eleven finds with construction seams of this type were recognised, ten from 16–22 Coppergate, from contexts with a date range of mid–late 11th century to early 13th century, while another was found unstratified at the College of Vicars Choral. The ma-

jority of the shoes of this construction were ankle-shoes and low boots with one-piece uppers (Style 7), with a single example of an ankle-shoe fastened over the instep with integral laces (Style 6).

Type 4 turn-welted construction

Heavily worn turnshoe soles were frequently repaired by the application of a patch, known as a clump sole, to the worn areas. Over time the clump began to be stitched to the rand, rather than to the sole itself, and by the middle years of the 15th century evolved to become a separate outer sole stitched to a wider rand, now a welt. This development is known as turn-welted construction. Tunnel stitches were replaced with grain/flesh stitching, the thread passing completely through both welt and sole. The original turnshoe method was maintained for the initial construction, with the turnshoe sole now becoming an insole (inner sole). There are three turn-welted shoe finds, all from the Coppergate watching brief site. None of the shoes had their uppers sufficiently well preserved for their styles to be identified, though the soles are clearly 15th-century types. Two of the finds came from a massive ground raising dump dated to the 16th century, but containing

15th-century material; the other occurred unstratified. Shoes of turn-welted construction are included in the catalogue as Type 4. They are not the subject of further discussion in the text.

Type 5 welted construction

By the end of the 15th century, the turn-welted construction had been developed further and the welted construction was devised. The shoe of welted construction had an upper, an inner sole and an outer sole stitched to a welt. The shoes were now assembled on the last the right side out; as they no longer needed to be turned inside out, thicker, more robust leather could be used. Welted construction was used throughout the post-medieval period and is still in use for handmade shoes today. True turnshoes continued in use alongside the new turn-welt and welted constructions (Davis 1997, 113) for a limited time but the welted construction came to dominate the trade, though turnshoe construction was sometimes chosen to make indoor wear. Six finds of welted footwear were found, four from 16–22 Coppergate and one from the College of Vicars Choral, and are included in the catalogue as Type 5. None was sufficiently well preserved to allow the style of upper to be identified.

Shoe soles

One hundred and ninety-four shoe soles were complete or sufficiently complete to allow their dimensions, that is total length and width across the tread, waist and seat, to be measured (Fig.1593). Many more were almost complete but had damage that prevented the taking of one or more of these key measurements and so could not be included in this survey. None of the long toes of the piked or poulaine soles survived but the measurements for these soles, minus their extended toes, have been included (Type e4). The dimensions of the complete soles, their shape and date of deposition are presented in tabular form in the catalogue for the information of fellow workers and to facilitate future research.

The soles have been classified by shape (Fig.1594). The main criterion used here to define sole type is the width of the waist relative to that of the tread and of the seat. It has long been thought that the relationship between the length of a sole and the width of the waist, stated as a ratio, could be used as a dating tool (Carter and Clarke 1977, 355). Toe shape and

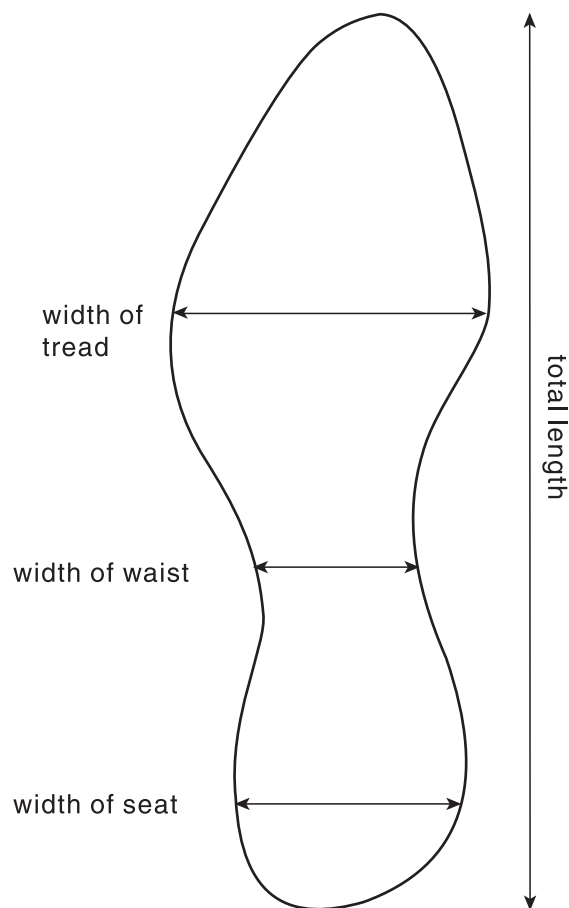
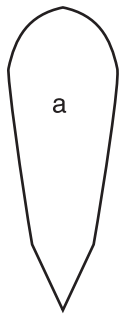


Fig.1593 Sole measurements taken

the shape of the seat have also been considered here. Criteria such as these are necessarily somewhat subjective (at what point does a rounded toe become oval?) but provide useful comparative attributes. Five major types were identified in this way (Types a–e), and these were further subdivided according to the shape of the toe and the seat to produce a total of thirteen sub-types. These sole types appear in the accompanying shoe catalogues. The seam used to join the various sole types to their uppers has been described fully when considering shoe constructions. The Anglo-Scandinavian shoe sole Type a is distinguished by having a pointed heel extension; Types b, c, d, e and their sub-types each have a rounded seat.

Soles of Type a

This shoe sole has a pointed V-shaped extension at the seat, sometimes called a 'heel-riser'. This ex-

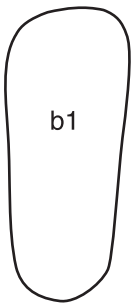


a

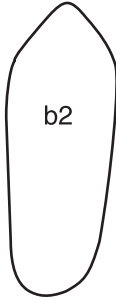
Type a

round or short pointed toe
medium tread tapering to a v-shaped
heel extension (no waist)

Anglo-Scandinavian



b1



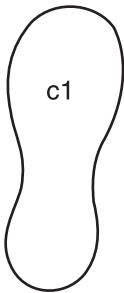
b2

Type b

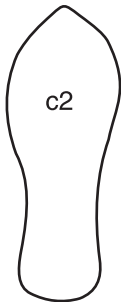
medium tread tapering to a round seat (no waist)

Anglo-Scandinavian

b1 round toe
b2 short pointed or oval toe



c1



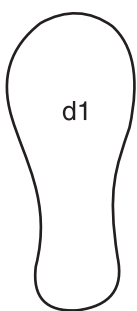
c2

Type c

sole with slight waist

Late 11th–early 13th century

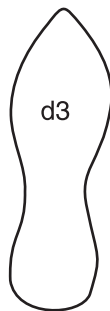
c1 round toe
c2 short pointed or oval toe



d1



d2



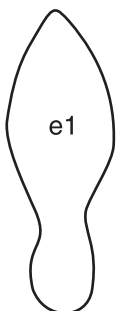
d3

Type d

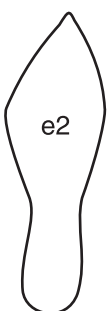
sole with distinct waist

12th–13th century

d1 round toe
d2 oval toe
d3 oval toe and wide seat



e1



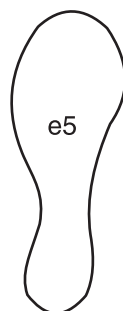
e2



e3



e4



e5

Type e

soles with narrow waist

Early 13th century
onwards, especially
14th–15th century

e1 oval toe
e2 pointed toe and long
narrow seat
e3 pointed toe and wide seat
e4 pointed toe and straight
medial edge to tread
e5 round toe

Fig.1594 Sole types

tension fitted into a corresponding V-shape cut out from the back part of the uppers (as seen in York shoe Styles 3a and 4) or fitted between either side of the uppers to form the back part of the shoe (as seen in Style 2). Many of the heel-risers found at York are decorated with simple impressed linear designs (see Fig.1672, p.3341), described fully with the other forms of shoe decoration (pp.3340–1). The sole has a rounded or short pointed toe and a tread of medium width that tapers back to the seat, with no distinct waist. As none of the soles of this type has a true waist or seat, the figures given for the width of the waist and seat are a measurement of the estimated positions of these areas only, and are provided for comparison with other sole types.

At 16–22 Coppergate this type of sole is found in the earliest Anglo-Scandinavian levels (mid 9th–late 9th/early 10th century) and goes out of use by the middle of the 11th century. Hald (1972, 117) considered that the use of the sole with a V-shaped heel extension dated to the second half of the 8th century and possibly earlier. It has been found throughout north-west Europe, with Rouen in France being the most southerly find spot yet to be recorded (Montembault 1998, 59, fig.2A).

A variation, seen in London (Pritchard 1991, 213–14, fig.3.99) but not so far in York, has a rectangular, tab-like heel-riser that is stitched over the top of the quarters at the back, rather than being set into a cut-out. It is possible that this represents an earlier variant that continued in use alongside the new one (Pat Reid, pers. comm.); indeed, it appears to be in the tradition of the counters at the back of the heel seen in earlier, ecclesiastical shoes from Iona (Groenman-van Waateringe 1981).

Soles of Types b, c, d and e

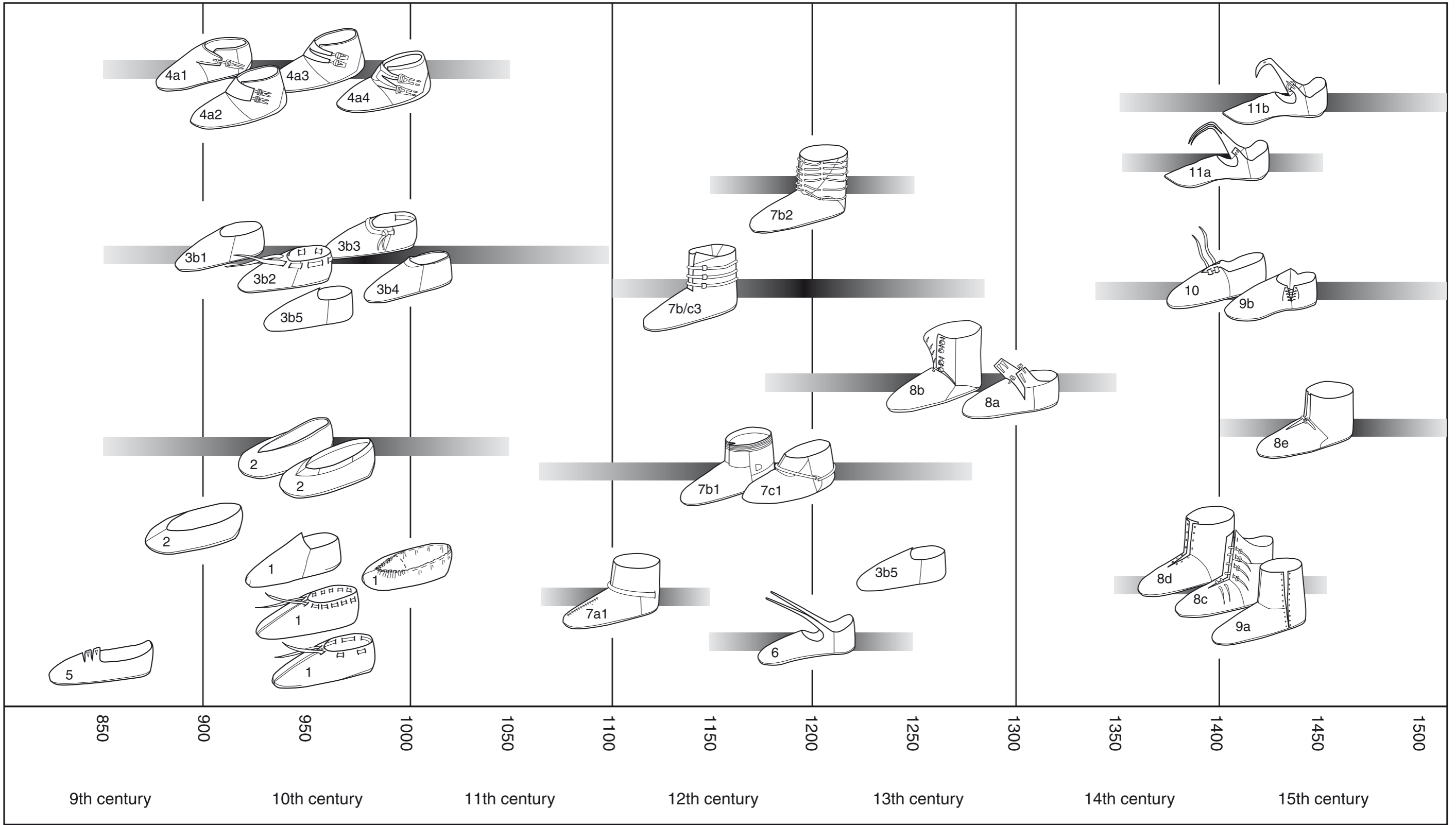
The other types of shoe sole distinguished all have rounded seats, like those of shoes worn today. Type b soles are of similar shape to those of Type a in all respects other than having a rounded seat. They have a rounded or short pointed toe and a tread of medium width tapering to a rounded seat, with no distinct waist. They can be divided into two sub-types: those with a rounded toe (Type b1) and those with a short pointed or oval toe (Type b2). These wide, relatively shapeless soles also date to the Anglo-Scandinavian period. Type c soles have a slight waist between the tread and the seat. Examples with a rounded toe

(Type c1) and a short pointed or oval toe (Type c2) could be distinguished. These soles date to the late 11th to the early 13th century. Type d soles, dating to the 12th and 13th century, have a distinct waist, with either a round toe (Type d1) or an oval toe (Type d2); others had a wide seat (Type d3). Soles with narrow waists, Type e, occurred from the early 13th century onward, though they were found principally in 14th- and 15th-century contexts. Examples with round toes (Type e5), oval toes (Type e1), pointed toes and long, narrow seats (Type e2), and pointed toes and wide seats (Type e3) were present. A further category of soles could be recognised with pointed toes that extended from the forepart in such a way that the inner edge of the tread was almost straight (Type e4). These soles were recovered from contexts dating from the late 14th–late 15th century and were dominated by extremely long toes, poulaines or pikes, though all the examples had been broken off or deliberately cut away.

Shoe styles (Fig.1595)

The shoe styles are described below in roughly chronological order with reference to examples from other sites in Great Britain and Europe where appropriate. They have been considered under a number of general headings for clarity and have been assigned style numbers to facilitate use of the catalogue and clarify the general discussion (pp.3418–36). The terminology used is given in Fig.1597. The accompanying illustrations use stitch conventions shown in Fig.1596, taken principally from Goubitz (1984, 187–96), and are generally shown from the flesh side. The illustrations often include a diagram to show the likely appearance of a complete shoe of that style. Quantifications of all the shoe styles by period at each site appear in an Appendix, pp.3533–5.

Fig.1595 (foldout, facing) Time line showing the range of shoe styles represented by the leather shoe components found at the sites in York under consideration. Please note that Styles 3b1, 3b2 and 3b4 also occur with v-shaped heel extensions as Styles 3a1, 3a2 and 3a4




- - - - -	grain/flesh stitch
~~~~~	edge/flesh stitch
	edge/flesh whipped stitch
x x x x x or > < > < > <	tunnel stitch
xxxxxxxxxxxx	tunnel stitch on uppers for decorative stitching
//—//—//—	whip stitch used to attach a strengthening cord
// // // //	lapped seam with whip stitch used to attach a tongue or internal lining
o-o-o-o-o-	grain/flesh stitch for decorative stitching

Fig.1596 *Stitch conventions used in illustrations*

### Anglo-Scandinavian shoes (9th- to 11th-century footwear)

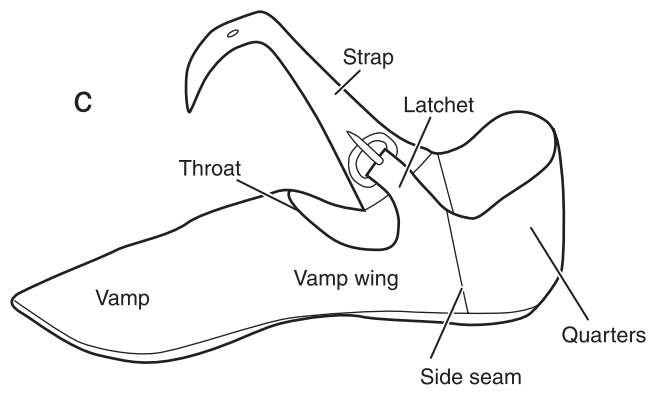
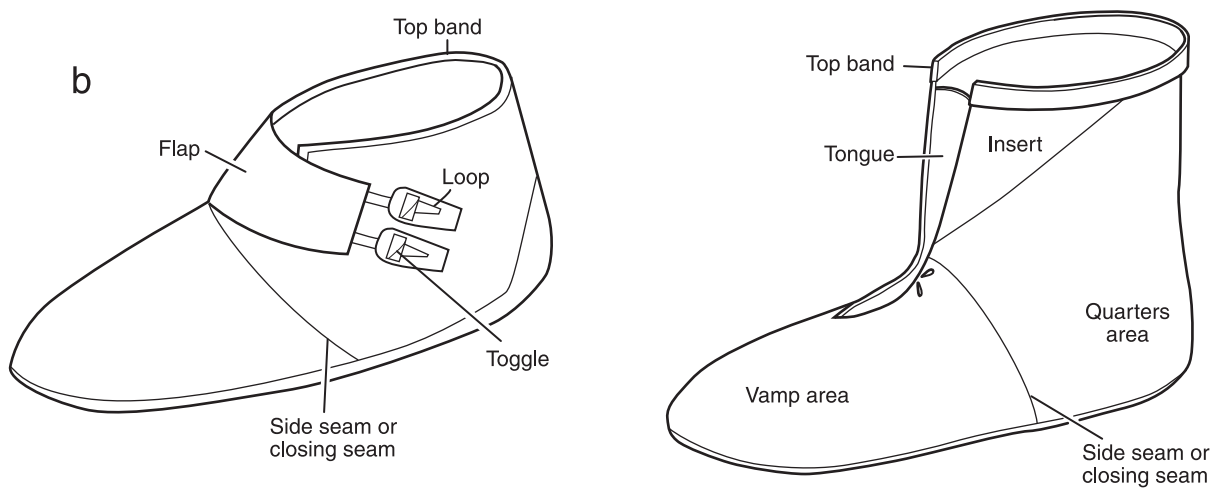
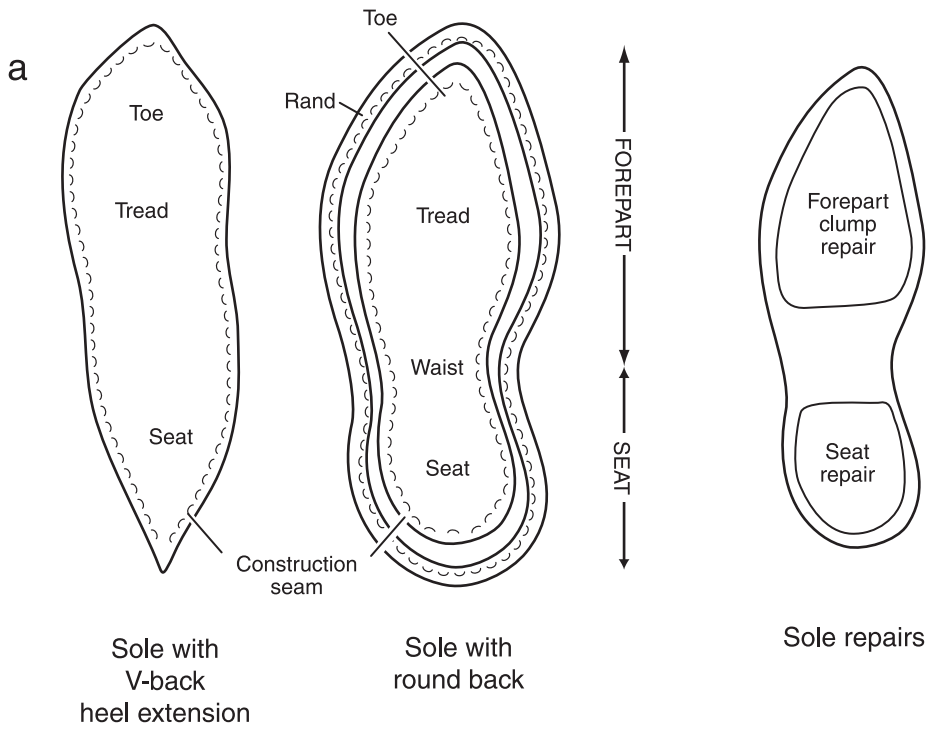
#### Shoes made from a single piece of leather (Style 1)

A small number of shoes were found at 16–22 Coppergate that had been made entirely from a single sheet of leather, with both the sole and the uppers cut from the same sheet. They have been made using differing cutting patterns but, for clarity, have been considered here as a single group (Style 1). One shoe (15354, Figs.1599–600) may be paralleled by examples from elsewhere with some certainty. It has proved less easy to find comparable examples of three other shoes (15353, Fig.1601; 15355, Fig.1602; 15357, Fig.1598), though individual aspects of their construction can be recognised in shoes from other

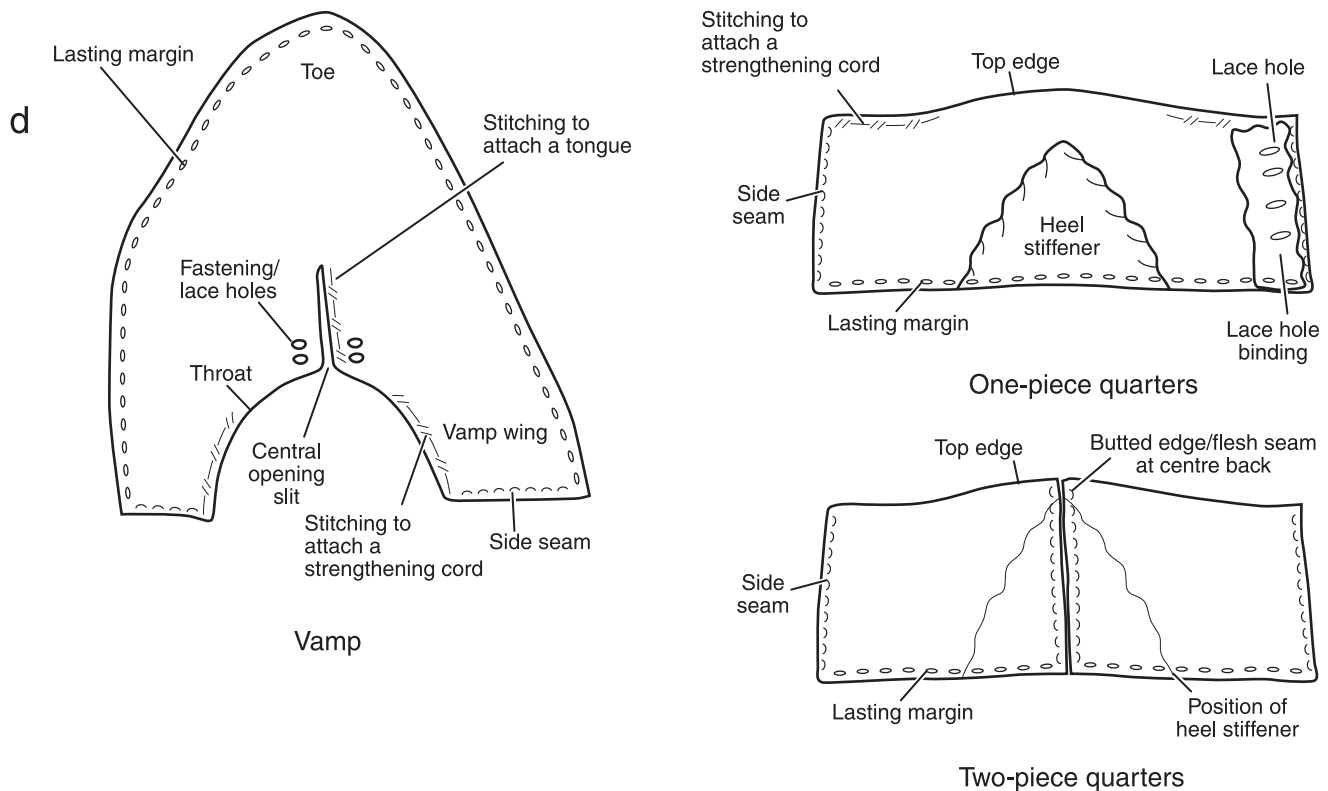
assemblages. To the authors’ knowledge, no other examples of these types of footwear construction have been found at York to date and their occurrence is of some interest.

A shoe of very simple construction (15357, Fig.1598) was found in a backfill deposit dating from c.975–early/mid 11th century in the building behind the one on the street frontage on Tenement B at 16–22 Coppergate. It comprised a sub-rectangular piece of sheep/goatskin with a distinctive V-shaped ‘cut-out’ marking the position of a central back seam. The sub-rectangular panel was folded longitudinally and seamed up the centre back to fit around the heel. The opposite end was bent round and sewn together to form the toe, the resulting slightly oblique seam lying just to one side, comfortably on top of the toes and showing that the shoe was made for a right foot. A line of grain/flesh holes with thread impressions from a running stitch is visible along the top edge. The running stitch served gently to gather the top edge around the foot and it is possible that the two ends of the gathering thread or thong extended at the back seam and wound around the ankle to secure the shoe to the foot. The size of the holes and the accompanying impressions indicate that the thread or thong used was fine. One might doubt that this was sufficiently substantial to withstand the strain of gathering or tying around the leg; however, the narrowness of the drawstrings used on shoes of comparable construction from other cultures, such as the Hottentot of Africa, should be remembered (Hald 1972, 204, fig.236). Alternatively, the shoe may have been attached with a running stitch to a textile legging or stocking in the manner of a ‘footed hose’ popular in the later medieval period. A series of larger holes is also present at the top edge toward the toe. These larger holes with similar impressions from a running stitch may indicate where a small additional piece, or ‘gore’, was inserted to lie across the top of the foot at the base of the toes. This unusual shoe is of simple construction but the cutting pattern and fine stitching show some degree of sophistication.

The literature search possible within the remit of this project, though providing plentiful comparable material for the majority of the footwear from York, could not find an exact parallel for this simple shoe. Closest similarities lie with ‘primitive’ shoes, and ethnological sources are likely to provide the nearest match. Simple shoes made from a single piece of







**Fig.1597** (above and facing) Diagrams to explain terminology used to describe shoe parts: (a) shoe soles; (b) shoe uppers of principally one-piece construction; (c) shoe uppers with separate vamp and quarters; (d) terms used to describe shoe vamps and quarters (b and c after drawings in Grew and de Neergaard 1988)

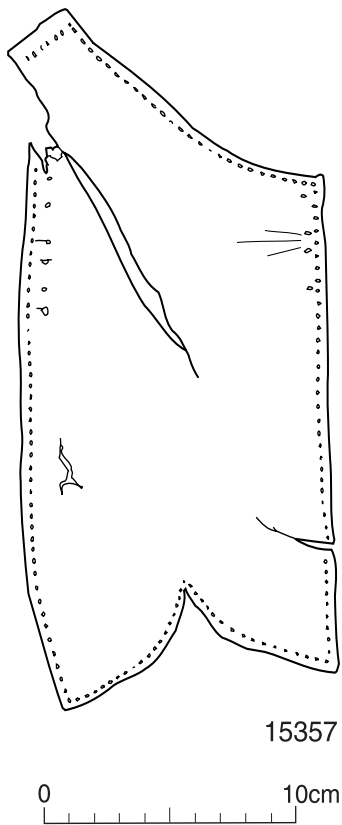
untanned hide, with a seam at centre back and centre front, and gathered around the top edge, are known from Ireland, Scotland and the islands around its northern and western shores. The Irish pampootie, the rivelin or rivlin from Shetland, and the other types of 'hide shoes' from further afield in Iceland and the Faroe Islands, still worn into the recent past and so charmingly described by Hald, are all variations of this simple, basic construction. The simple shoe from York (15357) must be seen to be part of the same tradition.

The York shoe may best be considered along with a small number of simple shoes recovered from archaeological contexts in the Netherlands and Germany, though these are of a more basic design, lacking the 'refinements' of the shaped back seam and the toe seam on the York example. Fragments from four simple shoes of calfskin have been found in a well at Amersfoort-Hoogland in a context thought not to date to before the 12th century (Goubitz 1997b, 432–5). An earlier example from Wijk bij Duurstede (Dorestad, Netherlands) dates from the second half

of the 8th–first half of the 9th century, while a shoe from the Elisenhof terp (North Germany) dates to the 9th century (*ibid.*, 434). These shoes are distinguished from those of similar style but of prehistoric date by being made of thin leathers. The York shoe, found in Period 5B backfill, falls neatly within the time scale they provide and is similarly made of thin leather.

A further three shoes (15353–5) recovered from contexts dating to the middle years of the 10th century (c.930/5–c.975) were also constructed from a single piece of leather, though more sophisticated cutting patterns were adopted.

A nearly complete shoe (15354, Figs.1599–600) for the left foot, and a possible fragment of a second (15356), were found in mid 10th-century contexts at 16–22 Coppergate (Period 4B). The complete shoe (15354) came from the fill of a scoop in the front of Tenement C, the fragment (15356) from a pit fill at the rear of the site. The shoe is cut from a single piece of leather with a central sole section with the two



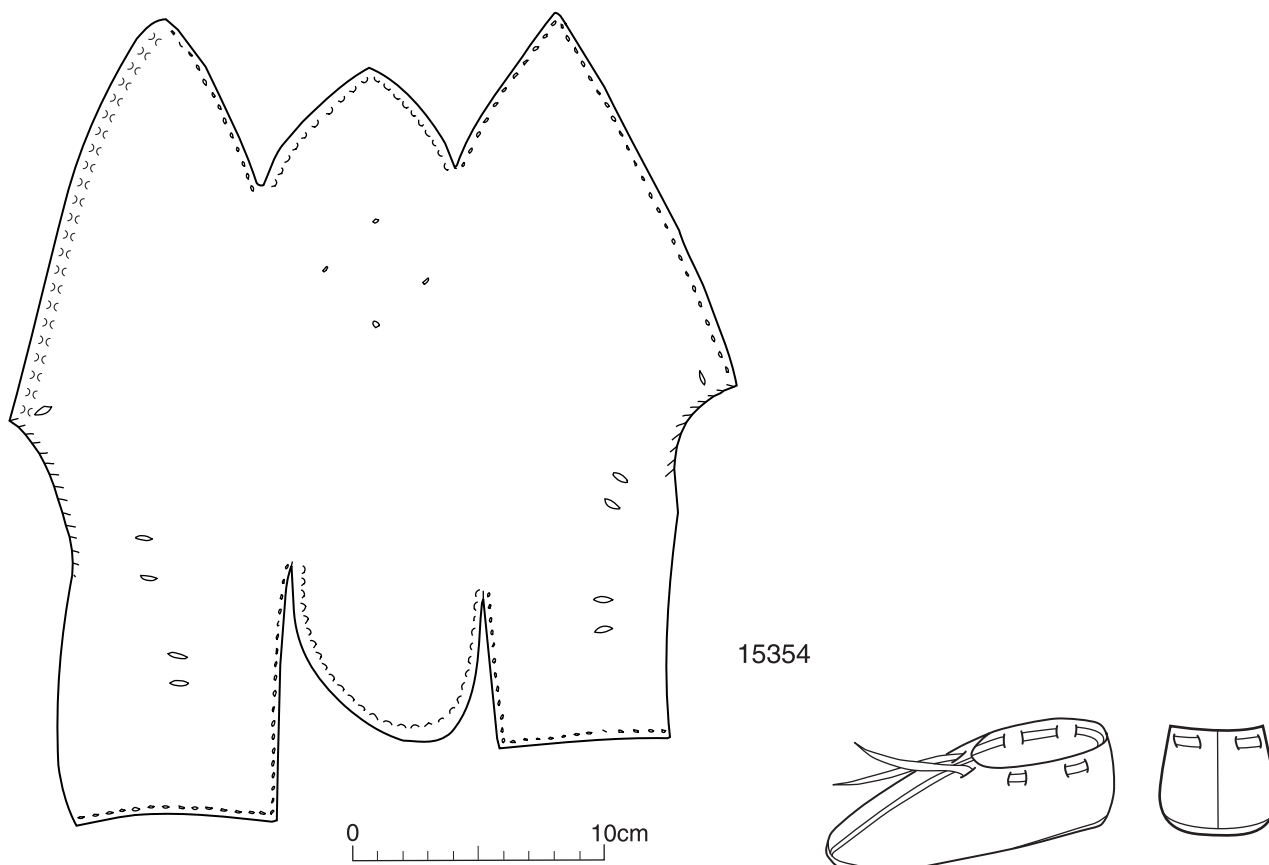
**Fig.1598** 15357, shoe Style 1, made from a single piece of leather. Scale 1:3

halves of the uppers to either side. These fold up around the foot and are seamed to the toe area of the sole, around the heel area at the seat and up the centre back. A lapped seam sewn with a tunnel stitch on the upper face and a grain/flesh stitch on the lower runs down the centre of the vamp from throat to toe. It has a whipped seam at the throat, which may suggest that it originally had a separate throat insert or tongue. The remainder of the top edge is plain cut, and has certainly been cut down on one side, so that the top edge may have originally held a top band. The shoe is fastened by a drawstring that passes through pairs of slits around the top edge and is tied at the front.

Shoes of this style have been found in small numbers elsewhere in north-western Europe distributed around the Baltic Sea coast and rivers leading to it. A similar shoe was recovered from Lembecksburg, on Föhr, in Northern Germany (Hald 1972, 71–2, 74, figs.79–80). It has been dated to the 9th century by association with Pinsdorf pottery. Examples were found at the early Danish town of Haithabu (Hedeby) (Groenman-van Waateringe 1984, taf.1, 2, taf.2, 2 and taf.8, 2) dating between the 8th and the 10th century. Others have been found in Poland at Wolin, dated to the 9th century, and at Gniezno, dated to the 10th century (Hald 1972, 126, figs.154–5). To the east, shoes of this style have been recovered at Staraja Ladoga, in Russia, dating to between the 7th and 9th century (*ibid.*, 133–4, figs.162–3, no.VII after Ojateva 1965, 45, no.VII). A similar, undated, shoe from a bog find at Wedelspang Mose, Haddeby, in South Schleswig, has a similar cutting pattern but in this case the drawstring fastening passed through a series of multiple slits around the vamp throat as well as the paired thong slits around the rest of the top edge (*ibid.*, 69, 72, figs.75–6).

Another shoe (15353, Fig.1601) is much less complete, making interpretation more difficult. It too was cut from a single piece of calfskin with a central sole area and the uppers formed by bending up the two sides. Unfortunately much of the area of the uppers had been cut down or torn away and the leather is now delaminated. From what remains it appears that the toe shape was created by a central edge/flesh seam running from under the toes and continued upward to form a central vamp seam. A similar seam was present at the seat, lying directly under the heel, and continued up the back of the heel to form a central back seam. Thong slots present in the surviving fragment of uppers indicate that the shoe was fastened with a drawstring. The seat area of the sole was repaired by the addition of a large clump repair secured by crude thonging, and thong slits show that the forepart had been similarly repaired. The shoe seams themselves had been sewn with thread.

The remains of shoe 15353 suggest that the cutting pattern took the form of two matching halves that formed the uppers by being folded up around the foot, separated by opposing seamed V-shaped notches that shaped the toe and heel. Two shoes of this style have been recovered as bog finds from Wedelspang Mose (Hald 1972, figs.71–2, 74).



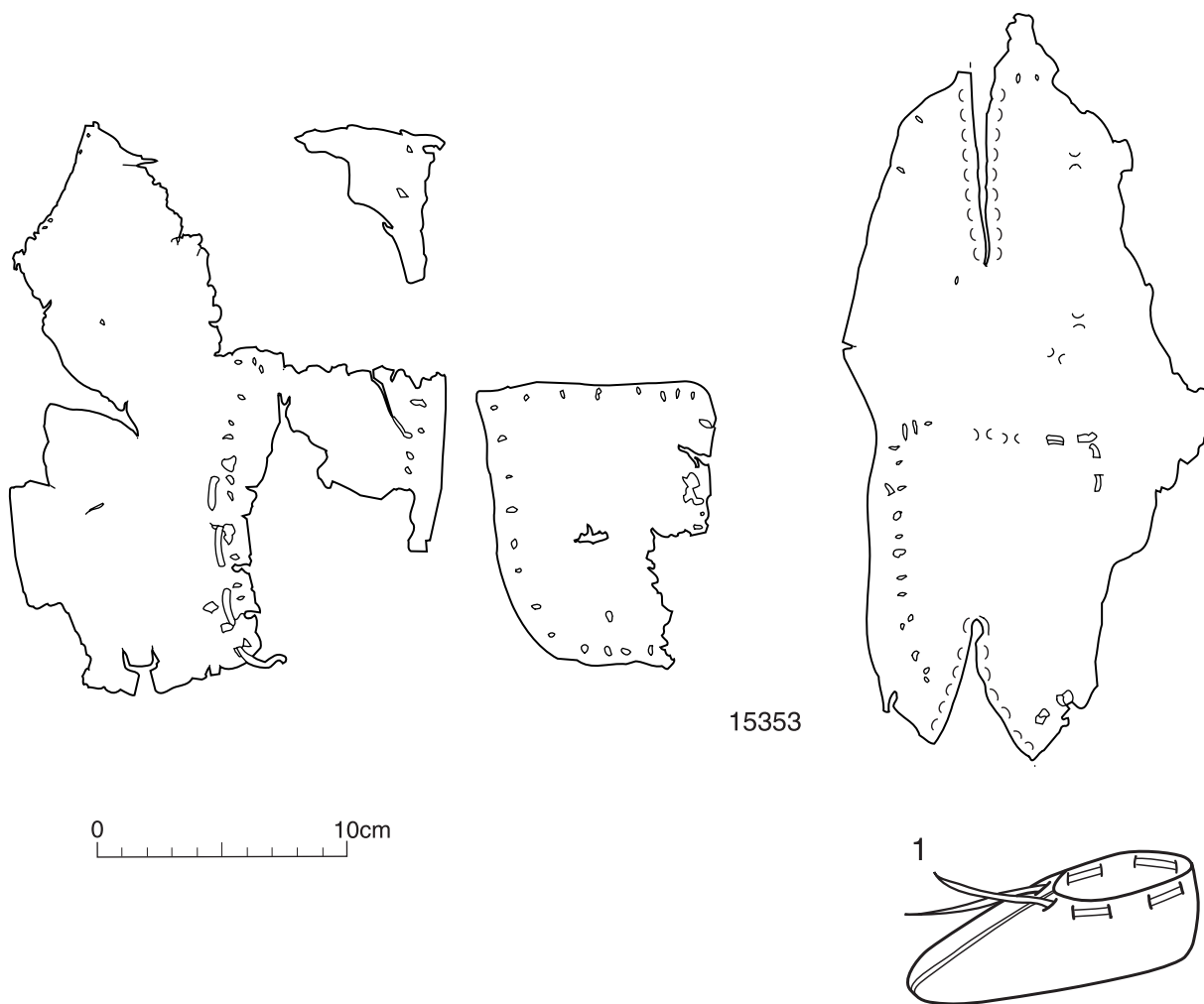
**Fig.1599** 15354, shoe Style 1, made from a single piece of leather. Scale 1:3

A shoe of sheep/goatskin (15355, Fig.1602) from a Period 4B dump deposit in Tenement D appears to be of unusual design. Cut from a single piece of leather, the shoe has a central seam running down the area of the sole from toe to heel. The cone-shaped toe is formed from a small circular projection at the toe; the area for the heel is formed by a T-shaped seam. The shoe is closed with a single seam on the inner (medial) side of the foot; the top of the seam appears to have been additionally strengthened on the interior. The centre of the throat has a small peak, while there appears to be a step in the top edge to define the quarters area, a feature seen in a much more pronounced form in a woman's shoe from Middelburg on the island of Walcheren in Zeeland (Hald 1972, figs.131–4). A cone-shaped toe, though upward pointing in contrast to the York shoe, was also seen on a shoe from Elisenhof, Ejdersted, in north-west Schleswig (Hald 1972, 97, shoe XIII, figs.123–4). The settlement of Elisenhof, located on

the North Sea coast of the Jutland peninsula in what is now North Germany, began in the middle of the 8th century, and the shoes recovered there are



**Fig.1600** 15354, shoe Style 1, after reconstruction



**Fig.1601** 15353, shoe Style 1, made from a single piece of leather. Scale 1:3

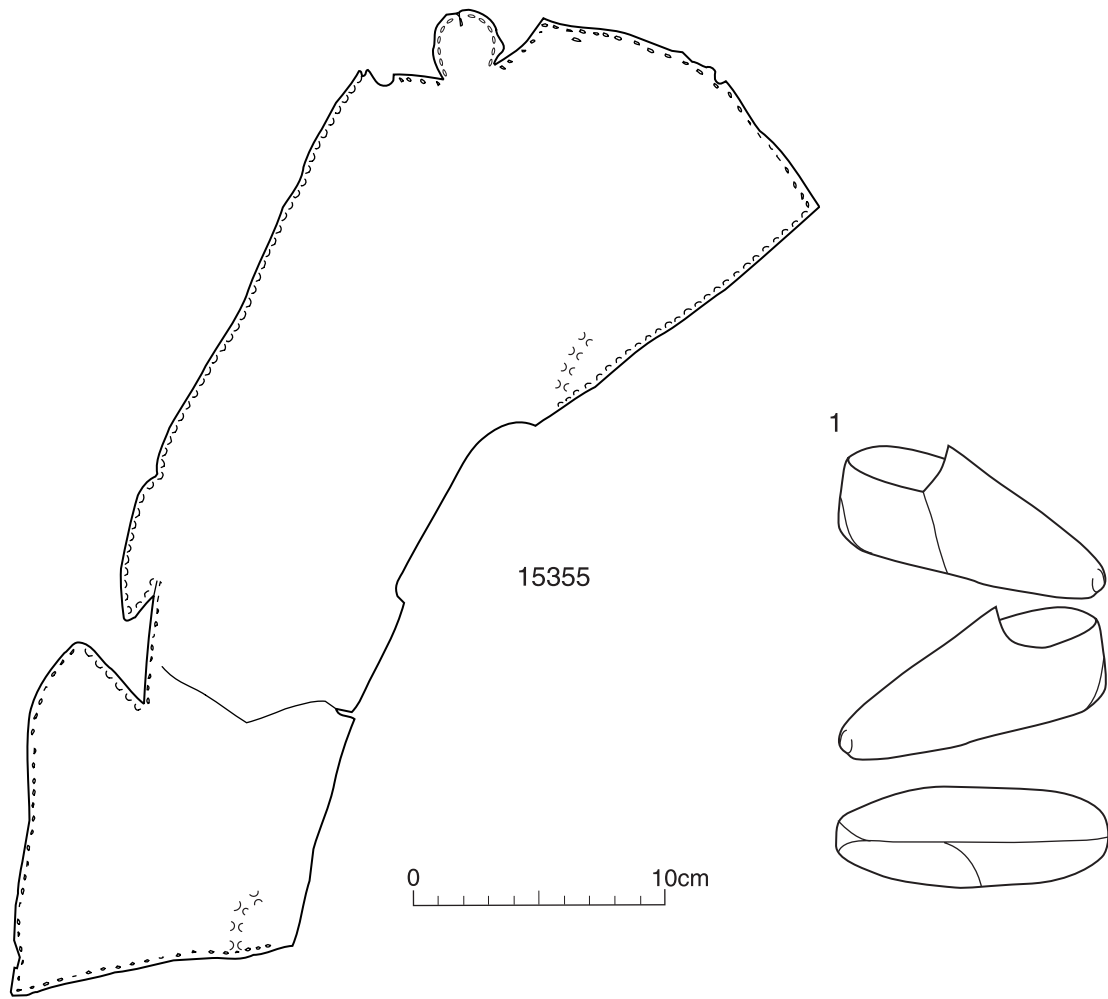
thought to date to the second half of the 8th and the 9th century (*ibid.*, 99).

One might imagine that the practicalities of such a shoe design were severely limited, and question the comfort of walking in a shoe with a seam running down the centre of the surface on which one walked. This unlikely design, however, is seen on other shoes. A shoe from Kilkummin, Co. Offaly, Ireland, made from a single-piece of leather, has an ingenious cutting pattern producing an ankle-shoe that originally fastened with a drawstring around the ankle (Goubitz 1987, 2, fig.1a). The shoe, when reconstructed by Olaf Goubitz, was also found to have a seam running underneath the foot (*ibid.*, fig.1b).

These five shoes, made from a single sheet of leather, do not occur in quantity at York and were

not the everyday shoes worn by the inhabitants of the city. While it is possible that they are shoes of earlier date, 7th–8th century, other explanations may be considered. Is it too fanciful to see these shoes as arriving in York on the feet of foreign traders bringing their goods from the north? A worn and repaired *nåle-bundet* sock was found in a 10th-century pit at 16–22 Coppergate along with typically Norse textile (p.1787, AY 17/11); it is likely that these too were actually worn by Scandinavians rather than arriving as traded goods (*ibid.*, p.1826). Less palatably, were the shoes worn by slaves, themselves traded commodities?

All the other shoes recovered from York, whether of Anglo-Scandinavian or medieval date, were made with separate soles and uppers.



**Fig.1602** 15355, shoe Style 1, made from a single piece of leather. Scale 1:3

### Low-cut slip-on shoes with a seam at centre back (Style 2)

A large number (111) of low-cut slip-on shoes were recognised (see Table 385, p.3531). They are of simple design, comprising a separate sole with a pointed extension at the seat (sometimes referred to as a heel-riser) and an upper cut from a single piece of leather (e.g. 15371, Fig.1604). Eleven of the shoes had tooled decoration on the heel extensions (see Fig.1672, p.3341). These low slippers were made using two different methods of turnshoe construction (Type 1 and 2). Shoes made using turnshoe construction Type 1 had the sole attached to the upper by a line of tunnel stitching slightly inset around the edge of the sole (15372, Figs.1605–6). The tunnel stitching changed to an edge/flesh seam around the V-shaped heel ex-

tension, the sole joining to the edge of the uppers with a grain/flesh lasting margin. Alternatively, the sole was attached to the upper with an edge/flesh seam around the edge, joining to the uppers with a grain/flesh lasting margin, turnshoe construction Type 2 (e.g. 15367, Fig.1611). The construction seam was sewn with either a fine leather thong or thread. The sewing medium itself rarely survived but could often be determined by the shape of the stitching holes. Where the construction of the individual shoes could be determined (a minimum of 57 examples) nearly three-quarters (72%) were found to be tunnel stitched (turnshoe construction Type 1). Shoes of both constructions occurred from the mid-late 9th/early 10th century and throughout the Anglo-Scandinavian period, though the tunnel-stitched construction





- |                        |                    |
|------------------------|--------------------|
| 1. Faroes              | 8. Lembecksburg    |
| 2. Shetland            | 9. Elisenhof       |
| 3. Kilcummin           | 10. Hedeby         |
| 4. York                | 11. Haddeby        |
| 5. Middelburg          | 12. Wolin          |
| 6. Dorestad            | 13. Gniezno        |
| 7. Amersfoort-Hoogland | 14. Staraja Ladoga |

**Fig.1603** Map of Europe showing places mentioned in the discussion of shoes made of a single piece of leather



**Fig.1604** 15371, shoe Style 2. This shoe has been reconstructed without its top band

dominated during the later 10th–early /mid 11th century. Study of their find spots indicates that low-cut slip-on shoes of both constructions were being thrown away in the same areas.

The single seam of the one-piece upper was stitched to the sides of the triangular heel extension of the sole; this extends upward from the sole to form the back of the shoe. Occasionally, the heel extension did not extend to the full height of the uppers, in which case the top of the uppers was joined by a short back seam (15358, Fig.1608). The top edge of the uppers has a butted seam with whip stitching. This stitching was used to attach a top band or possibly an internal lining which is no longer preserved. Thir-

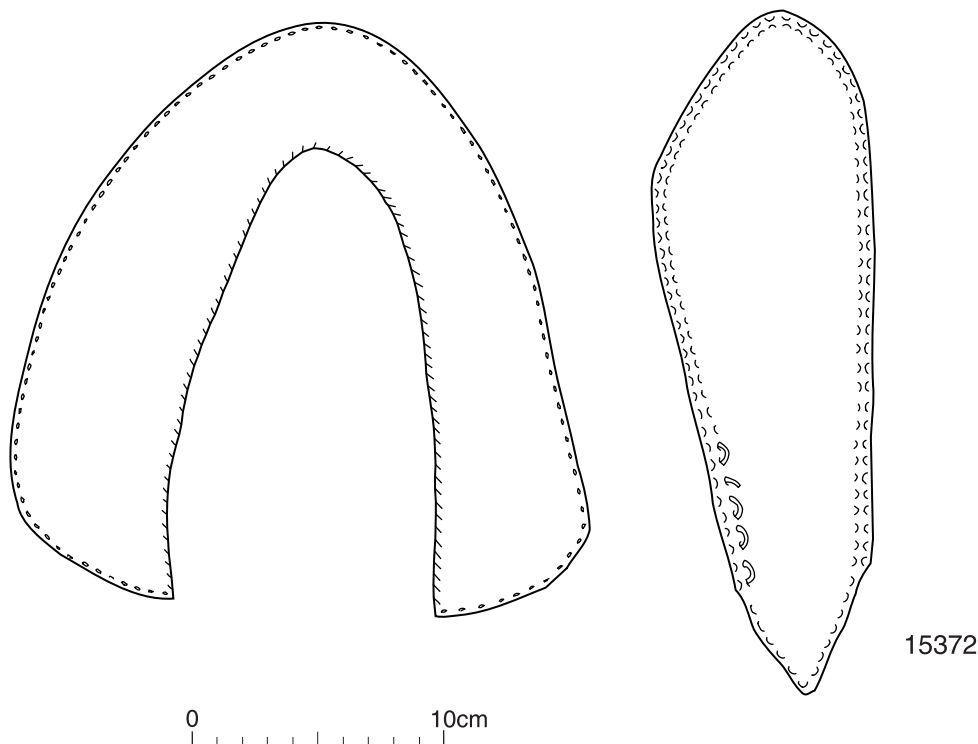


Fig.1605 15372, shoe Style 2, construction type 1. Scale 1:3

teen shoes had a top band attached along the top edge. Five of these were narrow (e.g. 15365 and 15374, Figs.1609–10), formed from strips of leather 8–10mm wide, usually folded lengthways and attached with whip stitching. A further eight were much wider (e.g. 15359, Fig.1607), varying in width between 9mm and 28mm. These were plain, unfolded strips and were clearly employed to make the shoe higher. They are reminiscent of those used on some contemporaneous toggle-fastened ankle-shoes which are similarly

raised in height by the addition of a wide top band (pp.3308–10). Two shoes with wide top bands were unusual in having different types of leather used in their construction. One (15363) has a sheep or goatskin upper, whilst another (15359, Fig.1607) has an upper which is clearly made of goatskin. The latter also has a top band of calfskin attached flesh side out to provide a decorative contrast to the upper (Fig.1607). Whether this mix of materials and textures was the result of a conscious desire to achieve a particular decorative effect or the shoe-maker simply making use of whatever he had in stock is unknown.

### Variants

This style of shoe was highly standardised. Two shoes from 16–22 Coppergate, however, varied from the basic one-piece upper construction. One shoe (15358, Fig.1608) from a mid 9th- to late 9th-/early 10th-century (Period 3) context had the upper made in two halves, joining with a vamp seam running down the centre from throat to toe. A short back seam was present above the pointed heel extension. A central vamp seam running from throat to toe is also seen on the shoes made from a single piece of leather

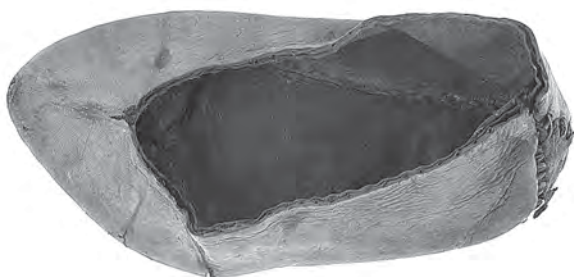


Fig.1606 15372, shoe Style 2, after reconstruction

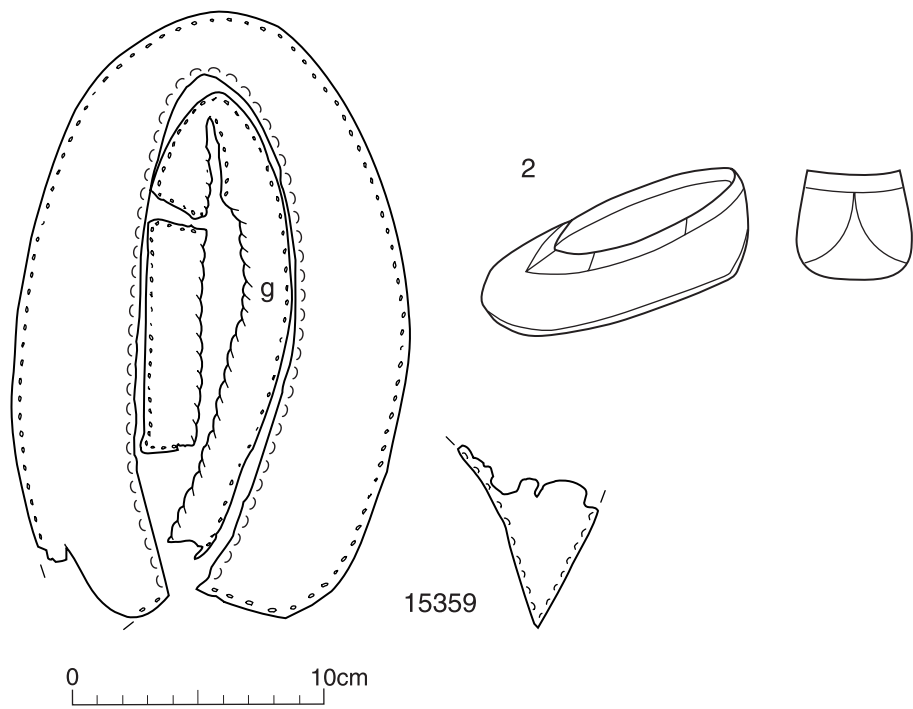


Fig.1607 15359, shoe Style 2, with wide top band. Scale 1:3

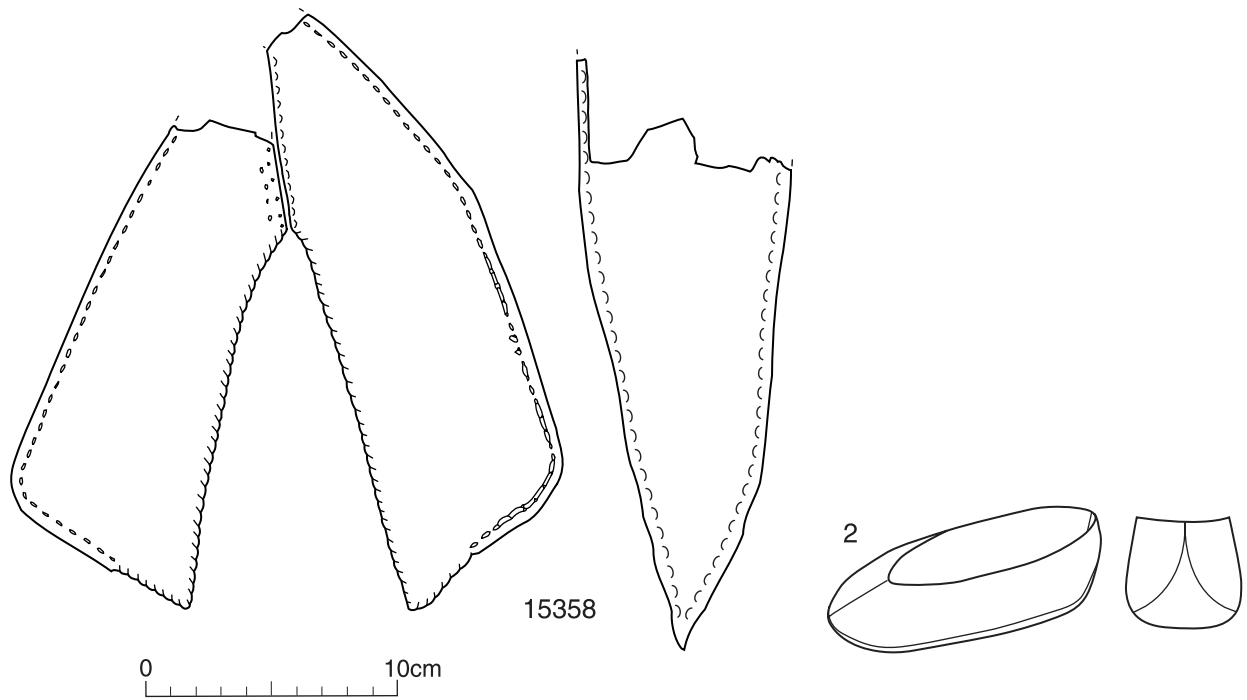


Fig.1608 15358, shoe Style 2, with upper made in two halves. Scale 1:3

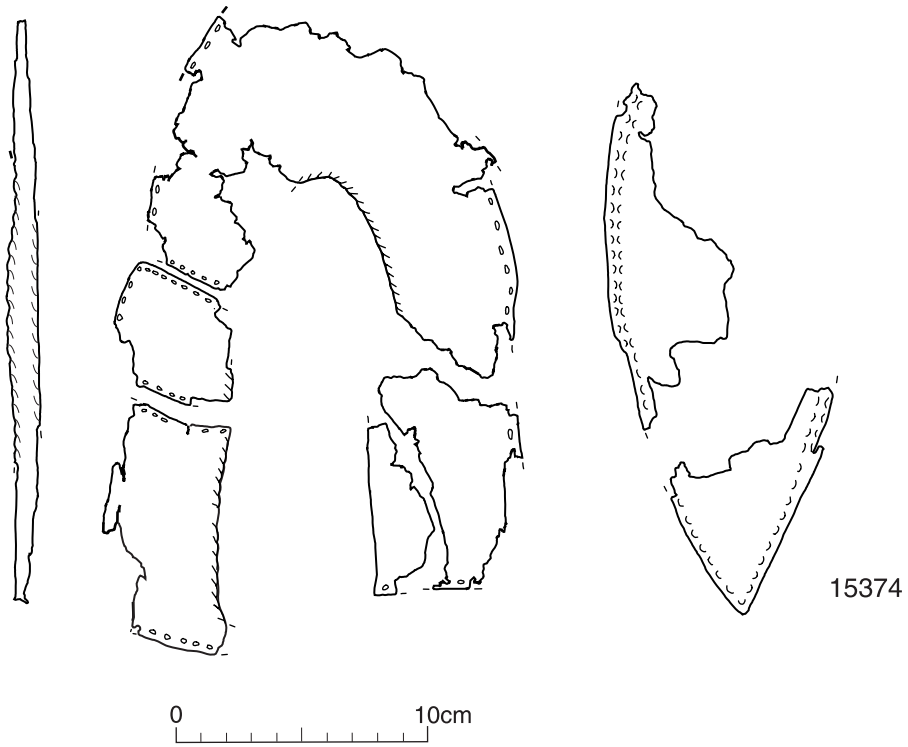


Fig.1609 15374, shoe Style 2, with insert and narrow top band. Scale 1:3

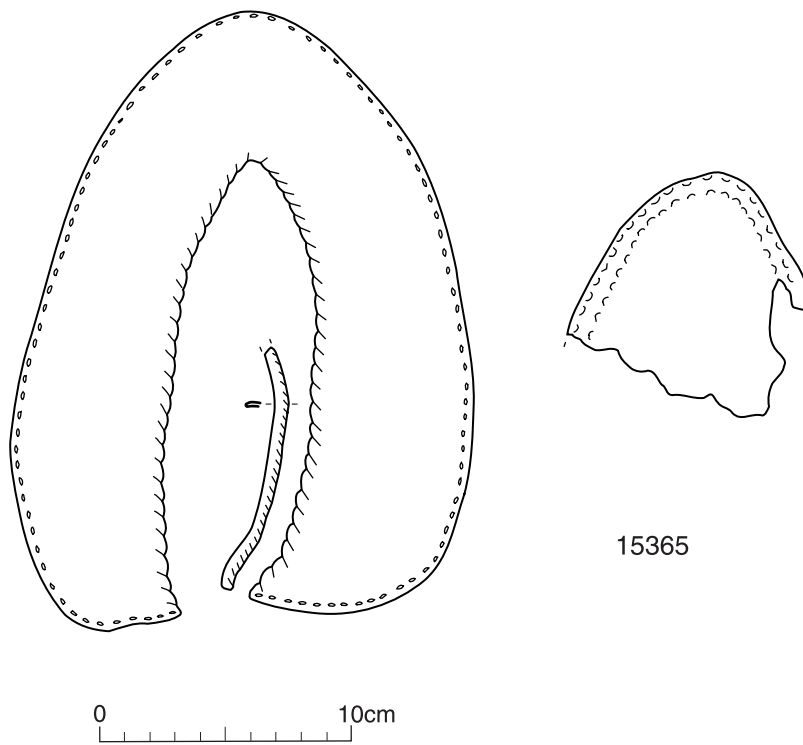
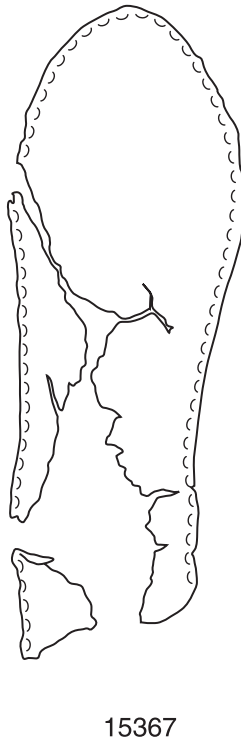
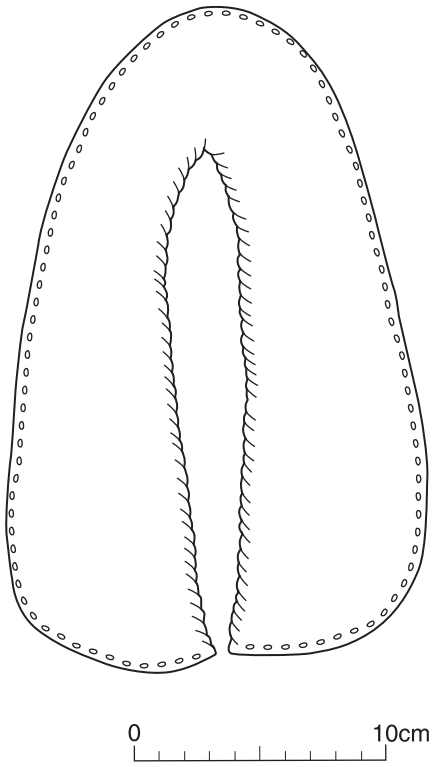


Fig.1610 15365, shoe Style 2, with narrow top band. Scale 1:3



15367

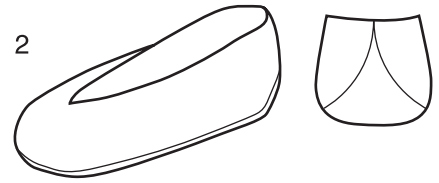
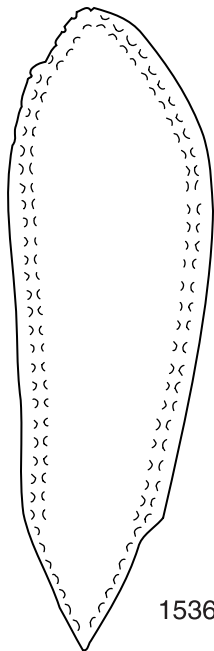
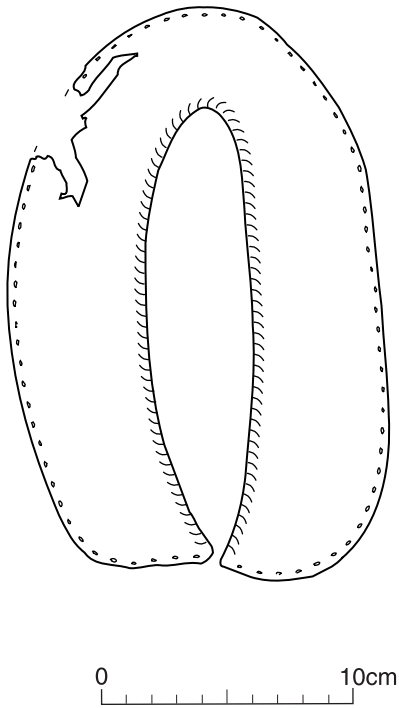


Fig.1611 15367, shoe Style 2. Scale 1:3



15361

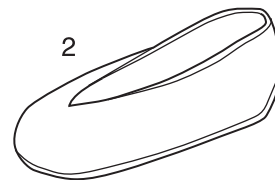


Fig.1612 15361, shoe Style 2. Scale 1:3



and may be part of an earlier shoe-making tradition. It may be significant that this shoe was found in an early deposit.

Another shoe (15374, Fig.1609) from a deposit dating to the mid-later 11th century has the majority of one side made from two different sized insert pieces stitched with grain/flesh closed seams. The top edge of the shoe is edged with a flat (unfolded) top band. Each of these two variants utilises small pieces of leather and may be the result of subsequent translation of the low-cut slip-on shoe rather than a separate shoe style.

### *Dating and distribution*

These low-cut slip-on shoes are present at Coppergate from the earliest period of post-Roman occupation dating to Period 3 (the mid 9th-late 9th/early 10th century) and continue into Period 5B deposits (c.975-early/mid 11th century). This style was common through the 10th century and remained popular into the middle of the 11th. A single shoe (15375) occurred in an 11th-/12th-century context, suggesting that at York the style rapidly fell out of fashion after the Norman Conquest. They occur in some numbers:

the 16-22 Coppergate site produced 109 examples from across this period, a single shoe was found in a deposit of Anglo-Scandinavian date during the Coppergate watching brief and another occurred unstratified at the College of Vicars Choral at Bedern. Elsewhere in York low-cut slip-on shoes have been found at Feasegate (Stead 1958, 529, fig.6, 4), Hungate (Richardson 1959, 87, fig.21, 5), 6-8 Pavement (545, Fig.71, AY 17/3), and North Street (1993.1) (Carlisle 1995, unpublished assessment report).

In London two low-cut slip-on shoes were recovered in 10th-century deposits at Milk Street. One shoe (Pritchard 1991, 215, figs.3.97-3.98, 272) exactly parallels examples from York, while a child's shoe (*ibid.*, figs.3.97, fig.3.99, 274) varies only in having the heel extension sewn to the back seam of the upper with tunnel stitching. The London shoes had an edge/flesh seam around the sole (turnshoe construction Type 2). This style of shoe was also popular in 10th-century Dublin, occurring in some numbers at Fishamble Street including contexts securely dated to c.920-1060 (Daire O'Rourke, pers. comm. and National Museum of Ireland collection E190:7366; E172:1281; E172:10827 for example). One shoe of this style from



**Fig.1613** Map of Europe showing places where low-cut slip-on shoes with a seam at centre back have been found

Fishamble Street was noted which had a wide, folded top band like the York examples, but with the addition of a line of fine slits for a narrow drawstring or possibly decorative thonging (National Museum of Ireland collection E172: 12372). Further afield, two, or possibly parts of three, shoes of this type were found in a bog at Lottorf Mose, near Hedeby (Hald 1972, 79–81, 86–7, figs.96–9). One sole (*ibid.*, fig.98) was sewn with tunnel stitching (turnshoe construction type 1). Could it be that this find, close to the Scandinavian trading centre of Hedeby, represents British footwear abroad?

### Shoes with one-piece uppers joining with a side seam (Style 3)

A large group of shoes (184) was found that comprised a sole and a simple one-piece upper joining with a single side seam placed close to the throat toward the toes (see Table 386, p.3531). The side seam was situated on the medial (inside) of the foot and was vertical or slightly angled. The majority of the shoes had the side seam sewn with an edge/flesh stitch on one side joining to a grain/flesh stitch on the other, though it appears to have mattered little which was used on the vamp seam and which on the quarters. This combination of stitching appears to be the result of using a narrow thong to sew the seam. The edge of one side of the upper to be joined was skived, that is, cut obliquely to form a bevel, so helping to make the seam lie flat. Less commonly, a grain/flesh closed seam was used (e.g. 15394). It is likely that these seams had been sewn with thread. The size of the stitch holes suggests that where thonging was used in the construction seam it had also been used to stitch the side seam.

This style of shoe was made using two different cutting patterns. For clarity these have been called (a) and (b) here. The first type had a sole with a pointed heel extension (Type a), as occurred on the low-cut slip-on style of shoe described above (Style 2). The uppers were cut with a corresponding V-shape at the centre back into which the heel extension was sewn. The second type had a sole with a rounded seat (Type b). The uppers were cut straight across at centre back and were strengthened by having a semi-circular or triangular heel stiffener stitched to the interior at that point. These two cutting patterns occurred using two different constructions. In both cases the sole was sewn to the uppers by either a tunnel stitch around the edge of the sole (turnshoe

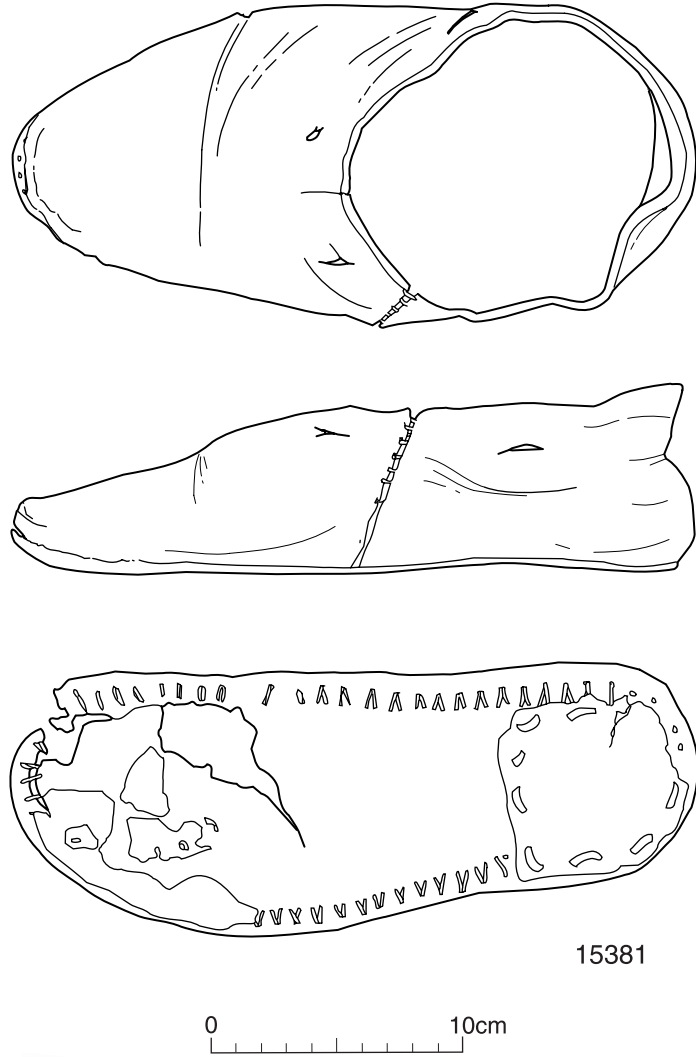
construction Type 1) or an edge/flesh seam (turnshoe construction Type 2). Where a tunnel stitch was used (construction Type 1) on the soles with a heel extension, the stitching changes to an edge/flesh seam to accommodate the heel extension. In the catalogue the cutting pattern employed for each shoe has been categorised by the letter a or b. The turnshoe construction type (1 or 2) is specified in a column within the table.

Of the 184 shoes of this general type, the majority came from 16–22 Coppergate in contexts dating from the mid–late 9th century through to the early/mid 11th century. Within the general type different styles were present. Along with shoes with no original fastenings (3a1/3b1) were shoes fastened by a single drawstring around the top edge tied at the front (3a2/3b2); others had a drawstring stitched at the throat and tied at the side of the foot (3b3). Many shoes had an additional insert at the throat (3a4/3b4), while two shoes with a pointed throat were found (3b5). These stylistic differences are described separately below. In addition to the differing styles recognised, a number of fragmentary finds belonging to the general type were found that cannot be further sub-classified (Style 3--). Twenty-seven are clearly of the general type, but have no further diagnostic attributes; one could be identified further by the heel extension on the sole (3a-) and eleven had a sole with a round seat (3b-). Where identifiable (161 examples) the uppers were of bovine leather, being chiefly of calfskin, though a small number of exceptions of sheep or goatskin were noted (15383, 15401 and 15417). The general style of shoe with a one-piece upper joining with a single seam at the side appears to have been in common use in Europe throughout the period. It continues after the Norman Conquest in the form of the one-piece ankle-boot, the basic footwear design employed throughout the earlier part of the medieval period.

### *Shoes with one-piece uppers joining with a side seam, with no original fastening (Styles 3a1 and 3b1)*

Fifty-nine shoes, all from 16–22 Coppergate, were of simple slip-on style reaching to the ankle. The majority (45, 76.3%) had a sole with a rounded seat (Style 3b1; see 15381, Fig.1614) and the heel area of the uppers supported internally by a heel stiffener (e.g. 15385, Fig.1616). They were found in contexts dating from Period 3 through to Period 5B. Seven

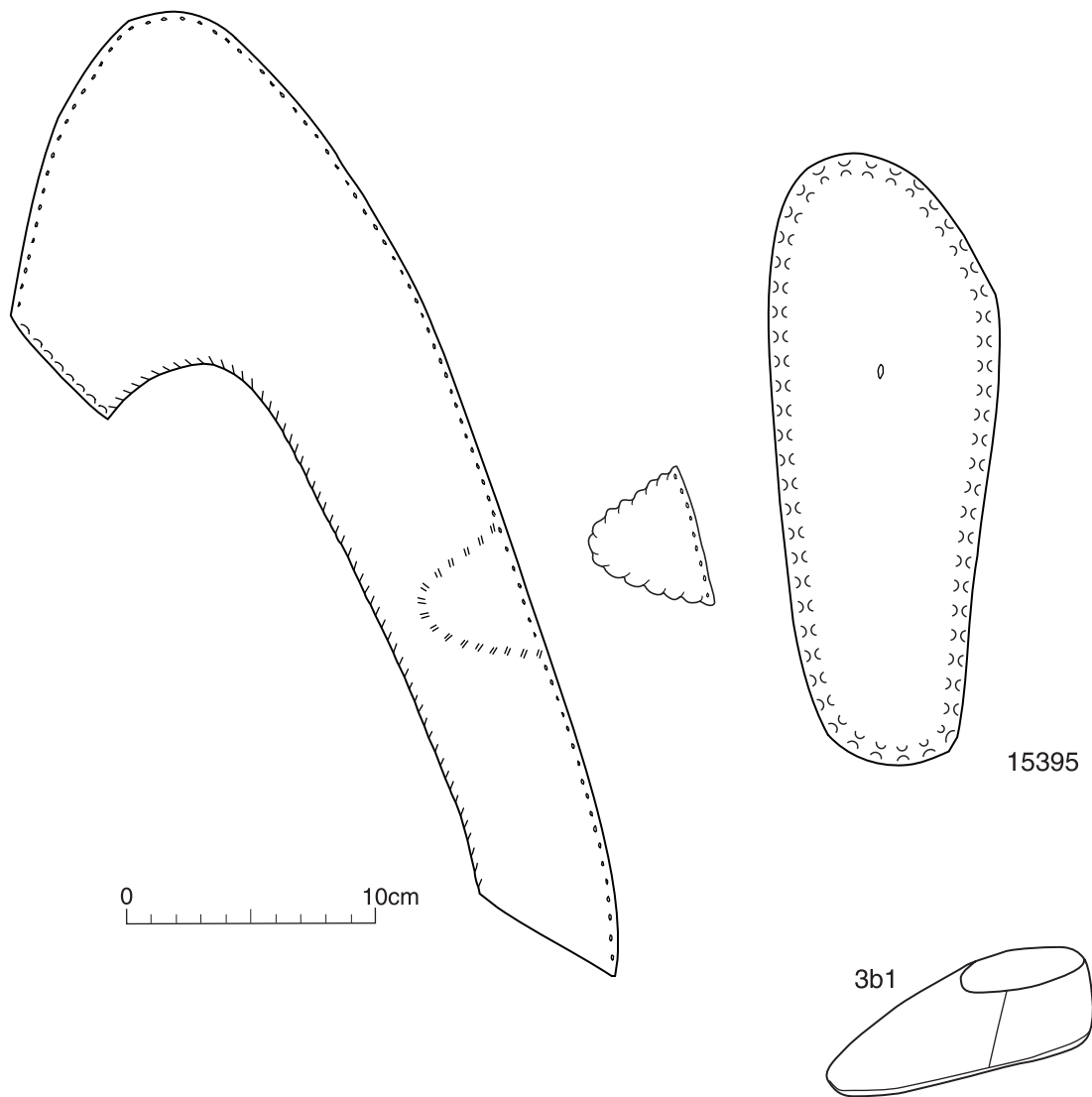
**Fig.1614** 15381, shoe Style 3b1 after reconstruction, with later slits to hold a drawstring. Scale 1:3



shoes (e.g. 15376, Fig.1617) had a sole with a heel extension and a corresponding V-shaped seam at the centre back of the uppers (Style 3a1). These were mainly found in contexts dating to Period 4B. A single example may date slightly later (Period 5B); another occurred residually in a medieval context along with much residual 10th-century pottery. A

further seven were so fragmentary that details of the heel area did not survive (Style 3-1).

This style of slip-on shoe with no method of fastening appears not always to have provided a good fit, as in four cases (e.g. 15381, Fig.1614; 15385, Fig.1616) slits had been added later to hold a draw-

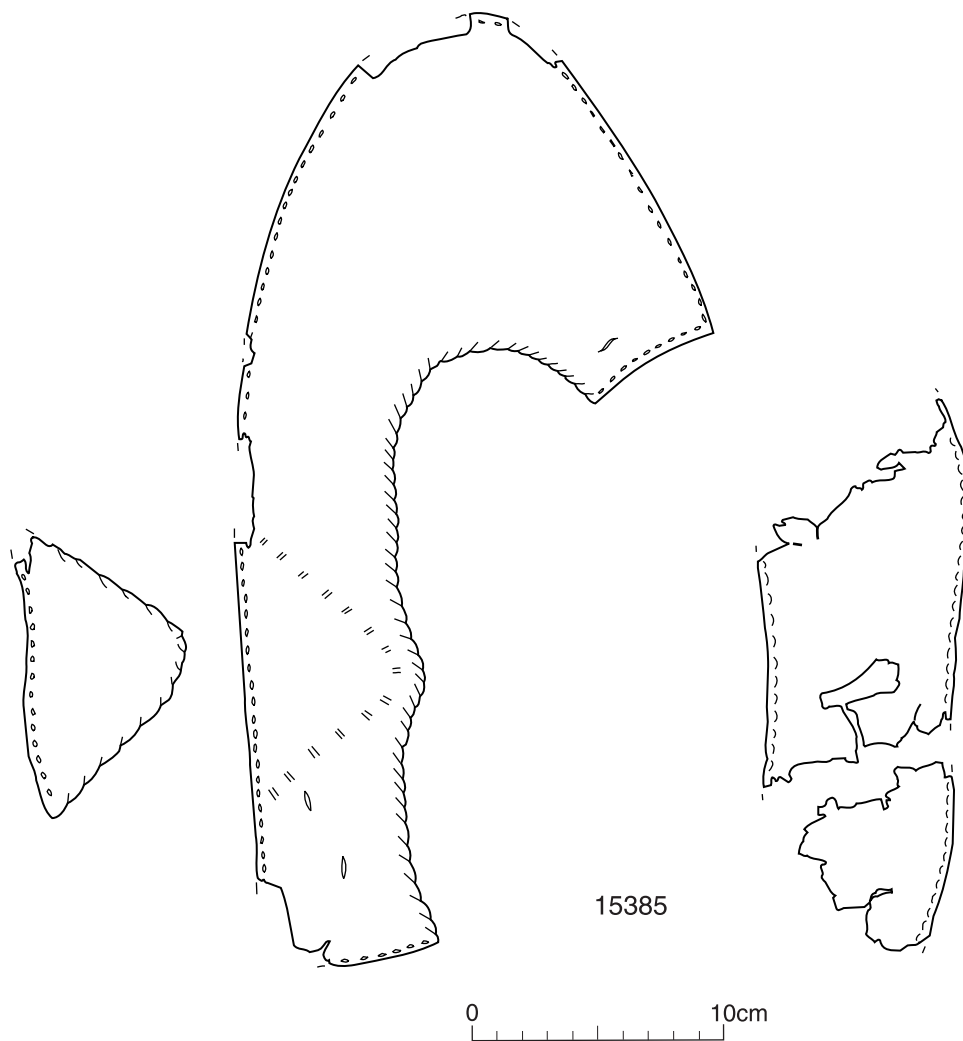


*Fig.1615 15395, shoe Style 3b1, with the heel area of the uppers supported internally by a heel stiffener. Scale 1:3*

string. This was presumably intended to hold the shoe more tightly around the ankle and prevent it from slipping off. Shoes with these additional slits were distinct from the true drawstring-fastened shoes (described below), as it was usually clear that the slits had been added as a secondary expedient rather than as an original design feature. The top edge of the shoe uppers usually had a whipped edge/flesh seam; one shoe was found with a small fragment of the narrow, folded top band remaining (15379).

Nine shoes had been modified at the throat. This modification usually took the form of a single slash (e.g. 15382, Fig.1618), or a double slash (15397,

Fig.1619) running down the vamp. This may be evidence of a foot condition, but was probably intended to relieve the pressure of a tight fit over the instep, discussed further in the foot pathology section (see p.3353). Two shoes (15387 and 15390, Figs.1620–1) have a slash across the instep close to the throat and running parallel to it. While one (15390) appears to be a secondary modification to improve the fit, the other (15387), being deliberately stitched, is a type variant comparable to those with a separate small insert at the throat, described below (Style 3a4/3b4). A shoe similarly slashed across the instep, though of a style comparable to the low-cut slip-on shoe described above (Style 2), differing only in being higher



**Fig.1616** 15385, shoe Style 3b1. Scale 1:3

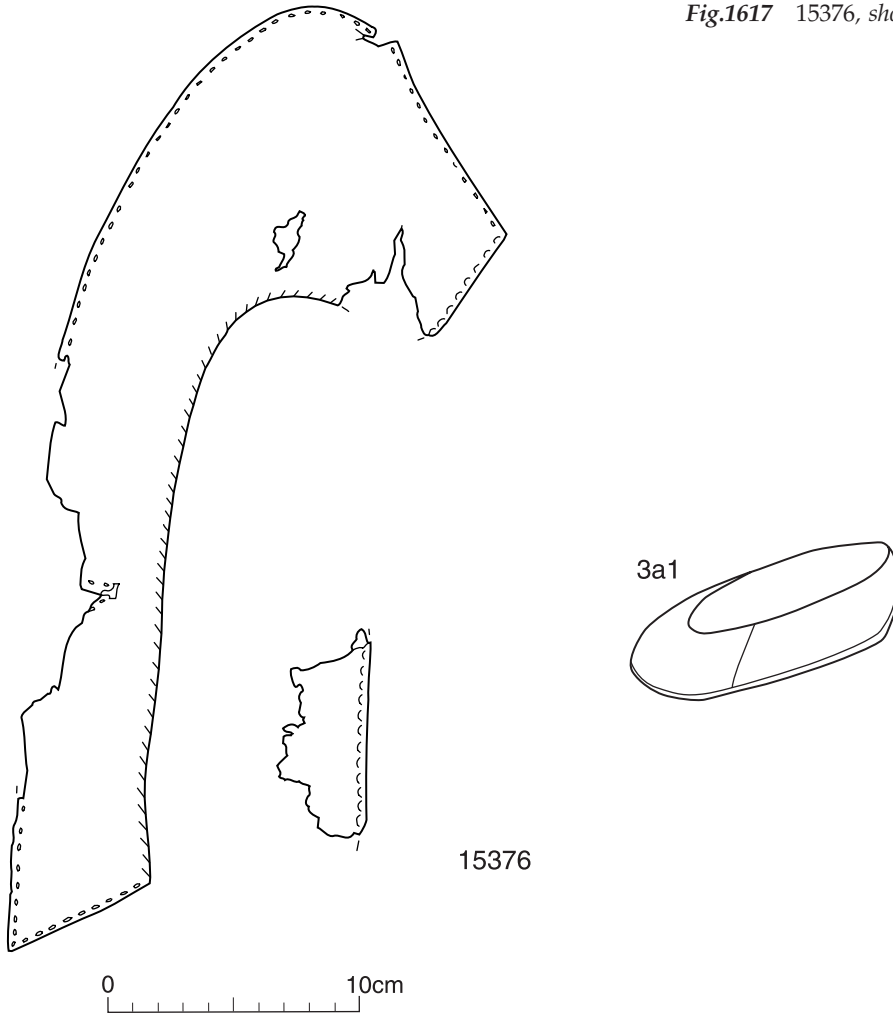
cut across the instep and originally fastened with a drawstring, was found at Schleswig (Schnack 1992, taf.18, 1). Indeed, a number of the shoes from Schleswig were decorated with multiple, vertical slashing on the vamp. One shoe of this style at York (15384) had the entire top edge cut down, so that it resembles the low slip-on style (Style 2).

One shoe (15386, Fig.1622) is of particular interest. The shoe is of construction 2 sewn with thong; the upper extends relatively high up the foot and is distinguished by having a small rectangular tongue at the centre of the throat formed from a pair of short, vertical cuts running toward the toes. This appears

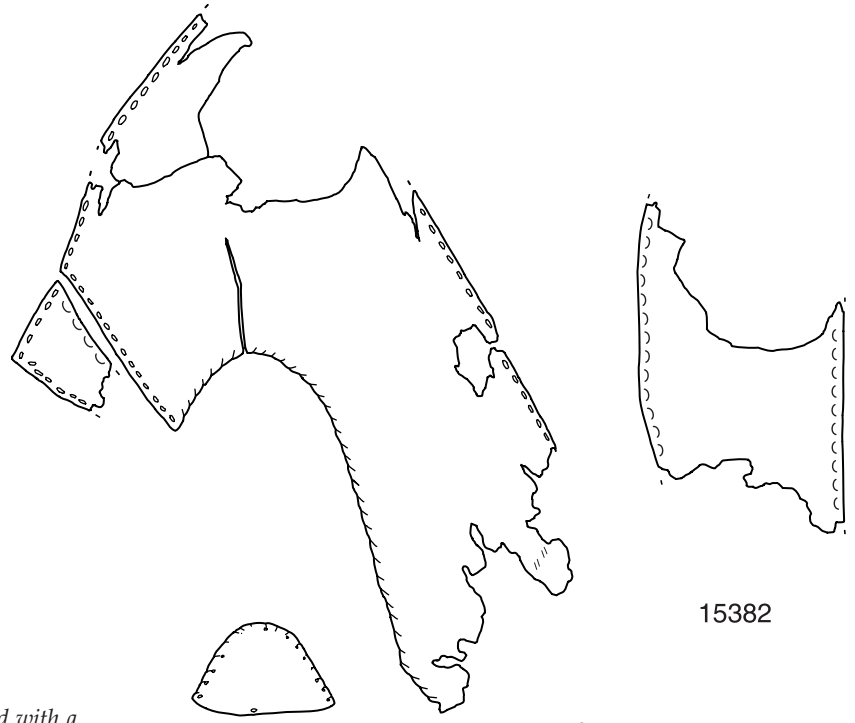
to be a deliberate shoe style rather than a throat modification to ease the fit of the shoe as seen on the shoes discussed immediately above. Round-seated shoes (3b) with a similar small, angular tab at the throat and decorated with embroidered stripes down the vamp have been found at Norwich (Ayers and Murphy 1983, fig.22, 6, fig.24, 12) in contexts of late 10th- to late 11th-century date. Another was found at Guildhall Yard, London (GYE92 <6588>), in a medieval cess pit. Two shoes with the same distinctive angular tab at the centre of the throat were found at 1 Poultry in London (ONE94 <3075> and <3973>) associated with pottery dating to 1050–1150. One <3973> differed from the other examples, however,



Fig.1617 15376, shoe Style 3a1. Scale 1:3



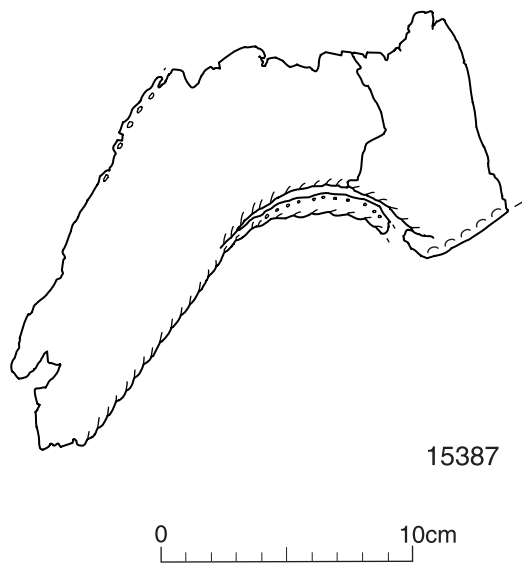
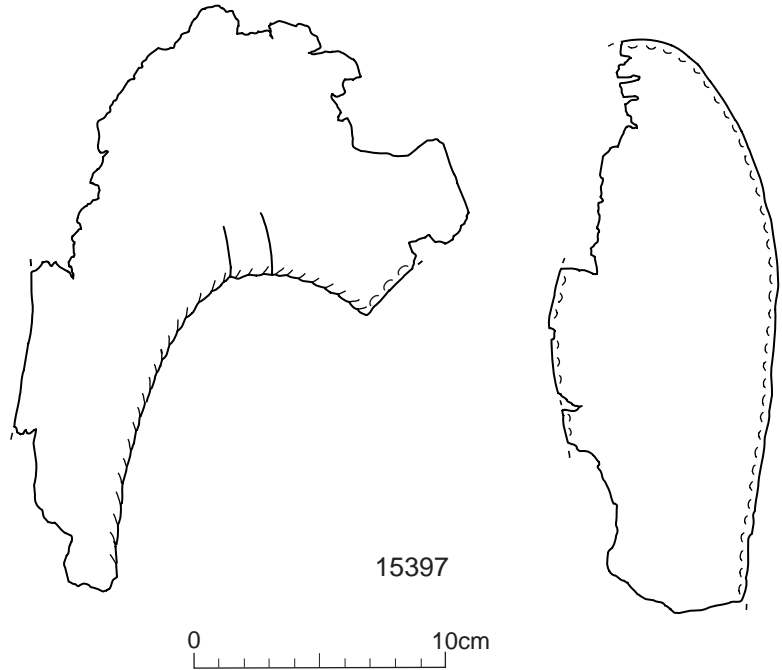
15376



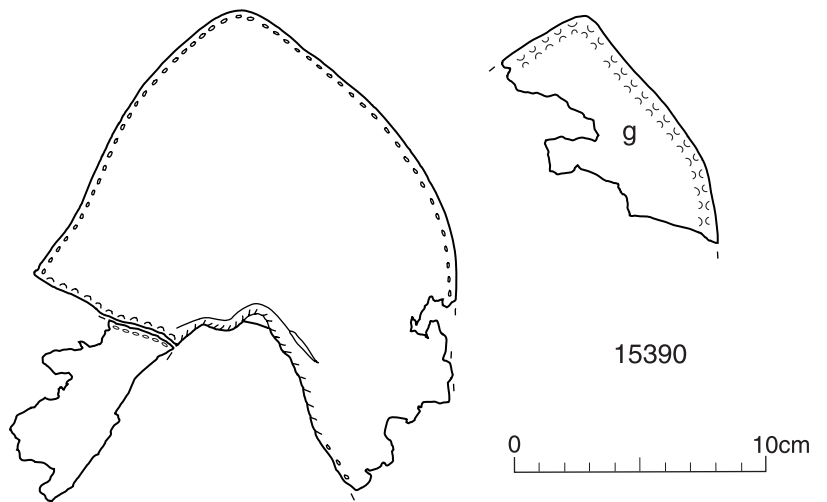
15382

Fig.1618 15382, shoe Style 3b1, modified with a single slash at the throat. Scale 1:3

**Fig.1619** 15397, shoe Style 3b1, modified with a double slash at the throat. Scale 1:3



**Fig.1620** 15387, shoe Style 3b1, with a slash across the instep. Scale 1:3



**Fig.1621** 15390, shoe Style 3b1, with a slash across the instep. Scale 1:3

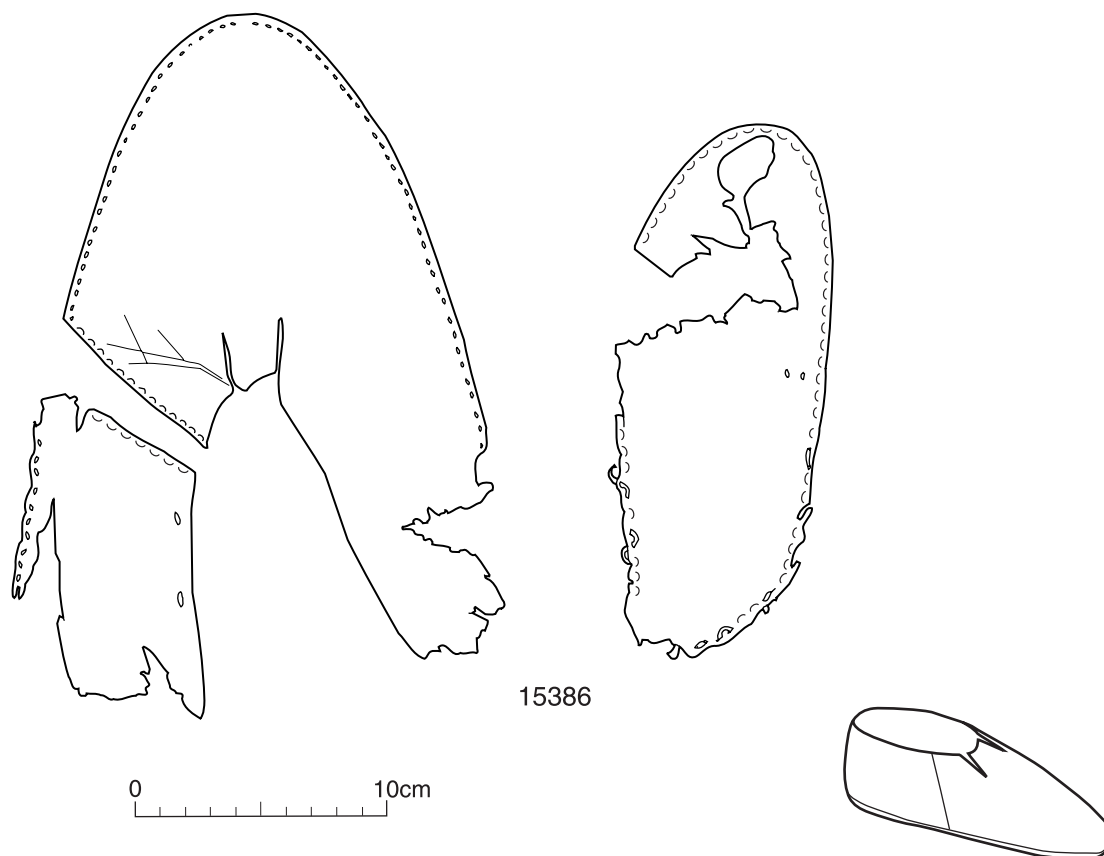


Fig.1622 15386, shoe Style 3b1, with a small rectangular tongue at the centre of the throat. Scale 1:3

in having a sole with a V-shaped heel extension (3a). The back of the seat extended over the short back seam of the upper, a feature seen in other pre-Conquest shoes from London, but not so far found at York.

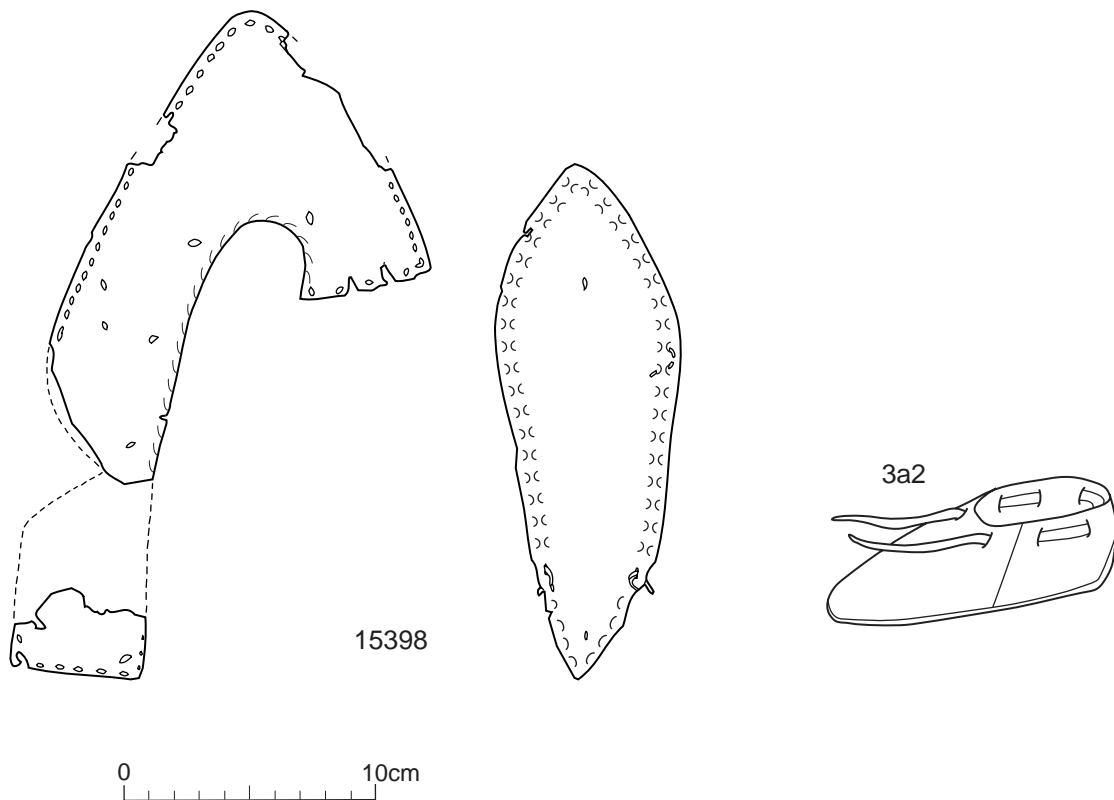
This general style of shoe with soles with rounded seats (Style 3b1) has been found elsewhere at York: at the site of the south corner tower in Feasegate (Stead 1958, 528, fig.6, 2–3), the Parliament Street sewer trench (Fig.108, 756; Fig.113, 819, 821–2, AY 17/4) and 12–18 Swinegate. A further example, with the addition of a small insert at the side seam, was found along with leather offcuts in Feasegate (Dyer and Wenham 1958, 422–3, fig.3). The sole of this shoe had been stitched to the uppers by a thread made of bast fibre, probably flax (ibid., 423).

Recent excavations in the City of London at Bull Wharf (BUF90 and UPT90) and Guildhall Yard have

found shoes with one-piece uppers joining with a side seam with soles with heel extensions (Style 3a1) and rounded seats (Style 3b1) in contexts dating from the 10th to the middle of the 11th century. Similarly, shoes of this style, again made with soles with both heel extensions and rounded seats, have been found at Fishamble Street, Dublin (Daire O'Rourke, pers. comm and National Museum of Ireland collection E172:13586; E172:13660, for example). Examples with a heel extension have also been found at Hedeby (Groenman-van Waateringe 1984, taf.12, 1, taf.13, 3).

*Shoes with one-piece uppers joining with a side seam, fastening with a drawstring (Style 3a2 and 3b2)*

Twenty-one shoes had been fastened with a drawstring that passed through a series of vertical slots in the uppers, close to the top edge (see Table 386, p.3531). The drawstring slots were original features,

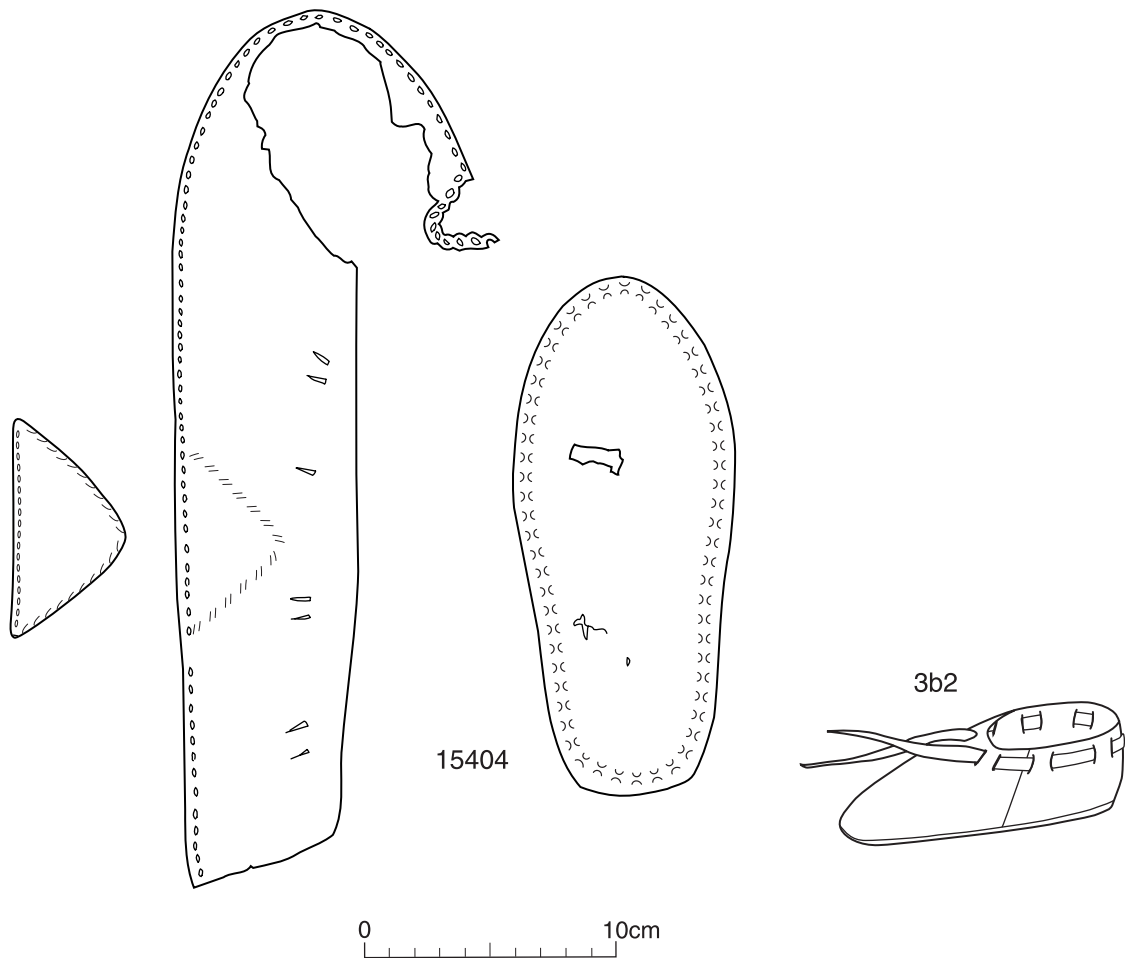


**Fig.1623** 15398, shoe Style 3a2, with widely spaced slots around the upper to hold the drawstring in place. Scale 1:3

being well formed, and did not appear to be a secondary modification like those described previously. These drawstring-fastened shoes were also made using two different constructions. Five shoes had soles with heel extensions (Type 3a2) sewn with either tunnel stitching (construction Type 1, 15398, Fig.1623) or an edge/flesh seam (construction Type 2, 15400). They were found in contexts dating to c.930/5–c.975 and mid–later 11th century, while two occurred residually in medieval deposits. Ten shoes of this type had soles with rounded seats and the uppers supported by a heel stiffener at centre back (Type 3b2). The majority had a tunnel-stitched construction seam (construction Type 1, e.g. 15404, Fig.1624); a single example (15405) had an edge/flesh stitched seam (construction Type 2). Again they were found in contexts dated to the 10th and early/mid 11th centuries. It was not possible to establish the construction method or sole shape used on a further six shoes with drawstring fastenings (Style 3-2). These

shoes were found at 16–22 Coppergate and 22 Piccadilly. They were also found at earlier excavations at Hungate (Type A, Richardson 1959, fig.21, 1–3). The general style appears to be widely found in this country and abroad.

The number of slots in the upper to hold the drawstring in place differed widely and while many were evenly and widely spaced around the upper (15398, Fig.1623; 15404, Fig.1624), others ran continuously around the top edge. The latter could be recognised as forming a distinct group (pp.3446–7) whose drawstring slots were particularly fine and closely spaced so that they must have served a decorative as well as a functional purpose (15399, Fig.1625). The remains of a minimum of ten shoes with this decorative fine drawstring detail were found; of these, two were certainly of this particular style, but the remainder were not sufficiently well preserved to allow such detailed classification. In addition, a number of other smaller



**Fig.1624** 15404, shoe Style 3b2, with widely spaced slots around the upper to hold the drawstring in place. Scale 1:3

fragments with a series of fine slots present are also likely to come from this style of shoe. These include a wide top band of sheep/goatskin (15410; see Fig.1677, p.3344) with a folded upper edge (hem), and lines of slots from decorative thonging found associated with a shoe with fine, functional, thonging (15409) and likely to belong to it. Shoes with fine thonging were found principally in contexts of late 10th- to early/mid 11th-century date, though examples dating to the mid 10th century were also found (15407–8, Fig.1626).

Ankle-shoes fastened with a drawstring which passed through a series of closely spaced thong slots that were both decorative and served to gather the shoe around the foot are found both in Britain and Europe. This style of shoe has been found at London where a goatskin ankle-boot with drawstring fasten-

ing made using turnshoe construction 2 was found in an 11th-century context (Pritchard 1991, 272, fig.3.114, 322). The style was popular at Schleswig during the 11th century (Schnack 1992, taf.9–14). Two shoes with soles with heel extensions from the Thule site at Lund, Sweden (Hald 1972, 145 fig.176 after Blomqvist and Martensson 1963), are closely dated to the period 1020–50. Similar drawstring fastening can be seen on an 11th-century shoe from Gdansk, Poland (ibid., 127 fig.158 after Wiklak 1960, ryc 19). One-piece ankle-shoes and boots with this drawstring fastening were popular during the 12th century at Waterford in Ireland (Class III in O'Rourke 1997a, 704–6, fig.18:3.4); here they are associated with soles with a rounded seat. They also occurred at Patrick Street, Dublin, in 14th-century contexts, which, as O'Rourke points out, is surprisingly late (O'Rourke 1997a, 706).



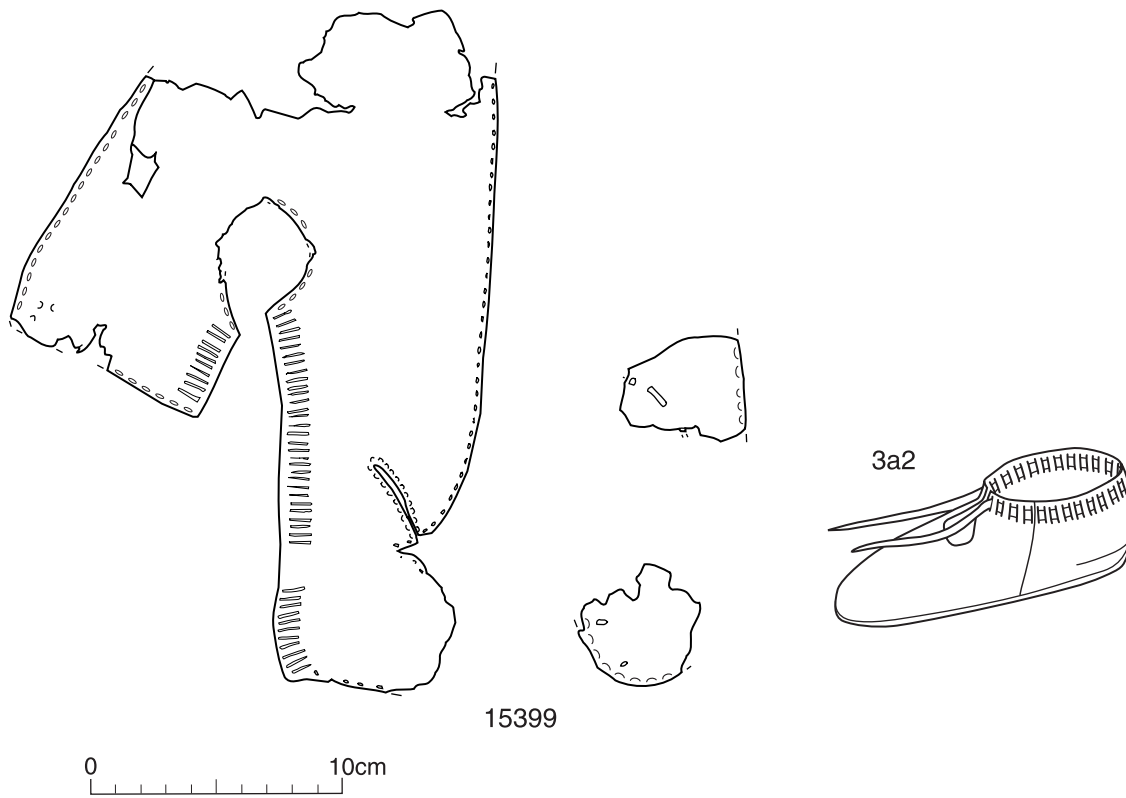


Fig.1625 15399, shoe Style 3a2, with fine and closely spaced drawstring slots. Scale 1:3

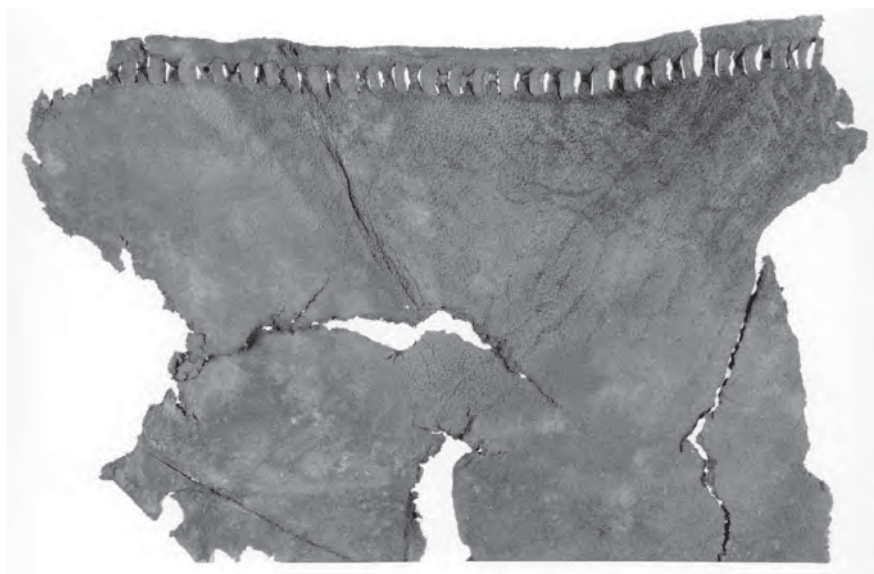
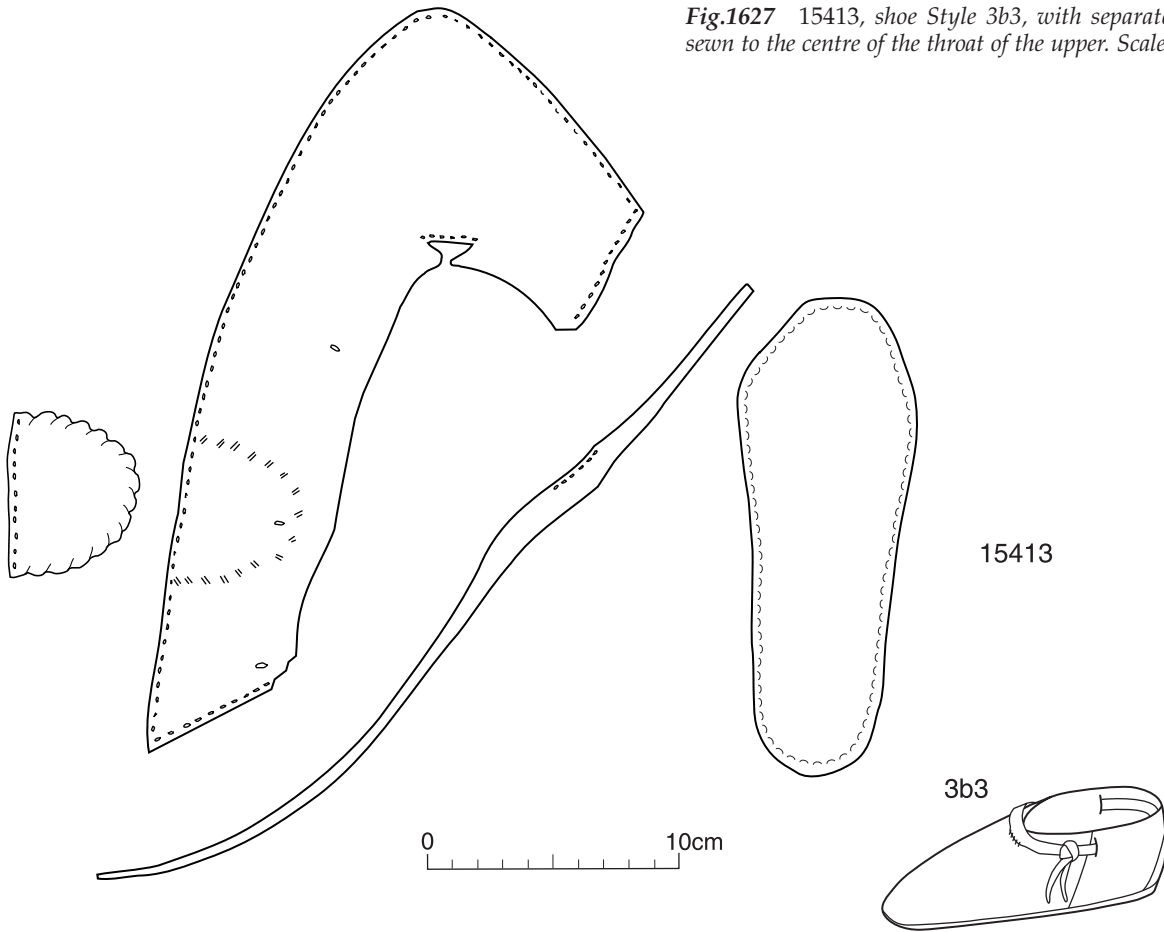


Fig.1626 15408, top edge of upper with fine drawstring slots

**Fig.1627** 15413, shoe Style 3b3, with separate drawstring sewn to the centre of the throat of the upper. Scale 1:3



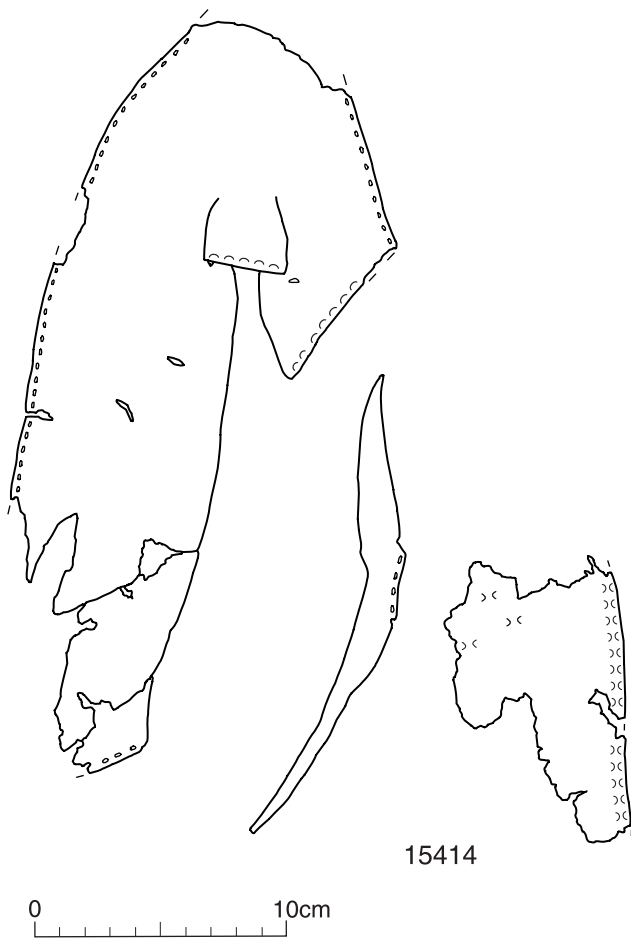
*Shoes with one-piece uppers joining with a side seam, fastening with a drawstring attached to the throat (Style 3b3)*

Seventeen shoes from 16–22 Coppergate were distinguished by having a separate drawstring sewn

to a small recessed area in the centre of the throat of their calfskin uppers (e.g. 15413, Figs.1627–8). The drawstring had a widened central area which was whip stitched to the centre of the vamp throat; to each side the top edge was angled forward to form two small flaps to lie under the join. The ends of the drawstring passed through slots around the top of the uppers and were tied at the side. All the shoes had a rounded seat (Style 3b3), the heel area of the uppers strengthened by an internal heel stiffener. Again the shoes were made in two different constructions; three shoes (e.g. 15414, Fig.1629) were made using tunnel-stitched construction (turnshoe construction Type 1), seven (e.g. 15413) used an edge/flesh construction (construction Type 2). This style of shoe was found predominantly in contexts dating to c.930/5–c.975 (Period 4B). Two shoes occurred in earlier levels (Periods 3 and 4A), while others were found in contexts which continued into the early/mid 11th century. A further two examples occurred residually in later contexts.



**Fig.1628** 15413 after reconstruction



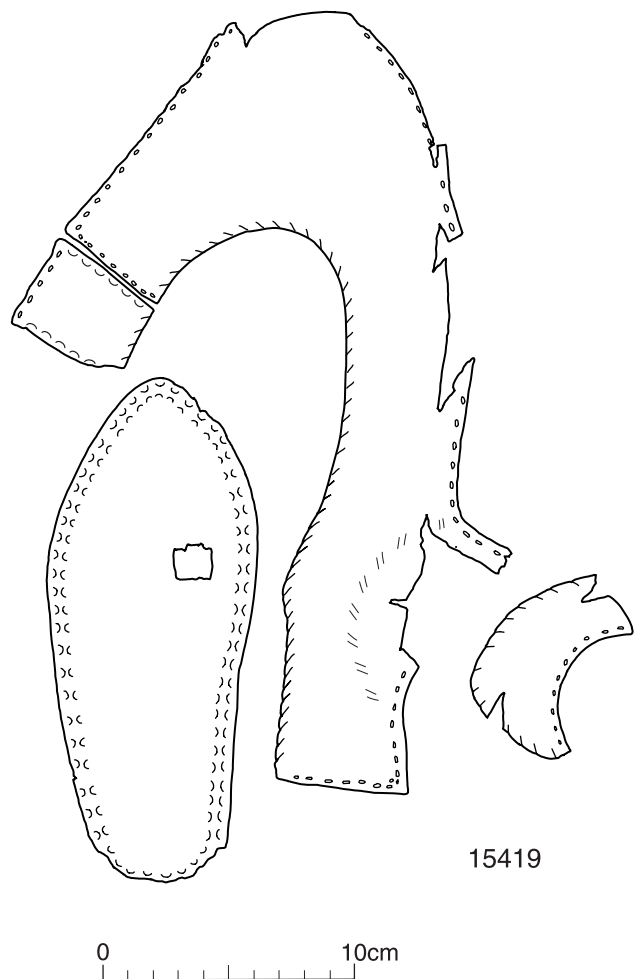
**Fig.1629** 15414, shoe Style 3b3, with separate drawstring sewn to the centre of the throat of the upper. Scale 1:3

An example of this type was also recovered from the site of the south corner tower at Feasegate (in reserve collection at Yorkshire Museum but not published by Stead in 1958). No other examples of this type of attached drawstring are known to the authors and it may be that this particular style was popular in York but not elsewhere.

*Shoes with one-piece uppers joining with a side seam, with an insert at the throat (Style 3a4 and 3b4)*

Thirty-two shoes with one-piece uppers had a small additional insert at the throat. All were recovered from 16–22 Coppergate. The crescent-shaped insert was sewn to the throat with an edge/flesh binding seam and had similar stitching present along

the top edge. On one example (15418, Fig.1631), however, the stitches pass right through the insert from edge to edge, sewn with perhaps a running or a back stitch. The throat has edge/flesh stitch holes in pairs, angled toward each other at the top. This shoe (15418), which was found in a context dating to the earliest part of the occupation, had a sole with a heel extension (Style 3a4). The majority (29 examples), occurring throughout the Anglo-Scandinavian period, had round-seated soles (Style 3b4) with the heel area of the uppers supported internally by heel stiffeners (15423, Fig.1632). Where construction could be determined, the majority (76%, thirteen examples) were of turnshoe construction 1 with a tunnel-stitched seam,



**Fig.1630** 15419, variant Style 3b4, with a rectangular insert between the quarter and the vamp wing at the side seam. Scale 1:3

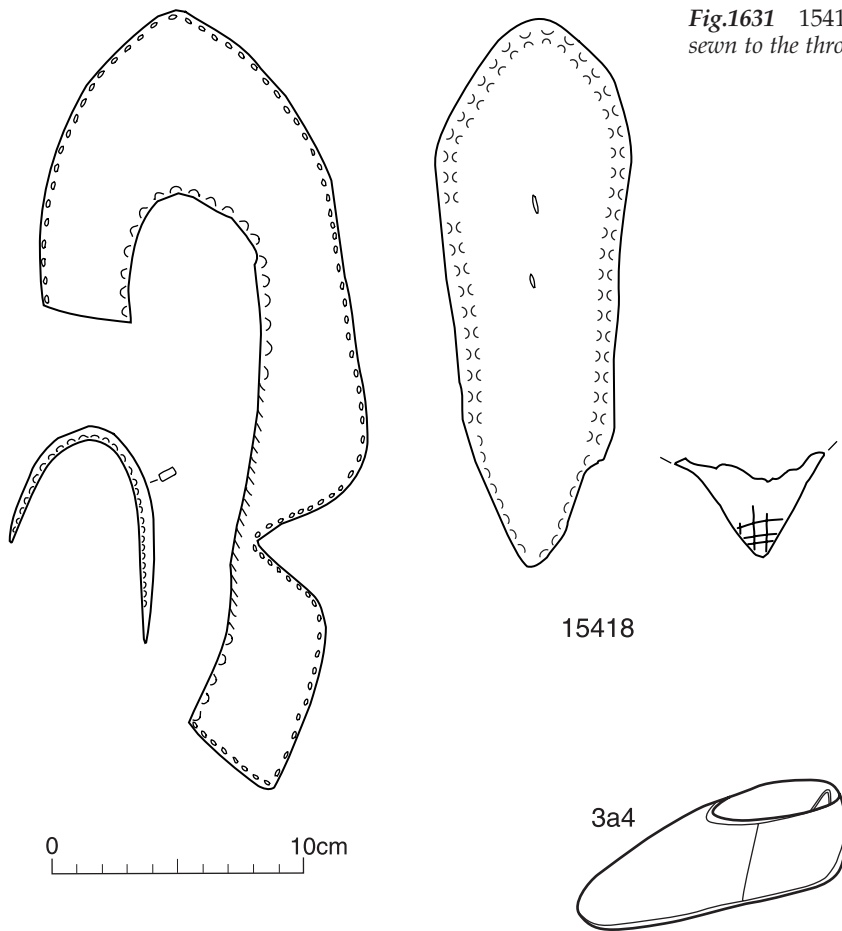


Fig.1631 15418, shoe Style 3a4, with crescent-shaped insert sewn to the throat. Scale 1:3

four were of construction Type 2 with an edge/flesh seam.

### Variants

One shoe (15419, Fig.1630) had a rectangular insert placed between the quarter and the vamp wing at the side seam. Another (15422) had a series of seven pulled slits, running along the quarter whose true function is uncertain, perhaps the result of repair or to hold a decorative thong as seen on a late 11th-century ankle-boot from London (Pritchard 1991, 222–3, fig.3, 108). A further example (15879) was found at Bedern. At first glance, it appears to be of the low slip-on type already described, as the heel-riser is the full height of the uppers, but it also has a side seam and throat insert.

### Shoes with one-piece uppers joining with a side seam and a pointed vamp throat (Style 3b5)

Two shoes from 16–22 Coppergate made with a one-piece upper joining with a single side seam were peaked at the centre of the throat. One (15424, Fig.1633) of calfskin was recovered from a context dated c.930/5–c.975. The other of sheep/goatskin (15425, Fig.1634) was found in a mid 13th-century levelling dump in Tenement C. The shoe is of unusual turnshoe construction, with an edge/flesh seam present on both the upper lasting margin and the sole (construction Type 3). The presumption that the shoe occurred residually in the context, however, may not necessarily be correct in this case. This simple shoe style was long-lived. The type has been found else-

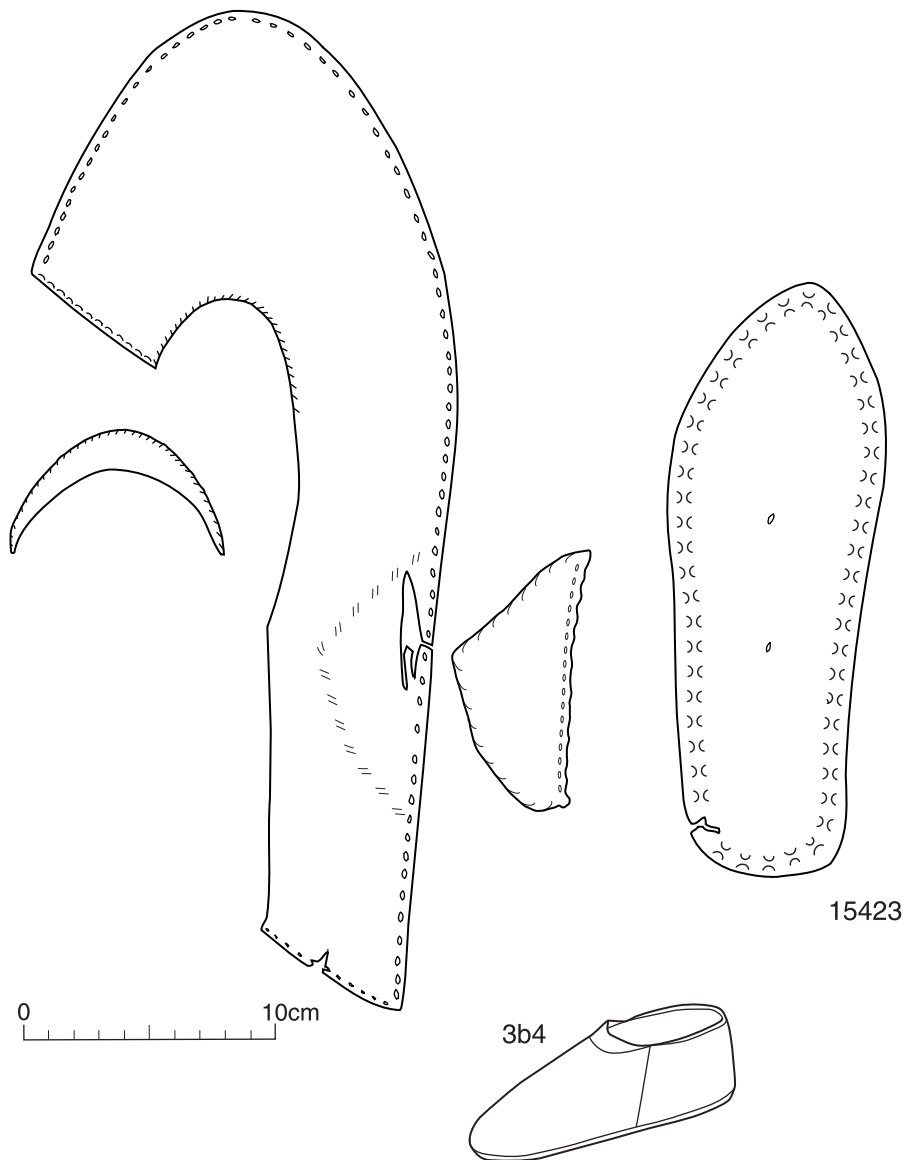


Fig.1632` 15423, shoe Style 3b4, with crescent-shaped insert sewn to the throat. Scale 1:3

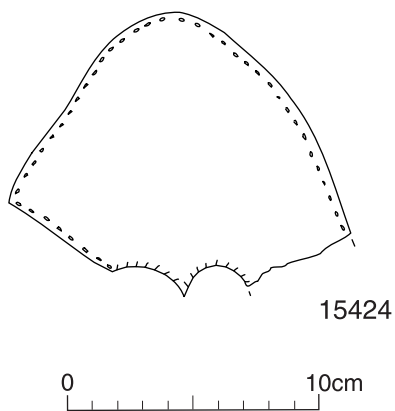
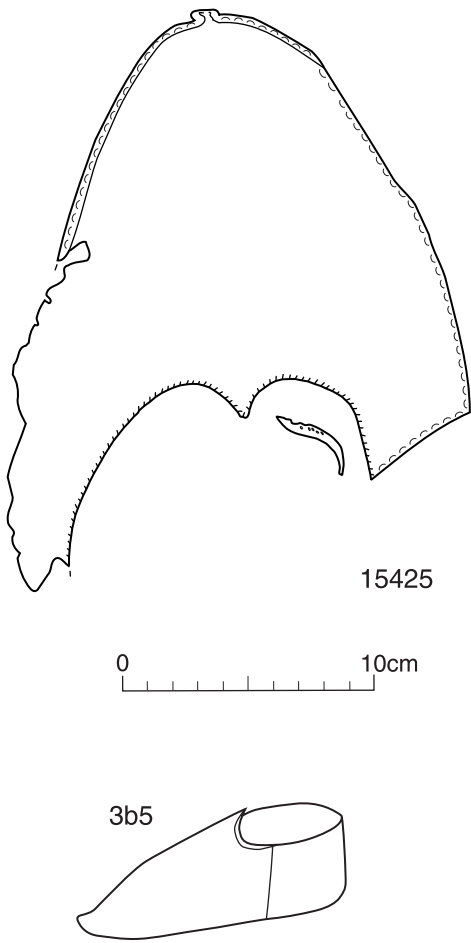


Fig.1633 15424, shoe Style 3b5, with a peak at the centre of the throat. Scale 1:3

where in the city at 12–18 Swinegate in 12th-/13th-century contexts. In London, shoes apparently of the same style, though of the commonly used edge/flesh construction (turnshoe Type 2 construction), have been found in an early/mid 12th-century context (Grew and de Neergaard 1988, 12, fig.11) and early/mid 13th-century contexts (ibid., 16–17, figs.18–19). These London shoes were thought by the authors to have been used as indoor slippers.





**Fig.1634** 15425, shoe Style 3b5, with a peak at the centre of the throat. Scale 1:3

### One-piece ankle-shoes fastened with flaps and toggles (Style 4)

A large group of distinctive ankle-shoes fastened with flaps and toggles over the instep were found at the sites under consideration here, and elsewhere in York. Though varying slightly in aspects of construction, they all comprised an upper of fundamentally one-piece construction closed with a single side seam at the vamp wing on the inside of the foot. This side seam was frequently sewn with an edge/flesh stitch on one side joining with a grain/flesh stitch on the other; less often a grain/flesh closed seam was used. The shoes were fastened over the instep by a flap or flaps with toggles that were passed through loops mounted low down on the quarters. Complete examples of shoes of this style show that the fastenings and the single seam were placed on the inside of the

foot though one would have thought that practicality dictated that any fastening would have been placed on the outside. This same phenomenon was noted on a near complete example from 5 Coppergate and commented upon by MacGregor (pp.138, 163, Fig.72, 627, AY 17/3).

Various methods were used to secure the fastening toggle. These small differences of attachment seen in shoes of Style 4 suggest different shoe-makers at work, rather than the output of a single worker. The toggle was usually secured by being threaded in and out of a series of slits cut into the flap. The terminal was then left free (15434) or held by making the end into a second toggle (15452). Alternatively, a slit was cut in the free end and the end passed through the slit. One (15431) had the free end, which was very narrow, curled around and passed through two tunnel stitches. On another (15432) the toggle was threaded through a triple slit in the flap, the end was then threaded back through a slit in itself and held by a widened terminal to its free end. A third example had the remnant of a thong projecting from the tip. It was secured by being curled around and passed through two tunnel slits. It is unclear how this arrangement would have related to a toggle and it is possible that the shoe was perhaps tied rather than toggled. Unfortunately, the part of the quarter that normally had the tie loop had been torn away. In fastening the ankle-shoe, the toggle was passed through a loop, which was cut from a strip, either slit down the middle or a shape cut out, to form the toggle hole. The base was tapered to a single thong (15430), or bifurcated, with the resulting 'tails' passing in and out of three (occasionally more) slots cut low down in the inside quarters area. They do not seem to have been knotted or stitched, but were again held in place by a variety of methods. In the simplest, the 'tails' were long and unsecured and were held in place by the tightness of the slots through which they are threaded. This technique was the most versatile as it would allow the length — and therefore the fit of the shoe over the instep — to be adjusted. In the second method, one 'tail' had a slit cut in it through which the end of the other passed.

All of the shoes were finished with an edge/flesh binding stitch (edge/flesh seam with whip stitching) along the top edge which may have secured a top band, though this rarely survives. One shoe (15437) has a top band of plain strip, itself finished with a

binding seam along its top edge. This may have simply served to strengthen the top edge or may have held an internal lining.

The uppers were sewn to a sole with a heel extension (Type a), and so had a corresponding cut-out at the centre back to accommodate the extended sole. Again, these shoes were made in two different constructions, the soles joining to the uppers by way of a tunnel-stitched seam (turnshoe construction Type 1) or with an edge/flesh seam (turnshoe construction Type 2). This is a feature seen on all the shoes of turnshoe construction of Anglo-Scandinavian date found at York (Styles 2 and 3) previously described above. A shoe (15450) dating to the middle of the 10th century was notable in having a new feature: a type

of 'proto-rand' made from a strip, folded lengthways flesh to flesh and stitched into the closing seam between vamp and quarters. The seams frequently appeared to have been sewn with leather thong. The differing cutting patterns and constructional details are described in full below, and presented in the catalogue.

The remains of more than 90 shoes of this general style were recognised. Forty-nine could be classified according to the number of flaps and toggles employed to fasten them and how these fastenings were constructed. Twenty-nine shoes could not be further attributed, but were made with a sole with a heel extension (Style 4a-), while thirteen were too fragmentary to be classified as anything but the general type (Style 4--).

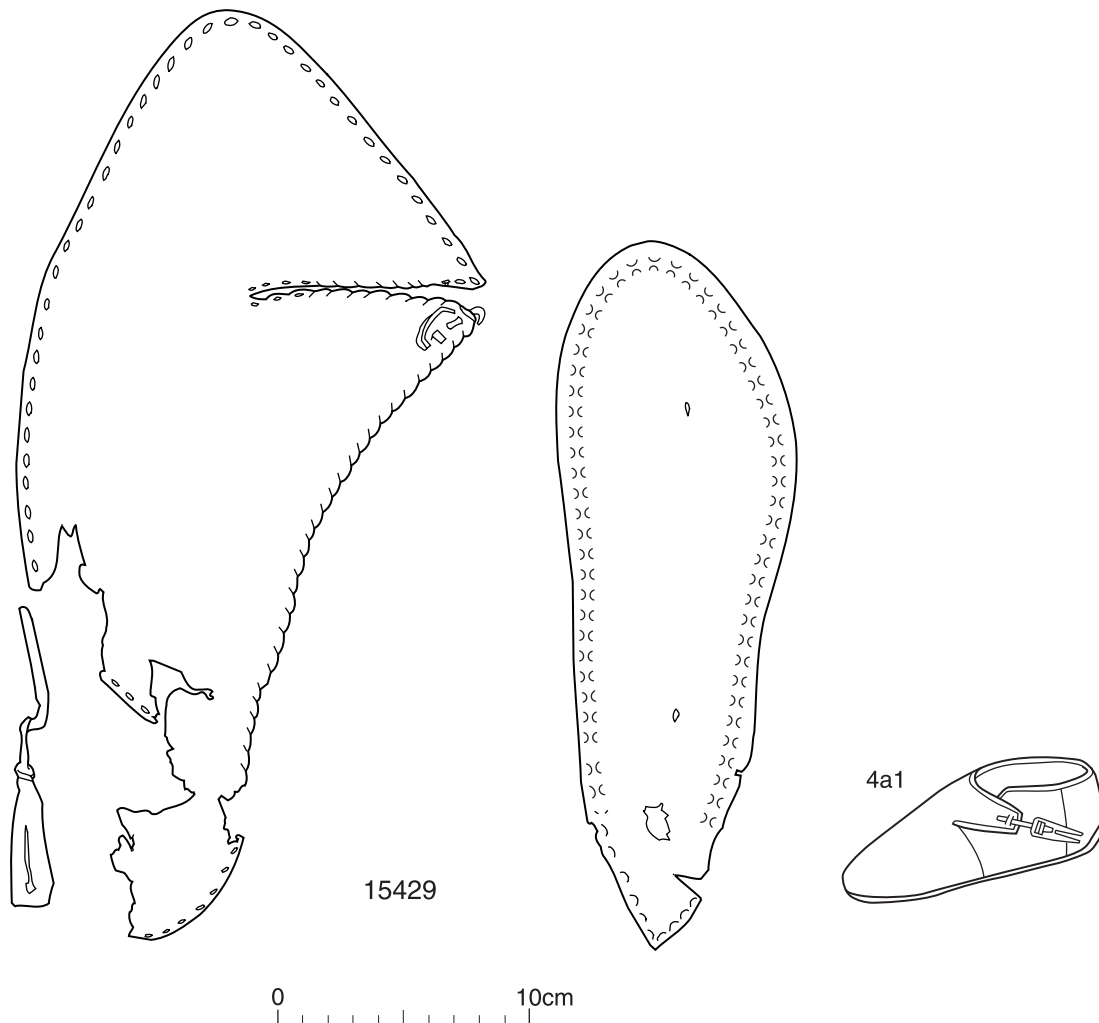


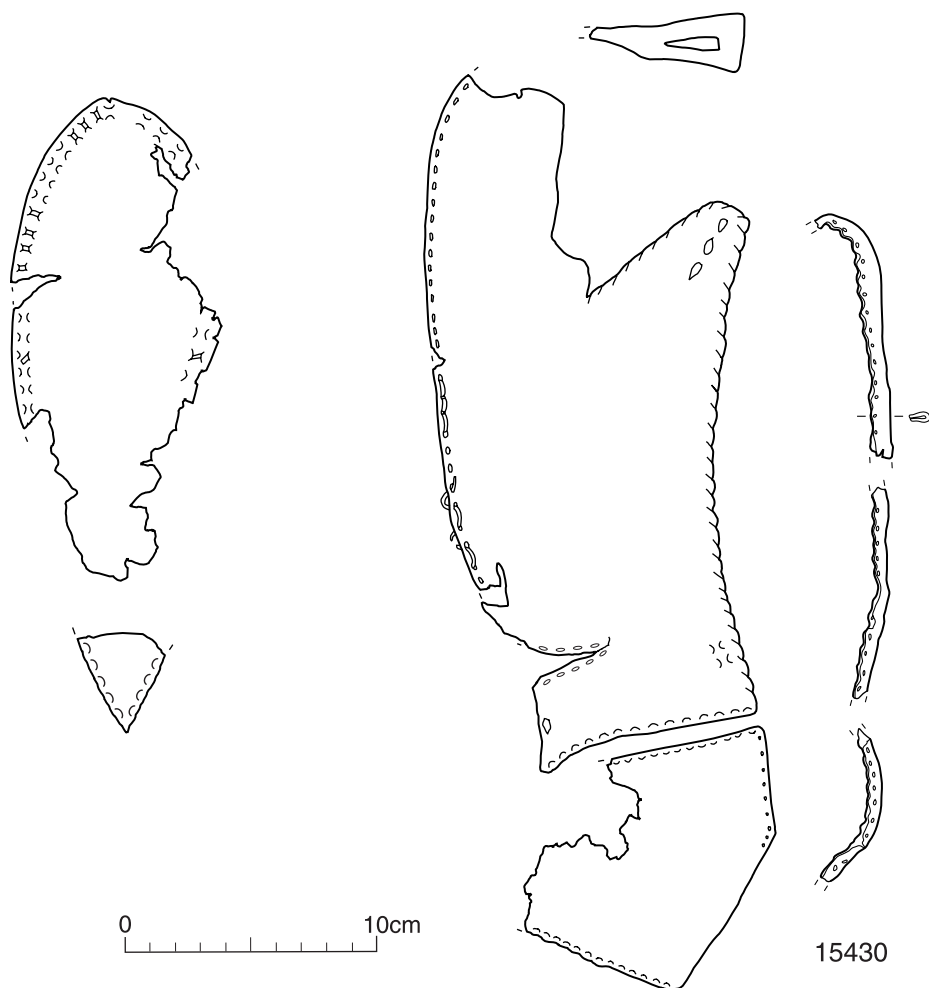
Fig.1635 15429, shoe Style 4a1, with a single wide flap with a toggle and loop fastening. Scale 1:3

*One-piece ankle-shoes, fastened with a single toggle and flap (Style 4a1)*

Seventeen examples, all from 16–22 Coppergate, had a single, wide flap with a toggle and loop fastening. The uppers were sewn to the soles with either a tunnel-stitched (turnshoe construction Type 1) (15429, Fig.1635) or an edge/flesh-stitched seam (construction Type 2 15433). The essentially one-piece upper design sometimes showed modifications. One shoe (15430, Fig.1636) had an insert forming most of the inside quarters area, sewn with a vertical edge/flesh butted seam in front of the fastening loop. The side seam was also unusual in that the quarters had a grain/flesh seam, but the vamp had a seam that was partly edge/flesh and partly grain/flesh stitched. On another shoe (15434) the vamp had a grain/flesh seam, but on the quarters the front edge was turned back and grain/flesh stitches pierced the full thick-

ness. This was presumably a device to add strength to a weak point, or perhaps to allow the use of inferior leather.

Shoes fastened with a single flap and toggle are dated to c.930/5–c.975 at York. A single example came from an earlier context dating to mid 9th–late 9th/early 10th century, and another came from a context that extended into the 11th century. Shoes of this style have been found previously at York. Stitching preserved in a shoe found at 5 Coppergate (pp.138, 163, Fig.72, 627, AY 17/3) was of animal fibre, probably wool. Others were found at Hungate (Richardson 1959, 88–89, fig.22, 6–8) and Feasegate (Stead 1958, 526, 528, fig.6, 5). One shoe from Hungate (Richardson 1959, fig.22, 7) was notable in having a round-seated sole (Style 4b1), apparently the only example with this cutting pattern to be recognised.



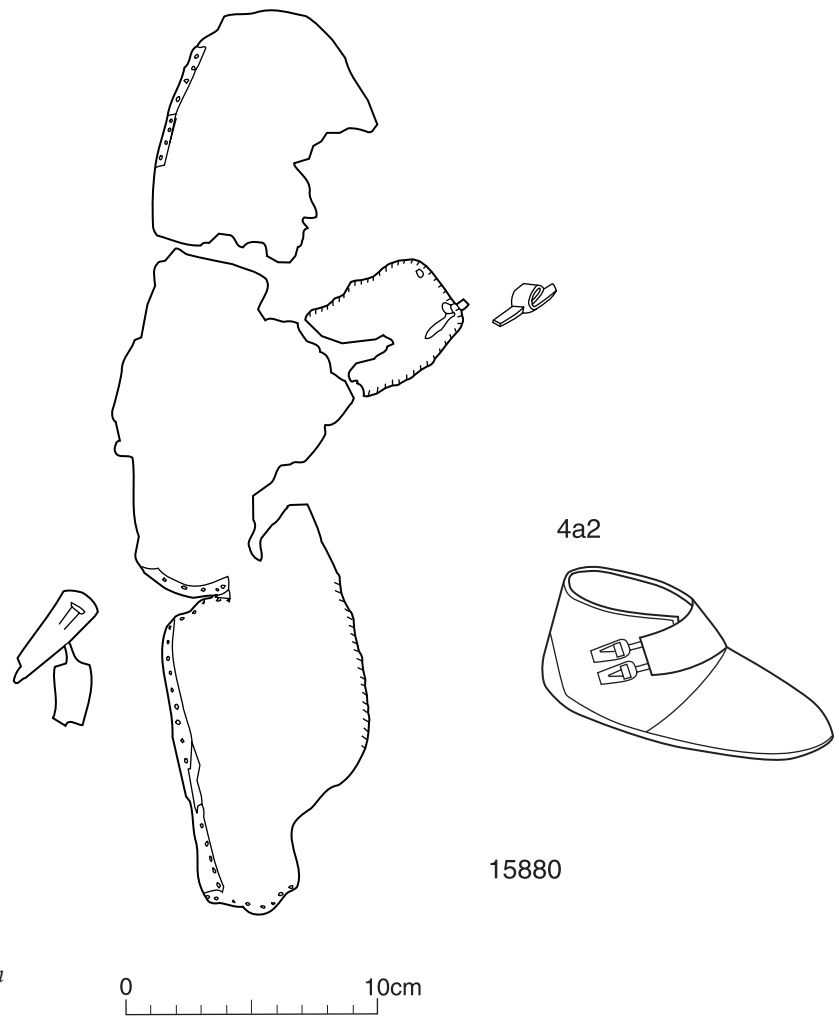
**Fig.1636** 15430, shoe Style 4a1, with a single wide flap with a toggle and loop fastening. Scale 1:3

Elsewhere in England, rather fragmentary examples have been found in Norwich and London. A shoe from Norwich apparently of this type was found in a late 10th- to 11th-century deposit (Ayers and Murphy 1983, 24, fig.21, 5). A shoe from King Street, Cheapside, London (Pritchard 1991, 219, fig.3.104) is dated tentatively to the early 11th century by its similarity to the surviving toe section of an ankle-boot from a dated deposit. Each has a single flap and toggle fastening, but may have originally fastened with a pair of toggles or double flap and toggles, as much of the uppers are missing. More recently an example has been recovered from excavations at Bull Wharf in London from a context of later 10th- to early 11th-century date (Jackie Keily, pers. comm.). Ten fragments apparently from shoes of this style have been found at Saint-Denis on the northern outskirts

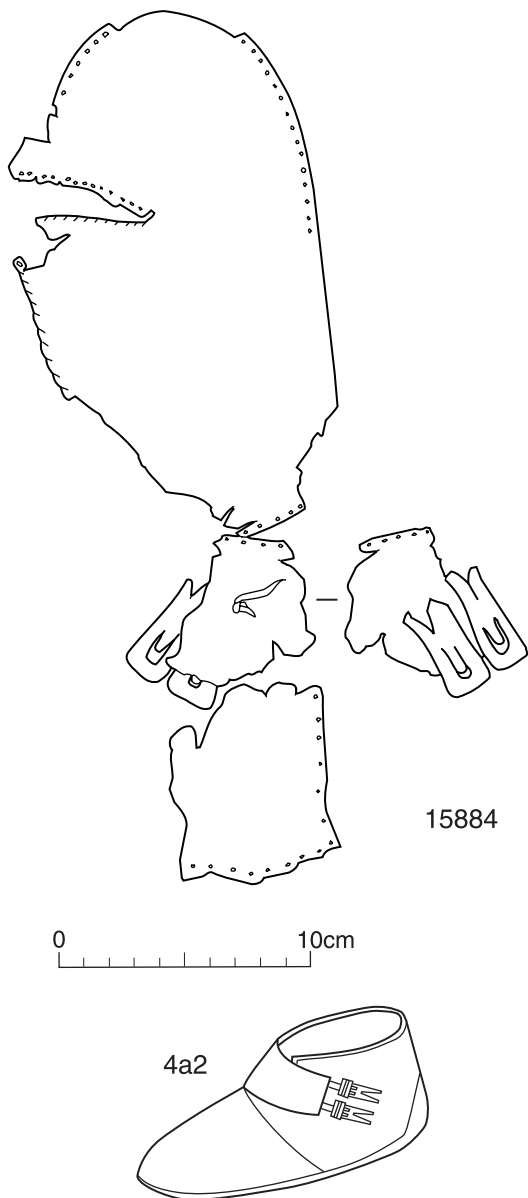
of Paris (Montebault 1998, 62). Pritchard has pointed out that this style of flap- and toggle-fastening shoe is comparable with two taller ankle-boots found beneath the foundations of the abbey at Middelburg (Hendriks 1964, 115, Abb.25) and dating to the 9th century. These boots extend above the ankle, fastening with a very wide flap over the instep and a single toggle mounted close to the side seam.

*One-piece ankle-shoes, fastened with two toggles on a single flap (Style 4a2)*

Two shoes were found at the College of Vicars Choral in a pit containing 10th-century pottery. The shoes of sheep/goatskin (15880-1, Figs.1637-8), and made of turnshoe Type 2 construction, were found in the same context and may possibly represent a pair.



**Fig.1637** 15880, shoe Style 4a2, fastened with two toggles on a single flap. Scale 1:3



**Fig.1638** 15881, shoe Style 4a2, fastened with two toggles on a single flap. Scale 1:3

They fastened with a wide flap with two toggles, each secured to the flap through a single circular perforation. A second toggle on the other end of the toggle strap held them in place. The fastening loops were bifurcated, but, as with the toggles, each 'tail' passed through only a single slit and then the two were knotted together to hold them in place.

*One-piece ankle-shoes, fastened with a double flap and toggle (Style 4a3)*

Nineteen shoes from 16–22 Coppergate were fastened with a pair of toggles mounted one on each of two individual flaps (e.g. 15439, Fig.1639; 15438, Fig.1640). This variation on the single flap and toggle style seems to have been created by simply cutting the flap down the middle, perhaps to improve the fit. The two flaps would certainly have provided more flexibility of movement over the instep than just one. Some examples of this type have the double fastening loops cut from a single piece of leather (15439). The actual loops are separated and their bases are still bifurcated, but the two centre 'tails' are merged so that only three are threaded through the uppers slits. They are then left free. Of the nineteen examples

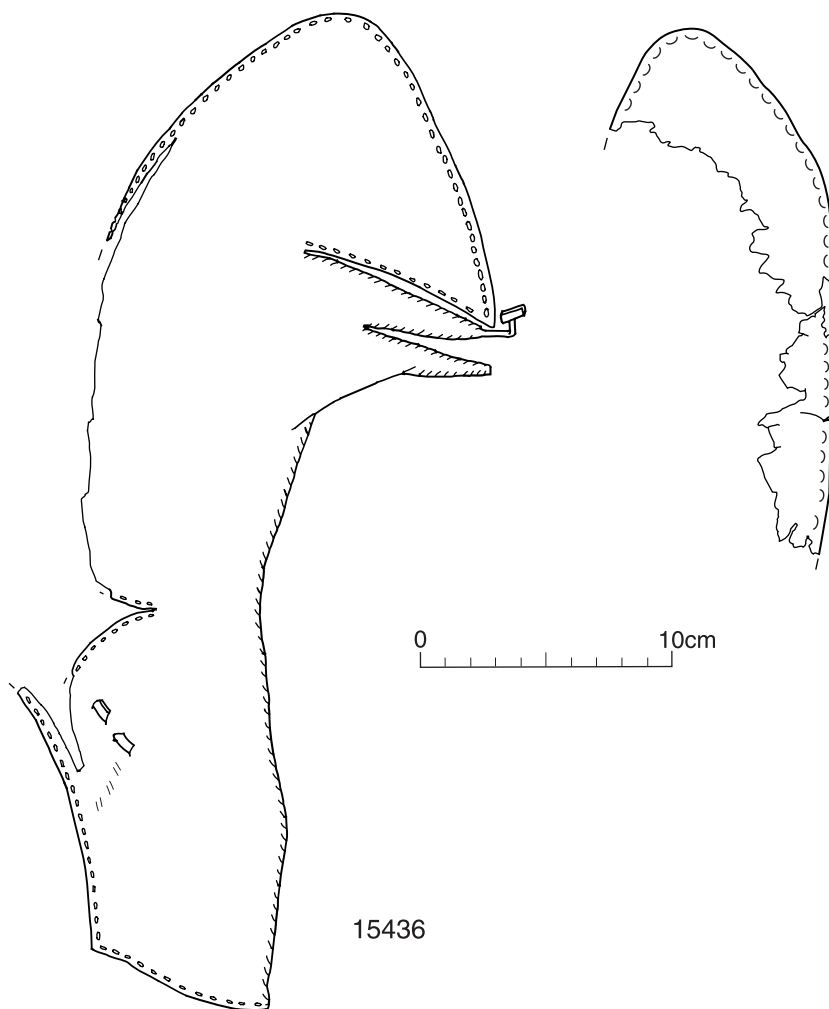


**Fig.1639** 15439, shoe Style 4a3, fastened with a double flap and toggles



**Fig.1640** 15438, shoe Style 4a3, fastened with a double flap and toggles





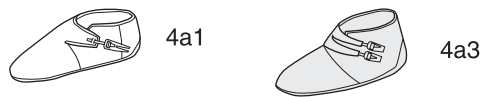
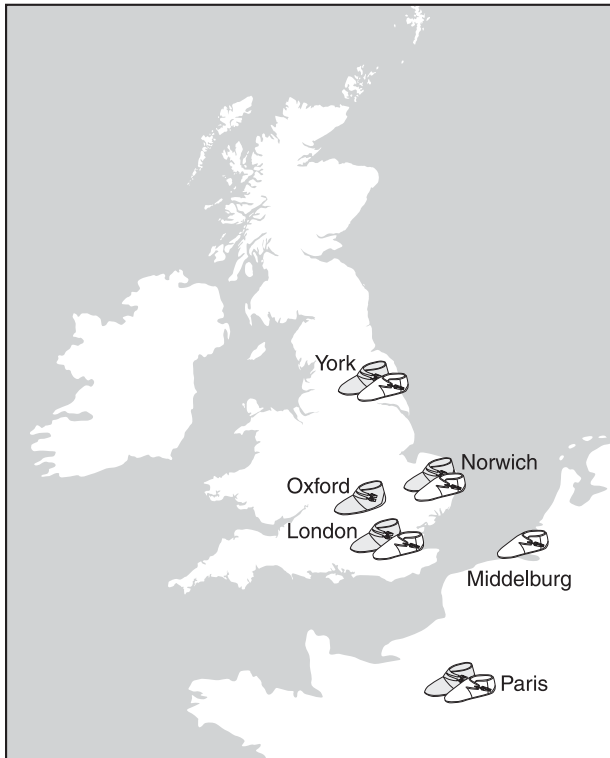
**Fig.1641** 15436, shoe Style 4a3, fastened with a double flap and toggles. Scale 1:3

present, only two (15436, Fig.1641; 15438, Fig.1640) have toggle fastenings with terminals threaded through perforations in the flaps. The remainder have flaps with no perforations, finished with edge/flesh binding stitch around the edge. One fragmentary uppers (15440), however, has a toggle with a bifurcated terminal, each tail of which has fine grain/flesh stitching. This would allow it to be stitched to the edge of the pointed tip of the fastening flaps, a method used on the majority of the shoes fastened with a top band flap (Style 4a4 below). These shoes were made with both tunnel-stitched construction seams (turnshoe construction Type 1 15439) and edge/flesh stitched construction seams (turnshoe construction Type 2, 15436).

Shoes fastened with a double toggle and flap were found in contexts dating from the earliest occupa-

tion (Period 3) through to the end of the Anglo-Scandinavian period, the majority (eleven examples) deriving from contexts dated to the middle of the 10th century. Shoes of this style have also been found at Hungate (Richardson 1959, 88, fig.22, 9–10) along with single flap- and toggle-fastening ankle-shoes.

Remains of two shoes fastened with a pair of toggles have been found at Oxford from contexts dating to the early/mid 9th century (Thornton 1977, 156, 160, fig.35, 10–11). The shoes are fragmentary and the fastening flaps are missing but the seating for the toggles remains, and as such they are comparable with the York shoes with double fastenings (Styles 4a2, 4a3 and 4a4). The shoes are sewn with thong; one shoe (*ibid.*, fig.35, 11) has the construction seam sewn with tunnel stitching (construction Type 1), the other (*ibid.*, fig.35, 10) with edge/flesh stitching (con-



**Fig.1642** Map of Europe showing places where one-piece ankle-shoes fastened with flaps and toggles have been found

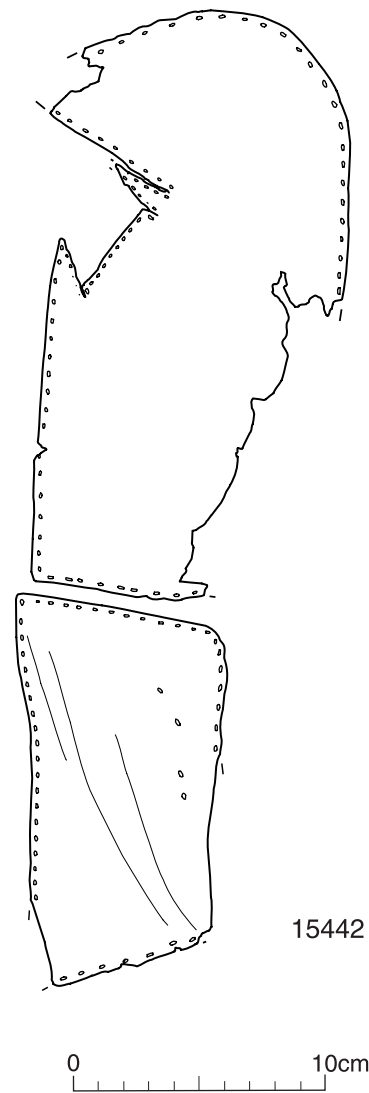
construction Type 2). A shoe with a double flap fastening and of tunnel-stitched construction (construction Type 1) occurred in an 11th-century context at Norwich (Ayers and Murphy 1983, 25, fig.23, 7). Shoes fastened with double flaps and toggles have recently been recovered from excavations in the City of London (1 Poultry and Bull Wharf) in contexts dated to the end of the 10th–mid 11th century (Jackie Keily, pers. comm.).

*One-piece ankle-shoes fastened with top band flaps and toggles (Style 4a4)*

Eleven ankle-shoes fastened with flap and toggle were distinctive in having a different uppers design whereby the flap or flaps which pass over the instep

were reduced in size and a wide top band attached (Style 4a4). The resulting flaps created by attaching these top bands have been called ‘top band flaps’. These top band flaps were fastened by toggles to loops attached to the quarters area of the shoe in the manner of the other shoes of Style 4 previously described. Again the shoes were made in two different types of construction: turnshoe construction Type 1 (15448) and 2 (15447, Fig.1644).

One shoe (15444, Fig.1645) made of Type 2 construction is fragmentary and open to differing interpretations. It appears to have been fastened by either a single or a double top band flap. The flap that passes over the instep is reduced to a small stub. Stitched to this is a wide top band, which folds back upon itself to form the flap to which a toggle was attached. The



**Fig.1643** (right) 15442, shoe Style 4a4, fastened with double top band flap and toggles. Scale 1:3

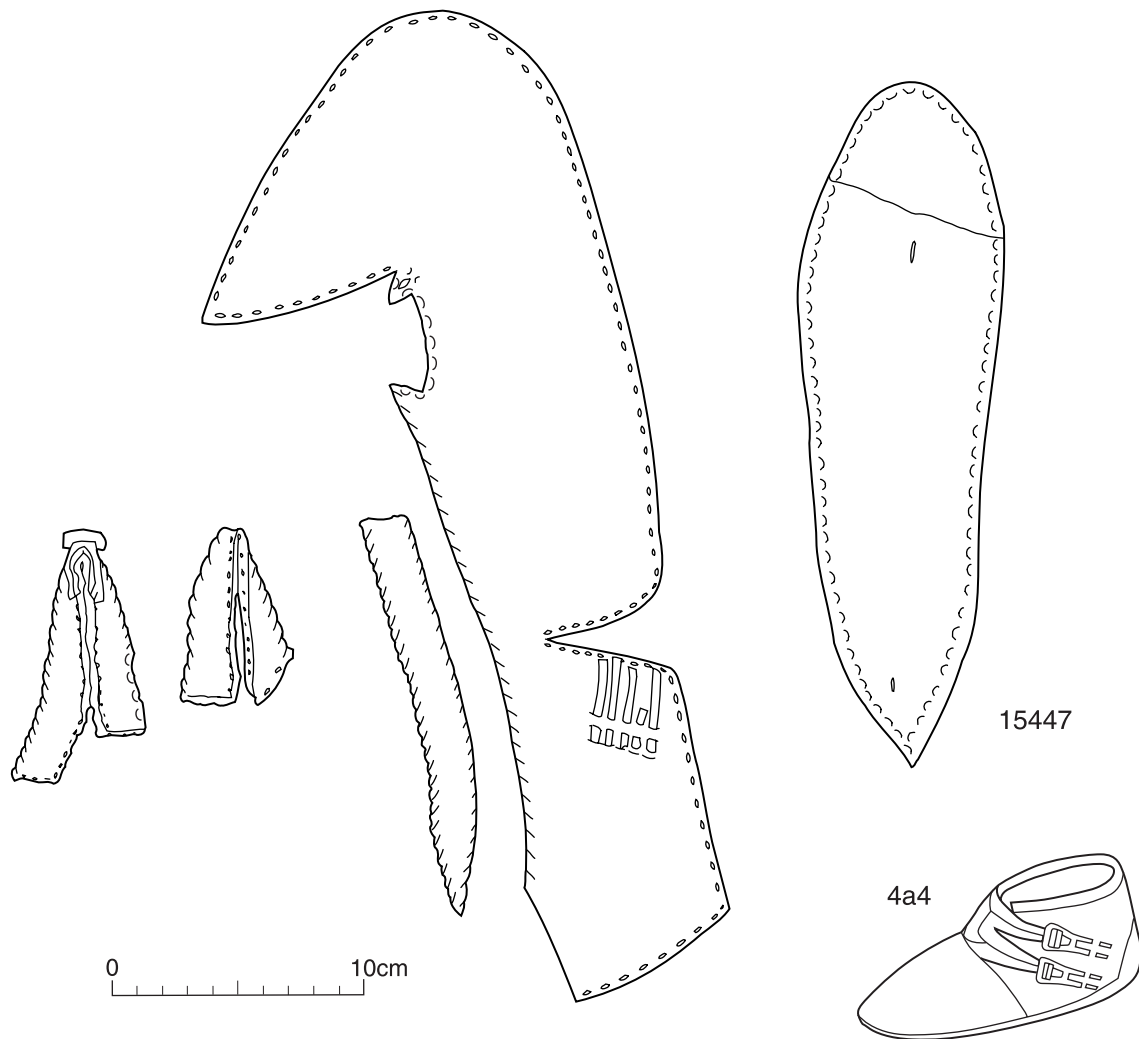


Fig.1644 15447, shoe Style 4a4, fastened with double top band flap and toggles. Scale 1:3

two 'legs' were stitched each side of the ridge on the flap created when it was folded and the two sides closed seamed together. Behind the stub, the top edge has been torn down and it is possible that there was a second, triangular stub for another flap, like those described below. This is supported by the presence of a separate piece of top band with the folded flap, but it is not certain that it came from this shoe.

Nine other shoes had two top band flaps. These were attached to triangular stubs, which were either very short (15448) or long and slender (15443). The toggle terminals were bifurcated, as described previously, and were attached either side of the flap ridge. In every case the top band and flaps were at-

tached to the shoe flesh side out, presumably for decorative purposes. Again the loop attachments showed some variation in execution. The base of the loop attachments either tapered into a single thong or split into several. One shoe (15446) had a double loop cut from a single piece of leather, the base of which was slit into six thongs, each threaded through three slits in the upper. Another (15447, Fig.1644) had a similar arrangement with five thongs. A third shoe (15445) had four such thongs each passing part way through the leather twice (as a tunnel stitch) before passing through the full thickness to the inside. These were in the form of V-shaped cuts, with the material left in situ in the middle. The base was bifurcated, and each 'tail' threaded through two slits.

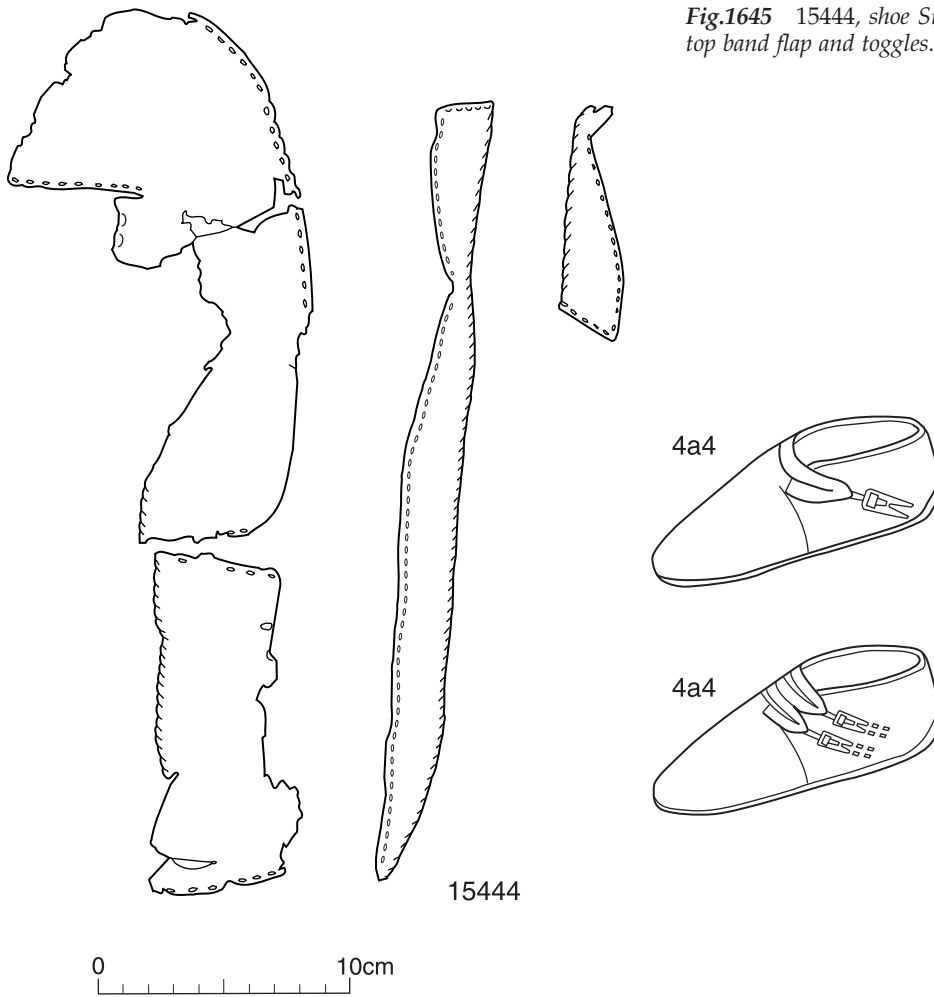


Fig.1645 15444, shoe Style 4a4, with either single or double top band flap and toggles. Scale 1:3

Shoes of this style were found at 16–22 Coppergate in contexts dating from Period 3 through to Period 5B. Another shoe of similar date (Period 4) came from 22 Piccadilly (15845), and a top band from this style of shoe was found unstratified (15846).

This general style of shoe fastened with a flap and toggle (Style 4) was quickly adopted and was popular in England throughout the 10th century. At York such shoes peak in popularity in the middle of the 10th century. Though present in slightly earlier deposits, it is clear that it is essentially a 10th-century style. The fact that they were being thrown away in large numbers during c.930/5–c.975 may suggest that they were most fashionable in the earlier rather than the later 10th century at York. Shoes of this style do not appear in the large assemblage of leatherwork

from Fishamble Street, Dublin, where much of the material dates to c.920–1060. Though the dangers of arguing from negative evidence are legion, one might have expected this style of shoe to have been common as York and Dublin share strong Scandinavian influence. The absence of the style from Fishamble Street may simply be due to the slightly later date of the assemblage. Only study of other contemporary groups of material can help resolve this.

#### *Leather toggles*

As a method of shoe fastening, the leather toggle had a long life, going in and out of fashion over a period of around 500 years. Though the styles changed, the toggle itself did not. It was made by rolling one end of a strip of leather and passing the free end through a slot cut in the roll. This gave it the

look of a coffee bean and indeed this type of toggle is often known today as a coffee bean toggle. Other types of toggle were used, notably that formed by tying a knot at the end of a leather thong, but these tend to be later medieval. The coffee bean toggle fastening is present in the earliest period (mid 9th to late 9th/early 10th century) at 16–22 Coppergate, on these ankle-shoes, which continued to be popular throughout the subsequent century and into the 11th. It appears again fastening shoes and boots of medieval date, described below (Styles 8a, 8b and 8c).

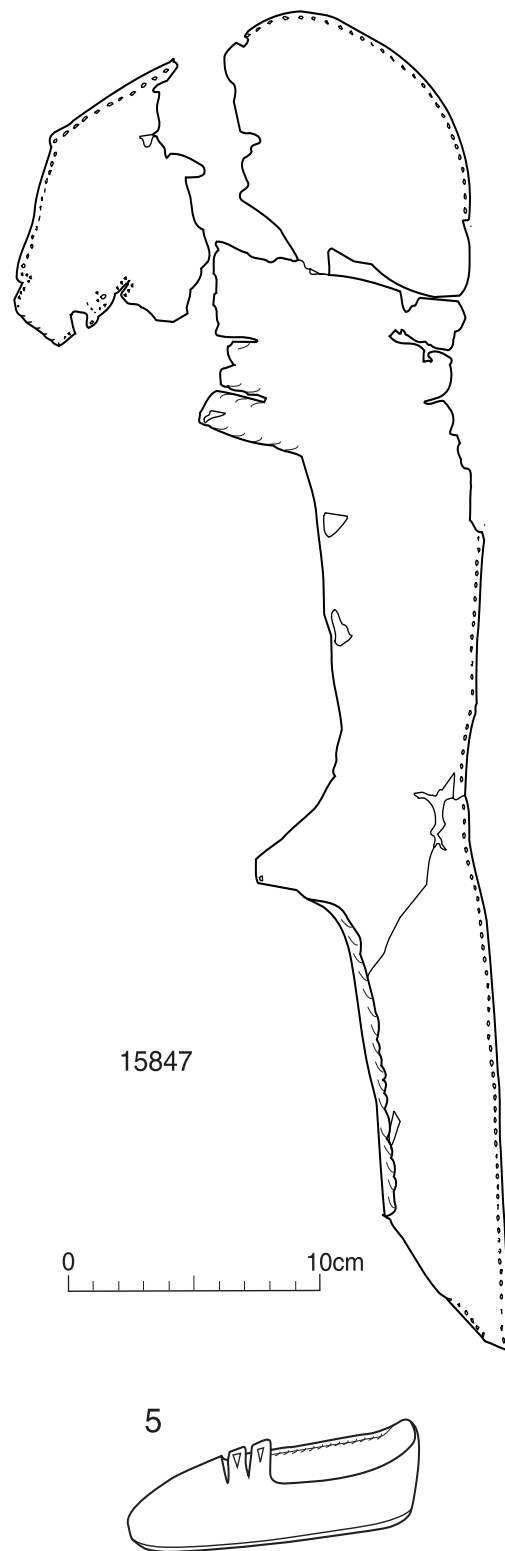
### Other Anglo-Scandinavian styles

A small number of fragmentary shoes of Anglo-Scandinavian date are of styles that, although differing from the principal types recovered from York and described above, have features that can be paralleled in assemblages elsewhere.

### One-piece shoe with flap and toggle fastening (Style 5)

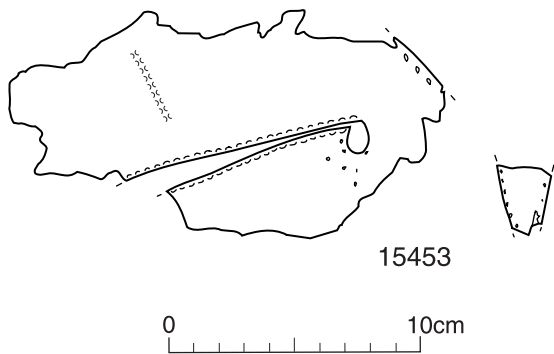
Of interest in the light of the number of flap- and toggle-fastening shoes found at York described above (Style 4) are the remains of a shoe (15847, Fig.1646) recovered from a context dated to the 9th century (Period 2) at 22 Piccadilly. The shoe was associated with Anglian pottery dating to the mid 9th century. As such this represents the earliest dated shoe find from the sites under consideration here. The shoe remains are fragmentary, so that the exact design is uncertain but it appears to be a variant or a predecessor of the flap- and toggle-fastening types (Style 4) already discussed. For ease of reference, it has been called Style 5 here, though only a single, poorly understood, example has been recovered.

The one-piece upper of calfskin (15847) had some unusual features, not least the form of the top edge. It was cut low and straight along the edge, rising suddenly at the centre back. There are two additional, large angular perforations close to the top edge on the outer side. These look secondary and add weight to the suggestion that this edge had been cut down. The inside edge has been folded over and blind whip stitched to the inner face of the upper. A folded hem is a feature also seen on a shoe of 10th-century date from Winchester (Thornton 1990a, 594, 599, 1864). The vamp and throat area is much torn so that the method of fastening is unclear. The remains of two short, torn flaps or latches are present, each with a



**Fig.1646** 15847, shoe Style 5, one-piece upper with flap and toggle fastening. Scale 1:3





**Fig.1647** 15453, the remains of another Anglo-Scandinavian style shoe. Scale 1:3

perforation close to the torn edge that may have retained toggles or thongs, or had toggles pass through them. The surviving cutting pattern with its rectangular, pierced flaps is comparable to that of Carolingian boots fastening with three flaps across the instep and shin found at Deventer and Groningen (Netherlands), and in fragmentary form at Tiel-Koornmarkt (Goubitz 1997b, figs.2, 4 and 7). It may be that this shoe has been cut down from such a flap- and toggle-fastening ankle-shoe or boot and remade (translated) into a shoe, the shaft of the original boot being discarded.

Boots of this basic design fastening with toggles passing through triple flaps, termed 'lobes' by Goubitz in his discussion of the type (*ibid.*, 426–32), have been found in the Netherlands, Germany and Poland in contexts dating to the 9th and 10th centuries (*ibid.*, 428). They occur at Hedeby dating between the 8th and 10th century where they are described as Carolingian shoe Type 8 by Groenman-van Waateringe (1984). They also occur in rather fragmentary form at Deventer dated to the 9th–10th century (Goubitz 1997b, 425), and a range of other sites in the Netherlands including Dorestad, and at Wroclaw in Poland where it is dated to the 10th century (*ibid.*, 428, 431).

These triple flap-fastening boots, particularly those with the longer, more pointed flaps, are comparable to the flap- and toggle-fastening shoes from York (Style 4). An example fastening with a double flap from Dorestad shows the closest similarities (*ibid.*, fig.6). The Carolingian boots however, differ from the York shoes, and the few examples from else-

where in Britain, in their method of fastening. At York the toggles are attached to the flaps and pass through fastening loops attached to the quarters. The Carolingian boots all fasten with toggles that are attached to the quarters and pass through fastening holes in the flaps (lobes). Only at Middelburg does a similar arrangement of fastening appear to be recorded (Hald 1972, 110, fig.139 after Hendriks 1964, 115, 25a).

The remains of another shoe upper deserves comment. A small fragment of calfskin (15453, Fig.1647) was found in a Period 3 dump deposit in Tenement C at 16–22 Coppergate. It had a long seam at the throat which drops distinctively low to lie very close to the lasting margin with a small circular recess at its base. A length of fine tunnel stitching marking the line of a decorative embroidered stripe ran from the throat toward the toe. As such it appears to have features from one-piece ankle-shoes and boots, with V-shaped cut-outs at centre back to take a sole with a heel extension (Type a), found elsewhere. The circular recess can be seen on a wide flap- and toggle-fastening ankle-boot from the abbey at Middelburg (Hald 1972, 110, fig.139 after Hendriks 1964, 25a), while the single line of decorative stitching at the toe is present on shoes from the same site (*ibid.*, figs.129–34). The throat extending down almost to the lasting margin can also be seen on a one-piece ankle-shoe with a similar toe stripe from Staraja Ladoga which fastened with lacing at the side (*ibid.*, 131, fig.161, 111 after Ojateva 1965, 44, 111) dated to the 7th–9th century. A fragment apparently from a similar shoe was found at Hedeby (Groenman-van Waateringe 1984, taf.6, 5) ornamented with double spiral decoration in the same manner as the Staraja Ladoga shoe.

### Medieval shoes from York

Shoes with soles with heel extensions (Type a) fell out of fashion soon after the Norman Conquest and after this time soles with rounded seats (Type b), like those worn today, were universally worn. Shoes were constructed with an edge/flesh seam joining the upper and sole (turnshoe construction Type 2) and this construction was employed throughout the medieval period, though two variations of this construction (turnshoe construction Type 2a and 3) were found in very small numbers. Variations to the usual turnshoe construction are highlighted in the following text where they are encountered. For the most part the shoes worn in York during the earlier medieval period had an upper made from a single piece

of leather that wrapped around the foot and joined with a single side seam. The one-piece upper was often supplemented by the addition of separate insert pieces that served to extend the upper or raise its height. Later, shoe uppers were constructed from two principal parts: the vamp that covered the front part of the foot, namely the toes and instep, and the quarters that wrapped around the heel.

For clarity the medieval shoes have been simply classified according the method of construction of their uppers and how they were fastened. During the later 11th–13th century footwear principally comprised ankle-shoes and boots, frequently fastened by a drawstring (Style 7). Later, front- and side-fastening footwear dominated. Two shoes were found that fastened at the front with integral laces (Style 6). Ankle-shoes and boots fastening at the front with toggles

(Style 8a and 8b) became popular during the 13th and early 14th century, followed by footwear fastened at the front with laces (Styles 8c and 8d) and buckles (Style 8e) at the end of the period. Ankle-shoes and boots laced at the side of the foot (Style 9) were found throughout the medieval period. Shoes with separate vamps and quarters fastened at the front with lacing (Style 10) or with latches and buckles (Style 11) were found in the late 14th and 15th centuries.

### Ankle-shoes fastening at the front with integral laces (Style 6)

Two shoes from 16–22 Coppergate (15454, Fig. 1648, and 15455) comprised a one-piece upper joined with a side seam, and fastened over the instep with two integral laces projecting forward from the front of each quarter. One shoe (15454), found in a mid

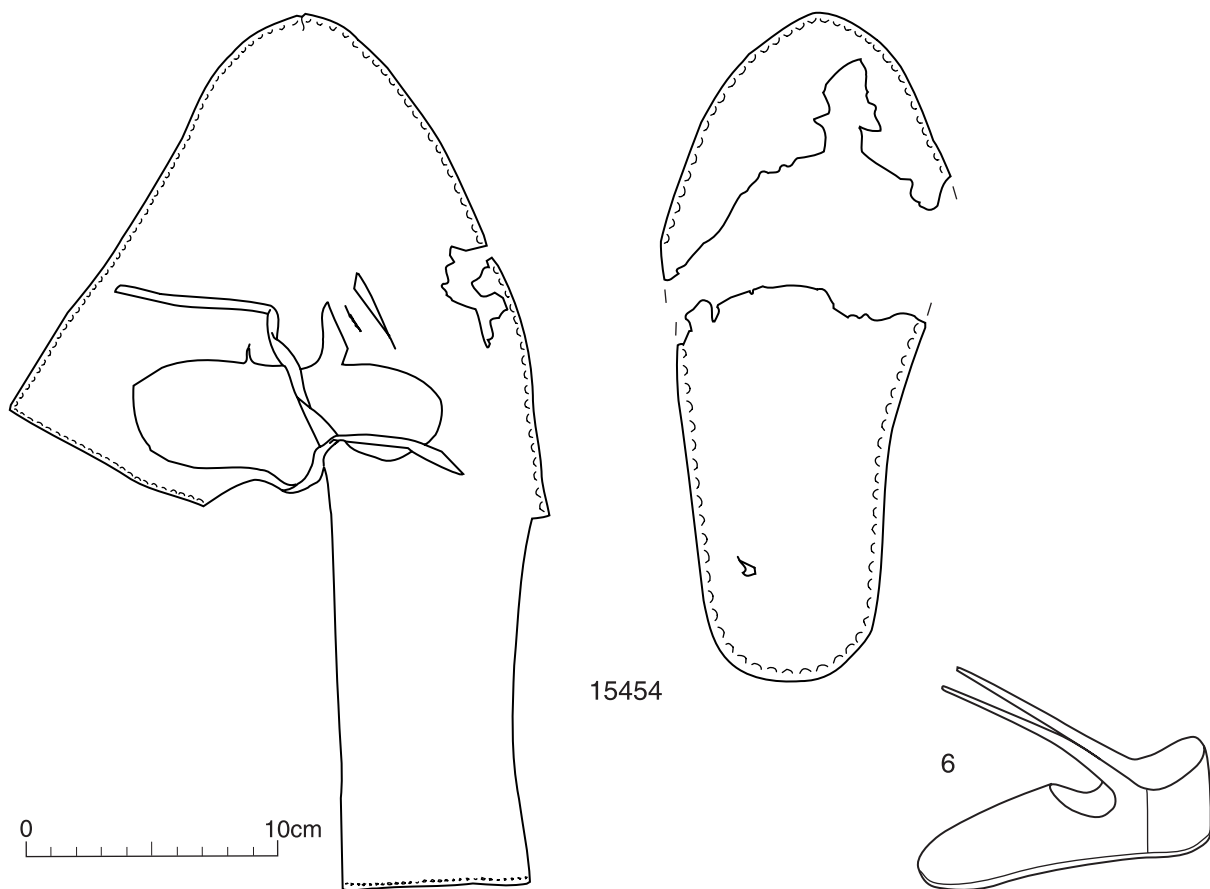


Fig.1648 15454, shoe Style 6, fastening at the front with integral laces. Scale 1:3

12th-century context, was of Type 3 construction with the sole and uppers joining with an edge/flesh seam. The other (15455), of common turnshoe construction (Type 2), was found in a late 12th- or early 13th-century context. Two shoes of this style have been found at Perth, Scotland, in contexts dating shortly before 1150 (Thomas and Bogdan in prep., Type G, fig.26, 186). Shoes with a similar cutting pattern, though cut with a lower throat extending further toward the toes, were found at Schleswig (Schnack 1992, taf.48, 1) and Konstanz (Schnack 1994, 27, taf.18, 444) in Germany, dating to the 14th century.

A shoe with a pointed scorpion's tail toe from a late 12th- to early 13th-century context at 16–22 Coppergate (15456) is of similar construction to Style 6, though without the integral laces. It has a rounded throat, high quarters and is apparently a slip-on shoe, though two secondary drawstring slits on the outside quarter suggest that it may not have fitted well. This shoe may have been modified from its original design.

### **One-piece ankle-shoes and boots, with front flaps (Style 7)**

Ninety-one shoes or shoe components came from ankle-shoes or low boots made principally with a one-piece upper, joining with a seam at the side, and with a pair of flaps at the front to close the throat over the instep. The flaps were stitched to the vamp throat at the base and to each other in the centre, creating a closed front. The boot or shoe must have been left loose enough to get the foot into, and a drawstring was often used to pull it tight to the leg. In a small number of cases the front flaps had not been joined, with the result that they were front opening. This general style had a long period of popularity. At York the earliest variants occurred in the later 11th century, with the exception of a very small number of intrusive finds (e.g. 15463, 15492). The latest were found in 13th-century contexts. A small number were found in later deposits, but these are certainly residual. This generic style is found throughout Britain and Europe. The earlier shoes often had long, pointed toes. Such long toes do not occur in this shoe type at Coppergate, but they have been found at other York sites such as 12–18 Swinegate. These toes, known as scorpion's tails, were introduced into England in the 1090s, during the reign of William II, around the same time as this general footwear type became popular.

Constructional details were preserved on 67 shoes or their components. Shoes were made in the usual turnshoe construction (construction Type 2) and a less commonly found variant on which both the uppers and sole were joined with an edge/flesh seam (construction Type 3). Three principal variations in upper construction were represented and are described in detail below where they have been termed a, b and c for clarity. The differences relate to the cutting pattern of the upper — whether the front flaps were cut in one with the one-piece upper (a), or formed by a single integral flap and a separate insert seamed to the upper (b and c). Stylistically the shoes produced using the three methods are the same and they are likely to represent nothing more than different ways of utilising whatever leather was available, or the preferences of individual workshops. No significant differences could be seen in the patterns of disposal of the three groups. Drawstring fastenings were common and multiple drawstrings were often used on the taller styles that extended above the ankle and up the leg (Styles 7b2, 7b/c3). The remains of footwear of this general style with one-piece uppers lacking other diagnostic features have been termed Style 7-- in the catalogue. Many of the uppers had the centre back of the quarters area at the heel supported by an internal heel stiffener. This was not present in all cases, however, and it was notable that some of the taller boot uppers, which would have benefited from such an addition, did not exhibit this feature, suggesting that it was not yet ubiquitous at this date.

This general style of ankle-shoe was occasionally decorated with embroidered stitching in a stripe extending down the vamp from the throat to the toe (e.g. 15459, Fig.1649), or around the top band (e.g. 15460–1, Figs.1650–1). Examples with a design scraped into the leather were also found. These are described in detail in a discussion of shoe decoration below (pp.3341–4, 3345). The surviving top bands were folded with a widely spaced binding stitch (whip stitching) on the top of the inner face. The stitch holes are small, suggesting that a narrow thread and fine needle or bristle had been used in their stitching. Though the function of this stitching is not known for certain, it may have been used to secure a textile or fur lining that has not survived. It was a notable feature of these ankle-shoes and boots that they were made in both calfskin and sheep/goat-skin.

## One-piece ankle-shoes and boots with integral front flaps (Style 7a1)

Six shoes from 16–22 Coppergate, dating to the late 11th–mid 12th century, had calfskin uppers with two integral front flaps. The medial (inside) flap projected above the vamp throat, while the other flap projected from the lateral quarter (15459, Fig.1649). One exception (15462) differed from this cutting pattern, having the closing seam curving forward to the centre front of the shoe. The medial flap was made up of a stub on the vamp wing and a triangular in-

sert, stitched to this stub at its base and to the closing seam along one side. The other side formed the front of the flap. Another (15460, Fig.1650), was notable in its construction having both the sole and upper sewn with an edge/flesh seam (turnshoe construction Type 3), a feature seen on other styles of one-piece ankle-shoes and boots below. These shoes fastened with a drawstring. The drawstring was either retained in a single slit on each side, toward the rear of the quarters (15459), or a pair of slits on each side, placed further forward (15458).

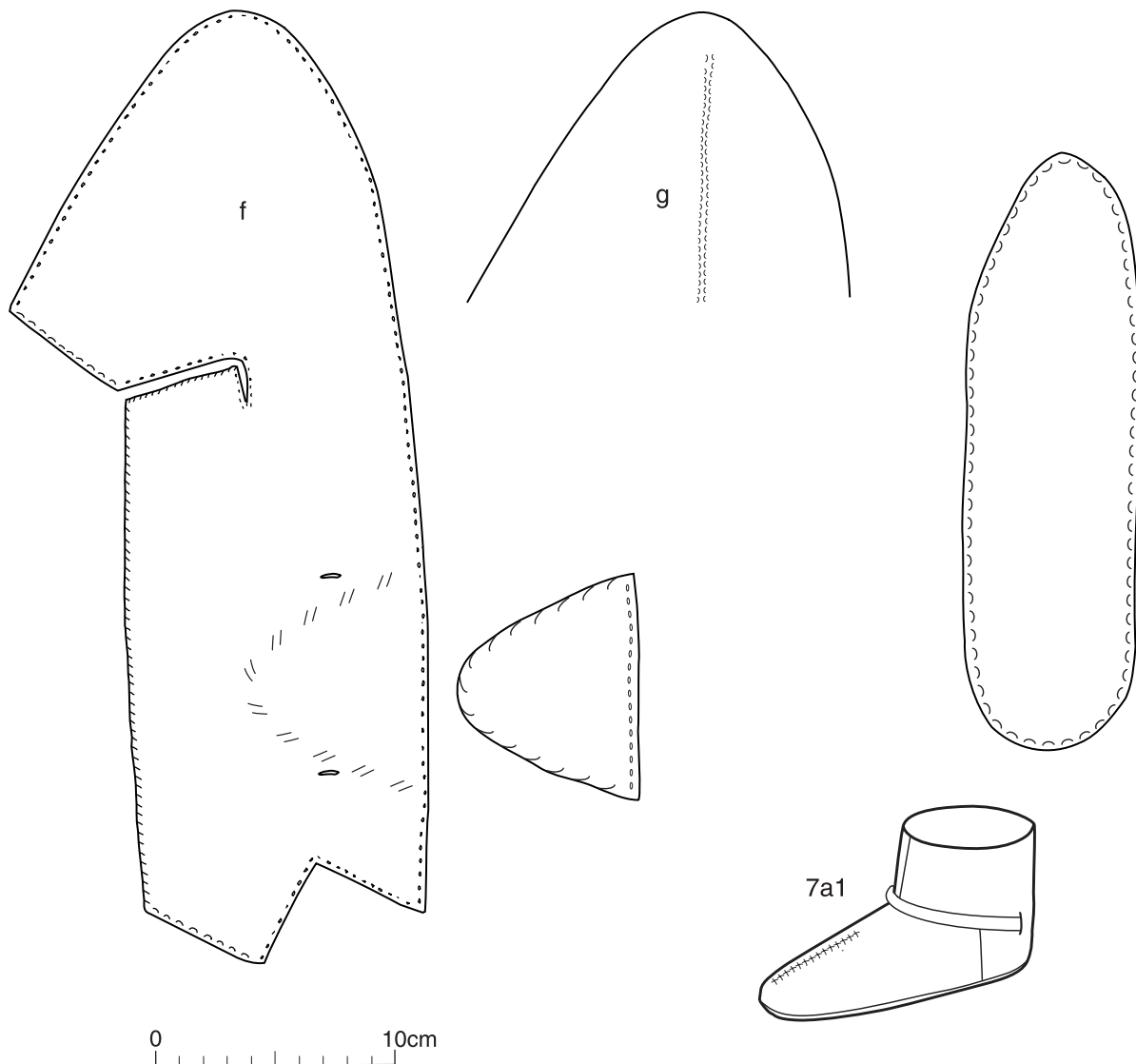
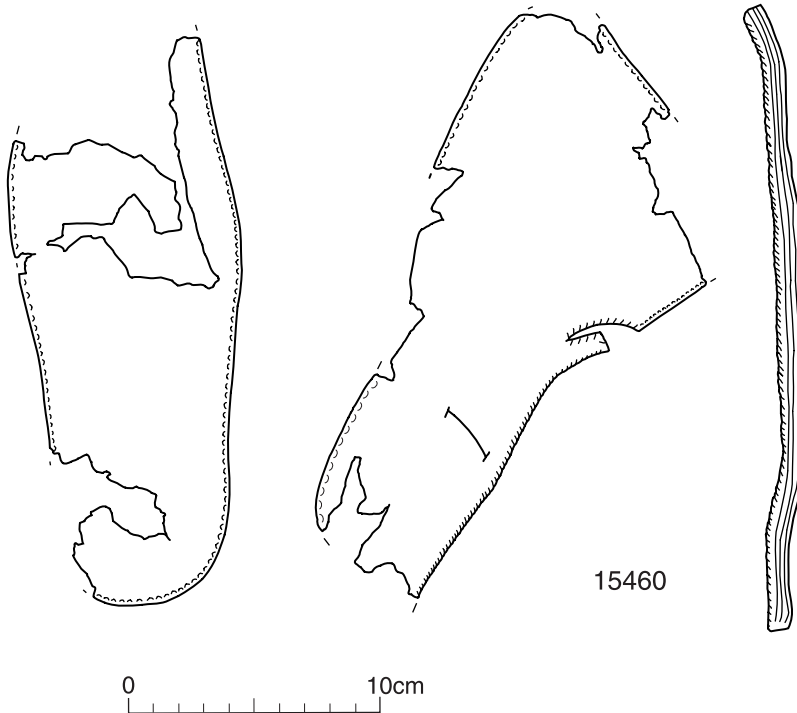


Fig.1649 15459, shoe Style 7a1, with integral front flaps. Scale 1:3



*Fig.1650* 15460, shoe Style 7a1, with integral front flaps and top band decorated with embroidery. Scale 1:3

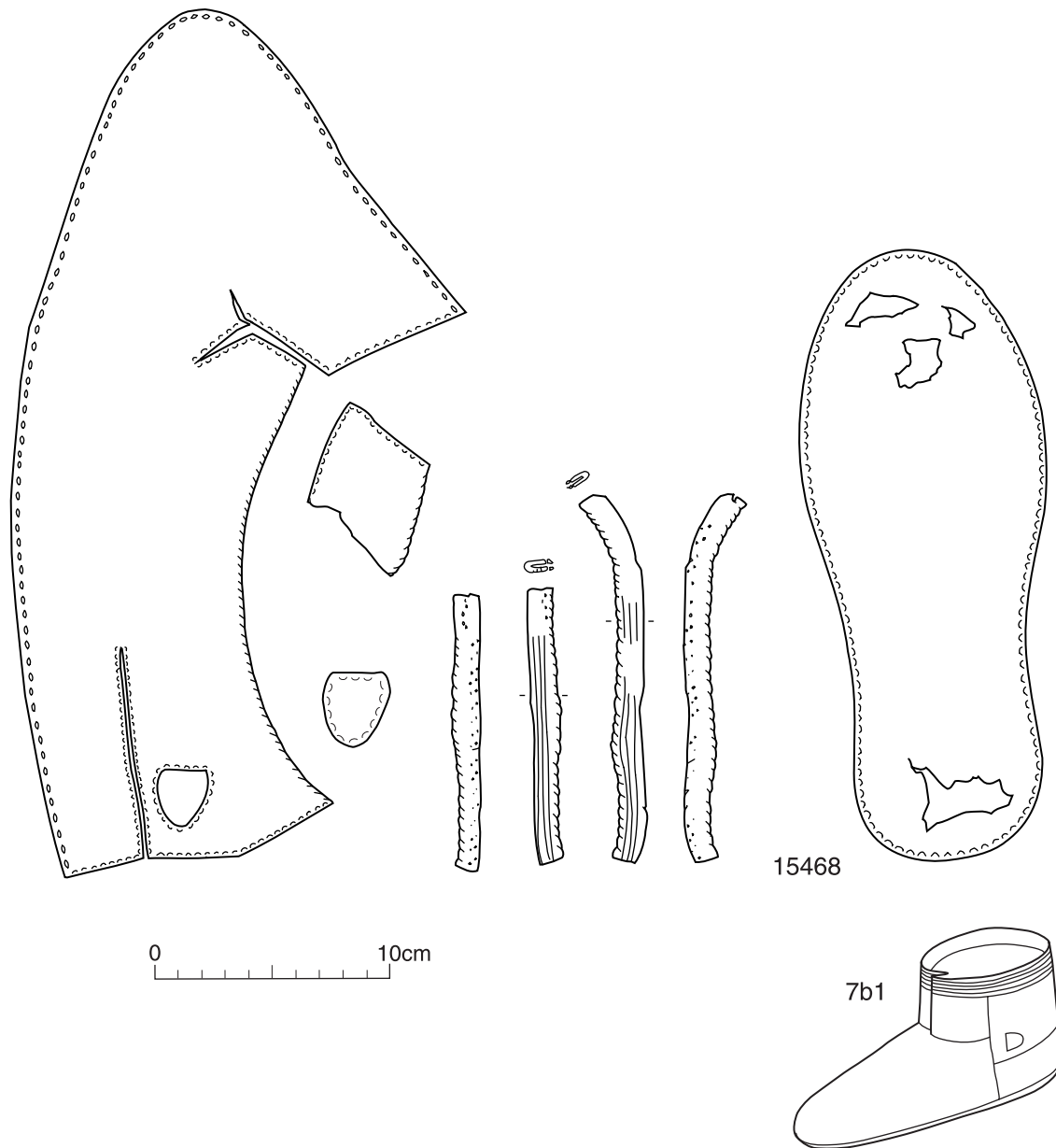
*One-piece ankle-shoes and boots with one front flap integral, the other a separate insert, stitched to the quarter (Style 7b1)*

A larger number (29 examples) had the inner front flap made from a separate, sub-rectangular insert, stitched to the front of the quarter at the closing (side) seam (15468, Fig.1651). This cutting pattern was applied chiefly to ankle-shoes or low boots extending slightly higher up the leg, but a lower shoe (15464) with the quarters cut to lie below the ankle also employed this style of upper. The majority had the front flaps sewn together at centre front to form a closed shoe or boot. One ankle-shoe (15470) had the front edges of both flaps plain cut, leaving it open at the front. Shoes of this type with an open front from London (Grew and de Neergaard 1988, 11) were usually finished at the front edges with edge/flesh binding stitch and sometimes a top band. This may suggest that the York shoe (15470) may simply have been cut down. Another shoe, 15867, from Bedern Foundry, does have its integral flap finished with a binding stitch. This shoe is more likely to be of the front opening type seen in London and elsewhere. Five shoes of this type had the upper and sole joining with a butted edge/flesh seam (turnshoe construction 3), while four were ornamented with decorative stitching.

While some examples of this type fastened with drawstrings passing through slots in the upper, the majority do not. Most appear to have been slip-on boots without fastenings. A separate lace may, of course, have been added; this would be wrapped around the ankle and tied off, but not actually retained in slots in the uppers. There is some evidence to support this. The surface of the uppers on several shoes (e.g. 15467) was abraded in a pattern which suggests a drawstring had been wrapped around it. Some shoes that did not have drawstring slots may have had them added later.

This design of cutting pattern would be more economical of leather than the previous style with its integral flaps, allowing smaller pieces of leather to be used. In fact, it is possible that in some cases, inferior quality leather was used. One ankle-shoe (15468, Fig.1651) had a D-shaped hole cut out of the quarter, close to the closing seam, into which a separate insert had been stitched. This is unlikely to be a decorative feature as the hole and insert were not neatly shaped. It is more likely that the shoe-maker (cordwainer) was making use of a piece of leather that already had a hole in it, perhaps as a result of warble fly. This appears to have been cut out and an insert fitted. It could, of course, be a repair to a torn





**Fig.1651** 15468, shoe Style 7b1, with one front flap integral and the other an insert stitched to the quarter. This shoe also has a top band decorated with embroidery. Scale 1:3

upper, though this is an unusual place for damage to occur. Beneath the hole a long, horizontal slit had also been closed with an edge/flesh butted seam. This does not fulfil any apparent function, such as acting as a dart to improve the fit, so may also be a repair. A similarly repaired slit was also found on another shoe of this style (15469). In contrast (15468) had a top band decorated with two rows of embroidery. It seems incongruous to have a decorated, and therefore expensive, shoe made from damaged

leather, so perhaps these features are best interpreted as the result of repair.

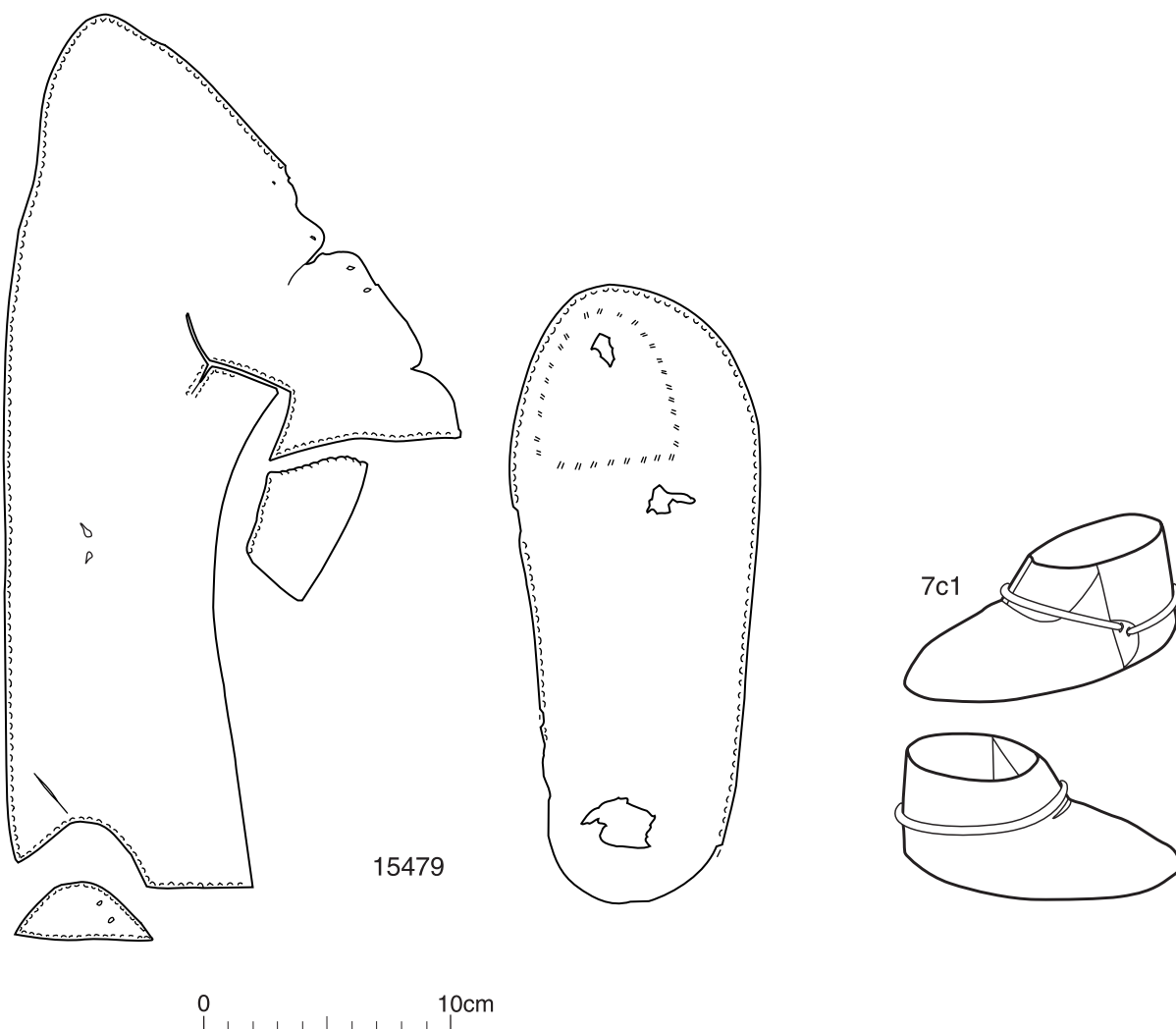
Shoes of this type from 16–22 Coppergate came from contexts dated to the late 11th to the late 13th century. A single example (15463) was recovered from a context dating to the mid 10th century but containing intrusive pottery of 12th-century date. A further two were recovered from later deposits and are likely to be residual. Shoes of this style from 22 Piccadilly

(15848–50) are from later 11th- to early 12th-century contexts and one from Bedern Foundry (15867) dates to the late 12th to early 13th century. Other examples of this cutting pattern have been found in York at City Mills, Skeldergate, in London and elsewhere across the country.

*One-piece ankle-shoes and boots with one front flap integral, the other a separate insert, stitched to a projection on top of the vamp wing (Style 7c1)*

Seventeen examples had the separate insert stitched to a projection on top of the vamp wing, rather than into the closing seam. This generally served to push the closing seam toward the back of the shoe. It

may have been a way of putting less strain on the closing seam by not having a horizontal seam running to it at the centre. The cutting pattern was more economical, allowing a shorter piece of leather to be used. The projection to which the front flap was stitched varied considerably in form. Some of the projections are sub-rectangular and quite large (for example 15478), especially where the quarters are high. The smallest (15477) is a triangle, to which only the bottom of the flap was stitched; the remainder was attached to the front of the quarter, as with the type previously described above (Style 7b1). Another variant (15480) had a short rectangular projection, the quarter height made up by a separate insert to the front flap.



**Fig.1652** 15479, shoe Style 7c1, with one front flap integral and the other an insert stitched to a projection on top of the vamp wing. Scale 1:3

Most footwear of this type was closed at the front. An exception (15477) had a whipped binding stitch along the front of the integral flap, suggesting that it had been open at the front. Many examples fastened with a drawstring. Drawstring slits were more common on this type than on Style 7b1, occurring either singly or in pairs around the uppers. One shoe (15484) had a large vertical slit behind the front flap insert, which may be secondary. The original slip-on design, perhaps with an additional separate drawstring, was apparently inconvenient, so the wearer cut a slot to hold the fastening in place. Another shoe (15479, Fig.1652) has two pairs of drawstring slots, one of which was cut into a small semicircular insert, low down on the inside quarters. The purpose of this insert is not immediately obvious, as it certainly does not cut down on the quantity of leather used. It is perhaps more likely that the drawstring tore out of the original holes and a cobbler replaced the whole section.

Two of the shoes (15476, 15479) varied in the method of turnshoe construction in that both upper and sole were joined with an edge/flesh seam (construction Type 3). Examples with decorative stitching (15476, 15484) and scraped decoration (15483, see Fig.1679) were found. It seems that poor-quality leather may have been used to make shoes of this style also. One shoe (15481) has a hole in the quarter behind the integral flap and, like the earlier example (15468, Fig.1651), this has an edge/flesh binding seam around the periphery to secure a patch. This feature is discussed further regarding refurbishment and repair below.

One shoe of Style 7c1 comes from a context dating no later than the middle of the 11th century. The majority date to the later 11th and 12th centuries, the latest dating to the late 12th–13th century. Two shoes occurred residually in later medieval contexts. This style has been found in more recent excavations at York at 12–18 Swinegate and City Mills, Skeldergate. It has been found widely elsewhere in England including Seal House in London (Pritchard 1991, 339, fig.3.118), 33–35 Eastgate, Beverley (Atkinson and Foreman 1992, fig.180.), Bull Inn, Coventry (Thomas 1980, no.49/185/12, fig.6), and Forehill, Ely (Carlisle 1999, unpublished assessment report).

#### *Boots with drawstring fastening passing through multiple slots (Style 7b2)*

Five boots from 16–22 Coppergate of basic one-piece construction with a separate insert stitched to

the quarters (Style 7b) were fastened with a wrap around drawstring passing through multiple slots in the uppers (termed Style 7b2 in the accompanying catalogue). They occurred in contexts dating from the late 12th to the mid 13th century. These low boots reached to the mid calf. They were fastened by a single drawstring that wrapped several times around the leg of the boot. This was secured by being threaded through several rows of slots arranged vertically in pairs at (usually) three points around the uppers (15485, Fig.1653). This would have kept the drawstring in position all the way up the boot leg and prevented it from slumping to the ankle. The boots are all somewhat fragmentary, but surviving pieces indicate that there could be a minimum of two (15486) and a maximum of six (15485) pairs of holes arranged one above the other. Wear patterns suggest that the drawstring was wrapped around the leg many times, passing around the leg between the slotted rows, as well as passing through the slotted rows. This would provide a tight fastening, which would prevent mud and other foreign matter from getting into the boot.

#### *Boots with drawstring fastening passing through vertical thonged loops (Style 7b3/c3)*

Boots also fastening with a drawstring wrapped around the leg several times but using a different method to retain the drawstring may be a variant and perhaps a development of the previous type. A vertical thong, threaded in and out of several slots, created a series of loops through which the drawstring passed. Two or three such thongs were spaced at intervals around the upper in the same way as the slots in the previous type. They were usually secured at each end by whip stitching inside the upper. Most thongs allowed for three drawstring loops, though this varied. One unusual boot (15491) had only a single loop on each side. In this particular case the thongs were very short and wide, but were whip stitched into position as usual.

Unlike the boots that fastened through multiple slots already described (Style 7b2), these boots fastening through thonged loops were made using two methods of attaching the flap insert. The flap insert was stitched either to the front of the quarter, called Style 7b3 (e.g. 15487, Fig.1654) in the accompanying catalogue, or a projection on the top of the vamp wing, Style 7c3 (e.g. 15489, Fig.1655). It seems that all the boots were left open at the front, as not a single

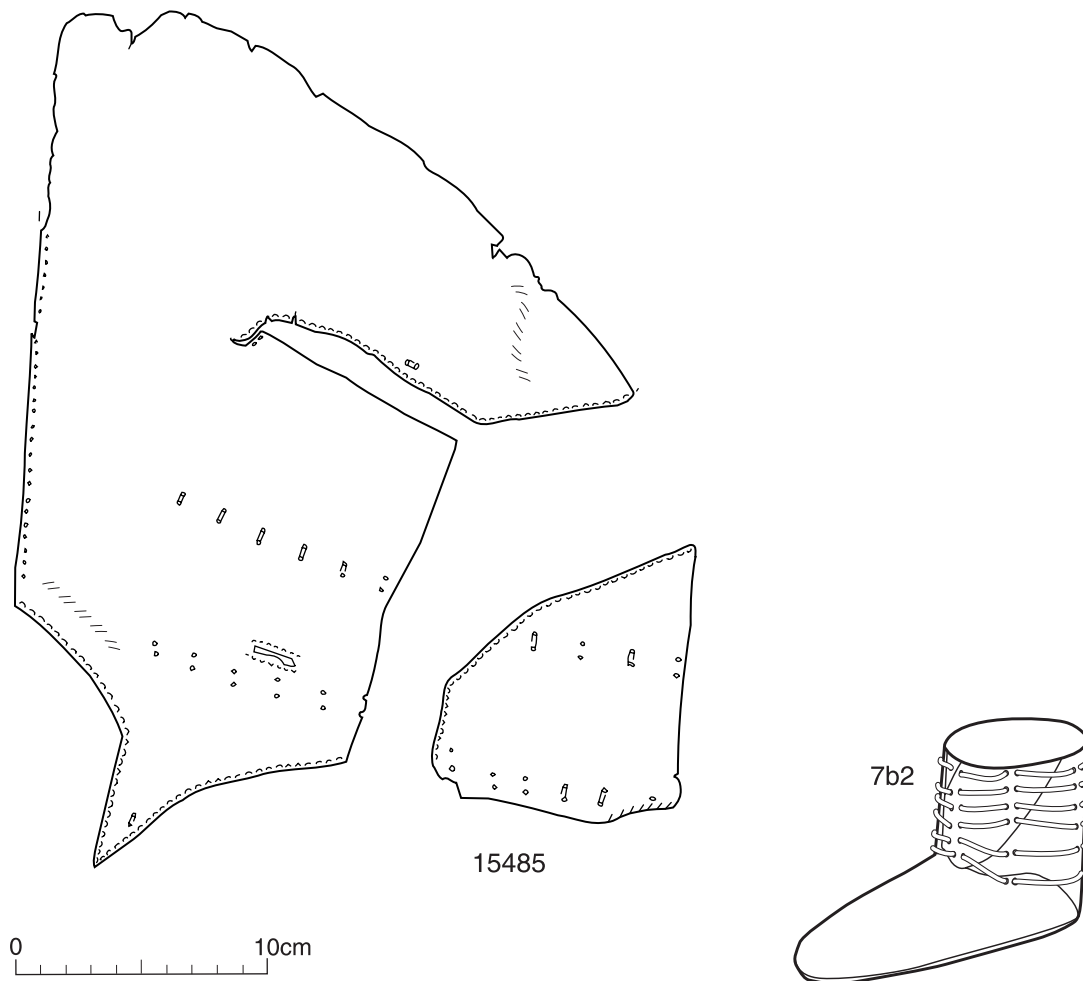


Fig.1653 15485, shoe Style 7b2, with drawstring passing through multiple slots. Scale 1:3

example had an edge/flesh butted seam along the front of the flaps that would indicate that they had been stitched together. The front edges of the front flaps generally had a whipped edge/flesh seam (e.g. 15490, Fig.1656); in some cases top bands were present (e.g. 15489), that clearly ran down the front edge of the front flaps. It is not clear why this type should have an open front, while the preceding type was generally a closed boot. One boot (15489) had an elliptical circular cut-out and a corresponding patch, as seen in the one-piece ankle-shoes and boots of similar construction described above. Again, it is difficult to see how this could be a design feature, and it seems likely that it indicates the use of poor-quality leather or possibly a subsequent repair.

Twelve boots with this form of drawstring fastening were found amongst the material under consideration here. Ten came from 16–22 Coppergate principally from contexts dating from the early 12th to the 13th century; two from 14th-/15th-century contexts are likely to be residual. A single boot from the College of Vicars Choral at Bedern (15882) was dated to the early–mid 13th century, another from Bedern Foundry (15868) to the late 13th or early 14th centuries.

Boots fastening through thonged loops are commonly found in medieval shoe assemblages. Examples from York have been found in the Parliament Street sewer trench (pp.249, 263, Fig.113, 820, AY 17/4) and

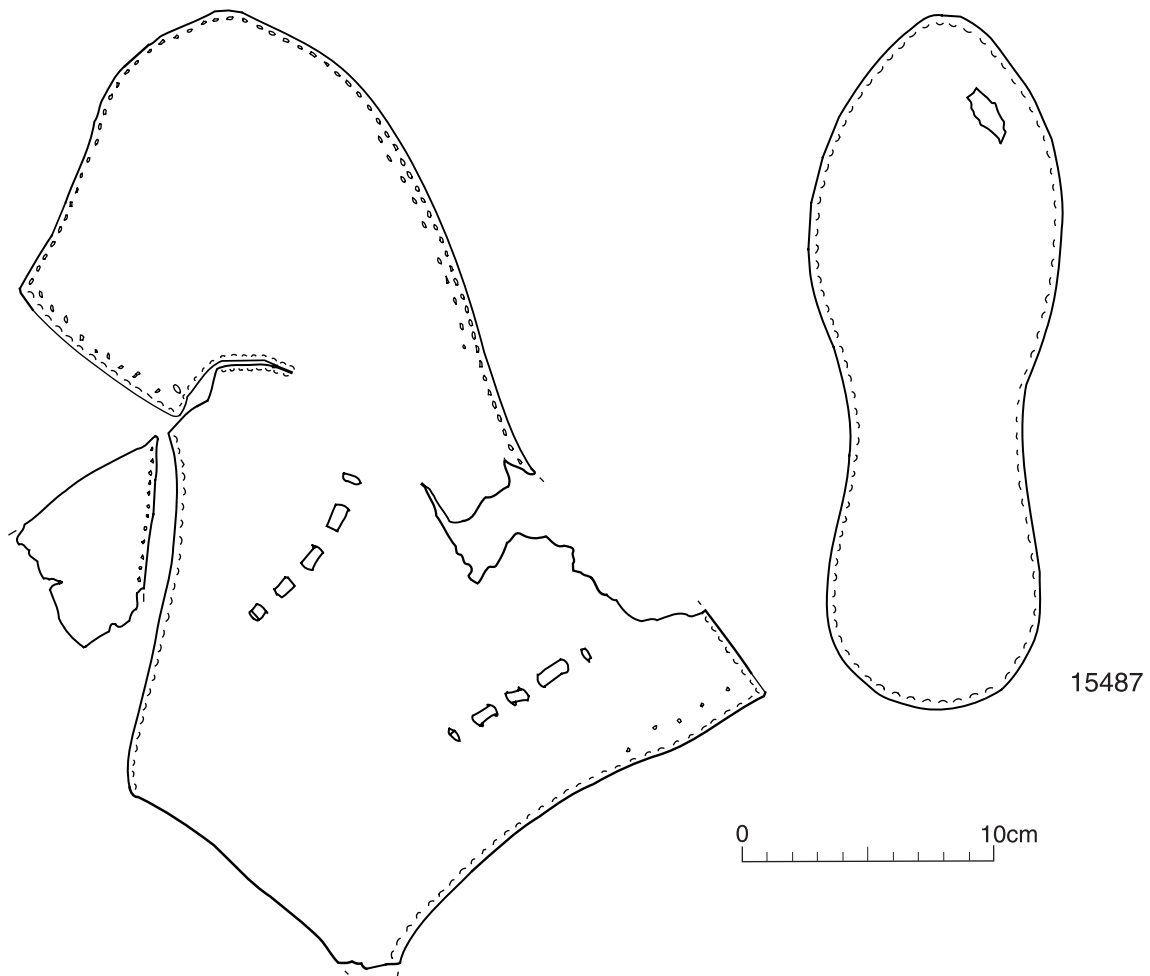


Fig.1654 15487, shoe Style 7b3, with drawstring passing through vertical throughed loops. Scale 1:3

at 12–18 Swinegate. It is common elsewhere in Britain, with published examples from Seal House and Billingsgate in London (Grew and de Neergaard 1988, 15–17, fig.16), Broadgate, Coventry (Thomas 1980, no.78/51/58, fig.5), 33–35 Eastgate, Beverley (Atkinson and Foreman 1992, 563, fig.88), and Baker Lane, King’s Lynn (Clarke and Carter 1977, 352–4, 19–23, fig.165).

### Front-fastening shoes and boots with one-piece uppers (Style 8)

A variety of shoes and boots were made with a simple cutting pattern comprising a one-piece upper, with the front of the two quarters forming two flaps which fastened together at the front of the foot.

Often one of the front flaps was formed from a separate insert as seen in the one-piece shoes and boots previously described above (Style 7). The general front-fastening style appears evolutionary, with the earlier toggle-fastening types (Styles 8a and 8b) being replaced in the later medieval period by a hybrid toggled and laced type (Style 8c), a fully laced type (Style 8d), and finally a buckled boot or ankle-shoe (Style 8e) in the 15th century. Throughout the medieval period, though small changes appear, the general one-piece upper design stayed the same. There are 34 examples of front-fastening footwear in total, of which 31 could be further classified (Styles 8a–e), while the remainder were recovered in too fragmentary a condition and are listed as Style 8- in the catalogue.



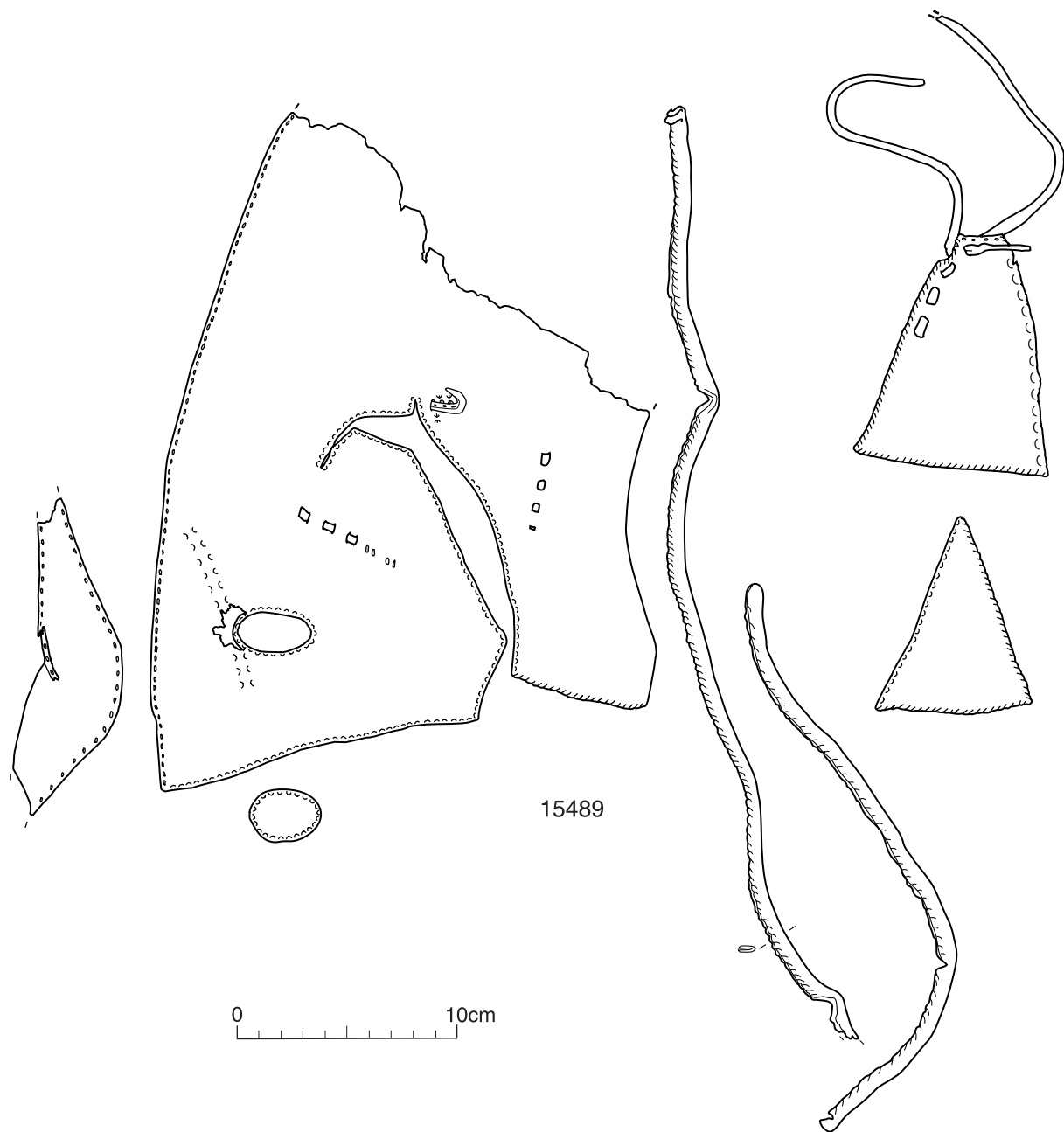


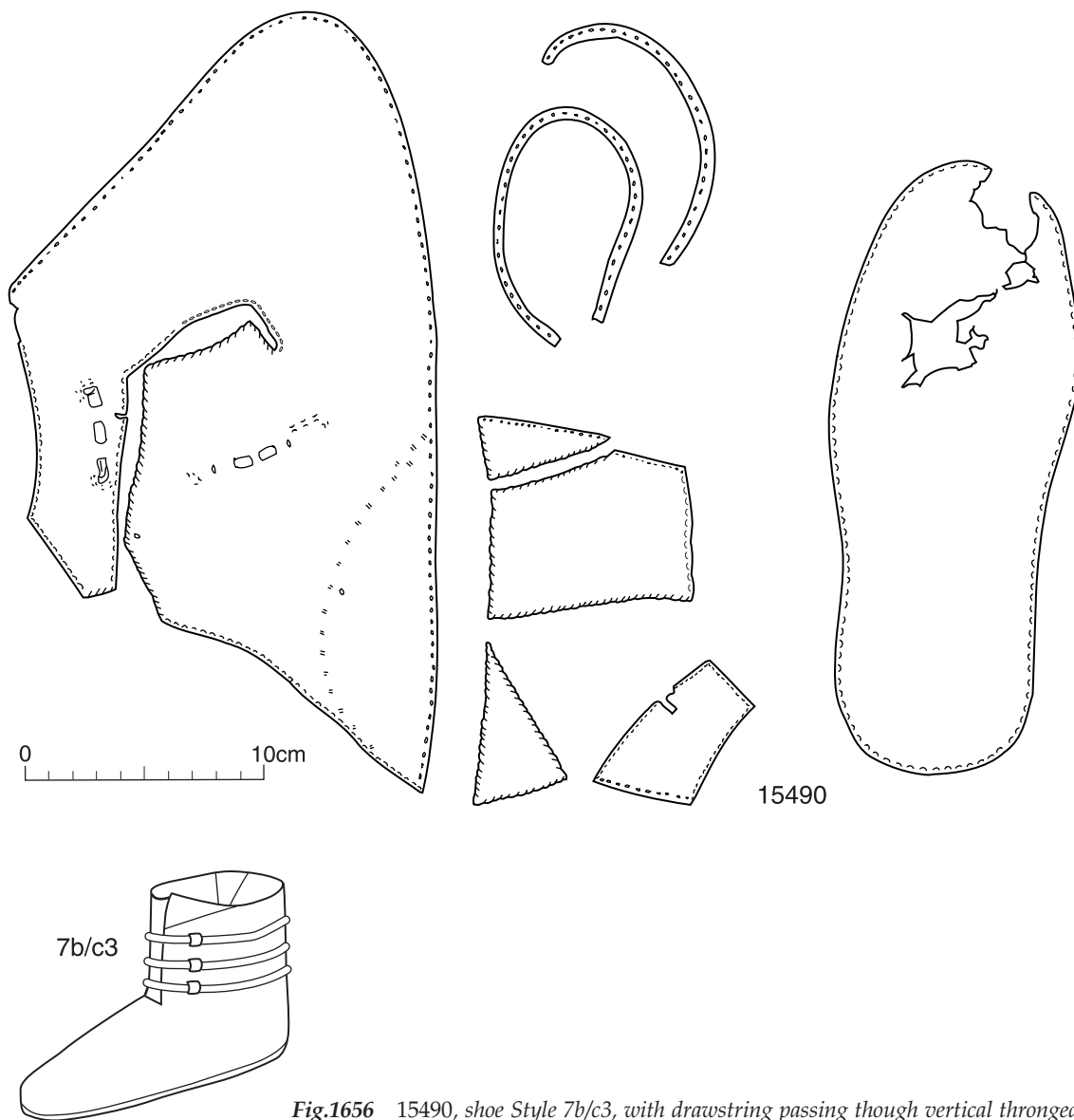
Fig.1655 15489, Style 7c3, with drawstring passing through vertical thronged loops. Scale 1:3

### *Front toggle-fastened shoes (Style 8a)*

Five shoes from 16–22 Coppergate were of a distinctive toggle-fastening style commonly found in medieval shoe assemblages throughout Britain and Europe. The shoe style was not well represented, occurring as fragmentary remains only. This style marks the reappearance of the rolled, 'coffee bean' toggle, which had fallen out of use two centuries previously with the increase in drawstring fastenings.

Although the toggles were made in the same way as the Anglo-Scandinavian ones, the method of fastening was somewhat different.

The shoes were made with a one-piece upper joining with a single side seam. Shoes and ankle-shoes, that extended slightly higher to reach the ankle, were made in the same style. This style of shoe fastened over the instep with a pair of flaps that projected from

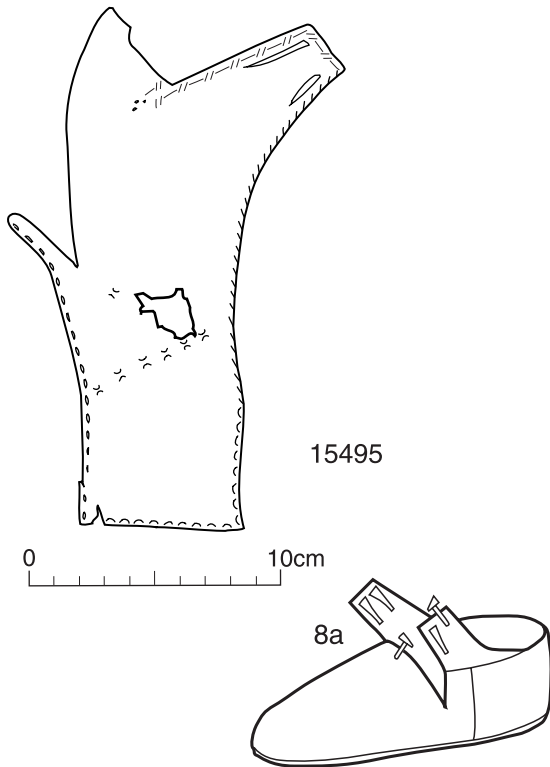


**Fig.1656** 15490, shoe Style 7b/c3, with drawstring passing through vertical throughed loops. Scale 1:3

the vamp wings and fastened to the same toggle on the vamp throat. The toggle was secured to the vamp by its terminal, which passed through a perforation and was stitched down on the inside. On some shoes, particularly the lower-cut examples (e.g. 15494), both flaps were integral, being cut in one piece with the upper, and each carried a single toggle hole. The slightly higher ankle-shoes (15495, Fig.1657) had one integral flap, the other being made from a separate insert. On these shoes the method of fastening was more complicated. The (medial) insert flap had one toggle hole and one or two additional toggles. The opposite flap had a corresponding number of toggle holes. The lower toggle hole on each flap fastened over

the toggle in the middle of the vamp throat, as the toggles fastened through the corresponding toggle holes above. The flaps were put under considerable strain. To prevent stretching and tearing, a strengthening cord was blind whip stitched around the inside edge (15495). This strengthening cord was a technical innovation, occurring for the first time on shoes of this style in the London assemblages (Grew and de Neergaard 1988, 21).

In London this toggle-fastening style was popular in the later 13th century, and continued in use until the early to mid 14th century (Grew and de Neergaard 1988, 21–6). The five examples from 16–

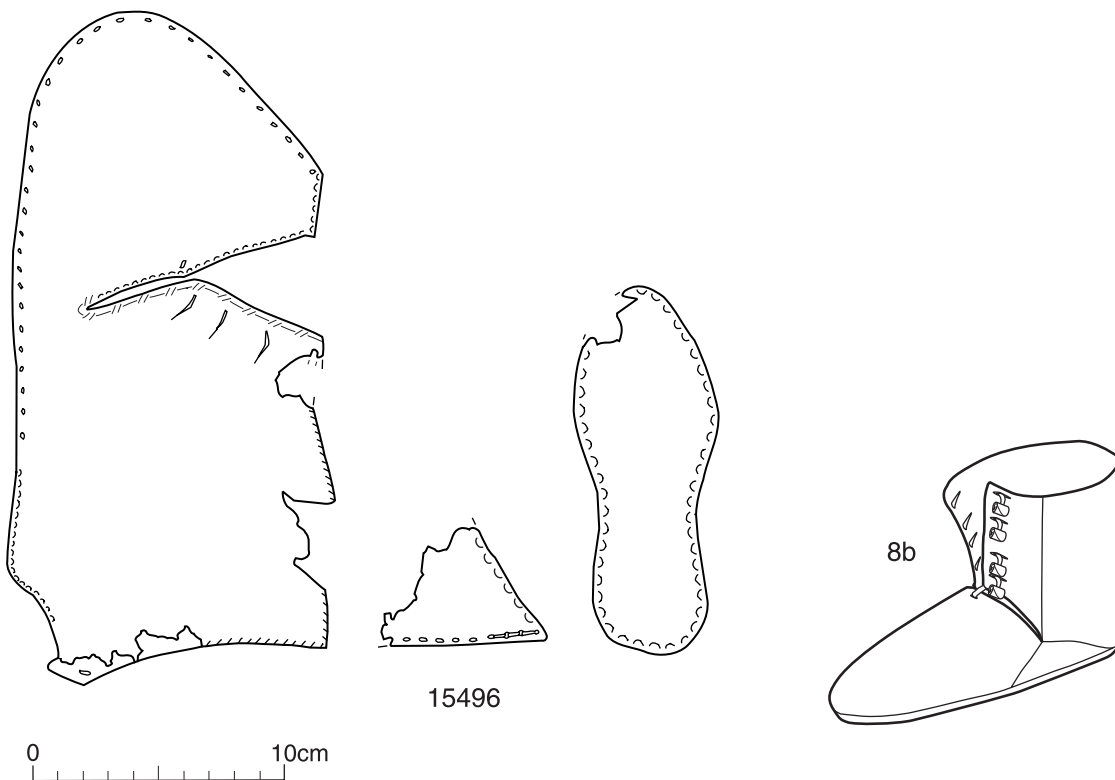


**Fig.1657** 15495, *Style 8a*, a front toggle-fastened ankle-shoe. Scale 1:3

22 Coppergate were recovered from contexts ranging in date between the late 9th/early 10th century and the 16th century. The earliest shoe (15494) is undoubtedly intrusive, though no pottery of later date accompanied it in the deposit. The latest is certainly residual. Two others are from 12th-/13th- and early 14th-century contexts, complementing the London dating.

#### *Front toggle-fastened boots (Style 8b)*

The remains of two taller toggle-fastening boots of this same basic style were found at 16–22 Coppergate in contexts dating to the 12th/13th and 13th/14th centuries. The quarters of the boot extend higher up the leg to the mid calf and fasten with similar toggles through corresponding toggle holes. A toggle at the centre of the throat fastened through the lower toggle hole of both flaps. The better surviving example (15496, Fig.1658) had three additional toggle holes present on the integral flap, which fastened to toggles attached to the opposite flap which was made from a separate insert piece. Stitching marks the former position of a tongue at centre front. Similar boots have also been found elsewhere in York, most notably at the County Hospital site, Monkgate (YAT 1983.19).

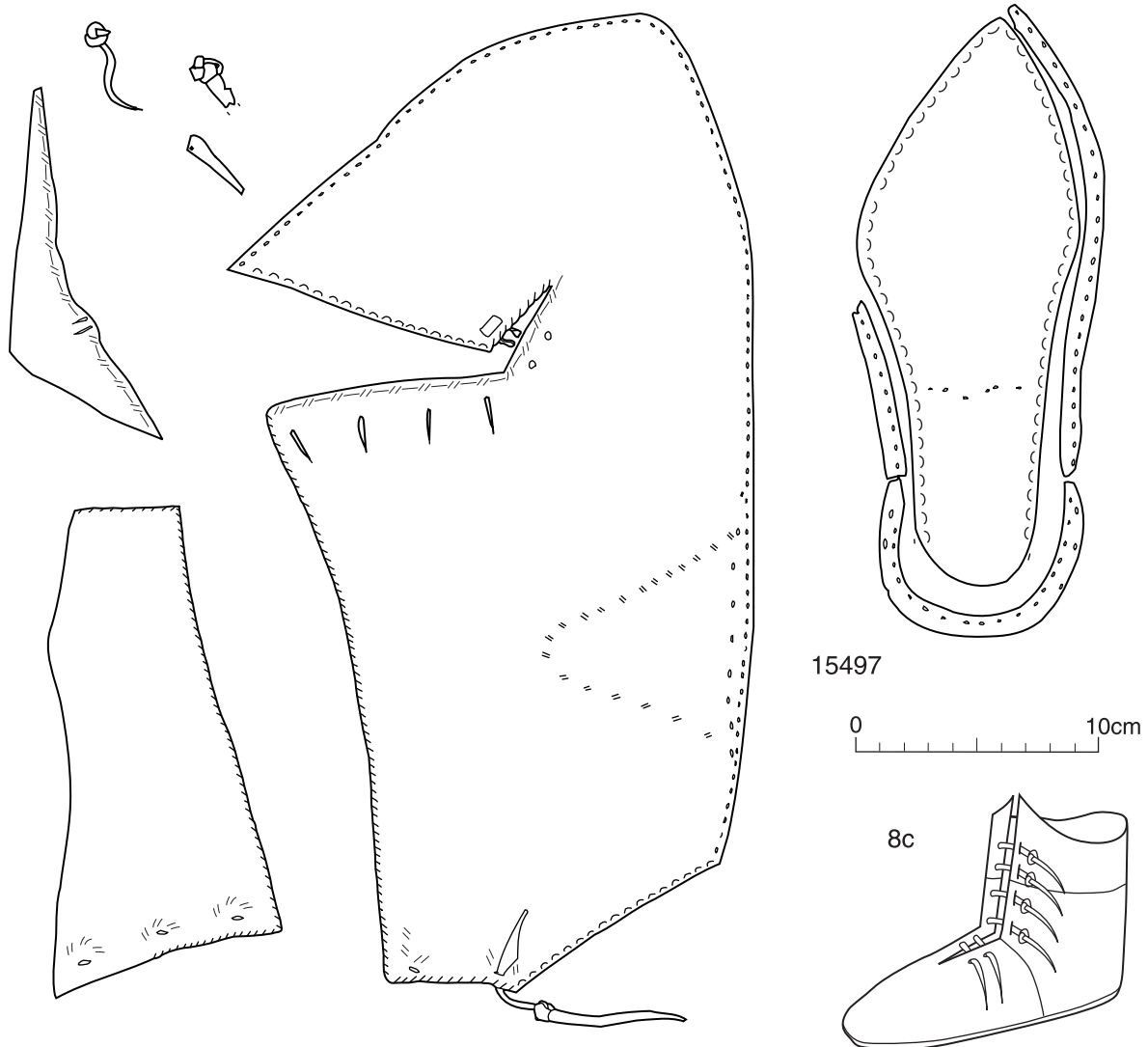


**Fig.1658** 15496, *Style 8b*, a front toggle-fastened boot. Scale 1:3

*Front toggle- and lace-fastening boots (Style 8c)*

Six ankle-boots with one-piece uppers that fastened at the centre front with laces and toggles were found at 16–22 Coppergate, five dating to the late 14th or early 15th century (e.g. 15497, Figs.1659–60) and one from an unstratified context. A vertical slit opening was present at the throat with two lace holes on either side, through which it was laced across the instep. The lace was cut from a single strip of leather, split along its length to make two laces but with an uncut terminal which prevented the laces from passing completely through the paired lace holes. Toggles fastened the front of the quarters up the leg. The

toggles were attached to the quarters by their long terminals, which passed through slits in the uppers, and were blind whip stitched into place. The ends are left long. The opposing quarters flap carried the toggle holes, which were generally of 'teardrop' shape and, when fastened, overlapped the toggled flap. A separate triangular tongue was sewn with a lapped seam with whip stitch to the front edge in front of the toggle holes and along the edge of the throat opening. The opposite edge of the throat opening had an edge/flesh binding stitch that ran most of the way up the front edge of the boot.



*Fig.1659* 15497, Style 8c, a front toggle- and lace-fastened boot. Scale 1:3



*Fig.1660 Two views of reconstructed boot 15497*

Not all toggles were of rolled 'coffee bean' type at this date. A simpler type, created by simply tying a knot in a thong, was also used (15497). It might be expected that the knot would be at the end of the thong, but in fact it was usually tied mid way along its length, leaving a long end beyond it. This end was presumably used to pull the thong through the toggle hole and it may have been easier to fasten than a coffee bean toggle. It would also have been quite decorative, as can be seen from the tall boots from the Fischmarkt at Konstanz (e.g. Schnack 1994, taf.30, 211), that fastened with as many as thirteen of these long knotted thongs.

#### *Front-lacing one-piece ankle-boots (Style 8d)*

A small number of ankle-boots made with a one-piece upper of calfskin were fastened at the front with laces (15498, Fig.1661). Examples were found with separate, single, laces; others were fastened with bifurcated, double, laces. The single laces had been held within the lace holes by having widened terminals. Stitching ran along the internal edge of the front opening to attach a separate tongue. Six boots of this type were found, one from 16–22 Coppergate, the others from the Coppergate watching brief site. The 16–22 Coppergate boot (15498) came from a context dating from the 15th/16th century. Three of the watching

brief examples (15826–8) came from less closely datable deposits laid down as part of a massive ground-raising scheme in the early 16th century, the others being broadly medieval. In London similar front-lacing ankle-boots were recovered from late 14th-century contexts (Grew and de Neergaard 1988, 28, figs.55–8).

#### *One-piece ankle-boots fastening at the front with buckles and straps (Style 8e)*

Eight ankle-boots of one-piece construction fastened at the front with straps and metal buckles. The cutting pattern is similar to that of the toggle- and lace-fastening boots previously described (Style 8c), but they were usually lower, the plain cut top edge reaching to just above the ankle. One example (15829) was extended higher up the leg by the addition of a separate piece. The ankle-boots fastened with either a single or a pair (15851) of buckles and straps. The small, annular buckles were of lead/tin alloy or tinned iron, and are retained on ankle-boots from the watching brief site (15829–32) and 22 Piccadilly (15852). These shoe buckles have also been found separately, unassociated with shoes, at the College of Vicars Choral, the earliest from early 15th-century deposits, the rest coming from 17th-century levels (14544–7, AY 17/15). The buckles were attached to



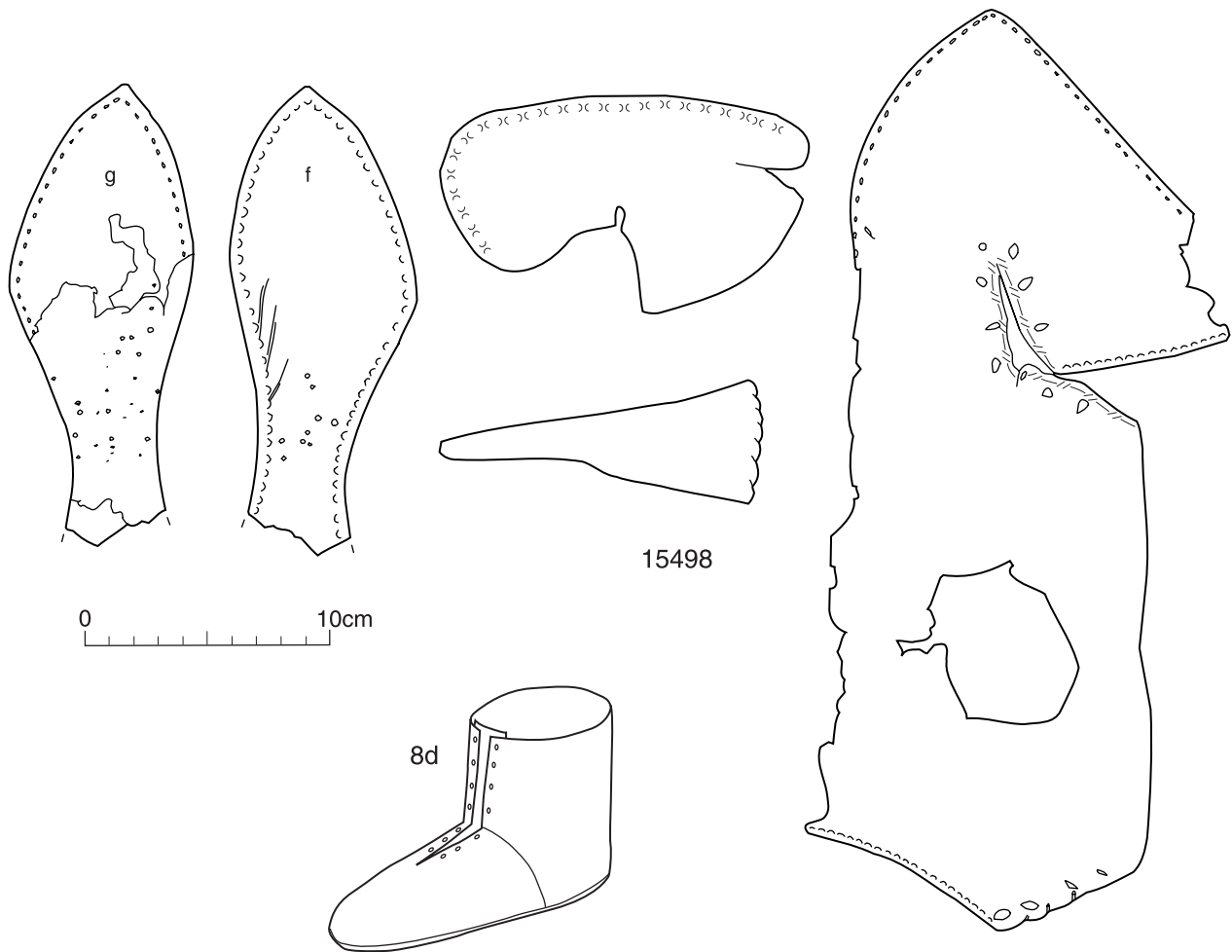


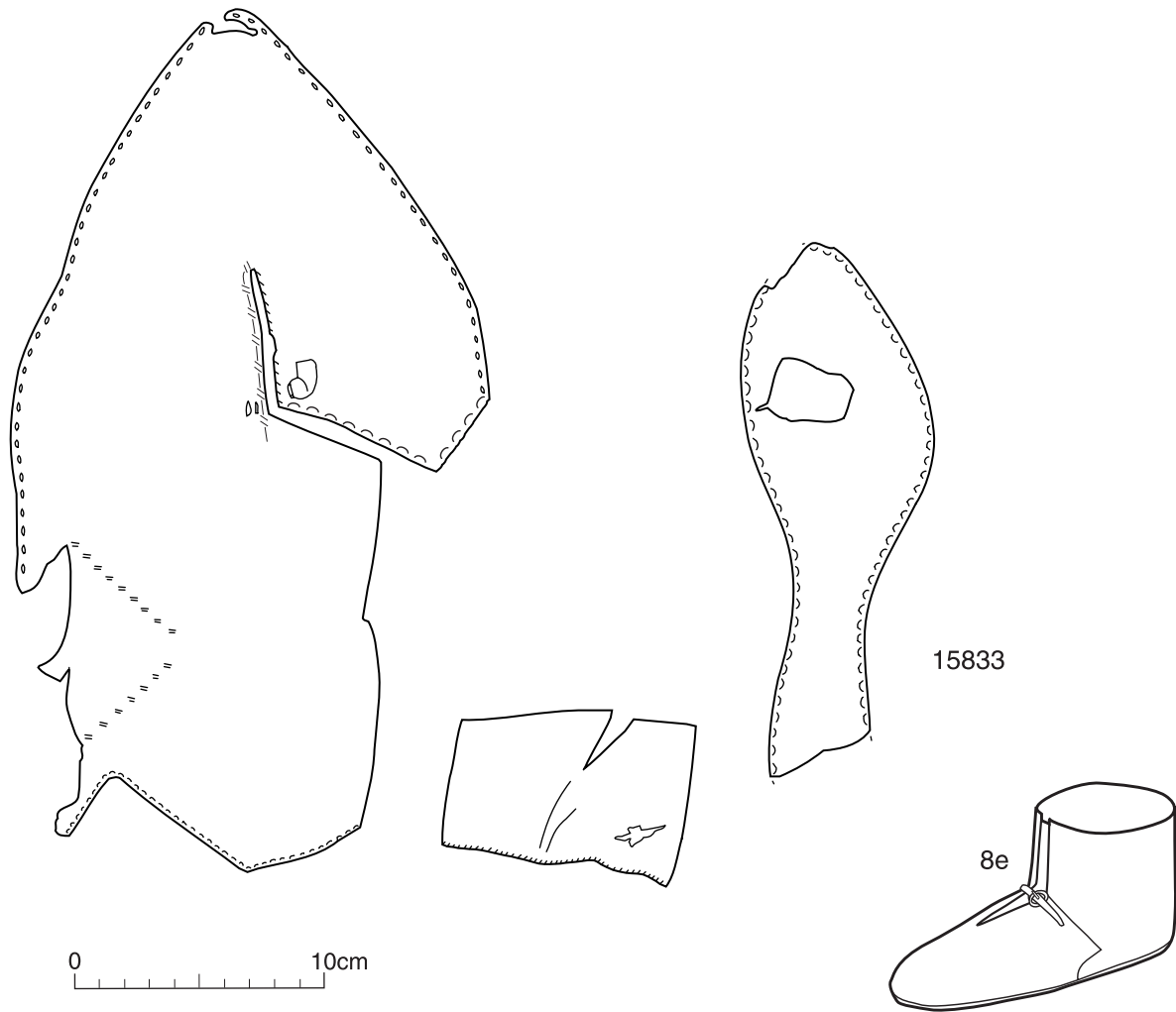
Fig.1661 15498, Style 8d, a front-lacing one-piece ankle-boot. Scale 1:3

straps on the lateral side. The corresponding fastening straps with the buckle pin holes passed across the instep from the other side. The buckle straps were of strip form, tapered to a point at both ends (15830), with a slit in the middle for the buckle pin and an oval perforation. The strap folded around the buckle, both ends passed through one or two slits and one end was threaded through the perforation to secure it. A variation was seen on one ankle-boot from 22 Piccadilly (15852) where the tapered strap terminals were not interlaced, but simply blind whip stitched to the inside of the uppers. The fastening strap was held in a single slit in the uppers by a widened, T-shaped terminal, or was sometimes folded (15831). The front edges and throat opening were stitched along the interior for the attachment of a reinforce-

ment cord or tongue. A rectangular tongue was present in at least one example (15833, Fig.1662).

It seems that poor-quality leather was still being used. One example (15829) had a teardrop-shaped hole in the back of the quarter with whipped edge/flesh stitching around the edge to hold a small insert. Again it appeared to be a repair, possibly to enable use of a piece of poor-quality leather, perhaps disfigured by warble fly or subsequent damage.

A single example of a front-buckling boot from 22 Piccadilly (15852) was recovered from a context dated to the 15th to early 16th century. Six ankle-boots found during the Coppergate watching brief were from contexts which could be dated no more closely



**Fig.1662** 15833, Style 8e, a one-piece ankle-boot fastening at the front with a buckle and strap. Scale 1:3

than to the medieval period and another from the same site (15834) was from a 16th-century context. Other front-buckling ankle-boots have been recovered from late medieval shoe assemblages throughout the country. Those from well-dated contexts in London date to the early 15th century (Grew and de Neergaard 1988, 41, figs.63–6).

### Side-lacing footwear (Style 9)

Side lacing was a common form of shoe and boot fastening, enjoying sporadic periods of popularity from the 12th to the 15th centuries. Side-lacing footwear had a vertical opening on the inner (medial) side that was closed by a single leather lace threaded alternately through holes on either side. It was then,

presumably, tied at the top. The lace holes were usually reinforced by the addition of an internal lining, also of leather, that was attached to the interior of the uppers with whip stitching. Occasionally such lace hole linings of V-shape were recovered separately, no longer associated with the shoes from which they came (e.g. 15869).

The remains of 30 examples of side-laced footwear were recovered, half of which could be classified according to their cutting patterns. Side-lacing shoes made with one-piece uppers (Style 9a) and with separate vamps and quarters (Style 9b) were represented. A further fifteen were not sufficiently well preserved for their cutting patterns to be established and appear as Style 9- in the catalogue.

*Boots of one-piece construction lacing at the side (Style 9a)*

Six boots with one-piece uppers of calfskin lacing at the side were found from 16–22 Coppergate. Though rather fragmentary, they were made of a fundamentally one-piece upper construction and all appear to have been of similar design. The boot quarters were tall and wrapped around so that the front edge of the inside (medial) quarter formed one side of the opening and the vamp wing formed the other. On top of the low vamp wing a separate, sub-rectangular insert served to raise the height of the boot leg. The insert was sewn with a butted edge/flesh seam to the vamp wing at the base and with a whipped edge/flesh seam up the front of the leg. At the side, a short length of butted edge/flesh seam rose from the lasting margin, above which the open sides were fastened through multiple lace holes. The best surviving boot (15500, Fig.1663) had eleven pairs of fastening holes; other examples had eight or nine surviving holes, but these are more fragmentary. Stitching on the inside of the uppers, on both sides of the opening, showed that they were lined with a sub-rectangular reinforcement in this area. Similar evidence indicated the use

of tall heel stiffeners at centre back, usually triangular in shape and truncated at the top. The top edges of the boots were plain.

One boot (15499) came from a context dated to the late 12th century. The other boots dated to the end of the medieval period, two occurring in early 15th-century deposits, while three examples (including 15500) were found in the same 14th-/15th-century dump. These later boots can be paralleled by examples of similar date from the London assemblages (Grew and de Neergaard 1988, 43, figs.68–70).

*Footwear of two-piece construction lacing at the side (Style 9b)*

Nine examples (four from 16–22 Coppergate, one from the watching brief, four from Bedern Foundry) of side-laced footwear were of two-piece construction, having a separate vamp and quarters (e.g. 15501, Fig.1664). In contrast to the side-lacing boots of fundamentally one-piece construction described above (Style 9a), these were shoes, with one exception which may be considered a tall ankle-shoe or very low boot. This ankle-shoe (15504, Fig.1665) came from an 11th-

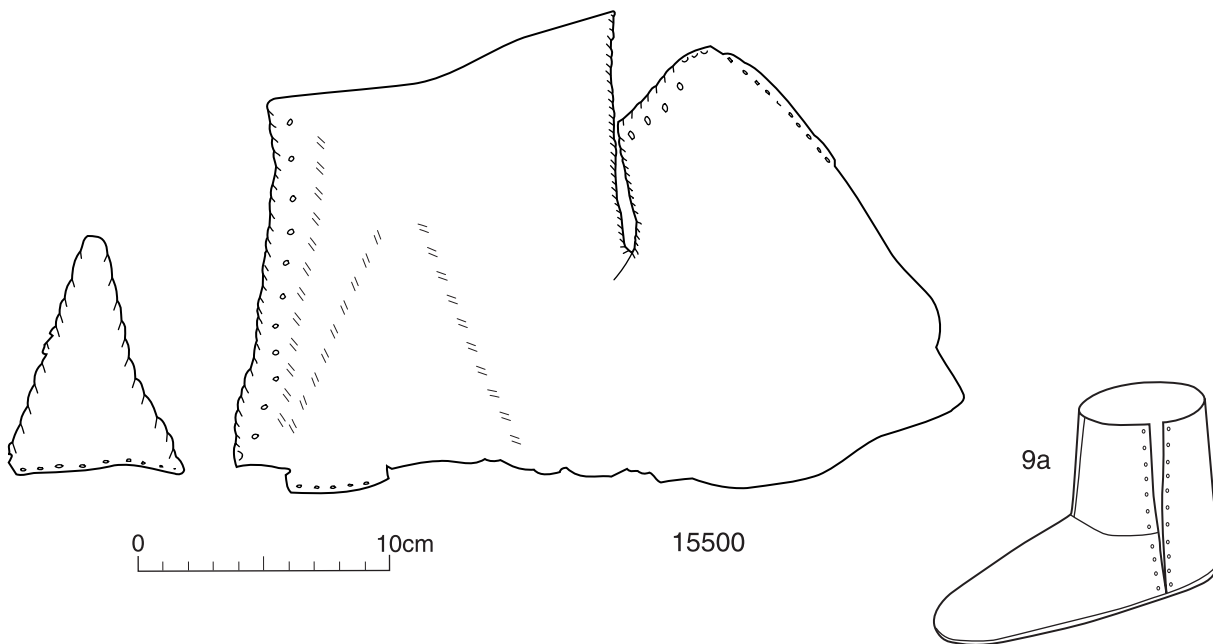


Fig.1663 15500, Style 9a, a boot of one-piece construction lacing at the side. Scale 1:3

/12th-century context, though it is probably intrusive (see below), while the remainder were found in contexts dated to the 14th to 16th centuries. Complete examples had five or seven pairs of lace holes present. The shoes, unusually, laced on the outer side of the foot but one example (15503) appeared to lace on the inner side. The lace holes were strengthened by the addition of a separate lining whip stitched to the interior and heel stiffeners were present at centre back of the quarters. One shoe (15503) had a cord held by whip stitching to the interior of the quarters to strengthen the top edge. Another (15502) was unusual in having a throat insert that carried the top lace hole, and a very low, semi-circular heel stiffener.

Small differences between the individual shoes provided criteria by which their dating could be suggested. The one-piece quarters belonging to three of the shoes (15501–3) were elegantly shaped with high backs dropping to lie beneath the ankle on each side, common to later 14th- and 15th-century shoes. Ankle-boot 15504, however, had features suggestive of a date later than that of the context in which it was found. Indeed, sherds of intrusive pottery were also found in the same context. This ankle-boot was found in 11th-/12th-century dumping in Tenement B, but the sole is of a shape more appropriate to the 14th or 15th century. A double row of blind whip stitching ran down the centre of the vamp to the toe on the

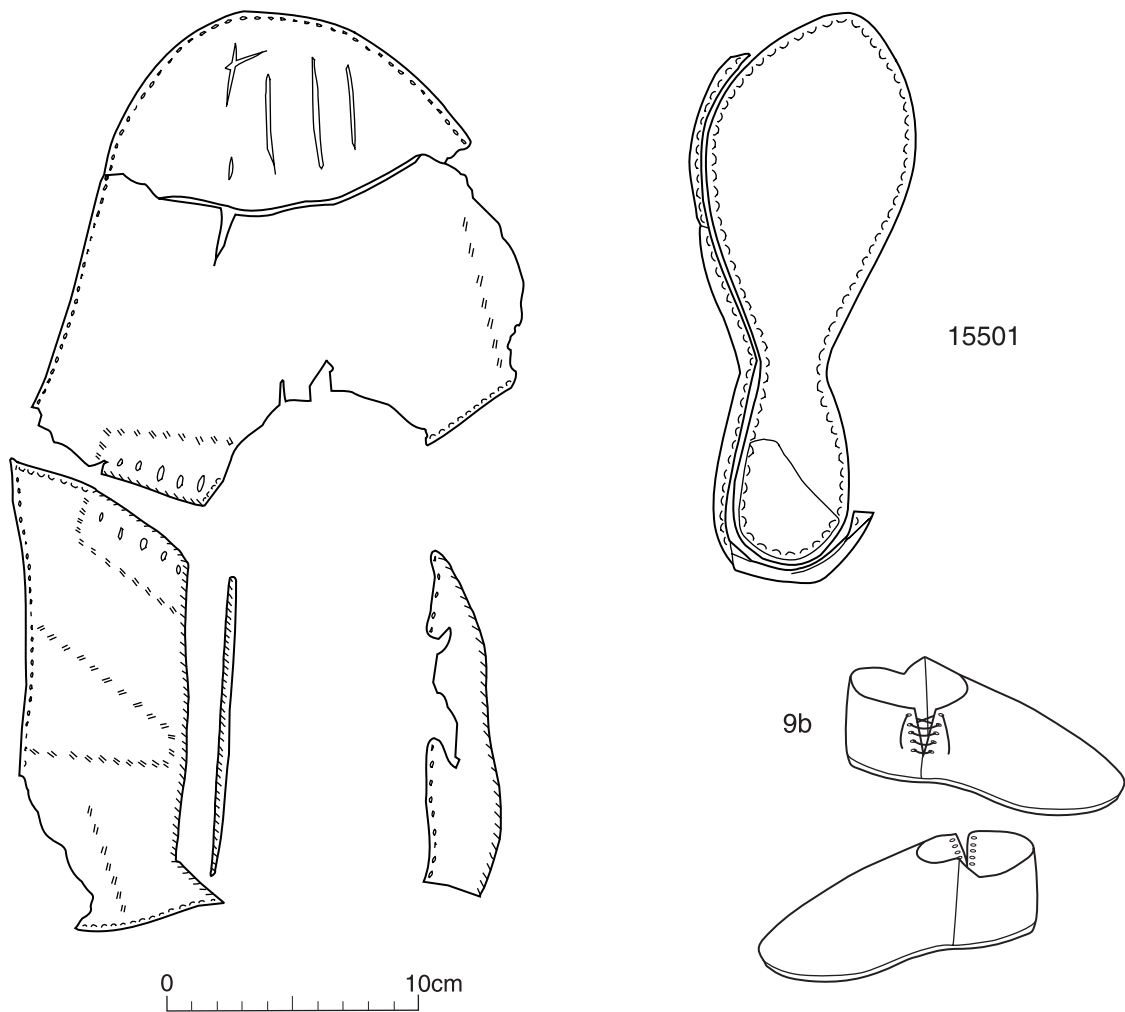
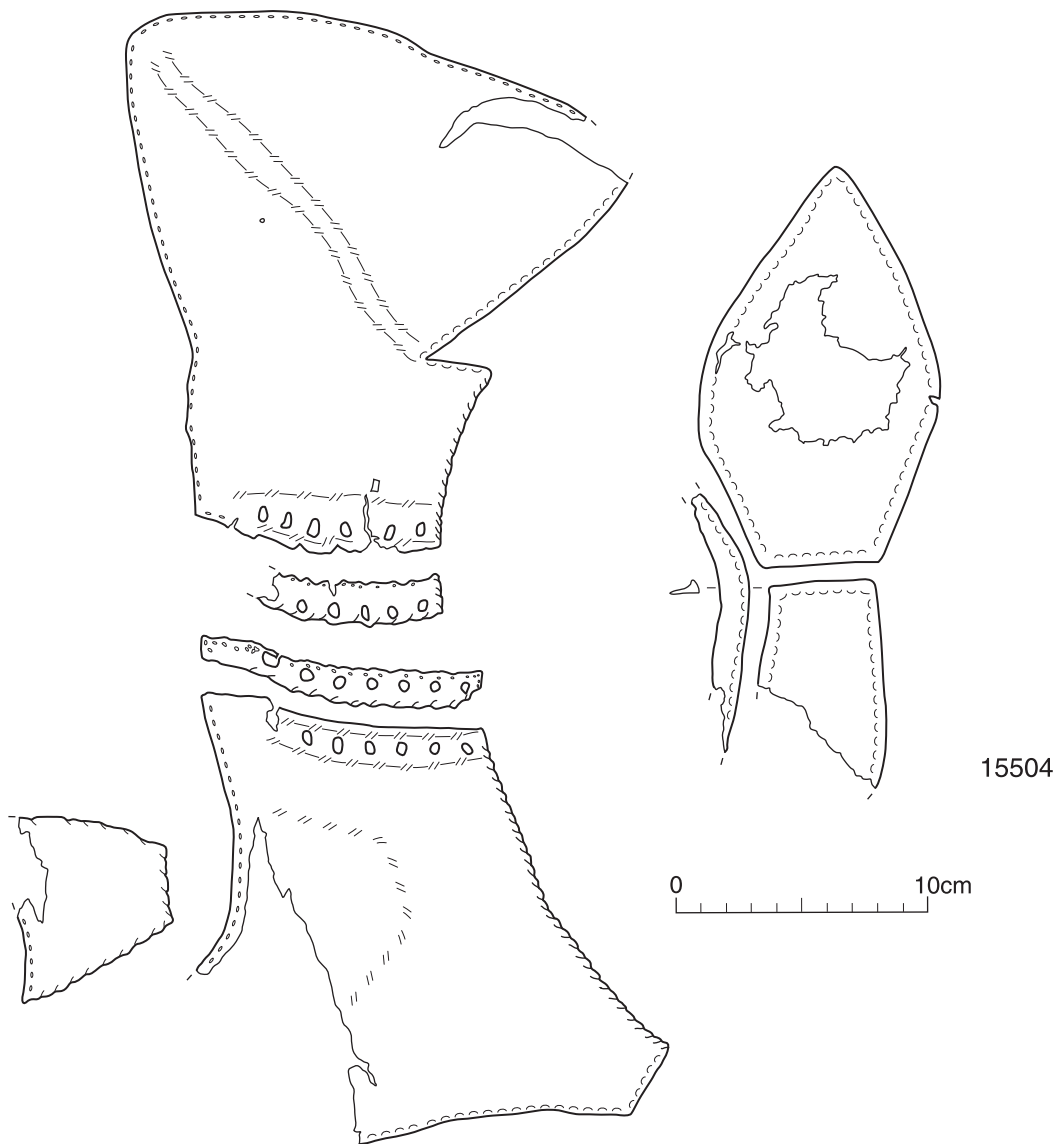


Fig.1664 15501, Style 9b, a shoe of two-piece construction lacing at the side. Scale 1:3



*Fig.1665* 15504, Style 9b, a boot of two-piece construction lacing at the side. Scale 1:3

inside of the shoe. This stitching appeared to have secured a cord or strip, now absent, that created a slight ridge on the outside of the vamp, apparently a decorative feature. Raised ridges running down the centre of vamps have been found elsewhere. Two late medieval examples, likely to date to the mid 15th century, were found at Abbey Wharf, Reading (Mould 1997, 111, fig.64, 20). The vamps of 'kidney boots' in the Coventry Museums collection were also decorated in this way (Thomas 1980, 16, Type 6). A similar feature was found on the vamp of an early 15th-century shoe from London (Grew and de Neergaard 1988, 40, fig.62) where two rows of tunnel stitching

running vertically from throat to toe on the interior produced a decorative 'stepped' appearance.

#### Front-laced footwear of two-piece construction (Style 10)

A shoe (15505, Fig.1666) and the vamp from a boot (15506) of two-piece construction fastening with laces at the front of the foot were found at 16–22 Coppergate. Footwear of one-piece construction fastening with laces at the front of the foot (Style 8d) from contexts of late 14th-/late 15th-century date have been described above. The boot vamp (15506)



was found in an early 15th-century context. The shoe came from a late 13th-century context, but its style and the shape of the sole is of a type more appropriate to the 15th century. As 14th- and 15th-century pottery was found in the same deposit, the shoe is likewise probably intrusive. The vamp of the calfskin shoe (15505, Fig.1666) joined to the one-piece quarters with straight butted side seams. The convex throat had a central opening, with two lace holes on each side. The quarters were cut below the ankle on both sides and rise to a high back, supported on the interior by a tall, narrow, truncated heel stiffener. Whip stitching from the attachment of a strengthening cord was present on the interior, running all the way around the top edge except at the back of the heel, where it would have rubbed on the foot. This

was a common shoe style occurring in many medieval assemblages. In London examples were dated to the mid to late 14th century (Grew and de Neergaard 1988, figs.52–4).

The separate boot vamp (15506) did not have a curved throat; instead, a butted edge/flesh seam ran right up to the central opening on each side. Whip stitching to secure a separate tongue was present along either side of the opening on the interior. There was a single lace hole on each side of the central opening; others may have been carried on the quarters. The corresponding boot quarters were not found. At this date, the quarters may have been of one-piece or two-piece design. A boot from London with a similar vamp, also dated to the early 15th century (Grew

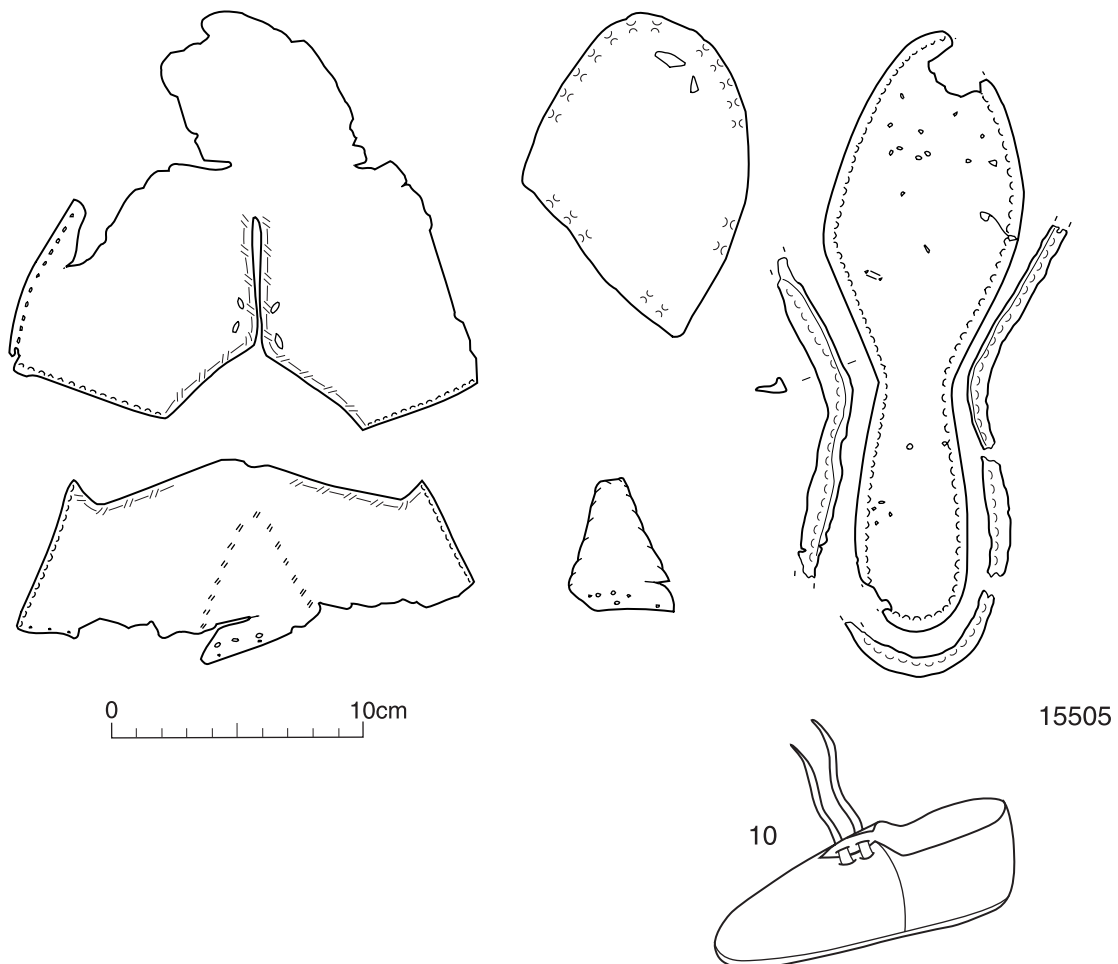


Fig.1666 15505, Style 10, a shoe of two-piece construction lacing at the front. Scale 1:3

and de Neergaard 1988, 42–3, figs.67, 107), had two separate quarters joined with a butted edge/flesh seam at centre back. Like the York vamp, the vamp of the London boot had a pair of fastening holes at the central opening. A second pair of fastening holes was present at the bottom of the front edge of the quarters, suggesting that the boot was only fastened at the instep and, despite the tongue, would have been relatively open at the front of the leg.

### Buckle- or latchet-fastened shoes (Style 11)

A small number of shoes fastened over the instep with either a bifurcated strap (Style 11a) or a buckle and strap (Style 11b) were found. They were of a type apparently popular throughout Europe during the late 14th century. Other shoes of this general style were recognised but were insufficiently well preserved to allow differences in the method of fastening to be distinguished (listed as Style 11- in the catalogue). The uppers comprise a vamp with low-cut wings and a separate one-piece quarters, cut to lie below the ankle bone before rising to a high, curving back. The toes of these shoes, as was fashionable at this period, are usually pointed, often exaggeratedly so, forming poulaines. None of the long toes had survived, however, having been either broken off or deliberately cut away. Moss found stuffing the toe of one shoe vamp (15511, Fig.1667) has been identified as a poorly preserved single shoot of *Thuidium tamariseinum* and a number of shoots of *Rhytidiadelphus* sp. (perhaps

*R. triquetrus*) that might have been brought from woodland, heathland or moorland habitats (Hall and Kenward, Reports from the Environmental Archaeology Unit, York, 99/27). These two mosses were also used to stuff the toes of shoes of the same styles from London, though shoes of similar date from Gloucester were found to be stuffed with a high proportion of riverine mosses (Eddy in Grew and de Neergaard 1988, 88–9).

### Front latchet-fastened shoes (Style 11a)

Two shoes from 16–22 Coppergate could be positively identified as being of front latchet-fastening style. One (15507, Fig.1668) was dated to the late 14th century, the other (15508, Fig.1669) to the early 15th century. Only the vamp of one (15508) and the vamp and latches of the other (15507) are present, so the exact form of the quarters is unknown. In each case the fastening latchet takes the form of a strap bifurcated along most of its length to form two laces. This was joined to the front edge of the inside quarter with a butted edge/flesh seam. The two ends of the split lace tie off through two keyhole-shaped lace holes cut into a second latchet. This latchet was either cut as part of the vamp (15508) or attached to the outside quarter (15507). In the latter case the latches are still tied together and also pass through a slit in the vamp throat, though this is unlikely to have been an original feature.



Fig.1667 15511, Style 11-, with moss stuffing in the toe

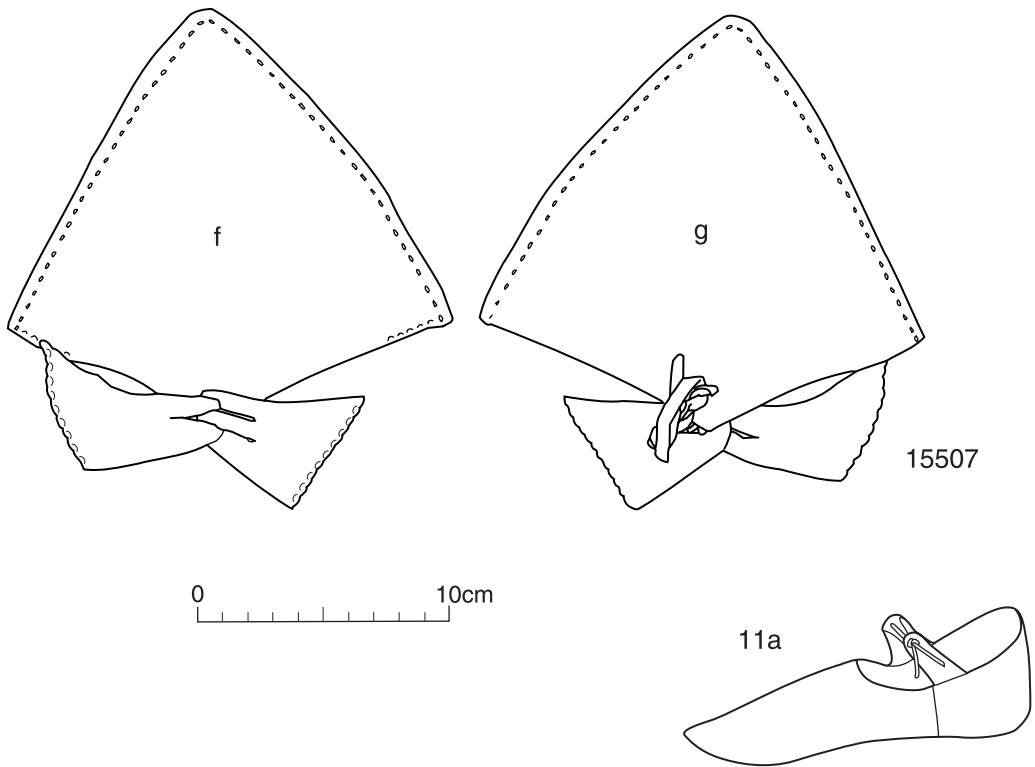


Fig.1668 15507, Style 11a, a front latchet-fastened shoe. Scale 1:3

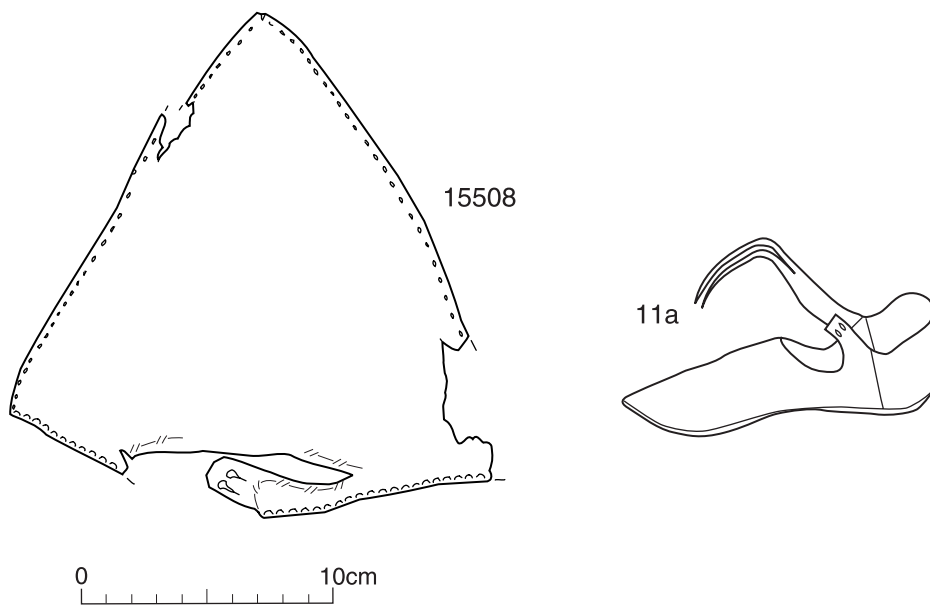
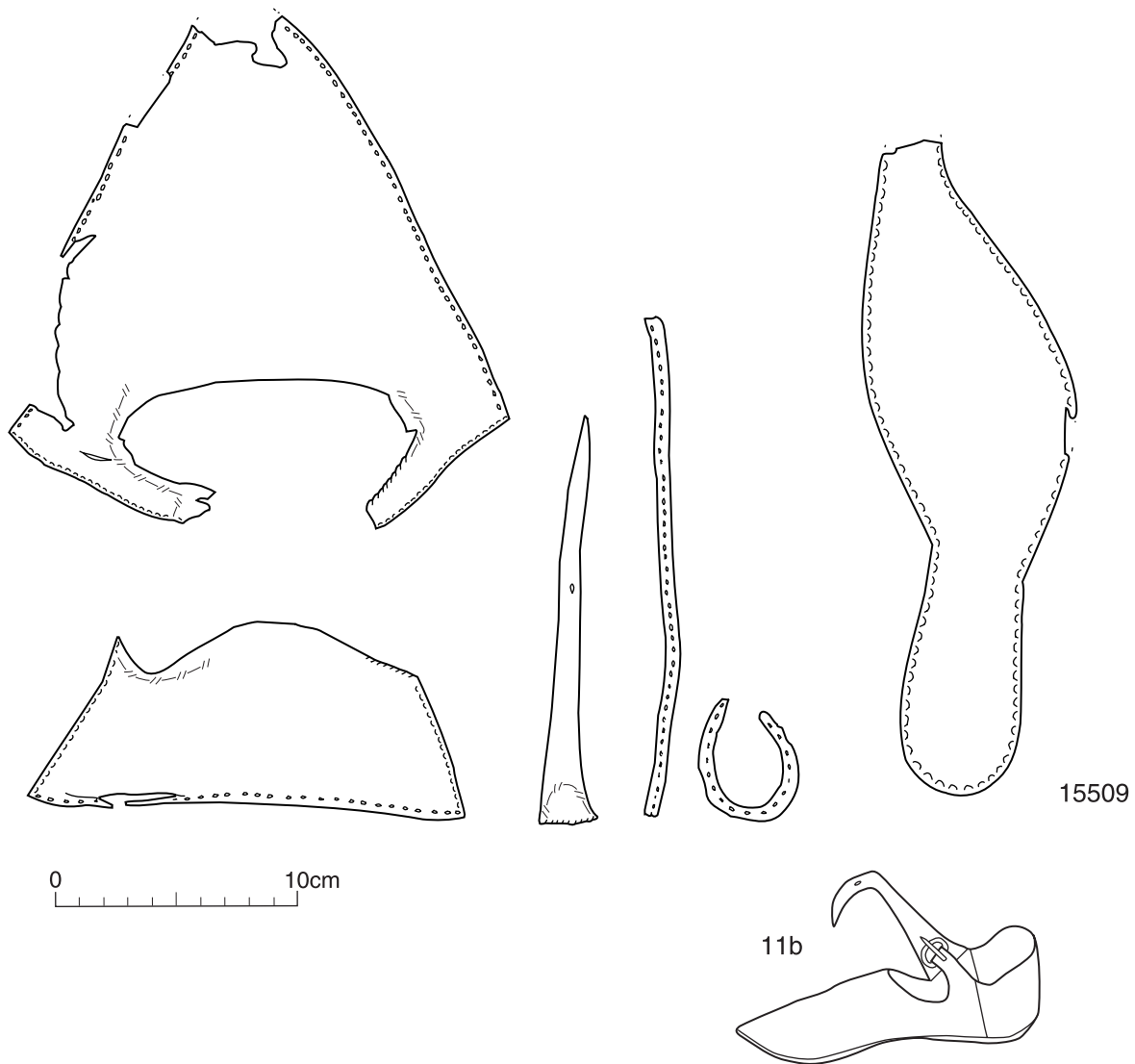


Fig.1669 15508, Style 11a, a front latchet-fastened shoe. Scale 1:3

*Front buckle- and strap-fastened shoes  
(Style 11b)*

Three shoes fastened with a buckle and strap were found at Coppergate in a linear cut dated to the 14th/15th century. The shoes are of similar appearance to the front latchet-fastened shoes (Style 11a) described above, but differ in their method of fastening. A small buckle was mounted on a strap cut as part of the vamp on the outside of the foot. None of the buckles survive attached to the shoes. The fastening strap was attached either to the front of a vertical projection on the inside vamp wing (15509, Fig.1670), or to the front

of the quarter. The sides of the vamp throat were cut low and were originally reinforced by a strengthening cord held by whip stitching to the interior. This cord also ran up the side of the buckle strap and along the top edge of the quarter on that side on one shoe (15509). A similar cord was also present on the other side on another example (15510). These shoes had fashionable, exaggeratedly pointed toes. Shoes fastened with a side latchet (Style 11a) and with a buckle and strap (Style 11b) formed a large component of the late 14th-century footwear assemblage from Baynard's Castle in London (Grew and de Neergard 1988, 29–33, figs.42–5).



*Fig.1670 15509, Style 11b, a front buckle- and strap-fastened shoe. Scale 1:3*

## Shoe sizes

The sites studied in detail provided 220 shoes and separated soles sufficiently complete to allow their size to be measured. This is perhaps a surprisingly small number out of the c.1,140 soles and sole fragments recovered. It supports the interpretation that much of the shoe assemblage represents the disposal of cobbling waste, only discarded when beyond further use, their fragmentary nature also increased by the reworking of some of the deposits.

Modern shoe sizes represent the internal measurement of the shoe inside the upper rather than the length of the sole itself. For this reason the length of the sole covered by the foot was the dimension used in this study and, though this was sometimes subject to distortion, the imprint of the foot could usually be seen clearly. This was considered important in assessing the true size of the shoe's wearer, particularly where the toe was extended, as with the few exaggerated poulaine toes recovered. Absolute figures in millimetres were obtained, and are given in the accompanying catalogue. These measurements have been converted into the equivalent modern English shoe sizes in the tables below as they are more easily compared and understood.

The problem of depositional and post-depositional changes which archaeological leather items undergo is complex and cannot be explored fully here. To summarise, leather may swell slightly when it first becomes waterlogged after deposition, then shrinks during burial. It shrinks further on excavation, during the conservation process and also in subsequent storage. The amount of shrinkage exhibited by a leather object will vary in different directions according to the part of the hide or skin from which it has been cut. It is necessary, therefore, to make some allowance for this. Though an exact level of shrinkage is probably not ascertainable for an ordinary archaeological assemblage due to the number of factors involved, not least the very high degree of accuracy necessary in obtaining the initial measurements (Ibbs 1990), studies have been carried out that provide a reasonable figure with which to work. In 1959, John Thornton began an experiment (Rhodes 1980, 101–2) in which a number of oak-tanned strips were buried in wet soil, to be recovered and analysed after intervals of one, two, four, eight, sixteen, 32, 64 and 128 years. Analysis of those recovered to date

**Table 372** Modern English and Continental shoe sizes

Length (mm)	Modern English size	Continental size
110	Child 1	16½
119	Child 2	18
128	Child 3	19
136	Child 4	20½
144	Child 5	22
153	Child 6	23
161	Child 7	24
170	Child 8	26
178	Child 9	27
187	Child 10	28
195	Child 11	29
204	Child 12	30½
212	Child 13	31½
221	Adult 1	33
229	Adult 2	34
238	Adult 3	35½
246	Adult 4	37
254	Adult 5	38
264	Adult 6	39½
271	Adult 7	41
280	Adult 8	42
288	Adult 9	43
296	Adult 10	44½
305	Adult 11	46
313	Adult 12	47
322	Adult 13	48

suggests that there is an initial period of rapid shrinkage, which then slows down to reach a figure of about 10% total shrinkage. The problem of further shrinkage during conservation has been addressed by a number of researchers, notably Ganiaris et al. (1982) and Panter (1986). The results suggest that the additional reduction in size is around 5%. The majority of the leather from the sites of detailed study at York was conserved by freeze-drying, but a small amount of material from Bedern was conserved by another method (see pp.3215–6) so that a slight difference in the amount of shrinkage experienced may be expected. For the purposes of this study, then, a total shrinkage of 15% has been assumed. This is rather generous but the resulting figures are directly comparable with modern shoe sizes. Actual length measurements have been provided in the accompanying catalogue to allow other workers to calculate the shoe



**Table 373** Shoe measurements expressed in equivalent modern English shoe sizes (with a 15% allowance for shrinkage): child sizes. Numbers include shoes which cannot be attributed to a particular style

C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	Total
1	2	1	–	3	4	5	7	2	3	3	31

**Table 374** Shoe measurements expressed in equivalent modern English shoe sizes (with a 15% allowance for shrinkage): adult sizes. Numbers include shoes which cannot be attributed to a particular style

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	Total
4	9	10	27	15	17	40	22	23	7	10	2	3	189

sizes using their own preferred shrinkage values. It should be remembered, however, that it is unlikely that modern size distributions are a perfect match for Anglo-Scandinavian and medieval ones. The modern size distributions reflect the increased size of the population brought about by the general high standard of nutrition in the second half of the 20th century, and consequently may be up to four sizes larger than historical populations (Grew and de Neergaard 1988, 105). This need not present a problem as it is the relative rather than the absolute figures and the range of sizes that are of interest to us here.

In modern Britain, 90% of the adult population fit into two broad size bands. Men wear shoes of sizes 6 to 11 and women wear sizes 4 to 8. Though Anglo-Scandinavian and medieval distributions at York may not exactly match this pattern, certain similarities may be expected. There is likely to be a peak where male and female sizes overlap at sizes 6 to 8, and a further such peak is expected at size 4, where female sizes overlap with those of juveniles. It can be seen from Table 374 that both of these peaks do indeed occur, though the range of the male/female overlap seems to be a size higher (sizes 7–9, rather than 6–8).

**Table 375** Sizes of shoe found in each shoe style (including a 15% allowance for shrinkage): child sizes

	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	Total
<b>Style</b>												
2	–	–	–	–	–	–	–	–	–	–	2	2
3a2	1	–	–	–	–	–	1	–	–	–	–	2
3a4	–	–	–	–	–	–	–	–	1	–	–	1
3b1	–	–	–	–	–	–	1	–	–	–	–	1
3b2	–	–	–	–	–	–	1	–	–	–	–	1
3b3	–	1	1	–	–	–	–	–	–	1	–	3
4a1	–	–	–	–	–	–	–	1	–	–	–	1
7a	–	–	–	–	1	–	–	–	–	–	–	1
7b	–	–	–	–	–	–	–	1	–	–	–	1
8b	–	–	–	–	1	–	1	–	–	–	–	2
<b>Total</b>	1	1	1	–	2	–	4	2	1	1	2	15

**Table 376** Sizes of shoe found in each shoe style (including a 15% allowance for shrinkage): adult sizes

	A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	Total
<b>Style</b>														
1	–	–	–	–	–	–	–	–	–	–	–	–	1	1
2	–	1	1	5	4	1	3	1	–	–	–	–	–	16
3	–	1	–	–	–	–	–	–	–	–	–	–	–	1
3a2	–	–	–	–	1	–	–	–	–	–	–	–	–	1
3b	–	–	–	–	–	–	2	–	–	–	–	–	–	2
3b1	–	1	–	1	–	1	1	1	1	1	–	–	–	7
3b2	–	1	–	–	–	–	–	–	–	–	–	–	–	1
3b3	–	–	–	1	–	1	–	–	–	–	–	–	–	2
3b4	1	–	–	–	–	–	1	–	–	–	–	–	–	2
4a1	–	–	–	–	–	–	1	–	–	–	–	–	–	1
4a3	–	1	–	1	2	–	1	–	–	–	–	–	–	5
4a4	–	–	–	1	–	1	1	–	–	–	–	–	–	3
7	–	–	–	–	–	1	1	–	–	–	–	–	–	2
7a	–	–	–	–	–	–	1	–	–	–	–	–	–	1
7b	–	1	1	1	–	1	–	1	2	–	–	–	–	7
7b/c3	–	–	–	–	–	–	1	–	1	–	1	–	–	3
7c	–	–	–	–	–	–	1	–	–	–	–	–	–	1
8	–	–	1	–	–	–	–	–	–	–	–	–	–	1
8c	–	–	–	–	–	1	–	–	–	–	–	–	–	1
9	–	–	–	–	1	–	–	–	–	–	–	–	–	1
9b	–	–	–	2	–	–	1	–	–	–	–	–	–	3
10	–	–	–	–	–	1	–	–	–	–	–	–	–	1
11b1	–	–	–	–	–	–	1	–	–	–	–	–	–	1
11b2	–	–	–	–	1	–	–	1	–	–	–	–	–	2
<b>Total</b>	<b>1</b>	<b>6</b>	<b>3</b>	<b>12</b>	<b>9</b>	<b>8</b>	<b>16</b>	<b>4</b>	<b>4</b>	<b>1</b>	<b>1</b>	<b>–</b>	<b>1</b>	<b>66</b>

While this may be a genuine feature of the distribution, it is perhaps more likely to be due to the imprecise shrinkage figure of 15%. This may also be the case with the very large adult sizes 12 and 13 recorded. It is worth noting that one of the adult size 13 shoes is made of a single sheet of leather, having a ‘foot print’ difficult to measure. This highlights the problems of applying a blanket percentage to the whole assemblage.

It will be apparent from Tables 375–6 that while 81 shoes of recognisable style were measurable, they were spread across almost all of the shoe styles represented and occurred in a wide range of sizes. This has resulted in there being, usually, only a few of each style present, which has made drawing any meaningful conclusions difficult. In spite of this, a few (admittedly tenuous) observations were possible when the individual variations of style were grouped together and considered in broader style groups.

### Children’s shoes

There were 31 children’s shoes from a total of 220 measurable shoes recovered, 14% of the whole assemblage. It is clear from Table 373 that some children were certainly shod in Anglo-Scandinavian and medieval York. More interestingly, some of those children wore shoes from a very young age, apparently as soon as they could walk, a phenomenon also noted in the medieval London assemblages (Grew and de Neergaard 1988, 105). The smallest example recovered at York, a shoe with a sole with a heel extension and a one-piece upper and drawstring fastening (Style 3a2 15400) found occurring residually in an early 15th-century context, was of a child size 3. Two other examples of similar style fastening with a drawstring stitched to the throat (Style 3b3) occurred in child size 4 or 4/5 (15412; 15416).

Only fifteen measurable shoes of child’s size could be attributed to a particular shoe style. Five main

styles were recognised (see Table 375). They principally comprised shoes and ankle-boots with one-piece uppers with a single side seam (Style 3), and shoes and ankle-boots with one-piece uppers (Style 7), often fastening with a drawstring. These shoe styles are of fundamentally similar design. Two low-cut slip-on shoes (Style 2), a single example of a flap-and toggle-fastening shoe (Style 4a1) and two boots fastening with toggles at the centre front (Style 8b) also occurred. All the styles found in the equivalent modern child's shoe sizes, with the exception of the two front toggle-fastening boots (Style 8b), also occurred in adult sizes so that it was not possible to

relate any particular style exclusively to children. The small number of measurable shoes under discussion also means that the occurrence of children's sizes in any of the other styles cannot be precluded.

### Attributing shoe styles to gender (Fig.1671)

Regrettably, the number of measurable shoes occurring within each shoe style was low so that it would be unwise to suggest that any particular style could be associated with men, women or children from this alone. Some tentative suggestions are made here as, though small in population size, the data

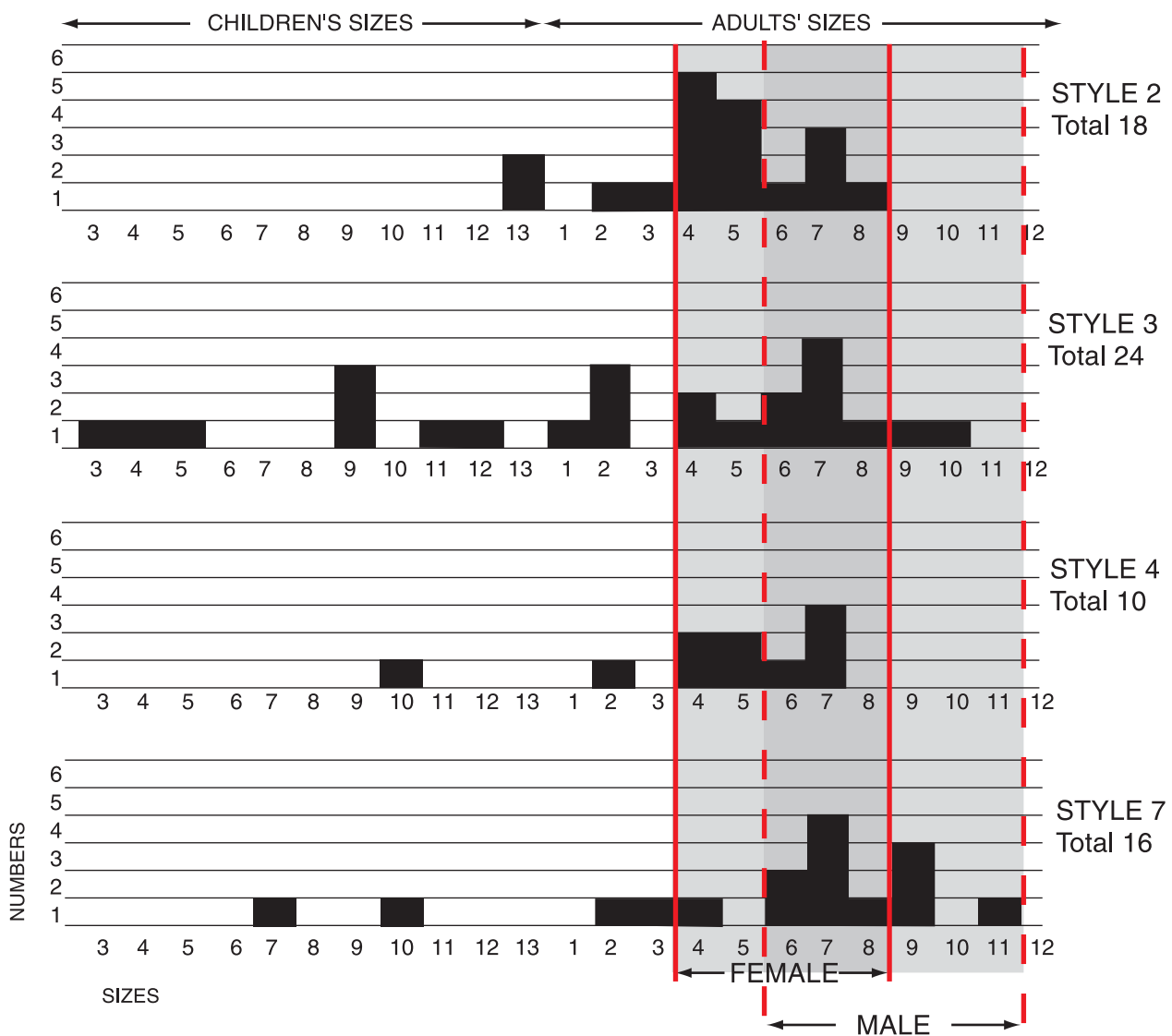


Fig.1671 Number of measurable shoes of Styles 2, 3, 4 and 7 occurring in sizes worn by children, males and females (allowing 15% for shrinkage)

provided in the catalogue may be added to that available in the future and allow better informed statements to be made by others.

Many of the shoe styles were spread over adult sizes 3 to 8, with a scattering of children's sizes, suggesting that they were worn by both genders. The low slip-on shoes (Style 2), however, show a marked difference to this trend. Of the eighteen measurable examples, four were in sizes C13–A3 and fourteen in sizes A4–A8. As the larger end of the female size range overlaps with the smaller end of the male size range all the shoes of this type could be considered to lie within the women's and children's size ranges. No examples were found in the larger male sizes and it appears from the, admittedly limited, evidence to be a predominantly female style. The flap- and toggle-fastening ankle-boots (Style 4) share a similar size range: of the ten measurable examples all could be considered to lie in the children's and women's size ranges, two in sizes C10–A2 and eight in sizes A4–7. Shoes with one-piece uppers joining with a single side seam (Style 3) appear to have been worn by everyone; the 24 measurable examples were evenly distributed between the children's, women's and men's sizes, twelve occurring in sizes C3–A2, ten in sizes A4–A8 and two in sizes A9–A10. Similarly the one-piece ankle-boots (Style 7) were distributed over children's, women's and men's sizes; of sixteen measurable examples, four occurred in sizes C7–A3, eight in sizes A4–A8 and four in sizes A9–A11. As this was by far the predominant shoe type worn during the 12th century this does not come as a surprise. The only three examples of boots fastening with a drawstring secured via vertical thongs (Style 7b/c3) all occurred in male sizes (A7–A11).

The numbers of measurable shoes occurring in recognisable styles amongst the medieval London shoe assemblages were also relatively low and insufficient to allow specifically female and male types to be distinguished (Grew and de Neergaard 1988, 103). Some tentative suggestions were made that side-lacing shoes of 13th-century date, and the latchet- and buckle-fastened shoes of late 14th-century date were worn by men. At York the very small quantities of measurable shoes of these two styles (Style 9b and 11 respectively) do not appear to support this. The three side-lacing shoes occurred within the female size range (one fell into the larger female/smaller male size overlap). The three buckle- and

latchet-fastened shoes also occurred within the female size range, though two were placed in the female/male size overlap.

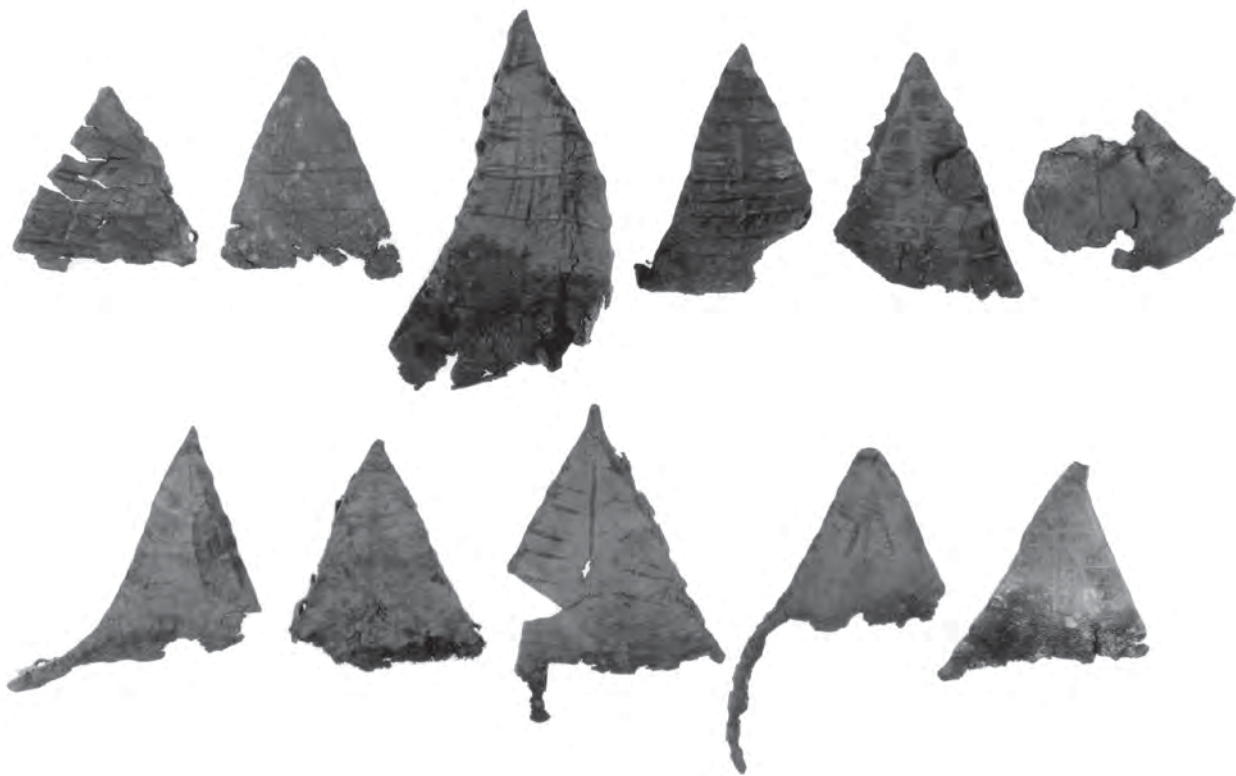
### *Footwear decoration*

Seventy-four shoes exhibited some form of decoration. Impressed linear designs were most common, with 39 examples, occurring principally on the heel-risers of Anglo-Scandinavian shoes. Embroidery was also well represented, 25 finds having decorative stitching on the vamp or top band. Other forms of decoration occurred more rarely. One 12th-century ankle-shoe has a design scraped into the outer surface of the uppers, while another has a similar design incised into the leather. Some shoes displayed features that may have had a decorative as well as a practical function.

### **Impressed decoration**

Thirty-nine shoes had been decorated by having a design pressed into the dampened leather with a blunt point, a technique known as tooling and commonly used on knife sheaths and other decorated leatherwork. The tool used may have been of metal, perhaps a heavily worn awl, but could equally have been of wood, bone or antler.

The shoes were of Anglo-Scandinavian date, occurring in contexts dating from the mid 10th through to the early/mid 11th century (Periods 4B to 5B) at 16–22 Coppergate. Each was decorated on the triangular heel extension of the sole (heel-riser) with an impressed linear motif, often crudely executed. Shoes of differing upper styles, low-cut slip-on shoes (Style 2), shoes with one-piece uppers joining with a side seam (Style 3, Fig. 1631) and flap- and toggle-fastened shoes (Style 4), were decorated in this way. The decoration would be unseen by the wearer, being only visible from behind, and seen to best advantage only when the wearer was kneeling. It is possible that the crude impressions served as some form of maker's mark. Decorated heel-risers have also been found on shoes from Fishamble Street, Dublin, and the tooling is not limited to the linear designs seen at York (Pat Reid, pers. comm.). The decorated counters at the back of the heel of shoes from Iona, dating to the late 6th–early 7th century (Groenman-van Waateringe 1981, figs. 22, 24), and the decorated heels of the one-piece shoes from Ireland (Type 1 Lucas 1956, 368, fig. 4) are also brought to mind here. The simply



*Fig.1672 Tooled decoration on shoe sole heel extensions (grain view)*

decorated heel-risers from York and elsewhere may represent the end of this tradition for ornament at the back of the shoe.

The decorated heel-risers display a number of variations on a basic linear decorative theme. Some of the motifs employed are shown in Fig.1672. At its most basic, the design is simply a series of horizontal parallel lines (15534), or such lines with the addition of diagonals running down from one side (15528). Slightly more complicated, and the most common, is the horizontal and vertical hatched design seen on a number of soles including 15373 and 15441. A variation has paired verticals and horizontals (15532). A common feature is a central, vertical line running up to the point of the heel-riser. 15526 and 15531 have this, with horizontal transverse lines running across the width. 15525 has the central line with diagonals running up from it to the edges, while 15537 has the diagonals running downward from the centre. 15362 has the central line, with both horizontal lines and diagonals running upward, while 15529 is similar, but with diagonals from one side only, run-

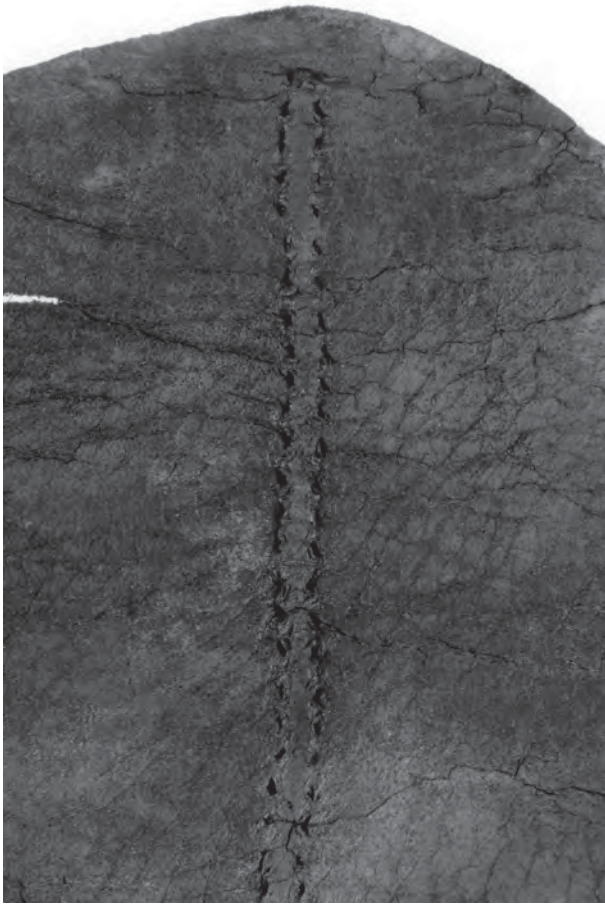
ning across the full width. 15535 has the central line crossed with diagonal hatching. Heel-riser 15446 has two additional lines running parallel to each edge, meeting the central line at the point of the heel-riser. A similar example, 15433 has all three of these lines, plus the remnants of two diagonal lines, while on 15533 they are crossed by horizontals.

In addition, a fragment of shoe upper (15530) had three parallel impressed lines that may have formed part of a decorative device, but the fragment is too torn to be certain.

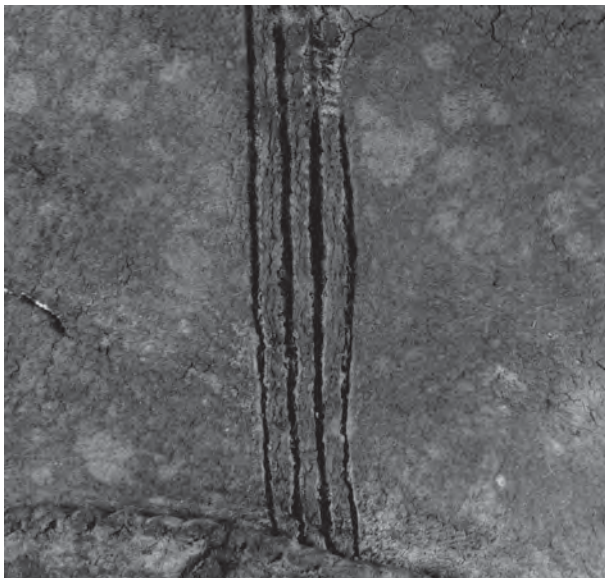
### **Embroidery**

Twenty-five shoes have been decorated with embroidery. Most commonly, the decoration is in the form of a vamp stripe, a stitched band running down the vamp from throat to toe. The majority of the decorative vamp stripes occurred on ankle-shoes or boots closed by flaps at the throat (Style 7), commonly worn from the late 11th to the early 13th century. This date range for the popularity of the vamp stripe at York is supported by the well-dated material from





**Fig.1673** 15524, showing a single line of tunnel stitching for a vamp stripe



London (Pritchard 1991, 77–9). Shoes with this decoration have been found in major urban centres throughout England (*ibid.*, 79) and the rest of Europe.

Occasional examples of vamp stripes were found on footwear of earlier date. The decorative device was seen on a fragment of calfskin upper with a distinctive throat reaching close to the lasting margin (15453, Fig.1647) recovered from a Period 3 context in Tenement C at 16–22 Coppergate. A second decorated vamp of this early date was also recovered (15524). Vamp stripes also occurred on fragmentary uppers lacking diagnostic features to allow the shoe styles to be identified.

The decorative stripe running down the vamp may have its origin in shoes with a central toe seam. Shoes with a central toe seam made from a single



**Fig.1674** Two examples of three rows of stitching between scored lines for a vamp stripe

piece of leather (Style 1, 15353–4, Figs.1598–600) and with a separate sole and uppers (Style 2, 15358, Fig.1608) have also been found at 16–22 Coppergate. It is possible that this constructional seam may have evolved into a decorative feature. A good example of this can be seen on a late 11th-/early 12th-century ankle-shoe from London (Pritchard in Grew and de Neergaard 1988, 77–8, fig.112a–b).

The majority of the stripes occur on uncut vamps. The simplest vamp stripe using a single row of paired, grain surface, tunnel stitch holes was seen on a boot from 16–22 Coppergate (15459, Fig.1649) and an ankle-shoe from 22 Piccadilly (15849). Another single-row vamp stripe from 22 Piccadilly (15855) had apparently been executed by pinching the leather into a ridge and over stitching it with grain/flesh stitches. It is assumed that a needle was used rather than a bristle, although the holes may have been pierced with a fine awl before stitching. The stitches employed are discussed by Penelope Walton Rogers below.

The more common technique was to prepare the vamp with two or more lines, incised into the grain surface of the leather. The tunnel stitching then passed more easily through the resulting strip in the middle. One vamp, 15524 (Fig.1673), had a single row of stitching executed in this way, but a stripe comprising three rows of stitching was the most common variation. This required four incised lines to be made prior to stitching. Several shoes have these three-row stripes (Fig.1674) including 15461, 15472 and 15541–2 from Coppergate and 15883 from the College of Vicars Choral.

Several top bands are decorated in the same way. Single rows of stitching were found, as seen on an ankle-shoe (Style 7b1 15465) from Coppergate, while other top bands were ornamented by double (15540, Fig.1675) or triple (15543, Fig.1676) rows of embroidery. The top bands had been prepared in the same manner as the vamp stripes, with linear incisions for ease of stitching. Other decorative features seen on top bands are described below. None of the stitching survived in the vamp stripes, but two top bands retained their original yarn (see Figs.1675–6).

### The needlework on two shoe top bands

By Penelope Walton Rogers, Textile Research, York (UK)

The decorative needlework in the top bands from Coppergate is worked in a silk yarn, used without twist in the unstratified band, 15543, and with a Z-twist in the 12th-/13th-century example, 15540. In both cases, parallel lines have been cut into the grain surface and the silk yarn runs between the score lines, so that it picks up only the top layer of the leather. Two rows of cross stitch in undyed yarn have been used in 15540 (Fig.1675), and in 15543 there are three rows of sloping over stitching (in the context of leatherwork, called satin stitch), the middle row pink, the outer rows undyed (Fig.1676; pp.409–10, Fig.170, AY 17/5).

Embroidered shoes were worn through much of Europe in the 12th and 13th centuries. The most elaborate examples were worn by high-ranking members of the Church, as can be seen in the shoe of Saint Desiderius at Delémont, Switzerland (Schmedding

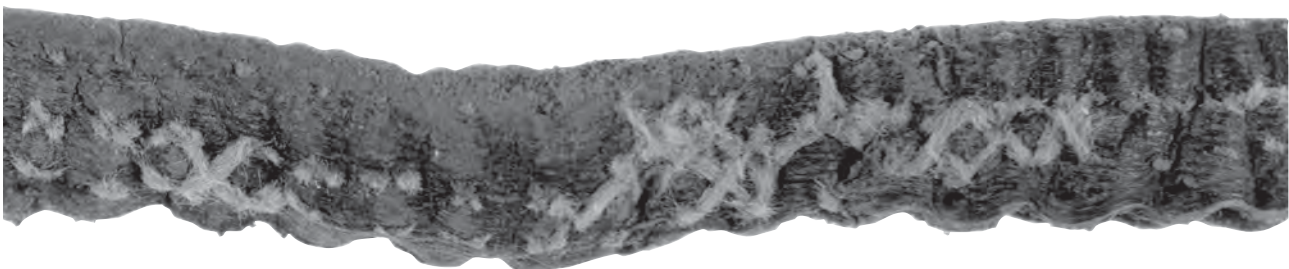


Fig.1675 Top band 15540, with double row of silk embroidery between scored lines





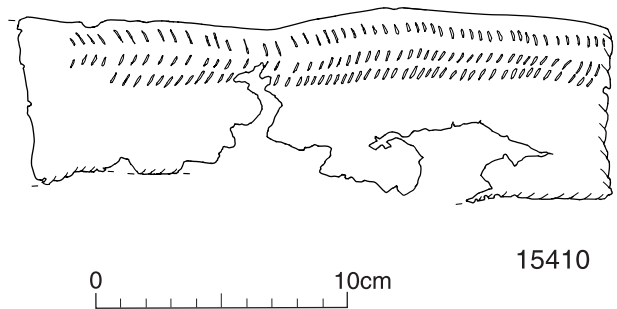
*Fig.1676* Top band 15543, with triple row of silk embroidery between scored lines

1978, 100), but similar forms were worn by more ordinary citizens. A front vamp stripe, running from toe to throat, was the earliest and most common form of decoration (Pritchard 1988), although, by the later 12th century, embroidery was commonly applied around the throat, across the instep, or diagonally over the wing (Raknes Pedersen 1992). Three types of stitch were regularly used, satin, cross and raised herringbone (also known as plait stitch). The use of incised lines as a base for these stitches can be seen throughout Scandinavia (*ibid.*), and in four late 12th-century shoes from London (Pritchard 1988), while scored lines from which the sewing yarn has decayed have been found on uppers from several other English sites, including Beverley and Durham (Atkinson and Foreman 1992, 177–8). In Eastern Europe, the silk was sewn directly on to the leather, without score lines, and the same is true of some of the 12th-century London shoes (Pritchard 1988). The largest collection of embroidered shoes to be published so far is that from Bergen, Norway (Raknes Pedersen 1992), and there are six examples from Perth High Street (Thomas and Bogdan forthcoming). The Bergen shoes belong to the period 1170–1248 and, from comparison with other smaller collections, this seems to be the main period of use of silk embroidery worked between scored lines, of the type recovered from Coppergate.

## Other decorative features on top bands

### Decorative thonging

Shoe top bands were found displaying a number of other decorative techniques in addition to the embroidered decoration described above. A wide top band of sheep/goatskin (15410, Fig.1677), found in a context dating to c.975–early/mid 11th century, had been decorated with three lines of small, vertical, closely spaced slits that may have held decorative running or slanted thong rather than thread. Another example with three rows of slits was found at Parliament



*Fig.1677* Top band 15410 with rows of slits for decorative thonging

Street, York (p.254, Fig.117, 859, AY 17/4, there described as a belt). It is comparable in other respects to other wide top bands from 11th-century ankle-boots from London (Pritchard 1991, 237, fig.2.122, 353–4) which had been sewn with coloured thread.

It is perhaps worth remembering here the occurrence of very fine vertical slits running along the top edge of a small number of shoes of one-piece construction with a single side seam (Styles 3a2 and 3b2). The impressions of thread or a fine running thong are visible passing between the slits. For the most part these shoes are represented by small fragments (for example, 15408, Fig.1626). It is difficult to be certain, with so little surviving, whether the slits held a decorative thread or thong, or a functioning thong or lace by which the top edge of the shoe was gathered and held around the foot.

### Use of the flesh side

Six of the Anglo-Scandinavian flap- and toggle-fastened ankle-shoes (Style 4a4) had top bands that were fitted flesh side outward (e.g. 15444, Fig.1645; 15447, Fig.1644). In fact, only one (15443) of the shoes of this style fastening with toggles and flaps formed from top bands had the top band attached with the grain face outward, strongly suggesting that this was actually a standard feature for this particular stylistic variation. It was also noted on a low-cut slip-on shoe of Style 2 (15359, Fig.1607). The use of the flesh

side of the leather would have provided a contrasting suede effect to the smooth grain of the uppers, and must be considered a decorative feature. Of course, top bands are, in themselves, decorative, particularly the embroidered examples (see pp.3343–4), but in these types they are primarily functional parts of the construction of the shoe.

### Scraped and incised decoration

A heavily repaired shoe (15388) with a one-piece upper joining with a single side seam (Style 3b1) from a mid 10th-century context was notable in having a crude six-pointed star or asterisk incised on the vamp wing alongside the seam. The mark, formed by three crossing lines, has the appearance of an ownership mark rather than decoration. Two shoes are decorated over most of their surface. A child's ankle-shoe of Style 7 (15457) of mid 12th-century date, has had a design applied on to it by lightly scraping back the grain surface. The design is essentially linear, incorporating straight and wavy lines, in addition to hatching (Fig.1678). Another child's shoe of the same style (15483) also has linear decoration over most of its surface (Fig.1679) lightly incised into the leather.

### Possible decorative cut-outs

A small number of ankle-shoes and boots of Style 7 displayed what may be interpreted as a decorative feature, although the recovery of a complete example

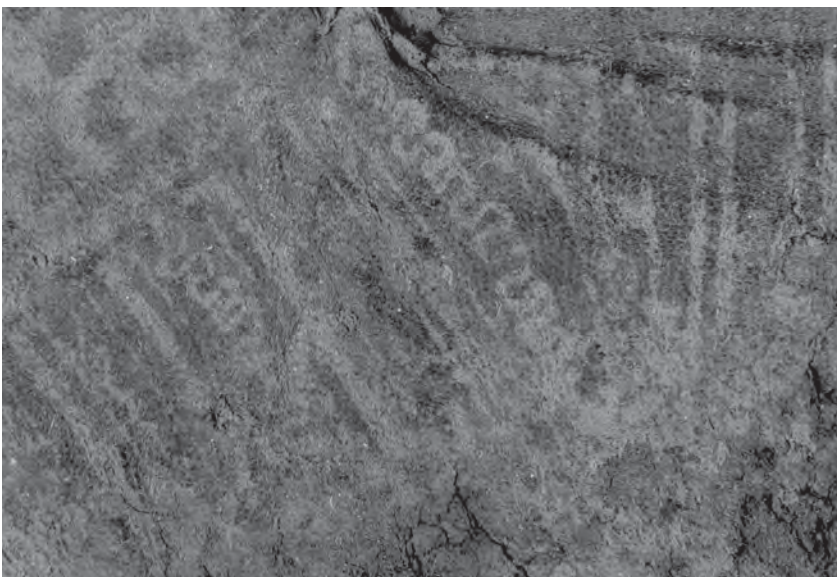


Fig.1678 Detail of 15457, with lightly scraped decoration





*Fig.1679* Detail of 15483, with scraped decoration

suggests it is more likely to be the result of repair. These ankle-shoes and boots have small holes cut out of the quarters, the hole having a butted edge/flesh seam around the edge. One such ankle-shoe (15493), comes from a 12th-/13th-century context; another of Style 7c1 (15475), of mid-late 11th-century date, has a 30 × 25mm rectangular hole cut out of the inside quarter between two pairs of drawstring slits. A complete front flap-fastened ankle-shoe of Style 7b1 (15468, Fig.1651, p.3317) and a boot fastening with a drawstring passing through vertical thonged loops (15489, Fig.1655, p.3322) also have a hole cut out of the quarter. In these cases, however, the holes have been patched by stitching a piece of leather of the exact size into place using a butted edge/flesh seam. It is likely that this is simply a repair or a method of disguising the use of poor-quality leather. The recovery of the small patch fitting into the cut-out hole on these examples suggests that the shoes now lacking such a patch were also originally repaired in this way.

Shoes with similar small holes in their uppers have been noted in other assemblages, for example an early 12th-century ankle-boot from Seal House, London (Pritchard 1991, 232, 235, fig.3.120, 342). This ankle-boot lacked an accompanying small patch to fill the hole and, consequently, the hole cut out from

the outside quarter at the ankle was thought to have been a decorative device to show off the coloured hose worn beneath.

### Openwork decoration

It was notable that no examples of footwear with openwork decoration were found at York. Medieval shoes with decorative openwork uppers have been found at other urban centres, the earliest from London dating to the first half of the 13th century and continuing through to the early/mid 15th century (Grew and de Neergaard 1988, 79–83, figs.115–17). These represent the more expensive, high fashion shoes. Shoes of this later medieval date are rather poorly represented in the York assemblages under consideration here and it suggests that the footwear of the upper strata of later medieval York society has not been recovered so far.

### *Refurbishment and repair*

In shoes of Anglo-Scandinavian and medieval date, the foot rested on a single thickness of leather so that, in comparison with modern footwear, the sole was more prone to wear and damage, and probably wore out relatively rapidly. Worn shoes were taken back to the shoe-maker (cordwainer) for repair. To-



day cobbling is generally regarded as the shoe repair trade; historically, however, cobblers were shoe refurbishers.

John de Garlande, in his *Dictionarius*, written sometime between 1218 and 1229, set out the differences between the two trades that he observed in Paris:

*Pictaciarum viles sunt, qui consuunt sotulares veteres, renovando pictacia, et intercucia, et soleas, et inpedeas. Allutarii sunt qui faciunt calciamenta de alluta, et prosunt civitati Parisius; qui conservant sibi forumpedias equitibialia, et spatulas.*

‘There are cheap cobblers who stitch together old shoe soles, renovating the patches on shoes and the welts and the soles and the uppers. There are leatherworkers who make boots of dressed leather, and they are beneficial to the citizens of Paris; they maintain for themselves a market for walking shoes, stirrup leathers, and shoulder-straps’ (*Dictionarius*, 26–7).

Though brief, the difference between the two trades and their social standing is clear. In the medieval period the cobbler dealt in old shoes, refurbishing, remaking and repairing them, before selling them on. Disputes between the two trades were common, chiefly regarding the extent to which the cobbler could repair footwear and restricting the amount of new leather he used to that of clump repairs (Grew and de Neergaard 1988, 89 after Mander 1931, 56). It may be possible that the work of the two separate

trades can be seen represented in the assemblage from 16–22 Coppergate.

## Types of repair

### Clump repairs

The most common repair undertaken was to patch a worn area of shoe sole with an additional piece of leather, a clump. The toe-tread area and the seat received the greatest wear and clumps were frequently stitched to the underside of the sole in those areas. Earlier clumps were often rather crudely thonged to the sole but throughout the medieval period tunnel stitching was employed. A coarse tunnel stitch was used, left loose to allow access for the fingers until stitching was complete when the loose thread was pulled tight to draw the clump against the sole.

The clump was often wider than the sole, in which case it was stitched to the uppers at the sides. Eventually, clumps began to be stitched to soles before any wear had taken place, presumably because they were more easily replaced than a worn sole. A front-laced shoe from Coppergate (15505, Fig.1666) has a wide rand with tunnel stitches to attach a clump repair and may be one such shoe. During the 15th century, these additional clumps developed into a full outer sole, stitched to the widened rand: the turn-welt construction (construction Type 4, see Fig.1592, p.3269).

Some of these clump soles were found separately, but many were associated with the shoe they repaired and are also entered in Tables 378–9.

It is apparent from Table 377 that during the Anglo-Scandinavian periods, the incidence of clump soles is around 6% of the total number of shoe finds, while in the medieval period it is much higher, at almost 22%. These figures are compatible with those showing the incidence of repair as shown from other evidence of repair stitching, given below. It would appear that footwear was more likely to be repaired with clump soles after the Conquest. This may be due to a number of factors, not least the establishment of a regulated cobbling trade in the medieval period, which may not have existed earlier.

### Replacing soles

The alternative way of repairing a worn sole is simply to replace it with a new one. The replacement

**Table 377** The number of clump repair pieces found at 16–22 Coppergate by period and the percentage of total shoe finds they represent

Period	Clumps	% of shoe finds
3	–	–
4A	–	–
4B	25	5.9
5A	5	5.3
5B	14	5.9
5C	6	16.2
6	177	21.6
Totals	227	13.0

of a worn sole using the same stitch holes in the uppers is undetectable in the archaeological record. Where individual areas of sole have been replaced this can be seen. The occurrence of two or more part soles with the individual components joined with a butted edge/flesh seam is interpreted as being the result of such repairs. Fifty-eight soles are in two or even three pieces. Two-piece soles have a butted seam across the waist, and have probably had a worn heel area replaced with a new seat fitted to an otherwise sound sole. Three-piece soles are less common, and have an extra piece at the toe, another area of wear. An 11th-/12th-century sole (15466) from Coppergate shows an obvious seat replacement. The seat is out of line with the rest of the sole and suggests that such repairs were not always competently done. This type of repair was undertaken by the shoe-maker rather than the cobbler. A present day maker of authentic historical footwear suggests that it was achieved by the shoe being first soaked in warm water to aid flexibility, turned inside out and the sole cut from the upper, the upper was re-lasted and the new sole, or part sole, sewn in place and the shoe re-turned (Mark Beabey, pers. comm.).

### Lasting margin repairs

Another common problem was that the stitching between the sole and the uppers (the lasting seam) underwent a lot of stress and tended to break. These gapes would usually be repaired by restitching through the same holes. Again, for the most part this would be undetectable unless a new line of stitching had to be used where small areas of stitch holes had torn or worn through. Occasionally a gape would be very crudely repaired, perhaps by the wearer. This was seen on an ankle-shoe of late 12th- or 13th-century date from Coppergate (15456) which had been roughly thonged. A particularly makeshift repair of this type was seen on 15519, a shoe of 13th-century date of uncertain style, also from Coppergate. This has been crudely patched, the two patches made from cut-down shoe uppers fragments, still retaining their seams. They had been tacked to the sole seat and quarters at the lasting seam with a leather thong. This thong then continued forward, repairing a gape, threaded in a spiral fashion through sole and uppers, compressing them flat. This repair appears so crude and unskilful to the modern eye, it must have made the shoe extremely uncomfortable to wear. It can only be imagined that it was a very temporary 'get you home' type of repair.

### Uppers repair

Uppers were less prone to extremes of wear and damage than soles and their repair is less commonly found. The re-lasting of uppers onto a new sole may account for the disproportionate occurrence of shoe soles and uppers usually seen in the archaeological record. It may be, however, that shoe uppers composed entirely of textile that would survive less well in the burial environment add to the discrepancy.

Tears are the most common damage seen on uppers and were mended by stitching the two edges together with a butted edge/flesh seam, as seen on a front-laced boot (15848) from 22 Piccadilly. An unusual repair is seen on a vamp (15835) from the Coppergate watching brief where a flesh surface cut, which has weakened the leather, has been strengthened with a whip stitch. A side-laced shoe (15501) of 14th-/15th-century date from 16–22 Coppergate, has extensive damage to the outside joint area of the vamp. This has been repaired with a patch, of strip form, lasted in at the base and whip stitched to the upper (Fig.1664, p.3330).

Drawstring fastenings were vulnerable, and while a broken drawstring would have been easily replaced, if it tore out of the retention slits in the uppers a more complicated repair was necessary. A late 12th-/13th-century ankle-shoe (Style 7c) from Coppergate (15479, Fig.1652, p.3318), has a small semicircular insert which carries a pair of drawstring slits. There is no apparent reason for this insert in terms of design or of making best use of the leather. It is assumed that the original drawstring slits were cut into the upper, and tore out for some reason — perhaps the wearer stood on the drawstring with the other foot — necessitating the replacement of that section. Indeed, it is difficult to imagine any other way of repairing torn drawstring slits.

Another ankle-shoe from 22 Piccadilly (15851) has a semi-circle of grain/flesh holes at the back of the quarters describing a shape reminiscent of a heel stiffener. As heel stiffeners are usually blind whip stitched into the inside of the quarters, this is unlikely to have been for that purpose. It could represent stitching to repair a loose heel stiffener or to hold an oversized clump seat repair that extended up onto the quarters. An early 12th-century ankle-boot from Seal House, London (Pritchard 1991, 236, 273, fig.3.121,

343), has similar stitching interpreted in that case as for an appliqué patch at the heel.

### Amount of repair undertaken

The number of shoe soles showing signs of repair appears to vary over time. The number of repaired soles as a percentage of soles recovered from 16–22 Coppergate is shown in Table 378. As shoe uppers were rarely repaired, the proportion of repaired shoes of the total is so low as to be insignificant. Soles, on the other hand, were often repaired, so are more likely to yield meaningful results. These tables, therefore, only include soles.

At Coppergate, the percentage of repaired soles is relatively low in the Anglo-Scandinavian periods, averaging 7.43%. Even in Period 4B, a period of great activity on site, with a good sample size (184), it is only 4.89%. In Period 5B (sample size 125), the percentage has climbed to 12.8%. In contrast, in the medieval period, it is much higher, amounting to over a quarter of the total soles having been repaired. This is mirrored at the other York sites studied. It also parallels findings in medieval London assemblages (Grew and de Neergaard 1988, 89), which show a similar range of repair percentages from a quarter to a half of all shoe soles recovered (*ibid.*, table 15).

It should be remembered that this is a fairly crude survey for a number of reasons. The lack of easily accessible site-wide phasing for the medieval period at Coppergate (Period 6, late 11th–16th century) when

this study was undertaken made century-by-century comparisons impossible so that only general statements can be made. In addition, the quantification of soles includes both complete soles and smaller fragments, with the result that an unrepaired fragment may come from an unrepaired part of a repaired sole, so slightly depressing the resulting figures. More significant is the fact that only the addition of clump repairs as shown by the presence of tunnel stitching on the grain side of the sole is represented. The replacement of worn soles by stitching new components using the original lasting margin stitch holes will go undetected (and the figures suggest that this was perhaps more prevalent during the Anglo-Scandinavian period). Despite this, the results do suggest that footwear was more likely to be repaired in the period after 1100 than previously.

Of course, most of the shoe components recovered show no signs of repair. This might be interpreted as suggesting that most people were wealthy enough to be able to throw away worn out shoes and replace them with new ones. It should be remembered, however, that many shoe repairs made by shoe-makers may be undetectable, which tends to skew the data by placing a large number of worn, but unrepaired soles into the archaeological record. It is likely, therefore, that only the work of the cobbling trade is represented. This may explain the apparent increase in the occurrence of repairs during the medieval period as a reflection of the growth of the cobbling trade.

### Extent of repair

Many shoes were not only repaired once but several times (see Table 379). Medieval shoes at Coppergate were commonly repaired repeatedly before being finally thrown away. The majority of the detectable repairs were seen as lines of tunnel stitching present on the grain side of the shoe sole, resulting from the attachment of successive clump repairs to the seat and tread. One sole (15517) from a late 10th- to early/mid 11th-century deposit and another (15520) from a late 11th- to early 12th-century context at Coppergate had each been repaired six times. Table 379 shows the number of times a shoe was repaired before being thrown away. Multiple repairs were also noted at the other sites studied, soles repaired up to five times occurring at Bedern Foundry and the College of the Vicars Choral.

**Table 378** The number of soles repaired at 16–22 Coppergate by period and the percentage of total sole finds they represent

Period	Total no. soles	No. repaired	% repaired
3	24	2	8.33
4A	4	–	–
4B	184	9	4.89
5A	29	1	3.45
5B	125	16	12.8
5C	11	–	–
6	554	145	26.17
Totals	931	173	18.58

**Table 379** Number of times shoes were repaired at 16–22 Coppergate by period

Figures are numbers of shoes; these tables include all repairs, not just those to the sole

Period	Repair x 1	Repair x 2	Repair x 3	Repair x 4	Repair x 5	Repair x 6
3	2	–	–	–	–	–
4A	–	–	–	–	–	–
4B	10	4	–	–	–	–
5A	1	–	–	–	–	–
5B	12	5	–	–	–	1
5C	–	–	–	–	–	–
6	66	54	12	13	7	1
Totals	91	63	12	13	7	2

### *Incidence of cutting down shoe parts*

#### **The Anglo-Scandinavian period at 16–22 Coppergate**

The Anglo-Scandinavian shoe finds had occasionally been cut down and areas deliberately removed. Cut-down shoes represented c.8% of the shoe finds from the earliest phase at 16–22 Coppergate and rose to c.15% throughout the 10th and early/mid 11th century. Cut-down items were not found in large groups, however, as one might expect if dealing with the debris from a cobbler’s workshop. Cut-down shoe parts were found in ones and twos in individual contexts; occasionally as many as three examples were found together. Cut-down shoe parts were found in all four tenement plots, though the majority came from Tenement C.

**Table 380** The number of cut-down shoes from Anglo-Scandinavian period at 16–22 Coppergate and the percentage of total shoe finds they represent

Period	Shoes	% of shoe finds
3	6	8.3
4A	2	14.7
4B	47	11.1
5A	15	15.8
5B	34	14.3
5C	6	16.3
Totals	110	12.5

A sample of cut-down shoe parts was analysed from the two main periods of activity on the site, Periods 4B (c.930/5–c.975) and 5B (c.975–early/mid 11th century), in an attempt to identify any repair or refurbishment activity. The majority of the cuts were found to be modifications to the vamp throat or the top edge of the quarters. As such they appeared to be the result of adjustments made to get a better fit, attempts to ease the pressure of a shoe that was too tight across the instep or to make a shoe lie more comfortably under the ankle bone. Some of these cuts may be indicators of podiatric conditions, discussed below (pp.3351–3). Such modifications may have been made to allow the shoe to be worn by another person. Further supporting evidence for the refurbishment of shoes, such as cut away seams, was lacking.

Soles seem to have been cut down far less often than uppers and, when they were, they were cut across the toe, waist or seat, perhaps to remove a worn section for replacement. Most of these cuts were crude in execution and more likely to have been to salvage a piece of leather for re-use. Repaired shoes were frequently found but it is uncertain whether these repairs were undertaken by specialist craftsmen or by the owners themselves. One may speculate that the cruder repairs were the work of the owner, rather than a cobbler or shoe-maker.

#### **Evidence for shoe refurbishment in the medieval period**

A minimum of 176 shoe finds had been cut down before being discarded, representing over 21% of the



total shoe assemblage from medieval 16–22 Coppergate (figures were unavailable to break this down into individual centuries when the study was undertaken). The shoe parts had been cut down in similar manner to those of Anglo-Scandinavian date. Vamp throats and top edges of quarters were cut away to improve fit. Vamps were slashed and had small areas removed to ease bunions and other foot pathologies. In addition, a new kind of mutilation was observed, seen from the 12th century onwards (at the latest), in which the uppers had been cut away around the lasting margin and the seam discarded. Uppers without lasting margins and soles with a narrow strip of the uppers lasting margin present around the edges were found. These provide evidence of the shoe refurbishment, later to be known as shoe translating. The lasting margin was cut away and the resulting smaller shoe uppers were repaired and attached to a new sole to provide a refurbished shoe to fit a smaller foot.

Shoe parts cut down in this way were recovered both from the extensive site-wide dumps at Coppergate and from pits. The material deposited in the large dumps may have originated from elsewhere in the city, being brought in with other refuse as part of land-raising activities. The material from the pits is more likely to have originated in the immediate vicinity.

### *Foot pathologies*

By Ian Carlisle in consultation with **J.B. Gajowskyj**, State Registered Chiropodist and member of the Society of Chiropodists

From the moment when a shoe is first put on, its form begins to be altered and shaped by the foot. Over a period of time it becomes 'worn in', moulding to the shape of the foot. This is especially true of turnshoes, which are relatively soft and have only a single thickness sole. The sole of the foot leaves an impression on the sole of the shoe, so that the pressure points at the seat, the lateral (outer) side of the foot, the ball of the foot and the toes can often be discerned in a shoe which has been worn for some time. The uppers stretch and alter in shape, becoming moulded to the shape of the foot. The back bulges out at the bottom and sometimes becomes trodden down. The upper has a tendency, particularly with poorly executed designs, to roll under the foot on the inside, while the sole rolls up onto the foot on the outside.

As the wearer moves around, the way in which he walks creates distinctive wear patterns on the shoe. In a person with a normal walking gait, the feet point slightly outward, causing the outer edge of the heel to hit the ground first. The weight is then gradually transferred to the heel and the ball of the foot (the metatarsal heads), then the metatarsal heads and the toes, and finally the tips of the toes, before the foot is lifted from the ground. The constant repetition of this process creates distinctive wear patterns, with the greatest wear occurring at the outside rear of the seat, the tread (metatarso-phalangeal joint) and the tips of the toes.

Individuals suffering from a podiatric condition will often walk in a different manner to this standard model, creating diagnostic wear patterns. For example, in an individual whose feet turn inwards when they walk, a condition known as pigeon toe, the inside of the heel tends to meet the ground first, so it is the inside rear of the seat which becomes worn, and the upper may be forced inward. Two 13th-century shoes, 15884–5, from the College of Vicars Choral at Bedern exhibit this pattern of wear, which may have been caused by a pigeon-toed wearer. However, a wearer with an interphalangeal corn on the fourth or fifth toe would also tend to walk with the weight on the inside of the foot, to keep it off the corn. This would cause similar wear patterns on the inside seat.

A.W. Swallow (1975, 28–32) first recognised the potential of wear marks in archaeological footwear, identifying three main groups. These are wear under the shoe; impressions on the insole; creases, bulges, splits and deliberate slits in the uppers. He also identified the types of foot conditions which alter the shoe in a diagnostic pattern. The bunion (*hallux valgus*) occurs when the metatarsal head of the great toe is displaced medially, so that the joint bulges outward and the toe turns in on the other toes (Grew and de Neergaard 1988, 111). The joint becomes inflamed and swells, forming the bunion. This swelling can cause the sole and/or upper to wear through, as with 15393 from Coppergate. Alternatively, the wearer may attempt to relieve painful pressure on the bunion by cutting holes or slashes in the vamp, e.g. 15466 from Coppergate. This condition may be caused by trauma to the great toe, or by wearing shoes with a toe shape which does not follow the natural form of the foot (J.B. Gajowskyj, pers. comm.). The forepart of many, if not most, Anglo-Scandinavian and



medieval footwear is too narrow for the toes and this had the effect of forcing the great toe inward. Over a period of years, this could lead to a bunion.

When the great toe is forced inward, the second toe is often pushed upwards to allow it to go underneath. In this raised, flexed position, the interphalangeal joint of the second toe rubs on the underside of the vamp of the shoe. A callous forms to protect the joint, and this can develop into a corn which becomes inflamed and painful. The skin may break and infection may set in. The rubbing of the corn on the vamp may cause wear in this area, but often, the wearer would cut a hole in the upper at this point to relieve the pressure, and a late 12th- or 13th-century shoe from Coppergate (15377) has such an opening. It should be mentioned that this condition can occur independently of *hallux valgus*. In many people the second toe is longer than the great toe and if the footwear is not cut to reflect this, the second toe may be forced back into a flexed position, and develop a corn.

If the shoe is so narrow as to force the first toe onto the second, the other toes tend to be forced together as well, causing compression of the toes. Wearing shoes keeps the feet in a humid atmosphere with little air circulating, particularly when wearing woolen socks or chausses (hose). The skin between the toes becomes saturated and the friction between them causes an interphalangeal corn on the joint, generally of the fourth or fifth toe. A late 9th- or early 10th-century shoe from Coppergate (15378) has a hole cut in the vamp above this point, probably to relieve the pressure on such a corn. This shoe may not have caused the problem as it seems large enough not to compress the toes, so it was probably a pre-existing problem when the shoes were acquired. The hole is quite large and probably reflects a long-term problem. The fourth toe seems to have retracted to allow the fifth to move beneath it and the throat has been slashed to allow more room for this. The tip of the



**Fig.1680** 15426, with the vamp slashed close to the lateral joint to relieve pressure perhaps from hammer toe



**Fig.1681** Sole of 15487 showing hole worn through by the great toe as a result of *hallux rigidus*

flexed fourth toe has left an impression on the inside of the sole. The inside seat of this sole has worn where the wearer favoured the corn. This further illustrates the problem of recognising pigeon toe.

Another condition which affects the lesser toes is 'hammer toe'. The joints of the toes become fixed in a contracted, clawed position. This can again be caused when the great toe is angled inward by a bunion, forcing the second and sometimes the subsequent toes to claw back out of the way. Narrow shoes are again the most usual cause. The flexed toes create additional wear on the tread of the sole, so that it will often wear through. Corns may also form on top of the raised joints, and the vamp is often cut or slashed to relieve the pressure. *15426* (Fig.1680) from Coppergate has such a slash close to the lateral joint, while *15501* (see Fig.1664, p.3330) has multiple slashes to the vamp, suggesting a bunion in conjunction with hammer toe.

The great toe can also be affected by a condition known as *hallux rigidus*. Through age or injury, perhaps repeated stubbing of the toe (Grew and de Neergaard 1988, 111), the metatarso-phalangeal joint becomes fixed in position, unable to flex, with the result that in walking, the weight is carried on the toe rather than the ball of the foot. This leads to greater wear at the tip of the great toe and the sole is often worn through at this point. Quite a number of finds exhibit wear of this kind, e.g. *15487* (Fig.1681) and *15466* from Coppergate and *15854* from 22 Piccadilly, suggesting that the condition was relatively common in the Anglo-Scandinavian and medieval periods. This is unsurprising, considering the comparatively light construction of turnshoe footwear. Being constructed of necessity from thin leather (it is impossible to turn thick leather), turnshoes offer little protection against accidental injury such as stubbing of the toe. They are also not waterproof and cold wet feet are particularly susceptible to the osteo-arthritic changes which could equally be the cause of immobility in the joint.

Sixty-eight shoes have a slit or slits in the vamp, probably to relieve the pressure of a tight fitting shoe over the instep. It is possible that some of these shoes were worn by individuals suffering from various foot conditions such as the corns or bunions already

described, or a specific condition known as *pes cavus* in which the foot is unnaturally arched. Unless this was an extremely widespread problem in Anglo-Scandinavian and medieval York, however, it seems more likely that most of these shoes were simply too tight.

Interestingly, of the 68 examples, ten date to Period 4B. This is the largest number from any one specific period (Period 6 is the entire medieval period, so is broken down further for comparison). Seven of these have slits to their throats or the throat is cut down, suggesting a tight fit or possibly *pes cavus*. Significantly, nine of the ten shoes are of similar construction (Style 3), the higher slip-on type common in this period. This pattern continues into Periods 5A and 5B, from which six of the nine shoes are of the slip-on type. Of these, five have been similarly cut at the throat. This could suggest a high incidence of *pes cavus* in the 10th and 11th centuries, but it is more likely that this design was simply not cut generously enough over the instep in many cases, and the wearer had to make adjustments get the shoes to fit (J.B. Gajowskyj, pers. comm.).

It must be remembered that some known pathologies are not easy to recognise in the footwear. For example, fallen arches are quite common today and may have been in the past. It is particularly common amongst women today, the main cause being narrow footwear with high heels. Anglo-Scandinavian and medieval shoes had flat soles, so probably would not have caused the condition, but, as they provided little support, they would not have prevented it. As such, fallen arches would almost certainly have been present in Anglo-Scandinavian and medieval York, but since its only effect on the footwear is to create fairly uniform wear over the whole of the sole of the shoe, it is easily confused with soles which have simply received heavy wear.

It seems that York's past population suffered the same foot conditions which are prevalent today and for much the same reason: ill-fitting footwear. However, as some of these pathologies, e.g. *hallux valgus*, can take up to 20 or 30 years to develop, it is likely that they were not as common in the periods under consideration as they are today, due to the much lower life expectancy at that time.

## Sheaths and scabbards

By Esther Cameron

### *Introduction*

In studies relating to the developing leather industry of the British Isles the sheaths and scabbards from Anglo-Scandinavian York represent a substantial landmark. In numbers alone the sheaths represent the largest body of available data in England for finds of this type and date. It is an exciting collection, the study of which prompts new questions relating to the production, wearing and disposal of sheaths in the 10th and 11th centuries. The scabbards, which form a separate body of data, bring life to a previously sterile subject, allowing us a partial, fascinating glimpse of an aspect of scabbard production in early medieval England. There are no other published collections of similar material to compare with this unique assemblage.

### *Sheaths and scabbards: Anglo-Saxon background*

An Anglo-Saxon tradition of sheath-making in England can be traced back to the 7th century through remains on knives and seaxes from late graves in pagan cemeteries and from high-status burials located, for the most part, in eastern England. Of these finds, not one has survived in a waterlogged condition and, apart from metal fittings, their remains are for the most part extremely insubstantial. Anglo-Saxon sword scabbards of the 5th to 8th centuries have failed to survive burial, but traces of them on the blades of corroded swords are a familiar sight in archaeological collections. From these, new insight into the tradition and practice of scabbard-making has recently been obtained through detailed research. This new evidence suggests that their manufacture may have been governed by a strict code of practice and probably took place in specialised workshops. Due to the importance of swords in Anglo-Saxon society a special value seems to have been bestowed upon scabbards, some of which were already very old at the time of their burial (Cameron 2000).

### *Sheaths of knives of the 7th to 9th centuries*

Knife sheaths of the 7th century were made of animal skin, generally 1–1.5mm thick, of which the

species of some have been identified as calf, but the method of tannage is unknown. The form of these well-fitting sheaths involved a fold over the back of the knife blade and a join along the cutting edge, using tunnel stitch in thong. There is some evidence to suggest that sheaths normally enclosed handles as well as the blades of knives and that they may often have been decorated with tooling on the front face. Where it survives, decoration consists of concentric delineation of the blade at the lower end of the sheath. The upper (handle) end survives in one example only, from Broomfield, Essex (Cameron 2000, fig.36), which is decorated with a quadrilateral, subdivided. There is a suggestion, therefore, of a division into fields for handle and blade, and that decoration of sheaths was confined within fields outlined by tooled lines.

Knife sheaths of the 8th and 9th centuries in England are almost unknown. A knife of modest size from grave 145, Buckland, Kent, was found with small rivets aligned in two groups at the cutting edge near the tip and near the base of the blade (Evison 1987). Its presumed leather sheath might have echoed, in smaller scale, the sheaths of seaxes (see below) and its date of deposition is estimated to be 700–750. A knife sheath of unknown date from Parliament Street, York (755, Fig.107, AY 17/4), covered the handle as well as the blade and had a notch at the mouth to ease the removal of the knife. The sheath is seamed along the cutting edge and has a narrow, tapering suspension flap with a rectangular hole for suspension. A suspension flap is an element of sheath design involving an extra allowance of leather essentially for suspension of the sheath by strap or thong, or (on sheaths of seaxes) where metal fittings are positioned. The moulded spine of the Parliament Street sheath is not found on any other leather artefacts of this date. The style of tooled decoration on each face of the sheath, occupying the handle, blade and suspension flap, suggests a 9th-century date and sets it apart as possibly a unique example from this period (pp.240–1, AY 17/4). A sheath fragment from 16–22 Coppergate with a moulded spine, 15646, may also be of this type, despite coming from a 13th-century context.

### *Sheaths of seaxes of the 7th to 9th centuries*

With one or two possible exceptions the sheaths of seaxes of the 7th century enclosed the handles as



well as the blades of knives. None survives intact and what has been retrieved is vestigial. The outlines of some sheaths have been recorded by plotting the positions of metal fittings in situ in the ground. This shows the development of the suspension flap, which varies in form from the modest angled seam-line to exaggerated rectangles, sometimes with ostentatious metal fittings (Cameron 2000, figs.30 and 35). This feature, which seems to have developed in the Rhineland, became incorporated into the character of Anglo-Saxon sheaths in the 7th century.

The horizontal manner in which seaxes were worn required the seam-edges of sheaths to be reinforced with metal fittings, the function of which was concerned with suspension, rather than closure, of the sheath. The sheaths were probably closed by a seam of tunnel stitch, evidence for which survives upon one sheath from Buttermarket, Ipswich (Cameron 2000, 292). Among 7th-century seaxes from England, four are known to have been decorated. Two, from Buttermarket, Ipswich, have designs consisting of incised lines which delineate the shape of the blade, one in a triple border with the enclosed field infilled with transverse, parallel, incised strokes. A third, from Harford Farm, Norfolk, may once have been decorated in a similar fashion but only three parallel, transverse lines at intervals of a few millimetres are now visible. Finally, the sheath from Ozengell, Kent, had an interlaced design impressed into the central part of the sheath while a second design, primarily of oblique hatching at 1mm intervals, covered another area, possibly the suspension flap (Cameron 2000, fig.34, 297).

No sheaths of seaxes of the 8th or 9th centuries are known in England. However, a unique metal fitting from the River Thames near Westminster Bridge, London, dated to the late 8th century on stylistic grounds, is thought to belong to one (Small et al. 1973, 138). Moreover, the sculptural relief on an 8th-century stone carving from Repton, Derbyshire, shows a mounted warrior with a seax at his waist (Biddle and Kjølbye-Biddle 1985, fig.3). It is not clear from the relief whether the handle is completely enclosed by the sheath, but there is the suggestion of a riveted edge and possibly the outline of the blade tooled onto the sheath, which may also be decorated with oblique hatching.

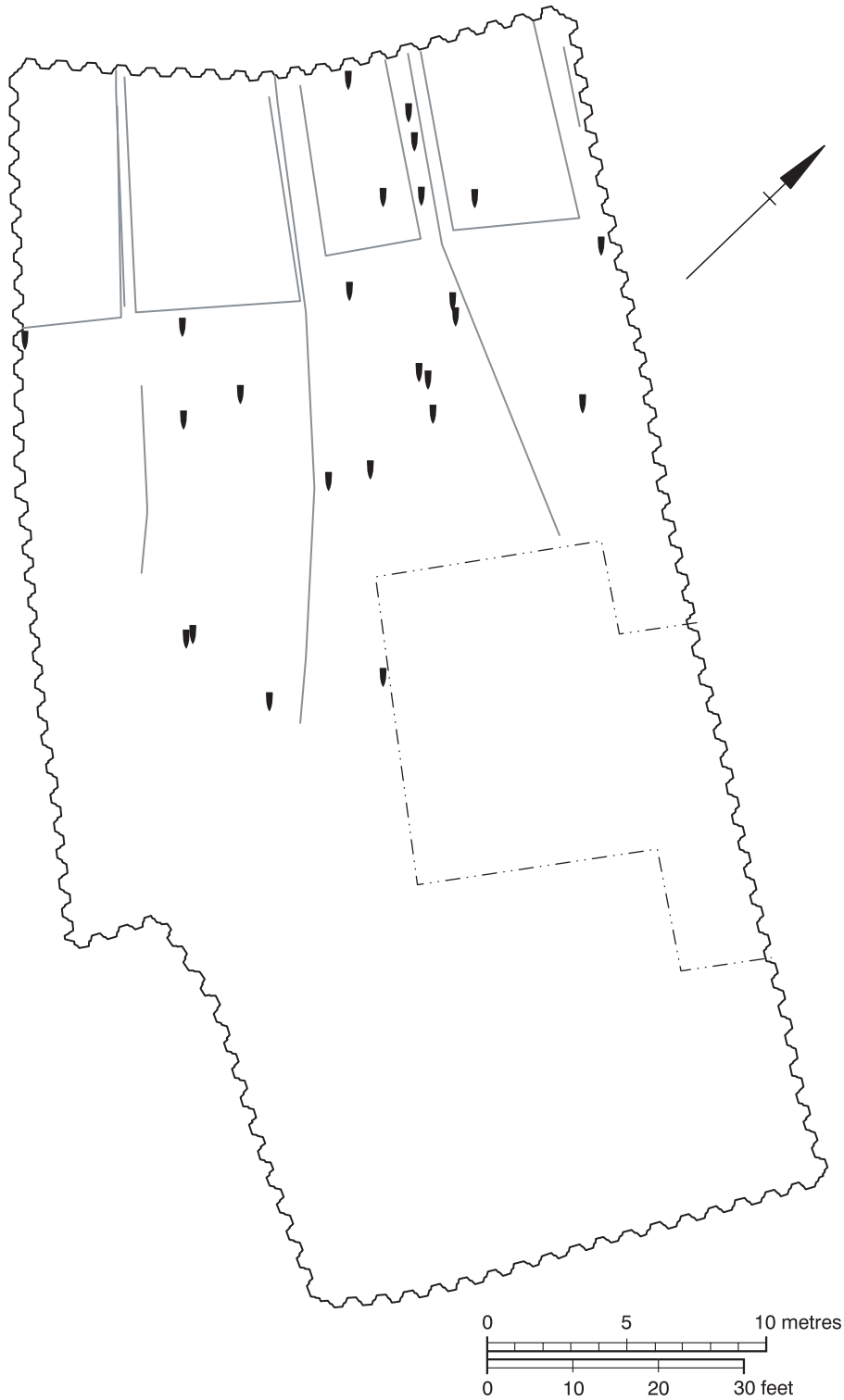
## *Scabbards of swords of the 5th to 9th centuries*

Anglo-Saxon sword scabbards of the 5th and 6th centuries were, by tradition, most frequently made of willow, in pairs of cambered plates. These were lined with sheepskin and sometimes decorated on the outside in raised relief by carving the surface of the wood, and by applying thongs or string to it, which would be covered with thin skin, possibly using glue. The decorated surface, showing through the skin, consisted either of longitudinal ridges or of lines running obliquely from a central position outwards towards the edges of the scabbard. Metal fittings sometimes reinforced the scabbard ends and the suspension points, but these were not essential to the function of scabbards. A more substantial type of skin, possibly a true leather, began to be used to cover scabbards in the 7th century, and these were seamed at the back with thong in a sinuous stitch.

Suspension from the sword-belt was by a strap attached to the front of the scabbard a little way below the mouth. Attachment could be by a number of ways, one of which required a strap-slide on the front of the wooden scabbard, concealed, at least in part, by the skin or leather covering (see Fig.1688). A strap-slide connects its scabbard with a suspension strap, being that part of the scabbard through which the strap passes. It may be an integral part of the scabbard front, in which case it is carved from the wood, or, if made of bone or metal, must be fitted on. Since there are other means by which straps may be connected to scabbards, a strap-slide is not essential provided some other system has been devised to take its place. Examples of integral wooden strap-slides survive on swords from Broomfield, Essex (British Museum accession number 1894.1216.4), and Wickhambreux, Kent (Maidstone Museum, uncatalogued).

The custom of wearing metal fittings, such as chapes, on scabbards declined sharply in the late 6th century in Anglo-Saxon territories. Scabbard remains on swords of the 9th to 11th centuries indicate that in basic construction scabbards remained unchanged throughout the Anglo-Saxon period, but, prior to excavations at Coppergate, too few remains had been found from which to generalise.

*Sheaths and scabbards: patterns of distribution at Coppergate (Figs.1682-5)*

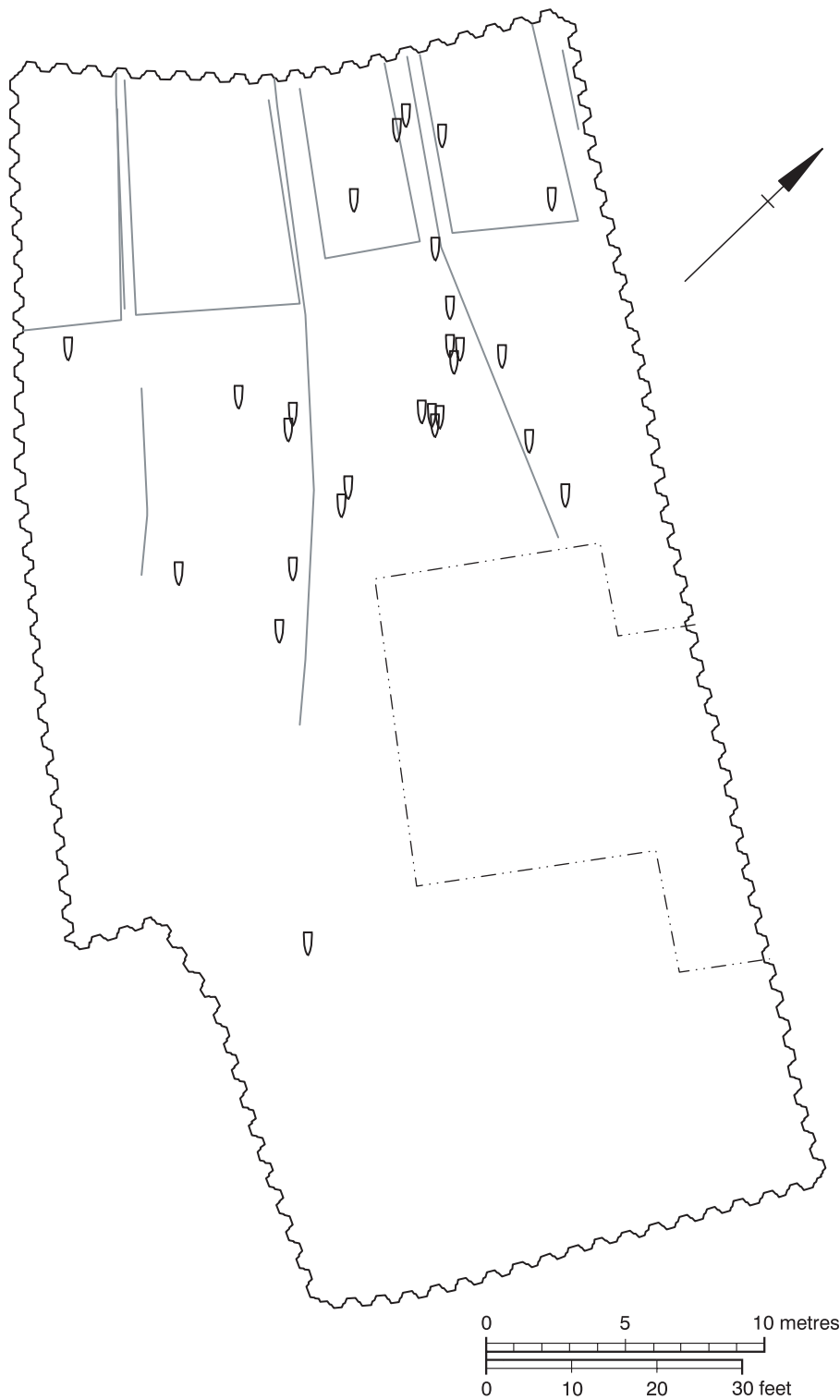


*Fig.1682 Distribution of sheaths at 16-22 Coppergate in Period 4B*

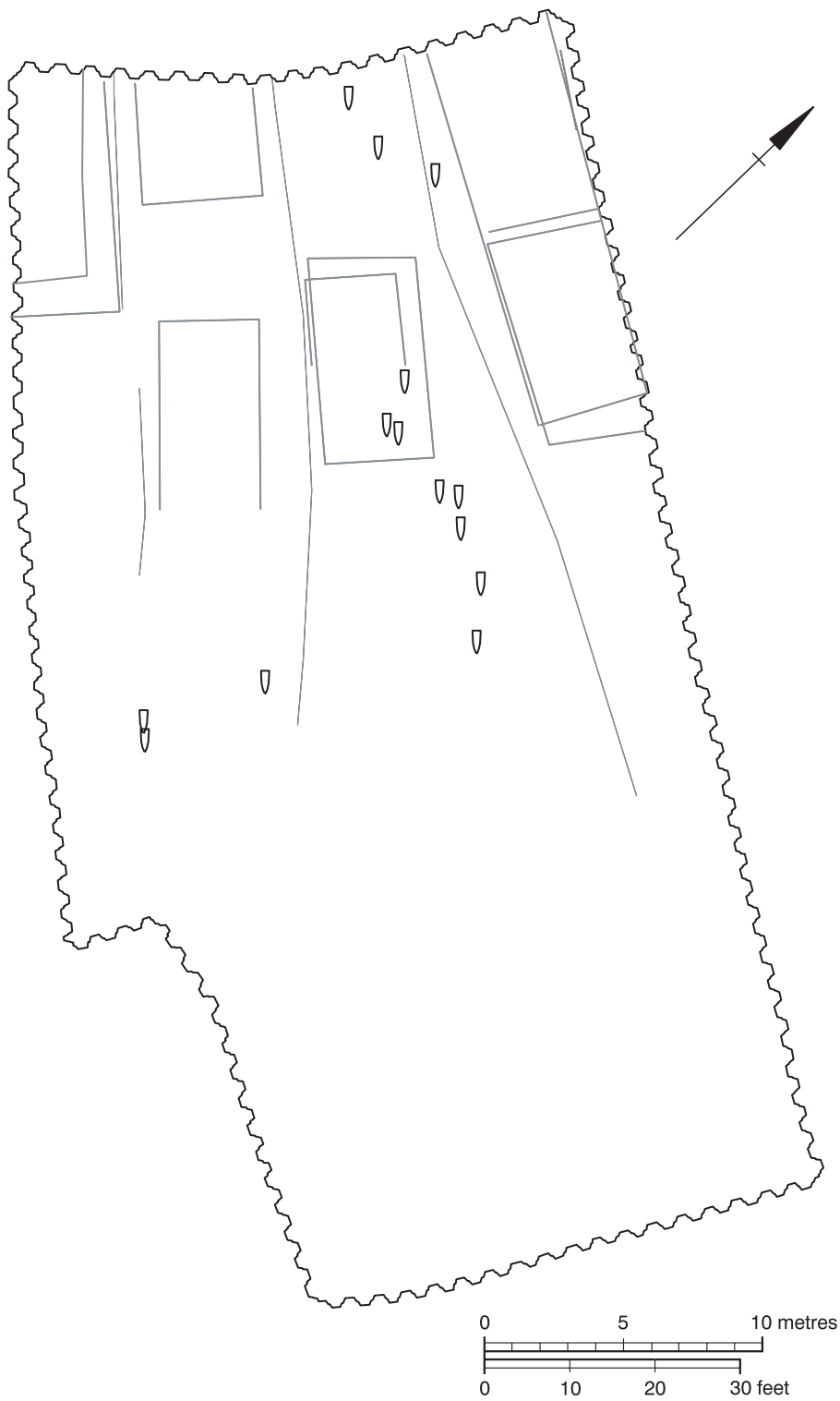




*Fig.1683* Distribution of sheaths at 16–22 Coppergate in Period 5B



*Fig.1684* Distribution of scabbards at 16–22 Coppergate in Period 4B



*Fig.1685* Distribution of scabbards at 16-22 Coppergate in Period 5B

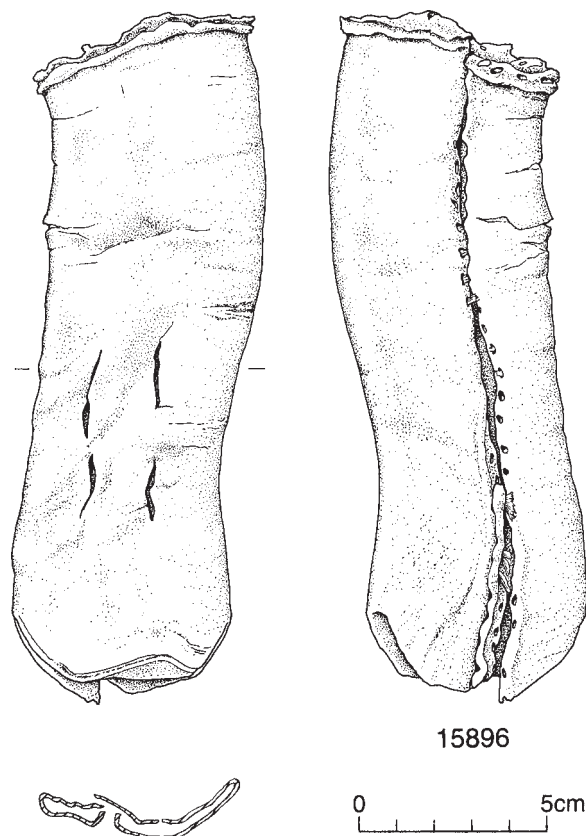
The distribution of scabbards at Coppergate was plotted by phase, and that of sheaths by type as well as phase. The patterns of distribution for both scabbards and sheaths are so similar that it is likely that they were discarded in mixed batches. There is no evidence that sheaths were deposited separately from scabbards, or scabbards from sheaths, during Periods 4B, 5A or 5B. The remains of sheaths and scabbards were found in and around the buildings of Tenements C and D, and within the recorded boundaries of the back yards of all four tenements. Four sheaths and three scabbards lay beyond the outermost extent of the wattle fencing in the direction of the river, but the majority are distributed in the raised ground away from the river and are not clustered in any meaningful way. Disturbed stratification in the area of the buildings of Tenements A and B probably accounts for the absence of sheaths and scabbards from these two areas.

### *Scabbards of swords of 10th- and 11th-century York*

#### **Quantities and types of scabbard leathers**

Sixty-four fragments of scabbard leather found at York include three unprovenanced (15894–6; Fig.1686), two excavated from 5 Coppergate (638, 641, AY 17/3) and one of early to mid 11th-century date from 22 Piccadilly (15856). The remaining fifty-eight, from 16–22 Coppergate, are from secure contexts (set out below) from which it may be seen that most were discarded between c.930 and c.975, and that others were found in contexts extending into the mid 11th century.

The scabbard leathers had been cut and torn into fragments before being discarded. Few pieces make

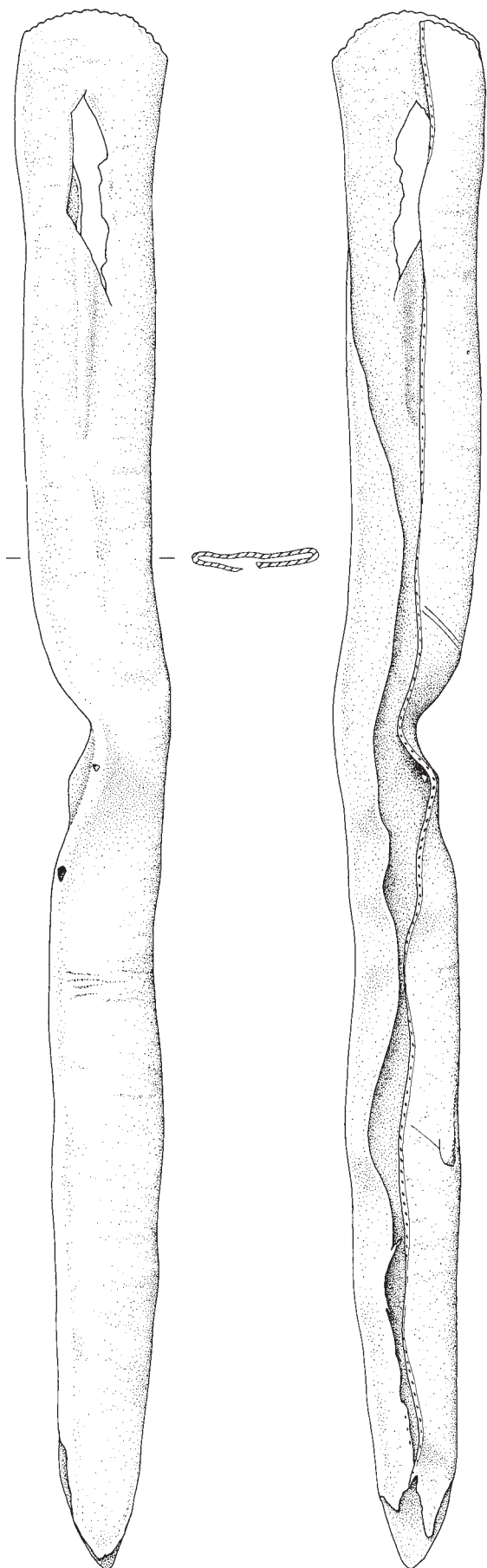


**Fig.1686** (above and facing) Three unprovenanced Type 3 scabbard leathers from York. Scale 1:3; 15896 1:2

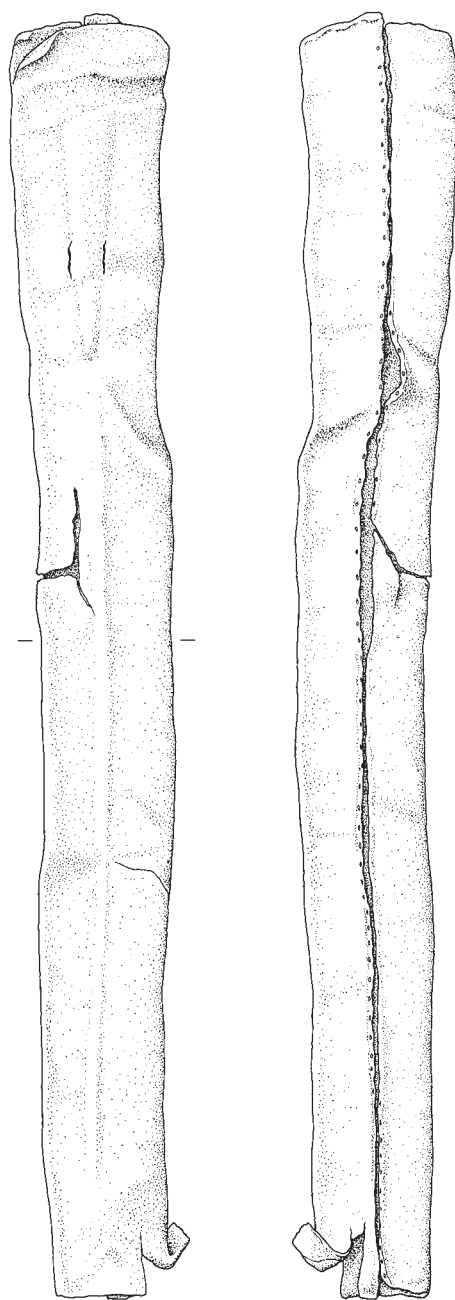
up complete lengths, and none is whole. The assemblage is fairly homogeneous in character as the scabbard leathers conform to a single style and method of assembly, and have certain features in common, such as the convex shape of the mouth (which indicates a downward-curving lower guard on the sword) and means of suspension on the front.

**Table 381** Anglo-Scandinavian scabbard leathers from 16–22 Coppergate by period in catalogue order

Period 3	Period 4A	Period 4B	Period 5A	Period 5B	Period 5Cf
15551–2	15553–5	15544–5	15546	8963	15599–600
		15548–9	15579–85	15547	
		15556–78		15550	
				15586–98	



15894



15895

0 10cm



## Mouths of scabbards

The mouths of scabbards, retained upon seven of the fragments from Coppergate, have curved outlines (15544, 15546-8, 15555, 15586, 15595; Fig.1687). Five are

curved at a gentle angle but two are steeply angled including one (15555) with a 90° angle at its apex; the other is characterised by a three-sided notch at the apex of its 90° curve (15595). The mouths of scab-

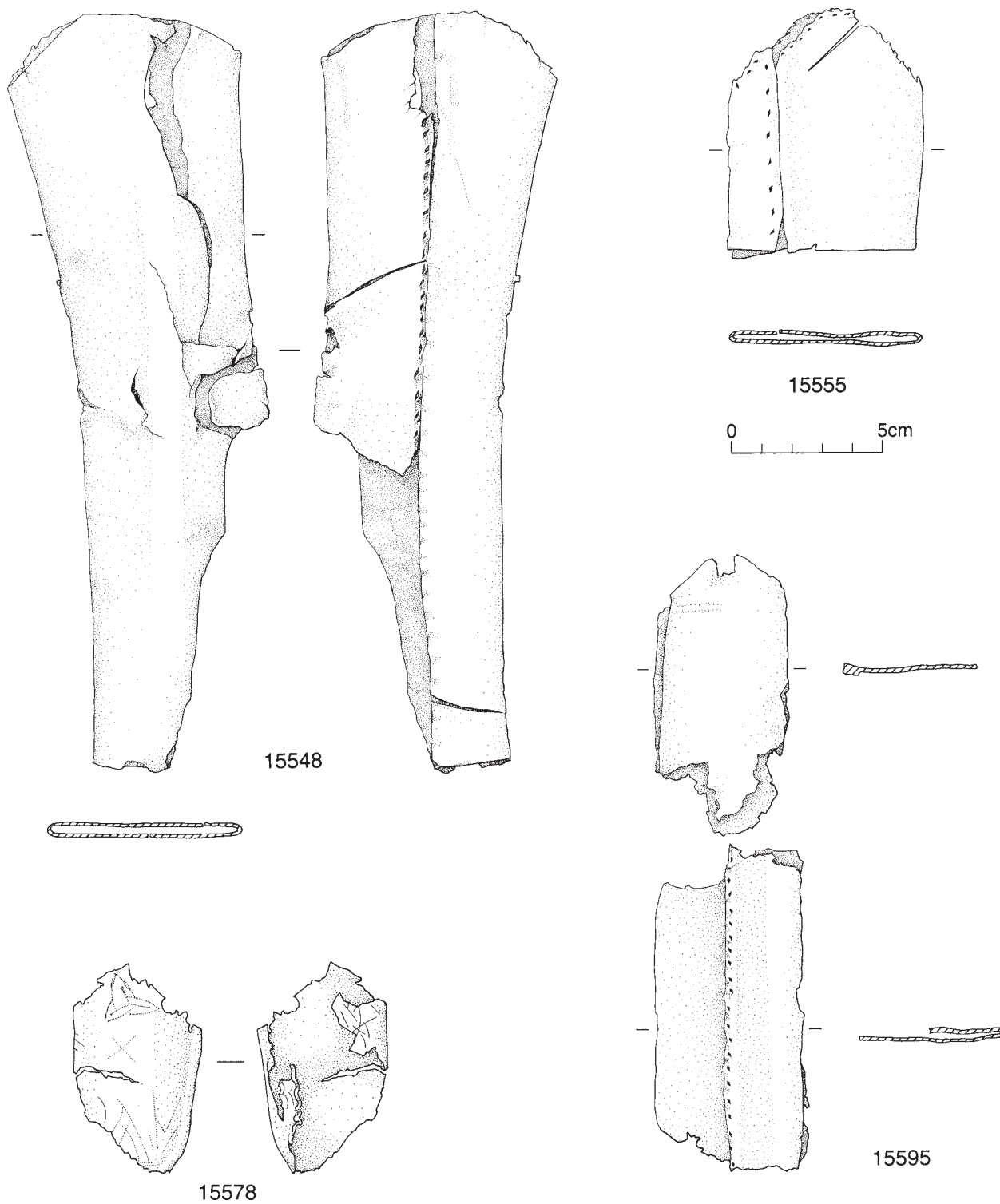


Fig.1687 Scabbards of the 10th and 11th century from 16-22 Coppergate. Scale 1:2

bards generally have stitching around the mouth edge but three Coppergate examples from Period 5B do not (15547, 15586, 15595). It may be that binding stitch around the scabbard mouth, a possible function of which was to attach it to the lining, was not used in York after 975.

### Method of suspension

Eight scabbard leathers carry upon their front faces the impressions of strap-slides. Each slide occupied a central, longitudinal position and to either side of its mid-point is a vertical slit in the leather, giving access to the strap. The slide was evidently not fixed to the leather, and previous tradition suggests that it would probably have been attached to the wooden scabbard beneath. No strap-slides of 8th- to 11th-century date have been found, either on a scabbard or in any other English context, although a similar impression has been noticed on a scabbard leather from Gloucester (Heighway et al. 1979). The outlined impressions show that the slides must have

been long and flat; although they vary, there are three recognisable types at York, to which the Gloucester type may be added as a fourth (Fig.1688).

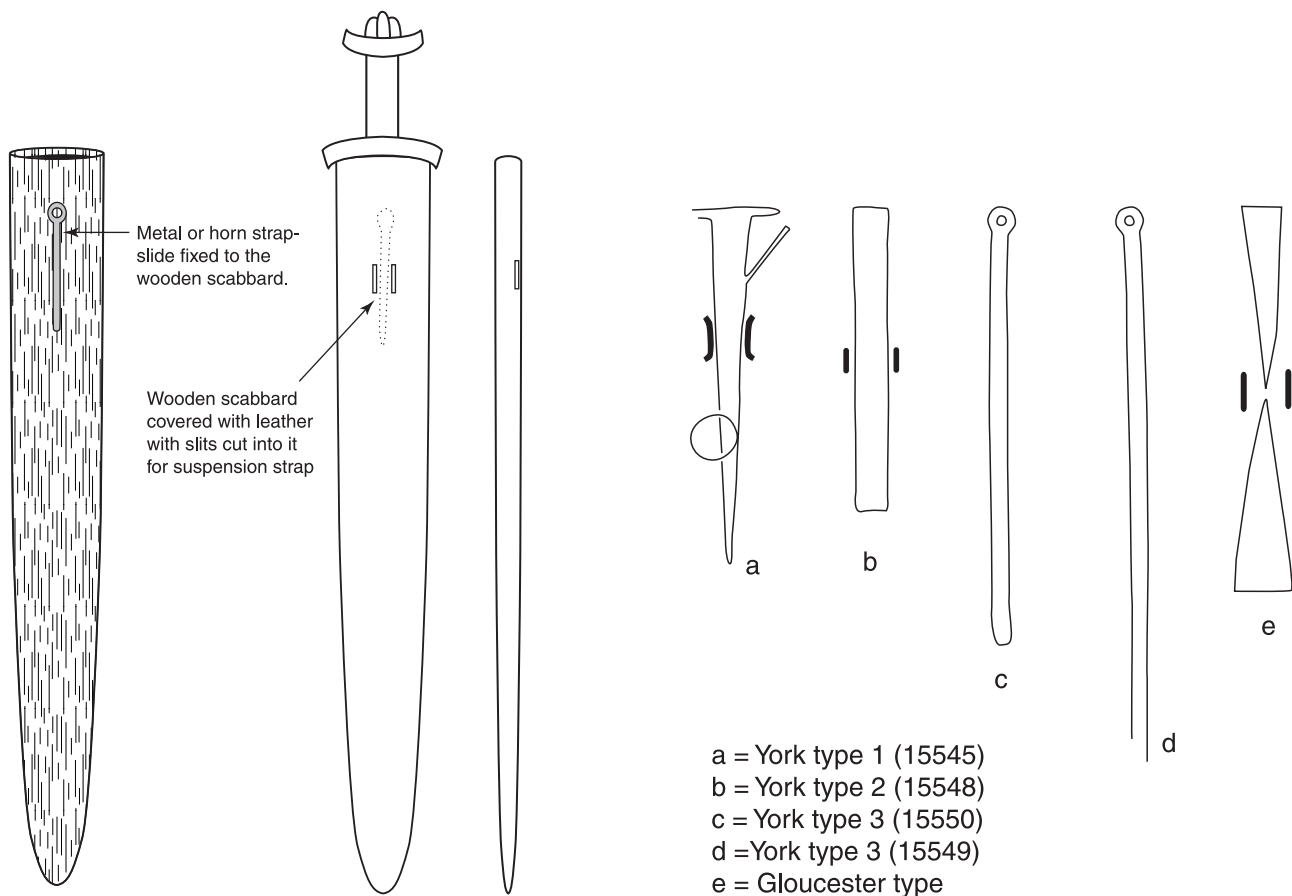
**York Type 1:** (15544–7, 15894) Of miscellaneous outline, generally wide at the top and tapering to the bottom.

**York Type 2:** (15548) A plain rectangle.

**York Type 3:** (15549–50) An elongated, parallel-sided strip with a rounded, perforated end. This type is not accompanied by slits in the leather (as all the others are) and straps might have entered the scabbard at its edges through slits now made invisible by wear and tear.

**Gloucester type:** (Cameron 2000, 328) A narrow, flat plate with splayed ends.

Only one of the slides seems to have been slightly arched to allow a strap to run beneath and most would have required a transverse channel to be cut from the scabbard wood for this purpose. It is esti-



**Fig.1688** Diagram to explain what a strap-slide was and showing four types of strap-slides for scabbards

mated that the slides were 1–2mm thick and could have been made from organic materials such as antler or horn. It is also possible that they were integral, carved into the face of the scabbard, using a tradition known to have existed in the early Anglo-Saxon period. However, they could equally have been made from metal, the retrieval of which may have been the reason for some of the cut marks on the leather. A single scabbard leather from Coppergate (15587) and a further example in the Yorkshire Museum have pairs of vertical slits in a central position on the upper front face, but no strap-slide impressions.

## Dating

The hilt-fittings of swords dating from the late 9th century onwards are various but one of their chief characteristics is the curved guard (Petersen 1919). An 11th-century development in curved lower guards led to a relatively substantial version with a triangular field at the apex of the curve, and a downward projection from the centre of the lower edge. Since there were few scabbard fragments with mouths from Coppergate and since three types are represented, all belonging to the 10th and 11th centuries, only one of which is exclusively an 11th-century type, no conflict arises between them and the site dating.

In order to place the scabbards with strap-slide impressions more precisely within this range, their seam types were examined as a group. Types 1 and 2, and the Gloucester-type, all have butted seams stitched at 5–7mm intervals, which makes it more likely that they pre-date 975 (see below). Type 3 has two representatives, only one of which has a seam, but this is a closed seam with a stitch interval of 5mm. It may therefore post-date 975.

## Decoration

Six fragments of scabbard leather of the 10th to mid 11th century have tooled lines for no evident practical purpose, which must therefore be decorative or skeuomorphic. 15599 is a fragment from a worn scabbard edge with a little of the front and back faces extending to either side of the central fold. On one face, probably the front, a raised ridge approaches the scabbard edge at an oblique angle and finishes there. If this is indeed a scabbard fragment, the ridge is reminiscent of a particular type of decoration on some scabbards of the early Anglo-Saxon

period featuring lines that radiate outward and downward from the suspension point. 15550 is the upper front face of a scabbard and has, in addition to a suspension feature, a single raised ridge which runs down the centre. As a decorative element on sword scabbards this echoes a device used at least since Roman and early Anglo-Saxon times, and implies extreme conservatism in Anglo-Saxon scabbard design. 15587, an almost complete length of scabbard, has two lines tooled into the front face below the suspension point, suggesting once again the image of radiating lines. There is another, shorter, line on the back. 15549 is another fragment from the upper front face of a scabbard with a line which descends the scabbard, off centre, from a position below the suspension feature. Finally, 15578 (Fig. 1687), possibly the chape end of a scabbard front, has a roughly tooled, 20mm triquetra which looks like a trial piece, possibly executed after the leather had been removed from its scabbard.

Other examples of decorated scabbards of similar date include one from Lincoln (Cameron 2000, 256), which has two parallel lines tooled down the side of the seam on the back face, and another from St John's Lane, Dublin, with three raised ridges running lengthwise and tapering on the front face (National Museum of Ireland collection E173:3087).

## Scabbard plates of wood

At York, discarded leather scabbard fragments of late Anglo-Saxon date are almost invariably cut with longitudinal strokes and slashes of a knife. The manner of the cutting suggests that the leathers were stripped from another component from which they could not be quickly separated by any other means. With the exception of small fragments found inside scabbard leather 8963, no other evidence for wooden scabbard plates was found among the quantities of wood and woodworking debris excavated at Coppergate (AY 17/13). It would seem appropriate, therefore, to put forward a reasoned argument for supposing that Anglo-Scandinavian scabbards were made of wood. Archaeological evidence of swords from early Anglo-Saxon cemeteries, which invariably had wooden scabbards, set the standard up until the 7th century, but swords with scabbard remains of 8th-century date are unknown and those of the 9th century are extremely rare. The earliest is the Palace of Westminster sword, dated c.800, which had traces of wood on the blade (Dunning and Evison 1961), and

the scabbard of the Repton sword, buried in 873–4, was also of wood, lined with animal hair and covered with leather or skin (Biddle Kjølbbye-Biddle 1992). Swords with wood remains belonging to the late 9th or early 10th century are known from Ireland and the Isle of Man (Hall 1978a, 79–80; Bersu and Wilson 1966), and there is good evidence for the use of wooden scabbards thereafter on 10th-century swords from Bath, Somerset (Davenport 1991, 1–2, figs.2–9, fiche 1, frames A2–8); the River Thames (Cameron 2000, 104) and Skerne, Yorkshire (Dent 1984), as well as the late 11th-century sword from Hereford Cathedral (Stone and Appleton-Fox 1996, 56, fig.41). Finally, a scabbard leather from 10th-/11th-century Fishamble Street, Dublin, comparable in every way to scabbard leathers of similar date excavated at York, was found with its inner wooden scabbard intact (National Museum of Ireland collection E172:12812). Instances of swords being found with scabbards of leather alone are unknown and, since it seems probable, in view of the evidence, that all the scabbard leathers from York originally belonged to scabbards of wood, the absence of the wooden component is intriguing. It has been argued elsewhere (Cameron 2000) that the scabbards of swords were probably made in specialist workshops to a formula and fitted to individual blades. Some scabbards from 7th-century graves were as much as a century old when buried and had evidently been treasured along with the swords. It is not unlikely, therefore, that scabbards were valued in the late Anglo-Saxon period also, if not to the same extent, and that the wooden plates were re-used when it became necessary to replace the lining and re-cover with fresh leather. One could speculate that the absence of scabbard plates of wood at York was because the refurbishment of scabbards in leather workshops required the client to supply the wooden component.

### The lining

Binding stitch along the edges of scabbard mouths is a common feature of late Anglo-Saxon scabbard leather from York and Gloucester (Cameron 2000, 328) up until the third quarter of the 10th century. The stitching might have been decorative, but it is probable that it was for attachment of a lining. Assuming that the lining was glued to the inner face of the wooden scabbard plates, it probably emerged at the mouth and was stitched there to the leather cover, thus anchoring the two layers and concealing the wooden scabbard sandwiched between them. Whether the lin-

ings of the York scabbards were of textile or sheepskin is unknown, for none survives. Both 9th- to 10th-century scabbards from Jurby, Isle of Man (Bersu and Wilson 1966), were lined and bound with textile, and the 11th-century scabbard of the sword from Hereford was also lined with textile, a practice which may have originated in Scandinavia. However, the sword from Bath, which is contemporary with the York scabbard leathers, and which is unique in having some of each of its organic components preserved (wood, textile, leather), was lined with animal skin with hair.

### Circular impression

A small circular impression on scabbard leather 15545 (Fig.1689) is associated with the impression of a strap-slide. The function of the disc is puzzling, but its position is reminiscent of a circular maker's mark on the sword from Skerne, Yorkshire (Dent 1984).

### Metal fittings

No metal fittings have been found on any Anglo-Saxon sword scabbard of the 8th to 11th century. Chapes might have been worn but they are extremely rare among English finds. A copper alloy chape found at Coppergate in 1906 (15891) is characteristically Scandinavian in its outline, including the knob at its base, and jaw-like extensions for scabbard attachment, and is not within the Anglo-Saxon tradition (Page 1912, 107). Waterman (1959) identified the animal decoration as Jellinge style and Hall (1994, 110, fig.97) suggests either Jellinge or Mammen style, but both agree that the piece is a 10th-century import, probably from the Baltic. A second chape found in 1989 by a metal detectorist at Castor, Cambridgeshire, and now in Peterborough City Museum, is decorated in acanthus scroll and probably dates from the mid 10th century (Cameron 2000, fig.37).

### Summary

Scabbard leathers found at York testify to an established leather supply with standards for animal type and age at death. Generally, scabbard leathers of the 8th to 11th centuries were undecorated but, occasionally, lines raised in relief echoed designs of the early Anglo-Saxon period. Indeed, the evidence points to a high degree of uniformity in scabbard manufacture and, in keeping with symbols of social order, a strong sense of conformity to the practice of previous centuries. Anglo-Scandinavian scabbards do





**Fig.1689** Detail of scabbard 15545 showing outline for strap-slide and circular impression

not exhibit the individuality of knife sheaths of the same date.

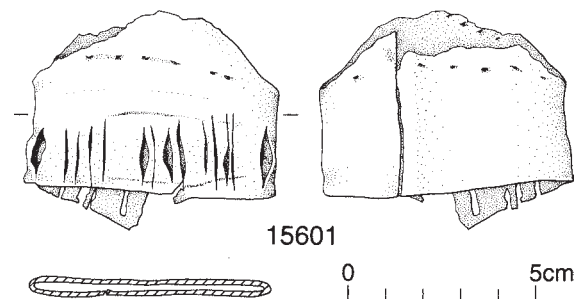
Metal fittings on scabbards of the 8th to 11th centuries are rarely found, but it might be argued that scabbards were habitually stripped of them before disposal, and some cut marks on scabbard leathers from Coppergate support this view in relation to

strap-slides. Scabbard-fittings in evidence at York, apart from a single chape, are strap-slides, known only from impressions. Previously a feature of the 5th and early 6th centuries, strap-slides were used at York in the 10th century, but it is not known whether they evolved from earlier forms or re-emerged as expressions of an older fashion, or what materials were used to make them.

### *Scabbards of swords from post-Conquest York*

The remains of swords and their scabbards are uncommon finds on medieval urban sites in England, and the discovery of ten scabbard leathers at 16–22 Coppergate and the Coppergate watching brief site in contexts dating from the late 11th to the early 16th centuries therefore forms a rare group.

15837 comes from a late 11th- to early 13th-century context (2050) and is chronologically the earliest. This find represents two scabbards, both of which have features in common with pre-Conquest examples including convex-shaped mouths edged with binding stitch, a strap-slide impression bordered by slits, and linear decoration raised in relief. Both were cut and torn before being discarded, as others of pre-Conquest date had been. Another scabbard mouth of similar shape (15601, Fig.1690), from an early 12th-century context, was lined with thin leather and decorated with a transverse band of vertical slits. Three scabbard fragments of probable 13th-century date are small and plain, but one of them is of sheep or goat, and the stitching of the seams is fine compared to those of earlier date (15603–4, 15606).



**Fig.1690** Post-Conquest scabbard fragment 15601 from 16–22 Coppergate. Scale 1:2



An incomplete scabbard leather from an early 15th-century context has two longitudinal lines impressed into its surface (15602). The identity of a 12th-century find of irregular shape (15607), and two further possible scabbard fragments, one from an early 16th-century context (15605), the other unstratified (15608), remains uncertain.

Downward-curving lower guards are characteristic of swords of the late 9th to 11th centuries in areas of Anglo-Saxon influence. However, this feature disappears from the time of the Conquest and is not, for instance, in evidence among swords depicted in the Bayeux tapestry. The three earliest scabbard leathers of this group must therefore be pre-Conquest despite their discovery in contexts of later date. Shortly before this fascicule went to press the dating of context 2050 was revised and is now considered Anglo-Scandinavian.

Two scabbard leathers of late 11th- and early 12th-century date are known from Waterford (Hurley et al. 1997, figs.18:13.3 and 6) of which one, with linear decoration on the front in raised relief, is a type that occurs in Viking Dublin. The other, which is complete, has a straight mouth and is decorated with ring-and-dot stamps and tooled lines. A third example from late 13th- or early 14th-century Manchester (Walker in prep.) also has a straight mouth and two longitudinal panels, defined on the front by three raised lines, filled with hatching.

The seven fragments of scabbard leather from post-Conquest York cannot be characterised on present evidence although they seem to belong to a conventional type that prevailed throughout the medieval period.

## The suspension of scabbards

Finds from York with evidence for scabbard suspension include impressions on the front of scabbards of strap-slides (see above) as well as three fragments of belts possibly associated with the wearing of swords. The position and use of the elusive strap-slide has already been discussed and it is the straps and belts themselves that are the focus of attention here.

There is some evidence from early Anglo-Saxon burials to suggest that the sword, when worn, was

suspended from a belt by two straps that were attached to the scabbard at two points, thereby spreading its weight and controlling the angle at which it hung. This practice continued, the clearest examples, with mineralised remains of leather straps and metal fittings still attached to the scabbards, being the 9th-century swords from Ballateare and Cronk Moar, Jurby, on the Isle of Man (Bersu and Wilson 1966). While buckles, D-shaped links and strap dividers are distinctive parts of these assemblages, leather straps other than the fragments preserved on the metalwork did not survive and we have no detailed knowledge of belts specific to sword-wearing in the 9th to mid 11th centuries. A warrior on a fragment of a Late Anglo-Saxon stone frieze from Winchester Old Minster carries his sword in a scabbard suspended from two points on his belt (Tweddle et al. 1995, 314–22, figs.642–9). Belts depicted on the Bayeux tapestry, however, seem not to have a divided suspension system and are equipped with buckles.

An interesting find (15611, Fig.1691), from a late 11th-century context at Coppergate, is 45mm wide, of double thickness and represents one end of a sword-belt. Its distinctive feature is a pair of slits, 60mm in length, positioned near the gently rounded end. This type of belt is known from medieval miniatures, such as the Joshua Initial from the *Winchester Bible* produced in England 1160–70, and from sculptured figures such as that of Dietrich von Brehna in Naumburg Cathedral c.1265 (Norman 1971, 238; Oakeshott 1994, 239–40). This type of belt required no buckle but the other end was split into two long tails which, when the belt was passed around the body, were threaded through the slits and tied. A short distance from the rounded terminal the continuity of the belt would have been interrupted by the attachment of the scabbard, effectively dividing the belt into two sections (see Oakeshott 1994, fig.119). It is thought that these belts originated in Scandinavia or Germany during the 10th century and, according to Oakeshott, were popular in England during the 12th and 13th centuries. This particular object, which is the first of its kind to be found in this country (recognised by Ian Carlisle) looks remarkably intact and may be unused. Leather finds from medieval Leiden (Netherlands) include a group of fragmentary sword scabbards and belts (van Driel-Murray 1990).

Also from Coppergate, 15612 (Fig.1691) comes from a mid 14th-century context and consists of a 196 ×

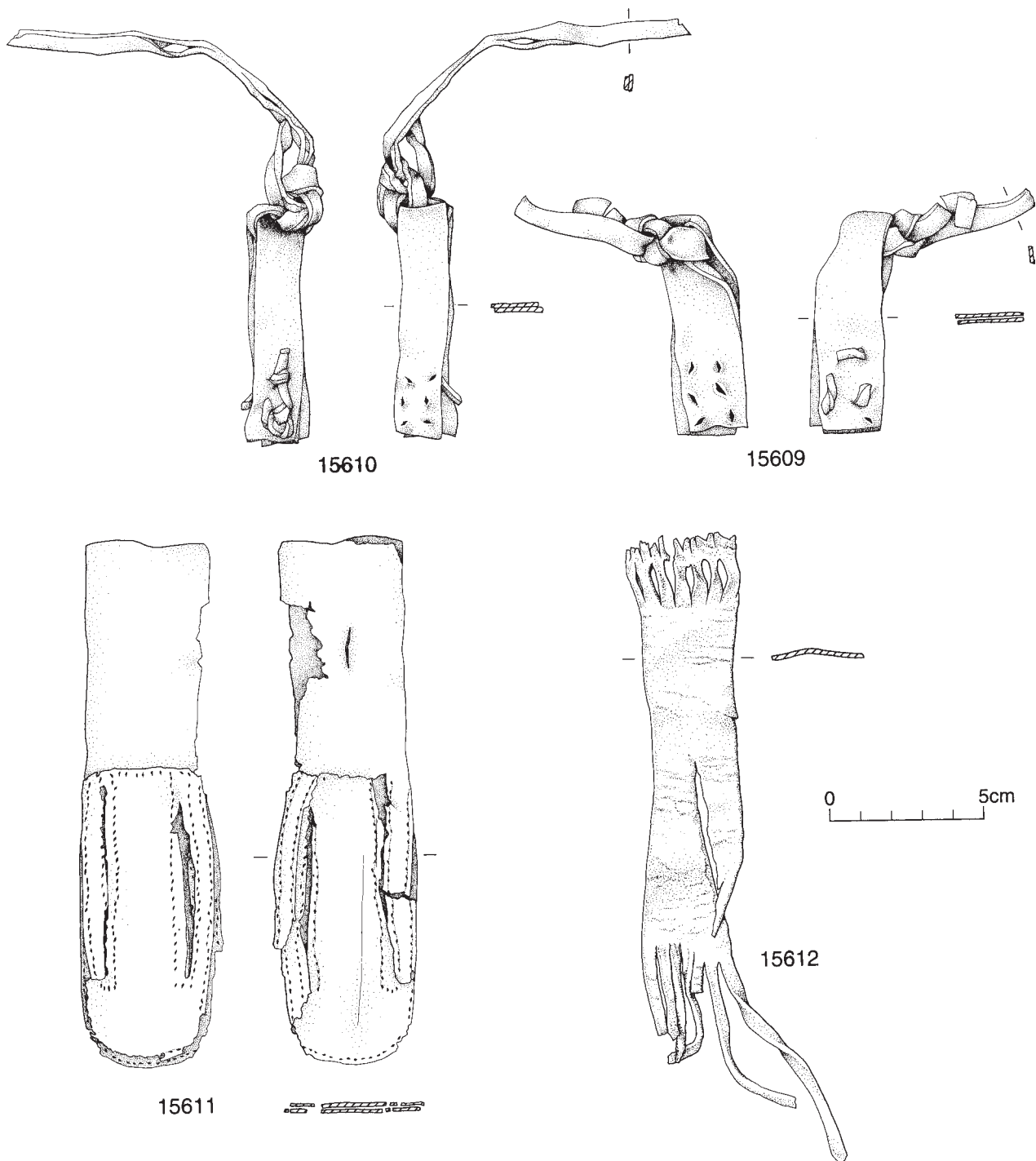


Fig.1691 Belts and straps possibly used for the suspension of scabbards in the medieval period. Scale 1:2

35mm strip with a row of six slits near one end, each of which has been pulled in one direction. The two ends of the strip have been cut into a series of thongs, those at one end having been truncated while those at the other are only partially so. This piece might be interpreted as another section of sword-belt, of the type

just described, although in this case coming from one of the ends attached to a scabbard. If this were so, the strip (belt) would have been wrapped around the scabbard and secured by the thongs from one end being threaded individually through the slits, and back through an adjacent slit, producing the effect of large

stitches to be seen, for example, on the 14th-century brass of Sir Robert de Bures in the church of All Saints, Acton, Suffolk (Edge and Miles Paddock 1988, 84). However, some features of this item, namely the single thickness of leather, lack of stitching at the edges, disparity between the number of thongs and slits, and evidence of thong-cutting at the other end, give rise to doubt. The connecting strap, which would have joined the upper and lower parts of the belt across the scabbard at this point, is also notable by its absence. In view of these uncertainties the type of belt this might have come from remains unspecified, and there is some evidence of it having been re-used to make laces and thongs.

15888 (see Figs.1714–15, p.3394), from a mid 14th- to early 15th-century context at the College of Vicars Choral, comprises fragments of strap decorated at regular intervals with metal roundels and studs. Some consideration was given as to whether this should be identified as a belt associated with scabbard suspension. There are five fragments, one of which forms a right-angled junction with another strap of equal width and has one end divided into narrow, truncated strips — possibly a fringed terminal, or perhaps a sign of re-use for thong-making. Oakeshott (1994, 242–4) identifies a particular type of belt worn by men and women in the mid 13th century. This, the *cingulum militaire*, was of exceptional length, decorated as a symbol of rank with metal shields of arms and transverse mounts, and was a feature of civil dress in elevated society. In comparison with such belts, our object from Bedern seems to lack precision and finish, and the mounts are dissimilar. The same conclusion is reached after comparing it to sword-belts depicted on late 13th- and 14th-century effigies in brass which appear to be of greater width, superior finish, and to have different decora-

tive mounts. The fragment with the fixed junction, a feature not found on medieval belts, gives ground for reasonable doubt that this belongs to a belt at all and suggests a different function for the piece, such as horse harness (see also pp.3394–5).

## *Sheaths of knives and seaxes from Anglo-Scandinavian York*

### Quantity and types

At the present time, 41 sheaths of knives dating from the 10th and 11th centuries have been found at the following sites in York: 37 from 16–22 Coppergate (see Table 382), including one residual find from Period 6 (15646), one from the excavation at Coppergate in 1906 (15890), one from 6–8 Pavement (681, AY 17/3), one from Hungate (15892) and one from Market Street (15893).

The single finds from four different sites come from 10th-/11th-century contexts, and their dating is confirmed through comparison with the bulk of the sheaths found at 16–22 Coppergate. The latter are dated by site phase and, as the table below shows, most were discarded in the mid 10th century (Period 4B).

Sheaths from Period 4B (930/5–975), the earliest from the site, comprise two categories: Type A are those that are seamed along one edge, apparently continuing the Anglo-Saxon tradition, whereas the others, Type B, are seamed at the back and consequently have a different outline and appearance. Both categories have a suspension flap to one side and are subdivided according to differences in the design of this feature. Category A is therefore divided into Types A1 and A2, and category B into Types B1, B2 and B3.

**Table 382** Anglo-Scandinavian knife sheaths from 16–22 Coppergate by period in catalogue number

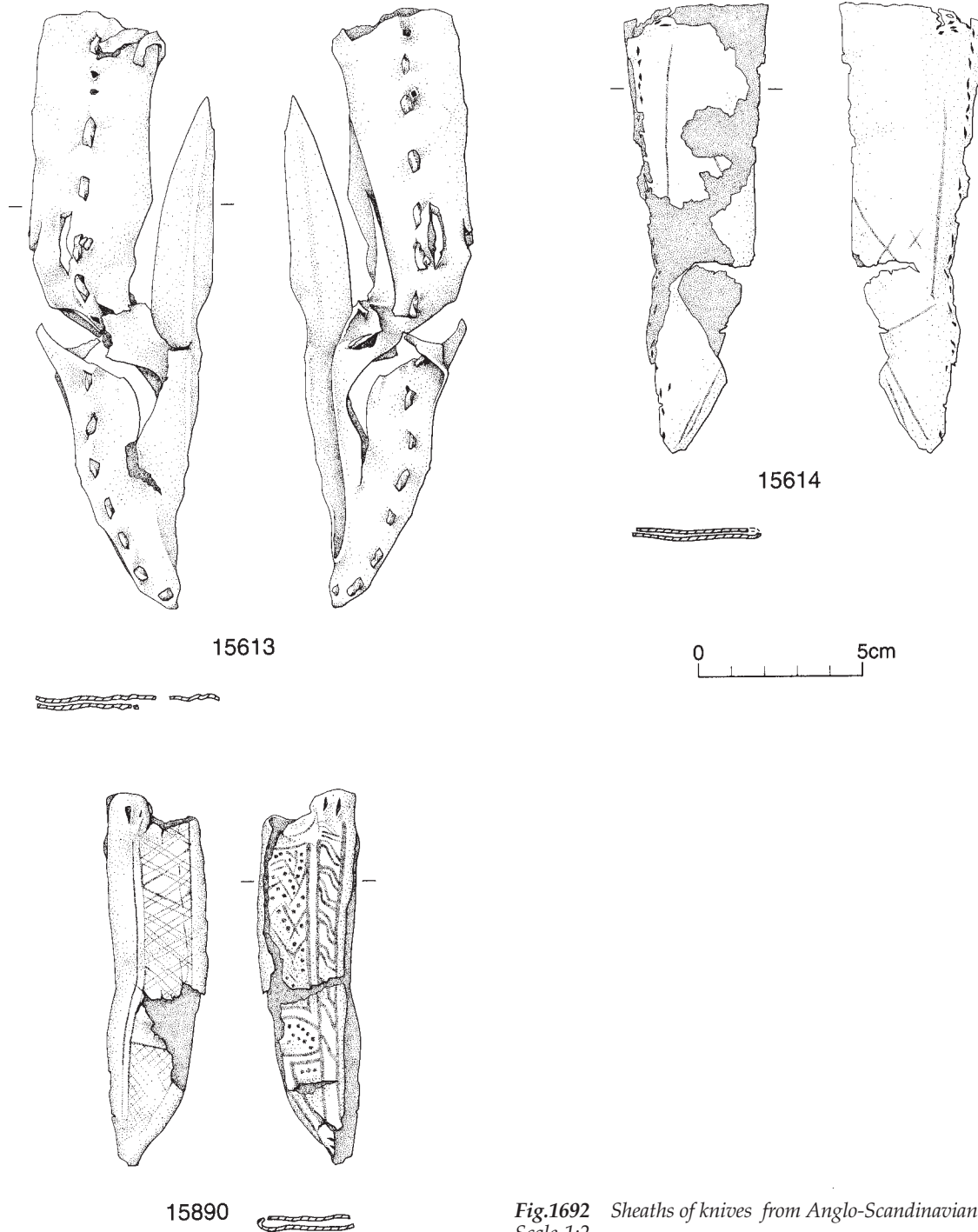
Period 4B	Period 5A	Period 5B	Period 5Cf	Unstratified
15613–21	15622–4	15638–40	15649	15641–2
15625–36	15637	15643–5		
15647		15648		

## Type A

There are four sheaths in this category from York, at least three of which were designed completely to enclose knives with handles at least as long as the blade. Two of the blades (15614, Fig.1692 and 15615, Fig.1694) must have been gently angled on the back and had convex tips while a third (15613, Fig.1692)

probably had a curved cutting edge and a straight back, horizontal with its handle.

*Type A1.* Sheaths 15613–14 belong to category A1. Both have full-length, tapering suspension flaps with a tooled line delineating the handle edge. On the flap of each sheath, groups of small holes near the mouth



**Fig.1692** Sheaths of knives from Anglo-Scandinavian York: Type A1.  
Scale 1:2



indicate attachment points for straps, and on 15613 there is also a large slit, for suspension. Both sheaths are closed along the cutting edge by running stitch. There is a similarity between A1 sheaths, including the tooled outline of the blade on 15614, and 7th-century knife sheaths of the Broomfield type; this strongly suggests that A1 sheaths are an Anglo-Saxon type. Another of the same type, found at Coppergate in 1906, is now in the Yorkshire Museum (15890, Figs.1692-3). It is seamed at the side with running

stitch and has a narrow, tapering suspension flap with a slit for suspension and a notched mouth. Decoration is divided into fields, as for the sheaths of seaxes, with which this small sheath has much in common. Two London Type A1 sheaths have since been found (MOL 825 and 44). The first, from Wood Street EC2, is a residual find from a pit of 11th-/12th-century date, while the second, from Upper Thames Street EC4, was associated with a 10th-century timber structure on the waterfront. The latter is a beautiful ex-



*Fig.1693 Front and back view of knife sheath 15890, of Anglo-Scandinavian Type A1*



ample; its method of construction, notched mouth, full-length suspension flap with a slit, and tooled decoration in delineated fields, make it a classic of its type (Cameron 2000, fig.52).

*Type A2.* Sheaths 15615–16 (Fig.1694) have suspension flaps which are not full-length and tapered, but cut away at the junction of the handle and blade, producing a sharp angle in the outline of the sheath. Although no knife sheaths of earlier date are known to have this outline it appears to echo that of some 7th-century seax sheaths, a parallel emphasised by the line of rivet holes at the seam edge of 15615. A further parallel lies in the decoration of its handle with interlocked, hatched triangles — a design used on a 7th-century seax sheath from Liebenau, Nieder

Sachsen, Germany (Häßler 1996, figs.15–16), and seemingly on one from Ozengell, Kent. Sheath 15616 has some unusual features, including a double line of awl holes at the seam edge and dotted decoration on the blade. The notched mouth is typical of Anglo-Saxon sheaths.

Two other sheaths of this type from Saddler Street, Durham (Carver 1979), are from midden deposits, one of 10th-/11th-century date, the other 11th-/12th-century. Other Type A2 sheaths have been found in a 10th-/11th-century deposit at Fishamble Street, Dublin (National Museum of Ireland collection E141:1317), and in a mid 12th-century dump at Waterford, Ireland (Hurley et al. 1997, fig.18:12, 2).

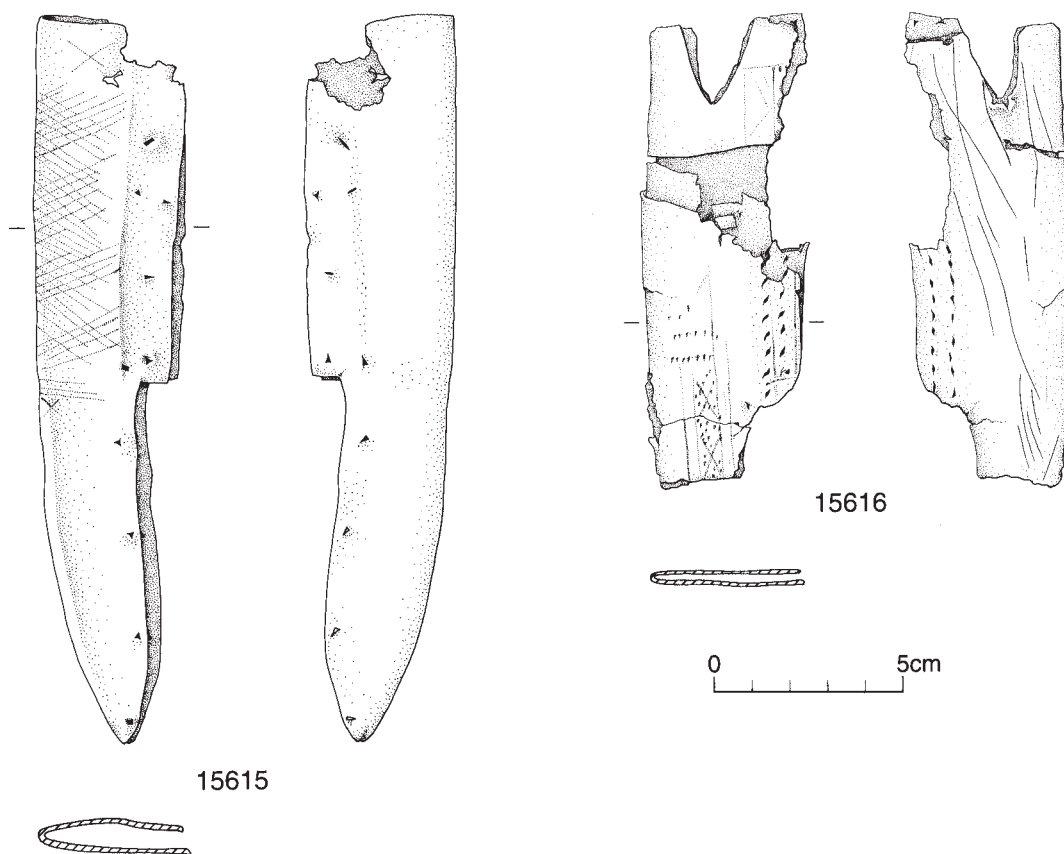


Fig.1694 Sheaths of knives from Anglo-Scandinavian York: Type A2. Scale 1:2

## Type B

Type B sheaths, from Period 4B at 16–22 Coppergate, are seamed at the back, usually with a binding stitch. The position of this seam required the blade part of the sheath to remain undecorated on the back. Few of the sheaths are complete; of those that are, the greatest blade length is 100mm (15618) and the

smallest 60mm (15625, 15627, 15631). The lengths of knife handles are generally equal to or slightly longer than the blades. Category B sheaths are subdivided into groups B1, B2 and B3 on the basis of their overall shape and particularly the outline of their suspension flaps.

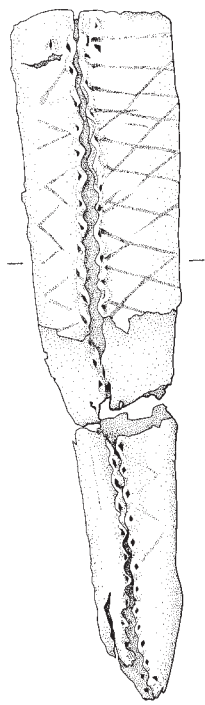
*Type B1.* Included in this group are 15617–24 (Figs.1695–7). Characteristically, these have relatively small suspension flaps, the widths of which occupy less than half the widths of the sheaths. The shape of the flap is that of a right-angled triangle with the hypotenuse represented by the tapering edge ending at the junction of the handle and blade. At the mouth of the sheath the flap may be perforated by up to three triangular holes, possibly for rivets, with a suspension slot for a thong positioned below them. A stepped notch was cut from the mouth of the sheath 15619. Tooled lines dividing the handle from the suspension flap, and outlining the blade, are common to all sheaths of this group. Of other sheaths from York, 15892 from Hungate and 15893 from 23 Market Street belong to category B1 (or possibly B3), that



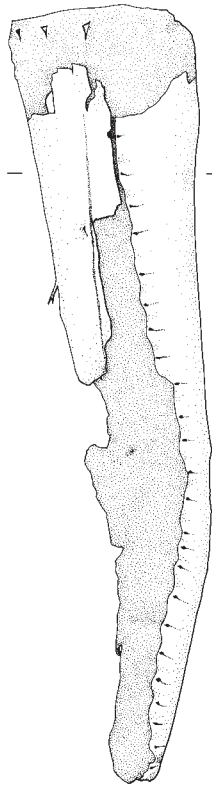
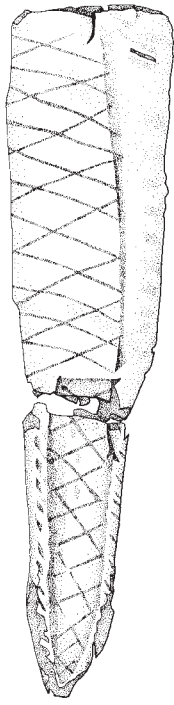
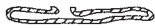
Fig.1695 Front and back view of sheath 15617 of Type B1



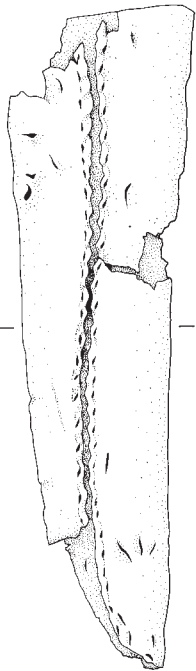
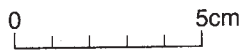
Fig.1696 Detail of sheath 15617, showing seam



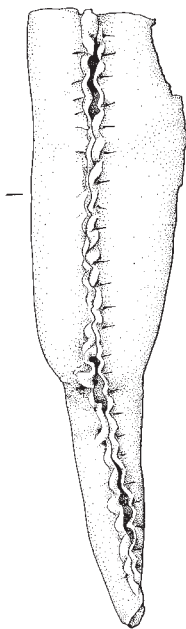
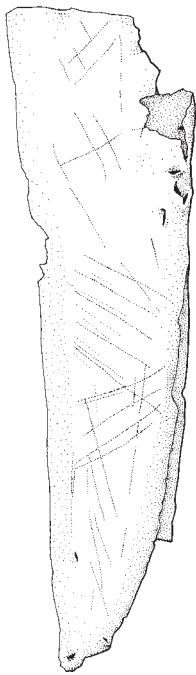
15617



15618



15622



15623



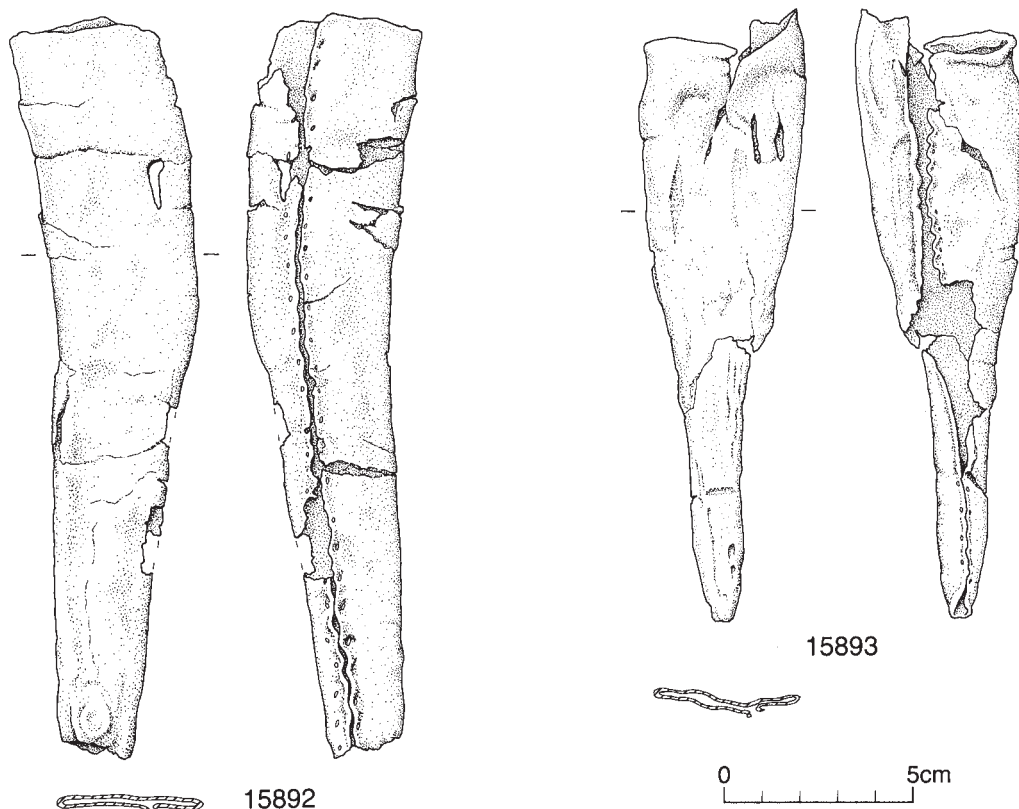


Fig.1697 (above and facing) Sheaths of knives from Anglo-Scandinavian York: Type B1. Scale 1:2

from Hungate being an elongated design for a longer knife blade.

Other examples of B1 types have been found in waterfront deposits of 10th-/11th-century date at Bull Wharf Lane, London, and from a 9th- to 12th-century context at Milk Street, London (MOL 413, 415, 418).

*Type B2.* This group includes 15625-7 (Figs.1698-9). 15627 is from the blade-end of a sheath for a straight-backed knife; 15626 is also fragmentary, while 15625 is almost complete and provides the best example of this type. It is characterised by a suspension flap, still less than half the width of the sheath, with a curvilinear outline instead of a straight taper. Type B2 sheaths have tooled decoration, suspension slits and a border, raised by moulding, to emphasise the blade. Tooling includes hatching and cross-hatching, sometimes with lines of impressed dots (15625).

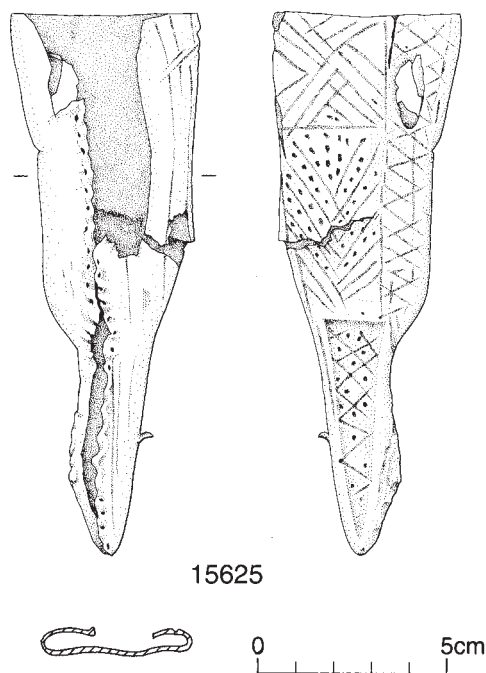


Fig.1698 Sheath 15625, Type B2. Scale 1:2



The complete sheath from 6-8 Pavement is for a knife with a straight-backed blade, parallels for which are given by Tweddle (p.142, 681, AY 17/3). Details of its description in AY 17/3 and its comparison with two sheaths from Durham leave room for doubt. It is not seamed at the side (as is claimed, and as the Dur-

ham sheaths are) but on the back face, and the outline of its suspension flap is curvilinear. It is closed at the mouth by three stitches, below which lies the suspension slot. There is no evidence to support Tweddle's suggestion that this sheath had a metal binding at the mouth. Other important features of the sheath are the



*Fig.1699 Front and back view of sheath 15625*



manner of its all-over decoration, the use of chevrons in its design, as well as the raised, moulded ridge which delineates the blade on the front face. These are all elements which help to secure the identity of this sheath with others of B2 type.

Other B2 type sheaths have not been found in England, but at least one is known from Fishamble Street, Dublin (National Museum of Ireland collection E190:155), which is similar in every way except that it lacks the overall decoration, only the blade being delineated.

*Type B3.* This group comprises 15628–42 (Fig. 1700). The distinguishing feature of these sheaths is the width of the suspension flap, which is half the total width of the sheath, and its curved outline and emphatic shoulder as it nears the junction of the handle and blade. The mouth of the suspension flap was usually closed by stitching and a suspension slot positioned below. Decoration on B3 sheaths is infrequent, although tooled lines delineate the suspension flap and sometimes the blade. Hatching and cross-hatching appears on two sheaths (15629 and 15641), and an unusual barbed-herringbone design upon another (15628). Other examples from similar contexts and dates include one from Bull Wharf Lane, London (MOL 454), another from Waterside North West, Lincoln (Cameron 2000, 255), and two from Fishamble Street, Dublin (National Museum of Ireland collection E172:12151 and E172:12169).

## Type C

A category of knife sheath which makes its appearance at York rather late in the Anglo-Scandinavian period has a long, thin outline and is almost parallel-sided. It is seamed at the edge with fine holes, as though for thread, and is generally plain and undecorated. There are a total of three (15647–9, Fig. 1701), one of which (15649) seems to have started out as a Type B sheath and was at some stage redesigned as a Type C, involving the repositioning of the seam. It was finally discarded in the mid/late 11th century. A Type C sheath from Fishamble Street, Dublin (National Museum of Ireland collection E172:9128), is the only other known example.

## Dating

The dating of all sheaths from York is dependent upon the site phasing at 16–22 Coppergate. By plot-

ting sheath types against phases the following picture emerges. During the period 930 to 975, sheaths of Types A and B were being discarded in a mixture that was dominated numerically by the Bs. The Type As might be traditional Anglo-Saxon sheaths, the Type Bs, possibly of Viking origin, are of a different design. It is not clear from the evidence at York when the new Type B sheaths, with seams at the back, were first introduced. Sheaths from the Viking town of Hedeby are not from well-stratified contexts. Although one or two pieces are equivalent to undecorated Type B sheaths at York, stylistically most appear to be of 11th- to 12th-century date (Groenman-van Waateringe 1984, taf.21, 5 and taf.22, 5). It is only the B3 type which provides continuity in knife sheath manufacture from 930 to the mid 11th century at York. Others from Types A, B1 and B2 fail to appear after 975.

The two A2 sheaths from Coppergate came from mid 10th century contexts, but elsewhere tend to appear in 11th-century contexts and as such supply a link in the ancestry of edge-seamed sheaths. Type C sheaths were found at Coppergate in late 10th- and 11th-century contexts only.

## Decoration

While some of the sheaths of 10th- and 11th-century York are highly decorated, this is not characteristic of the assemblage as a whole. For instance, included in the more highly decorated group is the 9th-century sheath from Parliament Street, and other sheaths of Types A1, A2 and B2. On the other hand, the most commonly occurring Type B3 sheath is generally plain.

Decoration, where it occurs, is consistent with known Anglo-Saxon techniques such as linear tooling, although there are also examples of incising and stabbing. The stretching and shaping of the spines of some sheaths from the 9th century onwards is a technique not previously in evidence. However, this perception may well result from the scarcity of leather surviving from earlier periods, and the poor condition in which it tends to be found. Styles of decoration on sheaths from York, such as strict adherence to standard fields, frequent use of hatched and cross-hatched lines, and the partial outlining of handles and blades, are also consistently Anglo-Saxon. Whereas earlier traces of Anglo-Saxon decorated leatherwork are characterised by precision, the decor-

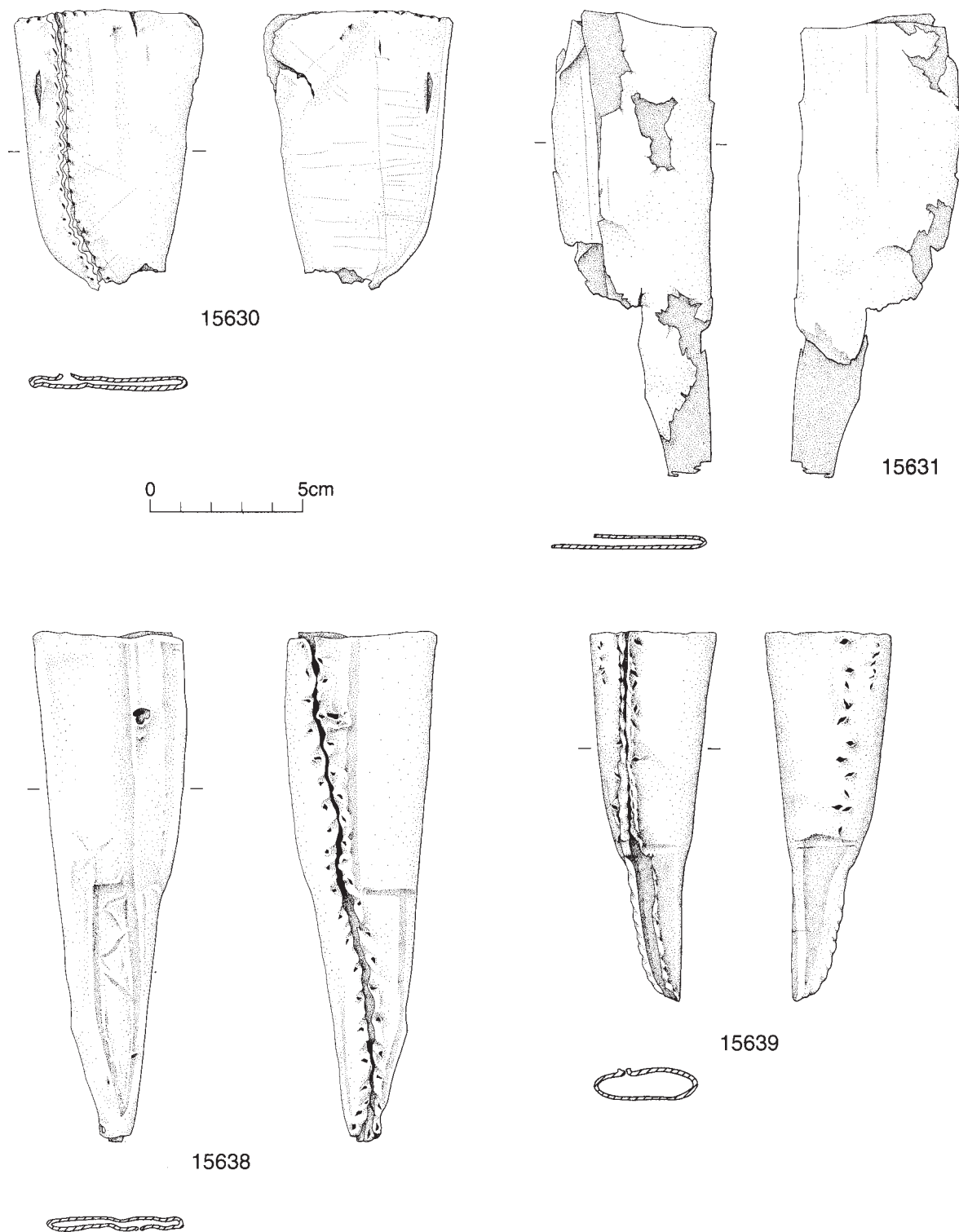
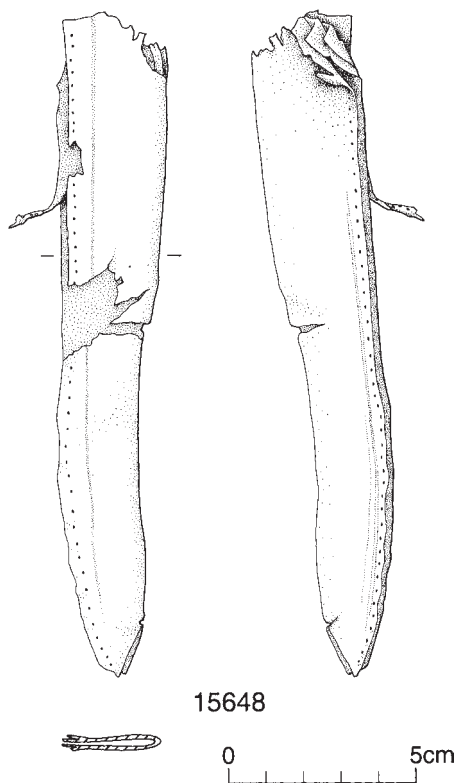
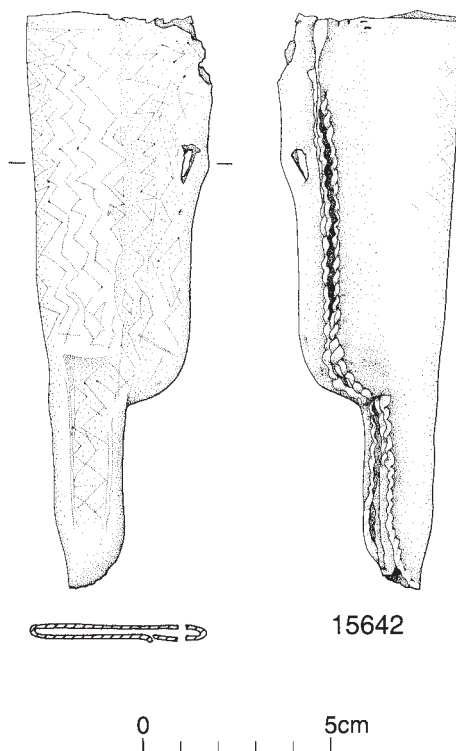
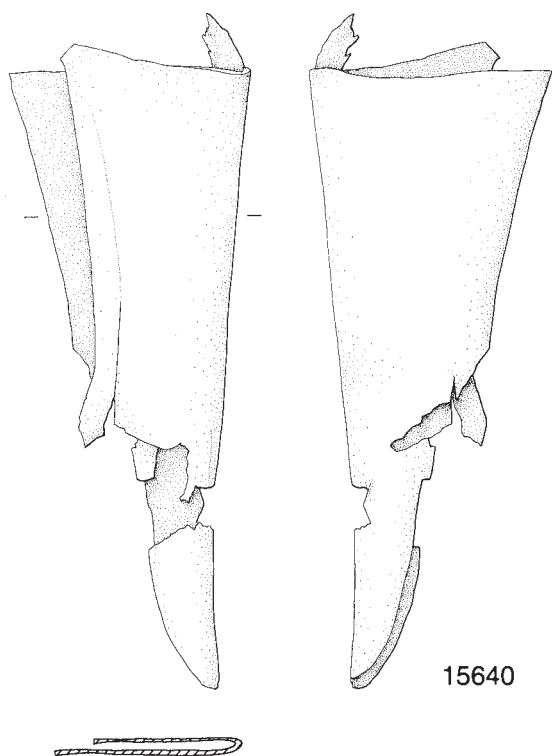


Fig.1700 (above and facing) Sheaths of knives and seaxes from Anglo-Scandinavian York: Type B3. Scale 1:2



ation of Type B1 and B2 sheaths falls a long way short of that and appears to have been executed freehand and at some speed.

*Sheaths of seaxes of the 10th and 11th centuries* (Figs.1702–9)

Seven sheaths of seaxes have been found at York, four of which are from 16–22 Coppergate (15659–62, Figs.1702–8), another from the 1906 excavations (15889, Figs.1707, 1709) and two from Parliament Street (753–4, AY 17/4). Other members of this distinctive group, discovered at Hexham, Northumberland (Smith 1923, 106), Cheapside, London (Dunning 1932; Vince 1991, 211–12; Waddington 1927, 526–7, pl.LXV), Southgate Street, Gloucester (Goudge 1979; AY 17/4, 240), and Berkeley Street, Gloucester (Garrod et al. 1984, 98, fig.66), bring the total known in

Fig.1701 (left) Sheath 15648, Type C. Scale 1:2

England to twelve. Three others, outside England, are published by Okasha (1992). At a recent count the total number of whole and fragmentary sheaths of seaxes of 10th- and 11th-century date found in Dublin reached thirteen, and a fragment which may be from another was found at Waterford (Hurley et al. 1997, fig.18:14.6).

Made of substantial leather, up to 3mm thick, these sheaths are folded over the back of the blade and

joined along the cutting edge, after the fashion of earlier sheaths of the 7th century. The natural shape of the folded leather is modified along the fold by being stretched to accommodate the back of the blade. A common feature is a moulded ridge which runs along the back of the blade-part to add strength where stretching has weakened it. The sheaths were all closed along the cutting edge, usually by rivets at intervals of about 40–50mm, traces of which suggest that they were normally of iron, some with disc-like heads and wash-

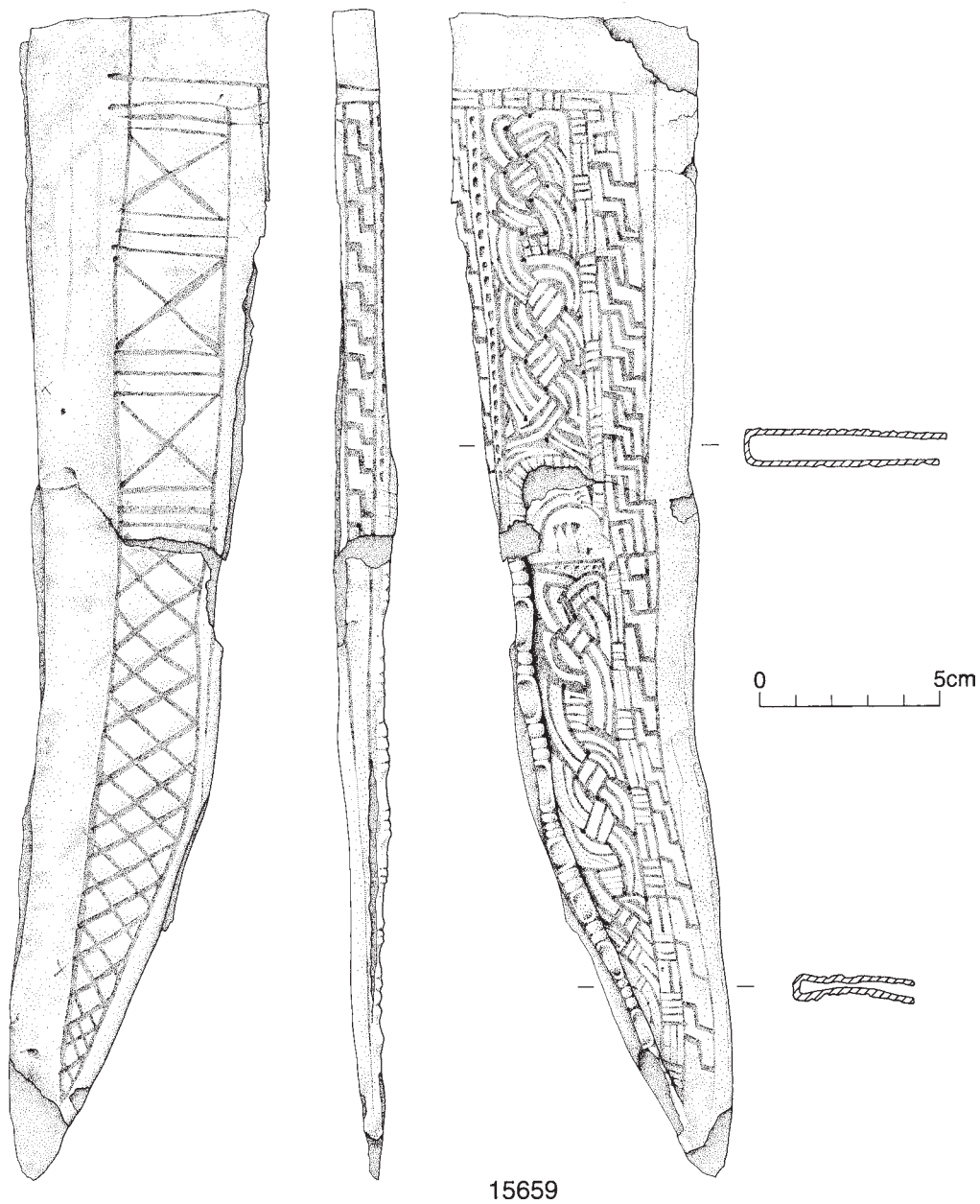


Fig.1702 Seax sheath 15659, Group 1. Scale 1:2

ers. One sheath from York (15661, see Figs.1704-6) and another from Berkeley Street, Gloucester (Garrod and Heighway 1984, fig.66), were fitted with rectangular iron platelets associated with rivets at either end of the handle part, presumably to reinforce these two positions for strap attachment. The sheath from Parliament Street, York (753, AY 17/4) has a concentric wear pattern around one of these two rivet positions and similar marks are visible at the mouth of the sheath from Berkeley Street, Gloucester.

In addition to rivets, many of the sheaths were also closed by tunnel stitch. The purpose of the rivets, apart from attaching suspension straps, is not therefore immediately obvious. The edges where they are invariably found are plain, while other exposed surfaces are decorated, and this may be due to the edges having been concealed by metal U-shaped reinforcers fastened by the rivets. No sheath fittings of this kind and of this date are known in England, although the sheath from Aachen, Germany, still has metal fittings (Okasha 1992). The nearest example to the type pro-

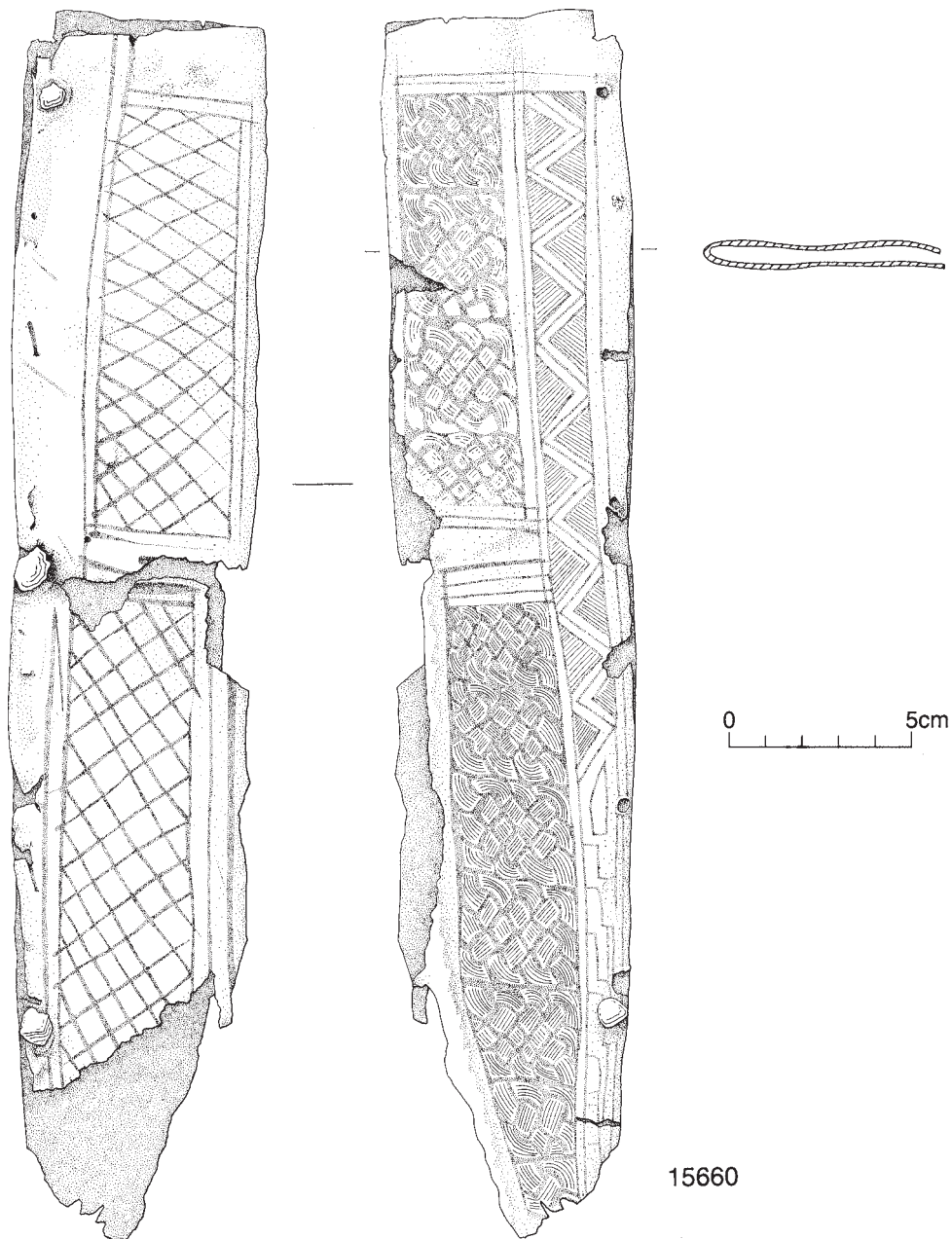


Fig.1703 Seax sheath 15660, Group 1. Scale 1:2



posed is that from the Thames at Westminster Bridge, of probable 8th-century date (Webster and Backhouse 1991, 225). Since the sheaths discussed here had to all appearances been deliberately discarded, it is likely that any metal fittings they might once have had were removed beforehand.

### Decoration

All the sheaths of seaxes of Late Anglo-Saxon date are elaborately decorated. Decoration was applied within a maximum of seven designated fields upon the sheaths, namely handle (front and back), blade (front and back), suspension flap (front and back) and

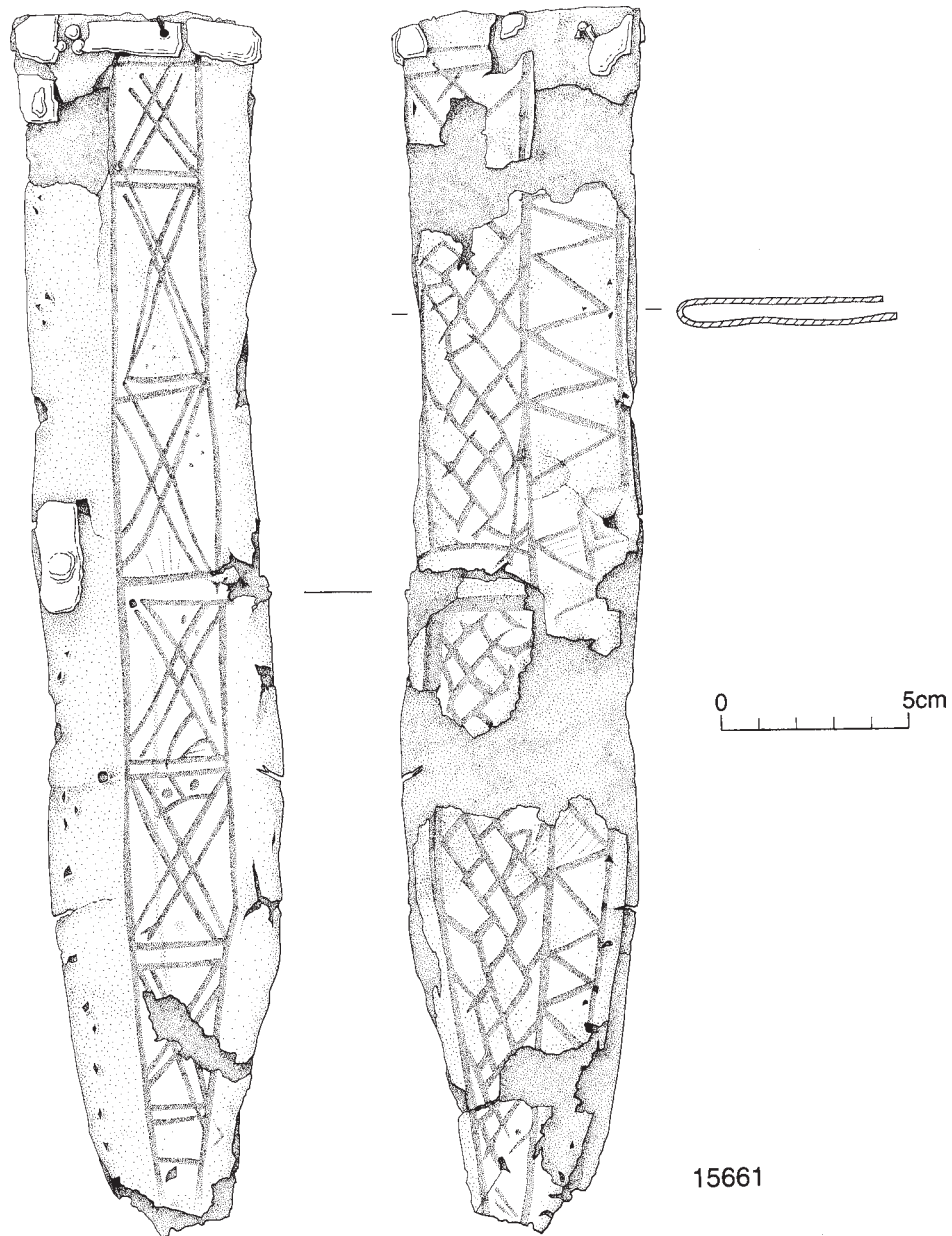


Fig.1704 Seax sheath 15661, Group 1. Scale 1:2

spine. The most common technique used to execute linear designs is the impression of the leather by tooling. Punched decoration in the form of ring-and-dot is also used. One of the more elaborate designs, in acanthus scroll, is executed by a technique known as embossing (754, AY 17/4). On two sheaths (753, AY 17/4; 15659, Fig.1702) a moulded spine extends onto

the junction between blade and handle, forming a crescent or roundel on the front face which appears to be decorative rather than functional.

### Categories of sheaths of seaxes

The sheaths of seaxes are divided here, on stylistic grounds, into three groups.

Group 1 sheaths from Coppergate include 15659–61 (Figs.1702–6). The decoration of the handle and blade sections of the front face, executed with varying degrees of skill, is typically in wide-bodied interlace, some of it coarse and dismembered. A series of templates seem to have been used in laying out the design of one (15660, Fig.1703). Corresponding areas on the back face are most commonly filled by cross-hatching, occasionally in paired lines, with ring-and-dot sometimes punched between the intersections. The front of the suspension flap may be decorated either in intersecting triangles or coarse interlace. The spines of sheaths in this sub-group may be decorated with key-pattern. Other sheaths of seaxes belonging to Group 1 are from Hexham, Berkeley Street, Gloucester, and Trump Street, London.

A sheath belonging to Group 2 is from Parliament Street (753, Fig.107, AY 17/4). Only five of the seven possible fields of decoration are filled but, in addition, a roundel with a crouched animal motif marks



Fig.1705 Front and back view of sheath 15661

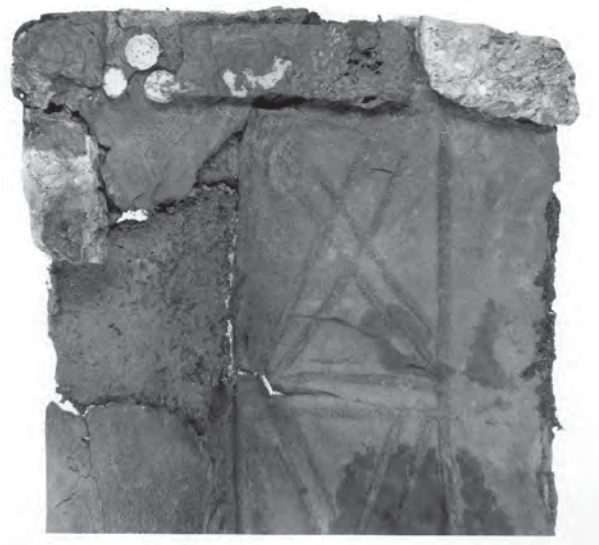


Fig.1706 Detail of sheath 15661 showing metal fittings

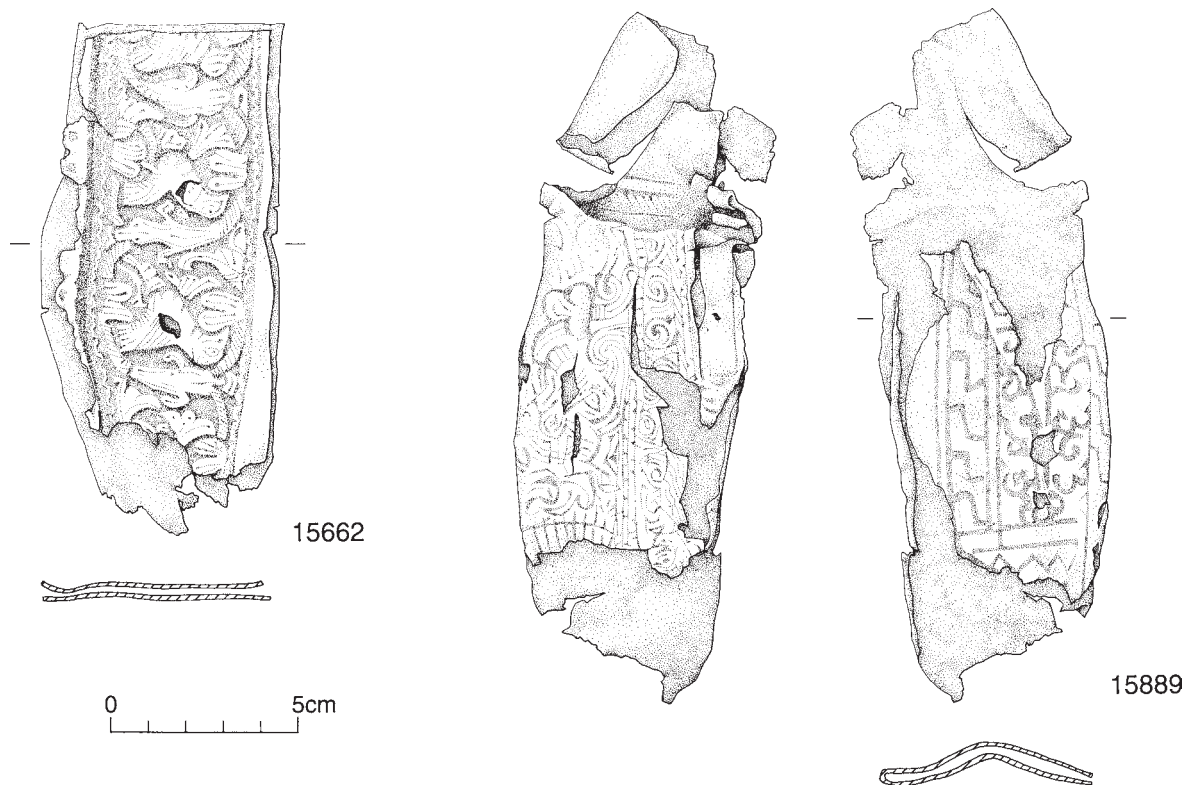


Fig.1707 Sheaths of seaxes from 10th- and 11th-century York, Group 3. Scale 1:2



Fig.1708 Detail of sheath 15662

the division between handle and blade. The design upon the front face (handle and blade) is a modular figure-of-eight loop interlaced with narrow strands. The suspension flap on the front face is filled with intersecting triangles, hatched. The back (handle and blade) is occupied by a loose interlace reminiscent of 'sprang', a type of elastic netting (Hald 1980, 274; Barber 1991, 122–4). This sheath is strikingly matched by another from Southgate Street, Gloucester (Goudge 1979).

Group 3 sheaths are from 16–22 Coppergate (15662, Figs.1707–8), the 1906 Coppergate excavations (15889, Figs.1707, 1709) and Parliament Street (754, Fig.107, AY 17/4). Decoration of all three involves busily entwined elements, including acanthus scroll, on both front and back faces. These sheaths are all fragmentary, with either the handle or blade part missing. One other similar sheath was discovered at Cheapside, London (Vince 1991).

The dating of these three groups depends upon the dating of comparable English art styles in metalwork, manuscript and sculptural form, as well as



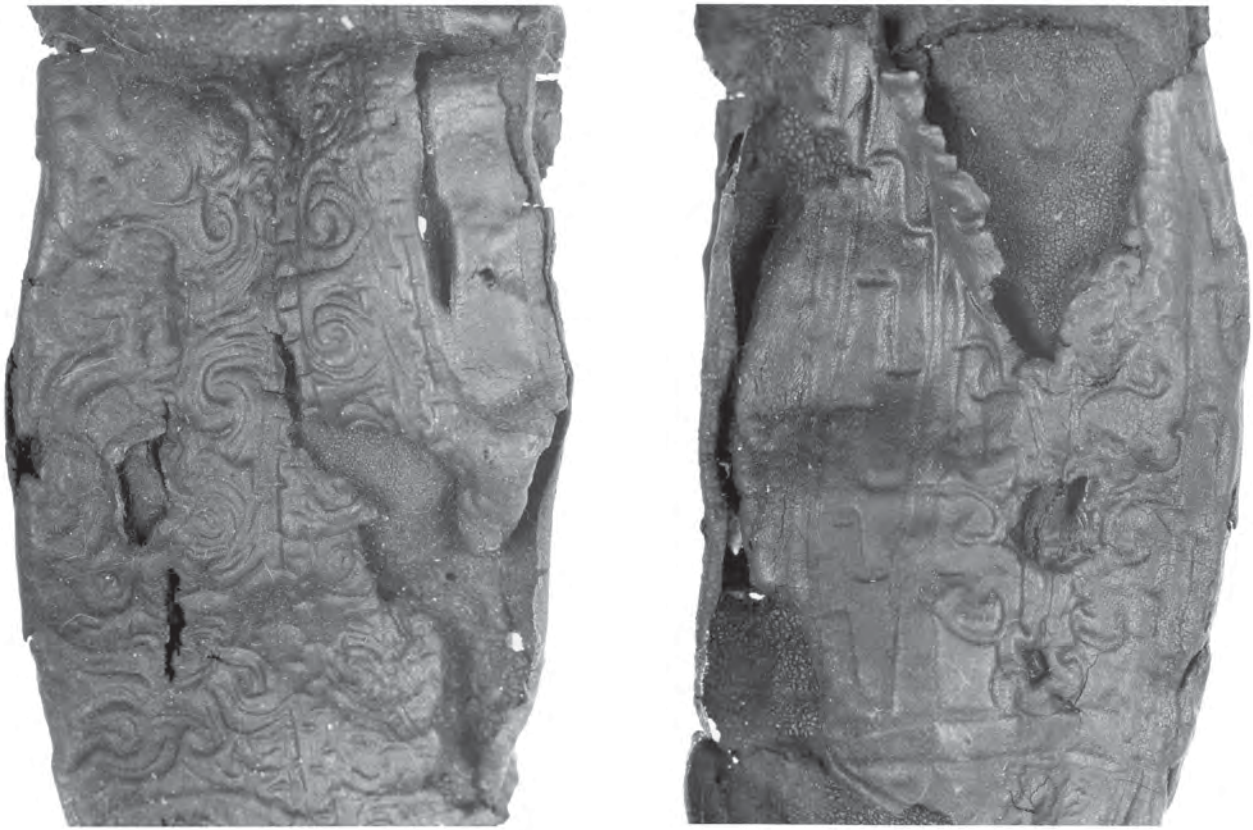


Fig.1709 Detail of the decoration on the front and back of sheath 15889

upon the contexts in which they were found. All twelve decorated sheaths from England are assumed to come from pre-Conquest contexts. The most recent finds, particularly those from Coppergate, provide the most secure dating evidence for the entire group. Group 1 contains three sheaths from Coppergate, two of which (15659–60) are contextually dated 930 to 975, and another (15661) from the late 10th to the early/mid 11th century. The dating of the two sheaths from Group 2 (from Southgate Street, Gloucester, and 753 from Parliament Street) is less secure, but they are from probable 10th- to 11th-century contexts. However, Tweddle has already pointed out the similarity of the interlace in their decoration to Urnes style, which Wilson (Lang 1978, 140) dates at 1040 to 1135, and the cut-off date for this group is thereby extended a little beyond the Conquest. Group 3, characterised by acanthus-type designs, post-dates the introduction of this motif in the early 10th century. Since no chronological development between the sub-

groups is indicated, a general date of 930 to just beyond the Conquest covers them all. A representation of a seax sheath survives upon a 10th-century carved stone cross in the church at Middleton, North Yorkshire (Hawkes 1989, fig.6.15, 3).

### *Sheaths of knives from post-Conquest York*

Seven knife sheaths from post-Conquest levels at 16–22 Coppergate are from various contexts ranging in date from the 11th to the 16th century. Two others are from unstratified deposits at Coppergate, and three more sheaths, from 22 Piccadilly, Bedern Foundry and the College of Vicars Choral, were also from medieval deposits. Three sheaths (15641, 15646, 15649) of Types B and C, being of probable pre-Conquest date, although from post-Conquest levels, are dealt with under the heading Anglo-Scandinavian sheaths (see above).

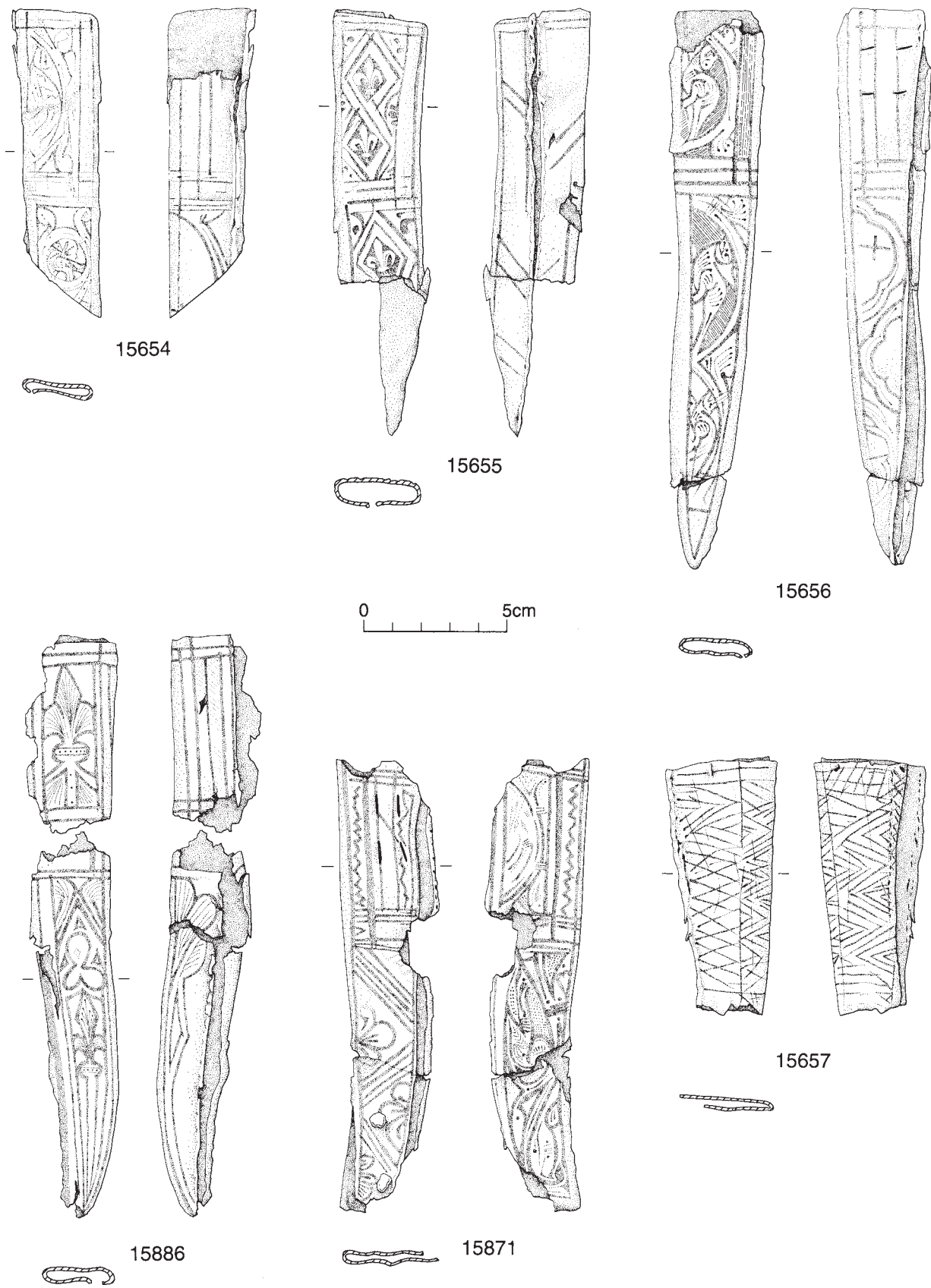


Fig.1710 Sheaths of knives from medieval York: Type E. Scale 1:2



**Table 383** Sheaths of knives from post-Conquest York

Site	Cat. no.	Context date	Date by form and style
16–22 Coppergate	15650	C6e2 (12th–13th century)	11th–12th century
16–22 Coppergate	15651	A6z4 (13th century)	11th–12th century
16–22 Coppergate	15652	u/s	11th–12th century
16–22 Coppergate	15653	C6e11/D6e3 (mid 13th century)	mid 13th century
16–22 Coppergate	15654	D6f8–g2 (late 15th–mid 16th century)	13th century
16–22 Coppergate	15655	D6g2 (mid 16th century)	13th–14th century
16–22 Coppergate	15656	D6e7 (early 14th century)	13th century
16–22 Coppergate	15657	u/s	13th century
16–22 Coppergate	15658	B6g4 (early 15th century)	late 13th–14th century
22 Piccadilly	15857	P4.2 (late 11th century)	late 11th–12th century
Bedern Foundry	15871	P1.2 (mid–late 13th century)	mid–late 13th century
College of Vicars Choral	15886	P8 (mid 15th–16th century)	13th–14th century

## Type D

Four undecorated sheaths (15650–2, 15857), each of them severely cut and torn, probably belong to an amorphous group of sheaths of crude design and construction sometimes found in urban deposits. One of them (15650), however, is not entirely plain for it has the outline of an angle-backed knife tooled upon it, which indicates a probable date of manufacture prior to the 13th century.

## Type E (Fig.1710)

The unstratified fragment 15657 and sheath 15653 are examples of a distinctive 13th-century type. Both are characterised by a close-fitting handle section, all over cross-hatching and chevrons to both faces, and a central division of the decorative fields. Other examples are known from London (Cowgill et al. 1987, fig.80, 389) and Waterford (Hurley et al. 1997, fig.18:13, 2, 4 and 9). Other 13th-century sheaths, from Bedern Foundry (15871), the College of Vicars Choral (15886) and Coppergate (15654–6), illustrate certain changes to the form and style of most sheaths following the Conquest. In many cases the outline of medieval knife blades and their handles allowed sheaths to be more closely fitted at the handle end.

This trend, accompanied by the repositioning of suspension slots from the side to the back of the sheath, rendered the device of the suspension flap redundant. The seam was still positioned on the back, sometimes very close to the edge, finely stitched with thread in a manner that would have made it almost invisible. The handle and blade were, as before, delineated by tooling, but the infilling of these fields with decorative elements, which previously had been hatched, now incorporated leaves, tendrils, animals and birds in a more sophisticated, curvilinear style.

## Type F (Fig.1711)

Sheaths of this category are distinctive both in outline and in the form of their decoration. Sheath 15658 was designed for a short-bladed/long-handled knife, which was accommodated at one edge of the sheath, occupying no more than two-fifths of its total area (in contrast to those of Type E). The remainder of the sheath appears to be an exaggerated suspension flap, the purpose of which may have been to provide suspension slots and extra surface area for decoration. The all-over decoration, which is executed by tooling, occupies the usual fields of knife handle, blade and suspension flap, although the outline of the knife is not part of the design on the reverse.

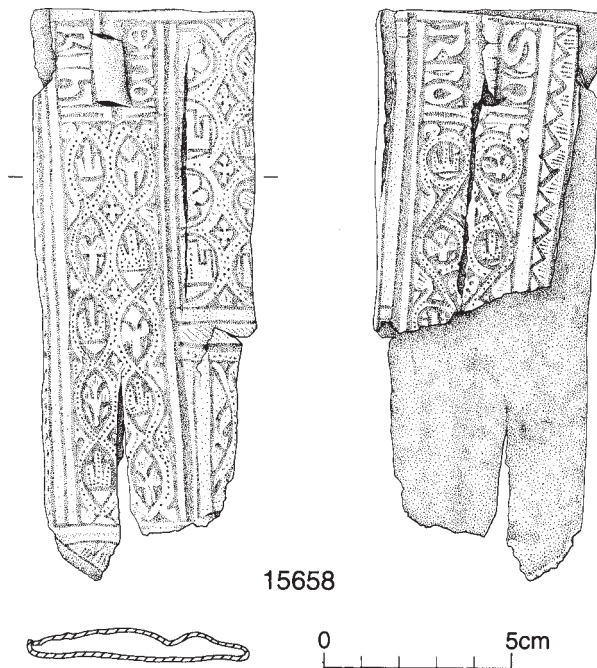


Fig.1711 Sheath 15658 from medieval York: Type F. Scale 1:2

Certain areas of the sheath are covered with roundels, while the body of the front suspension-flap has lozenges, all of which are infilled with one of two heraldic motifs: a triple-towered castle and a fleur-de-lis (see p.3389). To either side of the suspension slot, on both front and reverse, is an illegible inscription, which may be an abbreviated name or motto, in Lombardic script, typical of the late 13th century (J. Cherry, pers. comm.).

### Dating

Sheaths similar to those of Type E have been excavated from a 14th-century pit in Hull (Evans 1993, fig.124, 344–5) and from an unstratified context in London (Cowgill et al. 1987, fig.102, 472). It is probable that 15654 could also be placed in the 13th century, sharing as it does several elements of form and style with 15871 and 15656 (Fig.1710). A bird within a roundel of acanthus leaves is featured on the front, and this too is paralleled by finds from early 14th-century contexts in Hull (Evans 1993, fig.122, 338) and London (Cowgill et al. 1987, fig.88, 417; fig.89, 419 and 421; fig.90, 423). Interestingly, another Lon-

don sheath with a similar design is ascribed by Russell to the 12th century (Russell 1939, pl.III, 2).

Sheaths 15655 and 15886 (Fig.1710) are of 13th-/14th-century date. The fleur-de-lis pattern of 15655 is one that is used over several centuries, while the linear design on the back and the general outline of the sheath (which is incomplete) could equally belong to either century. The outline of 15886 and the distinctive motif of a fleur-de-lis on a rod lies comfortably within the 13th century. Similar sheaths have been found in early/mid 14th-century contexts in London (Cowgill et al. 1987, fig.88, 415–16).

Consideration of form and decoration leads to the conclusion that most of the medieval sheaths under discussion are earlier in date than site phasing at York would indicate. This suggests that a process of wear, discard and redeposition of material may have taken place, resulting in a residual effect upon the finds from the College of Vicars Choral and 16–22 Coppergate. Comparable material from urban contexts elsewhere in England suggests that many of these deposits may also be of a residual nature, which goes some way to explain the looseness of their dating.

### Summary

Eleventh- to 12th-century sheaths discovered elsewhere in England and its nearest trading ports include a small group from Durham (Carver 1979); larger groups from Hedeby and Schleswig (Groenman-van Waateringe 1984; Schnack 1998); a single example from a 12th-century pit in London (Vince 1991, 130–3); a group from a 12th-/13th-century deposit at Low Petergate, York (Wenham 1972); a sheath from 11–13 Parliament Street, York (973, Fig.107, AY 17/4), and assemblages from Dublin (O’Riordain 1969, 23–5) and Waterford (Hurley et al. 1997, 736–42). English sheaths of the 13th to 15th century, which are more numerous, are known from Hungate, York (Richardson 1959); Hull (Evans 1993, 176–82); Coventry (Chatwin 1934); Southampton (Platt et al. 1975, 299); Norwich (Hurst and Golson 1955–7, fig.25); London (Cowgill et al. 1987); and Bergen (Herteig 1959). Substantial groups of late medieval sheaths from urban sites elsewhere in northern Europe include Schleswig, Leiden and Svendborg (Schnack 1998; van Driel-Murray 1990; Groenman-van Waateringe 1988).

Of the twelve post-Conquest sheaths from York, four are probably 11th/12th century in date, and

eight belong to the 13th/14th centuries. The types are not exclusive to York but belong to a mixture of form and style that appears to have prevailed simultaneously across the kingdom.

### *Heraldic motifs on two sheaths from York*

By John A. Goodall, FSA, FRNS

15655 (Fig.1710)

This sheath has panels with lozenges containing a fleur-de-lis, with palmettes in the interstices. The back is decorated with unevenly spaced inverted chevrons. The fleur-de-lis was an extremely popular motif, either as an all-over pattern of closely set small stamps (MOL 438, 440; Southampton sfs1975, 2157) or else in lozenges as here (MOL 440 in a dotted lozenge lattice, and MOL 447). It was also used in combination — the lilies of France and leopards of England occur together in heraldic line fillers of the so-called East Anglian manuscripts at the beginning of the 14th century.

15658 (Fig.1711)

The front of this sheath has alternating castles and fleurs-de-lis in dotted oval frames and small fleurons in the interstices. On the back is a similar pattern but the fleurs-de-lis are rendered incompetently. While it is possible that the front design may have links with 13th- or 14th-century Spain, the armorial carvings on the ends of the sarcophagus of Alphonso de la Cerda (d.1327/33) divide the arms of Castille and Leon in elaborate double frames with fleurs-de-lis, alluding to his mother Blanche, daughter of S. Louis (d.1300), in the interstices (Gómez-Moreno 1946, pl.xxii). More obvious comparanda are sheaths from London featuring lozenges with castles halved with fleurs-de-lis, or vice-versa (MOL 426–8). Wilmot (Cowgill et al.1987, 47ff.) suggests that these could be explained by the arms borne by Alphonse, Count of Poitou, son of Louis VIII of France and Blanche of Castile (d.1271): *Azure flory gold halved with Gules semy of castles gold* (Heralds' roll 67, revised edition 51). He does not, however, offer any explanation for the frequent occurrence of a minor French royal cadet's arms in this country. A preferred interpretation can be derived from the Great Seals of Edward II and Edward III (Birch 1887) which refer to the queens of Edward I, Eleanor of Castile and Margaret of France, through the addition of castles on either side of the

enthroned king. Edward III added the fleur-de-lis, an allusion to his mother, Isabel of France.

### *The suspension of sheaths*

Although manuscript illustrations of the 13th and 14th centuries show knives being worn in a variety of ways (Cowgill et al. 1987, 54–5), stitch holes in sheaths of earlier date, from Anglo-Scandinavian York, suggest that they were sewn or tied to a strap that hung from the waist belt. Holes in the suspension flaps of pre-Conquest sheaths are of four types: single, large holes or slits for suspension straps (e.g. 15642, Fig.1700), groups of awl-holes where the sheath was stitched to a girdle or strap (e.g. 15617, Fig.1697; 15628), fine holes near the top edge where the flap was closed by stitching (e.g. 15630, Fig.1700; 15635), and angular holes aligned at the mouth where rivets were used to close the flap (e.g. 15618, Fig. 1697). Of these, the first two types alone are concerned with sheath suspension.

Among several fragments of strap from Period 4B at Coppergate, two of identical form and character might have served as connectors between sheaths and belts (15609–10, Fig.1691). The reasoning behind the suggestion lies in similarities in the size and grouping of stitch holes on straps and sheaths, as well as the suitability of the straps for this purpose. Both items consist of a short strap, doubled to form a loop, the two ends stitched together, and perhaps at one time attached to a sheath or a belt. Knotted to the loop is a narrower strap with both ends free for attachment, possibly to a belt or a sheath. The straps were not found connected to sheaths and their identification as fasteners for sheaths is conjectural. A similar, if not identical, strap arrangement was found sewn to a sheath from 11th-/12th-century deposits at Hedeby (Groenman-van Waateringe 1984, taf.20, 6). No straps specific to the wearing of sheaths of seaxes have been identified from the corpus of leatherwork at York.

Unlike pre-Conquest sheaths, those of the 13th and 14th centuries were not suspended from their edges, but from one or two pairs of slits positioned at the back. In manuscript illustrations and on monumental effigies, sheaths are sometimes shown being worn closely attached to the waist-belt rather than hanging from it; indeed, no straps for their suspension have been identified in England.

## *Anglo-Scandinavian blades and the shapes of sheaths and scabbards*

### **Knives**

Among a range of Anglo-Scandinavian knife forms from Coppergate are some which appear to be compatible with sheaths from the same site. Blade forms delineated on the outside of two Type A1 sheaths, *15614* from 16–22 Coppergate and *15890* from the 1906 excavations on Coppergate (Fig.1692), have convex backs with lengths of 44mm and 38mm and widths of 16mm and 18mm respectively. These are nearest in outline to knives with back forms C1 and C3 as described in *AY 17/6* (pp.565–70) although the short blade length makes form C3 (which itself might be a worn form of C1) the closest match. Sheath *15614* comes from Period 4B and therefore fits comfortably within the 9th- to 11th-century span to which form C3 knives belong (the context of *15890* is unknown).

Similarly, the Type A2 sheath *15615* (Fig.1694) was designed for a knife of back form C1, with a blade 90mm long and 18mm wide. Type B1 sheaths include *15617* for a knife of back form C1 with a blade 74mm in length, *15622* and *15623* for knives of back form C3 with blades 70mm and 64mm in length respectively, and *15618* with for an angle-backed A1 Knife with a blade 100mm in length (Fig.1697). Type B2 sheaths *681* (*AY 17/3*) and *15625* (Fig.1698) were for knives of back form C1/D with blades 68mm and 60mm in length respectively. All but one of the Type B3 sheaths also seem to be designed for C1 knives, the exception being *15638* (Fig.1700) which was for a knife of the rare back form B with a blade 78mm in length. However, it cannot be claimed of Anglo-Scandinavian finds either in the Coppergate assemblage or among finds from the city of York itself that any pattern of association between particular blade forms and types of sheaths is discernible.

Both knives and sheaths of the later medieval period project an image of increasing conformity; the outlines of blades on sheaths from Coppergate and Bedern are similar to knives from Coppergate, the watching brief, 22 Piccadilly and Bedern (see pp.2751–5 *AY 17/15*).

### **Seaxes**

None of the sheaths of seaxes was found containing a blade, but their design indicates that they were

intended to house large angle-backed knives and seaxes. Measurements of all known large sheaths in England suggest that the blades of these weapons varied in length from 170mm to 200mm generally, with one from London (Cheapside) 250mm in length. Similarly, we can also deduce that their widths varied from 30mm to 40mm. Knives or seaxes of these dimensions from known 10th- to 11th-century contexts are rare. Of 128 knife blades from 16–22 Coppergate (one of the largest collections of late Anglo-Saxon knives in Northern Europe) only one (*2811*, Fig.230, *AY 17/6*) can be called a seax by Härke's definition (Härke 1989).

It is common to find the outlines of large knives tooled into the leather of seax sheaths and incorporated into the decorative design. These tooled images show straight and curved cutting edges, horizontal and sloping backs of blades (relative to the handle) and tips which are concave, convex and straight. It is not, therefore, possible to classify the sheaths on the basis of blade shape — for instance, by applying Ottaway's analysis of knives from Coppergate (pp.558–78, *AY 17/6*) — because the knives depicted on the sheaths exhibit too much variation in this respect.

### **Swords**

Despite evident changes in the metallurgy and production of middle Anglo-Saxon weapons, the dimensions of swords of the Anglo-Scandinavian period are broadly comparable to those of early Anglo-Saxon date although the former often have fullers, tend to be slightly shorter in length and are more tapered than the latter. Measurements of some middle and late Anglo-Saxon weapons show that the blades of swords ranged in length from 633 to 810mm, and in width from 43 to 62mm (Cameron 2000, 57). Scabbard remains from York all fall within this range. The hilt-fittings of swords dating from the late 9th century onwards are various but a typology of early medieval Norwegian swords (Petersen 1919) contains a late 9th- to early 10th-century group with curved guards which is recognised as essentially Anglo-Saxon in origin. Subsequent studies of middle and late Anglo-Saxon swords, based upon this group (Petersen's Type L), and upon its later sub-groups, have been published by Wheeler (1927), Wilson (1964 and 1965) and Evison (1967). The iron guards of Petersen's Type L are elliptical in plan and curved in outline which, sometime in the 11th century, occa-



sionally included a triangular field at the apex of the curve and a downward projection from that apex. The majority of scabbard remains from York are incomplete, but in seven cases the mouths of scabbards were identified, all of which were curved, including two of 11th-century date or later.

The apparent merging of Scandinavian and Anglo-Saxon designs in blade production in the 10th and 11th centuries prevents attribution to either cultural group on the basis of outline alone or when the lower guard is curved. The same may be said of scabbards, especially when only the leather parts remain, because although these can supply blade dimensions and the outline of the lower guard, no characteristics have yet been identified by which cultural differences might be distinguished. The reader should be aware, however, that evidence for scabbards in Scandinavia has yet to be collated and that the scope of this comparison is limited to the British Isles.

### **Sheaths of seaxes** (Figs.1702–4)

The cultural origins of these sheaths are suggested by features of their style and construction. Key elements are the closure of the seam by tunnel stitch and the practice of horizontal suspension to which are linked the device of the suspension flap, rivets at the seam edge and the use of metal edge-reinforcers. Decoration is impressed within designated fields, outlined by borders. Since these are all features of sheaths found in Anglo-Saxon England from the 7th century, a continuance through to the Conquest might be suggested. However, the fact remains that these sheaths are found in areas of Scandinavian rather than English influence; a wooden seax from Littleton bog, County Tipperary (National Museum of Ireland collection 1954:7), dated to the 10th century and called a weaver's sword, has a roundel in the same position as the moulded roundels on two sheaths from Parlia-

ment Street and Coppergate, York (753, AY 17/4, and 15659, Fig.1702). The number of sheaths for seaxes discarded at Fishamble Street (and other sites) in Dublin, and the distribution of similar types of sheaths elsewhere in England (York, Gloucester and London) and abroad (Trondheim, Norway; Aachen) is not easily accounted for, although the craftsmanship embodied in seaxes and their sheaths may have led to their transport as objects of trade.

### **Scabbards**

In construction, the scabbards of Anglo-Saxon and Viking swords followed a tradition similar to each other. They were made of wood, lined with lamb-skin, and their leather covers were seamed at the back. There is some evidence to suggest that the scabbards of Viking swords were lined with woollen textile instead of fleece, but remains of scabbard linings (of any description) were not found at York. Both cultural groups had adopted the downward curving lower guard and the mouths of scabbards were consequently convex in plan. The use of metal strap-slides, conjectured from the evidence of the leather, can be linked only tenuously to a much earlier Anglo-Saxon tradition. Indeed, a raised feature on the leather surface of a scabbard from a so-called 'Viking' burial at Cronk Moar, Jurby, Isle of Man, may also be related to this practice, and suggests that the strap-slide tradition was not confined to the settled lowlands of England (Bersu and Wilson 1966, pl.XII, fig.42). One scabbard-related item from York, the source of which is indisputably Baltic, is the metal chape found at Coppergate in 1906 (Page 1912; Waterman 1959; Hall 1994). Its presence highlights a key difference between Anglo-Saxon and Viking sword scabbards, which is that chapes, used by Scandinavian peoples in a continuous tradition stemming from the late Roman period, had ceased to be part of Anglo-Saxon tradition after conversion to Christianity.



## Other leather objects

A wide range of other leather items was recovered from the sites under consideration, reflecting the everyday life of the inhabitants. In addition to the large number of shoes found, other dress accessories included pouches and purses, fragments of girdles, belts and spur leathers. Surprisingly, perhaps, no fragments of leather garments were recognised, though it is likely that the leather from which they were made would be subjected to repeated recycling before eventually being discarded. Evidence for recreational activity such as the playing of ball games and archery was found, along with a possible fragment of bookbinding. Many of the straps found are likely to come from horse harness, amongst which the browband from a bridle may be positively identified. Domestic items included handles, various fastenings, washers, vessel bases and a possible water carrier, though no examples of costrels were represented. Alongside these were a number of items of uncertain function such as elliptical panels (but see p.3435) and small discs. Possible uses may be suggested for these enigmatic objects but at present their exact purpose remains unclear. To these may be added an assortment of leather that has been cut down from objects which cannot now be identified.

These objects are discussed here by function. Several categories of object occurred in both Anglo-Scandinavian and medieval contexts so that it has not been possible to group them purely according to period.

### *Straps*

A wide range of leather items from both Anglo-Scandinavian and medieval contexts could be classified under the general heading of 'straps'. Several types were present and were distinguished by their method of construction: flat straps, either plain or stitched, and folded straps, some strengthened by an internal lining. Functions for the straps have been suggested whenever possible; however, for many their original use cannot now be identified with certainty. What is evident is that a wide range of items used in the domestic setting are represented, including items of dress such as girdles, belts and spur leathers, handles and fastenings of various types, and components of horse bridle and other harness.

Many (25%) had been cut down to salvage re-usable lengths of leather before being discarded; some had clear signs that metal buckles had been removed for re-use. Occasional examples had been repaired, and it is likely that at least some instances of rather crude thonging seen on the straps may also represent repairs.

The straps are discussed here according to their method of construction, whether flat or folded, stitched or unstitched. Those straps with distinctive features such as a decorative surface treatment, decorative stitching and decorative mounts are discussed and catalogued separately. Strap fragments that may have come from sword-belts have also been considered separately and follow the discussion of sword scabbards by Esther Cameron (see pp.3367–9). A small number of strap or strip fragments were recovered that lacked diagnostic features or were either too small or too degraded to allow further categorisation (15734–6).

Straps of various types form a component of many of the larger leather assemblages. A particularly large number of straps (203) were recovered from the excavations in the medieval centre of Schleswig in the area of 'Schild' in deposits dating from the 11th–early 14th century (Schnack 1998, 46–58). A similar range of straps was represented in the York assemblages. Only plaited straps (form 5), generally found in 13th- and early 14th-century contexts, have yet to be recognised at York.

### **Decorated straps**

A small number of strap fragments distinguished by having a decorative surface or decorative stitching come from girdles (Fig.1712). It is also likely that some of the straps with decorative mounts are girdle fragments.

A length of decorated girdle (15872) was found in an early–mid 14th-century well fill at Bedern Foundry. The punched trefoil dot and impressed linear decoration had been painted red with cinnabar (Fig.1713). Other small fragments of straps with parallel rows of decorative stitching found at 16–22 Coppergate are also likely to come from girdles. Fragments with a row of stitching lying to each side of a row of buckle pin holes (15663) were recovered from a 12th-/13th-century context. Small fragments (15664) from another with three rows of decorative stitching

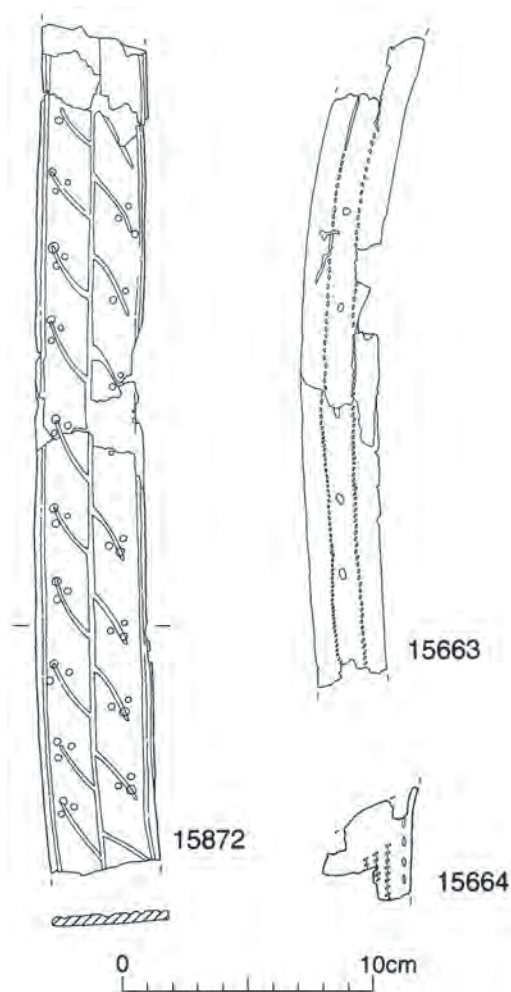


Fig.1712 Decorated straps or girdles. Scale 1:3



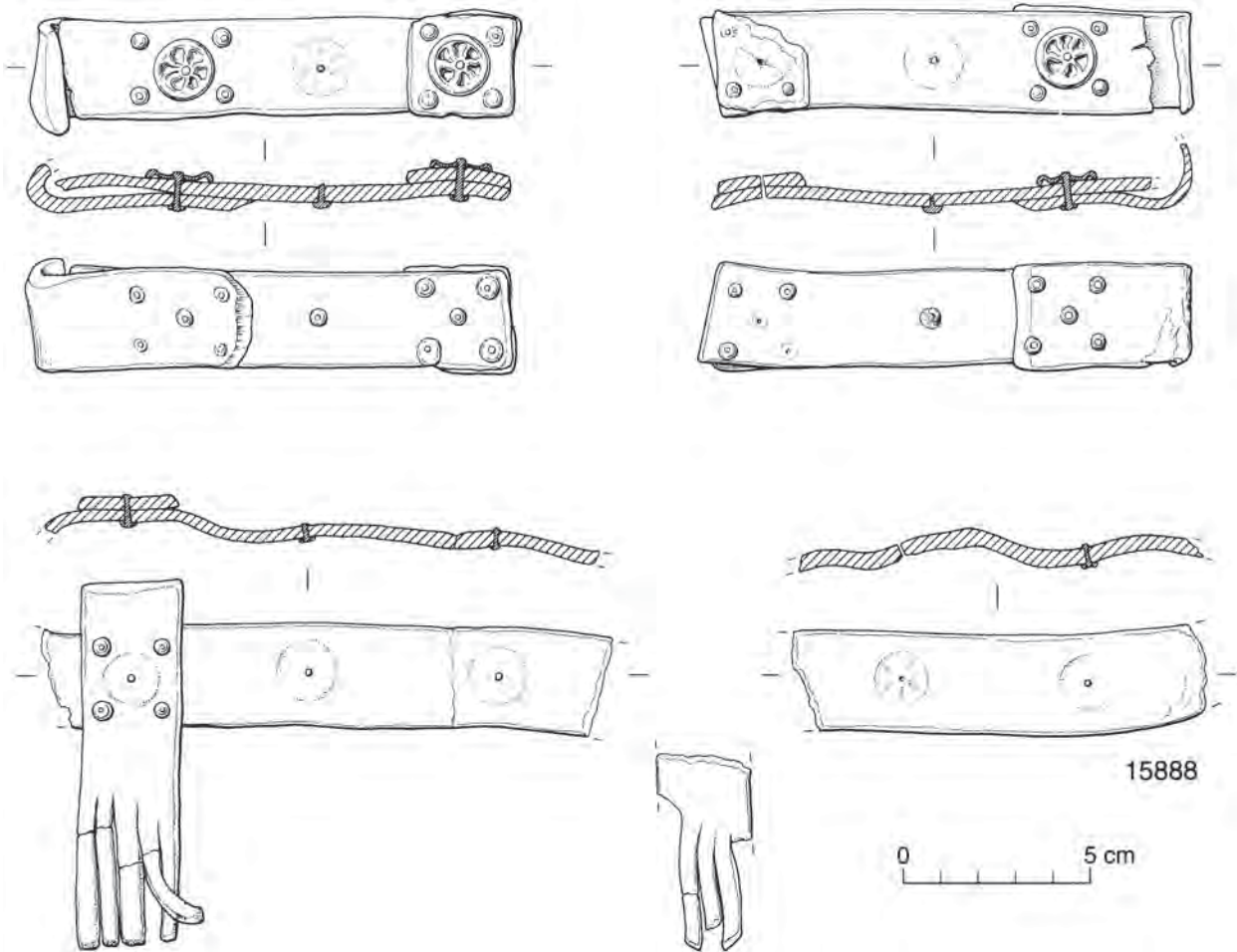
Fig.1713 Detail of girdle 15872 with red-painted punched and impressed decoration

present were found in a timber-lined cut dating to the 14th/15th century. Girdles with similar parallel rows of stitching have been found in deposits ranging in date from the late 12th to the late 14th century in the City of London (Egan and Pritchard 1991, 39, 1–13). The London girdles had a one, two or four rows of decorative stitching sewn with a double thread, and where preserved the thread was found to have been of silk (*ibid.*, 6–7, fig.21). Pritchard has suggested that those straps measuring 50–60mm in width, with a double line of stitching along each edge, were sword-belts. One of the York fragments (15664) has three rows surviving along one edge and it is likely that this was repeated along the opposite edge, making it of similar or greater width originally.

### Straps with decorative mounts (Figs.1714–16)

Eight plain, cut straps and a group of associated straps were decorated with metal mounts. All are of medieval date, the earliest deriving from a context of mid-late 13th-century date, the majority coming from 14th- to 15th-century contexts. Where the leather was identifiable it was found to be of cattle hide. Other strap fragments with holes likely to have held decorative mounts were also found and have been catalogued according to their method of construction.

Fragments of strapping decorated with wheel-shaped mounts of copper alloy (15888, Figs.1714–15)



*Fig.1714 Leather straps 15888 with decorative mounts. Scale 1:3*



*Fig.1715 Leather straps 15888 with decorative mounts*

were found at Bedern in an early 15th-century pit in the College garden. The leather strap fragments include strap junctions where two straps cross at right angles. At the strap crossings and to secure buckle or other fastening loops a series of quincunxes of rivets with circular roves are used to join the two pieces of leather together, the central rivet also attaching a spoked wheel-shaped mount. The circular wheel-shaped mounts have wavy 'spokes' not dissimilar to the circular mounts with 'wavy star' designs from London (Egan and Pritchard 1991, 850, fig.111), recovered from a context dated c.1350–1400. Two of the strap fragments have been cut into parallel thongs or fringing comparable with an item of calfskin (15612, Fig.1691) of similar date from Coppergate, whose possible use as a sword-belt has been discussed by Cameron (pp.3367–9). The right angle arrange-



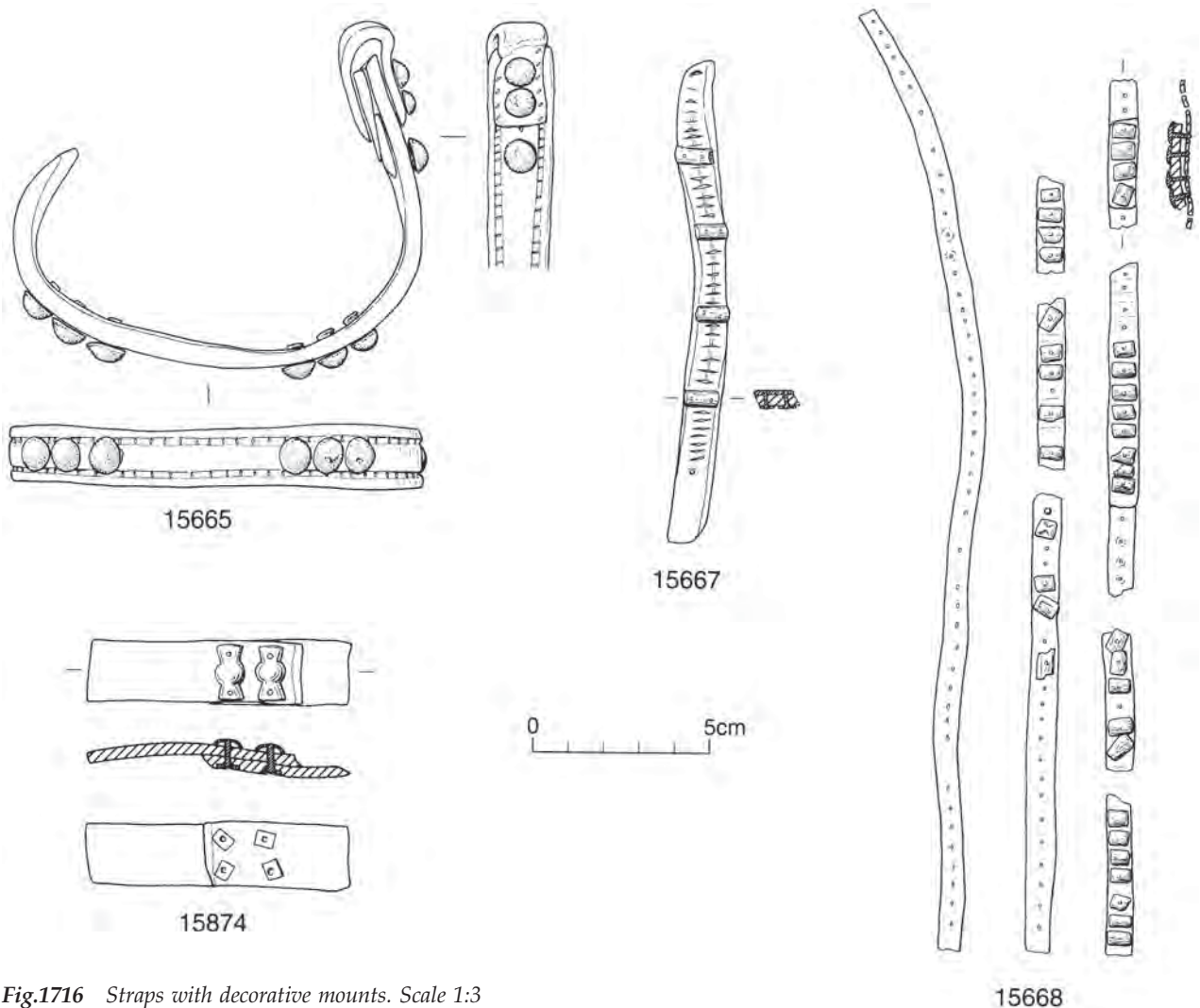


Fig.1716 Straps with decorative mounts. Scale 1:3

ment of strapping suggests these pieces may derive from decorative harness.

The other straps with decorative mounts are narrow and likely to be girdles, spur leathers or fragments of decorative harness. Four straps, ranging in width from 6–11mm, have a series of bar mounts. One is unusual in having bar mounts of iron (15668, Fig.1716) which may have been tinned (no analysis has been undertaken to confirm this). The other straps have bar mounts of copper alloy (15667, 15873, 15887). One strap (15667, Fig.1716) is further ornamented with parallel, vertical slits transected by a central impressed line. Contemporary sculptures show bar mounts used to ornament women’s girdles (Egan and Pritchard 1991, fig.20), men’s dress belts and sword-belts, and horse harness (ibid., 209–10,

fig.132). The wearing of a long, narrow girdle was a popular ladies’ fashion in the 13th and 14th century (ibid., 36). The fragments of narrow strap with iron bar mounts (15668) that survive extend to a combined length of some 664mm and it is possible that it represents such a girdle. It was recovered from 14th-/15th-century pit fill containing residual pottery of 12th-century date. Another strap (15666) has dome-headed studs along with the impressions of lozenge-shaped mounts. Two pieces of strap (15874, Fig.1716) from an early–mid 14th-century deposit at Bedern Foundry have been joined using baluster-shaped mounts of copper alloy sheet. A lined strap of cattle hide with domed studs of copper alloy (15665, Fig.1716) from a 14th-/15th-century context is particularly robust; its shape suggests it may have been a dog collar (see Fig.1485, p.2911, AY 17/15).

## Flat, plain straps

The simplest straps had parallel knife cut edges. They were found in Anglo-Scandinavian and medieval deposits. Where identifiable these plain straps were of bovine leather, with the single exception of a strap of sheep/goatskin (15838), possibly originally decorated with metal mounts, that was recovered from a medieval context. The plain straps varied greatly in width, the widest being 45mm, the narrowest 9mm. This variation, no doubt, reflects the range of uses that plain straps originally served. The majority were narrow, 86% measuring less than

30mm in width; indeed, 66% were less than 20mm wide. It is likely that these narrower straps (less than 20mm) were spur leathers or bridle components. Those ornamented by the addition of metal mounts have been described separately (see above).

A complete plain strap of cattle hide, 15684 from a 12th-/13th-century context, had a double loop at each end (Fig.1717). It is tentatively suggested that this strap may be a browband from a horse bridle with a separate throat-latch. The browband is comparable with those currently in use, conforming in

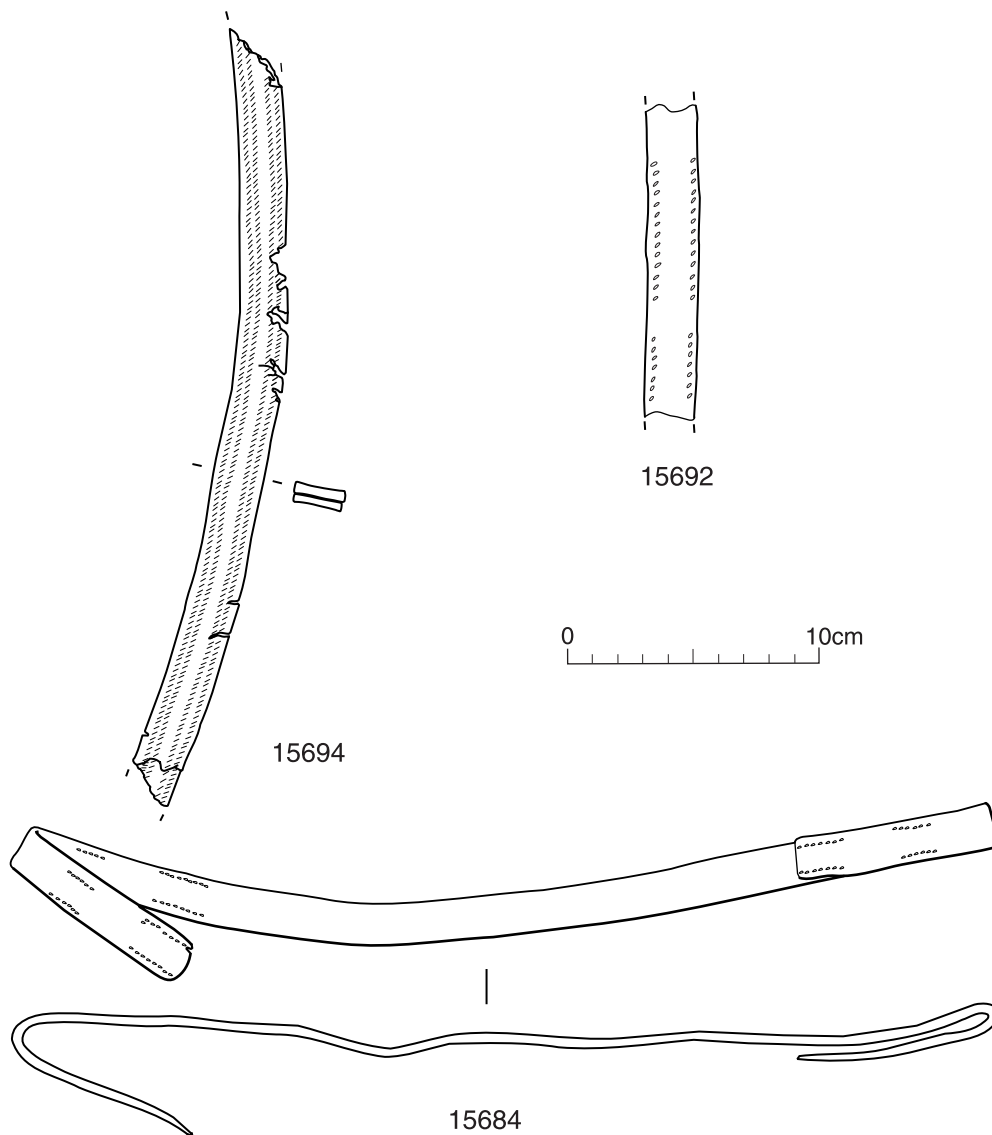


Fig.1717 Flat straps, perhaps from horse equipment. Scale 1:3



both length and width to the standard length used for a horse measuring 15–16 hands (15½ inches or 395mm in length). It differs only in that the stitching runs parallel to the edge of the strap rather than across it, as is usually seen. The gaps between the stitching accommodate straps of approximately 16mm and 19mm held c.16mm apart. The width of these straps is suggestive of a driving rather than a riding bridle; indeed the double-looped browband is more frequently associated with the driving bridle today. I am most grateful to Lawrence Stevens, a saddler, for this information. Manuscript illustrations show the browband as a component of the medieval bridle and examples with a separate throat-latch are depicted, such as the bridle on a horse with rider seen on the *Mappa Mundi* c.1300 (as illustrated in Clark 1995, 62, fig.46).

### **Flat, stitched straps** (Fig.1717)

Flat straps with a line of grain/flesh stitching along each edge were found in both pre-Conquest and medieval contexts; again, where identifiable, bovine leather was used. The edge stitching prevented stretching and may have originally secured the strap to a lining. The straps range in width from 20 to 46mm; only one example (15860) of a very narrow strap measuring 11mm in width was represented, dating to the later 10th–early/mid 11th century. A strap (15688) of this type from a late medieval deposit was joined to a second strap at a 90° angle suggesting it may be from harness. One fragment included in this category may be an inner lining from a folded strap, a type discussed below.

Five flat straps from medieval contexts dating between the 12th and 14th century were found with a single line of oblique grain/flesh stitch holes running along each edge. The use of stitch holes set at an angle to the strap edge would prevent tearing of the stitch holes, serving to strengthen the strap and prevent stretching. This suggests they were used in horse harness; indeed, a single example (15694), recovered from a 14th-century context, has a double row of oblique stitching along each edge to secure a double thickness of cattle hide, characteristic of horse harness. One strap (15692) has a break in the lines of stitching, suggesting it had been folded back to form a loop to hold a buckle. A single strap of cattle hide (15690) found unstratified is unusual in having running thonging, rather than stitching, present along each edge.

### **Folded straps** (Figs.1718–20)

Folded straps had both sides folded over flesh to flesh so that the edges abut along the centre back. The folded straps vary in width from 18–43mm, only two being less than 20mm in width. All those that could be identified were again found to have been made of bovine leather. They occurred in both pre-Conquest and medieval contexts and appear to have had more than one function.

Two folded strap fragments (15697–8, Fig.1718) had been sewn with a running grain/flesh stitch along each edge, the two parallel rows of stitching passing through to the front of the strap. The larger fragment (15697) was found in a Period 5B deposit, the other (15698) occurred residually. A length of cut-down strap (15696, Fig.1718), also from a Period 5B context, sewn with a coarse running or tacking stitch along each side, was strengthened by an internal lining. A small number of fragments possibly deriving from other examples were also recovered, some with the addition of an internal lining.

The majority of the folded straps, however, had a central butted back seam to join the two folded edges together. Two internally lined straps (15707, 15709, Fig.1718) had additional rows of stitching to either side of the central butted seam, piercing the full thickness of the strap and providing extra strength and resistance to stretching. Two other straps (15708, Fig.1719, and 15710) also appeared to have this extra stitching, but the holes did not pierce the full thickness of the leather and seem never to have been stitched. This may suggest that the stitched items were perceived as being of higher quality and that these unstitched examples with simulated stitching were poorer quality, cheaper imitations.

One back-seamed strap without a lining had also been additionally strengthened by a row of stitching along each folded side (15711) which passed through both thicknesses of leather. A single example (15701, Fig.1718) of late 10th- to early/mid 11th-century date had the back seam sewn with a fine thong, and had been more crudely thonged to a second strap, crossing it at right angles.

The function or functions of these folded straps with central seams is uncertain. Some of the more complete examples had additional stitching at the terminals (15700, 15702–3); one (15702) also opens

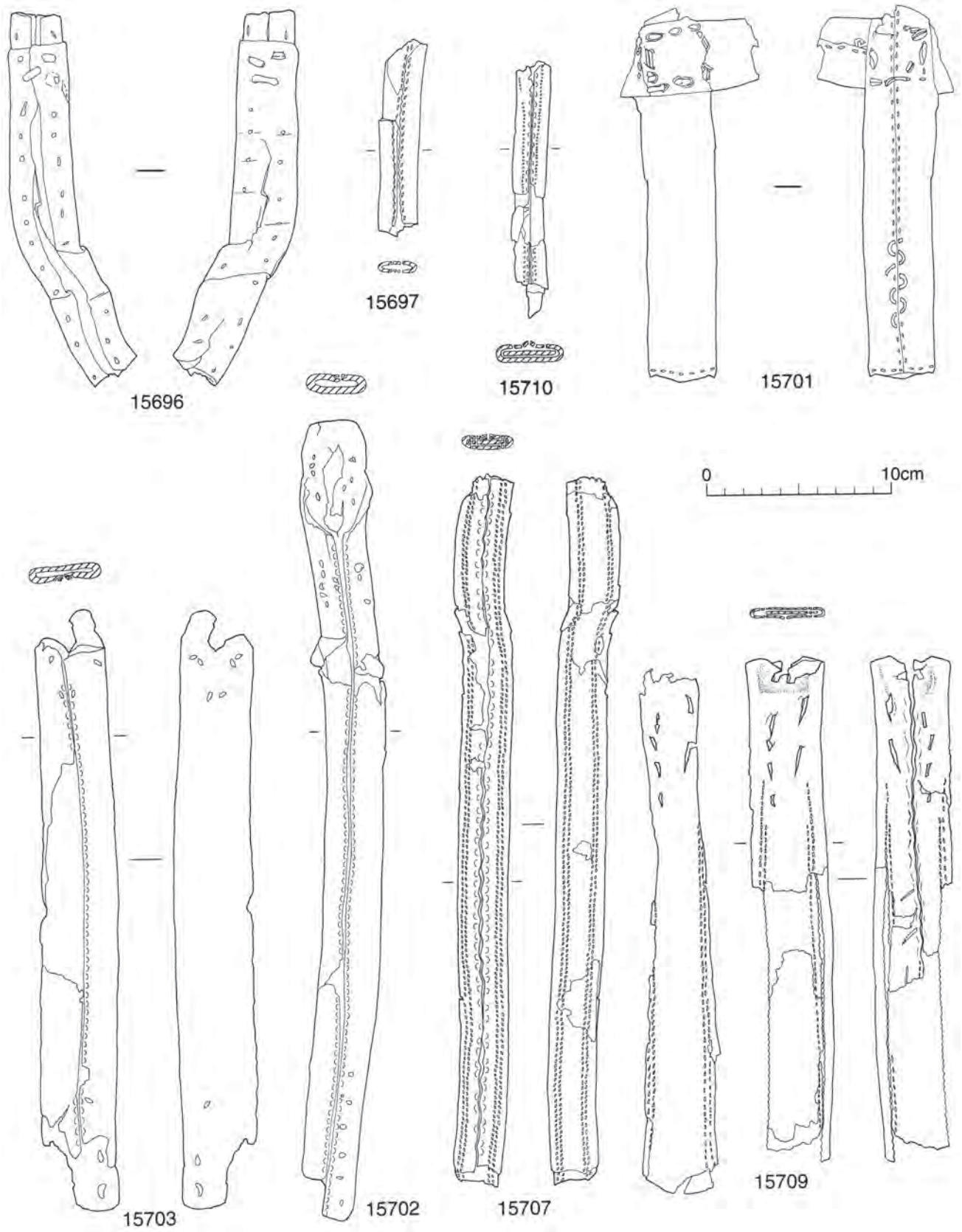
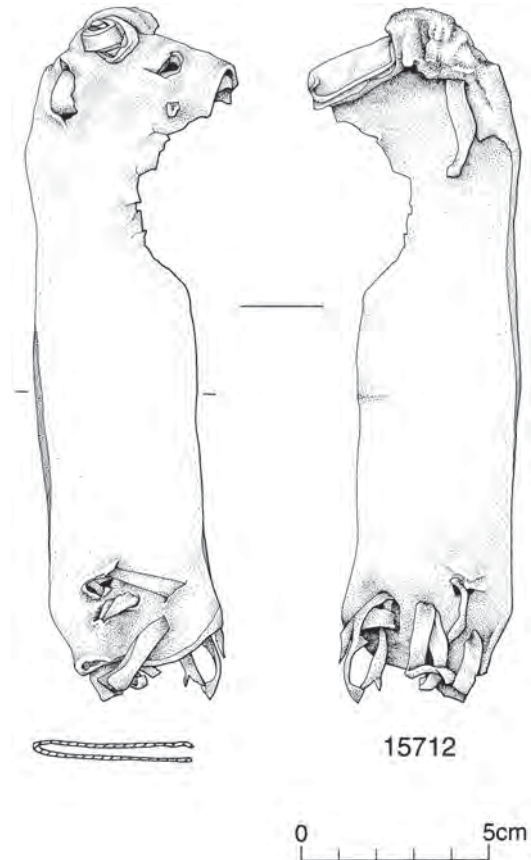


Fig.1718 Folded straps. Grain view is shown so that the central butted seams are edge/grain stitched. Scale 1:3

out suggesting it had been attached to another item in the manner of a handle. Others (15705, 15709) had once been stitched to a buckle indicating that they came from a belt or harness. Folded straps have been found in both Saxo-Norman and medieval contexts



**Fig.1719** *Folded strap with back seam and two rows of imitation stitching, 15708*



**Fig.1720** *Strap folded longitudinally down the centre, 15712*  
Scale 1:2

across the country. Most notably a folded, back-seamed strap was found still attached to an iron stirrup recovered from an early 13th-century context at the Billingsgate Lorry Park, London (Clark 1995, 71–2, 82, fig.54). The strap, being approximately 22–25mm in width, lies at the narrower end of the range of similar straps from York.

A single strap (15712; Fig.1720) from a Period 5B context differs from the rest in being folded longitudinally down the centre, so that the two edges lie one above the other. The strap is crudely stitched with thong at each end. When found the strap had the appearance of a suspension strap (comparable with 15715–16 below). The two ends do not appear to have been joined, however, and study of the wear on the strap suggests that the shape in which it was found occurred accidentally on disposal. A strap similarly folded longitudinally but sewn along the open edge was present amongst the Schleswig assemblage (Schnack 1998, abb.24, no.3).



## Buckled straps (Fig.1721)

Flat straps (with both plain and stitched edges) and folded straps had been associated with metal buckles. Three examples of plain straps with iron buckles still attached were found. One (15676) from a context dated to c.975 has an oval buckle with non-ferrous metal plating. A narrow strap with a rectangular belt hasp of plated iron secured to the strap with a link of leaded tin (15678) was found in a late 12th-century context at 16–22 Coppergate. Fragments from a long plain strap from a 15th-century context at Bedern Foundry also had a fragment of its iron buckle present (15875). Other straps had the buckle removed before being discarded (15673, 15705).

The former position of other metal fittings, either buckle-plates or strap-ends, could be seen on two straps of 10th-century date (15670, 15709). Several straps of both Anglo-Scandinavian and medieval date showed evidence of originally having a buckle.

One strap (15679) had chamfered edges probably to ease its passage through a buckle-frame. Many others had a series of small buckle pin holes running down the centre of the strap or notches to take the buckle-pin at the folded terminal. On some straps (such as 15670 and 15673) the holes were positioned so closely to the buckle-frame they were not intended to function as buckle holes and it may be that they originally held decorative mounts, subsequently removed. Buckled straps with either eyelets or purely decorative mounts positioned very close to the buckle are shown in a portrayal of a German buckle-maker c.1425 in his workshop (after Nuremberg Hausbuch, Treue et al. 1965, pl.49). This illustration graces the cover of the *Dress Accessories* volume of *Medieval Finds from Excavations in London* (Egan and Pritchard 1991). Despite consideration of the style of buckle and the strength of the strap it is often difficult to distinguish a buckled strap worn as a belt on the person from that used on horse harness. The 15th-century example from Bedern Foundry (15875) may have been used as a belt.

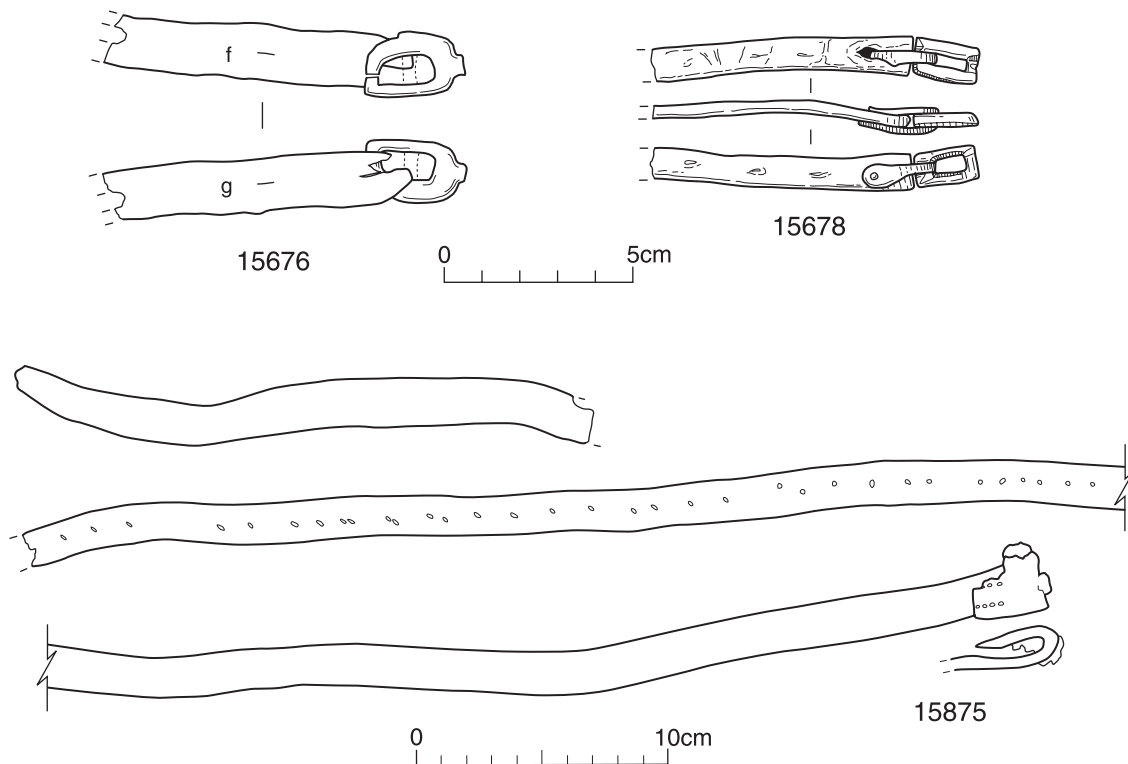


Fig.1721 Buckled straps. Scale 1:3

Further information on buckles, buckle-plates and strap-ends from Anglo-Scandinavian and medieval York may be found in AY 17/14 (pp.2568–70) and AY 17/15 (pp.2866–902).

## Fastenings and suspension straps

### Slotted strips

Strips with a slit at each end were found at 16–22 Coppergate occurring in 10th- to early/mid 11th-century contexts (15715–25). They were made of bovine leather, chiefly of calfskin. The slotted strips appear to represent a distinct category of object, though they vary in their dimensions. The wear present on two of the shorter, wider strips (15715–16, Fig.1722) indicated that they had been folded over and used for suspension. A folded strip wrapped around a thronged sheath and clearly part of its method of suspension was found at Hedeby (Groenman-van Waateringe 1984, taf.20, 6). For a discussion of the suspension of scabbards and sheaths see pp.3367–9, 3389 (15609–10, Fig.1691). The majority of the strips, however, were long and straight, some being joined to other strips by way of the slit terminals. The slit end provided a very simple and convenient method of attachment or extension; by passing a second slotted strip through the slit and then back on itself the strip could be neatly extended with a strong join without the need for sewing or thonging.

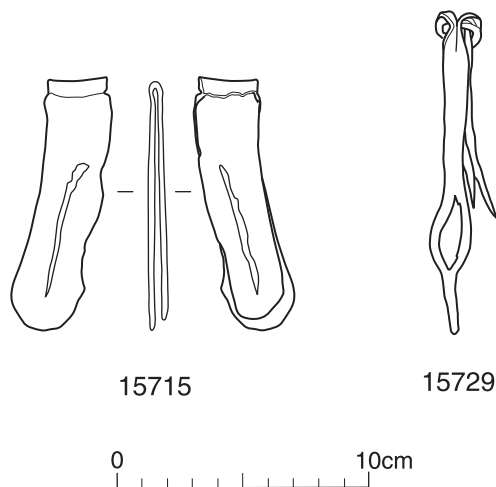


Fig.1722 Slotted strip 15715 and suspension fastening 15729. Scale 1:3

Slotted strips have also been found in assemblages of comparable date from London. Three slotted strips articulating together were found at 1 Poultry (<3004>) in a context associated with pottery dating from the 10th–mid 11th century. Other examples were found at Bull Wharf. One group (UPT90 <393>) was found in a context dating to the later 10th/earlier 11th century. A group of five straps from the same location (BUF90 <1948>) were found still articulated with each other. The middle three strips were folded in half, as seen in some of the York examples (15715–16) so that the neighbouring straps passed through both slotted ends, while the straps at either end were straight and joined through a single slotted terminal.

Such a simple item could have a variety of uses providing a range of fastenings. Similar slotted strips found at the old centre of Schleswig in the area of Schild in contexts of medieval date were considered to be shoe fastenings (Schnack 1992, taf.8, 10–12) and no doubt the narrower examples were used for this purpose. They have also been found at Hedeby (Groenman-van Waateringe 1984, taf.19, 4–7) where one example still remained secured to a fragment of leather by being threaded through a series of three vertical slots. The strip terminal was passed through one slot while the other end of the strip was passed through the second, then pushed through the slit in the terminal before passing out of the third slot (*ibid.*, taf.19, 4). This arrangement certainly created a strong attachment point for a fastening though exactly what was being fastened remains unknown.

One use for the longer, thinner examples was as simple handles. A deerskin drawstring pouch of late 14th-century date from Baynard's House, London (Egan and Pritchard 1991, 344–7, 1695, fig.228), showed how such handles were used. Here, the simple strip handle had a single slotted end through which the drawstring passed; the opposite end, in this case, was stitched to the pouch. The strips with slits at each end that were found at Coppergate could have been secured by folded tabs of leather to a bag or pouch; they were wider, however, and if used on pouches or bags they must have been larger and of generally more robust construction than the London example.

### Other suspension fastenings

A small number of other suspension fastenings were found in 10th-century contexts from 16–22 Coppergate. One (15726) may be paralleled by an



other used on a sheath hanger (15610, Fig.1691), described by Cameron (see above). Another is of distinctive form (15729, Fig.1722) comprising a strip with two, large, pulled slots present.

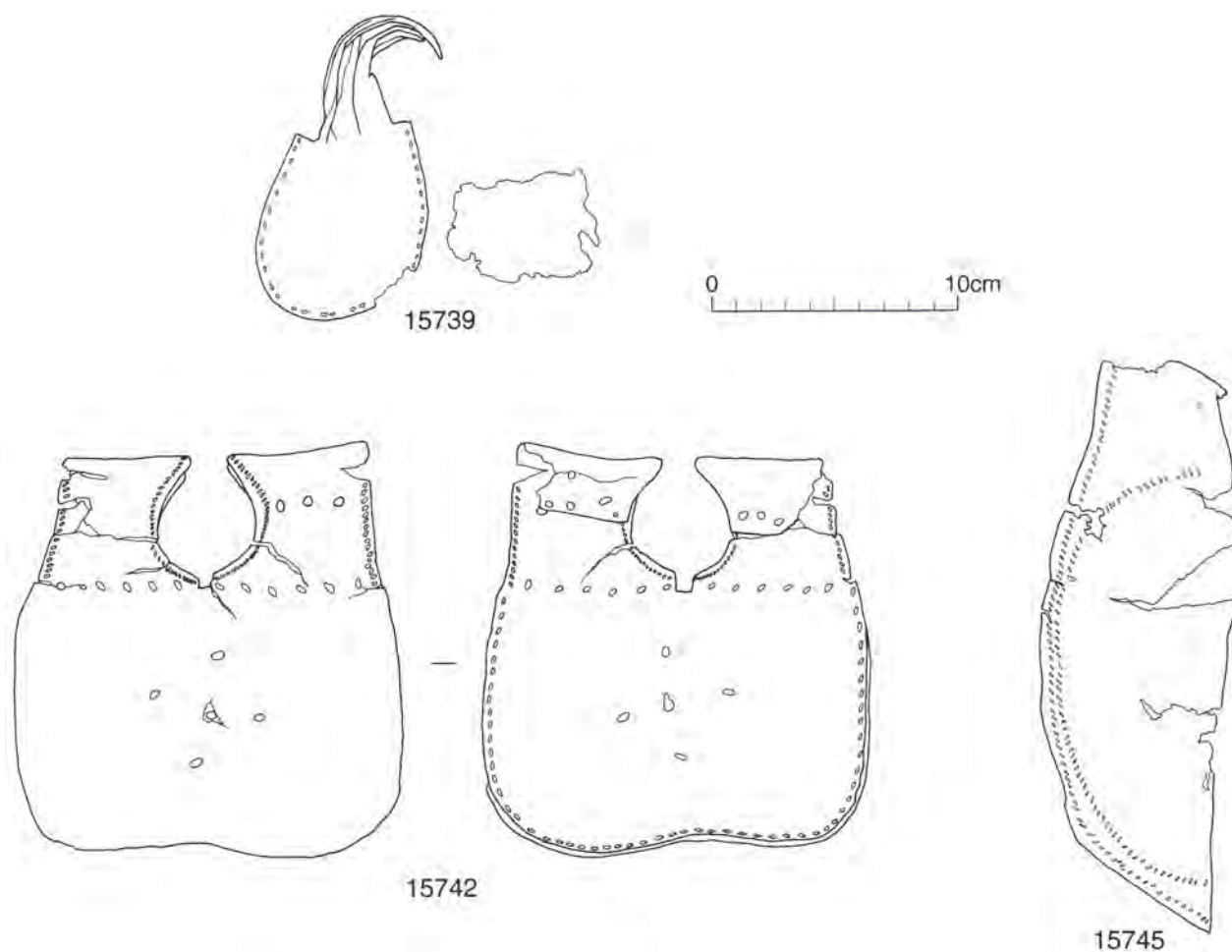
### *Knotted thongs*

A small number of knotted thongs and strips were found at 16–22 Coppergate (15730–3). These thongs may have served a number of functions such as fastening footwear, suspending items from a belt or acting as a drawstring on a pouch like that used in a deerskin pouch of 14th-century date from London (see above). Their original purpose, however, cannot be easily identified when recovered in isolation, separated from the objects that they fastened.

### *Pouches and purses* (Fig.1723)

The fragmentary remains of a small number of pouches and purses were found in both Anglo-Scandinavian and medieval contexts. For the most part, those found in the earlier deposits were represented by very small fragments and their identification can only be tentatively suggested here.

Fragments possibly from a flap-closing purse or pouch of calfskin (15737) were found in the fill of a Period 3 scoop, one of the earliest deposits at 16–22 Coppergate. Other small fragments with paired thong slits (15738, 15740–1), not recognisable as shoe components, may represent the highly fragmentary remains of possible drawstring purses and were re-



**Fig.1723** Pouch and belt purse. Scale 1:3. See facing page for a reconstruction of a belt purse like 15742 (based on a drawing by Marquita Volken)

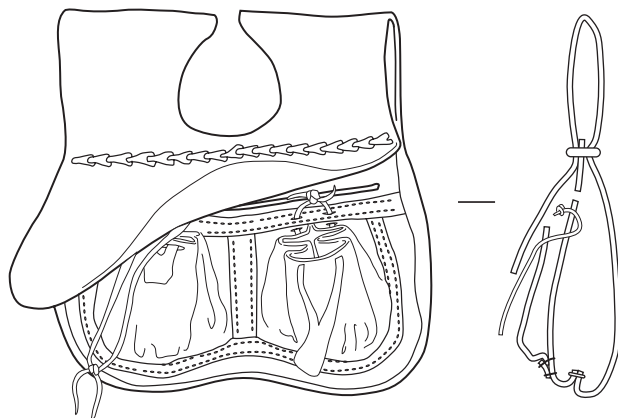
covered in contexts of 10th-century date. Better preserved was one side of a small pouch (15739) of sheepskin or goatskin found in 10th-century pit fill; a fragment from a second panel was also present. Three narrow, integrally cut, suspension straps extend from the top of the pouch, their irregularity suggesting that they may have been cut down.

Remains of a drawstring pouch (15747) were recovered from a 12th-/13th-century context. Now fragmentary, the pouch appears to have been made from a rectangular panel of sheep/goatskin folded in half, seamed along both sides and closed with a drawstring at the mouth. Fine stitching present suggests that it may have been internally lined. A small number of drawstring pouches of leather have been found in London (Egan and Pritchard 1991, 342–8), two of which, dating slightly later to the late 13th/early 14th century and the late 14th century, are of similar construction (*ibid.*, 344–7, 1694–5, figs.227–8). Others of comparable date have been found further afield. Two of differing size were found at Svendborg, Denmark (Groenman-van Waateringe 1988, fig.8.2), the larger dating to 1200, the smaller to 1270–1300.

### Belt purses with flaps

A panel from a flap-closing purse (15742) and fragments cut down from the front panel of a second example were found in backfill deposits of a cask-lined well dating to the early 15th century. The back panel of calfskin extended into two folded flaps through which the girdle or belt was passed. A lozenge-shaped arrangement of stitch holes in the centre marks the former position of a fastening. Fine stitching around the edges of the flaps appears to have been from decor-

ative stitching or may mark the position of a decorative edging. Four pieces (15743–6) cut down from the front panel of a flap-closing purse come from a larger example or examples. Each has distinctive stitching from embroidery present. Once considered to be purely decorative, the recovery of complete examples from the Netherlands has shown that this stitching also served to attach additional drawstring-closing coin pouches to the front panel. Marquita Volken has reconstructed purses with this stitching securing coin pouches recovered from late 15th- and 16th-century contexts at Criblet in Fribourg, Switzerland (Volken, Volken and Bourgarel 2001, 46–7, figs.13–14), and I am indebted to her for this information. The decorative stitching is comparable to that on a near complete purse from a 14th-century context in Stockholm, Sweden (Dahlback 1982, 237, fig.208), and the front panels of similar purses found elsewhere in Britain. Two examples have been found in London. A front panel from a purse of deerskin was recovered from a context dating c.1350–c.1400 at Trig Lane (*ibid.*, 356, fig.235, 1705); another, of calfskin, was found unstratified during the Billingsgate lorry park watching brief (*ibid.*, fig.236, 1706). Two purse panels with similar stitching from embroidery have been found in an early 15th-/mid 16th-century context at Queen Anne House, Shrewsbury (Mould 2002, 127, fig.76), again made of deerskin (885584) and of calfskin (885583). The remains of another purse of this type were found in a 14th-century context in the Augustinian Friary Garden at Hull (Watkin 1993, 184, 362, fig.125). A purse of this type in use is depicted on a monumental brass dating to c.1350–60 in the church of St Thomas à Becket at Hampsthwaite, North Yorkshire (AY 11/3, 393, fig.186a). Here the circular aperture between the folded suspension flaps of the purse has been used to hold a dagger, a feature shown on other brasses and manuscript illustrations (*ibid.*, 391) of the period.



### Archer's bracer (Figs.1724–6)

An archer's bracer (15748) was recovered from a late 14th-century context at 16–22 Coppergate. It was part of the backfilling of a large rectilinear pit that contained a large quantity of leatherworking waste, including shavings from the currying process (for discussion of this deposit see p.3197). The bracer acted as a guard to protect the inside of the forearm from the snap of the string when shooting a long bow. Though small, there is little doubt this was an item

Fig.1724 (left) Archer's bracer 15748. Scale 1:3

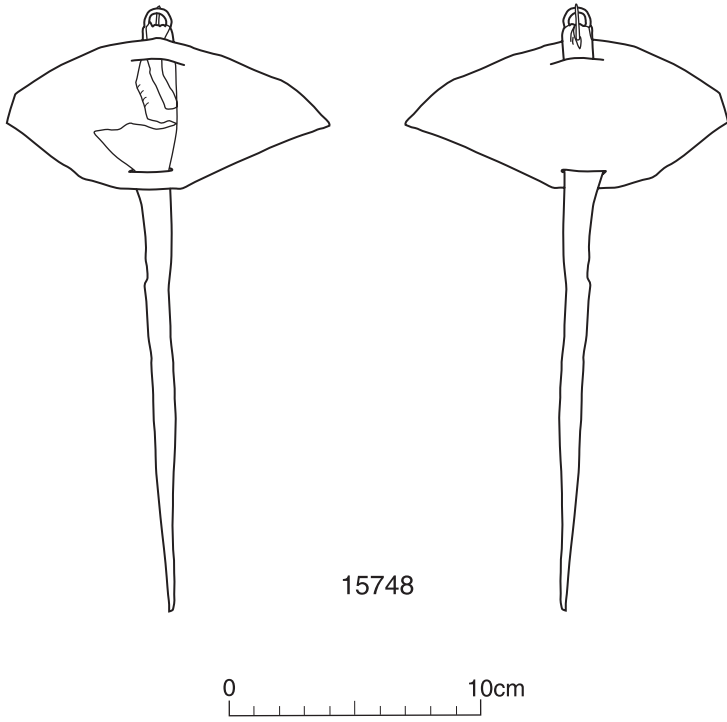


Fig.1725 Front and rear view of archer's bracer 15748, made from re-used shoe parts

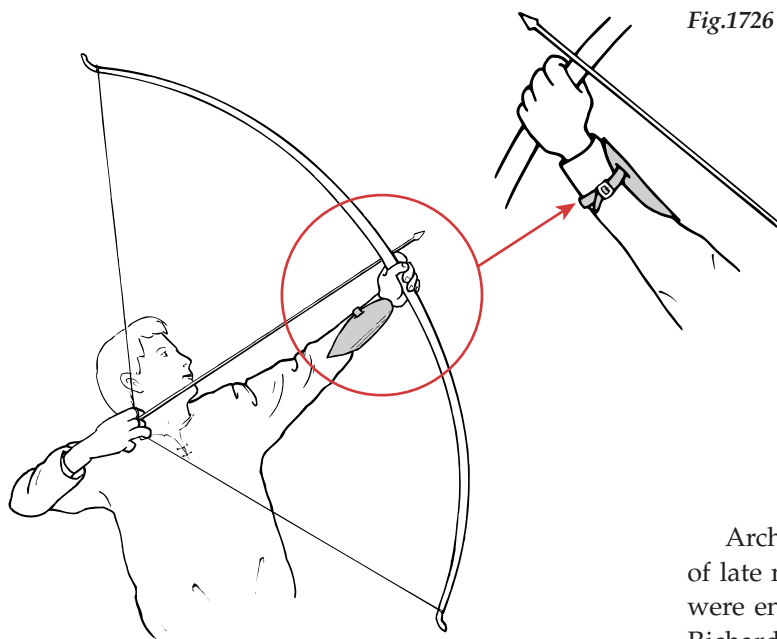


Fig.1726 Diagram showing how an archer's bracer was used

of archery equipment (Thom Richardson, pers. comm.). It has been made from re-used shoe parts: a cut-down poulaine sole for the guard and the shoe straps and buckle. The leather has been salvaged from a shoe that fastened with a buckle and latchet over the instep (Style 11b), a style popular in the later 14th century. Arrowheads have been found at 16–22 Coppergate in contexts dating from the 12th through to the mid–late 15th century (12822–41, AY 17/15).

A similar find (sf25) was recovered by YAT in 1999 from a 12th- to earlier 13th-century deposit at the NCP site, 64–74 Skeldergate, York. It consists of a roughly cut circle with a strap, cut from the same piece of leather, protruding from one side. This strap tapers toward its terminal, where it has been widened in an arrowhead shape. This presumably acted as a toggle, passing through a slit in a second, opposing strap. This strap is absent, but has clearly been torn off from the central pad. The grain surface is very worn and the remnant of an edge/flesh seam along part of the edge and worn tunnel stitches in the interior point to its origin as a shoe sole. This bracer differs from the Coppergate example in that the complete object was fabricated from a single piece of shoe sole, rather than being a composite of several components.

Archery might be considered the national sport of late medieval England (Reeves 1995, 97) and all were encouraged to take part. During the reign of Richard II other types of recreational games were banned in order to promote the use of the longbow for sport and the price of bows was controlled to make them accessible to even the poorest citizens (Hardy 1977, 128–9). The use of archers' bracers made of recycled shoe parts suggests that at York this was achieved.

### *Leather balls*

Components from balls of leather were recognised in contexts of Anglo-Scandinavian and medieval date. Leather balls have a long history. The playing of a number of outdoor games using small leather-covered balls was popular throughout the medieval period (Reeves 1995, 91–3). Early examples from contexts of mid/late 10th- and early to mid 11th-century date have been found at Brook Street, Winchester (Thornton 1990b, 707, 2246–7, fig.198). To these can now be added examples dating to the earliest period of Anglo-Scandinavian occupation at 16–22 Coppergate. Components from balls of three different constructions were represented, each comprising a number of separate panels stitched together and packed with stuffing. In addition, a bundle of leather thongs (15749) may also have been used as a simple type of ball. The bundle of thongs was found in a mid 10th-century context at 16–22 Coppergate. Much leatherworking waste was recovered from this period at Coppergate and, while only a small quantity of other leather was recovered from the same context as the bundle, it may represent nothing more than a convenient way of storing thonging intended for sewing.

### Possible balls of two- and three-part construction (Fig.1727)

An object made of two roughly circular pieces of calfskin (15750) sewn together around the circumference with fine thong was found in a deposit dating to the mid-late 9th/early 10th century. If sufficiently well stuffed this item may have been used as a ball, but it is perhaps more likely to be a circular pad (Fig.1728a). Balls made of two circular panels usually have a small seam in each running from the centre to the edge that served to create the desired spherical shape (Fig.1728b). Small balls with leather covers of this type have been found in later contexts elsewhere, including the roof of Westminster Hall. A collection of leather-covered balls containing either a central core of wood or packed with moss or leather scraps were part of the contents of a 17th-century well deposit from the churchyard of St Paul-in-the-Bail at Lincoln (Mould forthcoming, fig.28, 171–4). These small leather-covered balls were used to play a number of ball games such as an early form of ten-

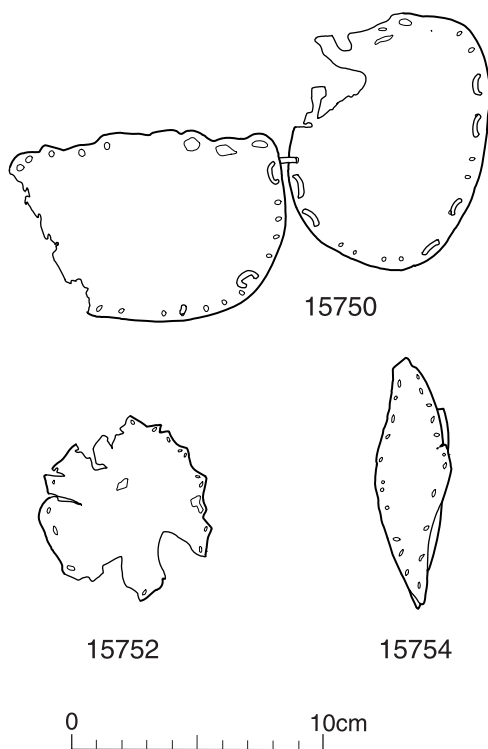


Fig.1727 Leather panels possibly from balls of two-, three- and multi-part construction. Scale 1:3

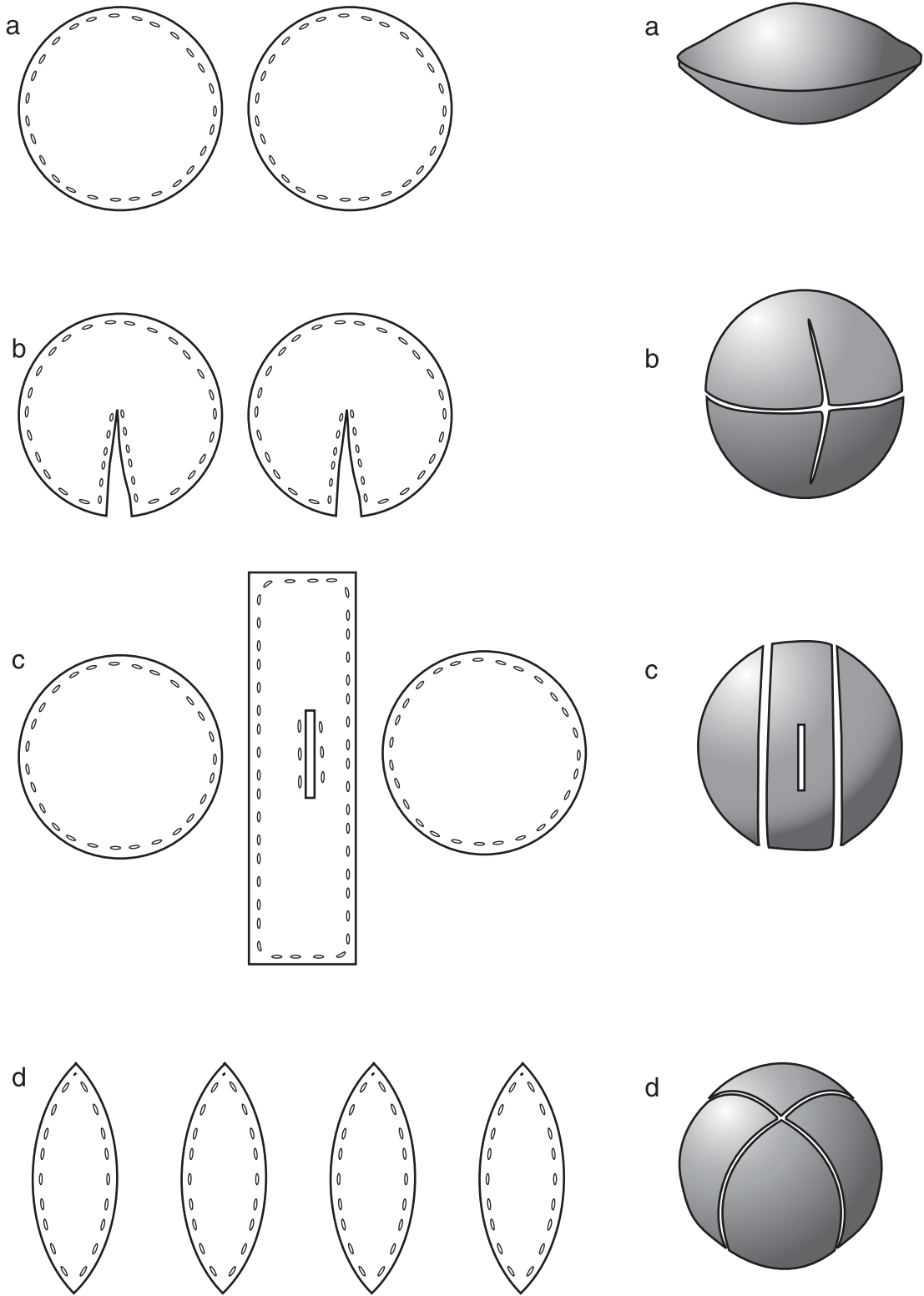
nis and pall mall. The two panels from York, however, are not truly circular and, having no dart running from the centre to the edge, appear to have originally formed more of a cushion-shaped oval than a sphere. Leather pads were used as a surface on which to work soft metals such as pewter, silver and gold. It may be that this circular leather object is part of a jeweller's tool kit rather than an item of recreation.

Circular panels from balls of three-part construction, 15751–3 were found in deposits of 10th-century date. These balls comprised two circular panels each sewn to a central connecting strip (Fig.1728c). The strip had a central slit to allow the sphere to be stuffed, usually with moss. Balls made in this manner seem to have been employed over a long period of time. Examples stitched with wool have been found in pre-Conquest deposits at Winchester (Thornton in Biddle 1990, 707, fig.198) and another of the same pattern has been recovered from a mid 14th-century context at Baynard's House, London (Egan 1998, 295, 968, fig.224). A ball of this type with the two circular panels remaining was found in a 12th-century layer at Schild in Schleswig (Schnack 1998, 82, abb.53). The circular panels from York, however, were not found associated with their central strips and it is possible that they represent small pouches rather than ball panels. The pouches would be gathered by a thong or thread passing through the holes around the edge and pulled tight to close. No gathering or puckering of the edge was visible. Their small circumference dictates that, if indeed they were pouches, the original contents were very small — small coin or possibly a powder.

### Balls of multiple construction (Fig.1727)

A series of small lenticular panels were found (15754–7, 15863–4) that appear to come from balls of multiple construction, where four or more panels were stitched together and stuffed to form a sphere (Fig.1728d). Again, this type of ball construction appears to be long-lived. Panels occurred in pre-Conquest contexts, the earliest dating to the mid 10th century, while two panels of sheepskin (15863–4), probably from the same ball, sewn with a whip stitch, were found in the fill of a barrel-lined well dating to the 15th–early 16th century with other domestic rubbish. A ball of this type with three of its panels and a core of tightly packed moss surviving was found at Baynard's House, London, in a context dating to the late 14th century (Egan 1998, 295, 969, fig.224). An-





*Fig.1728* Diagram showing the construction of (a) circular pads, (b) balls of two parts, (c) balls of three parts, (d) balls of multiple parts

other of four panels was found in a layer dating c.1660 at Trichay Street, Exeter (Friendship-Taylor 1984, 333, pl.4). Individual panels from other examples accompanied the balls of other constructions found in the 17th-century well in the churchyard at St Paul-in-the-Bail, Lincoln (Mould forthcoming, fig.28, 174). It is not usually possible positively to identify individual ball panels if not accompanied by the central core. The similarity to the elliptical stitched panels discussed below is apparent. The two panels recovered from a late medieval barrel-lined well at 22 Piccadilly (15863-4) are made of sheepskin and the possibility exists that they may be quirk panels from heavy working gloves.

### *Elliptical panels*

A distinct group of objects has been recognised amongst the leatherwork from 16-22 Coppergate for which a function has yet to be satisfactorily identified. The objects are of lanceolate or elliptical shape, frequently with a slit or small hole at either end. Some appear to have been stitched around their edges, others have distinctive slashing present. A selection is illustrated together for comparison in Fig.1729. All

were made of bovine leather. Two slight variations of shape could be distinguished: one of lozenge-shape with short terminals, the other with more elongated strip-like terminals. Though of the same basic shape, they differ in several particulars so it is possible that they represent more than a single category of object.

### **Plain forms** (Figs.1729-30)

A number of plain panels of lozenge or elliptical shape were recovered from Anglo-Scandinavian deposits. Three lozenge-shaped panels with a slit or hole at each end were found (15758, 15760-1). Another was distinctive (15759, Fig.1729 far left), having tooled decoration and possible rivets of lead alloy present. A further four were of slightly narrower shape and had seams around the edge (15762-5).

Three examples from deposits dating to the later 10th-early/mid 11th century had distinctive, longer terminals (15767-9). Two others of similar shape seamed around the edge (15770-1), and another with longer terminals but a more circular central section (15766), were found in mid 10th-century contexts.



*Fig.1729 Selection of plain elliptical panels*

Four of the seamed panels appear to comprise two matching components (15763–5, 15771), apparently sewn back to back to stiffen and strengthen. In one case (15763) this appearance is certainly the result of the delamination of the leather so that the grain has separated from the flesh side of the leather, a phenomenon also seen in examples from Dublin. Similar elliptical panels seamed around the edge, but with no evidence for having been sewn back to back, have been identified as components of multiple panelled balls and are discussed above.

Plain, lozenge-shaped panels pierced at each end like those from 16–22 Coppergate have been found at Hull, Gloucester and Dublin. At Gloucester a comparable example, with four decorative holes in the centre, was found at 1 Westgate Street in a deposit of late 4th-century date but thought to be possibly intrusive from a 9th-century context (Goudge 1979, 194–5, fig.14, 1). Two others were found in late Anglo-

Saxon deposits at 11–17 Southgate Street (*ibid.*). Three were found at Fishamble Street, Dublin, in contexts dated c.920–1060 (National Museum of Ireland collection E180:7033, E190:6006, E190:7007). One had an additional hole in the centre (E190:6006). Another (E190:7007), with possible signs of stitching at one terminal, comprised two identical components as noted on some of the stitched panels from Coppergate; in this case it appeared to be the result of delamination of the leather. An example was also found at Chapel Lane Staith, Hull, in a medieval context dating post-1350 to c.1400 (Jackson 1979, 56, fig.24, 52).

### Elliptical slashed panels (Fig.1731)

Eight small panels of elliptical or lanceolate shape, each with slashed interiors, were found at 16–22 Coppergate in contexts dating from the mid 10th through to the late 13th century. A single example was found associated with residual 12th-century footwear finds in an early 15th-century context (15776). They vary slightly in size but all were made of bovine leather with the interiors deliberately cut with a series of parallel slashes as though to allow for transverse expansion. While the slashing on some is crude, others are well executed and appear almost decorative. Half the examples have a small slit present at each end (15772–4, 15777), though they do not appear to have been used in every case. One example (15773) from a context of mid 10th-century date, with a single slash in the interior, appears to have had a thong passed through one of the terminal slits; indeed, it was found associated with a knotted thong. An example was found previously at York, occurring unstratified in the Parliament Street sewer trench (p.266, Fig.117, 885, AY 17/4).

Similar items with internal slashing have been recovered from several sites both in Britain and abroad, in contexts apparently dating from the 10th century onwards. One was found during recent excavations at Guildhall Yard in the City of London, associated with pottery dating to 1050–1150 (<4420>), another with pottery dating to 1080–1200 (<4375>). Others have been found at Bull Wharf (BUF90 <1935>; UPT90<412>); one example (UPT90<412>) was found unstratified but associated with a late Anglo-Saxon assemblage. Further afield, two with parallel slits and large holes at the terminals were found at Hedeby (Groenman-van Waateringe 1984, taf.28, 5–6) in an assemblage of 8th- to 10th-century

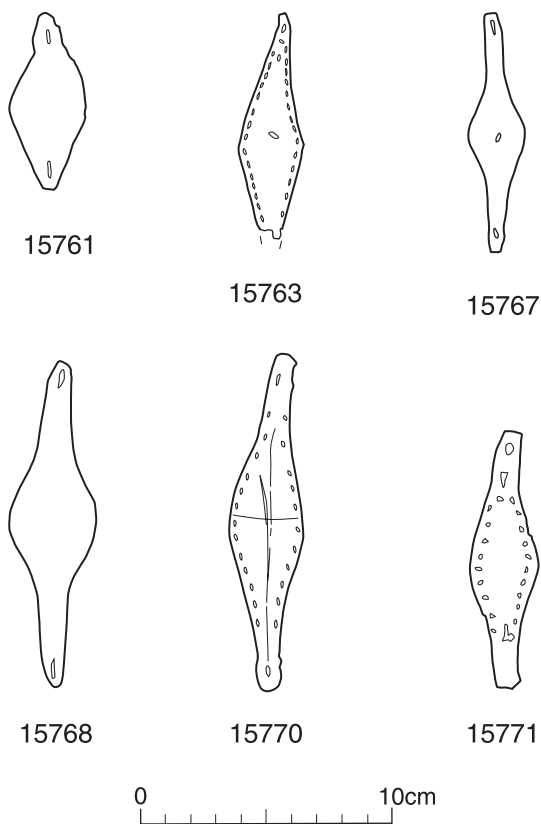


Fig.1730 Plain elliptical panels, some with stitching. Scale 1:3

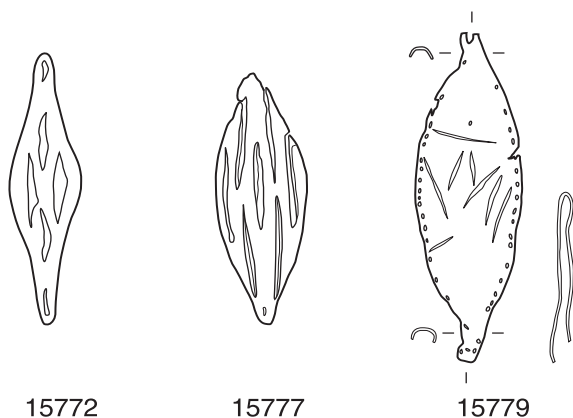


Fig.1731 Elliptical panels with internal slashes. Scale 1:3

leatherwork. Examples from medieval contexts have been found at Welsh Back, Bristol (Mould, unpublished report for Avon Archaeological Unit, 2001), at Perth, Scotland (Thomas and Bogdan forthcoming, fig.43, sfs803 and 2724), in a 13th-century deposit in Waterford, Ireland (O'Rourke 1997a, 726, fig.18:9.13), at Schleswig and Vergleichsfund aus Oslo, Norway (Schnack 1998, 78–80, abb.49, 1–5). Another, identified as a shoe tongue, was found in the castle ditch, Southampton, occurring residually in a probable 16th-century deposit (Platt and Coleman-Smith 1975, 301–2, 2171, fig.264).

### Possible uses of plain and slashed forms

The Irish examples have been tentatively identified as slings, being called *crann-tamall* or 'tree-slings' (Andy Halpin, pers. comm.). Continental examples have been similarly identified. Groenman-van Waateringe has also identified a plain example with a central square hole from a 16th-century context at Svendborg as a sling pouch (Groenman-van Waateringe 1988, 121–3, fig.9.1), as she does the slashed examples from Hedeby (*ibid.*, 122, fig.12.5.1). Schnack reached the same conclusion for those from Schleswig and Oslo (Schnack 1998, 78–80). Slings comprise a cradle or pouch to contain the missile, with a cord at each end; both the plain and the slashed forms from York do superficially resemble slings, having an expanded central area and pierced terminals at either end. To explore this possible explanation, the opinion of Thom Richardson, a ballistics expert at the Royal Armouries, Leeds, was sought. He considered several of the York panels to be too small

for use as slings and the leather from which they were made to be insufficiently robust. When in use, a sling is subject to considerable centrifugal force (Richardson 1998, 44–9) and the strong cords that pass through each end would create much larger holes than those seen on the objects here. Indeed, the cords are likely to have ripped through the thin leather from which some of the York panels were made. It should be pointed out that the slashed panels from Hedeby (Groenman-van Waateringe 1984, taf.28, 5–6) and the example from Svendborg (Groenman-van Waateringe 1988, fig.9.1) do have significantly larger holes than the York examples and their identification as sling cradles is not disputed. The identification of those examples with very small holes at the terminals is less certain. Only one surviving leather sling is known from England, recorded as having been found behind a pew in Winchester Cathedral and dating to c.1300 (Thom Richardson, pers. comm.); unfortunately, this is at present unavailable for study or comparison with the York material.

The plain forms from Coppergate are of similar shape, though larger in size, to iron strap guides that have been recovered from the site (pp.688–90, Fig.297, AY 17/6) and it is possible that they served a similar function on a range of straps and belts. Perhaps they were used to suspend a sheath or scabbard from a belt, being attached to the back of the sheath at the terminals and the belt slipped through the loop. They are also of an appropriate shape to be small handles from box or chest lids, held by a nail or rivet at each end; those with a central perforation may have held a decorative central stud.

### Panels with moulded terminals

One panel (15779, Fig.1731) from a late 11th-/early 12th-century context differs from the others in having a simple running stitch around the perimeter, slashes cutting only the grain surface of the leather, and terminals that appear gently rolled or moulded. Moulded terminals have been noted on examples elsewhere. One of the London examples from Guildhall Yard (<4375>) has each end moulded to form a small cylinder suggesting that a cord or a pin, presumably of wood or bone, passed through it. A comparable object was recovered from High Street, Dublin (National Museum of Ireland collection E711:5193). In the Dublin item each end is moulded into a crescent shape, rather than being pierced, as though to take a pin. The surface also has a series of

parallel slits that here are decorated by sinuous impressed lines above and below, and circular motifs. This has been identified as a hair ornament and does, indeed, bear similarities to the leather and wooden pin hair slides used to hold the hair in a 'pony-tail' today.

Such a wealth of examples with such a wide range of dates makes the difficulty in identifying the function of these elliptical objects all the more surprising. The cruder examples from York (15758, 15760–1) were found associated with waste leather and could be taken for pieces of secondary waste. Others clearly served a particular function, so far unrecognised. Some appear to have had a narrow thong or cord pass through the terminals, others do not, while occasional examples have moulded terminals which appear to have wrapped around a pin of some kind. Those with holes sufficiently large to accommodate a thong or cord at each end may best be interpreted as the cradles of slings used to throw stone shot. Slings were used for the killing of wild fowl, no doubt plentiful along the Ouse and the Foss (AY 15/4, 261–2; AY 15/5, 392–4), to scare away birds from devouring young crops as well as in sport and warfare (Reeves 1995, 89). The use of the others is more enigmatic. It is hoped that bringing these panels to wider attention here may allow their original function, or possibly functions, to be identified.

### Discs (Fig.1732)

Twenty-three leather discs with knife-cut edges were found at 16–22 Coppergate, the watching brief and 22 Piccadilly. The larger examples are discussed further, below. The smaller discs vary in diameter from 19–51mm, the majority measuring 25–35mm (e.g. 15780). All have a small hole in the centre. The discs were found principally in 10th- to early/mid 11th-century contexts, with two examples being found in a 12th-/13th-century context and one in an early 15th-century context.

For the most part it would seem that the perforation simply marks the central compass point used when marking out the disc for cutting. This being the case, the discs may well be offcuts produced when cutting out the central hole of leather washers. There is, of course, no reason why an offcut from the production of one type of object should not be used to make another, and it is possible that these small discs were themselves used. They could have been used

in groups to make handle grips for knives or other implements; they may have formed one or more of the elements of a composite whittle tang handle, perhaps alongside similar discs of wood, bone or antler. A whittle tang knife of early–mid 13th-century date from Swan Lane, London, has a series of discs of tin and organic elements, of unidentified material, which could be leather, threaded onto the tang (Cowgill et al. 1987, 80, fig.54, 15). Four of the discs (15781–4) have a central perforation sufficiently large to have been threaded onto a knife tang and are of an appropriate diameter for a knife handle. The others have a central perforation too small to accommodate the knife tang but may be unused and awaiting assembly. Blacksmithing was certainly being undertaken at 16–22 Coppergate during the 10th century. Dress fittings and horse harness fittings have been suggested as two categories of items being produced and it is possible that knives were also being made at this time.

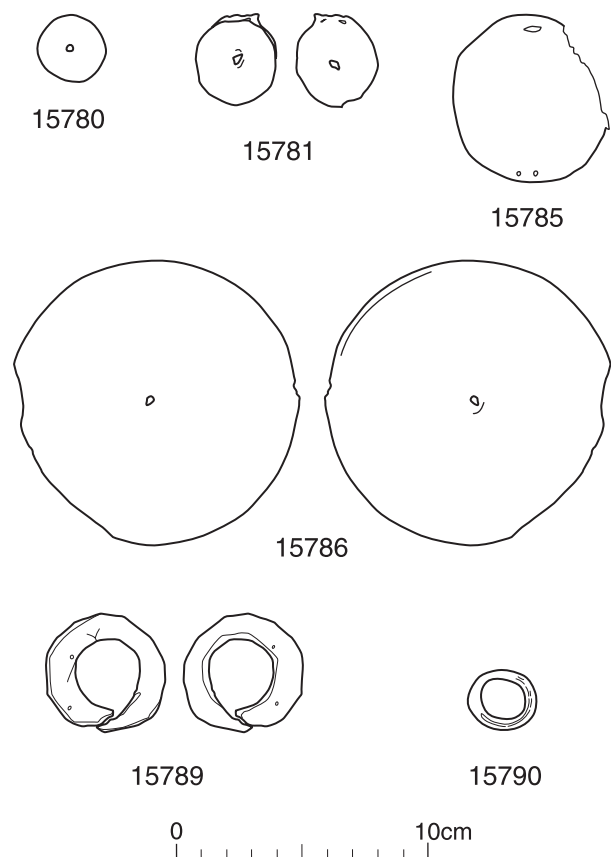


Fig.1732 Discs, vessel bases and washers. Scale 1:3



Similar discs have been found elsewhere in Britain and they are likely to be common finds, perhaps being considered insufficiently interesting to appear more regularly in reports. Discs from 10th- and 11th-century contexts have been recovered recently in the City of London. A disc with a pair of central perforations was found at Bull Wharf, London (UPT90 <416>), and two discs with single perforations with diameters of approximately 40mm were found together at the same site (<381>). Published examples appear to have been recovered exclusively from medieval deposits. Three unperforated discs and two perforated examples were found at the excavations at Whithorn Priory (Nicholson in Hill 1997, 509, LR25–6). Two unperforated discs came from fills of the main ditch dated to the second half of the 12th century, and a possible use as a gaming counter was suggested for the type. Uses as washers or identifying tags were suggested for the perforated discs that came from less well dated contexts there. Centrally perforated discs have been found in a 13th-century context at Goldsmith Street, Exeter (Friendship-Taylor 1984, 327, L20, fig.184, 20), a late 13th-/early 14th-century context at Eastgate, Beverley (Atkinson and Foreman 1992, 178, fig.91, 598), and in an early–mid 16th-century pit fill at Sewer Lane, Hull (Armstrong 1977, 59, fig.25, 45).

Discs recovered from medieval contexts may have been used as simple buttons or similar fastenings. Examples of simple leather buttons with a pair of fastening holes have been recovered from later deposits elsewhere, such as the French frigate the *Machault* scuttled by her crew in 1760 (Davis 1997, 41, fig.8). Discs with a single central perforation could have been secured to the garment by a single knotted thong or cord. Impressions are visible on some discs near the central perforation, possibly made by a knot or a rivet head. Medieval buttons have been found in excavations in London, examples of non-ferrous metal from the early 13th century, those of cloth from mid 14th-century contexts (Egan and Pritchard 1991, 278–80). As the use of buttons is established in the later medieval period, it is possible that the later dating examples from York were uses as simple garment fasteners.

### *Vessel bases* (Fig.1732)

A comparable, but much larger disc (15786) of cattle hide was found in the late 14th-century backfill

of a large rectangular tank, amongst a large assemblage of waste leather. A small concave curve present in one side appears to mark the intersection of another disc suggesting that several had been cut out together. The size of the disc and thickness of the hide used is consistent with the base of a leather jug or bottle. The disc also has a perforation in the centre, but the finished item would have been made watertight with pitch, which would have sealed this. Another two examples of similar diameter were found in medieval contexts at the Coppergate watching brief (15842–3), while a smaller disc (15785), possibly cut down from a bottle base, came from domestic refuse associated with 14th-/15th-century shoes and pottery.

### *Washers* (Fig.1732)

A small number of washers each with a large, cut, central hole were recovered from 16–22 Coppergate. Two (15789, 15791) appear to have been cut from re-used shoe soles. A disc (15787) from a mid 10th-century context has a distinctly abraded concentric band present indicating it had also been used as a washer or a valve.

### *Items of decorated leather* (Fig.1733)

Tooled decoration was found ornamenting shoes, sheaths and a painted girdle. Two other items had been similarly decorated. A small piece cut down from a larger item (15792) decorated with two triangular cut-outs and an irregular design of incised geometric and foliar motifs was found in a context dating c.975 at Tenement B at 16–22 Coppergate. Waste leather was also recovered from Tenement B at this date and it may be that this crudely decorated fragment represents a trial piece or perhaps an idle moment's doodling on a piece of scrap leather by a leatherworker.

A fragment of decorated leather (15793), probably of sheep/goatskin, was found in a medieval–early post-medieval backfill in Tenement B at Coppergate. The stamped floral and impressed linear decoration on the fragment of sheet leather suggests it may be a corner torn from a bookbinding. Once stripped away from the wooden board that they covered small bookbinding fragments are very difficult to recognise.

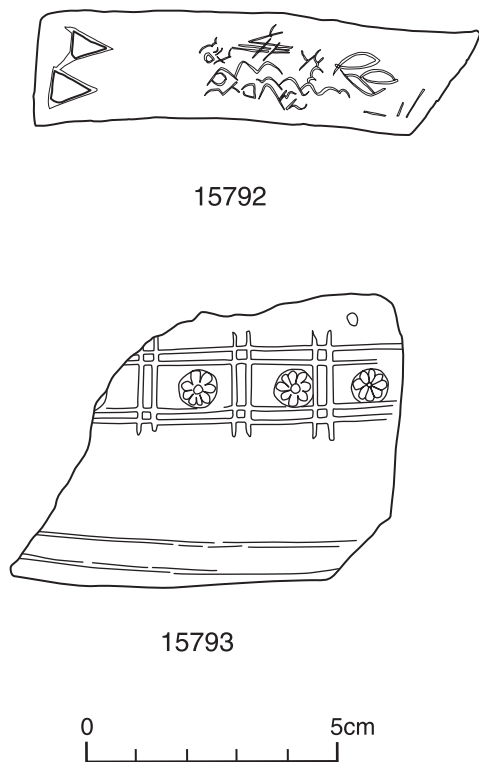


Fig.1733 Decorated fragments of leather. Scale 1:1

### Binding strips

Lengths of strip folded longitudinally were used to bind the edges of a range of items including garments. They are characterised by having been sewn along the edge with a line of grain/flesh stitching leaving a continuous thread impression visible when the stitching no longer remains. A binding of sheepskin or goatskin (15794) was found in a 14th-/15th-century context.

### Thonged fragments

A small number of thonged fragments (15795–9) were found that had been torn from larger items and could not be further categorised. The largest (15798), from a post-medieval context, comprised three pieces of cattle hide crudely thonged together as a repair.

Others (15797, 15799) are likely to be cut-down strap fragments.

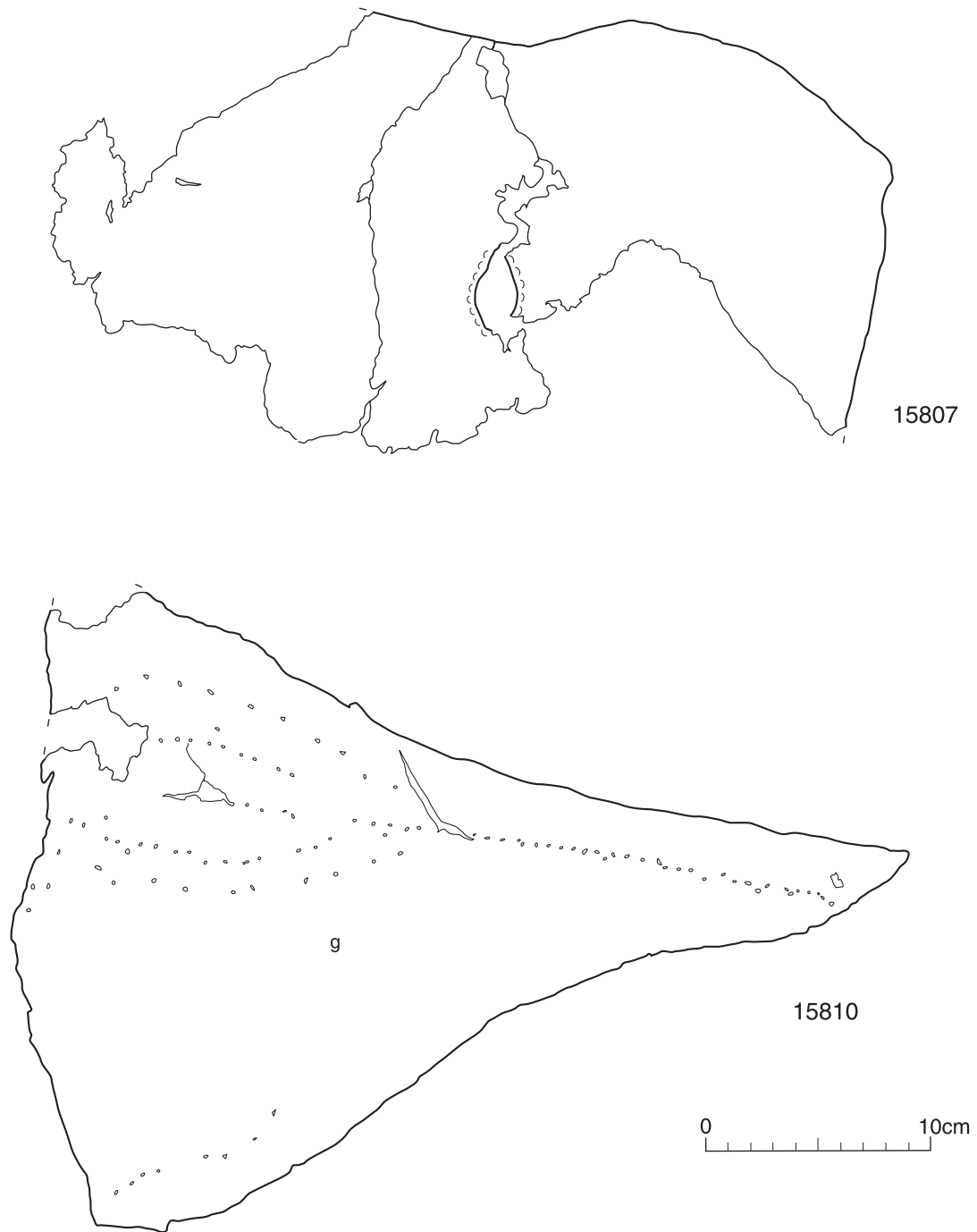
### Cut-down pieces (Fig.1734)

Many of the leather objects had been deliberately cut up to salvage re-usable leather before being thrown away. The number of shoe parts cut up before being finally discarded has been discussed on pp.3350–1, indicating as it does the activities of the cobbling trade. The cutting up of other items has consequently rendered them unrecognisable and, while some may also have originally been shoe parts, others are likely to come from a range of items that now cannot be further categorised. In some instances seams were found which had been deliberately cut away from leather items and discarded whilst the rest of the leather had been salvaged for re-use.

A number of cut-down fragments were of interest as they derived from larger items not otherwise represented amongst the assemblages examined. Cut-down fragments of bovine leather with a split thong seam (15806, 15808) were found in 10th- to early 11th-century build-up deposits at 16–22 Coppergate. The same split thong stitching occurred on an 11th-century side-opening ankle-boot with a sole with a V-shaped heel extension from London (Pritchard 1991, 223, 269, fig.3.108, 287). The split thong seam is particularly strong as each return stitch passes back through a split in the thong itself. It is used on late medieval flap-closing purses to secure the component parts to the hanging loops. The object from which the Coppergate fragments have been cut is unknown, but the curving nature of the largest surviving fragment (15808, Fig.1734) and the split thong seam suggests it was cut from a saddle bag.

A large piece of cut-down and torn sheet (15807, Fig.1734) of sheep/goatskin was found in pit fill dated to c.975 in Tenement D at 16–22 Coppergate. An elliptical seamed hole in the centre may mark the position of a neck suggesting that the sheet may have been cut down from a large water bag. A goatskin wine bag with a similar small neck holding a separate wooden funnel mouth and stopper was recovered from the wreck of *La Trinidad Valencera* lost in 1588 (Martin 1997, 11, fig.15).

Two cut-down pieces of sheep/goatskin (15844) found during the Coppergate watching brief in a context of Anglo-Scandinavian date were accompanied by two fragments of folded binding. No thread

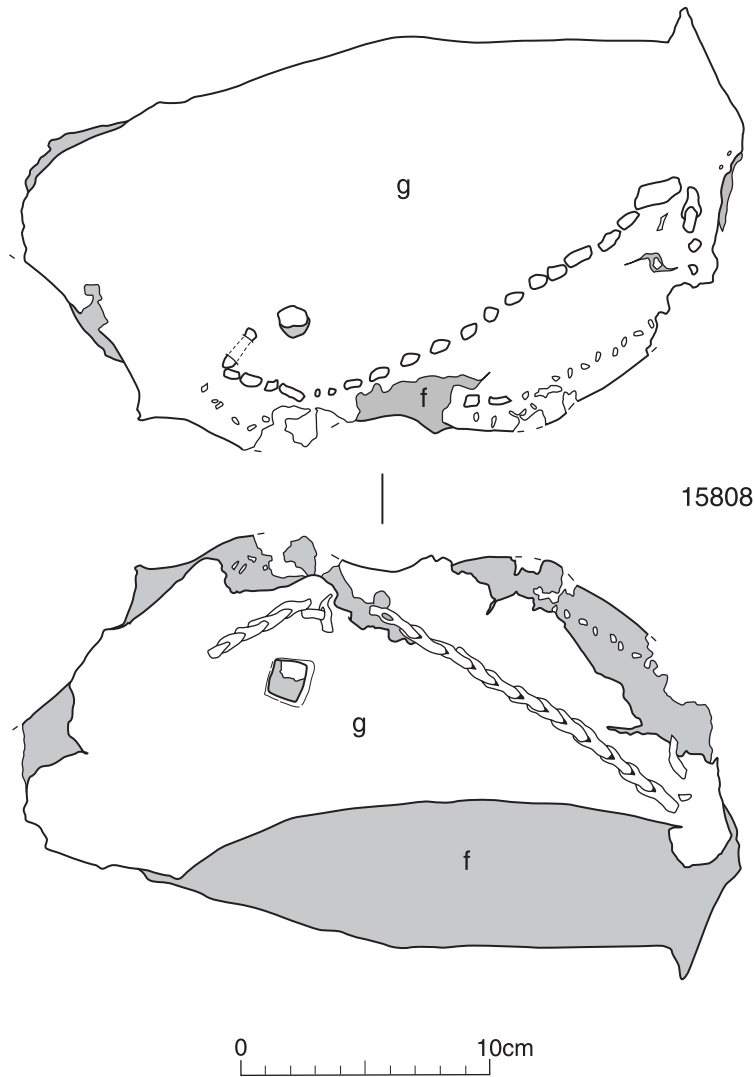


*Fig.1734 (above and facing) Cut-down pieces of leather. Scale 1:3*

impressions were present on the bindings, suggesting that they acted as an internal bead within the curved length of seam, a feature suited to the construction of large bags or pouches. The internally beaded seam is a construction used on Roman tentage (van Driel-Murray 1998, 289, fig.126, VIa/b) and, having been found under the difficult conditions of

a watching brief, it is possible that these fragments are of Roman date.

Two other pieces from 16–22 Coppergate are worthy of note. A long piece of deerskin (15809), possibly a cut-down strap, was found in a late 12th-century context along with leatherworking waste in



Tenement D. It had been cut across each end and down the length of each fold, as though to remove a central seam. Cut marks were present on the flesh side of the leather showing the passage of the knife. A large piece of sheepskin (15810), apparently with a patch to repair a damaged area, was found in an early-mid 14th-century dump deposit in Tenement C.

## Wealth and status reflected in the leather from York

### *Status*

The wide range of leather goods considered here provides an insight into the people of York who bought them, used them and finally threw them

away. The sword was an object that reflected the high status of the owner, as did the seax. The symbolism embodied by these two types of weapon is discussed by Esther Cameron when considering scabbards and sheaths from both the Anglo-Scandinavian and medieval periods below. During the medieval period the sword remained a symbol of high status. The sword and the spur were items associated with the knight. A small number of strap fragments likely to have been used to suspend a sword and narrow straps with decorative mounts that may be spur leathers were found amongst the material considered here. In addition, the presence of the foot bones of squirrels recovered from a 14th-century pit at the College of the Vicars Choral provides evidence for the preparation of furs for trimming the robes, possibly ceremonial

garments, worn by the members of the College (AY 10/5, 616–17). These provide evidence of the status of those that carried the weapons or wore the garments and fittings they represent. This is confirmed by other high-status objects found on the site, such as vessel glass, gold and silver brooches and rings, and seal matrices (AY 17/15).

## Sheaths and scabbards as mirrors of wealth and status?

By Esther Cameron

As objects of status, swords ranked high in Late Saxon society and featured as weapon gifts from lords to their men, symbolic of reciprocal bonds and obligations that existed between them. While the blades might sometimes have been inscribed or inlaid with small sections of pattern-welded iron, the real seat of display lay in the hilt as this could be richly embellished, most commonly with silver and niello. Despite their high status, swords of 9th- to 11th-century date were generally housed in plain scabbards expressive of function, conformity and restraint. A scabbard depicted on a stone frieze from the late Saxon Old Minster at Winchester is undecorated (Tweddle et al. 1995, 314–22, figs.642–9), as are those of Normans and Saxons alike illustrated in the Bayeux tapestry. Although it is unusual to find surface decoration on Anglo-Scandinavian and medieval sword scabbards, it is a feature of 9% of the total found at York. This fact alone does not invite special curiosity, however, because these fragmentary lines of tooling and possible relief moulding are faint echoes of an earlier era when decoration was focused as much upon scabbards as on swords. They belong to an age-old tradition that dwindled to extinction, along with the practice of pattern-welding, towards the end of the 10th century.

Upon one face of the stone cross-shaft at Middleton, North Yorkshire, a warrior (Middleton B) is depicted wearing a seax and surrounded by various weapons. The seax has a large, angle-backed blade and is worn horizontally with the suspension flap and mouth-band of its sheath emphasised in relief, possibly as metal fittings, and with the end of the handle protruding slightly from the mouth of the sheath. Depictions of seaxes in sculptural stone imply their continued status as weapons of rank. In order fully to appreciate the significance of the seax in

late Anglo-Saxon society a backward glance at the role it played in the late 6th- and 7th-century burial rite shows that the practice of sword burial was then in decline, its place being taken by the seax. From this point in time the sword underwent gradual technological development and emerged as a more business-like weapon at the end of the 10th century (Tylecote and Gilmour 1986). Meanwhile, decoration of the blades of seaxes with pattern-welding and inlaid wires of copper alloy persisted far beyond the time when the blades and scabbards of swords ceased to be decorated, and this suggests that they had been assigned a totemic role. Indeed, while discussing the purpose of the seax from Keen Edge Ferry (Berkshire), Evison points out that the elaborate metal inlays on the blade would have been damaged by use (Evison 1963). The old symbolism of display in weaponry, unmistakably in evidence during the pagan Saxon period, may have become enshrined in seaxes and preserved, albeit anachronistically, through to the Conquest. In the 10th and 11th centuries, after the sheaths of other knives had undergone stylistic change, the sheaths of seaxes demonstrate such strong adherence to Saxon tradition that the impression deepens of ownership and display of seaxes, and their sheaths, being weighted with the symbolism of a passing age.

Most sheaths for knives from York appear to be designed as items of everyday wear. Even so, the consistently high standard of craftsmanship and frequent use of decoration, on 83%, suggest that sheaths were also expressions of personal taste. Within the Coppergate assemblage the Type B3 and C sheaths are noticeable for their plainness. Whether they were produced for a different ethnic group or aimed at a particular level in the social stratum is not something that can be told from the evidence of the sheaths alone. It might be conjectured that B3 sheaths were the first Type B sheaths to be introduced to York by Scandinavians in the late 9th century and that types B1 and B2 were Saxon adaptations of a new and popular form, but the deposits at Coppergate are too mixed to allow detailed chronological distinctions of this kind to be made. Four crudely constructed Type D sheaths of 11th- or 12th-century date from Coppergate and 22 Piccadilly are also plain, but their size and appearance do not suggest that they were items for personal display. A utilitarian role, perhaps within large catering establishments or some other form of industry, might be conjectured for this group.



## Wealth

Other features seen in the leather objects may reflect the relative wealth of their owners. This may be exemplified by footwear. The proportion of the population which went barefoot will always remain unknown. Others have competently illustrated that in a northern climate even the poorest members of society probably wore leather shoes during the medieval period (Grew and de Neergaard 1988, 112–13; Larsen 1992, 77–80). This is also likely to be true for the preceding period. At York shoes in children's sizes were found, including a shoe to fit an infant taking his first step, but many of those below working age are likely to have gone unshod. For the most part the shoes from York appear to represent the lower end of the market during both the Anglo-Scandinavian and the medieval period. The majority of the shoes were heavily worn and many had been repaired, on occasion several times, before being eventually thrown away. Evidence for the translation of shoes, found at 16–22 Coppergate during the late 11th–12th century, represents the lowest end of the shoe-making trade.

A small number of Anglo-Scandinavian and medieval shoes were decorated but the majority appear to be the everyday shoes of the common man. A group of shoes from York dating between the 11th and the 13th century were decorated, principally with silk embroidery down the centre of the vamp and along the top band running around the top edge of the shoe. Embroidered toe stripes are shown on the shoes of Edward the Confessor depicted on the Bayeux tapestry, and on the shoes of figures of high standing in early medieval illustrations (see Grew and de Neergaard 1988, 113). This form of decoration occurs, in small numbers, on shoes in contemporary assemblages throughout Britain. It is likely that embroidered shoes were also worn by the wealthier merchant classes rather than exclusively by those of high rank. The range of embroidered, perforated and

stamped decoration seen on medieval shoes from the Gullskoen area of Bryggen, in Bergen (Larsen 1992, pl.1, figs.41, 44) shows the extent of decoration that might be expected, as does the openwork and scraped decoration shown on shoes of late 14th-/early 15th-century date from London (Grew and de Neergaard 1988, 79–87). The footwear from the York sites under consideration is comparatively plain. Examples of the long poulaine toes fashionable in later 14th and again in the later 15th century are limited. Those that are present have the toe broken off; one toe had been deliberately cut off as though intended to be re-made, 'translated' into a shoe with a more practical toe shape.

Plain items lacking any ornamentation may not necessarily indicate a cheaper product, as can be seen in the sword scabbards of pre-Conquest date described by Cameron above. It follows that highly decorated objects are not necessarily more desirable or costly. Indeed, in the current climate of 'less is more', elaborately ornate items may represent the lower end of the market. It may be that items made of uncommon materials such as deerskin, rather than the commonly found calfskin, represent expensive products. Items recognised as being of deerskin were extremely rare. For this study, however, we may suppose that the more work involved to decorate an item, the more costly the final product. The recovery of the painted girdle and straps ornamented with metal mounts suggests that wealthier customers were represented in the later medieval leatherwork. A high proportion were found in the area of Bedern, hinting at the increased spending power of those disposing of their rubbish in that area. Two straps with simulated stitching rather than stitched seams suggest that the leatherworker was prepared to provide cheaper versions of a particular product to cater for the needs of a less discerning clientele. The use of archer's bracers made from re-used shoe parts reminds us that there is always a market for low-cost items made from salvaged materials.

## The Wider Picture

In this final section the leatherwork assemblages from the sites under consideration are set in context. Firstly, the leatherwork assemblages previously recovered from York are outlined and a reinterpretation of the earlier groups is offered in the light of more recent dating evidence. We then turn our attention further afield. It is the remarkable collection of material dating to the Anglo-Scandinavian period for which the excavations at 16–22 Coppergate are known and that has been the principal focus of this volume. Other assemblages of pre-Conquest date recovered from elsewhere in Britain are summarised and compared with those from York. Possible cultural influences and trading contacts reflected in the Anglo-Scandinavian leatherwork from York are explored, by considering specifically the footwear, the sheaths and scabbards. Dr Carol van Driel-Murray then considers the York assemblage in its wider, European, setting. Finally, Dr Richard Hall comments on the significance of the York assemblage.

### Anglo-Scandinavian and medieval leather found at York

The survival of leather is governed by the environment in which it is buried. Waterlogged conditions prevail in many locations in York and organic remains such as leather and wood, which do not survive under normal burial conditions, have been preserved. Consequently, much leather has been recovered over the last century during building work and, in later years, archaeological excavation. Anglo-Scandinavian and medieval leather found in York has been summarised below with typological dates of the artefacts added, where identified. Sites that produced leather of uncertain date have also been included. This provides other workers in the field with a gazetteer of leather recovered from the city.

An interpretative summary by Quita Mould of earlier leather finds is presented here followed by a comprehensive summary by Ian Carlisle of the as yet unpublished leather recovered by YAT to the year ending 1997. It should be noted that excavations producing leather have been conducted recently in York by other organisations, but regrettably details of the leather are unavailable. The nature of the informa-

tion available has dictated that the two sections differ in their presentation. The earlier assemblages have been subject to reinterpretation, where appropriate, in the light of recent advances in dating which have been made as a result of the analysis of large, well-dated, assemblages, not least, that from Anglo-Scandinavian Coppergate and from the medieval waterfront excavations in London (Grew and de Neergaard 1988). The summary of unpublished sites excavated by YAT provides the available information on the leather recovered, but little interpretation of the groups has been possible.

### *Leather from earlier excavations (non-YAT sites)*

#### **Excavations at the site of the south corner tower of the Roman fortress wall, Feasegate (Stead 1958, 515–38) (Fig.1735, 22)**

Excavations in Feasegate in 1956 produced a small assemblage of shoes of Anglo-Scandinavian date from Trench II, described and discussed by Thornton and Goodfellow (*ibid.*, 525–30, fig.6). The two complete shoes, a near complete upper and fragmentary remains of a minimum of two others were recognised as not being of Roman date, as no doubt had been presumed from the locality of their discovery. The similarity to Swedish shoes was noted and an Anglo-Scandinavian or Anglo-Norman date proposed. The assemblage included a low-cut slip-on shoe (Style 2; *ibid.*, 529, fig.6, 4), a shoe with a one-piece upper joining with a single side seam (Style 3b; *ibid.*, 528, fig.6, 3), and a flap- and toggle-fastened shoe (Style 4a; *ibid.*, 529, fig.6, 5). The fragmentary remains of a drawstring-fastened shoe can also be recognised (*ibid.*, 528, fig.6, 1D).

Also in the Yorkshire Museum collection is a small quantity of leather from the south corner tower, Feasegate. This material includes a shoe upper with fine vertical thonging along the top edge and another upper of one-piece construction joining with a single side seam and fastening with an integral drawstring stitched to the throat (Style 3b3). It is implied but not actually stated in Thornton and Goodfellow's report that all the leather from the excavations was

described in the text. These additional items are not included within the published report and it is uncertain whether they belong to that assemblage or, more likely, were found subsequently at the same location.

### **Feasegate**

A small assemblage of leather was recovered during structural alterations to a cellar adjoining the excavations described above, carried out in the same year. The cellar was in premises then owned by Messrs Charles Hart. The leather was described by Dyer and Wenham (1958, 422) and the complete shoe described by Thornton and Goodfellow (*ibid.*, 422–3) and incorporated in their discussion of the finds from the south corner tower. The leather was found in a black, organic-rich soil layer, described as ‘evil smelling’, associated with wooden stakes and wickerwork. The leather comprised a single, complete shoe (*ibid.*, 422, fig.3, 1) with a one-piece upper with a single side seam (Style 3b) partly made up by a small triangular insert. The sole was sewn to the upper with a bast fibre, probably flax (*ibid.*, 423). The shoe was found with ‘dozens’ of offcuts interpreted as the debris from a cobbler’s workshop (*ibid.*, 422). Also found within the black soil layer was a large collection of animal bone, oyster and other edible seafood shells, a very small amount of hazelnuts, a plum stone, a bone pin and 30 sherds of pottery of 12th-/13th-century date. The style of the shoe, however, suggests that it pre-dates the pottery and is likely to date to the mid 9th to the mid 11th century.

### **Hungate** (Fig.1735, 31)

Anglo-Scandinavian and medieval leather was described and discussed by Richardson (1959, 86–90, 102–6), while the construction of the shoes was discussed by Learey and Blockley (*ibid.*, 87–90). A small assemblage of Anglo-Scandinavian leather was recovered, comprising a small group of shoes and shoe parts, a sheath (*ibid.*, 86, fig.19, 25), a thonged triangular object (*ibid.*, 85, fig.19, 24) and offcuts. The shoes were thought by Richardson to be debris from a cobbler’s workshop (*ibid.*, 63) and the waste leather offcuts were also described as ‘snippets identified as the refuse from a cobbler’s working place’ (*ibid.*, 86). A preliminary scan of the waste leather offcuts by this author identified secondary waste including intersectional cutting pieces indicative of shoe-making and a single piece of primary waste.

Seven near complete shoes, fragments of others and leather offcuts were recovered from the brushwood levels. A single low-cut slip-on shoe was represented (*ibid.*, fig.21, 5), four shoes with one-piece uppers joining with a single side seam (*ibid.*, fig.21, 1–3), and three shoes and components from three others with flap- and toggle-fastenings (*ibid.*, fig.22, 7–10). Although small, the shoe assemblage from Hungate was interesting since shoes of the same styles were made with both round-seated and V-backed soles, as at 16–22 Coppergate. The accompanying small finds were dated mainly to the second half of the 9th through to the end of the 10th century (*ibid.*, 65). The pottery was said to be unlikely to date before the 10th century and may have continued in use to the later 11th century (*ibid.*, 64).

Medieval leather was represented by four decorated sheaths (*ibid.*, 102–5, fig.29) dating from the late 12th/early 13th through to the 15th century, and shoe components. A one-piece boot upper fastening with drawstrings passing through vertical thongs (*ibid.*, 105, fig.30, 1) of 12th-/13th-century date was found along with a toggle-fastening boot (*ibid.*, 106 not illustrated) of late 13th-century date, and two medieval shoe soles (*ibid.*, fig.30, 2–3). Three components from a shoe of 16th-century date (*ibid.*, fig.30, 4–6) were also noted.

### **25–7 High Ousegate** (Fig.1735, 35)

Leather was recovered during the building works observed by G. Benson in 1902–3 (1903, 64–7) on cellars under properties lying between High Ousegate and Coppergate. The leather was a component of a collection of animal bone, pottery and metalwork, the brief descriptions of which indicate a date range from Roman through to the post-medieval period. In Benson’s notes on the excavations (1903, 66) he outlines the leather found: ‘In leather, were shoes, some laced, others had leather laces twisted into knots which served as buttons . . . some had one, others two; some pouches and dagger and sword sheaths were met with’. A single shoe, obviously part of the larger assemblage of leather, was described later by Richardson as being found amongst the ‘many objects’ recovered which included ‘samian, green-glazed pottery, a sword chape and axe of Viking type’ (Richardson 1959, 60). The shoe is said to be of the same kind as that found at Hungate (*ibid.*, fig.22, 7), that is, a single flap- and toggle-fastening shoe. The



**Fig.1735** Other sites in York which produced leather finds (see facing page for key)

comparable Hungate shoe is unusual, however, in having a sole with a rounded seat rather than a V-backed sole with a heel extension commonly found on shoes of this style.

Benson interpreted three pits as being used in the tanning process (discussed and rebutted fully elsewhere in this volume, pp.3227–8) and described the area around as having been used for refuse tips where leather, animal bones and horns were found jumbled

together (*ibid.*, 65). He noted that similar deposits of ‘warp, bone, horn and leather have been removed under Mr Dyson’s premises in Coppergate, under Barclays Bank, also in Parliament Street, Pavement, and Silver Street’.

### **23 Market Street (Fig.1735, 24)**

A very small collection of leather housed in the Yorkshire Museum included a medieval sheath



## Key to Fig.1735

1. Yorkshire Museum lift building
2. Purey Cust Nuffield Hospital
3. County Hospital, Monkgate
4. Assembly Rooms, Blake Street
5. Coffee Yard
6. 65 Low Petergate
7. 7/9 Aldwark
8. 14 Little Stonegate and 18 Back Swinegate
9. 12–18 Swinegate
10. Petergate Watching Brief
11. Granary Court, St Andrewgate
12. St Andrew's, St Andrewgate
13. 15 Davygate
14. 20–24 Swinegate
15. 1 King's Square
16. King's Square
17. St Andrewgate/Spen Lane
18. Bleasdale's Yard, St Saviourgate
19. St Andrewgate/Spen Lane
20. North Street boreholes
21. 13–17 Coney Street
22. South Corner Tower of the Roman fortress wall
23. 19 Market Street
24. 23 Market Street
25. 11–13 Parliament Street
26. Parliament Street sewer trench
27. Parliament Street sewer repair
28. 44/45 Parliament Street
29. Pavement/Parliament Street cable trench
30. 22 Pavement sewer flue repair
31. Hungate
32. Haymarket Car Park, Peasholme Green
33. 6–8 Pavement
34. 5–7 Coppergate
35. 25–7 High Ousegate
36. All Saints Church, Pavement
37. 11–15 Piccadilly and 44–46 Fossgate
38. 1–9 Micklegate
39. 1–9 Bridge Street
40. 14 Skeldergate
41. 1–2 Tower Street
42. 38 Piccadilly
43. 17–21 Piccadilly
44. 76/82 Walmgate
45. Albion Wharf, 23–28 Skeldergate
46. Skeldergate City Mills
47. 50 Piccadilly
48. 41–49 Walmgate and George Street
49. 104–12 Walmgate
50. Foss Islands Road
51. 84 Piccadilly
52. St George's Field
53. Barbican Car Park

(15893), a small number of medieval shoe components and part of a possible bag with a triple line of slits running around the surviving curved edge.

## King's Square (Fig.1735, 16)

A very small collection of leather housed in the Yorkshire Museum comprised a shoe sole, an upper fragment and a top band, along with another fragment. The shoe components suggest an Anglo-Scandinavian date.

## Low Petergate (Fig.1735, 6)

Leather, principally of medieval date, was found at Low Petergate (Wenham 1972, 96–105). Five decorated medieval sheaths (*ibid.*, 97, fig.22, 1–5, pl.XV) were found in a single context along with 70 other items, principally shoe components, which were described and discussed by Goodfellow and Thornton (*ibid.*, 97–105, figs.23–6). The dating of the leather-bearing context is a little confused, since it is described as being dated by pottery to the 12th–13th century; a footnote (*ibid.*, 97, 3), however, dates it to c.1200–1400. While many of the shoe components found are of this medieval date, two shoes of Anglo-Scandinavian date (*ibid.*, 100, fig.23, 6, fig.24, 7) are also present; these are suggested as representing a pair of shoes, the more complete example clearly being a low-cut slip-on shoe. A single 17th-century shoe insole (*ibid.*, fig.23, 1) came from a later deposit. It was also stated that 'in addition there was a large quantity of miscellaneous clippings . . . many appear to have come from a shoe-maker's shop as they show where shoe sections have been cut either from a skin or from other sections'.

*York Archaeological Trust sites* (in chronological order when excavated)

**Published sites** (with the finds re-interpreted where appropriate by Quita Mould)

**11–13 Parliament Street, 1971:** excavated by York Excavation Group, described and discussed by Tweddle (AY 17/4) (Fig.1735, 25)

A small assemblage of leather comprised a 13th-century decorated sheath (*ibid.*, 242, 973, Fig.107, Pl.XIV), a near complete shoe found associated with



13th-century pottery, and an unidentified seamed fragment of sheepskin (*ibid.*, 256, 269, 976). The ankle-shoe (*ibid.*, 253, 269, 975, Fig.108) had a one-piece upper joining with a single side seam and a top band. The vamp was originally decorated with an embroidered toe stripe and the top band had been similarly ornamented. Waste leather offcuts were also found (*ibid.*, 269, 974) and it was reported that many were recorded but not collected (*ibid.*, 256). The largest group came from a context dated by pottery to the 13th century.

**6–8 Pavement, 1972.21:** published in AY 17/3 (Fig.1735, 33)

A small assemblage of Anglo-Scandinavian leather including a saddle trapping (*ibid.*, Fig.70, 543), probably to fit beneath a padded saddle and secure the stirrup leathers, shoe components (*ibid.*, Fig.71), two sheaths (Fig.73, 550, 681) and miscellaneous items (Fig.73, 551–3) were found. The shoes consisted principally of broken components amongst which a low-cut slip-on shoe upper and a sole with a V-back heel extension could be recognised. A large amount of leatherworking waste was also found (*ibid.*, 154, Fig.80) and it is documented that ‘some strata at the Lloyds Bank site were composed almost entirely of leather offcuts’ (*ibid.*, 136). What appears in the accompanying catalogue and is retained at the Yorkshire Museum would appear to be only a small sample of the leather offcuts found. A preliminary scan of these waste leather offcuts by this author identified secondary and tertiary waste indicative of shoe-making. Also of interest from the site was the recovery of a wooden shoe last, a possible fragment of a second (*ibid.*, 144, Fig.74, 160–1, 493–4) and five iron awls (*ibid.*, 80, 159, Fig.41, 442–6).

**5–7 Coppergate, 1974.8:** published in AY 17/3 (Fig.1735, 34)

A small assemblage of Anglo-Scandinavian leather consisting chiefly of shoes (*ibid.*, Fig.72, 627–37), including a complete single flap- and toggle-fastening shoe with a V-backed heel extension (*ibid.*, 627), and a single sheath (*ibid.*, Fig.73, 638) was recovered.

**Parliament Street sewer trench, 1976–7.11:** published in AY 17/4 (Fig.1735, 26)

A relatively large collection of leatherwork was amongst the finds collected unstratified from the spoil

from the trench, principally from black organic levels of Anglo-Scandinavian date (*ibid.*, 178). The leatherwork included three decorated sheaths of pre-Conquest date (*ibid.*, 236–41, 260, 753–5, Fig.107, Pls.XI–XIII), a small collection of Anglo-Scandinavian and medieval shoes, straps, other miscellaneous items and offcuts.

Amongst the shoe assemblage was a single complete shoe (*ibid.*, 242, 260, 756, Fig.108) with a one-piece upper joining with a single side seam (Type 3b); an upper of the same style was also present (*ibid.*, Fig.113, 819). Approximately 50 turnshoe soles or sole fragments were also recovered (*ibid.*, 260–3, 757–809), shoe uppers (*ibid.*, 263–5, 815–49) and clump repair pieces (*ibid.*, 262–3, 810–13). The shoe uppers comprised principally of one-piece ankle-shoes and boots, and examples of both Anglo-Scandinavian and medieval styles were recognisable. Uppers from Anglo-Scandinavian flap- and toggle-fastening shoes (*ibid.*, Fig.114, 823, 825) and one-piece ankle-shoes and boots of late 11th- to 13th-century date were present (*ibid.*, Fig.112, 815–17, Fig.113, 820, Fig.115, 827, Fig.116, 830). A one-piece quarters with angled front seams (Fig.115, 826) and an incongruous uppers fragment (Fig.115, 828) indicate the presence of later material.

Twelve strap fragments were identified (*ibid.*, 265, 850–61, Fig.117). Five of these appear to be the top bands from shoes, one (Fig.117, 859), having three parallel rows of slits for decorative thread, is characteristic of the decorative top bands found on one-piece ankle-shoes of 11th–12th-century date. Amongst the quantity of miscellaneous leatherwork found was a large panel (*ibid.*, Fig.118, 862) more likely to be a Roman tent panel than the garment sleeve tentatively suggested. A large number of offcuts were found (*ibid.*, 256, 267, 891–936) and it was stated that ‘the 165ft (50m) length of Pavement had offcuts found at all the places investigated’.

## Unpublished sites

**1–2 Tower Street, 1981.3** (Fig.1735, 41)

Ninety-eight leather finds, not yet assessed.

**City Mills, Skeldergate, 1983.2** (Fig.1735, 46)

Fifty-four leather finds from contexts of 11th- to 15th-century date. This assemblage is entirely foot-

wear based, containing complete shoes, cut-down and torn components, and waste, some of which is diagnostic of footwear manufacture. It includes a complete Style 7b1 ankle-shoe with scraped linear decoration of the whole surface of the uppers, similar to Coppergate example 15483. Also a Style 7c1 ankle-shoe and a complete knife sheath with impressed linear decoration.

### **County Hospital, Monkgate, 1983.19**

(Fig.1735, 3)

Ten leather finds, mainly small footwear fragments of 13th- and 14th-century date.

### **All Saints' Church, Pavement, 1983.1038**

(Fig.1735, 36)

A single offcut.

### **Bleasdale's Yard, St Saviourgate, 1983.44**

(Fig.1735, 18)

A heel with iron nails and a single probable offcut.

### **7/9 Aldwark, 1985.5** (Fig.1735, 7)

A single trimming.

### **1-9 Bridge Street, 1985.17** (Fig.1735, 39)

A single unidentified fragment.

### **St George's Field, 1986.11** (Fig.1735, 52)

Four offcuts and a modern sole fragment.

### **Haymarket Car Park, Peasholme Green, 1986.14** (Fig.1735, 32)

A single trimming.

### **Purey Cust Nuffield Hospital, 1986.22**

(Fig.1735, 2)

Nine unidentified scraps

### **Assembly Rooms, Blake Street, 1986.8**

(Fig.1735, 4)

Seventeen finds, mainly offcuts, plus a few footwear fragments. One of these is an insert from a Style 7b3 boot of late 12th- or 13th-century date.

### **Coffee Yard, 1987.1** (Fig.1735, 5)

Twenty-three finds consisting of welted shoe fragments, including a possible butterfly spur leather from a riding boot, a belt, and a small number of secondary and tertiary offcuts.

### **Pavement/Parliament Street, 1987.22**

(Fig.1735, 29)

Five finds, including a 13th-century sole fragment, quarters from a probable 14th- or 15th-century shoe, several fragments from post-medieval shoes and a small quantity of leatherworking waste.

### **15 Davygate, 1987.26** (Fig.1735, 13)

A single find of a 14th- or 15th-century turnshoe sole.

### **1 King's Square, 1987.30** (Fig.1735, 15)

Seven unidentified scraps.

### **76/82 Walmgate, 1987.33** (Fig.1735, 44)

Sixteen finds of leatherworking waste, much of it diagnostically from shoe-making.

### **Foss Islands Road, 1988.3** (Fig.1735, 50)

A single primary offcut.

### **St Andrew's Church, St Andrewgate, 1988.6** (Fig.1735, 12)

A single scrap, possibly of shoe sole.

### **1 King's Square, 1988.8** (Fig.1735, 15)

Leatherworking waste and footwear fragments. These include a 10th-/11th-century sole with two uppers fragments and two top band fragments from the same context.

### **Granary Court, St Andrewgate, 1988.16** (Fig.1735, 11)

Four secondary offcuts.

### **1-9 Micklegate, 1988-9.17** (Fig.1735, 38)

Six hundred and five finds, mainly from the Roman and Anglo-Scandinavian periods, plus a few of medieval date. The Anglo-Scandinavian footwear is of turnshoe construction, with construction seams either edge/flesh to grain/flesh or tunnel stitched. Pointed heel extensions are in evidence, some with impressed decoration. Unfortunately, only a few uppers are sufficiently complete for the type to be identified. Identifiable types are slip-on shoes, of low and higher styles, equating to Styles 2 and 3 respectively. There is a third type (sf1667), drawstrung, with a throat insert, which is unparalleled in York to date.

Medieval shoes are represented by two front-fastening examples (Style 7), one an ankle-shoe, the other a boot, both probably 12th century. One of these is unusual in having the front flap on the lateral side. A small number of soles are also of 12th-century date. Later medieval finds are poorly represented by a single sole which is 13th-/14th-century in date.

Two sheaths are both plain and of similar type. They are folded and moulded, with the two cut edges closed by a simple running stitch passing through both thicknesses. One is from a context containing other finds of 10th-/11th-century date.

A scabbard, probably for a fairly short, broad sword, may be complete, as the slots for the belt fastening are present and these are usually situated just below the throat. It is torn into three pieces spread over two finds (sfs565 and 570) in two contexts. One context produced other finds of Anglo-Scandinavian date and the scabbard would in fact fit contemporary swords. There is no evidence of a wooden or other lining.

There are also a few possible clothing fragments, but these require further analysis before any meaningful comment can be made.

### **Barbican Car Park, 1988.27 (Fig.1735, 53)**

Five footwear fragments of unidentified type or date.

### **Albion Wharf, 23–28 Skeldergate, 1989.1 (Fig.1735, 45)**

Six finds, including a cut-down shoe sole of late 14th- or 15th-century date, other more fragmentary footwear parts, three strap fragments and two offcuts.

### **Yorkshire Museum lift building, 1989.18 (Fig.1735, 1)**

Two finds, one of which is the wide top band from a Style 4 ankle-shoe of Anglo-Scandinavian date.

### **11–15 Piccadilly and 44–46 Fossgate, 1989.19 (Fig.1735, 37)**

A single shoe uppers fragment, which may be from a front-closing ankle-shoe (Style 7b1 or 7c1) of 12th-century date.

### **12–18 Swinegate, 1989–90.28 (Fig.1735, 9)**

Excavations by YAT on this city centre medieval tenement site recovered 220 leather finds from contexts ranging in date from the 11th century to the modern period. The best-known find from this site is a set of wax tablets contained in a leather pouch (sf257). Some possible leatherworking activity during the 12th/13th centuries is suggested by cut-down footwear and secondary offcuts, after which the assemblage seems to be domestic in character.

A Style 2 slipper and a Style 3b1 slip-on shoe were found in 11th-/12th-century contexts. Style 7 footwear was particularly well represented in contexts of 11th-/12th-century date, with complete examples of a child's Style 7b1 ankle-shoe, a Style 7c1 ankle-shoe and a Style 7c2 boot, as well as numerous fragments. One Style 7b upper and two other shoes, one probably a high-throated slip-on similar to Style 3b5 and the other unidentified, have the long pointed scorpion's tail toe introduced into England during the 1090s. Six vamp fragments, two of them Style 7s, have embroidered vamp stripes, one of which retains three rows of pink plait stitch. Three top bands are also embroidered and one has in situ stitching of a natural fibre colour. There are also two sword scabbard fragments and a washer. Shoe Styles 7b and 7c remained common in 12th-/13th-century contexts, with one complete shoe and several complete uppers. There were three further embroidered vamp stripes, one with dirt-encrusted stitching thread. Thirteenth-/14th-century contexts produced a Style 10 front-laced shoe and quarters from a Style 9b side-laced shoe were both found. There were also two decorated knife sheaths.

The evidence from Swinegate, particularly the shoe types represented, parallels that from the main sites under discussion. The only features found at Swinegate which are not present at Coppergate, Bedern or 22 Piccadilly are the scorpion's tail toes. This could be perhaps explained by the Swinegate tenements having been of higher status during the later 11th and early 12th century, as this was undoubtedly a high-fashion feature.

### **14 Little Stonegate and 18 Back Swinegate, 1990.1 (Fig.1735, 8)**

Three finds, including a leather strap fragment trapped in a buckle-plate, a primary offcut and the bottom unit from a post-medieval shoe.

**20–24 Swinegate, 1990–1.25** (Fig.1735, 14)

A sheath of 13th-/14th-century date, a 14th-/15th-century turnshoe sole, a rand and a small quantity of waste.

**41–49 Walmgate and George Street, 1990.26** (Fig.1735, 48)

Three finds, comprising leatherworking waste.

**22 Pavement sewer flue repair 2, 1990.31** (Fig.1735, 30)

A single find of a small quantity of leatherworking waste.

**22 Pavement sewer flue repair 3, 1990.33** (Fig.1735, 30)

A single find of a small quantity of leatherworking waste.

**St Andrewgate/Spenn Lane, 1991.2** (Fig.1735, 19)

A triangular heel-riser with impressed linear decoration and an uppers fragment, both of 9th- to 11th-century date. Also one possible primary and three secondary offcut fragments.

**14 Skeldergate, 1991.14** (Fig.1735, 40)

Sixteen finds, including uppers fragments from a 12th-century Style 7 ankle-shoe and a Style 7b/c3 boot of late 12th-/13th-century date. Also a child's turnshoe sole and a sole seat of late 14th-/15th-century date.

**84 Piccadilly, 1991.16** (Fig.1735, 51)

Five finds comprising three footwear items, one offcut and an unidentified item (not seen).

**104–12 Walmgate, 1991.21** (Fig.1735, 49)

Two finds. Forepart from a two-piece sole of probable 14th-century date and three possible uppers fragments. Second find is an unidentified fragment.

**17–21 Piccadilly, 1991.29** (Fig.1735, 43)

Twelve finds, almost all shoe soles and sole fragments, dating from the 13th to 15th centuries. An uppers fragment may be from a 12th-century Style 7 shoe.

**13–17 Coney Street, 1991.3** (Fig.1735, 21)

A single find of lace fragments or trimmings of unknown date.

**Parliament Street sewer repair 1, 1991.7** (Fig.1735, 27)

A single find of three secondary offcuts of unknown date.

**North Street boreholes, 1992.1** (Fig.1735, 20)

Two secondary offcuts and a tertiary offcut.

**50 Piccadilly, 1992.10** (Fig.1735, 47)

Ten finds, mainly shoe fragments and offcuts, mostly undatable, but including uppers fragments from a side-laced boot of 14th- or 15th-century date.

**19 Market Street, 1992.16** (Fig.1735, 23)

A single find of a folded strip, possibly an unused binding or top band, and a secondary offcut.

**38 Piccadilly, 1992.4** (Fig.1735, 42)

Twenty-one finds, consisting almost entirely of footwear components and fragments, but also a belt or strap fragment, sf43. The footwear is of the 15th and first half of the 16th century, and exhibits both turnshoe and welted constructions. Of particular interest is an 'eared' or 'horned' sole (sf7) with exaggerated projections on either side of the toe. This feature was fashionable in the 1520s to the 1540s.

**St Andrewgate/Spenn Lane, YORYM 1995.89** (Fig.1735, 17)

Five finds, consisting of footwear components; these include a sole fragment of 12th- to 14th-century date, a single offcut and a scrap which may not be leather.

**Petergate Watching Brief, 1997.44** (Fig.1735, 10)

Two finds, comprising sole, uppers and clump sole fragments of 13th- to 14th-century date, plus two offcuts.

**Petergate Watching Brief, 1997.45** (Fig.1735, 10)

Two finds, consisting of a small number of offcuts and fragments.



### **Petergate Watching Brief, 1997.46** (Fig.1735, 10)

A single find of an unidentified fragment, possibly of shoe uppers.

### **44/45 Parliament Street, 1994.3210**

(Fig.1735, 28)

Seventeen finds, comprising mainly footwear fragments of 12th- and 14th-/15th-century date. Four of these are from Style 7 footwear, sf116 being notable in having the closing seam on the same side as the integral flap, rather than on the other side as is more usual.

## **Comparable assemblages from elsewhere in Britain**

Assemblages of medieval leatherwork have been recovered throughout Britain and the rest of Europe wherever suitable burial conditions allow. Many have been published in recent years and it would seem that, allowing for minor local variations, similar styles of shoe, constructed using the same techniques, were worn throughout Britain. Comparable material also appears to have been current throughout much of north-west Europe, though regional preferences for certain styles, fastenings and decoration are apparent. Similarly, sheaths and scabbards and a range of other leather items occurring in Britain can be paralleled in other major European assemblages and would seem to have been in general use.

Leatherwork of pre-Conquest date has, until recently, been less frequently recovered in Britain than medieval leatherwork. Small quantities of leather dating from as early as the late 8th/early 9th and 9th centuries have been reported on from Oxford, Gloucester and Winchester. Slightly larger quantities of leather dating principally to the 10th through to the mid 11th century have been published from London, Gloucester, Winchester, Norwich, Lincoln, Durham and York. Recent excavations at 1 Poultry, Bull Wharf and Guildhall Yard in London have produced a much larger corpus of material that was awaiting detailed study when this text was written. I am most grateful to the Museum of London Archaeology Service for allowing me to undertake a brief scan of this material and for providing me with the available dating, prior to study of the material. Similarly, large groups of leather of this date have been recovered from Dub-

lin; these also await detailed study. While the leather from Wood Quay, Dublin, excavated in 1974–81, is currently unavailable for study (stored wet, awaiting conservation), I am most grateful to the National Museum of Ireland for making possible a brief scan of the leather from Fishamble Street. The following discussion benefits from the knowledge gained from access to this, at present, unpublished material from London and Dublin.

The general composition of the assemblages of pre-Conquest date from settlement sites appears similar. They comprise principally of shoe components and waste leather offcuts with a small number of other items including sheaths or scabbards, straps and lozenge-shaped objects, at present termed 'slings' or 'hairslides' in the literature, and described as 'elliptical panels' in this volume. The nature of the various excavations and their subsequent publication sometimes makes it difficult to appreciate how the leather finds reflect the communities which used, and eventually discarded, them. The waste leather component of many of the pre-Conquest assemblages has usually prompted the authors to suggest that they represented the debris from cobblers' workshops, though shoe-making is often meant by this. The leather found at Durham and possibly Gloucester may represent a similar situation to that pertaining at 16–22 Coppergate, being apparently accumulated rubbish deposits in the backyards of small tenements. The leather from Norwich, Lincoln and London comes from waterfront sites and represents material deposited behind revetments, deliberately dumped following collection from elsewhere in those cities, albeit possibly close by.

### *Eighth- and 9th-century shoe assemblages from Britain*

To date, little leather from the 8th and 9th centuries has been recovered from Britain. That which has is directly comparable with that from mid-late 9th- and 10th-century York, the styles of shoe and their methods of construction being the same.

A small assemblage was recovered from the western end of the excavations in St Aldates, Oxford (Thornton in Durham 1977, 155–60). It comprised a strap terminal to take a metal buckle, waste leather (quantity unspecified) and the remains of a small number of shoes, constructional details of which



could be gained from six. The three shoes dating to the late 8th–early 9th century had soles with rounded seats; those dating to the early–mid 9th century had V-backed heel extensions. A shoe (*ibid.*, fig.35, 13) with a one-piece upper joining with a single side seam (York Style 3a) and flap- and toggle-fastening shoes (York Style 4) were found in early–mid 9th-century deposits (*ibid.*, fig.35, 10–11).

Another small assemblage (a maximum of four shoes) was found during excavations at 1 Westgate Street, Gloucester (Goudge 1979, 193–6), in deposits of 9th-century date ‘or possibly slightly earlier’ (*ibid.*, 167). Again the shoes of 9th-century date had soles with rounded seats, the complete example having a one-piece upper joining with a single side seam (York Style 3b) (*ibid.*, fig.14, 3).

### *Later 9th- and 10th-century shoe assemblages from Britain*

Four very fragmentary shoe finds were recovered from surfaces of an Anglo-Saxon street at Castle Yard, Winchester, dating c.880–6 (Thornton in Biddle 1990, 596). These included a round-seated sole and the remains of a shoe with a one-piece upper joining with a single side seam with a sole with a V-backed heel extension (York Style 3a).

Recent excavations at 1 Poultry in London have recovered leather in deposits associated with pottery of late 9th-/early 10th-century date. A low-cut slip-on shoe (York Style 2) and a child’s round-seated shoe with a one-piece upper joining with a side seam (York Style 3b) were recognised.

Leatherwork of 10th-century date has been found at Gloucester, Winchester, Milk Street in London, and York. Leatherwork dating to the second half of the 10th–mid 11th century is better represented, occurring at Durham, Winchester, Norwich, Lincoln, London and York. Leather of this date has also been found in Dublin, that from Fishamble Street serving here as a representative sample. Again, the methods of shoe construction and many of the shoe styles found in contexts of 10th- and later 10th-/mid 11th-century date are the same as those found in York, though some differences are now apparent. Whether the increased diversity is the result of the increased sample size is uncertain. Low-cut slip-on shoes (York Style 2), shoes with one-piece uppers joining with a side seam (York

Style 3a) and flap- and toggle-fastening shoes (York Style 4), all with soles with V-backed heel extensions, are common in England.

Low-cut slip-on shoes with the back of the sole extending over the centre back seam of the uppers, rather than between the central back seam of the uppers, have been found at London. One came from a 10th-century deposit at Milk Street (Pritchard 1991, fig.3.99, 274); more recently another has been found associated with later Saxon development at 1 Poultry (<2811>). A probable example was found at Westgate Street, Gloucester (Goudge 1979, fig.14, 4). This constructional variant on the more common V-backed heel extension has yet to be found at York.

At Fishamble Street, Dublin, low-cut slip-on shoes (York Style 2) and shoes with one-piece uppers joining with a single side seam with both round-seated soles (York Style 3b) and V-backed soles (York Style 3a) were found in mid 10th-century and 11th-century deposits. Flap- and toggle-fastening shoes (York Style 4), common in England during the late 10th–mid 11th century, were not found. Examples of the ‘native’ traditional shoe, the pampootie, made of untanned hide with the fur of the animal present, were found. While these were neither expected, nor found, amongst the English leather assemblages, a simple shoe made of a single sheet of leather found at York (15357) is clearly in the same footwear tradition.

While the construction and styles of shoes found throughout Britain are fairly consistent, some differences can be noted. Variations in features of the construction of particular shoes present in other assemblages but not so far found at York have been mentioned. To this should be added the small number of shoes made from a single sheet of leather found at York (York Style 1) which do not appear to be represented at other British sites. Recent excavations at 1 Poultry, London, have recovered the remains of a number of shoes, thought to date to the 10th century, also made from a single sheet of leather but of distinctive character, differing in style to those from York (Reid 2001, 271–2, fig.6). The detailed publication of these important shoes is awaited with great interest (Nailer and Reid in prep.). Many leather assemblages of pre-Conquest date are small and the recovery of larger groups of material is likely to fill gaps in the representation of styles and constructions that may be apparent at present. The study of the large group

from 16–22 Coppergate and those from London will begin to address this. It is possible that while small variations in style or construction at York may be the product of individuals or a local group of craftsmen, more significant differences in style and construction may reflect cultural diversity and trading contacts.

## Possible cultural influences and trading contacts

### *Cultural influences seen in the Anglo-Scandinavian shoes*

York was an important north-west European trading centre throughout the Anglo-Scandinavian period. Trading contacts were perhaps at their most extensive during the late 9th and early 10th century (Hall 1994, 15), and trading continued vigorously throughout the 10th and early 11th century, the Scandinavian influence dominating until the arrival of the Normans. Carol van Driel-Murray (1987, 32–42) has eloquently illustrated the potential of shoes as an expression of cultural identity and fashion, using Roman footwear as her model. While shoes cannot be expected to reveal fully the complexities of the political and economic situation that existed throughout the Anglo-Scandinavian period at York, a hint of the cultural affiliations of the wearers may perhaps be seen in the shoes found there.

Shoes were being worn in styles that, though having the same basic outward appearance, were made using two distinctly different methods of construction and cutting patterns. Shoes with the same styles of upper but differing constructions may be the product of craftsmen from two different shoe-making traditions supplying goods for the same market, or possibly two distinct sectors of the market. Later at York, and throughout the rest of the country, one shoe construction method came to dominate and was employed on all styles of footwear during the whole of the medieval period.

Previously, due to the small numbers of individual shoes found, the constructional differences seen in Anglo-Scandinavian footwear from Britain have been considered to be a reflection of differences in date. The large, closely dated assemblage recovered from Coppergate, however, has shown that shoes of differing constructions and cutting patterns were contemporary, and suggests that two possible traditions of shoe-making are represented.

In order to demonstrate this hypothesis, the styles and constructions of the few remains of shoes of the earlier Anglo-Saxon period in Britain are summarised below, followed by those from assemblages of 9th-/10th-century date. Shoes of differing constructions and cutting patterns but similar upper style from York are then discussed in the light of this.

## Construction and styles of shoes of 6th- to 7th-century date

We know little of the footwear being worn in Britain from the end of the Roman occupation through to the later Anglo-Saxon period. To date, few sites belonging to this period have produced leather finds. Some of the earliest shoes known from Britain were recovered from ditch I at Iona where distinctive, decorated shoes of turnshoe construction with separate soles and uppers joining with a closed seam were found dating to the period 585–618 (Groenman-van Waateringe 1979, 320). Slightly later are the highly fragmentary remains of four turnshoes found in the ship burial at Sutton Hoo dating to 625–35. One of these pairs of shoes has been tentatively compared with the flap- and toggle-fastening shoes (Style 4) from York (East 1983, 804) but this is surely stretching interpretation of the highly fragmentary remains too far. The shoes from Iona and Sutton Hoo are exceptional finds, the first probably representing ecclesiastical wear, the second the attire of royalty, both certainly at the pinnacle of shoe construction and design of the time and unlikely to be representative of the footwear of the common man. They share the characteristics of turnshoe construction of being made with separate soles and uppers, with soles that are rounded at the seat.

The shoes of early medieval Ireland are perhaps best considered here also. A style of shoe cut from a single sheet of leather using a highly sophisticated cutting pattern and richly decorated is known principally from crannog and bog finds (type 1 Lucas 1956, 366–71). These shoes certainly represent high-status footwear, apparently owing their origins to footwear worn in the east, as do those from Iona. Another shoe style cut from a single sheet of leather, less richly ornamented but again using a relatively sophisticated cutting pattern (*ibid.*, type 2), and simple shoes made from a single sheet of leather or untanned hide (*ibid.*, types 3 and 4) may well date to the same period. The simple shoe style continued to be worn

into the recent past. A highly decorated shoe cut from a single sheet of leather from Dundurn, Perthshire, in Scotland (Alcock, Alcock and Driscoll 1989, 217, fig.16, 50) is comparable with the decorated Irish footwear and worn by a person of rank.

Highly deteriorated remains of shoes were found on the feet of the primary burial in the Saxon barrow at Gally Hills, Banstead Downs, Surrey (Crowfoot 1976, 68–9), preserved by proximity to a hanging bowl. The burial has been dated by the grave goods, particularly a shield boss, to the second half of the 7th century or the first years of the 8th century. Few diagnostic features were preserved but the shoes appear to have been short boots, though the construction and sole shape is unknown. The author likens the remains to flap- and toggle-fastening shoes (Style 4) from York (*ibid.*, 69). The presence of the hanging bowl within the grave suggests it was the burial of a person of high status.

### **Construction and styles of shoes of 8th- to mid 9th-century date**

Shoes of 8th- and early 9th-century date from Britain, summarised previously, also have soles with rounded seats, though the amount of shoe leather of this early date is very small. The better preserved examples have one-piece uppers joining with a side seam, identified at York as Style 3b. The single shoe from York dated by association with pottery to the mid 9th century, although fragmentary, had a round-seated sole. It is interesting that the small group of shoes from Oxford from deposits of early–mid 9th-century date comprises shoes (Styles 3a and 4a) with soles with V-backed heel extensions. This appears to be the earliest occurrence of this construction so far recovered from Britain.

### **Construction and styles of shoes of later 9th- to 10th-century date**

Shoes of later 9th-century date are better represented in the archaeological record; those of 10th-century date are better still, and it can be seen that shoes with soles with V-backed heel extensions are worn throughout the country at this time. The occurrence of the V-backed sole in the Oxford assemblage prompted Thornton to suggest a Scandinavian influence (Thornton in Durham 1977, 160). Later, when discussing the Winchester leather, he suggested

that the V-backed sole was characteristic of the late Saxon period, because of the strong Scandinavian influence at this time (Thornton in Biddle 1990, 593). The large assemblage of shoes from York allows us to re-examine this proposal.

### **Possible cultural implications illustrated by constructional differences seen in the shoes from York**

At York shoes with V-backed heels (Style 2, Style 3a with various fastenings, and Style 4) occurred in contexts dating from the mid/late 9th century through to the early/mid 11th century. They represented nearly two-thirds (63%) of the classifiable Anglo-Scandinavian shoe assemblage (classifiable shoes and shoe components). Shoes with soles with rounded seats represented the remaining third (37%). Shoes of these four styles were made using two different types of construction seam (turnshoe construction Type 1 and 2). Of particular interest at York were the shoes with one-piece uppers joining with a side seam (Style 3). This style of shoe was made using two different cutting patterns: one with a sole with a V-back that extends up into the heel area of the uppers (Style 3a), the other with a sole with a rounded seat (Style 3b). These shoes, though made by different methods, presented the same outward, superficial, appearance to the wearer, the only noticeable variation being the heel area of the sole visible only from the rear. This general type of shoe was made as a slip-on style with no fastening (Styles 3a1 and 3b1), with a drawstring fastening (Styles 3a2 and 3b2), with an integral drawstring fastening (Style 3b3) and with an insert at the throat (Styles 3a4 and 3b4). At York the round-seated type (Style 3b) occurred in mid 9th- to late 9th-/early 10th-century contexts, while both types (Styles 3a and 3b) occurred in deposits of 10th- and later 10th- to early/mid 11th-century date. By far the majority of these shoes (88.5%) were made with soles with round seats (Style 3b) but examples with V-shaped heel extensions also occurred in small numbers. Could the occurrence of shoes of the same style, made using two different methods of construction, as we see at York, be the result of a cultural rather than a purely temporal difference?

The brief outline of the shoes recovered from Britain presented above would suggest that round-backed shoes were worn by the Anglo-Saxons. Research by others (Carol van Driel-Murray, pers.



comm.; Pat Reid, pers. comm.) has shown that from the 8th century V-backed shoes were worn alongside round-backed shoes throughout the countries bordering the North Sea, in Scandinavia and the Baltic regions. As we have seen, the British evidence of footwear of this early date is poor and significant assemblages of shoe finds that pre-date the later 9th century are lacking. Throughout Britain V-backed shoes occur as a component of assemblages of later 9th through to the mid 11th century. MacGregor (pp.140–2, AY 17/3) has suggested that the V-backed shoe, while not originating with the Vikings, may have been a style adopted and spread by them. The fashion appears quickly to have come into common use in Britain and it may have been spread by contact with Scandinavian warriors, traders and settlers. V-backed shoes fall out of use rapidly as the 11th century progresses and Scandinavian influence declines, both at York and throughout the country. This is also seen in leather assemblages from the Viking-established settlements in Ireland where V-backed shoe styles appear to be replaced by the round-backed styles with the increasing Norman influence in the later 11th century (Daire O'Rourke, pers. comm).

At York we see the same style of shoe (Style 3) being made in the 10th–11th century using two different heel shapes and it is possible that here this may reflect the merging of two shoe-making traditions: those of local, Anglian craftsmen and incoming, Scandinavian craftsmen. While it is impossible to say categorically that shoes of the same style made in two different heel shapes were worn contemporaneously in York, they were certainly discarded in the same deposits, implying they were very closely associated. Why would shoe-makers use fundamentally different techniques to make the same product? Was each craftsman employing his own traditional shoe-making skills to make shoes to appeal to a multi-cultural population or to particular sections of it? An Anglo-Saxon tradition and a Scandinavian tradition can also be seen in the knife sheaths of Anglo-Scandinavian date from 16–22 Coppergate (A1 and B sheaths respectively, see pp.3370–2, 3373–7). Something of a similar nature may perhaps be seen in textiles recovered from the same site where examples have been found of locally made imitations or interpretations of Scandinavian textiles, the York weavers producing a needle-worked copy in imitation of the Scandinavian piled weaves (pp.1826, AY 17/11).

## Practical reasons for the constructional differences observed

Could there be a more practical reason governing the choice of whether to make a shoe with a round or a V back? Indeed, was there a practical reason that dictated the change from a tunnel stitched to an edge/flesh sewn construction seam or the change from thong to wool and then to a thread of flax as the sewing medium? Craftsmen are by nature conservative. Traditional methods of working are often closely guarded and handed down from one generation to the next, while new techniques are adopted only if proved to be of significant advantage. Possible advantages of adopting any new method of working would be either that more products could be sold or that a higher price could be charged per item. The employment of a new technique might produce a better, more durable product for which more could be charged or an individual item could be made more quickly with the result that the same man hours would produce a larger quantity of saleable goods. Occasionally it might be found that a raw material was no longer available and alternatives sought. Can any of these processes be seen as governing the changes that occurred in the shoe assemblages of Anglo-Scandinavian date?

The use of a waxed thread makes sewing the individual components together easier and therefore quicker. Flax is more hard-wearing and better able to hold the wax than wool. Distinct improvements and advantages can be seen in moving from thong to woollen thread and then to flax as a sewing medium. This may well have governed the adoption of the use of an edge/flesh seam to join the shoe sole to the upper and the demise of the tunnel-stitched seam. Such an improvement is not so apparent in adopting a round or a V-backed sole in shoe construction or the use of an edge/flesh seam rather than a tunnel stitch to join the sole to the upper. Practical experiment shows that a shoe with a round seat is quicker to make than a shoe with a V-back sole (Mark Beabey, pers. comm.). The round-seated shoe is slightly easier to last as the difficulties of passing the last three stitches at the top of the V of the sole into a single stitch hole at the apex is avoided. So there is a small advantage in changing to the use of a round-backed shoe sole. Round-seated turnshoes, however, do not wear as well as V-backed shoes. In a round-seated shoe one is walking into the seam and it quickly

wears at this point, whereas the V-back has no seam in such a vulnerable place and, consequently, does not wear so quickly. The advantages of one do not clearly outweigh the disadvantages of the other. The well-dated deposits at 16–22 Coppergate show that in York the two different constructional seams and heel shapes were in use contemporaneously for the better part of 200 years. This would seem a rather extended time span if what we are seeing is simply the transition from one construction method to another, something that might be accomplished comfortably within two generations.

### *Developments of form and style in sheaths and scabbards and their cultural associations*

By Esther Cameron

#### **Sheaths**

Some sheaths of the 9th to 11th centuries at York show technical and stylistic links with sheaths of the 7th century. This is most clearly visible in seax sheaths of the 10th to 11th centuries which are tunnel stitched, riveted (possibly with metal edge-reinforcers), suspended horizontally and decorated by tooled hatching within delineated fields, just as their 7th-century counterparts had been (the 8th century offers insufficient evidence for comparison). As regards knife sheaths, despite the adoption of a new style of construction some time in the late 9th or early 10th century, the older type was retained and seems to have existed, in dwindling numbers, alongside the new.

#### *Old type*

Knife sheaths made in the old style were folded over the back of the knife, seamed along the cutting-edge with a concealed running stitch, and suspended by a strap or thong through a hole near the mouth, just inside the seam. On large sheaths, which were suspended horizontally, the seamed edges were also fitted with metal edge-reinforcers, held in position with rivets, to which straps were attached. Whatever its size, the entire knife, including its handle, was enclosed by the sheath. Perhaps in consequence of this, a V-shaped notch at the mouth to make the knife-handle more accessible, is a feature of some of the smaller sheaths. The subdivision of surfaces into decorative fields is apparent on most sheaths of this type and a tooled image of the blade is usually figured on each front face.

#### *New type*

The new type of sheaths differ from the old in the way they are cut and stitched; even the position of the seam is different, which serves to generate a different profile. The seams are butted, employ binding stitch and are positioned on the back of the sheath. The outline is more accentuated, being closely fitted over the blade and flaring at the handle end. A knife sheath from a 'Viking' burial of 9th- to 10th-century date at Ballateare, Jurby, Isle of Man, was also seamed at the back (Bersu and Wilson 1966, 61, pl.XVb). Unlike their older counterparts, the majority of the new type of sheaths (typically B3) are undecorated, but some forms (Types B1 and B2) include tooled linear designs, and the outlining of the blade on the front continues. With this amalgamation of form and style of decoration the new Anglo-Scandinavian types of sheaths continue through to the 11th century when further changes, in the form of Type C, D and E sheaths, alter the cohesiveness of the assemblage.

#### **International relations** (see Fig.1579, p.3242)

By Carol van Driel-Murray

Lying as it does on sea routes running both east-west and north-south, York is uniquely placed to reflect the political, cultural and economic influences affecting northern Europe in the 9th–12th centuries. The footwear assemblage forms part of a common northern tradition, sharing features with numerous sites from the Baltic regions, Scandinavia and the North Sea coasts: settlements such as Hedeby, Schleswig, Bergen, Oslo, Lund and Gdansk, all linked by the extensive networks of sea- and river-borne trade routes which also involve more exotic connections, to the Byzantine Empire via the eastern rivers and Novgorod, as well as to the Mediterranean via the Atlantic sea routes.

Along with tangible imports of luxuries and coins, cultural influences may be expected to pass along these channels and there is, indeed, little in the footwear of Anglo-Scandinavian York to distinguish it from other northern trading settlements. In the period concerned, this region is particularly well served with the publication of a number of extensive and well-dated complexes, and it emerges as an area of great cultural homogeneity in both footwear styles and the technological details of manufacture. Regional dif-



ferences do appear, such as the lavish decoration favoured in the Slav communities of the Baltic and eastern Europe (Wiklak 1960, fig.7; Gulkowa 1964), but the overall picture is one of foot-enclosing shoes and short ankle-boots, fastened with thongs passing through small slits cut in the upper. The development of these 'thong shoes' or 'slit-laced boots' between the 9th and 13th century is perhaps best illustrated in the detailed publications of footwear from the three successive trading centres of the western Baltic: Hedeby, Schleswig and Lübeck. Not only do they span the period of the 9th–17th century, but these reports are amongst the few to employ compatible criteria to define individual styles, thus allowing accurate comparison and quantification (Groenman van Waateringe 1984; Schnack 1992; van der Walle-van der Woude and Groenman van Waateringe 2001; Groenman van Waateringe 1976, 1980; Vons-Comis 1982). Though modern reconstructions of the thong shoes usually show them neatly knotted at the front, figures on an ivory plaque from the cover of the Codex Aurea (National Museum, Nürnberg; Cat. Europas Mitte, 02.03.22) suggest that the rather large, widely spaced slits around the foot opening of higher shoes and short ankle-boots may have held long garter thongs, which were crossed over baggy leggings and tied under the knee. Some of these thong shoes might, therefore, hint at the style of dress in general, though on the whole there seems to be little distinction between male and female shoes. In both Hedeby and Bergen (Groenman-van Waateringe 1984, 55; Larsen 1992, 76) the under-representation of women's sizes was explained by the actual absence of women in these trading communities, but this under-representation can now be seen to be a widespread phenomenon throughout the period, reflecting social factors (van Driel-Murray in Goubitz 2001, 360). Another common feature, apparent all over the region and thus not simply tied to local economic conditions as once thought, is the change to cow/calfskin for making uppers during the 13th century, whereas previously sheep/goat predominated (Schnack 1992, 26; van der Walle-van der Woude and Groenman van Waateringe 2001, fig.6, for graphic presentation of leather species from Hedeby and Schleswig).

Trading links, with the concomitant dynastic and political involvement between communities stretching from Russia to the Atlantic coasts, undoubtedly helped to form and to maintain cultural contacts. By

the end of the 10th century, however, the region was coming under pressure from the newly formed, powerful states to the south, which, accompanied by aggressive, politically motivated Christian missions, integrated northern Germany, Britain and finally, by 1200, Scandinavia into European Church and political structures. Though the Ottonian expansion in central and northern Europe and the Norman Conquest of Britain gave a political impetus, the role of the Church as a truly international, and, at some levels, highly mobile, cultural force should not be underestimated (Cat. Europas Mitte). It is no coincidence that the button boots and side-laced shoes of the southern fashion appear in Scandinavia around the time of the conversion (early 12th century, Larsen 1992, 62), only penetrating the Slav regions of the eastern Baltic towards the end of the 13th century (Wiklak 1960, fig.8). The shifts in cultural influences are clearly reflected in the footwear assemblage at York, where the conventional pan-European medieval shoe and boot styles prevail after Period 5C (Styles 8–11).

The overlapping influences from both the southwest and the northern Scandinavian/Baltic regions present in York are perhaps most clearly illustrated by two distinctive styles. The 9th-century Style 4a2, overlap closure with button and loop, seems to represent a western tendency to favour buttons or toggles rather than the thongs of the northern and eastern traditions. The style does not appear at the major north German or Scandinavian sites, but is present in Britain, at both coastal and inland sites in the Netherlands, and — a rare exception to the lack of information from France — from St Denis: all are dated to the 9th century (Goubitz 2001, 148–9). The related Style 5 with toggle and tab fastenings is well represented in Europe (sf1041; *ibid.*, 149–50), particularly along the Channel and North Sea coasts, but is apparently absent in Dublin, thus reinforcing the essentially southern and western origin of a style which can be seen as the precursor of the highly popular medieval button boot (Styles 8a and 8b). The overlapping zones of another of the boots and its variants is better documented. Style 7b3 (Schleswig, high shoe form A and B; Schnack 1992, 141) is common throughout Europe, but occurs in two forms, with differing distribution. On the eastern variant, the laces pass through slits cut into the boot leg, while on the western variant, vertical thongs form keepers through which the laces are drawn. The latter can

also be recognised on painting and sculpture of the 11th–13th century in Italy, the south of France and in the Rhineland, confirming a southern and western distribution, which overlaps with the north-eastern form particularly along the east coast of Britain and in the Netherlands. Where the two occur together, differences in proportion may reveal the relative strength of cultural influences. Significantly at York, in the later 12th–mid 13th century, there are only five of the eastern variant and twelve of the western, while in Schleswig the 25 ‘western’ boots are swamped by 281 ‘eastern’ examples. Unfortunately, at Bergen the two variants cannot be differentiated within the category of ‘leg-thong shoes’ nor can the scattered occurrences from the Netherlands be quantified as yet. The weakening of contacts across the North Sea are also evident in the absence of the high shoes and wide boots of Schleswig types C–H, which appear to develop in Scandinavia and the Baltic area towards the end of the 12th century.

The peripheral position of York and its access to other influences — perhaps post-Roman British or from the more southern Atlantic coasts — emerges through the scarcity of some of the more common North Sea/Baltic shoe styles, such as shoes with closely set thong holes around the edges of the opening (Schleswig half-shoe A, Hedeby type 3 and 7) and the low-cut shoes (Schleswig half-shoe B; Schnack 1992, maps 1 and 2) which apparently fail to reach Britain at all. Whether this is due to date, chances of survival or something more specific is open to speculation. Even more intriguing is the remarkable York Style 2, a low, slip-on shoe with a back seam. At York it occurs in considerable numbers but apart from two examples from Lottorf, a bog deposit near Hedeby (Hald 1972, 79–81, figs.96–9), does not appear in any of the contemporary continental settlement sites. It does, however, bear an uncanny constructional resemblance to so-called Coptic footwear, including tunnel-stitched sole constructions and some even with a back-pointed sole (e.g. Montembault 2000, 82, 159, 165), but in the absence of footwear in representative quantities from southern or central Europe, or for that matter from 5th- to 8th-century western Britain, and the lack of accurate dating for the Egyptian shoes, it would be unwise to speculate further on the origins of this particular style. The style is common elsewhere in England and in Dublin in the 10th century, and Quita Mould is probably correct to suggest that the two isolated examples from Lottorf are

either imports or arrived on the feet of foreign traders. Given the often ritual nature of bog deposits, the find location also invites an individual explanation. Low, open shoes also occur in Russia, but these are usually of a single-piece construction (Thompson 1967, fig.82; Hald 1972, figs.165, 174). In communities joined by long-distance trade routes, the appearance of isolated footwear designs may indeed be a legacy of passing individuals, though caution must be exercised before claiming ‘foreign’ origins, given the limited size of some comparable collections, the poor state of publication and the difficulty in establishing the direction of contacts. It has been suggested that two shoes from York show some Irish characteristics (15355, 15357, Figs.1601–2), and Quita Mould has drawn attention to a worn and repaired *nålebundet* sock which was found in a 10th-century pit at 16–22 Coppergate along with typically Norse textile (AY 17/11, 1787) and was probably actually worn by Scandinavians rather than arriving among traded goods. It should also not be forgotten that the slave trade formed the basis of much of the long-distance economic intercourse of the period and the movement of people other than merchants needs to be considered (Cat. Europas Mitte, vol.3, 4.5).

Early features common to the footwear being worn throughout the northern region and which also appear in the earliest levels at York are single-piece cutting patterns with vamp and seat seams, pointed back soles and tunnel stitching used to attach sole and upper in preference to other sewing methods. That there is indeed a difference between northern and southern footwear is suggested by the absence of these features from the Carolingian complex at Dorestad (Groenman-van Waateringe 1976). At all sites with representative quantities of footwear, however, these northern characteristics occur together with more advanced techniques such as separately cut soles and uppers, turnshoe construction and round-backed soles. The picture is, therefore, never entirely clear cut, and technological and stylistic change should not be regarded in strictly evolutionary terms.

A few shoes at York (Style 1) are still in the north European tradition of single-piece construction, dating to the 7th and 8th century, and harking back to the prehistoric footwear of the region. This transition is well illustrated at Elisenhof (Grenander-Nyberg 1985, taf.68, 2–3). Single-piece shoes there

come in two types, one with the two sides of the upper placed symmetrically on either side of the sole (the only form present at York), the other asymmetrical, with the upper cut to one side of the sole and stitched to the other. The latter was, until recently, regarded as a local variant confined to southern Jutland (e.g. Hedeby and Elisenhof; Hald 1972, 103), but it is evidently more widespread as examples are appearing from the entire area of Frisian influence and even inland in regions traditionally regarded as under Carolingian influence (Goubitz 2001, 94, 138). Single-piece shoes with a vamp seam form a large proportion of the assemblage from Hedeby, and are also being reported from the Netherlands, at both coastal and inland trading settlements (6th–9th century, *ibid.*, 94; Groenman-van Waateringe 1984, taf.3–4). The form is widespread in settlements dating to the 9th–10th century in Scandinavia (Ribe levels dating to 720–825; Larsen 1992, 45), the Baltic region and even further east, at Staraja Ladoga (Hald 1972, figs.154–5, 162.VII), but it does not seem to be present at Gdansk, suggesting that separately cut soles were the norm at least by the end of the 10th century. Transitional between the symmetrical single-piece shoe and the separately cut sole and upper is the uncommon form 15358 (included in Style 2, Fig.1608), a two-part upper with vamp and heel seam, which is little more than York Style 1 severed into its three components. A 9th-century example from the Slav fortification Mecklenburg is illustrated by Goubitz (2001, 145), perhaps revealing the general nature of experimentation with cutting patterns in this period rather than direct links.

The authors rightly draw attention to the phenomenon of soles with pointed backs, which is only mentioned in passing elsewhere, being regarded as merely contemporary ‘technical and fashionable shoe shapes’ (Larsen 1992, 48). Yet the feature must have possessed considerable significance for the wearers and especially for the makers since it is more suited to constructions with a back seam than to the smooth finish of the turnshoe. The pointed back could, therefore, be seen as a relic of the single-piece cutting pattern, but it should be stressed that in both Britain and Europe it already occurs together with rounded backs in the 9th century, and at all settlements the two types appear together, though in differing proportions as time progresses. Pointed backs form a major proportion of the soles throughout the 10th century but go out of fashion earlier in the west. In York the pointed-

back soles seem to have fallen out of use by the mid 11th century; in Scandinavia they disappear rapidly after 1100 but in eastern Europe and the Slavic regions pointed-back soles continue well into the 12th century (Novgorod, Izjumova 1959, fig.3; Gdansk, Wiklak 1960, fig.8). Quantification would allow a more accurate assessment of the course of the transition to rounded soles, but is rarely possible at present. At Schleswig, pointed-back soles occur only in combination with the earliest shoe and boot forms which are also those prevalent in Hedeby and date from before c.1100 (Schnack 1992, 74). For half-shoe A, the pointed back dominates, but the slightly later half-shoe B is predominantly round backed; a similar pattern can be discerned in the accompanying ankle-boots (*ibid.*, 99). At all settlements, pointed — even when dominant — occur together with rounded, and in combination with the same styles of upper. Although it is unlikely that the two shapes could be combined in a single pair of shoes, as had been proposed, the woman (and her servant) in the Oseberg burial possessed shoes with both round-backed and pointed-backed soles, with uppers seamed either at the side or over the vamp (Hald 1972, 114, fig.144; Larsen 1992, 48). The same technological combinations are reflected in the same shoe style at Hedeby (Type 10; Groenman-van Waateringe 1984, abb.13.4). Thus the distinction between the two sole shapes seems to be more one of individual shoe-makers’ traditions than culturally or ethnically determined, with date as the main determining factor throughout the region. Quantification is necessary to understand the course of the transition, for not only cultural influences through time need be involved in such changes. Status and the style of the footwear may also be factors to be considered, as well as the curious lack of correspondence between soles and uppers noted at Hedeby (Groenman-van Waateringe 1984, 33).

Experiment in construction methods is also evident in the occurrence of two methods of stitching the upper to the sole. Again, this is a feature appearing at most of the contemporary sites, including Novgorod (Izjumova 1959, fig.2), but is equally difficult to quantify. In the discussion above, attention has been drawn to the fact that in the earlier levels the majority of soles bear tunnel stitching, though a minority already employ an edge/flesh seam to attach the upper. This proportion increases until by Period 5B the turnshoe method of construction was dominant. Soles with tunnel stitching were not reg-

**Table 384** Soles and uppers with pointed backs from selected Scandinavian sites as a percentage of all soles and uppers

site	date	soles	uppers
Hedeby	before 1000	62%	80%
Oslo	before 1100	89%	
Oslo	1100–75	11%	
Schleswig	before c.1100		70% of shoe A

istered as a distinct category in the Hedeby report, although they do seem to be present (Groenman-van Waateringe 1984, taf.15.4), but in Schleswig (the successor settlement to Hedeby) Schnack notes that soles with tunnel stitching are extremely rare and are confined to the earliest levels (11th–12th century; 1992, 36). In the Netherlands the construction seems to be confined to the 9th and 10th century (Goubitz 2001, 94, figs.13–14). Thus this would again seem to be an early feature, being replaced throughout the region at slightly different rates by the more advanced turnshoe method, in parallel to the long transition to round-backed soles.

Although footwear dominates almost all assemblages, this is not the only leather artefact capable of carrying cultural information. Straps, perhaps used for securing bales or boxes of trade goods, are also much in evidence in Hedeby (Groenman-van Waateringe 1984, taf.18–19). Settlements around the Baltic coasts reveal a high proportion of purses and amulet covers (Izjumova 1959, fig.11; Groenman-van Waateringe 1984, taf.23; 1988, 104–5; Schnack 1998, 58–74); no amulet covers were present in the York assemblage, although there were a few purses and leather balls. The evidence of sheaths from York is limited in comparison to that from Schleswig (Schnack 1998, 17–37; van der Walle-van der Woude and Groenman-van Waateringe 2001, 36–8) or Svendborg (Groenman-van Waateringe 1988, 86–95) but shows the same transition from the northern mode of securing the leather at the side, often with metal studs or riveted bars, to stitched back seams. In York this occurs from the mid 10th century, while in Schleswig, more hesitatingly, from the 13th century. Sword sheaths are rare at both York and Hedeby, in contrast to the situation in Svendborg and Schleswig, reflecting not only the difference in date but also, perhaps, different politi-

cal conditions. Three fragments of sword sheaths from York (15548, 15555, 15595; Fig.1687) show the same features as early sheaths from Svendborg and the Netherlands, with triangular tops at the mouth opening, a feature which seems to have disappeared all over Europe before 1300. There is no evidence at York to establish which of the two suspension traditions was being followed (the sword-belt either tied or buckled, cf. Groenman-van Waateringe 1988, 83–5; van Driel-Murray 1990), though this is a matter of interest since again a western and an eastern tradition are involved.

On mainland Europe ‘elliptical panels’ are interpreted as sling pouches, and experiment shows that they function well. Most of the settlements contemporary to York have produced examples and Schnack draws attention to the depiction of a youth fowling with a sling on the Bayeaux tapestry (Schnack 1998, 78–80; Groenman-van Waateringe 1988, 121–2 gives a list of parallels, including Hedeby, Svendborg, Elisenhof, Dublin and the Netherlands). Various described as eye patches, oval panels, strap-ends or hair slides, leather sling pouches occur sporadically from Roman to early modern contexts, but their frequency in the 10th–11th century is remarkable and must reflect the particular importance of fowling to individuals in these societies at the time.

‘Bite marks’ also appear on leather offcuts dating to the Roman period (e.g. Nijmegen, the Netherlands, unpublished). The perfectly flat, rectangular impressions of equal size are unlikely to be tooth impressions especially as the curvature of the examples I have examined is too small for an adult human. As noted above, the association with leatherworking waste suggests some mechanical tool for gripping leather either to stretch it during the finishing off process, or to hold it while complex items were being cut out. This feature does emphasise the need for close examination of offcut assemblages, even when being treated as bulk samples.

The well-dated sequence at York allows more precision in tracing stylistic change, but the course of the development and the occurrence of both earlier and later features in the same assemblage is no different to the situation elsewhere. New techniques and fashions are gradually introduced, while earlier forms die out equally gradually. The rate of change may vary in detail between individual sites as long



overlaps are typical of fashion development and form the basis of an attempt to produce a seriation sequence for Roman footwear (van Driel-Murray 2001, fig.2). For the period between the 9th and 12th century, there is now sufficient material for seriation to be a profitable method of presentation, though the difficulty of reconciling the various classifications

used in the different publications would make this a complex undertaking. This is, however, a necessary task if the local variations within this vast region are to be identified and if the potential of footwear in establishing cultural affinities of the ordinary population is to be exploited to the full.

## The Significance of the York Assemblage

By R.A. Hall

The York leather assemblage published here in detail, together with that component from earlier excavations which is summarised here (pp.3418–26), is of importance in both its Anglo-Scandinavian (early medieval) and medieval aspects. Distinguishing between leatherworking debris found in dumps of soil that may have been imported to the excavation site and debris found in the soil layers where it was originally discarded during the manufacturing process is crucial for an interpretation of the scale and location of leather production. At 16–22 Coppergate, fortunately, the large scale of the excavation and the recovery of some substantial quantities of manufacturing debris support the interpretation that leatherworking was undertaken at this site in both the Anglo-Scandinavian and the medieval periods.

The pre-Norman leather is particularly significant as a closely dated and substantial body of material which goes some way towards redressing a national imbalance in the recovery of evidence for leatherwork of this era. The Anglo-Scandinavian assemblage has, for the first time, allowed substantial comparisons to be made between York's output and that found in contemporary collections from north-western Europe and Scandinavia. The result is that we can see a broad homogeneity in styles of footwear at this time, although there are some inter-regional distinctions to be drawn — for example, the York Style 2 slip-on, although common in England, is virtually unknown outside the British Isles. There are, nonetheless, complex issues that require further elucidation in future research projects.

One set of questions concerns the economic practices that lie behind the leatherwork recovered. For

example, by what mechanisms did the raw material reach the craftspeople? At a time when, as the animal bone assemblages demonstrate, much butchery was carried out on a domestic rather than a commercial basis (AY 15/3, 159), was it as an occasional purchase by the leatherworker of hide on the hoof, prompted initially by dietary rather than craft requirements, which was then tanned either on the spot or by a specialist tanner? Or were the hides bought, perhaps in bulk, from either butchers, who by 1066 were sufficiently numerous in one York street for it to be named after them, or from tanners, such as those who appear to have worked by the River Foss at Layerthorpe? Or were hides, either tanned or untanned, delivered from rural estates to urban craftworkers who were themselves firmly bound by social and economic ties into the estate's economic network and who were thus working for their aristocratic masters' profit, not for themselves as self-employed craftsmen? This in turn raises profound issues about the nature of social stratification in York and its region within the Anglo-Scandinavian period.

A related question concerns the scale of production and the degree of continuity in making leather goods. Variation in the number of objects recovered between the individual tenements strongly suggests that different amounts of leatherworking took place on each plot. The largest quantity of debris was found in Tenement B in the middle 10th century. Did this amount to full-time production by 'professional' specialists? Not if the range of evidence relating to other craft activities, notably metalworking, that was recovered from contemporary layers in this tenement is taken into account. Do the assemblages of debris from different crafts represent a succession of rea-



sonably long-term occupancies of Tenement B by different owners/renters/placements, or rapidly revolving placements of craft specialists, deployed into his town-house by an estate owner as successive raw materials became available? In either case, whence did this cadre of craftspeople originate?

Another important outcome of this study is the insights it has provided into questions of cultural affinity and ethnicity in this politically fast-moving pre-Norman era. The discussion of fundamentally different heel shapes has examined explanations including the deliberate targeting of an ethnically distinctive market niche, and the practical consideration of increasing turnover and profitability through ease of manufacture. It may, however, have been what is described as the essentially conservative attitude to working practices of the craftsman which accounts for the co-existence of two techniques for some 200 years in 10th- and 11th-century York.

Whatever the precise and full answers to these questions, it is clear that the 10th and 11th centuries in York laid the foundation for the flourishing state of the city's leather industry in the 12th and 13th centuries. The standardisation of turnshoe construction by the end of the 12th century could be seen as a response to growing guild regulation, and thus as

simply a further stage in the rise of independent specialist entrepreneurs.

The study of the second millennium leatherwork has not only defined the local sequence of styles and types, showing them to conform with national and northern European norms, but has provided a means by which the assemblage can bring a sharper definition to the picture of medieval life in York and its region. For example, the identification of the large elliptical panels as sling pouches opens up a new perspective on an activity otherwise unrepresented in the archaeological record. Similarly, the ability to detect status through the form of fashionable footwear, such as the scorpion-toed shoes recovered in Swinegate, provides another archaeological criterion which can be applied in the attempt to distinguish the more prosperous neighbourhoods and properties in the city.

The York leather assemblage presented here introduces into these various debates a vast new body of evidence. With this future researchers will be able to re-examine current issues and develop new hypotheses, continuing to move forward the study of the leather industry and, by this means, further elucidate the complexities of post-Roman economy and society.



## Catalogue

The catalogue numbers follow consecutively those on p.3154, AY 17/15. Each entry ends with the small find number, prefixed sf, preceded by context number. If a catalogue entry incorporates more than one item or fragment, the dimensions given relate to the largest item. Entries for items from 16–22 Coppergate attributed to Period 6 are followed by a code denoting Tenement (A–D), Period (6), phase and sequence. It should be noted that since 1994 the Yorkshire Museum accession codes have been prefixed YORYM.

Abbreviations: L. = length; W. = width; T. = thickness

## Finds from 16–22 Coppergate (1976–81.7)

### Shoes

The shoe catalogue is divided by type. The most complete examples of each type are fully catalogued and the others are tabulated. Any distinctive features are described in the main text. Components mentioned in the tables are not necessarily complete. Dimensions are of the flat uppers pattern except where stated otherwise. Shoe sizes and measurements are actual sizes, without the allowance made for shrinkage in the text discussion of sizes (see pp.3336–7). Where leather type is given it is of the uppers unless otherwise stated. Principal shoe components have been drawn from the flesh side (interior).

### Style 1: Shoes made from a single piece of leather

- 15353 Shoe, made from a single piece of leather, fragmentary. Uppers are torn and cut down. Part of probable vamp seam survives with edge/flesh stitching. This appears to have continued under the front of the foot as far as the tread. At the back, an edge/flesh back seam continued under the heel. The surviving (left) side has a pair of drawstring slits at the throat and two single slits on the quarter, one close to the back seam. The entire rear half of the sole area covered by a seat clump sewn with thong, the stitching penetrating the full thickness of the sole. A circle of thong slits in the tread area indicates this was also clump repaired originally. L.322, W.202, T.3mm. Leather: calf. 23080 sf7580 (P4B) (Fig.1601)
- 15354 Shoe, made from a single piece of leather. Vamp seam is a lap seam with a tunnel-stitched edge overlying a grain/flesh stitched edge. Back seam is an edge/flesh butted to grain/flesh seam. Toe and seat area of the sole are sewn with an edge/flesh stitch to the upper which has a grain/flesh stitch. Throat has been edge/flesh whip stitched, remainder of the top edge is cut. Two pairs of drawstring slits are present on each quarter and a third pair at throat, one on either side of the vamp seam. Stitching present from a clump repair at the tread. Very fine impressed dot decoration behind lapped edge on vamp seam. Reconstructed: L.281, W.105, T.3.4mm. Size: Adult 7½ (275mm). Leather: cattle. 22452 sf7663 (P4B) (Figs.1599–600)
- 15355 Shoe, made from a single piece of leather, for the left foot. Blunt flat toe formed by folding sides around a circular toe piece and stitching together, the heel formed from joining two small V-shaped areas to a straight seam. A central seam extends down the entire length of the sole area from toe to heel. Closed with a single side seam on the (medial) inner side of the foot, top of this seam has tunnel stitching on the interior to strengthen it, possibly by the addition of a small internal facing originally. All seams joined with an edge/flesh stitch on one side to a grain/flesh stitch on the other. Top edge is plain cut, centre of the throat has a small peak. L.465, W.157, T.1.3mm. Leather: sheep/goat. 35483 sf14078 (P4B) (Fig.1602)

- 15356 Shoe, triangular-shaped fragment possibly from the toe area of a shoe of one-piece construction of the same style as 15354 above. The remains of two original edges meet at a pointed tip each with grain/flesh stitching from a lapped seam. Torn away across the other edge. L.106, W.72, T.1.9mm. Leather: badly abraded, possibly sheep/goat. 27368 sf17556 (P4B)
- 15357 Shoe, made from a single piece of leather. Sub-rectangular panel, folded longitudinally, with a V-shaped cut-out, the sides joined by grain/flesh stitching to form the central back seam. Front seamed with similar stitching, the toe area skived to form a less bulky seam where it lies over the toes. Fine grain/flesh stitching impressions from a running stitch present along the top edge, with larger grain/flesh holes below, four on one side and six on the other. L.263, W.125, T.1.5mm. Leather: sheep/goat. 2403 sf209 (P5B) (Fig.1598)

### Style 2: Low-cut slip-on shoes with a seam at centre back

- 15358 Shoe, low-cut, slip-on, possibly left foot. Sole: toe torn off, wide asymmetrical tread tapering straight back to seat with triangular heel-riser. Lasting nail hole in centre of waist area. Uppers: two pieces with a vamp seam, grain/flesh on right, edge/flesh on left side, back seamed to heel-riser, with a grain/flesh closed back seam above this to top of uppers. Two nail holes in left side of quarters, close to top edge. Low cut at vamp throat, rising to high back. Construction seam is edge/flesh sole to grain/flesh uppers with remnants of leather thonging in situ. Top edge finished with whip stitch, possibly for top band. L.235, W.196, T.2.0mm. Leather: calf. 31206 sf11089 (P3) (Fig.1608)
- 15359 Shoe, low-cut, slip-on. Sole: seven delaminated scraps. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam edge/flesh sole to grain/flesh uppers. Wide top band (20mm wide) secured to top edge with edge/flesh (uppers) to grain/flesh (top band) seam. Top edge of top band finished with grain/flesh whip stitch. At vamp throat, top of top band folded in and secured to itself by a grain/flesh seam, forming pointed vamp throat. L.241, W.120, T.2.2mm. Leather: uppers goat, top band calf. 18927 sf5506 (P4B) (Fig.1607)
- 15360 Shoe, low-cut, slip-on, left foot. Sole: oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser. Lasting nail hole in toe, tread and front of seat area. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam is edge/flesh sole to grain/flesh uppers. Top edge finished with whip stitch, possibly for top band. L.234, W. (tread) 69, W. (seat) 45, T.2.9mm. Size: Child 11. Leather: calf. 23704 sf7846 (P4B)
- 15361 Shoe, low-cut, slip-on, right foot. Sole delaminated. Oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser. One-piece upper, broken in two at

- toe, no closing seam, back seamed to heel-riser. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser. Grain/flesh on the uppers. Top edge finished with whip stitch, possibly for top band. Sole fragments: L.258, W. (tread) 78, W. (seat) 58, T.1.3mm. Leather: unidentified. 19626 sf9224 (P4B) (*Fig.1612*)
- 15362 Shoe, low-cut, slip-on, left foot. Sole: oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser, which has impressed decoration. Lasting nail hole at front of seat. Delaminated. Uppers: fragmentary, from quarter. Back seamed to heel-riser. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser, grain/flesh on the uppers. Top edge finished with whip stitch, possibly for top band. Sole: L.252, W. (tread) 80, W. (seat) 50, max. quarters height 45, T.1.4mm. Size: Child 12. Leather: calf. 29222 sf10445 (P4B)
- 15363 Shoe, low-cut, slip-on. Sole fragmentary. Triangular heel-riser with impressed decoration and edge fragment only. One-piece upper, no closing seam, back seamed to heel-riser. One quarter torn away. Construction seam is grain/flesh. Top edge finished with whip stitch for top band, which is wide, unfolded and was originally attached flesh side out. Made up of two pieces, one of which is for the toe and vamp wing area. It has a V cut at the throat, the sides of which are grain/flesh closed seamed together to fit into the oval throat. The other top band fragment is from the quarters, and also has two possible lasting holes. The two top band pieces were grain/flesh closed seamed together. Top edge of top band is finished with a grain flesh seam. Uppers: L.230, W.158, T.2.3, W. (top band) 18mm. Leather: calf, uppers sheep/goat. 28883 sf12616 (P4B)
- 15364 Shoe, low-cut, slip-on, right foot. Sole fragmentary, indeterminate, but has triangular heel-riser. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam is edge/flesh sole to grain/flesh uppers. Top edge finished with whip stitch, possibly for top band. Uppers: L.250, W.160, max. quarters height 75, T.1.8mm. Leather: calf. 34207 sf12843 (P4B)
- 15365 Shoe, low-cut, slip-on. Sole: oval toe, wide tread, remainder torn off and absent. Tunnel-stitched construction seam. One-piece upper, no closing seam, back seamed to heel-riser. Lasting margin is grain/flesh. Top edge finished with whip stitch for top band, which is narrow folded type. Uppers: L.236, W.115, T.1.9mm. Leather: calf. 29835 sf13064 (P4B) (*Fig.1610*)
- 15366 Shoe, low-cut, slip-on. Sole: seat, heel-riser, and left side only, no waisting, toe form indeterminate, some thread surviving. One-piece upper, back seamed to heel-riser. Left quarter and top edge torn away. Construction seam edge/flesh sole to grain/flesh uppers. Uppers: L.220, W.120, T.1.6mm. Leather: calf. 35147 sf13856 (P4B)
- 15367 Shoe, low-cut, slip-on, complete, right foot. Sole: fragmentary. Oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam is edge/flesh, grain/flesh on the uppers. Top edge finished with whip stitch, possibly for top band. Reconstructed for display: L.245, W.111, H.75mm. Leather: calf. 35332 sf14101 (P4B) (*Fig.1611*)
- 15368 Shoe, low-cut, slip-on, probably right foot. Sole: tread rear to seat left half and heel-riser only. No waisting. Uppers: right side only. One-piece upper, no closing seam, back seamed to heel-riser. Side penetrated by two 4mm long slits, probably lasting holes. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser. Grain/flesh on the uppers. Top edge finished with whip stitch for top band. Top band: one piece survives, from vamp throat area, sub-rectangular, cut to a point at one end. Both ends have grain/flesh seams, one edge has a grain/flesh whip stitch, the other has a grain/flesh running stitch. Uppers: L.228, H. 60, T.2.1mm. Leather: calf. 35264 sf16489 (P4B)
- 15369 Ten shoe fragments. At least two shoes represented. Sole: oval toe, wide asymmetrical tread tapering back, with slight waisting, seat torn off. Tunnel-stitched construction seam. Two separated triangular heel-risers, one with impressed decoration and clump stitches at base where it is torn off, other plain. Both have a single lasting nail hole. Fragmentary one-piece upper, no closing seam, back seam torn off. Construction seam grain/flesh. Wide top band (12mm wide) secured to top edge with edge/flesh (uppers) to grain/flesh (top band) seam. Top edge of top band finished with edge/flesh whip stitch. At vamp throat, top of top band folded in and secured to itself by a grain/flesh closed seam, forming pointed vamp throat. Sole (assembled) L.156, W.93, T.1.1mm. Leather: uppers calf, top band sheep/goat. 2473 sf223 (P5B)
- 15370 Shoe, uppers only, low-cut, slip-on. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser. Grain/flesh on the uppers. Top edge finished with whip stitch for top band. Top band is folded strip, 1.5mm wide, laid face down, fold outward, against top edge of uppers so that stitches pass through both thicknesses. L.245, W.117, T.2.6mm. Leather: calf. 15192 sf4190 (P5B)
- 15371 Shoe, low-cut, slip-on, left foot. Sole: oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser. Lasting nail hole in centre of heel-riser, which has impressed decoration. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser. Grain/flesh on the uppers. Top edge finished with whip stitch for top band. Top band: narrow unfolded strip, placed grain side outward and secured to top edge of quarters through edge/edge stitch holes. Reconstructed: L.202, W. (tread) 99, max. quarters height 52, T.3.3mm. Size: Child 13. Leather: calf. 21510 sf9150 (P5B) (*Fig.1604*)
- 15372 Shoe, low-cut, slip-on, left foot. Sole: oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser. Lasting nail hole in centre of heel-riser. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser. Grain/flesh on the uppers. Top edge finished with whip stitch, possibly for top band. Reconstructed: L.240, W. (tread) 112, W. (seat) 55, max. quarters height 60, T.2.9mm. Size: Adult 3. Leather: cattle/calf. 21863 sf9804 (P5B) (*Figs.1605-6*)
- 15373 Shoe, fragmentary, low-cut, slip-on. Sole: edge fragment and triangular heel-riser only. Heel-riser has impressed decoration. One-piece upper, no closing seam, back seamed to heel-riser. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser. Grain/flesh on the uppers. Top edge finished with whip stitch for top band. Top band: narrow unfolded strip, placed grain side outward and secured to top edge of quarters through edge/edge stitch holes. Uppers: L.195, W.203, max. quarters height 56, T.2.7mm. Leather: calf. 29156 sf12809 (P5B)
- 15374 Shoe, low-cut, slip-on. Sole: two adjoining fragments, one from side with tunnel-stitched construction seam, the other a heel-riser with edge/flesh seam. Upper of one-piece type, but one side is made up of two sub-rectangular inserts, one in front of the other, grain/flesh closed-seamed to the vamp wing and to each other. Rear of both sides is stitched to heel-riser. Grain/flesh construction seam. Unfolded, single-layer top band secured to top edge with edge/flesh whip stitch. L.240, W.140, T.3.5mm. Leather: uppers calf. 3519 sf3680 (P5Cr) (*Fig.1609*)
- 15375 Shoe, low-cut, slip-on. Quarters fragment only with surviving grain/flesh construction seam and edge/flesh whip stitch top seam remnants. L.115, W.68, T.2.8mm. Leather: calf. 6297 sf16984 (D6a5; 11th/12th century) (P6)

SF	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
9180	sole, upper	1	a		calf		26181	3
9868	sole, upper	1	a	220	calf		28032	3
9996	sole, upper	2	a		calf		28064	3
10018	sole, upper	2	a		calf		28033	3
17196	upper				calf		28031	3
17500	upper, sole	2	a		cattle		34789	3
17705	upper				calf		32521	3
17720	heel-riser, upper, top band				calf		32665	3
17845	upper				cattle/calf		34789	3
7597	sole, upper	1					23482	4B
8482	heel-riser, upper						25380	4B
10099	sole, upper	1	a		calf		21887	4B
10236	sole, upper	1	a		calf		28127	4B
10283	upper				calf		27762	4B
10341	sole, upper	1	a		cattle/calf	impress	29222	4B
10466	sole, upper	1	a				29193	4B
11076	upper	1	a		calf		31143	4B
11151	sole, upper	2	a		calf		28738	4B
11190	sole, upper	1	a		calf		29736	4B
12194	upper				calf		28987	4B
12197	upper				calf		28987	4B
12365	upper			210	calf		27341	4B
12478	upper				calf		32105	4B
12512	upper				calf		28933	4B
12513	sole, upper	1	a		calf		28933	4B
12522	upper						28933	4B
12859	sole, upper	1	a				29459	4B
13164	sole, upper, top band	2	a				34739	4B
13305	upper				cattle		32312	4B
13306	sole, upper, rand	2	a		cattle		35005	4B
13454	sole, upper	1	a	220	calf	impress	32680	4B
13500	sole, upper	1	a		calf		29926	4B
13598	sole, upper	2	a	225	calf		35137	4B
13707	sole, upper	1	a	220	calf		35086	4B
16000	upper			180	calf		22595	4B
16281	upper						19626	4B
16290	upper			180	calf		18602	4B
16291	upper				calf		18602	4B
16661	upper				cattle/calf		24391	4B
17241	upper				cattle/calf		28493	4B
17249	upper				calf		28666	4B
17263	upper				cattle/calf		28835	4B
17274	upper				cattle/calf		28933	4B
17609	upper				calf		27884	4B
19483	sole, upper	2	a		calf		23482	4B
19489	upper						28730	4B
19493	sole, upper	1	a		cattle/calf		29459	4B
19502	upper				calf		32105	4B
19503	upper				calf		32105	4B
7309	upper				calf		22120	5A
7488	sole, upper	2	a			impress	22153	5A
7498	sole, upper	1	a		calf		22256	5A
7531	sole, upper	2			calf		22309	5A
7535	upper			210	calf		22309	5A
8154	heel-riser, upper				calf	impress	22197	5A
12294	upper	1			cattle/calf		26871	5A
15993	upper				calf		22123	5A
16297	sole				calf		22270	5A
16324	upper				calf		14963	5A
18528	upper				calf		22123	5A
18560	heel-riser, upper, clump sole		a		cattle		22267	5A
18575	sole, clump sole, upper	2			calf		22358	5A
19476	upper				calf		20808	5A



SF	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
19477	upper				calf		20808	5A
19478	upper				calf		20808	5A
4383	sole, upper	1	a		calf		15530	5B
5325	sole, upper	1	a	215	calf		6471	5B
5380	upper, sole	2	a		calf		6532	5B
7166	sole, upper, clump sole	1	a		calf		15791	5B
7294	upper, sole	1	a	215	calf		14545	5B
9104	upper			220	calf		19623	5B
9270	upper						21510	5B
9382	upper				calf		21510	5B
9407	sole, upper	1	a		calf		21680	5B
9661	sole, upper	1	a	210	calf		21660	5B
9921	sole, upper	1	a	230	calf		21898	5B
9924	upper				calf		21689	5B
10088	upper	1			calf		21863	5B
10338	upper				calf		29156	5B
10964	sole, upper	1	a		cattle/calf		29471	5B
11686	sole, upper	1	a		calf		21766	5B
16719	upper				calf		26940	5B
16958	upper, top band		a		calf	impress	6472	5B
18081	upper, heel-riser		a		cattle/calf	impress	21681	5B
18390	sole, upper	1	a	240	calf		29572	5B
18726	upper						15471	5B
18753	sole, upper	1	a		calf	impress	15750	5B
18875	sole, upper, top band	1	a		cattle		7669	5B
12905	sole, upper	1	a		calf		34377	u/s
17340	sole, upper	1	a					u/s
18610	upper, top band						22636	u/s

### Style 3: Shoes with one-piece uppers joining with a side seam

#### Style 3a1: Shoes with one-piece uppers joining with a side seam, no original fastening, sole with a pointed heel extension

- 15376 Shoe, slip-on, right foot. Sole: fragment of one edge only, torn. Edge/flesh construction seam. Uppers: almost complete, one-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh (vamp) to grain/flesh (quarter). V-shaped cut-out at back to accommodate heel-riser on sole. Grain/flesh construction seam. Top edge finished with edge/flesh binding seam. Several scored lines across grain surface, possibly for marking out. L.385, W.160, T.1.7mm. Size: approx. Adult 2. Leather: cattle/calf. 26949 sf9413 (P4B) (Fig.1617)
- 15377 Shoe, slip-on, right foot. Sole: oval toe, wide asymmetrical tread tapering back to round seat, no waisting. Lasting nail hole at waist. Uppers: one-piece wrap around,

vertical medial closing seam, edge/flesh (vamp) to grain/flesh (quarter). Tunnel stitch sole to grain/flesh upper construction seam. Top edge finished with edge/flesh seam, not whip stitch. Vamp has a slash running down instep from throat. Sole: L.250, W. (tread) 84, T.2.6mm. Size: Child 11½. Leather: calf. 1359 sf377 (D6y1; late 12th–13th century) (P6)

#### Style 3b1: Shoes with one-piece uppers joining with a side seam, no original fastening, sole with a round seat

- 15378 Shoe, slip-on, left foot. Sole: oval toe, wide asymmetrical tread, slight waisting, rounded square seat. Nail holes at tread and waist. Tunnel-stitched construction seam. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, grain/flesh vamp and quarter. Grain/flesh construction seam. Top edge has edge/flesh binding seam. Large triangular heel stiffener, lasted in at base, sides blind whip stitched into quarter. A

#### Other Style 3a1

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
7695	upper		a		calf		22490	4B
7743	upper				calf		22574	4B
10340	sole, upper	1			cattle/calf		28356	4B
13110	upper				cattle		34176	4B
9019	sole, upper	1	a		calf		21502	5B

secondary cut runs down vamp to lateral side of mid-line, with adjacent irregular cut hole above joint. Sole: L.242, W. (tread) 89, W. (waist) 75, T.3.2mm. Leather: calf. 28033 sf9874 (P3)

- 15379 Shoe, slip-on, left foot. Sole: delaminated flesh surface only. Oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser. Lasting nail hole at tread. Uppers: fragmentary, one-piece wrap around, vertical medial closing seam, grain/flesh and edge/flesh (vamp) to grain/flesh (quarter). V-shaped cut-out at back to accommodate heel-riser. Tunnel stitch sole to grain/flesh upper construction seam. Top edge finished with edge/flesh binding stitch for folded type top band, stitches pass through both thicknesses. Triangular heel stiffener, lasted in at base, blind whip stitched at sides. Sole: L.256, W. (tread) 91, W. (seat) 61, T.2.0mm. Size: Adult 5. Leather: cattle, upper calf. 34789 sf13212 (P3)
- 15380 Shoe, slip-on, left foot. Sole: rounded oval toe, wide asymmetrical tread tapering back to rounded seat, no waisting. Lasting nail holes at tread and seat. Uppers complete except for a narrow strip cut away from top edge at back. Vamp has a slash running down instep from throat. One-piece wrap around, vertical medial closing seam, edge/flesh (vamp) to grain/flesh (quarter). Top edge finished with edge/flesh whip stitch. Tunnel stitch sole to grain/flesh upper construction seam. Sub-triangular heel stiffener, lasted in at base and blind whip stitched into quarter. Reconstructed: L.252, W. (tread) 115, W. (seat) 77, max. quarters H. 56mm. Size: Adult 1½. Leather: calf. 22574 sf7731 (P4B)
- 15381 Shoe, almost complete, right foot, uppers and sole joined with thong. Sole: oval toe, broad asymmetrical tread, slight waisting, rounded seat. Edge/flesh construction seam. Tread and seat have been clumped, seat clump in situ, secured with single thong tacking. Uppers: one-piece wrap around, medial closing seam, grain/flesh (vamp), edge/flesh (quarter). Top edge: edge/flesh binding stitched. Four horizontal slits close to the top edge, either side of throat and either side of back, latter 16mm long. Secondary slash at throat. Sub-triangular heel stiffener, possibly laid grain surface to quarter, lasted in at base, blind whip stitched at sides. Sole: L 275, W. (tread) 100, W. (seat) 88mm. Size: Adult 5½. Leather: cattle, uppers calf. 18602 sf9116 (P4B) (Fig.1614)
- 15382 Shoe, slip-on, left foot. Sole: waist and left side of tread only, edge/flesh construction seam with surviving throat. Uppers: left side of vamp and medial quarter torn away. Vamp has a secondary slash running down instep from throat. One-piece wrap around, with additional sub-rectangular insert making up lateral vamp wing, joined with grain/flesh (vamp) to edge/flesh (insert) seam. Other edge was joined to (absent) quarter with a grain/flesh seam. Top edge finished with edge/flesh whip stitch. Grain/flesh construction seam. Sub-triangular heel stiffener, lasted in at base and blind whip stitched into quarter. Largest uppers fragment: L.286, W.157, T.2.5mm. Leather: calf. 18991 sf9574 (P4B) (Fig.1618)
- 15383 Shoe, slip-on, right foot, very deteriorated and fragmentary. Sole: rounded toe, wide tread, slight waisting. Uppers: one-piece wrap around, closing seam absent, but form indicates medial, vertical. Top edge finished with edge/flesh whip stitch. Construction seam is edge/flesh sole to grain/flesh upper. Fragment of heel stiffener, lasted in at base and blind whip stitched into quarter. Largest fragment: L.199, W.108, T.3.5mm. Leather: sheep/goat, heel stiffener calf. 27093 sf9653 (P4B)
- 15384 Shoe, slip-on, left foot. Sole: toe torn off, wide asymmetrical tread tapering slightly back to a rounded seat (rear part worn away), slight waisting. Lasting nail hole at waist. Uppers almost complete. Throat has been cut down in a V. One-piece wrap around, vertical medial closing seam, grain/flesh vamp to edge/flesh quarter. Top edge finished with edge/flesh whip stitch except at cut-down throat. Edge/flesh sole to grain/flesh upper construction seam. Uppers: L.448, W.175, T.2.5mm. Leather: calf. 34341 sf12918 (P4B)
- 15385 Shoe, slip-on, right foot. Sole fragmentary, toe and seat absent, wide tread, slight waisting. Uppers: almost complete, one-piece wrap around, vertical medial grain/flesh to grain/flesh closing seam. Top edge finished with edge/flesh whip stitch. Construction seam is edge/flesh sole to grain/flesh upper. Two horizontal slits in medial quarter and a third, vertical slit, in the medial vamp wing are possible lasting holes. Sub-triangular heel stiffener, lasted in at base and blind whip stitched into quarter. Uppers: L.405, W.166, T.2.5mm. Leather: calf. 29926 sf13393 (P4B) (Fig.1616)
- 15386 Shoe, almost complete, left foot, uppers and sole joined with thong. Sole: broad, round toe, almost straight sides, no waisting, rounded seat. Grain/flesh construction seam sewn with thong. Uppers: one-piece wrap around, medial closing seam sewn with a grain/flesh closed seam. High cut vamp with small, rectangular tongue at centre formed by a pair of short, vertical cuts. Top edge plain cut with two horizontal slits close to the top edge at the inner quarters. These slits are not pulled and have not been used for a drawstring. Small sub-rectangular cut out into grain surface of vamp at outer side. Sole: L 232, W. (tread) 90, max. uppers height 50, T.1.1mm. Size: Adult 9. Leather: calf. 35281 sf13754 (P4B) (Fig.1622)
- 15387 Shoe, slip-on, right foot, fragmentary. Sole: seat only. Rounded square shape, edge/flesh construction seam. Uppers: upper part of vamp and lateral vamp wing only, remainder torn off. One-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh on vamp, quarter side torn off. Top edge finished with edge/flesh whip stitch. Grain/flesh construction seam. There is a cut in the vamp, following the line of the throat, 3–8mm away from it. This has been closed with a fine edge/flesh binding seam. Uppers: L.188, W.84, T.1.5mm. Leather: calf. 35483 sf14017 (P4B) (Fig.1620)
- 15388 Shoe uppers, slip-on, right foot. Almost complete, one-piece wrap around, vertical medial grain/flesh to grain/flesh closing seam. Grain/flesh construction seam. Top edge plain cut and probably cut down. Blind whip stitches at back for absent sub-triangular heel stiffener. Grain/flesh stitch holes for clump attachment round seat, along lateral side and across toe. Three incised lines make a poorly executed six-pointed asterisk forward of main seam. L.212, W.145, T.1.8mm. Leather: calf. 35332 sf16379 (P4B)
- 15389 Shoe, slip-on, left foot. Sole: oval toe, wide tread, slight waisting, flat rounded seat. Uppers: almost complete, one-piece wrap around, vertical medial grain/flesh to grain/flesh closing seam. Top edge plain cut. Construction seam is grain/flesh sole to grain/flesh upper. Irregular, forked slit at vamp throat. Two drawstring slits in medial quarter, one vertical, the other horizontal. Third possible drawstring slit close to lateral side of throat. Reconstructed: L.158, W.64, T. (uppers) 1.9mm. Size: Child 6. Leather: calf. 22153 sf7486 (P5A)
- 15390 Shoe, slip-on, left foot, fragmentary. Sole: tread periphery only, in situ, tunnel stitched (sole) to grain/flesh (uppers) construction seam, stitched with surviving leather thong. Uppers: forepart only, quarters torn off both sides. One-piece wrap around, vertical medial closing seam, edge/flesh on vamp, grain/flesh on quarter side. Top edge finished with edge/flesh whip stitch. Grain/flesh construction seam. There is a cut in the vamp, following the line of the throat. L.183, W.108, T.2.2mm. Leather: calf. 1473 sf419 (P5B) (Fig.1621)
- 15391 Shoe, slip-on, left foot. Sole: oval toe, wide tread, slight waisting, seat torn off. Uppers almost complete. One-piece wrap around, vertical medial closing seam, grain/

flesh vamp to edge/flesh quarter. Top edge finished with edge/flesh whip stitch, except at vamp throat, where it has been cut down. Construction seam is tunnel stitched sole to grain/flesh upper. Semicircular heel stiffener, lasted in at base and blind whip stitched into quarters. Reconstructed sole: L.240, W. (tread) 105, T.1.9mm. Leather: calf. 14548 sf5101 (P5B)

- 15392 Shoe, almost complete, left foot, reconstructed. Sole: oval toe, medium asymmetrical tread, almost straight sides, tapering back to rounded seat. Tunnel-stitched construction seam. Uppers: one-piece wrap around, medial closing seam angled back slightly from lasting margin, edge/flesh vamp wing to grain/flesh quarter. Low-cut vamp throat. Top edge finished with edge/flesh binding stitch. At back of shoe are six secondary drawstring slits, just below top edge. Semicircular heel stiffener, lasted in at base, blind whip stitched into quarter. Reconstructed shoe: L.154, W.67, maximum uppers height 39, T. (uppers) 1.8mm. Size 149. Leather: calf. 6287 sf5286 (P5B)
- 15393 Shoe, slip-on, left foot. Sole: waist area, lasting seam extending to tread and seat. Uppers: almost complete. One-piece wrap around, medial closing seam, grain/flesh vamp to grain/flesh quarter, slopes forward towards lasting margin. Top edge finished with edge/flesh whip stitch. Construction seam is tunnel stitched sole to grain/flesh upper. Whole of inside of quarters has been faced with a separate piece of leather, sewn in with construction seam, closing seam and top edge, and blind whip stitched in at lateral vamp wing. Vamp has a lateral slash running down instep from vamp throat and a worn hole above the joint, close to the medial side of the foot. Reconstructed: L.220, W. (tread) 95, T. (uppers) 2.5mm. Leather: calf. 21502 sf9021 (P5B)
- 15394 Shoe, slip-on, fragmentary, parts of at least two shoes. Uppers: vamp fragment, throat only, finished with edge/flesh whip stitch. Quarters fragment, one-piece wrap around construction. Construction seam and vamp torn off and absent. Grain/flesh closing seam, top edge fin-

ished with edge/flesh whip stitch for top band. Top band: narrow unfolded strip, placed grain side outward and secured to top edge of quarters through edge/edge stitch holes. Two heel stiffener fragments, blind whip-stitched edges. Quarters fragment: L.247, W.61, T. (uppers) 2.5mm. Leather: calf. 6211 sf9125 (P5B)

- 15395 Shoe, complete, slip-on, left foot. Sole: round toe, wide asymmetrical tread, tapering back to a rounded square seat, with no waisting. Tunnel-stitched construction seam. Lasting nail hole at tread centre. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh vamp to grain/flesh quarter. Grain/flesh construction seam. Sub-triangular heel stiffener, lasted in at base and blind whip stitched into quarter. Top edge finished with edge/flesh binding seam. Reconstructed: L.261, W. (tread) 100, W. (seat) 70, quarters height above lasting margin 60mm. Size: Adult 3½. Leather: calf. 27221 sf9558 (P5B) (Fig.1615)
- 15396 Shoe, slip-on, right foot. Sole: oval toe, wide tread, slight waisting, squared round seat. Much of tread worn away. Uppers: one-piece wrap around, vertical medial closing seam, edge/flesh vamp, quarter edge torn off. Top edge finished with edge/flesh whip stitch. Part of vamp throat torn away, two large and one small worn/torn holes in body of vamp. Construction seam is tunnel stitched sole to grain/flesh upper. Semicircular heel stiffener, lasted in at base and blind whip stitched into quarters. Sole: L.250, W. (tread) 93, W. (seat) 55, T.4.2mm. Size: Adult 2½. Leather: calf. 21863 sf10066 (P5B)
- 15397 Shoe, slip-on, right foot, fragmentary. Sole: almost complete, medial edge and seat rear torn away, edge/flesh construction seam. Uppers: forepart only, quarters torn off at lateral vamp wing. One-piece wrap around, vertical medial closing seam, edge/flesh on vamp, quarters absent. Top edge finished with edge/flesh whip stitch. Two parallel secondary slashes at throat running down instep. Grain/flesh construction seam. Uppers: L.250, W.167, H. 3.0mm. Leather: calf. 27681 sf19486 (P5B) (Fig.1619)

### Other Style 3b1

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
13186	sole, upper	2			cattle/calf		34708	3
17831	sole, upper	1	b2		cattle/calf		34708	3
7753	upper				calf		22574	4B
8478	sole, upper, heel stiffener	2			calf		25380	4B
10298	sole, upper, heel stiffener	1		215	calf		27762	4B
11291	sole, upper, heel stiffener	1	b2		calf		29736	4B
13712	sole, upper	2	2		calf		35086	4B
14037	sole, upper, heel stiffener	1	b2		cattle/calf		35483	4B
14043	upper				calf		35483	4B
16304	upper, heel stiffener				calf		32105	4B
19497	upper, heel stiffener				calf		29736	4B
7308	sole, upper, heel stiffener	1	b1		cattle/calf		22088	5A
9722	sole, upper, heel stiffener	1	b2		cattle/calf		27388	5A
10028	sole, upper, heel stiffener	2	b1		cattle/calf		27428	5A
10663	upper, heel stiffener				calf		27811	5A
12845	sole, upper, heel stiffener	1	b1		cattle/calf		34295	5A
18544	upper				calf		22192	5A
5161	sole, upper, heel stiffener	1	b2		cattle/calf		6360	5B
9012	sole, upper	1			cattle/calf		21478	5B
9186	upper, heel stiffener				calf		21510A	5B
9205	sole, upper, heel stiffener	1	b2		calf		21510A	5B
9710	upper, heel stiffener				calf		21746	5B
16350	sole, upper	1	b2		calf		14941	5B
18083	upper				calf		21683	5B
9738	sole, upper, heel stiffener	1			calf			u/s

Style 3-1: Shoes with one-piece uppers joining with a side seam with no original fastening, sole type unknown

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
9731	upper				calf		27413	3
19506	upper				calf		34708	3
9216	upper				calf		19626	4B
12757	upper				cattle/calf		32189	4B
9383	upper				calf		21510A	5B
18132	upper				calf		21927	5B
5171	sole, upper	1			cattle/calf		6378	5Cr

Style 3a2: Shoes with one-piece uppers joining with a side seam, fastening with a drawstring, with a sole with a pointed heel extension

- 15398 Shoe, almost complete, drawstring-fastened, right foot. Sole: oval toe, wide asymmetrical tread, tapering back to a seat with a triangular heel-riser, no waisting. Tunnel stitched-construction seam, edge/flesh at heel-riser. Lasting nail holes at tread centre and heel-riser. Uppers: one-piece wrap around, vertical medial closing seam, grain/flesh closed type. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Five quite crude drawstring slits spaced out close to top edge, which is finished with edge/flesh binding seam. Sole: L.205, W. (tread) 74, T.1.3mm. Size: Child 6. Leather: calf. 22574 sf7728 (P4B) (Fig.1623)
- 15399 Ankle-shoe, drawstring, probably left foot. Sole fragments (2): seat fragment, not from same shoe; edge fragment with in situ thonging from clump repair. Both have edge/flesh construction seams. Uppers: almost complete, toe and left side of vamp torn away. Vertical medial closing seam, set well back, grain/flesh closed seam. V-shaped cut-out for heel-riser, lateral side of which has a 35mm cut running perpendicularly from it, near the apex. This has been closed with an edge/flesh butt seam. Concave throat with grain/flesh seam, possibly for (absent) insert, rising on both sides to meet horizontal top edge (plain cut). Just below top edge, a row of 9mm long vertical (drawstring?) slits spaced c.4mm apart, runs completely around shoe, except for a short gap over the V-shaped cut-out. Construction seam is grain/flesh. L.265, W.206, T.1.7mm. Leather: calf. 16887 sf17122 (P5Cr) (Fig.1625)
- 15400 Shoe, probably left foot. Sole: round, torn toe, wide tread, tapering to seat with triangular heel-riser, which has a single slit at tip. Uppers: right side only, torn throat to toe, no apparent closing seam, back seamed to heel-riser. A row of four vertical drawstring slits survives close to top edge of vamp wing, which slopes down to a wide round throat. Top edge finished with edge/flesh whip stitch, but has been cut down at quarter. Construction seam is edge/flesh sole to grain/flesh upper. Possible sub-triangular insert, fine widely spaced grain/flesh stitches along two edges, other torn. Sole: L.134, W. (tread) 52, T.2.5mm. Size: Child 1. Leather: unidentified. 2334 sf79 (B6w2; early 15th century) (P6)
- 15401 Shoe, slip-on, uppers only, right foot. One-piece wrap around, medial closing seam, angled forward from lasting margin, edge/flesh butt seam. Top edge finished with edge/flesh whip stitch. Part of vamp edge cut down.

Construction seam edge/flesh and grain/flesh. Heel stiffener, wide, low, truncated triangle, lasted in at base and blind whip stitched into quarters. A pair of vertical drawstring slits in lateral quarter. L.284, W.105, T.1.9mm. Leather: goat. 5975 sf19327 (C6c6; mid 12th century) (P6)

Style 3b2: Shoes with one-piece uppers joining with a side seam, fastening with a drawstring, with a sole with a rounded seat

- 15402 Shoe, right foot. Sole: oval toe, wide tread, slight waisting, round seat. Nail holes at tread and front of seat. Uppers: one-piece wrap around, vertical medial closing seam, edge/flesh quarter to grain/flesh vamp. Top edge curves up to a peak at rear and is finished with edge/flesh whip stitch. Three pulled drawstring slits, on right side of vamp and on each quarter. S-shaped slit in vamp below throat near midline. Construction seam is tunnel stitched sole to grain/flesh upper. Sole: L.169, W. (tread) 64, W. (waist) 57, W. (seat) 53, T.4mm. Size: Child 6. Leather: calf. 9450 sf1841 (P4B)
- 15403 Shoe, left foot. Sole: waist and tread rear only, wide tread, slight waisting. Uppers: one-piece wrap around, vertical medial closing seam, edge/flesh quarter, vamp torn away. Top edge finished with edge/flesh whip stitch except at throat where it is an edge/flesh butt seam. Irregular drawstring slits run down both sides, but not around throat. In situ drawstring is tied off at both ends. Sub-triangular heel stiffener, lasted in at base and blind whip stitched into quarters. Construction seam is tunnel stitched sole to grain/flesh upper. Uppers: L.281, W.103, T.2.7mm. Leather: calf. 26957 sf9450 (P4B)
- 15404 Shoe, almost complete, drawstring-fastened, right foot. Sole: delaminated flesh surface only. Round toe, wide asymmetrical tread, tapering back to rounded square seat, no waisting. Tunnel-stitched construction seam. Lasting nail holes at tread centre and front of seat. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh quarter to grain/flesh vamp. Grain/flesh construction seam. Sub-triangular heel stiffener, lasted in at base and blind whip stitched into quarter. Two pairs drawstring slits spaced out on each vamp wing/quarter. Top edge plain cut. Most of vamp crudely cut away, probably for re-use. Uppers: L.206, W.115, T.2.2mm. Size: Child 1½. Leather: cattle/calf. 29835 sf13113 (P4B) (Fig.1624)
- 15405 Shoe, left side uppers and heel only, drawstring-fastened, probably right foot. Sole: edge fragments only, edge/flesh



construction seam. Uppers: vamp and right side torn away. One-piece wrap around, vertical medial closing seam, set well back, edge/flesh butt seam. Top edge plain cut, stepped down at throat, probably to form base for securement of a wide tapering drawstring (missing). It passed through a pair of vertical slits close to the throat,

a second pair in front of the closing seam and a single slit to the left side of the back. Triangular heel stiffener, lasted in at base and blind whip stitched into quarter. Grain/flesh construction seam. L.205, H.70, T.1.7mm. Leather: calf. 22270 sf7510 (P5A)

### Other Style 3b2

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
10588	heel stiffener, sole, upper, drawstring	1			calf		21903	4B
13836	sole, upper, heel stiffener, drawstring	1			cattle/calf		29636	4B
19496	upper				calf		29736	4B
2153	sole, upper, drawstring, heel stiffener	1	b2		cattle/calf		9449	5B
16646	sole, upper, drawstring				calf		24916	5B
19442	upper, sole	1			calf		15470	5B

### Style 3-2: Shoes with one-piece uppers joining with a side seam, fastening with a drawstring, sole type unknown

15406 Shoe, drawstring-fastened, vamp and part of medial quarter only, probably left foot. One-piece wrap around, ver-

tical closing seam, grain/flesh quarter and vamp, extant thonging. Torn oval toe, throat also torn. Ten vertical drawstring slits run across closing seam in a curve, which appears to have extended further in both directions. Grain/flesh construction seam. L.204.2, W.148.2, T.1.4mm. Leather: calf. 1473 sf478 (P5B)

### Other Style 3-2

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
7775	upper				calf		22574	4B
9412	sole, upper	2			calf		26902	4B
16476	upper, drawstring				calf		35011	4B
7514	sole, upper	2			calf		22267	5A

### Shoes with one-piece uppers joining with a side seam, fastening with a drawstring through multiple slots (includes soles with heel extensions 3a2 and soles with rounded seats 3b2) (see pp.3295-6)

15407 Shoe, quarters fragment only, extensively torn. A probable top edge has an edge/flesh whip stitch seam remnant, and below are nineteen vertical drawstring slits with extant 5mm wide drawstring. Beneath this is a curving tunnel stitch seam for a heel stiffener. L.181, W.117, T.2.6mm. Leather: calf. 35225 sf16507 (P4B)

15408 Shoe, uppers fragment only, extensively torn. A probable top edge is plain cut and has a series of very fine drawstring slits running just adjacent to it. A curved opposing edge has a grain/flesh seam and is probably the lasting margin. L.86, W.73, T.1mm. Leather: calf. 34391 sf17769 (P4B) (Fig.1626)

15409 Shoe fragments (34) and scraps (40+). Two uppers fragments have edge/flesh whip-stitched top edges with a series of close-set vertical drawstring slits below. On one

fragment, this is passed back through a slit in itself and locked. Other fragment is part of a quarter with edge/flesh closing seam and grain/flesh construction seam. Largest: L.104, W.55, T.2.5mm. Leather: calf. 8033 sf672 (P5B)

15410 Top band with three rows of incised slits, approximately 4mm long, angled away from the edge. First row angled one way, second and third the other. No evidence for pulling or stretching around slits. Opposite long edge torn, but a short remnant of edge/flesh binding stitch remains. One short edge torn, other has rough grain/flesh binding stitch. L.228, W.71, T.1.0mm. Leather: sheep/goat. 8033 sf17621 (P5B) (Fig.1677)

15411 Probable shoe uppers fragment, unidentified type. A long edge with edge/flesh stitch holes is possibly the construction seam. At one end, the fragment is torn across, at the other end the construction seam meets an oblique angled edge, which also has edge/flesh stitches. This edge then angles back to meet top edge and both are finished with an edge/grain binding seam. This stops at a roughly cut recess, and behind this, a series of short, fine, vertical drawstring slits has been cut adjacent to the top edge. L.305, W.121, T.1.5mm. Leather: goat. 19269 sf6526 (P5Cr)



## Other Style 3-2 shoes with multiple slots

* denotes shoe fragments with multi-slots for drawstrings

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
*9660	uppers, drawstring				calf		27368	4B
*19511	uppers				calf	rouletted	35225	4B
*478	upper, upper				cattle		1473	5B
*16966	upper, top band, drawstring				cattle/calf	incised	6424	5B
*16976	uppers, drawstring				cattle/calf		6425	5B
*16986	uppers				cattle/calf		6287	5B
*19349	upper, drawstring						6425	5B
19233	uppers					incised	19269	5Cr
*19457	uppers				calf		16887	5Cr

### Style 3b3: Shoes with one-piece uppers joining with a side seam, fastening with a drawstring stitched to the vamp throat, sole with a round seat

- 15412 Shoe, drawstring-fastened, left foot, uppers only. One-piece wrap around, vertical medial closing seam, grain/flesh quarter, edge/flesh vamp. Top edge plain cut. Two cuts at throat form a rectangular tongue with grain/flesh stitching around its periphery, to which was originally secured the base of a wide, tapering drawstring on each side. The lateral drawstring survives and passes through a slot low down on the quarter, the point on the inside of the shoe. There is a matching slot on the opposing quarter. Construction seam is grain/flesh. L.208, W.105, T.0.9mm. Leather: calf. 26631 sf8847 (P3)
- 15413 Shoe, complete, drawstring-fastened, right foot. Sole: oval toe, wide, almost symmetrical tread, almost straight sides, eventually tapering back to rounded square seat, no waisting. Edge/flesh construction seam. Lasting nail hole at tread centre. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, grain/flesh closed seam. Vamp throat has small, triangular cut, forming two pointed flaps either side of straight throat with grain/flesh butt seam, securing a tongue with whip stitching which tapers each side to form a drawstring. This wraps around the foot, passes through three slits in the quarters and the ends are tied to each other on the medial side. Grain/flesh construction seam. Sub-semicircular heel stiffener, lasted in at base, sides blind whip stitched into quarter. Top edge plain cut. Reconstructed: L.183, W. (tread) 68, W. (seat) 49, max. uppers height 55, T.1.8mm. Size: Child 9. Leather: cattle/calf. 22574 sf7730 (P4B) (Figs.1627-8)
- 15414 Shoe, drawstring-fastened, right foot. Sole: right side tread and waist only, tunnel-stitched construction seam, evidence for clumping. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, on vamp side, lower half is grain/flesh, upper half edge/flesh. Bottom half of quarter side torn off, upper half is grain/flesh. Top edge plain cut. Two stepped rough cuts at throat form a rectangular tongue with an edge/flesh butt seam at top, to which a drawstring was originally secured. This is wide at the attachment point, with a

grain/flesh seam, but tapers off on each side to form a drawstring which passed through a pair of slits on each side of the quarters. Grain/flesh construction seam. Uppers: L.309, W.120, T.2.4mm. Leather: calf. 21887 sf9969 (P4B) (Fig.1629)

- 15415 Shoe, almost complete, drawstring-fastened, right foot. Sole: rounded oval toe, wide, almost symmetrical tread, almost straight sides, eventually tapering back to rounded square seat. Nail hole at front of seat. Edge/flesh construction seam. Lasting nail hole at tread centre. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh butt seam. Top edge plain cut. Two rough cuts at throat form a rectangular tongue with an edge/flesh butt seam at top, to which a drawstring (missing) was originally secured. It passed through two slits, one each side of the quarters. Blind whip stitches indicate original presence of semicircular heel stiffener. Construction seam edge/flesh sole to grain/flesh upper. Sole: L.190, W. (tread) 83, W. (seat) 53, T.4.2mm. Size: Child 10. Leather: calf. 29835 sf13056 (P4B)
- 15416 Shoe, fragmentary, drawstring-fastened, right foot. Sole: oval toe, wide, almost symmetrical tread, almost straight sides, eventually tapering back to rounded square seat. Tunnel-stitched construction seam. Uppers: one-piece wrap around, vertical medial closing seam, quarters side only survives, grain/flesh stitches. Top edge plain cut, except at throat, which has edge/flesh seam for attaching a drawstring (missing). This passed through two slits, one each side of the quarters. Grain/flesh construction seam. Sole: L.140, W. (tread) 62, T.3.8mm. Size: Child 2. Leather: cattle, upper calf. 22107 sf7329 (P5B)
- 15417 Shoe, drawstring-fastened, right foot. Oval toe, wide asymmetrical tread, narrow waist, wide round seat, rear torn away. Edge/flesh construction seam. Uppers: fragmentary, vamp only, torn away both sides. Vamp throat is straight and cut continues to form two pointed flaps either side of it. Throat has grain/flesh butt seam to secure a drawstring (missing). Front and top of flaps finished with edge/flesh butt seam, possibly to secure a separate rectangular insert, which has similar seam along three sides and edge/flesh binding stitch on fourth. Grain/flesh construction seam. Sole: L.223, W. (tread) 80, W. (waist) 41, W. (seat) 65, T.3.9mm. Size: Child 13½. Leather: uppers sheep/goat, sole cattle. 5348 sf1572 (C6e1, D6a16; 12th-13th century) (P6)

## Other Style 3b3

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
17614	sole, upper	2			cattle/calf		27919	4A
7645	sole, upper	1			calf		22495	4B
7699	upper, sole, drawstring	2			calf		22490	4B
8250	upper				calf		22803	4B
11058	clump sole, upper				calf		28728	4B
11229	sole, upper				cattle/calf		29736	4B
13609	sole, upper	2			calf		34357	4B
19495	sole, upper	2	b1				29736	4B
9266	sole, upper	2			calf		21511	5B
10518	upper, drawstring				calf		29325	D6d3; late 13th century
9839	uppers fragments, heel stiffener, drawstring				calf		27431	u/s

### Style 3a4: Shoes with one-piece uppers joining with a side seam, with a throat insert and a sole with a pointed heel extension

15418 Shoe, complete, slip-on, right foot. Sole: oval toe, wide slightly asymmetrical tread, tapering back to a seat with a triangular heel-riser, no waisting. Heel-riser has impressed hatched decoration. Tunnel-stitched construction seam, edge/flesh at heel-riser. Lasting nail holes behind tread centre and in waist area. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh vamp to grain/flesh quarter. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Vamp throat has a narrow crescentic insert which is attached with an edge/flesh stitch on the upper, and the stitches pass edge/edge across the full width of the insert. Remainder of top edge is finished with edge/flesh binding seam. Sole: L.226, W. (tread) 78, W. (seat) 61, T.3, max. uppers height 45mm. Size: Adult 1½. Leather: cattle/calf. 26181 sf9169 (P3) (Fig.1631)

### Style 3b4: Shoes with one-piece uppers joining with a side seam, a throat insert and a sole with a rounded seat

15419 Shoe, slip-on, left foot. Sole: oval toe, wide tread, tapering back to a round seat, rear edge worn away. Tunnel-stitched construction seam. Uppers: one-piece wrap around, sub-rectangular insert between medial vamp wing and quarter, attached with edge/flesh seam insert to grain/flesh seam vamp and quarter. Grain/flesh construction seam. Top edge: edge/flesh binding stitched except at vamp throat, where there is an edge/flesh stitch for a narrow crescentic insert (absent). Semicircular heel stiffener, lasted in at base, sides blind whip stitched into quarter. Sole: L.210, W. (tread) 85, W. (seat) 61, T.3.9mm. Size: Child 10. Leather: cattle. 19626 sf9218 (P4B) (Fig.1630)

15420 Shoe, slip-on, right foot. Sole: tread absent, tapering back to a rounded square seat. Tunnel-stitched construction seam. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh vamp to grain/flesh quarter. Grain/flesh construction seam.

Vamp throat has a narrow crescentic insert attached with an edge/flesh whip stitch. Remainder of top edge is plain cut. Large triangular heel stiffener, lasted in at base, sides blind whip stitched into quarter. Rand fragment, strip folded lengthwise flesh to flesh, appropriate for toe, but uncertain association with this shoe. Uppers: L.400, W.180, T.1.8mm. Leather: calf. 28410 sf10450 (P4B)

15421 Shoe, slip-on, left foot. Sole: delaminated flesh surface only. Round toe, tread mostly worn through, tapering back to a rounded square seat. Edge/flesh construction seam, nail hole at tread. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, grain/flesh vamp to edge/flesh quarter; some thread survives. Grain/flesh construction seam. Top edge plain cut except at vamp throat, where there is edge/flesh whip stitch for a narrow crescentic insert, the lateral side of which survives. Two parallel secondary cuts run down vamp to medial side of midline. Large triangular heel stiffener, lasted in at base, sides blind whip stitched into quarter. Two parallel horizontal cuts at back, above heel stiffener. Rand fragment at seat, strip, torn both ends. Sole: L.c.215, W. (tread) 80, W. (seat) 60, T.1mm. Leather: calf. 35160 sf13647 (P4B)

15422 Shoe, slip-on, right foot. Sole: edge fragments only. Tunnel-stitched construction seam. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, grain/flesh vamp, quarter torn away. Grain/flesh construction seam. Top edge has edge/flesh stitches for insert at throat, remainder has possible edge/flesh binding seam. At lateral quarter a line of large pulled slits runs up to top edge at a shallow angle from back of shoe. There is an additional slit at back, just below top edge. Uppers: L.189, W.121, T.1.9mm. Leather: calf. 6528 sf5458 (P5B)

15423 Shoe, complete, slip-on, left foot. Sole: oval toe, wide slightly asymmetrical tread, tapering back to a rounded square seat, very slight waisting. Tunnel-stitched construction seam. Lasting nail holes behind tread centre and in waist area. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, edge/flesh vamp to grain/flesh quarter. Grain/flesh construction seam. Vamp throat has a narrow crescentic insert attached with an edge/flesh whip stitch. Remainder of top edge is plain cut. Large triangular heel stiffener, lasted in at base, sides blind whip stitched into quarter. Sole: L.237, W. (tread) 88, W. (seat) 65, T.2.6mm. Size: Adult 2. Leather: calf. 14454 sf7250 (P5B) (Fig.1632)

## Other Style 3b4

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
9841	sole, upper, insert, heel stiffener	1			calf		27413	3
9086	sole, upper	1			calf		19390	4B
10287	upper				calf		27341	4B
11141	sole, upper, heel stiffener	2	b2		cattle/calf		28835	4B
12515	upper				cattle/calf		28933	4B
12702	upper						20747	4B
12839	sole, upper	2	b2		calf		29459	4B
12908	upper, heel stiffener				calf		34377	4B
12919	upper	1			cattle/calf		34381	4B
13076	upper, heel stiffener				calf		29904	4B
13348	upper, heel stiffener				cattle/calf		32629	4B
14026	upper, sole, insert, heel stiffener	1			calf		35448	4B
16467	upper, insert	2			cattle/calf		35147	4B
18625	insert				calf		22883	4B
19510	upper				calf		35147	4B
16816	upper				calf		20976	5A
5292	sole, upper, insert	1	b2		cattle/calf		6287	5B
8492	clump sole, sole, upper, heel stiffener	1	b1				24395	5B
9022	upper, sole, heel stiffener	1	b2		calf		21478	5B
9981	sole, upper, heel stiffener, insert	1	b2		calf		21863	5B
10308	insert				calf		29156	5B
10958	upper				calf		29156	5B
16351	heel stiffener, upper				calf		14941	5B
18094	upper				calf		21768	5B

## Style 3-4: Shoes with one-piece uppers joining with a side seam, with a throat insert, sole type unknown

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
17753	upper, heel stiffener				calf		34283	4B
19436	upper				calf		14659	5B

## Style 3b5: Shoes with one-piece uppers joining with a side seam and with a pointed vamp throat

15424 Shoe, slip on, vamp only, left foot. One-piece wrap around, quarters torn off at lateral vamp wing. Vertical medial closing seam, grain/flesh seam. Grain/flesh construction seam. Throat concave at both sides, rising to a point at centre, finished with edge/flesh binding stitch. L.113,

W.137, T.1.3mm. Leather: calf. 28904 sf12463 (P4B) (Fig.1633)

15425 Vamp fragment, slip-on shoe, vertical medial closing seam, edge/flesh. Edge/flesh construction seam. Tip of toe is early pointed type. Throat curved with central point, finished with edge/flesh whip stitch. Short fragment of top band, torn one end, pointed the other, probably to edge the throat. L.204, W.200, T.1.6mm. Leather: sheep/goat. 9224 sf17152 (C6e9; mid 13th century) (P6) (Fig.1634)

### Style 3a-: Shoes with one-piece uppers joining with a side seam, with a sole with a pointed heel extension

This category includes a single find which can be identified as being of the general Style 3 and as having a triangular heel-riser, but cannot be further classified

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
16833	upper				calf		20792	5A

### Style 3b-: Shoes with one-piece uppers joining with a side seam with a sole with a rounded seat

This category includes those finds which can be identified as being of the general Style 3 and as having rounded seats, but which cannot be further classified

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
9174	upper, heel stiffener, sole	1			cattle/calf		26181	3
7705	sole, upper, heel stiffener	1			calf		22490	4B
13184	upper, drawstring, top band	2			cattle/calf		34718	4B
13546	upper, heel stiffener				calf		35118	4B
13863	upper, heel stiffener, sole	2			cattle/calf		35143	4B
14181	sole, upper	1		237	calf		32105	4B
19480	upper, heel stiffener				calf		22376	5A
10313	sole, upper, heel stiffener	1			calf		29156	5B
10826	sole, upper, heel stiffener	1	b2		cattle/calf		29457	5B
19360	heel stiffener, upper				cattle/calf		9348	D6a25-b1; late 12th/early 13th century

### Style 3--: Shoes with one-piece uppers joining with a side seam, sole type unknown

- 15426 Shoe, slip-on, left foot. Sole: toe and seat torn away, wide asymmetrical tread, slight waisting. Tunnel-stitched construction seam. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, grain/flesh vamp, quarter side torn away. Grain/flesh construction seam. Top edge has edge/flesh binding seam. Blind whip stitches indicate missing heel stiffener. An 85mm secondary cut extends from above the lateral joint towards the toe. L.265, W.99, T.2.7mm. Leather: calf. 22574 sf7752 (P4B) (Fig.1680)
- 15427 Shoe, slip-on, probably left foot, fragmentary. Sole: toe torn off, narrow tread, squared-off seat. Grain/flesh con-

struction seam with extant thonging, edge/flesh at heel-riser. Uppers: one-piece wrap around, medial vamp only survives, vertical medial closing seam, grain/flesh vamp, quarter side torn away. Grain/flesh construction seam. Top edge has edge/flesh binding seam. L.216, W.124, T. (of object) 4.8mm. Leather: calf. 1473 sf460 (P5B)

- 15428 Shoe, slip-on, probably left foot, fragmentary. Sole: pointed toe, wide tread, little or no waisting, seat torn away, separated triangular heel-riser. Grain/flesh construction seam with extant thonging, uppers fragments still attached. Uppers: one-piece wrap around, medial vamp and quarter only survive, vertical medial closing seam, grain/flesh vamp and quarter with extant thonging. Grain/flesh construction seam. Top edge has edge/flesh binding seam. L.165, W.122, T.1.4mm. Leather: calf. 27093 sf16287 (P5B)

Other Style 3--

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
9183	upper				calf		26181	3
7698	sole, upper				calf		22490	4B
7744	sole, upper	1					22574	4B
7747	sole, upper, heel stiffener	2			cattle/calf		22574	4B
12185	sole, upper				calf		28967	4B
12484	upper, sole	2			calf		28904	4B
13092	sole, upper	2			cattle/calf		34580	4B
13859	sole, upper, drawstring				cattle/calf		32817	4B
14031	sole, clump sole, heel stiffener, upper				cattle/calf		32891	4B
14165	upper				cattle/calf		35672	4B
16289	upper				calf		27093	4B
16305	upper						32105	4B
17651	upper, heel stiffener				cattle/calf		31478	4B
19508	upper				calf		35143	4B
16001	upper, heel stiffener				calf		22190	5A
16808	upper, sole	2			calf		20400	5A
18563	upper, heel stiffener				calf		22271	5A
665	upper, heel stiffener				cattle		2875	5B
9385	clump sole, sole, upper	2			cattle/calf		21510A	5B
10684	upper, heel stiffener				calf		21925	5B
16331	upper, heel stiffener				calf		14973	5B
16345	upper, heel stiffener				calf		14434	5B
17940	upper						5716	C6e2-6; 12th/ 13th century

**Style 4: One-piece ankle-shoes fastened with flaps and toggles**

**Style 4a1: One-piece ankle-shoes, fastened with a single flap and toggle**

15429 Ankle-shoe, almost complete, toggle-fastened, right foot. Sole: largely delaminated flesh surface only. Oval toe, wide slightly asymmetrical tread, tapering back to a seat with a triangular heel-riser, very slight waisting. Tunnel-stitched construction seam, edge/flesh at heel-riser. Lasting nail holes at tread and seat centres. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, grain/flesh closed seam. Lateral quarter extends to form a flap which passes over instep and is secured by means of a 'coffee bean' toggle (absent). This is held by four slits in the flap, with no evidence of having been knotted or stitched, and fastens to a loop low down on the medial quarter. Loop is rectangular, cut from leather sheet and tapers to a narrow thong which passes through a slit in the medial quarter. There is no evidence of its having been knotted or stitched in position. Grain/flesh construction seam. Back of quarter cut out for heel-riser, extensively torn in this area. Top edge and periphery of flap is finished with edge/flesh binding seam, except at its lower forward edge, where it is stitched to the throat/closing seam by means of a grain/flesh closed seam. Sole: L.273, W. (tread) 94, W. (waist) 71, W. (seat) 70, max. surviving uppers height 90mm. Size: Adult 2. Leather: calf. 28064 sf9950 (P3) (Fig.1635)

15430 Ankle-shoe, almost complete, toggle-fastened, right foot. Sole fragmentary, rounded oval toe, wide asymmetrical tread largely worn away, tapering back to a seat with a triangular heel-riser. Tunnel-stitched construction seam, edge/flesh at heel-riser. Lasting nail hole at tread. Uppers: one-piece wrap around, with medial quarter formed by separate insert, attached with edge/flesh butt seam. Medial grain/flesh vamp to grain/flesh quarter closing seam. Lateral quarter extends to form a flap which passes over instep and is secured by means of a 'coffee bean' toggle (absent). This is held by three slits in the flap, and fastens to a loop low down on the medial quarter. Loop is squared off, cut from leather sheet and tapers to a narrow thong which passes through at least three slits in the medial quarter. Bottom of quarter torn off in this area, so exact detail unclear. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge and periphery of flap is finished with edge/flesh binding seam, except at its lower forward edge, where it is stitched to the throat/closing seam by means of a grain/flesh closed seam. Top front of insert is plain cut where it underlay the flap. Top band of folded strip. Uppers: L.280, W.125, T.2.3mm. Leather: calf. 26902 sf10161 (P4B) (Fig.1636)

15431 Ankle-shoe, fragmentary, toggle-fastened, right foot. Sole: edge fragment only, tunnel-stitched construction seam. Uppers: one-piece wrap around, medial closing seam, grain/flesh quarter, vamp side torn off. Lateral quarter extends to form a flap which passes over instep and is secured by means of a 'coffee bean' toggle (absent). This was held by the terminal passing through two slits in the flap, then a tunnel stitch, after which it was passed be-



neath itself to lock it in position. Much of medial quarter torn off and absent, so detail of fastening unclear. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge and periphery of flap is finished with edge/flesh binding seam, except at its lower forward edge, where it is stitched to the throat/closing seam by means of a grain/flesh closed seam. Top edge of medial quarter is plain cut where it underlay the flap. Uppers: L.357, W.162, T.2.6mm. Leather: calf. 32240 sf12672 (P4B)

- 15432 Ankle-shoe, uppers only, fragmentary, toggle-fastened, left foot. One-piece wrap around, medial quarter torn away. Medial closing seam, grain/flesh vamp, quarter side torn away. Lateral quarter extends to form a flap which passes over instep and is secured by means of a 'coffee bean' toggle. This is held by passing the terminal through two slits in the flap, then back through a slit in itself and through the foremost flap slit again. Grain/flesh construction seam. Top edge and periphery of flap is finished with edge/flesh binding seam. L.260, W.155, T.3.3mm. Leather: calf. 28730 sf16611 (P4B)
- 15433 Shoe fragments (13) and scraps (30), not necessarily from same shoe. Five sole fragments, four of which are torn edges with edge/flesh construction seam, fifth is a separated heel-riser with linear impressed decoration and edge/flesh stitching. Uppers fragments (8): quarters fragment with plain cut top edge and edge/flesh closing seam, three slits close to top edge; fragment with bifurcated tie-loop terminals in situ, one passing through a slit in the other; flap from single flap and toggle ankle-

shoe with edge/flesh binding stitch around edge, part of toggle terminal in situ held in two slits; detached complete 'coffee bean' toggle, terminal originally secured by passing it through a slit in itself; others all torn including lasting margin fragments with grain/flesh construction seam. Largest uppers fragment: L.176, W.60, T.3.0mm. Leather: calf. 25380 sf16799 (P4B)

- 15434 Ankle-shoe, uppers only, toggle-fastened, right foot. One-piece wrap around, medial grain/flesh vamp to grain/flesh quarter closing seam. On quarter side of seam the edge is folded flesh-to-flesh and stitch holes pass through both thicknesses. Lateral quarter extends to form a flap which passes over instep and is secured by means of a 'coffee bean' toggle, absent except for tapering terminal, held by threading through five slits in the flap. Toggle originally fastened to a loop (absent, except for part of a terminal) low down on the medial quarter. Lower part of quarter torn off, but arrangement of securement slits indicates that loop was bifurcated. The upper of the two terminals then passed through two vertical slits, then a horizontal one before passing through a slit on the other terminal. Only a single lower terminal slit survives. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge and periphery of flap is finished with edge/flesh binding seam, except at its lower forward edge, where it is stitched to the throat/closing seam by means of a grain/flesh closed seam. Top edge of medial quarter is plain cut where it underlay the flap. Uppers: L.322, W.131, T.1.4mm. Leather: calf. 26953 sf9832 (P5A)

### Other Style 4a1

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
7735	upper				calf		22574	4B
7925	sole, upper, loop	2			calf		23648	4B
11055	sole, upper	2			calf		28728	4B
11061	upper, sole	2			calf		28492	4B
13107	upper				cattle		34434	4B
13227	upper, sole	1	a		calf		32589	4B
16381	uppers, toggle				calf		35483	4B
17788	upper	1			calf		34467	4B
9423	upper, loop				cattle/calf		26871	5A
16653	sole, upper	1			calf		24888	5B
11135	sole, upper	1	a	161	calf		28890	u/s

### Style 4a3: One-piece ankle-shoes, fastened with a double flap and toggle

- 15435 Ankle-shoe, toggle-fastened, right foot. Sole: oval toe, wide slightly asymmetrical tread, tapering back to a seat with triangular heel-riser, no waisting. Tunnel-stitched construction seam, edge/flesh at heel-riser. Some extant thonging. Rand, strip, folded flesh-to-flesh, inserted around heel-riser. Uppers: one-piece wrap around, vertical medial closing seam, grain/flesh vamp to grain/flesh quarter. Lateral quarter originally extended to form two narrow flaps which pass over the instep, but these have been cut away. These fastened with toggles to a double loop low down on the medial quarter. Loop is absent, only the three terminals survive. These each pass through three slits in the medial quarter. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge

plain cut. Reconstructed: L.230, W. (tread) 85, W. (seat) 57, T.1.5mm. Size: Adult 1. Leather: calf. 28032 sf9869 (P3)

- 15436 Ankle-shoe, toggle-fastened, right foot. Sole: toe and lateral side to waist only. Oval toe, wide slightly asymmetrical tread, tapering back with no waisting. Edge/flesh construction seam. Uppers: one-piece wrap around, vertical medial closing seam, grain/flesh vamp to grain/flesh quarter. Lateral quarter extends to form two narrow flaps which pass over the instep and are secured by means of twin 'coffee bean' toggles, one of which is present. These were secured to flaps by threading through three pairs of slits. Toggles fastened to two loops low down on the medial quarter. Loops each have bifurcated terminals, which are held by each passing through five slits in the medial quarter with the ends left free. There is no evidence of their having been knotted or stitched in posi-

tion. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge and periphery of flaps finished with edge/flesh binding seam, except for a short length of top edge adjacent to closing seam, which underlay flaps. Uppers: L.230, W.153, T.1.8mm. Leather: cattle/calf. 29528 sf13478 (P4B) (Fig.1641)

- 15437 Ankle-shoe, uppers only, toggle-fastened, left foot. One-piece wrap around uppers. Medial grain/flesh vamp to grain/flesh quarter closing seam. Lateral quarter extends to form a flap which passes over instep and is secured by means of a 'coffee bean' toggle (absent). A second flap behind this has been torn away. It is unclear how the toggles were attached to the flaps. Toggles fastened to a double loop low down on the medial quarter. Loop is torn so form unclear, but it was cut from leather sheet and the extant base is bifurcated, with the twin terminals each passing through three slits in the medial quarter. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge is finished with edge/flesh binding seam for a plain strip top band, 12mm wide, itself finished with edge/flesh binding stitch. Periphery of surviving flap has grain/flesh stitch holes, and these continue at base of missing second flap. L.222, W.120, T.1.5mm. Leather: calf. 35225 sf13669 (P4B)
- 15438 Ankle-shoe, toggle-fastened, right foot. Sole: oval toe, wide slightly asymmetrical tread, tapering back to a seat with triangular heel-riser, no waisting. Tunnel-stitched construction seam, edge/flesh at heel-riser, thong in situ. Uppers: one-piece wrap around, vertical medial closing seam, edge/flesh vamp to grain/flesh quarter. Lateral quarter extends to form two narrow flaps which pass over the instep and are secured by means of twin 'coffee bean' toggles, one of which is present. This is secured to the flap by passing the terminal through a slit, then forming a second, looser, toggle on the inside. Toggles fastened to a twin loop low down on the medial quarter. Loop has a bifurcated terminal, which is held in four slits in the medial quarter. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge and periphery of flaps finished with edge/flesh binding seam, except for a short

length of top edge adjacent to closing seam, which underlay flaps. Reconstructed: L.235, W.90, H.100mm. Leather: calf. 35137 sf13711 (P4B) (Fig.1640)

- 15439 Ankle-shoe, almost complete, toggle-fastened, left foot. Sole: round toe, wide slightly asymmetrical tread, tapering back to a seat with a triangular heel-riser, no waisting. Tunnel-stitched construction seam, edge/flesh at heel-riser. Lasting nail hole at heel-riser. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, edge/flesh vamp to grain/flesh quarter. Lateral quarter extends to form two narrow flaps which pass over the instep and are secured by means of twin 'coffee bean' toggles (absent). These fastened to a double loop low down on the medial quarter. Loop is absent, only the three attachment thongs survive, central one having been split to form the two loops. These each pass through three slits in the medial quarter and the ends are left free. There is no evidence of their having been knotted or stitched in position. Grain/flesh construction seam. Back of quarter cut out for heel-riser. Top edge and periphery of flaps finished with edge/flesh binding seam, except for a short length of top edge adjacent to closing seam. Part of top band survives. Reconstructed sole: L.240, W. (tread) 82, W. (seat) 67, max. uppers height 92mm. Size: Adult 3. Leather: cattle/calf. 21510 sf9204 (P5B) (Fig.1639)
- 15440 Ankle-shoe, fragmentary uppers only, toggle-fastened, right foot. Uppers: two quarters fragments show sole with triangular heel-riser. One-piece wrap around, medial closing seam angled forward from lasting margin, grain/flesh vamp to grain/flesh quarter. Small rectangular slot cut out of medial quarter behind closing seam. Same quarter has three well-spaced, almost square holes adjacent to cut out for heel-riser, presumably for tie loops. Two separate narrow flaps which originally passed over the instep and were secured by means of twin 'coffee bean' toggles, also separated. These were secured to flaps by bifurcated tails which were stitched grain/flesh toggle to edge/flesh flap, threading through three pairs of slits. Largest uppers: L.143, H.82, T.2.1mm. Leather: calf. 29457 sf10816 (P5B)

### Other Style 4a3

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
13507	sole, upper	1			calf		32675	3
9119	sole, upper	2	a				18602	4B
10304	sole, upper, loop	1	a		cattle/calf		29193	4B
10370	upper, sole	2	a	210	cattle/calf	impress	27503	4B
11109	heel-riser, upper				calf		28674	4B
11226	upper, sole	2	a	200	calf		28730	4B
12490	upper				calf		32105	4B
17607	upper				calf		27852	4B
17689	uppers				calf		32362	4B
19499	upper				calf		32105	4B
7172	upper				calf		22077	5A
18518	heel-riser, upper				calf		22090	5A
16322	upper				calf		14666	5B
18370	heel-riser, upper, drawstring				cattle		29262	5B

### Style 4a4: One-piece ankle-shoes fastening with top band flaps and toggles

- 15441 Ankle-shoe, almost complete, toggle-fastened, left foot. Sole: oval toe, wide asymmetrical tread, tapering back to seat with triangular heel-riser, no waisting. Heel-riser has

impressed hatched decoration. Lasting nail hole at tread. Edge/flesh construction seam, still thonged to uppers. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, grain/flesh closed seam. Behind closing seam, top edge has two narrow triangular flaps projecting from it. A wide top band was

stitched flesh side out to the top edge and this continued around the flaps to form extensions or latches. The top band was attached with an edge/flesh uppers to grain/flesh top band butt seam. The latches were formed by being folded back on themselves at their tapered midpoints and being stitched together with a grain/flesh closed seam. 'Coffee bean' toggles (absent) were originally grain/flesh stitched into this seam by their bifurcated free ends. Toggles would have been secured to two loops on the medial quarter. Loops were each cut out of a single piece of leather, with bifurcated terminals, each of which was threaded through a set of three slits low down on the quarter. Construction seam is grain/flesh. Back of quarter cut out for heel-riser. A large, irregular piece of leather has been cut out of the lateral quarter, presumably for a secondary use. L.250, W.115, H.75mm. Size: Child 11. Leather: calf. 34789 sf13214 (P3)

- 15442 Ankle-shoe, uppers almost complete, toggle-fastened, left foot. One-piece wrap around, vertical medial closing seam, grain/flesh closed seam. Behind closing seam, top edge has two short triangular stubs. Two top band latchet flaps (absent) were originally attached to these stubs with a grain/flesh closed seam. Toggles and loops absent, but two pairs of slits low down on medial quarter indicate separate, bifurcated loops secured by passing each tail through a separate single slit. Construction seam is grain/flesh. Back of quarter cut out for heel-riser. Also three sole edge fragments of tunnel-stitched construction, including a round seat not from the same shoe. Largest uppers fragment: L.235, W.130, T.2.8mm. Leather: calf. 26957 sf9462 (P4B) (Fig.1643)
- 15443 Ankle-shoe, toggle-fastened, left foot. Three sole edge fragments only, edge/flesh construction seam. One-piece wrap around, medial closing seam, angled forward from lasting margin, grain/flesh closed seam. Behind closing seam, top edge has two narrow triangular flaps projecting from it. A wide top band was stitched flesh side out to the top edge and this continued around the flaps to form extensions or latches. Seam is edge/flesh uppers to grain/flesh top band/latches binding seam. The latches were formed by their being folded back on themselves at their tapered midpoints and being stitched together with a grain/flesh closed seam. 'Coffee bean' toggles were grain/flesh stitched into this seam by their bifurcated free ends. Top band was itself finished with an edge/flesh binding stitch. Toggles were fastened to twin loops on the medial quarter. Each was cut from a single piece of leather and bifurcated, each tail threaded through its own pair of slits low down on the quarter. Construction seam is grain/flesh. Back of quarter cut out for heel-riser. Uppers: L.385, W.109, T.2.0mm. Leather: calf. 34582 sf13132 (P4B)
- 15444 Ankle-shoe, almost complete, toggle-fastened, left foot. Sole: delaminated flesh surface scraps only. Edge/flesh construction seam. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, grain/flesh closed seam. Top of lateral quarter extends slightly to form a very short flap stub. A fragment of plain (unfolded strip) top band seems to have been grain/flesh closed seamed to this. It forms the actual flap by being folded back on itself at its tapered midpoint and being stitched to itself edge to edge with a grain/flesh closed seam. The fold would originally have had a 'coffee bean' toggle attached to it, which would have been secured to a loop on the medial quarter, now absent. The top of the uppers is torn behind the latchet stub, so interpretation is difficult, but a second, similar, possibly associated, piece of top band may have formed a second flap here. It would have been edge/flesh (uppers) to grain/flesh (top band) whip stitched in place. Periphery of both top bands is finished with an edge/flesh binding seam. Medial quarter torn, so only a single loop slit survives. Grain/flesh construction seam. Back of quarter cut out for heel-riser,

extensively torn in this area. Uppers: L.203, W.105, T.2, max. surviving uppers height 52mm. Leather: all calf. 35065 sf13437 (P4B) (Fig.1645)

- 15445 Ankle-shoe, toggle-fastened, right foot. Sole: waist and heel-riser fragments only, edge/flesh construction seam. One-piece wrap around uppers, medial closing seam, angled forward from lasting margin, grain/flesh closed seam. Behind closing seam, top edge has two triangular flaps projecting from it. A wide top band was stitched flesh side out to the top and this continued around the flaps to form extensions or latches. The top band was attached with an edge/flesh uppers to grain/flesh top band binding seam, except at the latches, where it changes to edge/flesh butt uppers to grain/flesh latches seam. The latches were formed by being folded back on themselves at their tapered midpoints and being stitched together with a grain/flesh closed seam. 'Coffee bean' toggles (absent) were grain/flesh stitched into this seam by their bifurcated free ends. Top band was itself finished with an edge/grain binding stitch. Toggles were fastened to a double loop on the medial quarter. Loop was cut out of a single piece of leather, split into four tails, each of which was threaded through its own series of five slits low down on the quarter. Only the last slit in each case pierces the full thickness of the leather, the others are, in effect, tunnel stitches. Construction seam is grain/flesh. Back of quarter cut out for heel-riser and has a tunnel stitch at its apex, possibly for reinforcement or to finish off. Uppers: L.375, H.82, T.2.0mm. Leather: calf. 29736 sf16608 (P4B)
- 15446 Ankle-shoe, toggle-fastened, left foot. Sole: edge fragments only, edge/flesh construction seam. Heel-riser has impressed decoration and a nail hole. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, grain/flesh closed seam. Behind closing seam top edge had two triangular flaps projecting from it, rearmost now torn off. A wide top band was stitched flesh side out to the top and this continued around the flaps to form extensions or latches. The top band was attached with an edge/flesh uppers to grain/flesh top band binding seam, except at the latches, where it changes to edge/flesh butt uppers to grain/flesh latches. The latches were formed by being folded back on themselves at their tapered midpoints and being stitched together with a grain/flesh closed seam. 'Coffee bean' toggles were grain/flesh stitched into this seam by their bifurcated free ends. Top band was itself finished with an edge/flesh binding stitch. Toggles were fastened to a double loop on the medial quarter. Loop was cut out of a single piece of leather, split into six tails, each of which was threaded through its own series of three slits low down on the quarter. Construction seam is grain/flesh. Back of quarter cut out for heel-riser. Uppers: L.365, W.130, T.1.7mm. Leather: calf. 26889 sf9253 (P5A)
- 15447 Ankle-shoe, almost complete, toggle-fastened, left foot. Sole: oval toe, wide asymmetrical tread, tapering back to seat with triangular heel-riser, no waisting. Two lasting nail holes at tread centre and heel-riser. Edge/flesh construction seam. Clumped at toe. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, grain/flesh closed seam. Behind closing seam, top edge has two short triangular stubs, the foremost one with a large perforation of unknown function at its base, possibly secondary. Two flaps were originally attached to these stubs with an edge/flesh upper stub to grain/flesh latchet seam. These were formed by being folded back on themselves at their tapered midpoints and being stitched to themselves edge-to-edge with a grain/flesh closed seam. A 'coffee bean' toggle is present, with the free end split. One of these was originally stitched into the seam at the fold of each latchet. These would have been secured to a double loop on the medial quarter, one loop of which survives and the long terminals are also

present. Both loops were cut out of a single piece of leather, the long free end forming five terminals, each of which was threaded through a set of three slits (total of 15) in the quarter, with no evidence for having been knotted or stitched into place. A plain piece of top band completed the top edge, stitched in with an edge/flesh binding seam. This and the latches were flesh outermost. Construction seam is grain/flesh. Back of quarter cut out for heel-riser. Sole: L.240, W. (tread) 82, W. (seat) 60, max. surviving uppers height 98mm. Size: Adult 3. Leather: all cattle/calf. 27495 sf11013 (P5A) (Fig.1644)

15448 Ankle-shoe, toggle-fastened, left foot. Sole: rear of tread, waist and heel-riser fragments only, tunnel-stitched construction seam, edge/flesh around heel-riser. Heel-riser has irregular linear impressed decoration. Uppers: one-piece wrap around, medial quarter formed from separate insert, grain/flesh closed seamed to one side of heel-riser and opposing quarter at top. Medial closing seam, angled forward from lasting margin, grain/flesh

closed seam. Behind closing seam, top edge has two short triangular stubs projecting from it. A wide top band was stitched flesh side out to the top edge and this continued around the flaps to form extensions or latches. The top band was attached with an edge/flesh uppers to grain/flesh top band seam, except at the latches, where it changes to edge/flesh butt uppers to grain/flesh latches. The latches were formed by being folded back on themselves at their tapered midpoints and being stitched together with a grain/flesh closed seam. 'Coffee bean' toggles were grain/flesh stitched into this seam by their bifurcated free ends. Top band was itself finished with an edge/flesh binding stitch. Toggles were fastened to twin loops on the medial quarter. Each was cut from a single piece of leather, and bifurcated, each tail threaded through its own series of three slits low down on the quarter, the ends apparently left free. Construction seam is grain/flesh. Back of quarter cut out for heel-riser. Uppers: L.360, H.81, T.2.4mm. Leather: calf. 14595 sf7123 (P5B)

### Other Style 4a4

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
17698	sole, upper, top band, insert	1			cattle/calf		32465	4B

### Style 4a-: One-piece ankle-shoes with flap and toggle-fastening, and a sole with a heel extension, not further classifiable

15449 Ankle-shoe, forepart only, toggle-fastened, left foot. Sole: narrow rounded toe, wide asymmetrical tread. Much of toe and tread area worn through. Still attached to upper by thonged tunnel stitch to grain/flesh construction seam. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, grain/flesh vamp, edge/flesh quarter, torn off behind this. Originally extended to form fastening flap, but this is now torn off. L.146, W.92, T.1.6mm. Leather: calf. 23881 sf8434 (P4B)

15450 Ankle-shoe, toggle-fastened, right foot. Sole edge and attached triangular heel-riser only, tunnel-stitched construction seam, heel-riser has nail hole. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, edge/flesh vamp to grain/flesh quarters seam. Behind closing seam, top edge has been cut down, so unclear whether flaps or top band latches. Remaining top edge has edge/flesh binding seam except short length of top edge adjacent to closing seam which underlay flaps. Toggles are absent, but were originally fas-

tened to twin loops on the medial quarter. Each was cut from a single piece of leather, and bifurcated, each tail threaded through its own series of five slits low down on the quarter. The ends were left free. Construction seam is grain/flesh. Rand of folded strip around heel. Back of quarter cut out for heel-riser. Uppers: L.417, W.163, T.1.5mm. Leather: calf. 32589 sf13245 (P4B)

15451 Ankle-shoe, toggle-fastened, right foot. Sole: edge fragments only, grain/flesh construction seam. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, vamp edge torn off, grain/flesh quarter. Vamp and front top edge badly torn, so unclear whether flaps or latches. Toggles (absent) were fastened to a double loop on the medial quarter. Loop was cut from a single piece of leather, split into four tails, each of which was threaded through its own series of three slits low down on the quarter. The middle two were joined together on the inside by the tail of one passing through a slit in the tail of the other. Top edge finished with edge/flesh binding seam, except for a short length of top edge adjacent to closing seam which underlay flaps/latches. Back of quarter cut out for heel-riser. Uppers: L.313, W.107, T.1.8mm. Leather: calf. 28043 sf9813 (P5A)

### Other Style 4a-

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
16756	uppers, loop				calf		26907	3
17684	upper				calf		32296	3
17797	upper				cattle/calf		34563	3
8956	sole, upper, loop	1			calf		21458	4B
10039	insert, loop				cattle/calf		27560	4B



Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
11105	upper				calf		29528	4B
12272	upper				calf		28904	4B
16705	upper	2			calf		25341	4B
17260	uppers, sole				calf		28728	4B
17578	upper						27509	4B
17585	sole, heel-riser, top band	2			calf	impress	27560	4B
17628	heel-riser, top band				calf		31143	4B
17633	upper				calf		31190	4B
17649	top band				calf		31476	4B
17730	top band				calf		32721	4B
17762	upper				cattle/calf		34343	4B
18387	sole, upper, heel-riser	2			cattle/calf		29528	4B
18398	uppers, top band				cattle/calf		29736	4B
18588	upper, loop				calf		22415	4B
19507	upper				calf		35086	4B
16342	upper, sole, loop	1			calf		14874	5A
17589	upper	2			calf		27679	5A
10601	upper				calf		21925	5B
18091	upper				calf		21746	5B
18388	uppers, loop				cattle/calf		29572	5B
13063	sole, upper	1	a		calf	impress	32441	u/s

### Style 4--: One-piece ankle-shoes with flap- and toggle-fastening, not further classifiable

15452 Ankle-shoe, uppers only, toggle-fastened, right foot. Medial quarter torn off and absent. One-piece wrap around. Medial closing seam, grain/flesh vamp, quarters edge

missing. Lateral quarter extends to form a flap which passes over instep and is secured by means of a 'coffee bean' toggle, only the tail of which survives. This is held by threading through three slits in the flap, with a second toggle formed on the inside to secure it. Grain/flesh construction seam. Top edge and periphery of flap is finished with edge/flesh binding seam. L.202, W. 100, T.1.7mm. Leather: calf. 22590 sf18606 (P4B)

### Other Style 4--

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
16756	upper, loop				calf		26907	3
17684	upper				calf		32296	3
17260	upper, sole				calf		28728	4B
17585	sole, heel-riser, top band	2			calf		27560	4B
17628	heel-riser, top band				calf		31143	4B
17633	upper				calf		31190	4B
17649	top band				calf		31476	4B
17730	top band				calf		32721	4B
18398	upper, top band				cattle/calf		29736	4B
16342	upper, sole, loop	1			calf		14874	5A
18091	upper				calf		21746	5B
18388	upper, loop				cattle/calf		29572	5B

### Another Anglo-Scandinavian style

15453 Fragmentary remains of shoe upper (five fragments and three pieces of scrap). The largest has remains of a grain/flesh lasting margin present with a deep cut ending in an oval cut-out lying at right angles to it. Each side of the cut has a fine edge/flesh seam suggesting a deep throat. A line of fine tunnel stitch holes from decorative stitching runs towards the toe. Largest: L.160, W.61, T.1.1mm. Leather: calf. 19743 sf16885 (P3) (Fig.1647)

### Style 6: One-piece ankle-shoe, fastening at the front with integral laces

15454 Ankle-shoe, almost complete, front-laced, left foot. Sole: tread completely worn through, forepart and remainder separated. Round toe, very wide asymmetrical tread, very slight waist, wide round seat. Edge/flesh construction seam. Uppers: one-piece wrap around, vertical medial closing seam, edge/flesh vamp wing to grain/flesh quar-



ter. Top edge plain cut, forward edge on each side projects forward to form two integral laces which would tie at front. Beneath these, front of quarters curve round to vamp throat, forming a wide cut away on each side. Vamp throat has a secondary longitudinal cut, bordered by a shorter one to its medial side and another in the body of the vamp to its lateral side. Construction seam is edge/flesh. Uppers: L.345, W.205, max. surviving uppers height 80mm. Leather: calf. 17626 sf7260 (C6d3; mid 12th century) (P6) (Fig.1648)

- 15455 Ankle-shoe, almost complete, front-laced, left foot. Sole: edge fragments only, edge/flesh construction seam. Uppers: one-piece wrap around, vamp mostly torn away, vertical medial closing seam, edge/flesh butt seam. Top edge plain cut, forward edge on each side projects forward to form two integral laces which would tie at front. Beneath these, front of quarters curve round to vamp throat, forming a wide cut away on each side. Construction seam is grain/flesh. Largest fragment: L.220, W.122, T.2.1mm. Leather: unidentified. 5238 sf17908 (C6e5/D6a20; late 12th/early 13th century) (P6)

## Style 6 (possible translation)

- 15456 Ankle-shoe upper, left foot. Uppers: one-piece wrap around, pointed scorpion tail toe, medial edge/flesh butt closing seam, set well back, angled forward from lasting margin. Rounded throat, rising to horizontal, plain cut top edge on both sides; on medial side this seems to have been made up with a now absent insert, edge/flesh butt seamed to the quarter. Single pair of drawstring slits on lateral quarter. Edge/flesh construction seam. A gape on the medial quarter has been repaired by a very rough overstitch using a leather thong. Also nine torn scraps and fragments, not certainly associated. L.371, W.128, T.1.8mm. Leather: sheep/goat. 1570 sf315 (D6y1; late 12th–13th century)

## Style 7: One-piece ankle-shoes and boots with a front flap

### Style 7a1: One-piece ankle-shoes and boots with integral front flaps

- 15457 Ankle-shoe, uppers only, left foot. Almost complete, one-piece wrap around, grain/flesh construction seam. Vertical medial closing seam, edge/flesh vamp, grain/flesh quarter. Lateral quarter extends forward to form a short integral rectangular flap, though there is no horizontal throat cut. On the medial side, the rectangular integral flap projects forward from the front of the quarter and was stitched into the throat with an edge/flesh butt seam. The fore edge is torn off, but an edge/flesh butt seam on the front of the opposing flap indicates that the two were stitched together to form a closed boot. Top edge has edge/flesh binding seam. Whole shoe has been decorated by lightly scraping away the grain surface in hatched, linear and wavy patterns. L.271, W.103, T.1.2mm. Leather: sheep/goat. 5415 sf1661 (C6c6, D6a7; mid 12th century) (P6) (Fig.1678)
- 15458 Boot, complete, front opening, drawstring-fastened, left foot. Sole: oval toe, narrow slightly asymmetrical tread, tapering back to a round seat, no waisting. Edge/flesh construction seam. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, hybrid edge/flesh and grain/flesh vamp to grain/flesh quarter. Quarters extend forward to form two integral flaps, stitched into throat, grain/flesh quarter to edge/

flesh throat. Flaps probably overlapped, but medial flap partially torn. Top edge plain cut. Grain/flesh construction seam. A drawstring passes through two slits just above the closing seam on medial side and through equivalent slits on lateral side. Reconstructed: L.148, W. (tread) 58, W. (seat) 52, T.0.7, max. quarters height 91mm. Size: Child 5. Leather: calf. 11641 sf4422 (B6a7; early 12th century) (P6)

- 15459 Boot, complete, front opening, drawstring-fastened, left foot. Sole: oval toe, narrow slightly asymmetrical tread, tapering back to a round seat, no waisting. Edge/flesh construction seam. Uppers: one-piece wrap around, medial closing seam, angled back from lasting margin, grain/flesh closed seam. Quarters extend forward to form two integral flaps which meet at centre front. On medial side the flap is grain/flesh closed seamed into the throat. Front of both flaps finished with edge/flesh butt seam. Top edge has edge/flesh binding seam. Grain/flesh construction seam. A drawstring passes through two slits low down toward the rear of each quarter. Sub-triangular heel stiffener, lasted in at base, sides blind whip stitched into quarter. Vamp stripe formed from a single row of tunnel stitching, thread absent. Reconstructed: L.246, W. (tread) 72, W. (seat) 71, T.1.7, max. quarters height 130mm. Size: Adult 2. Leather: calf. 11121 sf4650 (B6a6; 11th/12th century) (P6) (Fig.1649)
- 15460 Boot, fragmentary, right foot. Sole: waist and seat area, worn through at tread and seat. Broad across waist, with very slight waisting. Edge/flesh construction seam. Very fine tunnel stitching for associated clump sole. Uppers: one-piece wrap around, medial closing seam, angled forward from lasting margin, edge/flesh butt seam. Quarters extend forward to form two integral flaps which meet at centre front and are stitched together with edge/flesh binding seam. Bottom of flaps sewn in with similar seam. Top edge has edge/flesh binding seam for extant top band of folded strip, outer face with two rows of embroidery between incised lines, inside face has fine tunnel stitches. A small rough slit below lateral flap has been stitched together with edge/flesh stitches. Edge/flesh construction seam. L.190, W.115, T.2.1mm. Leather: calf, top band possibly sheep. 17599 sf7259 (C6c6; mid 12th century) (P6) (Fig.1650)
- 15461 Boot, fragmentary, drawstring-fastened, left foot. Uppers: one-piece wrap around, toe and much of lateral quarter torn away. Medial closing seam, angled back from lasting margin, edge/flesh vamp, quarters side torn away. Quarters originally extended forward at top to form two integral flaps, both now torn off. These were edge/flesh seamed into throat. Edge/flesh construction seam. There is a single drawstring slit low down on medial quarter. Blind whip stitches at base of medial quarter indicate a low, wide heel stiffener. Vamp stripe formed from three rows of tunnel stitching, thread absent. Top edge has edge/flesh binding seam. Also top band fragment, folded lengthwise flesh to flesh, single row of embroidery between incised lines, fine tunnel stitches on inner face; clump sole fragment, cut down along both sides. Largest uppers: L.232, W.95, T.2.8. Leather: sheep/goat? 5975 sf17955 (C6c6; mid 12th century) (P6)
- 15462 Shoe, uppers only, drawstring-fastened, right foot. One-piece wrap around, medial closing seam, angled forward from lasting margin, edge/flesh butt seam. Quarters extend forward to form two small integral flaps, edge/flesh butt stitched into throat and probably edge/flesh butt stitched together at front. Top edge has edge/flesh butt seam along lateral side, plain cut on medial side, separate flap has edge/flesh binding stitch. Grain/flesh construction seam. There is a pair of drawstring slits in the lateral quarter. L.227, W.130, T.1.9mm. Leather: cattle/calf. 5415 sf19322 (C6c6, D6a7; mid 12th century) (P6)

## Style 7b1: One-piece ankle-shoes and boots with one front flap integral, the other a separate insert, stitched to the quarter

- 15463 Ankle-shoe, front opening, left foot. Sole: rear of seat only, worn through and tunnel stitched for clump sole. Edge/flesh construction seam. Uppers: one-piece wrap around, grain/flesh construction seam, vertical medial closing seam, edge/flesh vamp to grain/flesh quarter. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter had a separate flap/insert, seamed to front of quarter as closing seam. Flaps stitched into the vamp throat at the bottom with an edge/flesh flaps to grain/flesh throat seam. Flaps were probably joined at front with an edge/flesh butt seam. Blind whip stitches at back indicate a low, semicircular heel stiffener. Top edge rises to a high convex back and is finished with edge/flesh binding seam. L.319, W.166, T.2.3mm. Leather: sheep/goat. 9450 sf18789 (P4B)
- 15464 Ankle-shoe, uppers only, left foot. One-piece wrap around, edge/flesh construction seam, vertical medial edge/flesh butt closing seam. Lateral quarter extends forward to form a short integral rectangular flap. Medial quarter had a separate flap/insert (absent), edge/flesh butt seamed to its fore. Front and base of surviving flap edge/flesh butt seamed, as is throat, suggesting flaps were stitched together and stitched in at throat. Top edge has edge/flesh binding seam. Blind whip stitches indicate presence of heel stiffener. Sole: L.301, W.131, T.2.2mm. Leather: sheep/goat. 2587 sf259 (B6w2; early 15th century) (P6)
- 15465 Ankle-shoe, complete, left foot. Sole fragments comprising asymmetrical tread and waist (slight waisting), toe and seat torn away. Edge/flesh construction seam. Uppers: one-piece wrap around, edge/flesh construction seam, medial edge/flesh butt closing seam, angled forward from lasting margin. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter is cut at an angle back to the top edge and originally had a separate flap/insert, now missing, edge/flesh butt seamed to this. Flaps met at the front and may originally have been edge/flesh butt seamed together. Both flaps were stitched into the vamp throat at the bottom with an edge/flesh butt seam. Top band is a strip folded lengthways flesh to flesh and edge/flesh (upper) to grain/flesh (top band) whip stitched to top edge. Outside face of top band has two incisions running full length, facilitating a row of tunnel-stitched embroidery with surviving thread in form of plait stitch. Inner face has fine tunnel stitches. Blind whip stitches for heel stiffener. Uppers: L.370, W.158, T.3.6mm. Leather: sheep/goat. 9428 sf1852 (D6a17-23; late 12th-13th century) (P6)
- 15466 Ankle-shoe, almost complete, front opening, left foot. Sole: pointed toe, wide almost symmetrical tread, slight waisting, wide, separate seat attached with grain/flesh closed seam. Edge/flesh construction seam. Worn through at great toe. Uppers: one-piece wrap around, grain/flesh construction seam, vertical medial closing seam, joining vamp to insert, which makes up medial quarter, with edge/flesh butt seam. Far side of insert attached to lateral quarter with grain/flesh insert to edge/flesh quarter seam. Lateral quarter originally extended forward to form an integral rectangular flap, now torn off. Medial quarter has a separate flap/insert, edge/flesh butt seamed to front of insert. Flap stitched into the vamp throat at the bottom with an edge/flesh throat to grain/flesh flap seam. Front of flap plain cut. Vamp throat is badly torn, but has a short horizontal slit close to midline and a similar slash is carried on the flap above it. Flap also has two vertical drawstring slits at bottom rear. Vamp has two long secondary slashes above toes, one each side of midline. Top edge appears to be cut down all round. Sole: L.253, W. (tread) 95, W. (waist) 71, W. (seat) 71, T.4.0mm. Size: Adult 2. Leather: calf. 11112 sf2405 (B6a6; 11th/12th century) (P6)
- 15467 Ankle-shoe, almost complete, left foot. Sole: oval toe, wide almost symmetrical tread, medium waisting, wide seat. Edge/flesh construction seam. Tread and seat have been clumped. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, vertical from lasting margin to near top edge, then angled backward to top edge. This angle has edge/flesh butt seam for insert. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter had a separate flap/insert (absent), edge/flesh butt seamed to its fore. Edge/flesh butt seams on front and base of lateral flap suggest flaps were stitched together and were stitched into throat. Top edge has edge/flesh binding seam. Blind whip stitches indicate presence of heel stiffener. Sole: L.254, W. (tread) 94.3, W. (waist) 62, W. (seat) 80, T.5.0mm. Size: Adult 6. Leather: uppers sheep/goat. 11416 sf2848 (B6c2-6; 12th-early 13th century) (P6)
- 15468 Ankle-shoe, complete, front opening, right foot. Sole: oval toe, wide almost symmetrical tread, slight waisting, wide seat. Edge/flesh construction seam, includes a folded rand of which several fragments present. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, vertical from lasting margin to front insert, then angled backward to top edge. A c.90mm cut extends from the closing seam, parallel with the lasting margin, its edges edge/flesh butt seamed together. Just above this is a D-shaped hole, 21mm by 16mm, with an edge/flesh butt seam around its periphery. Sf17352, a patch, fits this hole and has an appropriate seam. Lateral quarter extends forward to form an integral rectangular flap, originally made higher with a small triangular insert, now missing. Medial quarter has a separate flap/insert, edge/flesh butt seamed to its fore. Flaps meet at the front and may originally have been edge/flesh butt seamed together, though medial flap now torn along this edge. Both flaps are stitched into the vamp throat at the bottom, lateral flap with an edge/flesh butt seam and medial with a partial edge/flesh butt seam and a partial grain/flesh to edge/flesh seam. Vamp throat has a short central slash, possibly secondary. Top band is a strip folded lengthways flesh to flesh and edge/flesh whip stitched to top edge. Outside face of top band has three incisions running full length facilitating two rows of tunnel-stitched embroidery, thread now absent. No evidence for a heel stiffener. Sole: L.260, W. (tread) 103, W. (waist) 74, W. (seat) 82, T.4.2, max. quarters height 118mm. Size: Adult 4½. Leather: uppers sheep/goat. 11687 sf2861 (B6g4; early 15th century) (P6) (Fig.1651)
- 15469 Ankle-shoe, almost complete, right foot. Sole: oval toe, wide almost symmetrical tread, medium waisting, wide seat. Edge/flesh construction seam. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, vertical from lasting margin to front insert, then angled backward to top edge. Lateral quarter extends forward to form an integral rectangular flap, made higher with a long, narrow triangular insert, attached with an edge/flesh whip stitch. Medial quarter has a separate flap/insert, edge/flesh butt seamed to its fore. Flaps meet at the front and were probably edge/flesh butt seamed together. Medial flap is stitched into vamp throat at the bottom, edge/flesh throat to grain/flesh flap. A horizontal cut runs back from middle of closing seam, right around back of shoe. It has been stitched together with an edge/flesh butt seam. Top band is a strip folded lengthways flesh to flesh and edge/flesh whip stitched to top edge. Outside face of top band has two incisions running full length facilitating a row of tunnel-stitched embroidery, thread now absent. Sole: L.207, W. (tread) 88, W. (waist) 64, T.4.0mm. Size: Child 12. Leather: uppers sheep/goat. 5981 sf2935 (C6c3, D6a5; late 11th/early 12th century) (P6)

- 15470 Ankle-shoe, almost complete, front opening, right foot. Sole: oval toe, wide almost symmetrical tread, slight waisting, wide seat. Edge/flesh construction seam. Uppers: one-piece wrap around, grain/flesh construction seam, vertical medial edge/flesh butt closing seam. Lateral quarter extends forward to form a short integral rectangular flap. Medial quarter has a separate flap/insert, edge/flesh butt seamed to its fore. Front of flaps plain cut indicating that they were not stitched together, but bases of both were stitched into vamp throat, edge/flesh throat, grain/flesh flaps. Top edge plain cut. Sole: L.240, W. (tread) 105, W. (waist) 85, W. (seat) 80, T.4.2mm. Size: Adult 2½. Leather: uppers calf. 11713 sf3940 (B6c7; early 13th century) (P6)
- 15471 Ankle-shoe, uppers only, right foot. One-piece wrap around, vamp forepart torn away. Grain/flesh construction seam, vertical medial closing seam, grain/flesh quarter, vamp side absent. Lateral quarter extends forward to form a short integral flap. Medial quarter originally had a separate flap/insert (absent), edge/flesh butt seamed to its fore. Front and base of surviving flap is grain/flesh seamed, as is throat, suggesting flaps were stitched together and stitched in at throat. Top edge has edge/flesh binding seam. Tiny remnant of tunnel-stitched vamp stripe. Wide heel stiffener lasted in at base, blind whip stitched at sides. L.195, W.97, T.1.4mm. Leather: calf. 9323 sf19357 (D6d3; late 13th century) (P6)

- 15472 Ankle-shoe, uppers only, left foot. One-piece wrap around, vamp forepart torn away, but partially present. Grain/flesh construction seam, vertical medial closing seam, edge/flesh butt seam. Lateral quarter extends forward to form a short integral flap. Medial quarter originally had a separate flap/insert (absent), edge/flesh butt seamed to its fore. Front and base of surviving flap is grain/flesh seamed, as is throat, suggesting flaps were stitched together and stitched in at throat. Top edge has edge/flesh binding seam. Blind whip stitches indicate semicircular heel stiffener. Vamp stripe of four incised lines for three rows of embroidery (absent). L.250, H.88, T.2.3mm. Leather: sheep/goat? 9323 sf19359 (D6d3; late 13th century) (P6) (Fig.1674)
- 15473 Ankle-shoe, uppers only, left foot. Uppers: one-piece wrap around, edge/flesh construction seam, vertical medial edge/flesh butt closing seam. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter has a separate flap/insert, edge/flesh butt seamed to its fore. Edge/flesh butt seams on front and base of flaps indicate that they were stitched together and were stitched into throat. Top edge has edge/flesh binding seam except at lateral flap and behind closing seam, where it changes to edge/flesh butt seam. Top of separate flap is edge/flesh binding seamed. Blind whip stitches indicate presence of wide, low, heel stiffener. L.410, W.150, T.2.4mm. Leather: sheep/goat (probably goat). 11818 sf19407 (B6c2-6; 12th-early 13th century) (P6)

### Other Style 7b1

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
1220	sole, upper, rand	2	d1	160	cattle		5245	D6d3; late 13th century
2469	sole, upper, top band	3	d2	215	sheep/goat		12838	C6e1; 12th/13th century
2922	sole, upper, insert	2	c2	200	sheep/goat		11763	B6g4; early 15th century
3240	sole, upper, insert, heel stiffener, rand	2	c1		cattle/calf		13244	B6c2-6; 12th-early 13th century
4213	sole, upper, insert, top band, heel stiffener	2			calf		16603	D6a3-7; late 11th century-11th/12th century
19336	sole, upper, insert, heel stiffener, clump sole, top band	2	c2		sheep/goat	stitch	6257	C6c4; early 12th century
19337	upper, top band, heel stiffener				sheep/goat		6257	C6c4; early 12th century
19340	upper				sheep/goat		6257	C6c4; early 12th century
19342	sole, upper, insert	2			sheep/goat		6257	C6c4; early 12th century
19343	upper				sheep/goat		6257	C6c4; early 12th century
19344	upper				sheep/goat		6257	C6c4; early 12th century
19362	upper, insert	3			sheep/goat		9428	D6a17-23; late 12th-13th century
19427	upper, top band	3			sheep/goat		13363	B6c2-6; 12th-early 13th century

### Style 7a1 or 7b1

- 15474 Ankle-shoe, uppers only, front opening, left foot. One-piece wrap around, grain/flesh construction seam, medial closing seam, but both vamp and quarter edges cut down, so type indeterminate. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter may have had an integral or separate flap. Edge/flesh butt seam on front and base of lateral flap suggests flaps were stitched together and were stitched into throat. Top edge has edge/flesh binding seam. L.286, W.223, T.2.0mm. Leather: calf. 16608 sf19454 (D6a10; early 12th century) (P6)

### Style 7c1: One-piece ankle-shoes and boots with one front flap integral, the other a separate insert, stitched to a projection on top of the vamp wing

- 15475 Ankle-shoe, front opening, drawstring-fastened, right foot. Sole: two edge fragments only, edge/flesh construction seam, one has tunnel stitches for clump sole. Clump sole is of wide tapering strip form, thin leather, peripheral tunnel stitches. Uppers: complete, one-piece wrap around, grain/flesh construction seam, larger, crude stitch



- holes at medial joint for repair of gape. Vertical medial edge/flesh butt closing seam, set well back. Lateral quarter extends forward to form a short integral rectangular flap. On the medial side, the separate flap/insert is edge/flesh butt stitched to vertical projection on the vamp wing. Bottoms of flaps were stitched into vamp throat with edge/flesh butt seam. Top edge has edge/flesh binding seam for top band, continuing down front of flaps; flaps met at front, but were not stitched together. Top band is a strip folded lengthways flesh to flesh and grain/flesh (front fold) and edge/flesh (rear fold) whip stitched to top edge. It is in two pieces, one of which runs up the front of the medial flap and onto the top edge. The terminal of the other fits inside the fold of the first, and completes the top edge and front of the lateral flap. There are three pairs of drawstring slits, one on each flap and the other two at intervals along each quarter. Large, rectangular cut-out bordered by edge/flesh butt stitches in body of lateral quarter. Short secondary slit in centre of vamp throat. L.256, H.86, T.2.0mm. Leather: goat/sheep. 16887 sf6975 (P5Cr)
- 15476 Ankle-shoe, uppers only, drawstring-fastened, right foot. One-piece wrap around, edge/flesh construction seam, vertical medial edge/flesh butt closing seam. Lateral quarter originally extended forward to form a short integral rectangular flap, now torn off. On the medial side, the separate flap/insert is edge/flesh butt stitched to both a triangular vertical projection on the vamp wing and to the quarter at the top. Vamp throat also has edge/flesh butt seam, suggesting flaps were sewn in at throat. Top edge has edge/flesh binding seam. Two possible drawstring slits, one just behind closing seam, the other at back. Other side very fragmentary, so any other slits may have been lost. Vamp stripe of incised line with a row of stitches either side. L.187, W.141, T.1.8mm. Leather: goat. 20178 sf7158 (P5Cr)
- 15477 Ankle-shoe, uppers only, front opening, drawstring-fastened, left foot. One-piece wrap around, grain/flesh construction seam, vertical medial edge/flesh butt closing seam. Lateral quarter extends slightly forward to form a short integral rectangular flap. On the medial side, the separate flap/insert (absent) was edge/flesh butt stitched to both a triangular vertical projection on the vamp wing and to the quarter at the top. Vamp throat also has edge/flesh butt seam, where flaps were sewn in at throat. Top edge has edge/flesh binding seam. Two drawstring slits, low down on each quarter. L.322, W.157, T.1.9mm. Leather: sheep/goat. 4289B sf509 (C6i4; 16th–19th century) (P6)
- 15478 Ankle-shoe, front opening, drawstring-fastened, right foot. Sole: two fragments only, toe and tread left side and tread and waist right side. Blunt pointed toe. Edge/flesh construction seam. Uppers: one-piece wrap around. Construction seam is grain/flesh around toe of vamp, remainder is edge/flesh. Vertical medial edge/flesh butt closing seam, set well back. Lateral quarter extends forward to form a short integral rectangular flap. On the medial side, a separate flap/insert (now missing) was edge/flesh butt stitched to a vertical projection on the vamp wing. Bottom of both flaps was stitched into vamp throat with edge/flesh butt seam. Top edge has edge/flesh binding seam, continuing down front of lateral flap. Single drawstring slit low down on each vamp wing. L.287, W.215, T.1.6mm. Leather: calf. 9327 sf1389 (D6d3; late 13th century) (P6)
- 15479 Ankle-shoe, complete, front opening, right foot. Sole: oval toe, wide almost symmetrical tread, very slight waisting, wide seat. Edge/flesh construction seam. Uppers: one-piece wrap around, edge/flesh construction seam, medial vertical edge/flesh butt closing seam. Semicircular insert in quarter at closing seam, edge/flesh butt seam, has a pair of drawstring slits. There is a further pair of drawstring slits low down on the lateral quarter. The lateral quarter extends forward to form an integral rectangular flap. On the medial side, the separate flap/insert is edge/flesh butt stitched to a vertical projection on the vamp wing. Separate flap is edge oversewn so flaps were probably not stitched together. Both flaps were edge/flesh butt stitched into the vamp throat at the bottom. Wide semicircular heel stiffener lasted in at base, other edge blind whip stitched into quarter. Rand fragment from heel, grain/flesh construction seam. Sole: L.254, W. (tread) 101, W. (waist) 72, W. (seat) 79, T.5.3mm. Leather: sheep/goat. 17699 sf5250 (C6c1; early 12th century)
- 15480 Ankle-shoe, very fragmentary, difficult to define exact form. Front opening, right foot. Sole: toe torn away, wide asymmetrical tread, medium waist, wide seat. Edge/flesh construction seam, tread and seat have both been clumped at least twice. One-piece wrap around uppers, edge/flesh construction seam, medial vertical edge/flesh butt closing seam. The lateral quarter extends forward to form an integral rectangular flap. On the medial side, the separate flap/insert is edge/flesh butt stitched to a vertical projection on the vamp wing. Front of integral flap has grain/flesh seam, suggesting flaps were stitched together at front. This flap was grain/flesh (flap) to edge/flesh (throat) stitched into the vamp throat. Top edge finished with edge/flesh binding seam. No evidence for a heel stiffener. L.287, W.212, T.1.9mm, max quarters height 85mm. Leather: unidentified. 5415 sf19323 (C6c6/D6a7; mid 12th century)
- 15481 Ankle-shoe, uppers only, front opening, right foot. One-piece wrap around, grain/flesh construction seam, medial vertical edge/flesh butt closing seam set towards the back. The lateral quarter extends forward to form an integral rectangular flap, with a 9mm diameter circle cut out of it, edge/flesh butt seam around its periphery. On the medial side, the separate flap/insert (absent) was edge/flesh butt stitched to a vertical projection on the vamp wing. Front of integral flap has grain/flesh seam, suggesting flaps were stitched together at front. This flap was grain/flesh (flap) to edge/flesh (throat) stitched into the vamp throat. Top edge finished with edge/flesh binding seam. No evidence for a heel stiffener. L.287, W.212, T.1.9mm, max quarters height 85mm. Leather: unidentified. 5415 sf19323 (C6c6/D6a7; mid 12th century)
- 15482 Ankle-shoe uppers, right foot. One-piece wrap around, grain/flesh construction seam. Vertical medial edge/flesh butt closing seam, set well back. Lateral quarter extends forward to form a short integral rectangular flap. On the medial side, a separate flap/insert was edge/flesh butt stitched to a vertical projection on the vamp wing. Bottom of both flaps stitched into vamp throat with edge/flesh butt seam and front edges of flaps were sewn to each other to form closed boot. Top edge has edge/flesh binding seam. L.334, W.225, T.2.3mm. Leather: sheep/goat. 13363 sf19428 (B6c2–6; 12th–early 13th century) (P6)
- 15483 Ankle-shoe, uppers only, front opening, drawstring-fastened, right foot. One-piece wrap around, grain/flesh construction seam. Medial closing seam, angled back from lasting margin, set well back. Vamp edge is folded back to thicken the leather and the fold stitched to the quarter with a grain/flesh closed seam. Lateral quarter extends forward to form a short integral rectangular flap. On the medial side, a separate flap/insert (now missing) was edge/flesh butt stitched to a vertical projection on the vamp wing. Bottom of surviving flap stitched into vamp throat with grain/flesh flap to edge/flesh throat seam. Top edge has edge/flesh binding seam, continuing down front edge of flap, suggesting they were not stitched together. There is a pair of vertical drawstring slits on the lateral quarter. Whole upper is decorated by light scraping or incision of the grain surface in a linear pattern. L.222, W.223, T.1.2mm. Leather: sheep/goat

(probably goat). 13363 sf19429 (B6c2-6; 12th-early 13th century) (P6) (Fig.1679)

15484 Ankle-shoe, right foot. Sole: almost all of construction seam torn away, only a few indeterminate damaged holes remain. Oval toe, wide tread, wide waist, wide seat. Uppers: one-piece wrap around, construction seam is mix of edge/flesh and grain/flesh. Lateral side was originally edge/flesh, but has been repaired with grain/flesh stitches. On medial vamp and vamp quarter two sets of grain/flesh repair holes lie in semicircular patterns above lasting margin. Vertical medial edge/flesh butt closing seam, set well back. Lateral quarter extends forward to form a short integral rectangular flap. On the medial side,

a separate flap/insert was edge/flesh butt stitched to a vertical projection on the vamp wing. Front of this has a narrow sliver insert, with edge butt seam for attachment to other flap. Bottom of both flaps was stitched into vamp throat with edge/flesh butt seam. Top edge has edge/flesh binding seam for top band, much of which survives in two pieces, originally edge/flesh seamed together. Top band has four incised lines for three rows of embroidery (absent). Vamp stripe of same form. Torn out hole on medial side above heel stiffener may have been a drawstring slit. Blind whip stitches for low, wide heel stiffener. L.303, W.204, T.1.8mm. Leather: sheep/goat. 13465 sf19431 (B6c1; 12th/13th century) (P6)

### Other Style 7c1

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
18100	upper						21809	5B
495	upper				cattle/calf		1511	D6f9; mid 14th century
16963	upper, top band						6246	D6a6; 11th/12th century
17957	sole, clump sole, rand, heel stiffener, top band						5977	D6a7; 11th/12th century
19330	upper, insert, top band				sheep/goat		5977	D6a7; 11th/12th century
19426	upper, top band	2			sheep/goat		13363	B6c2-6; 12th-early 13th century

### Style 7b2: Boots with drawstring fastening passing through multiple slots

15485 Boot uppers, almost complete, front opening, right foot. One-piece wrap around, grain/flesh construction seam, much of which is cut and torn away, medial edge/flesh butt closing seam. This begins centre back at the lasting margin and curves upward and forward to meet the throat. The lateral quarter extends forward to form a short integral rectangular flap, stitched into the vamp throat at its base. On the medial side, the separate flap/insert is edge/flesh butt stitched to the quarter. This seam begins centre back at the top and curves down and forward to the vamp throat. A drawstring (now absent) was originally wound around the leg and secured via paired holes in three sets of six vertical tiers. These sets occur on the lateral quarter, at the back, and on the separate flap/insert. Top edge is cut down, so there may originally have been more than six tiers. There are blind whip stitches in a semicircular shape for heel stiffener. L.341, W.237, T.2, max. quarters height c.145mm. Leather: cattle/calf. 5333 sf17487 (D6a17; late 12th century) (P6) (Fig.1653)

15486 Boot uppers, front opening, left foot. One-piece wrap around, construction seam and much of vamp cut down. Medial closing seam set toward back of quarter, edge/flesh butt quarter, vamp side cut down. The lateral quarter extends forward to form a short integral rectangular flap, stitched into the vamp throat at its base with a grain/flesh closed seam. Front of flap cut down. On the medial side a separate flap/insert was edge/flesh butt stitched to the quarter. A drawstring (now absent) was originally wound around the leg and secured via two sets of paired slits set one above the other on each side. Top edge has edge/flesh binding seam. Also other fragments some probably not from this shoe: three small cut-down sole edge fragments, edge/flesh construction seam; three clump soles; two rand fragments, grain skives; heel stiffener, tall and narrow, edge/flesh whip stitch; patch or lining fragment, lasted in at base, sewn into a side seam along one edge; top band fragment, strip folded lengthwise flesh to flesh, secured by grain/flesh to edge/flesh seam; four other uppers fragments, torn and cut down. Uppers: L.256, W.112, T.2.4mm. Leather: calf. 5755 sf17943 (D6a17-23; late 12th-13th century) (P6)

### Other Style 7b2

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
380	sole, clump sole, upper, insert, top band	2					1502	C6e11, D6e3; mid 13th century
1992	sole, upper, rand	2			calf		5484	C6e1, D6a16; 12th-13th century
4889	upper				calf		13902	B6c3; 12th/13th century



## Style 7b/c3: Boots fastened with a drawstring passing through vertical thonged loops

- 15487 Boot, almost complete, drawstring-fastened, left foot. Sole: oval toe (worn through at great toe), broad asymmetrical tread, medium waist, wide round seat. Many defleshing cuts present. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam. Closing seam bordered on both sides by awl holes for a reinforcement repair. Bottom front of medial quarter made up of triangular insert (absent), lasted in at base and edge/flesh butt stitched into quarter. The lateral quarter extends forward to form a short integral rectangular flap, edge/flesh butt seamed into the vamp throat at its base. Top of flap and quarter is completed with a triangular insert, edge/flesh butt stitched into place. On the medial side, the separate flap/insert is edge/flesh (quarter) to grain/flesh (flap) stitched to front of quarter and into the vamp throat with a similar seam. A drawstring (now absent) was originally wound around the leg and secured via two vertical thongs which are each passed in and out of a set of eight holes on each quarter. Top edge plain cut. Sole: L.261, W. (tread) 97, W. (waist) 66, W. (seat) 82, T.4.8mm. Size: Adult 2½. Leather: cattle, uppers calf. 5245 sf1240 (D6d3; late 13th century) (P6) (Figs.1654, 1681)
- 15488 Boot, front opening, right foot. Sole: pointed toe, wide asymmetrical tread, slight waisting, wide seat. Edge/flesh construction seam. Tunnel stitches at tread and seat for clump soles (missing). Knotted thong fragment passed through grain/flesh hole at lateral waist is part of gape repair. Other end was passed through three pairs of slits in uppers. Uppers: one-piece wrap around, most of medial side cut away and top edge cut down. Grain/flesh construction seam. A second row of grain/flesh stitches runs along entire lateral edge, inside original construction seam, the stitches passing through uppers and rand, only nicking the sole in places. Professional repair to a gape. Closing seam absent except for forward edge of a small triangular insert, which makes up base of medial quarter, where it is an edge/flesh butt seam. The lateral quarter extends forward to form a short integral rectangular flap, stitched into the vamp throat at its base, edge/flesh throat to grain/flesh flap. On the medial side, the separate flap/insert is absent. A drawstring (now absent) was originally wound around the leg and secured via a vertical thong which was threaded through a set of at least eight slits in the lateral quarter behind the flap. Top of thong truncated by cut-down top edge. Any similar arrangement on medial side has been cut away. L.278, W.100, T.4.8mm. Leather: calf. 5716 sf1816 (C6e2–6; 12th/13th century) (P6)
- 15489 Boot uppers, complete except for medial side and toe of vamp, front opening, right foot. One-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, set well back. The lateral quarter extends forward to form a short integral rectangular flap, edge/flesh butt seamed into the vamp throat at its base. Top of flap and quarter is completed with a triangular insert, edge/flesh butt stitched into place. On the medial side, the separate flap/insert is edge/flesh butt stitched to a vertical projection on top of the vamp wing and into the vamp throat with an edge/flesh butt seam. An ovoid cut-out in the lateral quarter, close to the back of the shoe, has a small patch edge/flesh butt stitched into it. A drawstring (now absent) was originally wound around the leg and secured via three vertical thongs which are each passed in and out of a set of six holes in the quarters behind each closure flap and on the medial flap. The terminals of the thongs are secured to the inside of the uppers by fine tunnel stitches. Top band, strip folded lengthwise flesh to flesh, secured by grain/flesh to edge/flesh seam to top edge and front of flaps. Blind whip stitches for low rounded heel stiffener. L.274, W.200, T.1.7, max. quarters height 158mm. Leather: goat. 5484 sf2009 (C6e1, D6a16; 12th–13th century) (P6) (Fig.1655)
- 15490 Boot, almost complete, front opening, left foot. Sole: round toe, wide almost straight tread, slight waisting, wide seat. Edge/flesh construction seam. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled back from lasting margin. The lateral quarter extends forward to form a short integral rectangular flap, grain/flesh closed seamed into the vamp throat at its base. The top of this is completed with a triangular insert, edge/flesh whip stitched into place. On the medial side, the separate flap/insert is edge/flesh butt stitched to a vertical projection on top of the vamp wing and into the vamp throat with a grain/flesh closed seam. This flap is made up of a main piece and a triangular insert, edge/flesh whip stitched. There was a third triangular insert, now absent, edge/flesh butt stitched into the closing seam at the top. A drawstring (now absent) was originally wound around the leg and secured via two vertical thongs which are each passed in and out of six holes in the quarters behind each closure flap. The terminals of these are secured to the inside of the uppers by fine tunnel stitches. The top edge and front of both flaps is finished with edge/flesh whip stitch. There are blind whip stitches in a semi-circular shape for a heel stiffener. Sole: L.251, W. (tread) 105, W. (waist) 80, W. (seat) 82, T.5.3, max. quarters height c.130mm. Size: Adult 3. Leather: sole cattle, uppers sheep/goat. 11045 sf2597 (B6c8; early 13th century) (P6) (Fig.1656)
- 15491 Boot, uppers only, fragmentary, drawstring-fastened. One-piece wrap around, no surviving construction seam. Right side of leg is integral, at left side a horizontal edge/flesh butt seam continues from vamp throat, almost to back, then turns toward lasting margin. Attached to top of this is part of an insert which formed whole of leg part of boot on this side. At vamp throat level on each side is a short strip passing through a pair of horizontal slits and secured on the inside by blind whip stitches. That on the left side straddles the edge/flesh butt seam. Top edge plain cut. L.233, W.200, T.1.9mm. Leather: calf. 16653 sf11576 (B6a8–10; 12th century) (P6)

## Other Style 7b/c4

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
2862	sole, upper, uppers, top band, rand	2			sheep/goat		11687	B6g4; early 15th century
4822	sole, upper, heel stiffener, drawstring	2	c1		sheep/goat		18256	B6a7; early 12th century
5105	sole, upper, insert, top band, heel stiffener	2	c2		sheep/goat		13902	B6c3; 12th/13th century
19338	sole, upper, top band	2	c2		sheep/goat		6257	C6c4; early 12th century
19397	sole, upper, insert, heel stiffener, rand	2	c1	250	sheep/goat		11049	B6g2; 14th/15th century

## Style 7--: Shoes and boots with one-piece uppers, with no other diagnostic features preserved

- 15492 CS734 Shoe uppers insert, rectangular, bordered on three sides by edge/flesh butt seam and on other by edge/flesh binding seam. Probably front flap from Type 7 ankle-shoe. L.59, W.42, T.4.1mm. Leather: calf. 22108 sf15989 (P5A)
- 15493 Ankle-shoe, uppers only, indeterminate type, probably left foot. One-piece wrap around, grain/flesh construc-

tion seam, medial closing seam, edge/flesh vamp, quarter edge torn down. Lateral quarter may have extended forward to form an integral front flap, stitched into vamp throat with a grain/flesh (flap) to edge/flesh binding seam (throat) at its base. Behind front edge is an oval cut-out, beneath which is a pair of vertical drawstring slits. Top edge rises gradually towards a peak at back then gradually falls away again, before suddenly dipping toward lasting margin, then curving back toward horizontal and ending at a torn edge. Top edge and cut-out finished with edge/flesh binding seam. L.243, W.97, T.2.9mm. Leather: sheep/goat. 16100 sf17510 (C6e4; 12th/13th century) (P6)

### Other Style 7--

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
16946	insert				cattle/calf	6777		5Cr
19440	upper	3			sheep/goat	15311		5Cr
19441	upper				sheep/goat	18718		5Cr
507	insert				sheep/goat	2830		B6w2; early 15th century
2397	sole, upper, heel stiffener, rand	2	c2	225	calf	11049		B6g2; 14th/15th century
3957	upper, sole, clump sole, rand, heel stiffener, top band, insert					6257		C6c4; early 12th century
4219	sole, upper	2	d2	235	Goat	16410		D6a12; early 12th century
16432	sole, upper	2				17360		C6d1; mid 12th century
16549	upper				sheep/goat	16665		C6d20; late 12th century
17332	uppers				sheep/goat	11784		B6c2-6; 12th-early 13th century
17354	insert					11712		B6g4; early 15th century
17950	uppers, clump sole, sole, rand, heel stiffener, lace, top band					5975		C6c6; mid 12th century
18846	sole, upper rand	2				11293		B6f3; early 14th century
19467	upper, insert				calf	18194		B6c2; 12th/13th century
19473	upper				sheep/goat	18331		B6a5, C6c3; early 12th century

## Style 8: Front-fastening footwear with one-piece uppers

### Style 8a: Front toggle-fastened shoes

- 15494 Shoe upper, torn. One-piece wrap around, right vamp wing/quarters only, torn both ends. Grain/flesh construction seam. Quarter projects forward at top to form a small flap with toggle slit. Top edge finished with edge/flesh binding seam. L.148, W.95, T.1.5mm. Leather: calf. 30274 sf11123 (P4A)

15495 Shoe upper, torn, probably right foot. One-piece wrap around, quarters only, vamp torn off. Grain/flesh construction seam. Medial closing seam, only quarters side survives, edge/flesh butt seam. Lateral quarter projects forward to form a flap with two toggle slits. Flap terminal and lower edge bears the impression of a reinforcement cord and blind whip stitches to secure it. Top edge finished with edge/flesh whip stitch, except for a short length adjacent to closing seam, where a separate toggle flap was originally stitched with an edge/flesh butt seam. Blind whip stitches in a triangular shape for heel stiffener, now absent. L.207, W.107, T.2.5, max. quarters height c.85mm. Leather: calf. 13525 sf19432 (B6c2; 12th/13th century) (P6) (Fig.1657)

### Other Style 8a

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
18723	upper				sheep/goat	15401		5B
18161	sole, insole, rand, upper, heel stiffener, toggle				calf	12125		D6e7; early 14th century
19396	upper				sheep/goat	10993		D6g2; mid 16th century

## Style 8b: Front toggle-fastened boots

15496 Boot, child's, almost complete, toggle-fastened, right foot. Sole: oval toe, wide asymmetrical tread, medium waist, medium seat. Edge/flesh construction seam. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled forward from lasting margin and becoming the vamp throat. There was originally a triangular insert, edge/flesh butt stitched in at its base. Front of lateral quarter bears three complete T-shaped toggle slits and the remains of a fourth, blind whip stitches, plus the impression of a reinforcement cord or edge of a tongue. The front top of this quarter was originally completed with a triangular insert, edge/flesh

whip stitched into place. The front of the medial quarter has a slot for a toggle close to where it joins the vamp throat, which has a similar slot at its centre. There was originally a curved triangular insert, edge/flesh whip stitched into position, which would have borne a further three such slots. As there is no evidence for the toggles (now absent) having been stitched into the slots, they were presumably retained by tying or by forming a second toggle on the inside. Top edge finished with edge/flesh whip stitch. Sole: L.148, W. (tread) 56, W. (waist) 38, W. (seat) 45, T.4.5, max. surviving quarters height 127mm. Size: Child 4½. Leather: uppers calf. 13525 sf3946 (B6c2; 12th/13th century) (P6) (Fig.1658)

### Other Style 8b

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
1254	uppers, insert				calf		3235	A6g1; 13th/14th century

## Style 8c: Front toggle- and lace-fastening boots

15497 Boot, almost complete, toggle- and lace-fastened, left foot. Sole: pointed toe, wide asymmetrical tread, narrow waist, narrow seat. Edge/flesh construction seam, rand present as three pieces with skived overlaps. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled forward from lasting margin. Longitudinal opening in vamp running from vamp throat, bordered by two lace holes on each side, lace remnant extant in two of them. Front of lateral quarter bears four keyhole-shaped toggle slits and blind whip stitching on interior from lapped seam to attach the tongue, running down one side of the vamp throat opening. The front of the medial quarter has two slots for toggles, one of which remains in situ. This is formed by tying a knot in the centre of a leather lace, leaving two free

ends. One was passed through the slot in the upper and blind whip stitched into position. The other was left free. The top of the medial quarter is completed with a long, sub-rectangular insert, edge/flesh whip stitched, which bears a further three toggle slots. This insert went around the whole top edge except for a short length of the lateral quarter, where there was a much shorter insert, now absent, edge/flesh whip stitched to it and the top edge. This insert would have carried a single toggle slit. Top edge of insert plain cut. The medial edge of the vamp throat slit, the front of the medial quarter and the bottom half of the large insert are all finished with an edge/flesh whip stitch which secured a triangular tongue. Tall, truncated triangular heel stiffener, laced in at base and blind whip stitched at the sides. Triangular tongue with lapped seam with whip stitch along longer edge. Four separated toggle fragments. Reconstructed: L.246, W.106, H.221mm. Size: Adult 1½. Leather: uppers calf. 10546 sf2581 (C6g6; late 14th century) (P6) (Figs.1659-60)

### Other Style 8c

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
790	upper, toggle				cattle/calf		4790	C6g6; late 14th century
795	upper, lace				cattle/calf		4830	C6g6; late 14th century
2582	sole, rand, uppers, toggle	2	e1	158	cattle		10557	C6g6; late 14th century
19388	upper				sheep/goat		10771	B6g4; early 15th century
2435	sole, upper, lace	2	e5		cattle/calf			u/s

## Style 8d: Front-lacing one-piece ankle-boots

15498 Boot, torn and cut-down, front laced, right foot. Sole: pointed toe, medium asymmetrical tread, narrow waist, seat torn off. Edge/flesh construction seam, many tunnel stitches in the waist area indicating several repairs to tread and seat. One clump present covering toe and tread area. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam,

angled forward from lasting margin; some thread survives. Longitudinal opening in vamp, running from vamp throat, edges continuing up to form front of quarters. Bordered by seven lace holes on lateral side, and six on medial. Both have an extra, smaller slit above the top lace hole, perhaps unused lace holes. Both edges of vamp opening and edge of lateral quarter have blind whip stitches, and the impression of a reinforcement cord or edge of the triangular tongue. Front edge of medial quar-

ter may also have had these, but is flesh delaminated and only has wide-spaced edge/flesh whip stitches. Top edge is plain cut. A large rough hole is cut out of the back of the quarters, much of the lasting margin is torn away.

Sole: L.190, W. (tread) 73, W. (waist) 36, T.5.1, max. surviving quarters height 140mm. Leather: uppers calf. 4484 sf628 (C6g18; 15th/16th century) (P6) (Fig.1661)

## Style 8--: Front-fastening shoes with one-piece uppers, not further classifiable

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
2588	sole, clump sole, uppers, rand	2	e5	205	cattle/calf		10568	C6g10; early 15th century
17057	uppers				calf		10974	D6e7; early 14th century
18170	sole, clump sole, rand, uppers				calf		12237	B6f4; early 14th century
19389	upper				cattle/calf		10771	B6g4; early 15th century

## Style 9: Side-lacing footwear

### Style 9a: Boots of one-piece construction lacing at the side

15499 Boot, torn, side-laced, right foot. Sole: right side of tread to waist only, edge/flesh construction seam. Uppers: one-piece wrap around, grain/flesh construction seam. Bottom of medial quarter made up of triangular insert (absent), attached with edge/flesh butt seam. Remaining front edge of quarter has six lace holes along its edge with tunnel stitches for 10mm wide facing strip on flesh surface. Much of vamp edge and throat badly torn, front edge of lateral quarter partly cut down, remainder has edge/flesh butt seam. A horizontal cut in the lateral quarter from the vamp throat is edge/flesh butt seamed together. Top edge is finished with edge/flesh binding stitch for plain unfolded top band. Three rand fragments, two 4-5mm wide grain skive pieces, one perforated edge/skive, the other grain/skive. Third is curved to fit waist

and is broader in middle of curve. Uppers: L.290, H.148, T.2.0mm. Leather: calf. 16605 sf11552 (B6b4; late 12th century) (P6)

15500 Boot uppers, torn and cut down, side-laced, left foot. One-piece wrap around, grain/flesh construction seam, vertical medial closing seam at bottom c.20mm of vamp and quarter, edge/flesh butt seam. Above this, vamp and quarter were fastened with a lace passing through lace holes on each side. There are eleven on the quarter, but the vamp only has four as the height was increased on the medial side by a tall, sub-rectangular insert, now absent. This was edge/flesh whip stitched to the vamp throat and the front of the lateral quarter. The areas with the lace holes were originally faced with leather strip, now absent, also pierced with lace holes and blind whip stitched in position. Top edge is plain cut. A tall, triangular heel stiffener was lasted in at the base and blind whip stitched in at the sides. Much of the lasting margin is torn and cut down. L.300, H.173, T.2.1mm. Leather: calf. 10464 sf19368 (C6g7; 14th/15th century) (P6) (Fig.1663)

### Other Style 9a

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
3936	sole, upper	2	e2		cattle		10767	B6g4; early 15th century
17078	upper, heel stiffener				cattle/calf		10767	B6g4; early 15th century
19369	upper				cattle/calf		10464	C6g7; 14th/15th century
19370	upper				cattle/calf		10464	C6g7; 14th/15th century

### Style 9b: Footwear of two-piece construction lacing at the side

15501 Shoe, almost complete, side-laced, left foot. Sole: oval toe, wide asymmetrical tread, very narrow waist, narrow seat. Outer rear part of seat has a supplementary piece of leather, lasted in at sides and rear and skived to blend in at the front. Rand is a grain skive, broad, extends from behind toe, along lateral side and around seat in three overlapping, skived pieces. Construction seam is edge/flesh sole to grain/flesh uppers. Two-piece uppers, vamp and quarters, joined laterally by a vertical edge/flesh butt seam and medially by an edge/flesh butt seam over the bottom 35mm. The remainder was fastened with a lace passing through five lace holes on each side. The areas with the lace holes were originally faced with leather strip, now absent, also pierced with lace holes and blind whip stitched in position. Vamp has a plain cut concave throat, partially cut down to make it deeper and with two short secondary longitudinal slashes close to the centre. Over the break of the toes is a long lateral secondary slash, with a short longitudinal slash leading from it toward the vamp throat toward the medial end.

erally by a vertical edge/flesh butt seam and medially by an edge/flesh butt seam over the bottom 35mm. The remainder was fastened with a lace passing through five lace holes on each side. The areas with the lace holes were originally faced with leather strip, now absent, also pierced with lace holes and blind whip stitched in position. Vamp has a plain cut concave throat, partially cut down to make it deeper and with two short secondary longitudinal slashes close to the centre. Over the break of the toes is a long lateral secondary slash, with a short longitudinal slash leading from it toward the vamp throat toward the medial end.



There are three longitudinal slashes in front of this, over the toes on the lateral side. To the medial side of these is a cruciform slash with another short longitudinal slash just above it. Lasting margin torn away in lateral joint area. Underlain by a long, tapering patch, lasted in at base and blind whip stitched at sides, which also extends under lateral quarter. Quarters have straight top edge, rising to a point at closing seam, finished with a plain strip top band, edge/flesh whip stitched into place. Top edge is plain cut. A tall, triangular heel stiffener (absent) was originally lasted in at the base and blind whip stitched in at the sides. Sole: L.219, W. (tread) 84, W. (waist) 31, W. (seat) 48, T.3.7, max. quarters height 65mm. Size: Child 13. Leather: uppers, top band calf. 4885 sf858 (C6g7; 14th/15th century) (P6) (Fig.1664)

- 15502 Ankle-shoe, almost complete, side-laced, left foot. Sole: poulaine toe, tip broken off, wide asymmetrical tread, very narrow waist, narrow seat. Rand fragment, grain skive. Construction seam is edge/flesh sole to grain/flesh uppers. Two-piece uppers, vamp and quarters, joined laterally by a vertical edge/flesh butt seam and medially by an edge/flesh butt seam over the bottom 17mm. The remainder was fastened with a lace passing through five lace holes on each side. The areas with the lace holes were originally faced with leather strip, now absent, also pierced with lace holes and blind whip stitched in position. Vamp has a shallow V-shaped throat, into which was edge/flesh binding stitched a sub-triangular insert, which raises the height of the shoe and also carries the top lace hole. Quarters top edge rises from side opening to convex back, then falls away, before sharply rising to a point at closing seam. Finished with a plain strip top band, edge/flesh whip stitched into place. Top edge of throat insert and quarters is plain cut except for the short angle behind the closing seam, which has an edge/flesh binding seam. A low heel stiffener (absent) was originally lasted in at the base and blind whip stitched in at the sides. It is not laid symmetrically to the midline of the heel, but slightly to the lateral side of the shoe. Sole: L.243, W. (tread) 79, W. (waist) 29, W. (seat) 48, T.4.6mm. Size: Child 13. Leather: calf. 10794 sf2698 (C6g2; early-mid 14th century) (P6)
- 15503 Shoe, almost complete, side-laced, left foot. Sole: pointed toe, wide asymmetrical tread, very narrow waist, nar-

row seat. Broken across tread. Construction seam is edge/flesh sole to grain/flesh uppers. Two-piece uppers, vamp and quarters, joined laterally by a vertical edge/flesh butt seam and medially by an edge/flesh butt seam at the bottom. The remainder was fastened with a lace passing through seven lace holes on each side. The areas with the lace holes were faced with leather strip, also pierced with lace holes, and blind whip stitched in position. Vamp has a concave throat, finished with edge/flesh binding stitch. Quarters top edge rises from side opening to convex back, then falls away beneath ankle-bone, before sharply rising again to closing seam. A reinforcement cord (absent) was blind whip stitched into the lateral quarter below the top edge, starting at the dip below the ankle. Top edge of quarter is plain cut. Sole: L.247, W. (tread) 79, W. (waist) 30, W. (seat) 44, T.5.0mm. Size: Adult 2. Leather: calf. 10781 sf17085 (B6g4; early 15th century) (P6)

- 15504 Ankle-shoe, almost complete, side-laced, left foot. Sole: two-piece, edge/flesh butt seamed across waist. Pointed toe, wide asymmetrical tread, very narrow waist, narrow seat. Rand is a grain skive, broad, from waist. Construction seam edge/flesh sole to grain/flesh uppers. Part of medial side of vamp has been re-sewn using same holes. Two-piece uppers, vamp and quarters, joined laterally by a vertical edge/flesh butt seam and medially by an edge/flesh butt seam over the bottom 30mm. The remainder was fastened with a lace (short remnant survives in situ) passing through seven lace holes on each side. The areas with the lace holes were originally faced with leather strip laid flesh to flesh against inside of uppers. These were blind whip stitched in position. Lateral side of vamp throat is made up of closing seam, then steps up at midline, before curving slightly to meet laced edge. Front edge of lateral quarter is shaped to fit the step. Extends under lateral quarter. Quarters have slightly curved, almost straight top edge. Whole top edge finished with edge/flesh binding seam. A truncated triangular heel stiffener was lasted in at the base and blind whip stitched in at the sides. The inside of the vamp has the impression of a reinforcement cord running the full length of the midline with blind whip stitches either side. Vamp: L.231, W.218, T.2.9mm. Leather: sheep/goat. 18366 sf18309 (B6a5; 11th/12th century) (P6) (Fig.1665)

## Style 9-: Side-lacing footwear, not further classifiable

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
652	sole, uppers, heel stiffener, rand	2	e2		cattle/calf		4548	C6g18; 15th/16th century
794	sole, uppers, heel stiffener, rand	2	e2		cattle/calf		4830	C6g6; late 14th century
860	sole, uppers, rand	2	e4	220	cattle/calf		4885	C6f5; 13th/14th century
17053	uppers, heel stiffener				calf		10768	B6g4; early 15th century
17075	uppers				calf		10781	B6g4; early 15th century
17080	reinforcement						10767	B6g4; early 15th century
17092	clump sole, uppers, heel stiffener, rand				calf		10546	C6g6; late 14th century
17443	sole, uppers, heel stiffener, reinforcement	2			cattle/calf		4830	C6g6; late 14th century
18479	sole, clump sole, uppers	2					13949	B6c1; 12th/13th century
18859	insert						11440	B6g13; 16th-17th century
19382	uppers						10557	C6g6; late 14th century
19390	insert				sheep/goat		10771	B6g4; early 15th century



## Style 10: Front-laced footwear of two-piece construction

- 15505 Shoe, almost complete, front-laced, left foot. Sole: pointed toe, medium asymmetrical tread, very narrow waist, long narrow seat. Edge/flesh sole to grain/flesh uppers construction seam, clump sole from tread and tunnel stitches also indicate clumping to seat. Rand is a broad grain skive with surviving tunnel stitches for clump sole. Two-piece uppers, vamp and quarters, joined both sides by vertical edge/flesh butt seams. Vamp has a longitudinal opening bordered by a reinforcement cord impression and blind whip stitches. These continue along the top of the quarters, but stop at the back, level with the heel stiffener. There are two lace holes on each side of the throat opening, near to the top. From the closing seams, the top edge of the quarters dips below the ankle-bones, then rises again to a curved peak at the back. It is plain cut. A tall, triangular heel stiffener was originally lasted in at the base and blind whip stitched in at the sides. There are grain/flesh holes for a repair to the quarters, near its base. Sole: L.235, W. (tread) 82, W. (waist) 30, W. (seat) 43, T.4.9, max. quarters height 81mm. Size: Adult 2. Leather: sole cattle, uppers calf. 4772 sf776 (C6f1; late 13th century) (P6) (Fig.1666)
- 15506 Boot uppers, vamp only, front-laced. Grain/flesh uppers construction seam. Originally two-piece uppers, joined both sides by vertical edge/flesh butt seams. Vamp has a longitudinal opening at throat bordered by blind whip stitches. There is a lace hole on each side of the opening, near to the throat. Close to the point where the lasting margin meets the right-hand closing seam is an irregular scatter of grain/flesh stitch holes, apparently for a patch. L.181, W.235, T.2.7mm. Leather: calf. 11530 sf17379 (B6g4; early 15th century) (P6)

## Style 11: Buckle- or latchet-fastened shoes

### Style 11a: Front latchet-fastened shoes

- 15507 Shoe uppers, vamp and latchets, front latchet-fastened, probably left foot. Vamp has pointed toe, grain/flesh construction seam, two short edge/flesh butt closing seams and a shallow pointed throat with a central slit through which the two latchets are still tied together. One is long, bifurcated from one end for most of its length, widening to the other end, which has an edge/flesh butt seam for attachment to the absent quarter. The other is shorter, has the same wide end with an edge/flesh seam, but the other end is rounded and has two buttonhole-shaped slits for the bifurcated latchet to tie to. Vamp: L.164, W.174, T.2.5mm. Leather: calf. 10546 sf3963 (C6g6; late 14th century) (P6) (Fig.1668)
- 15508 Shoe vamp, from front latchet-fastened shoe, probably right foot. Pointed toe, grain/flesh construction seam, edge/flesh butt closing seam each side, the lateral one running almost the full length of the latchet on that side. This latchet projects from one end of the vamp throat, running almost parallel with it. The terminal is then an-

gled forward and carries two keyhole-shaped lace holes to which the other, bifurcated, latchet (absent) was originally fastened. L.197, W.194, T.2.6mm. Leather: calf. 10768 sf17076 (B6g4; early 15th century) (P6) (Fig.1669)

### Style 11b: Front buckle- and strap-fastened shoes

- 15509 Shoe, almost complete, front latchet-fastened, right foot. Sole: poulaine toe, tip torn off, wide asymmetrical tread, very narrow waist, long narrow seat. Edge/flesh construction seam. Rand is narrow strip form at sides, grain skive round seat. Uppers: two-piece, separate vamp and quarters, grain/flesh construction seam, edge/flesh butt closing seam each side, behind latchet and buckle, slightly angled back from lasting margin. Vamp has pointed toe, and concave throat. On the lateral side, the throat sweeps up to form the buckle-strap, the terminal of which is slit and folded back to take the buckle (absent). There is a second, longer slit below the throat, parallel with the closing seam. On the medial side, the throat curves toward the back, then there is a small V-shaped cut, the rear side of which extends upward to form a seat for the fastening strap, which is edge/flesh whip stitched to its front. Fastening strap has a wide base and tapers to a point, with a buckle-slit beyond the halfway point. A reinforcement cord impression and blind whip stitches run along the lateral side of the throat, up the edge of the buckle-strap, then across it to continue along part of the top edge of the quarter. On the medial side, another reinforcement cord ran around the curve and V at the end of the throat. Quarters: on the lateral side, the top edge sweeps down from the closing seam, beneath the ankle-bone, then up to a high, convex back. On the medial side, there was originally a small, triangular insert, now absent, completing the top edge adjacent to the closing seam. Sole: L.288, W. (tread) 90, W. (waist) 38, W. (seat) 50, T.5.8mm. Size: Adult 3. Leather: calf. 10515 sf2598 (C6g8; 14th/15th century) (P6) (Fig.1670)
- 15510 Shoe, fragmentary, front latchet-fastened, right foot. Sole: long poulaine toe, tip torn off, medium asymmetrical tread, very narrow waist, long narrow seat. Edge/flesh construction seam. Uppers: two-piece, separate vamp and quarters, grain/flesh construction seam, edge/flesh butt closing seam each side, behind latchet and buckle, slightly angled back from lasting margin. Vamp is fragmentary, poulaine toe tip torn off, much of lateral side and throat missing. Buckle-strap is on a fragment of lateral vamp, terminal is slit and folded back to take buckle (absent). A reinforcement cord impression and blind whip stitches run up from lateral side of throat, up the edge of the buckle-strap, then across it to continue along part of the top edge of the quarter. On the medial side, only the part below the top edge of the quarter remains. Quarters: On the lateral side, the top edge sweeps down from the closing seam, beneath the ankle-bone, then up to a high, convex back. On the medial side, the top edge gradually curves up to the back. Two pieces of moss stuffing from poulaine toe are present. Sole: L.253, W. (tread) 75, W. (waist) 32, W. (seat) 41, T.4.1mm. Size: Adult 1. Leather: calf. 10511 sf3962 (C6g8; 14th/15th century) (P6)

### Other Style 11b

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
17074	sole, clump sole, vamp, quarters, rand	2	e2				10511	C6g8; 14th/15th century

## Style 11-: Buckle- or latchet-fastening shoes, not further classifiable

15511 Shoe, forepart only, latchet- or buckle-fastened, right foot. Sole: poulaine toe, tip torn off, wide asymmetrical tread, torn off across tread. Edge/flesh construction seam. Uppers: vamp only, grain/flesh construction seam, pointed toe, tip torn off, but moss stuffing in situ. Edge/flesh butt closing on lateral side, other torn away. Much of interior

of vamp cut down in U-shape from throat. On the lateral side, the throat sweeps up to form base and attachment of buckle-strap or latchet fastening (absent), which was secured with edge/flesh binding seam. A reinforcement cord impression and blind whip stitches run along lateral side of throat, and would have continued onto buckle-strap/latchet. Tunnel stitches on lateral joint for patch. Assembled: L.178, W.102, T. (sole) 3.7mm. Leather: calf. 10511 sf2474 (C6g8; 14th/15th century) (P6) (Fig.1667)

### Other Style 11-

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period
2541	sole, vamp, quarters, rand	2	e2a	230	cattle/calf		10426	C6g12-14; mid 15th century
17066	sole, uppers	2			cattle/calf		10766	B6g4; early 15th century

## Shoe top bands found separately

- 15512 Strip, torn both ends, a row of pulled transverse slits, slightly off midline, runs full length. L.63, W.13, T.1.1mm. Leather: calf. 22391 sf15996 (P4B)
- 15513 Strip, folded in half, flesh to flesh, one end and one edge have grain/flesh stitch holes. L.55, W.22, T.1.9mm. Leather: unidentified. 6284 sf17022 (P5B)
- 15514 Wide strip, one end torn, other end and one edge grain/flesh overstitched. Opposite edge folded with two rows of oblique decorative closed slits that pierce both thicknesses. These run from complete end, stopping before torn end. L.229, W.68.3, T.1.3mm. Leather: sheep/goat. 8033 sf17621 (P5B)
- 15515 Broad strip, folded longitudinally, with multiple lines of decorative stitch slits, though there is little evidence of their having been used as stitch holes. The edges have a concave curve from each end, one of which is probably cut down. L.58, W.25, T.4.5mm. Leather: calf. 6357 sf16972 P6 (D6a5; 11th/12th century) (P6)
- 15516 Strip, folded lengthwise flesh to flesh, one end cut and the other torn across. The two edges and the cut end have coarse grain/flesh stitch holes, possibly two rows. L.184, W.39, T.7.4mm. Leather: cattle/calf. 16876 sf17114 P6 (D6a2; late 11th century) (P6)

ments and scraps, one cut down and torn, with remnant of grain/flesh construction seam. Other has a straight edge/flesh butt seam, an opposite convex edge/flesh butt seam with adjacent perforation, other edges torn. Uppers fragments and scraps (9), undiagnostic. Sole: L.240, W. (tread) 79, W. (waist) 30, W. (seat) 47, T.4.8mm. Size: Child 13. Leather: cattle. 4704 sf786 (C6f5; 13th/14th century) (P6)

15519 Shoe, fragmentary, unidentified type, right foot. Sole: rounded toe, wide asymmetrical tread, medium waist, round seat, edge/flesh construction seam. Has been clumped over entire seat. Rand in situ at seat, strip form, grain/flesh stitch holes. Uppers: cut-down remnant in situ along lateral side, tread to seat rear. Grain/flesh construction seam. Base of lateral closing seam survives, edge/flesh butt seam. Quarter is lined with leather strip, lasted in at base, blind whip stitches at top. Whole side has been crudely repaired by two seamed pieces of cut-down shoe uppers, tacked crudely in place over construction seam and finally secured with a leather thong, spirally wound and passing through slits in sole, uppers and patches, so that uppers are compressed. L.270, W. (tread) 97, W. (waist) 53, W. (seat) 77, T.5.0mm. Size: Adult 4½. Leather: cattle/calf. 12485 sf3954 (D6c1; mid 13th century) (P6)

15520 Shoe sole, right foot. Round toe, wide asymmetrical tread, broad but markedly hollowed waist, wide round seat. Edge/flesh construction seam. Tunnel stitches over entire tread and seat indicate that both have been clumped at least twice, and there are further tunnel stitches along lateral waist area. L.258, W. (tread) 100, W. (waist) 52, W. (seat) 83, T.4.8mm. Size: Adult 4. Leather: cattle. 5981 sf3955 (C6c3, D6a5; late 11th/early 12th century) (P6)

15521 Shoe sole, left foot. Oval toe, wide asymmetrical tread, medium waist, wide round seat. Edge/flesh construction seam. Many lightly scored cuts in flesh surface. L.252, W. (tread) 94, W. (waist) 59, W. (seat) 73, T.4.2mm. Size: Adult 3½. Leather: cattle. 16404 sf11578 (D6a18; late 12th century) (P6)

15522 Shoe sole, right foot, some thread surviving. Round toe, wide asymmetrical tread, broad waist, wide round seat. Edge/flesh construction seam. Tunnel stitches at tread and seat indicate that both have been clumped. L.275, W. (tread) 112, W. (waist) 82, W. (seat) 90, T.4.0mm. Size: Adult 7. Leather: cattle. 16410 sf11579 (D6a12; early 12th century) (P6)

## Separately typed soles

The small find may include other components and fragments

- 15517 Shoe sole, left foot. Tip of toe torn off, wide asymmetrical tread, broad waist, wide round seat. Edge/flesh construction seam. Tunnel stitches at tread and seat indicate that tread has been clumped at least three times and seat at least twice. Rand along most of lateral side of sole, strip form, grain/flesh stitch holes, lapped junction behind tread. Sole: L.249, W. (tread) 109, W. (waist) 84, W. (seat) 88, T.5.7mm. Size: Adult 4. Leather: cattle. 7369 sf1297 (P5B)
- 15518 Shoe sole, right foot. Pointed toe, medium asymmetrical tread, narrow waist, narrow round seat. Edge/flesh construction seam. Rand fragment in situ along tread medial side, strip form, grain/flesh stitch holes. Two others, as above, but one a grain skive, perforated edge/skive. Clump sole, appropriate to tread area. Two uppers frag-

15523 Shoe sole, left foot. Oval toe, wide asymmetrical tread, medium waist, seat and medial edge torn away. Edge/flesh construction seam. Tread has been clumped at least

three times. Some surviving stitching thread. L.194, W.89, T.3.7mm. Leather: unidentified. 16410 sf19445 (D6a12; early 12th century)

### *Other separately typed soles*

Arranged by sole type, in period and small find number order

Small Find	Parts Present	Con. Type	Shoe Size	Leather Type	Dectn	Context	Period
<b>Sole type a</b>							
9828	sole	1				27413	3
9271	sole	2		cattle/calf		18602	4B
10332	sole, heel-riser, uppers, top band	1		cattle/calf	impress	29222	4B
10532	sole, uppers	1		cattle/calf		28087	4B
10741	sole, heel-riser	1		cattle/calf	impress	28360	4B
11689	sole, heel-riser	1		cattle	impress	21887	4B
13233	sole, uppers	1				32589	4B
13294	sole, uppers	1		cattle		32589	4B
15937	heel-riser	1				21458	4B
16817	sole	1				20952	4B
18816	sole, rand, uppers	1				9510	4B
19505	sole	2	170	cattle		32589	4B
2260	sole	1				7669	5B
9105	sole	1				19623	5B
9674	sole	2		cattle		18949	5B
9855	sole, heel-riser	1				14515	5B
10081	sole	1		cattle		21863	5B
18030	sole	2				21381	5B
18053	sole, heel-riser	1		cattle	impress	21543	5B
18781	sole, heel-riser	1		cattle		15361	5B
<b>Sole type b1</b>							
13968	sole	2				36370	3
7552	sole	1	255			22376	5A
1588	sole	2	260			5415	C6c6, D6a7; mid 12th century
2002	sole	2				5484	C6e1, D6a16; 12th–13th century
17527	sole	2		cattle		16130	D6a16; 12th–13th century
<b>Sole type b2</b>							
13018	sole	2	240	cattle		32406	4B
10633	sole	1	250			21925	5B
17899	sole	2	147			3587	5Cr
1589	sole	2	240			5415	C6c6, D6a7; mid 12th century
18965	sole	2	242	cattle		9327	D6d3; late 13th century
7268	sole, clump sole	1	245				u/s
<b>Sole type b</b>							
17874	sole	1				28033	3
16859	sole	1				20400	5A
<b>Sole type c1</b>							
12949	sole	2				24094	4B
1876	sole	2	250	cattle		5848	5B
52	sole	2	260			2194	A6z4; 13th century
1433	sole, clump sole, rand	2				9327	D6d3; late 13th century
1569	sole	2				9334	D6a25–b1; late 12th/early 13th century
1646	sole	2	230	cattle		9305	D6a24; 12th/13th century
1914	sole	2				9305	D6a24; 12th/13th century
2046	sole	2	233	cattle		9305	D6a24; 12th/13th century

Small Find	Parts Present	Con. Type	Shoe Size	Leather Type	Dectn	Context	Period
<b>Sole type c1 (contd)</b>							
2054	sole	2	250	cattle		5484	C6e1, D6a16; 12th–13th century
2081	sole	2	260	cattle		9572	D6a9; early 12th century
2930	sole	2	263	cattle		5981	C6c3, D6a5; late 11th/early 12th century
3934	sole, rand	2	225			12458	C6e6; early 13th century
3948	sole	2				16123	C6d22; late 12th century
7217	sole	2				11656	B6g4; early 15th century
7241	sole	2		cattle		17275	C6d11; late 12th century
11549	sole	2	246	cattle		16891	C6d3; mid 12th century
16434	sole	2				17375	C6d1; mid 12th century
16563	sole, rand, uppers	2		cattle		16517	D6a19; late 12th century
16637	sole	2		cattle		16464	D6a19; late 12th century
17402	sole	2		cattle		11712	B6g4; early 15th century
19331	sole	2				5977	D6a7; 11th/12th century
19333	sole	2				6035	C6e1; 12th/13th century
19401	sole	2	245			11632	B6a6; 11th/12th century
19402	sole	2		cattle		11712	B6g4; early 15th century
19423	sole	2	165			13315	B6c2–6; 12th–early 13th century
19438	sole	2	250			15136	A6n2, B6a5; early 12th century
19470	sole	2				18256	B6a7; early 12th century
<b>Sole type c2</b>							
2175	sole, clump sole, rand, heel stiffener, uppers	2	253			5348	C6e1, D6a16; 12th–13th century
3958	sole	2				6257	C6c4; early 12th century
3964	sole	2		cattle		13244	B6c2–6; 12th–early 13th century
7246	sole	2	245			17535	C6d8; mid–late 12th century
16620	sole	2		cattle		16426	C6d20; late 12th century
17165	sole, clump sole, vamp, uppers	2			stitch	9305	D6a24; 12th/13th century
17515	sole	2				16170	D6a16; mid 12th century
19321	sole	2				5415	C6c6, D6a7; mid 12th century
19329	sole	2				5975	C6c6; mid 12th century
19339	sole	2	260			6257	C6c4; early 12th century
19403	sole	2				11818	B6c2–6; 12th–early 13th century
19446	sole	2				16410	D6a12; early 12th century
19447	sole	2				16410	D6a12; early 12th century
19448	sole	2				16410	D6a12; early 12th century
19450	sole	2	215			16608	D6a10; early 12th century
7252	sole	2	267	cattle			u/s
<b>Sole type c</b>							
1943	sole	2				5717	C6e2–6; 12th/13th century
16309	sole	2		cattle		13902	B6c3; 12th/13th century
16415	sole	2		cattle		17532	C6c4, D6a6; early 12th century
16447	sole	2		cattle		17103	C6c6; mid 12th century
17382	sole, uppers, clump sole	2				11632	B6a6; 11th/12th century
17403	sole	2				11725	B6c1; 12th/13th century
19472	sole	d				18256	B6a7; early 12th century
<b>Sole type d1</b>							
1241	sole, rand, clump sole	2	160	cattle		5245	D6d3; late 13th century
1654	sole	2	227	cattle		5406	C6e2; 12th/13th century
1749	sole, clump sole, rand, heel stiffener, uppers	2	240			5484	C6e1, D6a16; 12th–13th century
1949	sole, rand, uppers, heel stiffener	2	252	cattle		5655	D6a17–23; late 12th–13th century

Small Find	Parts Present	Con. Type	Shoe Size	Leather Type	Dectn	Context	Period
<b>Sole type d1 (contd)</b>							
1966	sole, rand	2	215	cattle		5655	D6a17–23; late 12th–13th century
3937	sole	2	230			5981	C6c3, D6a5; late 11th/early 12th century
7219	sole	2	242	cattle		11687	B6g4; early 15th century
11564	sole	2	205	cattle		16653	B6a8–10; 12th century
11575	sole, uppers			cattle		16653	B6a8–10; 12th century
18191	sole, uppers	2	250			12544	D6a25; 12th/13th century
19334	sole, rand	2	215			6035	C6e1; 12th/13th century
19451	sole	2	250			16608	D6a10; early 12th century
19474	sole					18366	B6a5; 11th/12th century
<b>Sole type d2</b>							
93	sole, clump sole	2	165	cattle		1002	D6y1; late 12th–13th century
272	sole, clump sole, uppers, rand	2		cattle		1585	C6v1; late 11th–early 12th century
288	sole	2				2605	B6w2; early 15th century
938	sole	2				5140	C6e10; mid 13th century
1177	sole, uppers, rand, top band	2	165	sheep/goat		5241	D6d3; late 13th century
1564	sole, rand	2	220	cattle		9334	D6a25–b1; late 12th/early 13th century
1570	sole, clump sole	2	233	cattle		9334	D6a25–b1; late 12th/early 13th century
1571	sole	2	260			9334	D6a25–b1; late 12th/early 13th century
1584	sole, rand	2	242			9334	D6a25–b1; late 12th/early 13th century
1585	sole	2	235			9334	D6a25–b1; late 12th/early 13th century
1597		2	232			9334	D6a25–b1; late 12th/early 13th century
1598	sole	2	235			9334	D6a25–b1; late 12th/early 13th century
1599	sole	2				9334	D6a25–b1; late 12th/early 13th century
1603	sole	2	224	cattle		9348	D6a25–b1; late 12th/early 13th century
1754	sole	2	175			5484	C6e1, D6a16; 12th–13th century
1836	sole	2	260			9305	D6a24; 12th/13th century
1871	sole	2	240	cattle		5348	C6e1, D6a16; 12th–13th century
1903	sole, rand, uppers, insert	2	235	cattle/calf		5755	D6a17–23; late 12th–13th century
1935	sole	2	230			5655	D6a17–23; late 12th–13th century
1971	sole, clump sole	2	218	cattle/calf		9305	D6a24; 12th/13th century
1990	sole, uppers, rand	2	240	cattle		5484	C6e1, D6a16; 12th–13th century
2014	sole, rand, uppers, heel stiffener	2	265	cattle/calf		5755	D6a17–23; late 12th–13th century
2017	sole	2	230	cattle		5484	C6e1, D6a16; 12th–13th century
2472	sole	2				12501	C6e7; early 13th century
3938	sole, rand, uppers	2	250			12544	D6a25; 12th/13th century
3951	sole	2	274			5803	C6e1–2; late 12th/early 13th century
3952	sole, clump sole, rand	2	248			12851	C6d23; late 12th century
3965	sole	2	215	cattle		12501	C6e7; early 13th century
4920	sole, clump sole, uppers, rand	2				18366	B6a5; early 12th century
7218	sole	2				11296	B6c7; late 11th–early 12th century
7225	sole	2	227			11747	B6g2; 14th/15th century



Small Find	Parts Present	Con. Type	Shoe Size	Leather Type	Dectn	Context	Period
<b>Sole type d2 (contd)</b>							
7264	sole	2		cattle		13902	B6c3; 12th/13th century
11555	clump sole, sole	2		cattle		16653	B6a8-10; 12th century
11572	sole, rand	2	230	cattle		16605	B6b4; late 12th century
11577	sole	2		cattle		16465	D6a19; late 12th century
16299	sole	2				11296	B6c7; late 11th-early 12th century
16377	sole	2	250	cattle		5348	C6e1, D6a16; 12th-13th century
16623	sole	2		cattle		16490	C6d18; late 12th century
17147	sole	2	245			9224	C6e9; mid 13th century
17980	sole, clump sole	2				5749	C6e6; early 13th century
18172	sole, rand, uppers	2	120			12257	D6e5; early 14th century
18173	sole	2	225			12274	D6e1; 13th/14th century
18229	sole	2				12851	C6d23; late 12th century
18471	clump sole	2	210	cattle/calf		13579	B6c2; 12th/13th century
18483	sole, rand	2	190			13525	B6c2; 12th/13th century
18837	sole	2				11052	B6c7; late 11th-early 12th century
19332	sole	2	258	cattle		5981	C6c3, D6a5; late 11th/early 12th century
19415	sole	2				12237	B6f4; early 14th century
19464	sole	2	205	cattle		18194	B6c2; 12th/13th century
19465	sole	2	230	cattle		18194	B6c2; 12th/13th century
7261	sole	2		calf			u/s
11580	sole, clump sole, uppers, top band	2					u/s
17303	sole	2					u/s
17320	sole	2		cattle			u/s
19512	sole	2	235				u/s
19513	sole	2	232				u/s
19514	sole	2					u/s
<b>Sole type d3</b>							
2204	sole	2	245			9510	4B
18732	sole	2				15525	5B
1801	sole	2				5693	C6e6; early 13th century
1863	sole	2	254			5655	D6a17-23; late 12th-13th century
11560	sole	2				16465	D6a19; late 12th century
16643	sole, clump sole, rand, uppers, top band	2				16465	D6a19; late 12th century
18230	sole, rand	2				12853	D6a22; 12th/13th century
18702	sole	2				15161	B6a7; early 12th century
19439	sole	2	250			15161	B6a7; early 12th century
19449	sole	2	240			16465	D6a19; late 12th century
19453	sole	2		cattle		16608	D6a10; early 11th century
19462	sole	2				18194	B6c2; 12th/13th century
19463	sole	2				18194	B6c2; 12th/13th century
<b>Sole type d</b>							
18747	sole	2				15697	5B
67	sole	2				2227	A6z4; 13th century
125	sole	2		cattle		1119	D6e10; mid 14th century
657	sole, uppers	2				4591	C6g19; mid 14th century
789	sole	2				4801	C6g8-16; late 14th-late 15th century
1587	sole	2		cattle		9334	D6a25-b1; late 12th/early 13th century
2006	sole	2		cattle		5484	C6e1, D6a16; 12th-13th century
3945	sole	2				12485	D6c1; mid 13th century
7243	sole	2		cattle		17375	C6d1; mid 12th century
16390	sole	2		cattle		5655	D6a17-23; late 12th-13th century

Small Find	Parts Present	Con. Type	Shoe Size	Leather Type	Dectn	Context	Period
<b>Sole type d (contd)</b>							
16545	sole, rand, uppers	2		cattle		16604	B6b4; late 12th century
16557	sole	2				16592	B6c1; 12th/13th century
17115	uppers	2				16892	C6d23; late 12th century
17162	sole	2				9302	D6a26; 12th/13th century
17506	sole	2				16173	B6a11; 12th century
17508	sole	2				16014	C6d24; late 12th century
17525	sole	2		cattle		16038	B6a7; early 12th century
17933	sole, rand	2		cattle		5536	C6e1; 12th/13th century
17974	sole	2				5693	C6e6; early 13th century
18954	sole	2				4879	C6g6; late 14th century
19355	sole	2				9224	C6e9, mid 13th century
19400	sole	2				11458	B6c7; late 11th–early 12th century
19416	sole					12237	B6f4; early 14th century
19418	sole, uppers	2		cattle/calf		12485	D6c1; mid 13th century
19458	sole	2		cattle		18172	B6c1; 12th/13th century
19459	sole	2		calf		18172	B6c1; 12th/13th century
19460	sole					18172	B6c1; 12th/13th century
19461	sole	2				18193	B6c2; 12th/13th century
19468	sole	2				18256	B6a7; early 12th century
19469	sole	2				18256	B6a7; early 12th century
19471	sole	2				18256	B6a7; early 12th century
17318	sole	2					u/s
<b>Sole type e1</b>							
780	sole	2	205	cattle		4763	C6g7; 14th/15th century
7178	sole, vamp	2	155	sheep/goat		10993	D6g2; mid 16th century
19393	sole	2	240			10993	D6g2; mid 16th century
19394	sole, rand	2				10993	D6g2; mid 16th century
<b>Sole type e2</b>							
624	sole, rand	2	189	cattle		4380	C6g19; mid 14th century
650	sole, rand, heel stiffener, uppers	2	227	cattle		1821	D6g2; mid 16th century
747	sole	2				4591	C6g19; mid 14th century
767	sole	2	225	cattle		4682	C6g8–16; late 14th–late 15th century
768	sole	2	207	cattle		4658	C6g19; mid 14th century
791	sole	2	219	cattle		4082	C6i1; late 17th century
804	sole	2				4790	C6g6; late 14th century
826	sole	2	196	cattle		4874	C6g6; late 14th century
1069	sole	2	182	cattle		3235	A6g1; 13th/14th century
2528	sole	2				10112	D6j1; late 17th century
2634	sole	2				10264	D6f7; late 15th century
2646	sole	2				10766	B6g4; early 15th century
3942	sole	2				12274	D6e1; 13th/14th century
3947	sole	2				10552	C6g4–10; late 14th/early 15th century
4928	sole, uppers, heel stiffener	2	215	cattle/calf		18429	B6g4; early 15th century
17051	sole	2				10768	B6g4; early 15th century
17052	sole	2	235			10546	C6g6; late 14th century
17071	sole, rand	2				10508	C6g7; 14th/15th century
17087	sole, uppers	2				10557	C6g6; late 14th century
18174	sole	2				12274	D6e1; 13th/14th century
18930	sole	2				10437	C6g16; late 15th century
18933	sole	2		cattle		10454	C6g12–14; mid 15th century
18964	sole, rand	2	205			9023	D6e11; mid 14th century
19367	sole	2				10454	C6g12–14; mid 15th century
19371	sole	2				10464	C6g7; 14th/15th century
19372	sole					10464	C6g7; 14th/15th century
19380	sole	2				10557	C6g6; late 14th century
19517	sole	2	215	cattle		4704	C6f5; 13th/14th century

Small Find	Parts Present	Con. Type	Shoe Size	Leather Type	Dectn	Context	Period
<b>Sole type e2 (contd)</b>							
19518	sole	2	233			4931	C6g18; 15th/16th century
19519	sole	2				4931	C6g18; 15th/16th century
679	sole, rand	2					u/s
<b>Sole type e3</b>							
814	sole, rand	2	250	cattle		4867	C6g6; late 14th century
910	sole	2	225			9129	D6e9; mid 14th century
1565	sole	2		cattle		9334	D6a25-b1; late 12th/early 13th century
1592	sole	2	230			9334	D6a25-b1; late 12th/early 13th century
2737	sole	2	220			10993	D6g2; mid 16th century
3950	sole, rand	2	215			12485	D6c1; mid 13th century
18201	sole	2	235			12619	D6a24; 12th/13th century
18697	sole	2	205			15043	B6c5; early 13th century
<b>Sole type e4</b>							
488	sole, clump sole	2		cattle		4054	C6i2; 17th/18th century
654	sole	2				4548	C6g18; 15th/16th century
766	sole	2				4658	C6g19; mid 14th century
782	sole	2	233	cattle		4790	C6g6; late 14th century
783	sole, rand	2		cattle		4790	C6g6; late 14th century
801	sole	2	210			4763	C6g7; 14th/15th century
805	sole	2				4763	C6g7; 14th/15th century
817	sole	2	212			4790	C6g6; late 14th century
2569	sole	2				10515	C6g8; 14th/15th century
3961	sole	2	242			10511	C6g8; 14th/15th century
17039	sole	2	215			10766	B6g4; early 15th century
17070	sole, clump sole	2				10511	C6g8; 14th/15th century
18945	sole	2	250			10464	C6g7; 14th/15th century
19375	sole	2				10464	C6g7; 14th/15th century
19376	sole	2				10490	C6g10; early 15th century
19377	sole	2				10490	C6g10; early 15th century
<b>Sole type e5</b>							
18148	sole	2				2410	5B
1055	sole	2	210	cattle		4875	C6e11; mid 13th century
2637	sole	2				10580	D6h3; early 17th century
17044	sole	2				10758	B6g6; 15th century
18312	patten sole layer	4	214			18429	B6g4; early 15th century
19413	sole	2	242			12222	B6c9/C6e11; early-mid 13th century
19414	sole	2	195			12222	B6c9/C6e11; early-mid 13th century
17317	sole	2					u/s
<b>Sole type e</b>							
120	sole	2				4039	C6z1; late 14th-early 15th century
752	sole	2				4660	C6g19; mid 14th century
754	sole	2		cattle		4540	C6e13; mid 13th century
770	sole	2				4658	C6g19; mid 14th century
785	sole, rand, heel stiffener, vamp	2				4790	C6g6; late 14th century
813	sole	2				4867	C6g6; late 14th century
994	sole	2				9172	D6e10; mid 14th century
2549	sole	2				10469	C6g11; mid 15th century
2641	sole	2				10726	B6g4; early 15th century
17033	sole	2				10522	C6g10; early 15th century
17034	sole	2				10568	C6g10; early 15th century
17041	sole	2		cattle		10545	C6g6; late 14th century
17045	sole	2	195			10522	C6g10; early 15th century
17050	sole	2				10546	C6g6; late 14th century
17059	sole	2				10634	B6f12; late 14th century
17063	sole	2				10617	B6g10; 15th/16th century

Small Find	Parts Present	Con. Type	Shoe Size	Leather Type	Dectn	Context	Period
<b>Sole type e (contd)</b>							
17069	sole	2				10521	C6g10; early 15th century
17073	sole	2				10758	B6g6; 15th century
17084	sole, vamp, quarters, rand	2				10781	B6g4; early 15th century
17369	sole	2				11900	B6f4; early 14th century
17372	sole, clump sole	2				11953	B6f3; early 14th century
17420	sole	2				11883	B6f3; early 14th century
17426	sole	2				11927	B6f11; 14th century
18157	sole	2				12026	D6e9; mid 14th century
18209	sole	2				12659	D6c1; mid 13th century
18222	sole	2				12767	C6e2, D6a17; late 12th century
18286	sole	2		cattle		18073	B6c7; late 11th–early 12th century
18648	sole	2				13005	B6e1; late 13th century
18926	sole, clump sole, rand	2				10119	C6h9; 16th–17th century
19373	sole					10464	C6g7; 14th/15th century
19374	sole	2				10464	C6g7; 14th/15th century
19386	sole	2				10771	B6g4; early 15th century
19409	sole	2				11883	B6f3; early 14th century
19410	sole	2				11900	B6f4; early 14th century
19411	sole	2				11900	B6f4; early 14th century
19412	sole	2				11900	B6f4; early 14th century

## Unclassifiable footwear components with features mentioned in the text

This category includes all those components and fragments which are too incomplete for further classification.

- 15524 Shoe uppers, vamp only, unidentified type. Cut down each side and along lasting margin. Remnant of edge/flesh binding seam at centre throat. Vamp stripe of single line of tunnel stitching forming a raised ridge. L.123, W.131, T. (sole) 1.6mm. Leather: calf. 27555 sf17583 (P3) (Fig.1673)
- 15525 Shoe fragments and scraps. Separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. Top band fragment of folded type with grain/flesh stitch holes passing through both thicknesses. Uppers fragment, torn, from top edge, with edge/flesh stitches, possibly binding seam. Sole edge fragment with edge/flesh construction seam. Seven others, unidentified. Uppers fragment: L.129, W.48, T.1.4mm. Leather: calf. 28904 sf17270 (P4B)
- 15526 Separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. L.54, W.44, T.3.0mm. Leather: cattle. 32115 sf17666 (P4B)
- 15527 Thirteen shoe fragments. Cut-down sole edge fragment, edge/flesh construction seam, five cut down and torn uppers fragments, two with delaminated edge/flesh butt seams; seven rand fragments, grain/flesh construction seams. Sole edge: L.119, W.13, T.4.6mm. Leather: cattle. 9450 sf19364 (P4B)
- 15528 Shoe fragments (9) and scraps (40). Separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. Three fragments construction seam with sole and uppers joined by thonging, tunnel stitches (sole), grain/flesh (uppers). Four fragments uppers lasting margin, grain/flesh stitch holes. Uppers fragment, edge/flesh butt seam. Heel-riser: L.73, W.39, T.1.3mm. Leather: cattle. 8800 sf2165 (P5A)
- 15529 Shoe fragments (8) and abraded uppers scraps (5). Fragments include four uppers and three sole, all from lasting margin, none definitely adjoining. Construction seam is edge/flesh sole, grain/flesh upper. Also a separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. Largest uppers fragment: L.68, W.67, T.2.3mm. Leather: calf. 20808 sf16834 (P5A)
- 15530 Shoe uppers fragment, probably vamp, delaminated grain surface only, torn all round except for throat. Faint vamp stripe of three impressed lines running from throat. L.152, W.66, T.1.2mm. Leather: calf. 22119 sf18527 (P5A)
- 15531 Shoe uppers fragments and scraps (13). Separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. Also four sole fragments, tunnel-stitched construction seam; four uppers fragments, grain/flesh construction seam; four unidentified scraps. Heel-riser: L.54, W.38, T.2.2mm. Leather: cattle. 2484 sf179 (P5B)
- 15532 Shoe fragments (9) and scraps (6). Sole: separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. Uppers: one fits left edge of heel-riser, others are all top edge fragments with edge/flesh binding seam or lasting margin with grain/flesh stitch holes. Heel-riser: L.113, W.67, T.3.7mm. Leather: cattle/calf. 29156 sf10325 (P5B)
- 15533 Separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. L.48, W.45, T.1.5mm. Leather: calf. 21510 sf16294 (P5B)
- 15534 Separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. Tip torn off. L.32, W.29, T.2.2mm. Leather: cattle. 14515 sf16363 (P5B)
- 15535 Shoe fragments (2), sole and uppers. Sole: separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. Nail hole in centre. Uppers: top edge, edge/flesh binding seam, otherwise torn. Uppers: L.68, W.34, T.1.3mm. Leather: calf. 20442 sf16826 (P5B)
- 15536 Two shoe fragments. Clump sole, sub-rectangular, tunnel stitches; probable uppers fragment, cut down all

- round. Clump sole: L.75, W.68, T.3.1mm. Leather: cattle. 6578 sf16956 (P5B)
- 15537 Separated triangular heel-riser with linear impressed decoration, edge/flesh construction seam. L.55, W.46, T.3.0mm. Leather: cattle. 21592 sf18063 (P5B)
- 15538 Fifteen shoe fragments. Very small sole edge fragment, tunnel-stitched construction seam. Five rand fragments, all folded strip type, grain/flesh stitches passing through both thicknesses. Uppers fragment, cut down, one original edge, top edge, with edge/flesh binding seam. Uppers fragments (2), from lasting margin, grain/flesh construction seam, holes match those of rands. One encloses a fragment of another component, possibly a heel stiffener. Six drawstring fragments, all 5.5–7.0mm wide, with unabraded areas and crimped sections where they have passed through slots. Longest is appropriate for wrapping several times around a boot. Largest drawstring: L.539, W.7, T.1.8mm. Leather: unidentified. 1473 sf18150 (P5B)
- 15539 Clump sole, sub-triangular, tunnel stitches around periphery. L.78, W.70, T.2.7mm. Leather: probably cattle. 15494 sf18730 (P5B)
- 15540 Top band, folded lengthwise flesh to flesh, secured to shoe with grain/flesh stitches which pass through both thick-

nesses. Outer face embroidered with intact double row of stitching, inner face with row of oblique blind whip stitches. Both ends cut transversely and secured together with lap seam. L.295, W.6.0, T.3.2mm. Leather: sheep/goat. 5406 sf1968 (C6e2; 12th/13th century) (P6) (Fig.1675)

- 15541 Shoe uppers, vamp only, torn off both sides. Grain/flesh construction seam, vamp stripe of four incised lines, three rows of stitching (absent). L.197, W.110, T.1.7mm. Leather: sheep/goat. 5975 sf19326 (C6c6; mid 12th century) (P6)
- 15542 Shoe uppers fragment, vamp, cut down and torn, short remnant of edge/flesh construction seam Vamp stripe of four incised lines for three rows of embroidery (absent). L.61, W.10.6, T.2.0mm. Leather: sheep/goat. 9428 sf19363 (D6a17–23; late 12th–13th century)
- 15543 Top band, strip form, folded flesh to flesh, originally overstitched to top of shoe, stitches grain/flesh on inner fold, edge/flesh on outer. Outer side has four incised lines with three rows of embroidery, some of which is extant. Most is faded to natural colour, but some thread is still pink. Inner face has a widely spaced overstretch running along top edge. Broken into two fragments. Largest: L.238, W.8.4, T.2.8mm. Leather: calf. u/s sf19516 (formerly part of sf11580) (Fig.1676)

## Other shoe components not sufficiently well preserved to be classified by style

* = may be decoration or differential preservation

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
9035	upper				calf		26721	3
9176	sole	1					26181	3
9177	sole, uppers				calf		26181	3
9184	uppers, heel stiffener				calf		26181	3
9185	sole, uppers	1			calf		26181	3
9601	sole	1					27272	3
9739	uppers				calf		27413	3
9928	uppers				calf		28036	3
9929	uppers, heel stiffener				calf		28036	3
11537	loop				calf		31073	3
13173	sole, vamp	2			cattle/calf		32521	3
13554	top band						32676	3
15991	sole, uppers	2					28348	3
16470	uppers				calf		36323	3
16493	sole, uppers	2			calf		36171	3
16541	sole, uppers	2					36033	3
16658	sole	1					24755	3
16785	top band						26181	3
16819	uppers				calf		20887	3
16877	uppers				calf		19763	3
16886	sole, uppers						19763	3
17201	uppers				calf		28064	3
17202	uppers				calf		28064	3
17203	uppers				calf		28066	3
17227					calf		28240	3
17441	uppers						3696	3
17559	uppers, top band						27413	3
17593	vamp, uppers				calf		27775	3
17682	toggle				calf		32283	3
17721	upper, uppers						32668	3
17741	uppers				calf		32936	3
17840	uppers				calf		34758	3
17850	upper				calf		34818	3



Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
17860	uppers				cattle/calf		34895	3
17862	uppers				sheep/goat		34904	3
17865	top band				sheep/goat		34933	3
17902	lining				cattle		3706	3
19268	uppers						27272	3
10193	upper, heel-riser, loop				cattle/calf		25994	4A
10379	vamp				calf		25987	4A
10392	uppers				calf		25987	4A
16685	uppers				calf		25232	4A
16772	uppers						25987	4A
17616	uppers				calf		27921	4A
18440	sole, uppers						30286	4A
18442	sole, uppers, toggle	2			cattle/calf		30292	4A
18446	sole, heel-riser, uppers				cattle/calf		30343	4A
18448	loop				calf		30352	4A
18459	top band				calf		30352	4A
7720	clump sole						22574	4B
7726	sole, uppers	2			calf		22523	4B
7746	clump sole, uppers, drawstring						22574	4B
7759	uppers, sole	2			cattle/calf		22523	4B
7772	top band				calf		22490	4B
8193	loop				calf		25110	4B
8378	toggle				calf		25330	4B
9192	sole, uppers	2a			cattle/calf		19626	4B
9429	uppers				calf		25748	4B
9461	clump sole						18986	4B
9613	sole	2					27093	4B
9646	sole, uppers	2					27093	4B
9664	uppers						27093	4B
10086	sole	1			cattle		21887	4B
10190	uppers				calf		27203	4B
10228	uppers, heel stiffener				cattle/calf		28088	4B
10278	uppers				calf		27762	4B
10330	uppers				cattle/calf		30002	4B
10448	upper, heel stiffener				calf		29254	4B
10463	uppers				calf		28432	4B
10476	uppers, heel stiffener, insert				calf		29254	4B
10485	vamp				calf		28092	4B
10578	uppers, sole	1					29193	4B
10798	sole, uppers, heel stiffener	1			cattle/calf		28128	4B
10849	upper, heel stiffener				cattle/calf		29467	4B
11057	sole, uppers	1			cattle		28728	4B
11271	uppers, sole						29736	4B
12681	vamp				calf		32113	4B
12690	sole, heel stiffener, uppers						32224	4B
12910	latchet				calf		31476	4B
12948	upper				calf		34391	4B
13016	rand				calf		34412	4B
13032	upper, heel stiffener, sole	2			calf		32217	4B
13070	vamp				cattle		34569	4B
13157	uppers						29926	4B
13226	sole, uppers	1					32589	4B
13264	sole, uppers	2			cattle/calf		29954	4B
13269	uppers, top band				cattle		32590	4B
13280	uppers						34842	4B
13359	sole, heel-riser, top band, uppers						29926	4B

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
13366	sole, upper	1			calf		32526	4B
13368	uppers, sole						29926	4B
13379	sole, uppers				calf		29926	4B
13537	sole, upper				calf		32725	4B
13814	uppers, heel stiffener				calf		35059	4B
14038	sole, uppers, heel stiffener	1			cattle/calf		35483	4B
14077	uppers				cattle/calf		35483	4B
14182	sole	1-2					32105	4B
15987	clump sole, heel-riser	2					22574	4B
15990	uppers				calf		22807	4B
15997	uppers				calf		22370	4B
16004	upper				calf		22868	4B
16005	sole, clump sole, heel stiffener, uppers	1					22490	4B
16077	uppers						25110	4B
16282	heel stiffener				calf		19626	4B
16283	sole	1					19626	4B
16288	heel-riser						27093	4B
16292	sole, uppers, vamp, top band	2					18602	4B
16293	uppers				cattle/calf		35143	4B
16306	vamp				calf		32105	4B
16380	sole, uppers	2			cattle/calf		35332	4B
16384	sole	1					35160	4B
16452	uppers				calf		35433	4B
16453	sole	1					35448	4B
16462	uppers				calf		35524	4B
16464	sole						35709	4B
16472	uppers				calf		35005	4B
16483	clump sole				cattle		35137	4B
16484	uppers						35137	4B
16487	uppers				calf		35012	4B
16495	sole, uppers, heel stiffener, clump sole	2			cattle/calf		35483	4B
16500	sole	2					35143	4B
16501	sole, uppers, heel stiffener	2			calf		35549	4B
16510	uppers, heel stiffener	2			calf		35147	4B
16521	uppers, heel stiffener, toggle						35118	4B
16523	uppers				calf		35007	4B
16525	sole, uppers	2			cattle/calf		36064	4B
16532	sole, uppers, vamp				cattle/calf		35086	4B
16535	clump sole				cattle/calf		36060	4B
16536	uppers				calf		36060	4B
16602	uppers				calf		28738	4B
16605	uppers						29736	4B
16612	uppers						28730	4B
16613	uppers				calf		28730	4B
16648	uppers				calf		23066	4B
16659	uppers						24292	4B
16663	uppers				cattle/calf		24808	4B
16664	uppers				cattle/calf		24724	4B
16670	sole, uppers	1				impress	23080	4B
16672	uppers				calf		23234	4B
16674	sole, uppers						23251	4B
16699	uppers						23339	4B
16704	clump sole				cattle		24312	4B
16707	uppers				calf		25725	4B
16709	uppers						25881	4B
16731	clump sole						25391	4B
16732	uppers				calf		25598	4B
16736	uppers				calf		23402	4B

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
16738	clump sole				calf		23497	4B
16741	uppers				calf		23456	4B
16747	uppers				calf		23102	4B
16750	uppers				calf		25934	4B
16751	loop						25934	4B
16757	uppers, heel stiffener						23366	4B
16758	uppers				calf		23187	4B
16765	uppers				calf		25808	4B
16776	upper						26106	4B
16794	rand						26161	4B
16801	uppers, vamp						26902	4B
16841	uppers				calf		20747	4B
17207	uppers						28076	4B
17210	sole, heel stiffener, uppers	1					28087	4B
17214	uppers				calf		28092	4B
17221	uppers				calf		28186	4B
17223	heel-riser, uppers						28232	4B
17226	uppers				calf		28236	4B
17232	uppers						28360	4B
17236	top band						28489	4B
17239	uppers				calf		28492	4B
17242	uppers						28494	4B
17245	heel stiffener				calf		28496	4B
17255	clump sole						28711	4B
17257	clump sole						28715	4B
17265	upper, heel stiffener						28841	4B
17279	heel-riser				cattle	impress	28987	4B
17545	heel-riser						27341	4B
17566	uppers						27466	4B
17574	uppers, top band				cattle/calf		27503	4B
17576	top band, toggle, loop				calf		27504	4B
17604	heel stiffener, uppers				calf		27812	4B
17624	uppers				calf		31011	4B
17626	uppers						31013	4B
17636	top band, uppers						31194	4B
17658	top band				calf		32026	4B
17663	sole	2					32105	4B
17669	uppers				cattle		32129	4B
17672	uppers, heel-riser, vamp, heel stiffener						32199	4B
17676	clump sole, uppers						32217	4B
17678	uppers				calf		32224	4B
17687	loop				calf		32354	4B
17715	uppers				calf		32589	4B
17716	uppers				calf		32617	4B
17718	sole	2					32629	4B
17733	clump sole						32725	4B
17735	uppers						32742	4B
17757	uppers						34289	4B
17760	uppers, vamp				cattle/calf		34340	4B
17771	latchet				calf		34412	4B
17785	sole	1					34438	4B
17792	uppers				calf	impress	34517	4B
17794	heel stiffener				calf		34521	4B
17795	sole, uppers				calf		34558	4B
17803	uppers				calf		34580	4B
17805	sole, uppers	2			cattle/calf		34582	4B
17807	uppers				calf		34604	4B
17809	uppers				calf		34612	4B
17820	uppers				calf		34655	4B
17822	uppers, heel stiffener				calf		34670	4B
17827	uppers						34703	4B
17838	sole, uppers	1			cattle/calf		34739	4B

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
17854	uppers						34842	4B
18098	uppers				calf		21807	4B
18116	vamp				calf		21887	4B
18315	uppers				calf		18529	4B
18318	sole, uppers	2					18538	4B
18326	uppers				calf		18601	4B
18328	sole, clump sole, rand, heel stiffener, drawstring, uppers	2					18602	4B
18330	uppers						18666	4B
18354	sole	2					29100	4B
18362	uppers, sole, top band	1					29193	4B
18364	top band				calf		29222	4B
18379	sole, heel-riser, upper	1			calf	impress	29459	4B
18385	uppers						29467	4B
18395	sole, uppers	2					29693	4B
18404	uppers				cattle/calf		29844	4B
18406	drawstring				cattle/calf		29845	4B
18409	sole, heel stiffener, uppers	1					29904	4B
18418	top band, uppers				calf		29926	4B
18423	top band						29953	4B
18425	uppers				cattle/calf		29954	4B
18564	upper						22272	4B
18581	drawstring						22370	4B
18589	uppers				cattle		22421	4B
18592							22431	4B
18593	sole, uppers, top band	1					22438	4B
18597	uppers				calf		22490	4B
18599	top band				calf		22505	4B
18603	uppers				calf		22523	4B
18604	uppers, top band, clump sole				calf		22574	4B
18608	uppers				calf		22595	4B
18615	uppers, drawstring						22714	4B
18617	uppers				calf		22767	4B
18624	sole	1					22868	4B
18626	top band				calf		22896	4B
18793	sole, uppers	2					9510	4B
18887	heel-riser, uppers						8627	4B
18889	sole, uppers						8760	4B
18917	uppers						8732	4B
19250	sole, uppers	1					22490	4B
19263	uppers, sole						26012	4B
19481	upper				calf		22574	4B
19487	quarters				calf		28730	4B
19488	uppers				calf		28730	4B
19490	sole, upper	1			cattle/calf		29254	4B
19491	sole, upper	1			cattle/calf		29254	4B
19498	sole	1			cattle		29736	4B
19500	upper				calf		32105	4B
19509	uppers				calf		35143	4B
17901	uppers, insert				cattle		3647	4/5
1483	uppers				sheep/goat		8453	5A
2854	upper				sheep/goat		11672	5A
7255	sole, clump sole, uppers						20808	5A
11274	uppers				calf		22154	5A
11900	uppers				cattle/calf		26871	5A
12801	uppers, heel stiffener				calf		27681	5A
12828	sole, uppers	2					34249	5A
15994	uppers						22128	5A
15998	heel stiffener, uppers						22090	5A
15999	uppers				calf		22226	5A
16002	uppers, top band				calf		22090	5A
16003	top band				calf		22153	5A

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
16295	upper, sole	1			calf		22267	5A
16334	uppers				calf		14965	5A
16340	uppers				calf		14873	5A
16649	uppers						23000	5A
16745	heel-riser, uppers				cattle/calf	impress	26871	5A
16763	loop				calf		23001	5A
16769	uppers, heel stiffener				sheep/goat		26953	5A
16820	uppers						20808	5A
16822	sole, uppers, heel stiffener, top band					incised	20185	5A
16831	uppers				calf		20772	5A
16846	sole, uppers	2					20181	5A
16852	uppers						20746	5A
17549	uppers				calf		27118	5A
17554	heel-riser				cattle		27296	5A
17595	uppers				calf		27806	5A
17598	uppers				calf		27808	5A
17601	uppers				calf		27809	5A
17603	vamp, sole	1			calf		27811	5A
18337	uppers						18925	5A
18522	uppers				calf		22104	5A
18531	uppers				calf		22128	5A
18535	uppers				calf		22140	5A
18536	uppers, heel stiffener				calf		22141	5A
18542	uppers, top band				calf		22166	5A
18545	uppers						22193	5A
18548	uppers				calf		22208	5A
18556	uppers				calf		22256	5A
18558	vamp				calf		22266	5A
18570	uppers						22313	5A
18574	uppers				calf		22340	5A
18577	heel stiffener				calf		22358	5A
18630	heel stiffener						22050	5A
18634	uppers						22090	5A
18878	uppers, heel stiffener, clump sole						8023	5A
18882	sole	1					8453	5A
18885	sole, uppers, top band						8484	5A
18920	uppers				cattle/calf		8800	5A
166	sole	1					2463	5B
174	vamp				cattle		2372	5B
190	sole, uppers, welt	5					2369	5B
193	fragments						2463	5B
242	insert				cattle		1092	5B
323	uppers, heel stiffener, clump sole				cattle		1535	5B
1558	heel riser, uppers, top band, drawstring					incised	5321	5B
5092	clump sole				cattle		11125	5B
7263	uppers	1			calf		14659	5B
8238	toggle				calf		21204	5B
8284	loop				calf		21203	5B
8848	vamp				calf		19620	5B
8878	heel-riser				cattle		19620	5B
9080	upper	1			calf		19622	5B
9106	sole	2					19622	5B
9287	sole, uppers	1			calf		19633	5B
9332	sole	1					19625	5B
9343	sole, uppers						19625	5B
9847	vamp				cattle		14515	5B
9953	sole						21904	5B
10254	sole, uppers, drawstring	2					21809	5B
10280	uppers, heel stiffener				calf		29156	5B



Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
10291	uppers, heel stiffener, heel-riser						29192	5B
10687	sole, uppers, heel stiffener	1					21925	5B
10715	sole	1					21925	5B
11899	uppers				calf		21543	5B
14496	sole, top band	1					19623	5B
16071	heel stiffener						6472	5B
16174	uppers						14434	5B
16284	heel stiffener				calf		19625	5B
16285	sole, uppers				calf		19625	5B
16298	loop						14545	5B
16316	drawstring				calf		6528	5B
16318	uppers				cattle/calf		14968	5B
16336	uppers						14667	5B
16338	vamp				calf		14712	5B
16344	sole, uppers, heel stiffener	1			calf		14548	5B
16352	sole	1					14941	5B
16651	uppers				calf		26863	5B
16656	uppers				calf		24903	5B
16862	sole, upper	1			calf		20294	5B
16878	uppers						19622	5B
16899	sole, uppers, rand						19307	5B
16952	uppers						6530	5B
16971	sole, clump sole, drawstring, top band					stitch	6415	5B
16974	sole, uppers, top band						6358	5B
16979	heel-riser, uppers, vamp, drawstring				cattle		6347	5B
16994	uppers						6211	5B
16995	uppers				cattle/calf		6284	5B
16997	top band				sheep/goat	incised	6284	5B
16999	uppers				cattle/calf		6425	5B
17006	uppers						6788	5B
17017	uppers						6284	5B
17018	clump sole						6578	5B
17026	uppers, drawstring						6870	5B
17158	sole	2			cattle		9378	5B
17164	rand, uppers						9360	5B
17464	uppers, drawstring						5434	5B
17537	uppers				calf		21257	5B
17581	vamp						27513	5B
17937	uppers, drawstring				cattle/calf		5673	5B
17965	top band						5588	5B
17995	sole	2					5848	5B
17996	uppers						5887	5B
18014	heel-riser						21197	5B
18016	sole, uppers						21203	5B
18017	uppers				calf		21204	5B
18020	clump sole				calf		21249	5B
18037	sole	1					21478	5B
18042	uppers				calf		21497	5B
18046	heel stiffener				calf		21508	5B
18048	uppers				calf		21510	5B
18050	sole	1					21511	5B
18058	lining				calf		21587	5B
18061	uppers				calf		21591	5B
18071	sole	1					21667	5B
18072	uppers				calf		21674	5B
18076	sole, uppers, heel stiffener, top band	2					21676	5B
18089	vamp				calf		21689	5B
18096	uppers, heel stiffener						21796	5B
18109	heel-riser				cattle		21858	5B
18118	sole	2					21888	5B

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
18130	sole	2					21925	5B
18139	sole	2					1632	5B
18141	clump sole						2060	5B
18151	uppers, top band						1473	5B
18324	top band					incised, stitch	18580	5B
18340	sole	1					18949	5B
18355	sole	2					29101	5B
18358	upper				calf		29128	5B
18360	uppers				calf		29156	5B
18368	uppers				cattle/calf		29259	5B
18372	clump sole, heel stiffener, uppers						29263	5B
18376	top band, uppers						29386	5B
18503	heel stiffener						13716	5B
18720	uppers				sheep/goat		15338	5B
18722	vamp				calf		15370	5B
18724	uppers				cattle		15467	5B
18725	heel stiffener				calf		15470	5B
18728	insert				calf		15472	5B
18734	sole, heel riser, uppers, top band	1					15530	5B
18748	uppers				calf		15700	5B
18761	rand				cattle		15932	5B
18762	uppers				calf		15994	5B
18772	sole, top band	1					15177	5B
18775	uppers, drawstring						15189	5B
18783	uppers				calf		15530	5B
18812	uppers						9483	5B
18845	sole	2					11125	5B
18895	uppers						7480	5B
18897	heel riser, uppers						7483	5B
19170	uppers						6532	5B
19186	sole	1					14941	5B
19241	uppers						21204	5B
19324	sole	2					5434	5B
19325	sole	2					5434	5B
19348	top band				sheep/goat		6425	5B
19354	sole	2			cattle		7369	5B
19437	upper				calf		14659	5B
7157	vamp, clump sole						20177	5Cr
16868	sole	2			cattle		20166	5Cr
16872	uppers				cattle/calf		20179	5Cr
16875	upper				sheep/goat	colour	19357	5Cr
16891	uppers, insert				calf		19269	5Cr
16893	uppers				calf		19090	5Cr
16904	uppers						19232	5Cr
16908	sole	2					19374	5Cr
16913	uppers						19371	5Cr
16932	uppers				cattle		6795	5Cr
16936	sole, uppers, rand						6795	5Cr
16947	uppers, top band				calf		6785	5Cr
16948	insert				sheep/goat	incised	6785	5Cr
16954	sole	1					6926	5Cr
16959	uppers, top band				calf		6473	5Cr
16981	uppers, top band						6908	5Cr
17111	top band, clump sole						16877	5Cr
17128	sole, uppers						16733	5Cr
17437	sole, clump sole	2			cattle		3464	5Cr
17896	vamp	3					3507	5Cr
17899	sole	2		147			3587	5Cr
18010	uppers				sheep/goat		21024	5Cr
18718	sole, clump sole, upper, top band						15311	5Cr

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
19172	uppers						6570	5Cr
19194	insert						16877	5Cr
2	sole	2			cattle		1002	D6y1; late 12th–13th century
70	clump sole						2238	A6z4; 13th century
80	fragments						1002	D6y1; late 12th–13th century
86	clump sole						2196	A6z4; 13th century
97	uppers, top band, insole						1002	D6y1; late 12th–13th century
106	uppers						2336	A6z4; 13th century
139	clump sole						1133	D6h1; late 16th century
245	uppers				cattle		2587	B6w2; early 15th century
258	sole	2			cattle		2621	A6z3; early 13th century
499	sole						2841	A6z2; late 12th century
511	clump sole				cattle		2635	A6z1; 11th/12th century
543	sole, insole, midsole, lift, top band, pegs, nails	5					4385	C6i4; 16th–19th century
615	rand				cattle		4380	C6g19; mid 14th century
757	sole	2					4402	C6f1; late 13th century
807	sole, uppers	2					4763	C6g7; 14th/15th century
832	uppers						4931	C6g18; 15th/16th century
906	sole						9113	D6e6; early 14th century
967	sole	2			cattle		3178	A6i2; 14th/15th century
984	clump sole						9122	D6e1; 13th/14th century
1067	uppers				cattle		4640	C6e10; mid 13th century
1204	sole, rand, uppers, insert				cattle		3235	A6g1; 13th/14th century
1285	uppers				cattle		5245	D6d3; late 13th century
1494	sole, rand, uppers, insert						5348	C6e1, D6a16; 12th–13th century
1519	sole, rand, clump sole						5348	C6e1, D6a16; 12th–13th century
1586	insole				cattle		9334	D6a25–b1; late 12th/early 13th century
1590	clump sole						9334	D6a25–b1; late 12th/early 13th century
1607	sole, rand	2					9348	D6a25–b1; late 12th/early 13th century
1711	uppers						5331	D6a17; late 12th century
1728	sole, rand	2					5415	C6c6, D6a7; mid 12th century
1753	toggle				sheep/goat		5484	C6e1, D6a16; 12th–13th century
1765	sole, clump sole, uppers	2					5333	D6a17; late 12th century
1818	sole, rand, uppers, clump sole						9305	D6a24; 12th/13th century
1838	clump sole, sole	2					9305	D6a24; 12th/13th century
2059	clump sole						9305	D6a24; 12th/13th century
2257	upper				sheep/goat		5536	C6e1; 12th/13th century
2263	rand, clump sole, insert						6035	C6e1; 12th/13th century
2738	upper, toggle, top band				cattle/calf		12005	D6g2; mid 16th century
3170	toggle				cattle		12406	B6c9; 13th century
3368	sole, clump sole, rand, heel-riser, uppers, top band						6257	C6c4; early 12th century
3401	top band				sheep/goat	stitch	6257	C6c4; early 12th century
3935	sole, clump sole, uppers	2					11818	B6c2–6; 12th–early 13th century
3953	rand	2					10771	B6g4; early 15th century
3956	sole, rand						6257	C6c4; early 12th century

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
4767	drawstring				calf		17528	C6d4; mid 12th century
5311	top band				sheep/goat		18172	B6c1; 12th/13th century
5431	sole, uppers	2					17890	B6a1, C6a1; late 11th century
7162	vamp				calf		15285	B6a1; late 11th century
7215	sole, vamp, rand				sheep/goat		12487	D6d1-2; late 13th century
7216	sole	2					12015	D6f4; late 14th century
16106	top band				sheep/goat	stitch	9323	D6d3; late 13th century
16301	sole	2					11687	B6g4; early 15th century
16302	insert				goat		11687	B6g4; early 15th century
16310	sole	2					13902	B6c3; 12th/13th century
16311	clump sole						13902	B6c3; 12th/13th century
16312	vamp						13902	B6c3; 12th/13th century
16313	uppers				calf		17418	C6c4, D6a6; early 12th century
16378	sole, uppers	2					9305	D6a24; 12th/13th century
16388	uppers						5484	C6e1, D6a16; 12th-13th century
16392	vamp, uppers					*poss	17360	C6d1; mid 12th century
16394	insert, vamp				cattle/calf		17890	B6a1, C6a1; late 11th century
16396	clump sole				cattle		17965	C6b1; 11th/12th century
16397	uppers				cattle/calf		17659	C6c4, D6a6; early 12th century
16398	vamp, clump sole						17788	B6a3/C6c1; early 12th century
16399	sole	2			cattle		17375	C6d1; mid 12th century
16401	top band						17890	B6a1, C6a1; late 11th century
16418	insert				sheep/goat		17551	C6c3; early 12th century
16419	uppers						17699	C6c1; early 12th century
16422	sole, uppers						17890	B6a1, C6a1; late 11th century
16424	clump sole						17599	C6c6; mid 12th century
16426	sole, rand, clump sole, heel stiffener						17699	C6c1; early 12th century
16430	sole, uppers, top band						17278	C6d1; mid 12th century
16435	sole	2			cattle		17397	B6a5; 11th/12th century
16437	sole	2					17394	B6b6; late 12th century
16438	upper				sheep/goat		17532	C6c4, D6a6; early 12th century
16440	sole	2					17275	C6d11; late 12th century
16442	sole	2			cattle		17076	C6d8; mid-late 12th century
16444	clump sole						17037	C6d8-20; mid-late 12th century
16446	sole	2			cattle		17008	B6a7; early 12th century
16449	sole, heel stiffener	2					17040	D6a9; early 12th century
16548	clump sole						16525	D6a13-14; mid 12th century
16551	clump sole, sole	2					16603	D6a3-7; late 11th century-11th/12th century
16554	sole, rand, clump sole, uppers, top band, drawstring						16590	D6a12; early 12th century
16559	sole	2					16605	B6b4; late 12th century
16565	sole, rand, insert	2					16608	D6a10; early 12th century
16566	clump sole, vamp, drawstring				sheep/goat		16636	C6e2-6; 12th/13th century
16569	sole, rand, uppers	2			cattle/calf		16653	B6a8-10; 12th century

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
16571	sole, uppers	2			cattle/calf		16535	D6a9; early 12th century
16574	uppers						16512	B6b6/C6d20; late 12th century
16577	sole	2			cattle		16515	C6d22/D6a13; mid/late 12th century
16578	sole	2					16556	B6a10, C6d8; mid 12th century
16581	rand				cattle		16501	B6c1; 12th/13th century
16582	sole	2			cattle		16523	D6a13, mid 12th century
16585	sole	2					16525	D6a13–14; mid 12th century
16587	clump sole						16585	B6b6/C6d20; late 12th century
16589	uppers				calf		16545	B6a7; early 12th century
16592	sole, clump sole, insert, rand	2			cattle		16612	D6a1; late 11th century
16594	sole	2					16605	B6b4; late 12th century
16596	sole, rand	2			cattle		16653	B6a8–10; 12th century
16625	clump sole						16443	B6c1; 12th/13th century
16629	rand, drawstring						16409	D6a14; mid 12th century
16634	sole	2					16443	B6c1; 12th/13th century
16636	clump sole, rand, heel stiffener						16410	D6a12; early 12th century
16639	sole	2					16464	D6a19; late 12th century
16642	rand						16465	D6a19; late 12th century
16873	sole	2			cattle		19061	C6b1; 11th/12th century
16919	vamp				sheep/goat		1567	D6y1; late 12th–13th century
16926	clump sole						2194	A6z4; 13th century
16930	uppers						2194	A6z4; 13th century
16940	sole, clump sole, uppers, heel stiffener, top band	2					6257	C6c4; early 12th century
16941	sole, uppers, rand, insert						6257	C6c4; early 12th century
16944	uppers						6257	C6c4; early 12th century
16964	top band, clump sole						6246	D6a6; 11th/12th century
16988	sole	2					6258	C6c3, D6a5; late 11th/early 12th century
17001	toggle				cattle		6023	D6a6; 11th/12th century
17004	sole, drawstring	2			cattle		6034	C6e2; 12th/13th century
17010	uppers, insert						6245	D6a6; 11th/12th century
17032	sole, rand, uppers, top band						10993	D6g2; mid 16th century
17036							10545	C6g6; late 14th century
17037	sole, uppers						10767	B6g4; early 15th century
17046	sole, rand, uppers, quarters	2			cattle/calf		10511	C6g8; 14th/15th century
17048	sole						10897	B6g1; 14th/15th century
17049	sole, rand	2					10515	C6g8; 14th/15th century
17056	clump sole, rand						10993	D6g2; mid 16th century
17058	toggle				calf		10783	D6e10; mid 14th century
17062	uppers				calf		10928	C6g1; early–mid 14th century
17079	uppers				calf		10557	C6g6; late 14th century
17089	clump sole, rand						10557	C6g6; late 14th century
17093	sole	2					16879	C6c5–d17; early–late 12th century
17095	sole, rand						16876	D6a2; late 11th century
17099	sole	2					16735	B6a5; 11th/12th century
17100	sole	2					16734	C6a1, D6a1; late 11th century
17105	sole, clump sole, rand						16797	C6d17; late 12th century
17108	heel-riser						16774	C6d20; late 12th century
17109	clump sole						16790	C6d14; late 12th century
17113	clump sole, top band, heel stiffener, uppers						16876	D6a2; late 11th century



Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
17116	clump sole, sole						16979	C6d11; late 12th century
17119	sole	2					16949	B6a10, C6d8; mid 12th century
17121	clump sole						16923	C6d9; mid-late 12th century
17125	sole						16920	C6d11; late 12th century
17127	sole	2					16879	C6c5-d17; early-late 12th century
17132	sole, heel stiffener, insert	2					9305	D6a24; 12th/13th century
17135	sole	2					9302	D6a26; 12th/13th century
17137	sole	2					9398	D6a14; mid 12th century
17138	sole, rand, heel stiffener, top band						9224	C6e9; mid 13th century
17150	sole	2					9224	C6e9; mid 13th century
17152	sole, clump sole, rand, uppers, toggle, top band						9224	C6e9; mid 13th century
17155	sole, uppers	2					9260	D6a26; 12th/13th century
17157	insert				sheep/goat		9397	D6a17-23; late 12th-13th century
17167	heel stiffener				sheep		9322	D6d3; late 13th century
17172	sole, clump sole, rand, uppers, top band						9323	D6d3; late 13th century
17173	sole, clump sole, uppers, top band, heel stiffener, rand, drawstring						9323	D6d3; late 13th century
17174	sole, uppers	2					9224	C6e9; mid 13th century
17177	sole, rand, upper				sheep/goat		9224	C6e9; mid 13th century
17178	sole, clump sole, rand, uppers, drawstring	2					9224	C6e9; mid 13th century
17180	uppers, rand				calf		9348	D6a25-b1; late 12th/early 13th century
17182	sole, rand, clump sole, uppers						9334	D6a25-b1; late 12th/early 13th century
17185	sole, clump sole, rand, uppers						9334	D6a25-b1; late 12th/early 13th century
17189	clump sole, sole, rand, uppers, drawstring						9334	D6a25-b1; late 12th/early 13th century
17295	sole	2					13315	B6c2-6; 12th-early 13th century
17322	clump sole						10923	C6g1; early-mid 14th century
17334	sole	2					6257	C6c4; early 12th century
17343	rand						11416	B6c2-6; 12th-early 13th century
17345	sole	2			cattle		11507	B6c6; early 13th century
17347	uppers rand						11514	B6c2; 12th/13th century
17352	insert						11712	B6g4; early 15th century
17358	rand						11760	B6g2; 14th/15th century
17361	rand						11818	B6c2-6; 12th-early 13th century
17366	rand						11883	B6f3; early 14th century
17368	sole	2					11886	B6f4; early 14th century
17375	sole	2					11979	B6d4; 13th century
17376	uppers				sheep/goat		11510	B6c2; 12th/13th century
17377	uppers				cattle		11514	B6c2; 12th/13th century
17384	uppers				cattle		11633	B6c6; early 13th century
17390	sole						11646	B6a7; early 12th century
17392	sole, clump sole, uppers, insert	2			cattle/calf		11647	B6a7; early 12th century
17395	sole, clump sole, rand, uppers, drawstring	2					11656	B6g4; early 15th century

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
17397	uppers						11668	B6c2-6; 12th-early 13th century
17405	clump sole, sole	2			cattle		11726	B6c1; 12th/13th century
17407	sole, rand						11728	B6c7; early 13th century
17409	rand						11752	B6g2; 14th/15th century
17412	sole, clump sole, rand, uppers, top band, drawstring	2					11763	B6g4; early 15th century
17414	sole, clump sole, vamp	2					11784	B6c2-6; 12th-early 13th century
17415	sole	2					11797	B6g2; 14th/15th century
17417	sole, clump sole, top band, heel stiffener, rand						11818	B6c2-6; 12th-early 13th century
17418	clump sole						11881	B6f6; 14th century
17421	clump sole, rand						11886	B6f4; early 14th century
17422	uppers						11900	B6f4; early 14th century
17425	sole, rand, uppers, insert, top band	2					11919	B6f3; early 14th century
17429	clump sole				cattle		11956	B6f3; early 14th century
17431	rand				cattle		11979	B6d4; 13th century
17432	clump sole						11991	B6f3; early 14th century
17435	sole	2					3256	A6i2; 14th/15th century
17447	clump sole						4879	C6g6; late 14th century
17449	uppers						5246	C6e5; early 13th century
17451	sole	2					5331	D6a17; late 12th century
17452	uppers				cattle		5331	D6a17; late 12th century
17454	uppers, rand						5333	D6a17; late 12th century
17456	sole, clump sole	2					5348	C6e1, D6a16; 12th-13th century
17458	heel stiffener				cattle		5406	C6e2; 12th/13th century
17460	sole, clump sole, rand, uppers, top band						5415	C6c6, D6a7; mid 12th century
17467	rand						5442	C6e5; early 13th century
17470	sole, clump sole, uppers, rand, top band						5484	C6e1, D6a16; 12th-13th century
17504	sole	2					16114	D6a16; mid 12th century
17511	clump sole						16112	C6d21; late 12th century
17512	sole	2					16130	D6a16; mid 12th century
17513	sole						16153	C6d22; late 12th century
17515	sole						16170	D6a16; mid 12th century
17517	sole	2					16170	D6a16; mid 12th century
17520	sole	2					16331	C6d17; late 12th century
17522	sole	2					16362	B6c7; late 11th-early 12th century
17523	sole	2			cattle		16384	C6e6; early 13th century
17526	uppers						16123	C6d22; late 12th century
17528	sole	2					16170	D6a16; mid 12th century
17531	sole	2					16173	B6a11; 12th century
17535	sole	2			cattle		16362	B6c7; late 11th-early 12th century
17893	sole	2					13243	B6a7; early 12th century
17898	sole, vamp	2					3536	A6c3; 12th century
17905	uppers						5232	C6c6, D6a7; mid 12th century
17910	rand						5245	D6d3; late 13th century
17911	uppers				cattle		5289	D6d3; late 13th century
17914	sole, rand, toggle, uppers				cattle		5331	D6a17; late 12th century
17915	clump sole, rand, uppers						5333	D6a17; late 12th century
17922	sole, clump sole, drawstring, uppers, heel stiffener, rand, top band						5348	C6e1, D6a16; 12th-13th century
17925	sole, upper, clump sole, heel stiffener, rand						5415	C6c6, D6a7; mid 12th century

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
17928	sole, uppers, rand, clump sole, heel stiffener, drawstring	2					5484	C6e1, D6a16; 12th–13th century
17930	sole	2					5331	D6a17; late 12th century
17936	sole, clump sole, rand, uppers						5655	D6a17–23; late 12th–13th century
17945	clump sole						5777	D6a17–23; late 12th–13th century
17947	sole, clump sole, uppers, top band						5803	C6e1–2; late 12th/early 13th century
17953	heel stiffener						5976	C6d3–14; mid–late 12th century
17959	sole, clump sole, rand, uppers, top band					stitch	5981	C6c3, D6a5; late 11th/early 12th century
17963	uppers, insert						5545	D6a17–23; late 12th–13th century
17967	sole	2					5603	C6e2–8; late 12th/early 13th century
17970	uppers						5668	C6e6; early 13th century
17971	sole, rand	2					5671	C6e6; early 13th century
17982	rand						5755	D6a17–23; late 12th–13th century
17984	clump sole						5777	D6a17–23; late 12th–13th century
17987	sole	2			cattle		5802	D6a17–23; late 12th–13th century
17989	uppers						5803	C6e1–2; late 12th/early 13th century
17993	clump sole, top band						5838	C6c5, D6a6; early 12th century
18000	uppers						5978	D6a6; 11th/12th century
18005	sole	2					5981	C6c3, D6a5; late 11th/early 12th century
18135	uppers, sole						1404	D6y1; late 12th–13th century
18142	sole, uppers	1					2284	B6u1; late 11th–early 13th century
18152	clump sole						12008	D6g2; mid 16th century
18154	rand						12015	D6f4; late 14th century
18155	sole fragments, uppers fragments, rand	2					12018	D6e9; mid 14th century
18158	sole, rand	2					12054	C6e11; mid 13th century
18160	sole	2					12106	C6e9, D6e1; mid 13th century
18162	clump sole						12126	D6e9; mid 14th century
18164	clump sole, heel stiffener						12147	D6e7; early 14th century
18165	rand, clump sole						12177	C6f4; 13th/14th century
18167	sole, rand, clump sole, uppers	2					12222	B6c9/C6e11; early–mid 13th century
18175	uppers, rand						12276	D6e5; early 14th century
18177	clump sole, uppers						12365	C6e6; early 13th century
18179	sole, clump sole, rand, uppers				cattle/calf		12367	D6e4–5; 13th/14th–early 14th century
18180	clump sole						12368	D6e3; 13th/14th century
18183	sole	2			cattle		12404	B6c4, C6e6; early 13th century
18184	sole	2					12407	B6c9; 13th century
18186	sole, clump sole, uppers						12458	C6e6; early 13th century
18187	uppers, rand, drawstring						12485	D6c1; mid 13th century
18189	sole, clump sole, uppers	2					12501	C6e7; early 13th century
18192	uppers						12546	D6a25; 12th/13th century
18193	sole, rand, uppers, drawstring						12548	D6a25; 12th/13th century

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
18195	sole			224			12556	B6c4, C6e6; early 13th century
18196	uppers, heel stiffener				sheep/goat		12561	D6a3-25; late 11th-12th/13th century
18199	sole, uppers, top band	2					12572	C6e1; 12th/13th century
18202	clump sole						12629	D6a25; 12th/13th century
18206	sole	2					12647	D6c1; mid 13th century
18207	sole	2					12648	D6e1-8; late 13th/early 14th century
18211	uppers				calf		12631	D6a26-e3; early-late 13th century
18212	sole	2					12710	D6a26; 12th/13th century
18217	sole, rand, uppers						12751	D6d1; late 13th century
18218	sole	2					12752	D6f1; mid-late 14th century
18219	clump sole						12758	D6b-d1; 13th century
18220	sole	2					12760	C6e4; 12th/13th century
18224	sole	2					12839	C6d21; late 12th century
18225	sole, uppers	2					12843	D6a23; 12th/13th century
18226	clump sole				cattle		12844	C6e2; 12th/13th century
18227	sole, uppers	2					12847	C6d21; late 12th century
18234	sole	2					12989	C6e2; 12th/13th century
18235	sole	2					12062	C6e10; mid 13th century
18239	sole	2					12180	D6e5; early 14th century
18241	sole, rand	2			cattle		12222	B6c9/C6e11; early-mid 13th century
18242	rand						12257	D6e5; early 14th century
18244	clump sole						12274	D6e1; 13th/14th century
18245	rand						12276	D6e5; early 14th century
18250	rand				cattle		12413	B6c1; 12th/13th century
18252	sole	2			cattle		12458	C6e6; early 13th century
18253	sole, rand	2					12485	D6c1; mid 13th century
18258	rand						12556	B6c4, C6e6; early 13th century
18261	sole	2					12619	D6a24; 12th/13th century
18265	sole						12840	C6d23; late 12th century
18268	insert				cattle		12863	C6e4; 12th/13th century
18275	sole	2					12989	C6e2; 12th/13th century
18276	rand						12270	B6f5; early 14th century
18288	rand, uppers				sheep/goat		18169	B6g4; early 15th century
18291	clump sole						18172	B6c1; 12th/13th century
18293	sole	2			cattle		18174	B6c2; 12th/13th century
18295	sole, rand, clump sole						18193	B6c2; 12th/13th century
18297	sole, clump sole, uppers, heel stiffener						18194	B6c2; 12th/13th century
18299	clump sole, rand						18256	B6a7; early 12th century
18300	uppers				sheep/goat		18329	B6a5; 11th/12th century
18302	sole, clump sole, uppers						18331	B6a5, C6c3; early 12th century
18304	sole, rand						18337	B6a6/C6c5; early 12th century
18307	sole, uppers, heel stiffener, clump sole, rand				cattle		18366	B6a5; 11th/12th century
18311	sole, clump sole						18381	B6a5; 11th/12th century
18332	sole, clump sole, uppers, top band	2					18668	C6d6; mid 12th century
18343	rand				cattle		18120	B6c5; early 13th century
18344	clump sole						18138	B6c5; early 13th century
18463	top band				sheep/goat		13523	B6a3; 11th/12th century

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
18465	sole, clump sole, heel stiffener, uppers	2					13525	B6c2; 12th/13th century
18467	sole, clump sole, rand, uppers, top band	2					13563	B6a7; early 12th century
18468	sole, uppers	2					13568	B6a5; 11th/12th century
18470	sole, clump sole, rand, uppers	2					13571	B6a3; 11th/12th century
18473	clump sole, uppers						13855	C6c3; early 12th century
18475	sole, clump sole, rand, uppers, top band	2					13902	B6c3; 12th/13th century
18482	uppers, insert				cattle		13523	B6a3; 11th/12th century
18487	sole						13554	B6a5; 11th/12th century
18490	lace						13562	B6b6; late 12th century
18493	uppers						13568	B6a5; 11th/12th century
18495	top band						13578	B6c2; 12th/13th century
18498	sole, uppers	2					13616	A6j1; 15th century
18499	heel stiffener, rand						13666	B6f6; 14th century
18501	top band, uppers				calf		13698	B6a5, C6c3; early 12th century
18509	sole	2					13902	B6c3; 12th/13th century
18511	rand						13932	B6d1; 13th century
18513	rand				cattle		13949	B6c1; 12th/13th century
18650	rand						13007	B6f5; early 14th century
18652	clump sole, sole	2					13037	B6f4, C6g1; mid 14th century
18654	sole, rand, uppers	2					13110	B6c1; 12th/13th century
18656	uppers				cattle		13147	B6u1; late 11th–early 13th century
18658	clump sole						13175	B6x1; 15th–16th century
18659	uppers				cattle		13206	B6e2; 13th/14th century
18661	sole, clump sole	2					13228	B6f5, C6f6; early 14th century
18663	sole, clump sole, rand, uppers, top band	2				stitch	13242	B6c2–6; 12th–early 13th century
18666	sole, clump sole, uppers, rand	2					13243	B6a7; early 12th century
18667	sole, clump sole, uppers, top band	2					13244	B6c2–6; 12th–early 13th century
18669	sole, rand, insole, insert, top band						13315	B6c2–6; 12th–early 13th century
18673							13363	B6c2–6; 12th–early 13th century
18675	sole, vamp	2					13385	B6c1; 12th/13th century
18677	clump sole				cattle		13390	B6c4; 12th/13th century
18679	uppers	2					13398	B6c2–6; 12th–early 13th century
18681	clump sole				cattle		13437	B6c9; 13th century
18683	sole, drawstring	2					13465	B6c1; 12th/13th century
18689	clump sole						13304	B6f1; early 14th century
18691	uppers						13320	B6d4; 13th century
18700	sole, clump sole, rand	2					15136	A6n2, B6a5; early 12th century
18694	sole, rand						13383	B6f5, C6f6; early 14th century
18698	sole, clump sole	2					15124	B6a7; early 12th century
18703	sole, rand, uppers						15166	B6a7; early 12th century
18705	sole	2					15183	B6c2; 12th/13th century
18707	clump sole						15185	B6c2; 12th/13th century
18708	vamp						15202	B6a1; late 11th century
18710	sole, clump sole	2					15203	B6u1; late 11th–early 13th century
18711	vamp				calf		15226	A6n4/B6a6; early 12th century
18712	uppers				calf		15226	A6n4/B6a6; early 12th century



Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
18715	clump sole, sole, uppers						15285	B6a1; late 11th century
18719	clump sole						15334	B6a4; 11th/12th century
18766	rand				sheep/goat		15108	B6c2; 12th/13th century
18767	sole	2					15122	B6c1; 12th/13th century
18768	sole	2			cattle		15124	B6a7; early 12th century
18771	sole	2			cattle		15151	B6a7; early 12th century
18774	sole	2			cattle		15183	B6c2; 12th/13th century
18777	rand				cattle		15202	B6a1; late 11th century
18780	insert				calf		15334	B6a4; 11th/12th century
18784	sole, clump sole	2					9404	D6a24; 12th/13th century
18785	sole, clump sole, uppers, rand						9428	D6a17-23; late 12th-13th century
18795	uppers, sole	2					9570	D6a9; early 12th century
18798	sole, clump sole, rand, uppers, drawstring						9572	D6a9; early 12th century
18799	sole	2					9641	D6e1; 13th/14th century
18811	sole, rand, uppers	2					9481	D6a14; mid 12th century
18819	top band					stitch	9572	D6a9; early 12th century
18821	clump sole						9574	D6a9; early 12th century
18824	sole, clump sole	2					9641	D6e1; 13th/14th century
18828	clump sole						9813	D6a25; 12th/13th century
18831	sole	2			cattle		11000	B6c7; late 11th-early 12th century
18834	sole, rand, uppers, drawstring	2					11045	B6c8; early 13th century
18839	clump sole, heel stiffener				cattle/calf		11053	B6g2; 14th/15th century
18841	sole, uppers	2					11106	B6c8; early 13th century
18843	sole, clump sole						11115	B6g1; 14th/15th century
18848	sole, rand, heel stiffener	2					11296	B6c7; late 11th-early 12th century
18853	rand						11356	B6c8-g?; medieval-early post-medieval
18857	sole	2			cattle		11416	B6c2-6; 12th-early 13th century
18861	sole	2					11447	B6g13; 16th-17th century
18863	sole	2					11458	B6c7; late 11th-early 12th century
18865	sole	2					11468	B6h1; 15th-16th century
18870	sole, vamp, rand	2					11332	B6f3; early 14th century
18928	uppers				cattle		10391	D6g1; early-mid 16th century
18929	uppers, heel stiffener				cattle		10412	C6g14; mid 15th century
18934	uppers						10490	C6g10; early 15th century
18937	sole, clump sole	2					10464	C6g7; 14th/15th century
18940	quarters				calf		10464	C6g7; 14th/15th century
18943	clump sole						10167	C6i3; 17th-18th century
18946	rand				cattle		10477	C6g8; 14th/15th century
18948	clump sole						1118	D6e10; mid 14th century
19176	clump sole, uppers						11656	B6g4; early 15th century
19199	clump sole				cattle		17551	C6c3; early 12th century
19208	sole	2					18256	B6a7; early 12th century
19213	sole						18256	B6a7; early 12th century
19328	vamp				sheep/goat		5975	C6c6; mid 12th century
19365	upper				sheep/goat		9572	D6a9; early 12th century
19366	upper				cattle/calf		9572	D6a9; early 12th century
19381	uppers						10557	C6g6; late 14th century
19384	quarters				calf		10767	B6g4; early 15th century
19385	quarters				calf		10767	B6g4; early 15th century
19387	sole						10771	B6g4; early 15th century

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
19391	quarters				cattle/calf		10771	B6g4; early 15th century
19392	uppers				calf		10781	B6g4; early 15th century
19395	upper, clump sole				cattle/calf		10993	D6g2; mid 16th century
19399	sole	2					11458	B6c7; late 11th–early 12th century
19404	sole	2					11818	B6c2–6; 12th–early 13th century
19405	sole	2					11818	B6c2–6; 12th–early 13th century
19406	sole	2					11818	B6c2–6; 12th–early 13th century
19421	insole	2		150			13243	B6a7; early 12th century
19424	sole	2					13363	B6c2–6; 12th–early 13th century
19425	sole	2					13363	B6c2–6; 12th–early 13th century
19433	clump sole						13902	B6c3; 12th/13th century
19434	sole	2					13902	B6c3; 12th/13th century
19435	sole	2					13902	B6c3; 12th/13th century
19455	upper				calf		16608	D6a10; early 12th century
19456	uppers, heel stiffener, lining, insert				calf		16653	B6a8–10; 12th century
19466		2					18194	B6c2; 12th/13th century
19475	upper				calf		18366	B6a5; 11th/12th century
21	clump sole							u/s
515	sole, vamp, quarters, welt, insole	5		190				u/s
2367	insole, welt, clump sole, sole, heel stiffener, lining, vamp, quarters	5			cattle/calf			u/s
2473	uppers							u/s
2994	sole, uppers, vamp, insert, rand				sheep/goat			u/s
6884	clump sole				calf			u/s
7143	rand							u/s
17282	uppers, top band				calf			u/s
17287	sole, uppers	1			calf			u/s
17289	uppers				calf			u/s
17290	uppers, insert							u/s
17291	uppers				calf			u/s
17294	uppers				calf			u/s
17297	insert							u/s
17298	sole, uppers, heel stiffener							u/s
17300	uppers							u/s
17301	uppers, rand				calf			u/s
17306	toggle				calf			u/s
17308	uppers, insert				cattle			u/s
17309	uppers							u/s
17310	sole, welt							u/s
17313	sole, clump sole, uppers, drawstring							u/s
17315	sole, insert, rand							u/s
17324	sole, uppers, top band							u/s
17329	rand				calf			u/s
17337	vamp							u/s
17339	sole, uppers, top band							u/s
17694	heel-riser	2				impress	32439	u/s
18215	clump sole						12741	u/s
19515	sole	2						u/s

## Scabbards of swords

Number in bold = corpus number in Cameron 2000

### York type 1

- 15544 Closed centre back, with a bevelled seam stitched at 6mm intervals. The mouth of the scabbard is slightly convex on the front, but straight at the back and puckered by stitches on the flesh side of the leather. There is a suspension point 90–100mm below the mouth with two vertical slits to either side of a raised impression of a strap-slide (now lost). In outline, this feature fans out at the mouth end, but the rest is unclear. L.193 (incomplete), W.70, T. (leather) 2mm. Leather: calf. 25934 sf10124, **158** (P4B)
- 15545 Closed off-centre back, with a butted seam stitched, edge/flesh, at 5–6mm intervals. Fragment of a surviving stitch suggests that thong was used. An abraded feature on the grain surface indicates that a strap-slide originally lay beneath the leather, with a slit to either side for suspension. Below the slits, a circular abrasion, 16mm in diameter, suggests that a disc also lay beneath the leather. Fragments (4), max. L.420, estimated W.65, T. (leather) 1mm. Leather: calf. 35447 sf16518, **186** (P4B) (Fig.1689)
- 15546 Butted seam centre back, stitched at 5mm intervals. The scabbard mouth is convex and finely stitched. On the front face, a raised feature beneath the leather has resulted in surface abrasion, indicating that a Y-shaped strap-slide was used. There are two vertical slits, one on each side of the slide. The condition of the leather is cut and torn. L.660, W.60, T. (leather) 1.5mm. Leather: calf. 27809 sf10310, **243** (P5A)
- 15547 Closed centre back with butted seam, stitched at 7–8mm intervals. The mouth of the scabbard is convex. The suspension point, 80mm below the mouth, is marked by a raised, abraded feature caused by a strap-slide beneath the leather (now lost). There are two slits, one to either side of the centre point of this feature. L.250 (incomplete), W.50, T. (leather) 2mm. Leather: calf. 14388 sf16327, **157** (P5B)

### York type 2

- 15548 Cut from the mouth end of a scabbard, the condition of which is very worn. The scabbard was closed with a bevelled seam, centre back. The scabbard mouth is convex and edged on its inner (flesh) side with fine stitch holes, perhaps for the attachment of a lining. Centrally positioned on the scabbard front, a little below the mouth, lies a raised and abraded feature (L.105mm, W.12mm) where a strap-slide lay beneath the leather on the same longitudinal axis as the sword. At its central point, 125mm below the scabbard mouth, the leather is slit on either side of the feature for the passage of a suspension strap. Signs of extreme wear at the scabbard edge opposite may have been caused by the rubbing of a strap. Fragments (3): L.254, W.69, T. (leather) 2mm. Leather: calf. 35086 sf13829, **154** (P4B) (Fig.1687)

### York type 3

- 15549 Fragment of upper front face from which the mouth and the lower body of the scabbard have been torn. A raised feature in the leather is abraded and indicates the use of a strap-slide with a circular terminal for suspension. No seam survives. An impressed line runs alongside the cut edge. The condition of the leather is worn, cut and torn. L.405, W.55, T. (leather) 1mm. Leather: calf. 34289 sf17756, **252** (P4B)

- 15550 Fragment of front and back face. Closed seam, off-centre back, stitched at 5mm intervals through fine, rectangular holes. A raised feature on the front face is abraded, indicating the use of a strap-slide with rounded ends at the point of suspension. Also, a single raised line runs the length of the centre front face. Condition worn, particularly at edges. It is cut longitudinally, torn transversely. L.380, W.50, T. (leather) 1mm. Leather: possibly sheep. 1473 sf422, **250** (P5B)

### Type uncertain

- 8963 Five small fragments, of which three have butted seams, stitched at 4–5mm intervals. The largest has the impression of wood grain on its flesh side. Flakes of wood, less than 0.5mm thick (the largest 28mm in length), associated with this leather, might be the remains of a wooden scabbard. 5673 sfs2471 (leather) and 18993 (wood), **162** (P5B)
- 15551 Seam is a mixture of butted and closed, with stitches grain/flesh on one edge, edge/flesh on the other. Stitched at 4–5mm intervals through diamond-shaped holes. L.60, W.50, T. (leather) 1.5mm. Leather: calf. 28348 sf17475, **199** (P3)
- 15552 No seam, but a tapering fold suggests a scabbard edge. Condition laminated, cut and torn. L.200, W.80 (unfolded), T.1mm. Leather: calf. 34789 sf17846, **358** (P3)
- 15553 One long edge seamed, edge/flesh stitches 7mm apart, characteristic of a scabbard fragment. L.180, W.40mm, a laminated split. Leather: calf. 25232 sf9639, **168** (P4A)
- 15554 Butted seam to one edge, stitched edge/flesh. Several small fragments of calf. T. 2mm. 30274 sf18437, **185** (P4A)
- 15555 The mouth end of a scabbard, convex in outline with stitching holes torn open. Closed seam, off-centre back, stitched at 7mm intervals through diamond-shaped holes. L.83, W.65, T. (leather) 1mm. Leather: calf. 30286 sf18439, **189** (P4A) (Fig.1687)
- 15556 Folded, tapering and closed, off-centre back, with a bevelled seam, stitched at 5mm intervals. Condition worn. L.335 (incomplete), W.28, T. (leather) 2mm. Leather: either sheep or goat. 27018 sf9493, **155** (P4B)
- 15557 The lower end of a scabbard. Butted seam, centre back, stitched at 7–8mm intervals. At the tip the seam extends onto the front face for a distance of 55mm. Cut and torn transversely into four sections. Condition laminated. L.380, W.57 (folded), T.1.5mm. Leather: calf. 27203 sf9546, **357** (P4B)
- 15558 Strip of irregular shape cut along the line of a seam, with a fold running parallel. Top and bottom edges are torn. L.365, W.43, T.1.5mm. Leather: calf. 30148 sf11022, **180** (P4B)
- 15559 No seam. Condition laminating, worn, torn and cut. L.500, W.55 (folded), T. (leather) 1.5mm. Leather: calf. 32443 sf13081, **354** (P4B)
- 15560 The lower end of a scabbard. Closed seam, off-centre, stitched at 5mm intervals through diamond-shaped holes. L.240, W.38, T. (leather) 2mm. Leather: calf. 32465 sf13096, **248** (P4B)
- 15561 From the lower end of a scabbard. Closed with a butted seam stitched at 4–6mm intervals. Edges cut and torn. L.143, W.50, T. (leather) 1mm (laminated). Leather: calf. 35086 sf13708, **237** (P4B)
- 15562 Closed centre back, with butted seam using edge/flesh stitching at 5mm intervals. The mouth of the scabbard is straight, possibly truncated. L.420 (incomplete), W.60, T. (leather) 2mm. Leather: calf. 35147 sf13891, **159** (P4B)
- 15563 A closed seam, stitched at 7mm intervals, on one edge. Folds are longitudinal and worn. Some edges cut (including one to remove the seam), others torn. Fragments (2):

- L.120 and 127, T. (leather) 1.5mm. Leather: calf. 35147 sf16468, **235** (P4B)
- 15564 Five fragments with edges cut and torn. The seam is butted and stitched, edge/flesh, at 4mm intervals. T. (leather) 1mm. Leather: calf. 35483 sf16496, **182** (P4B)
- 15565 Fragment folded length-wise and closed with a butted seam stitched at 6mm intervals. Edges cut and torn. L.125, W.42, T. (leather) 1.5mm. Leather: calf. 35147 sf16509, **195** (P4B)
- 15566 Closed seam centre back stitched, grain/flesh, at 6–7mm intervals through diamond-shaped holes. Edges cut and torn. L.205mm, W.70mm, T. (leather) 1mm. Leather: possibly calf. 35252 sf16515, **183** (P4B)
- 15567 From the lower end of a scabbard, tip missing. Closed seam on the back is stitched at 7mm intervals through diamond-shaped holes. Edges cut and torn. L.230, W.55, T. (leather) 1.5mm. Leather: calf. 35086 sf16533, **194** (P4B)
- 15568 Closed centre back with a butted seam, stitched at 7mm intervals. Fragments (2): L.75, W.65, T. (leather) 1.5mm. Leather: calf. 35086 sf16538, **193** (P4B)
- 15569 One edge stitched edge/flesh at 4mm intervals. The remaining edges cut. L.208, W.25, T.1.5mm. Leather: calf. 25380 sf16798, **356** (P4B)
- 15570 Fifteen fragments with longitudinal folds and seams. Leather: probably calf. 28904 sf17271, **170** (P4B)
- 15571 One edge is seamed, grain/flesh, with holes at 5mm intervals. A fold, originally the scabbard edge, runs parallel to the seam. Edges cut and torn. L.75, W.65, T.1.5mm. Leather: possibly sheep. 22560 sf17477, **135** (P4B)
- 15572 Closed with butted seam, centre back, stitching edge/flesh at 5–6mm intervals. L.380, W.65, T. (leather) 1.5mm. Leather: calf. 27509 sf17579, **171** (P4B)
- 15573 One long edge is part of a butted seam, stitched at 5–6mm intervals. Other edges are cut and torn. L.135, W.50, T. (leather) 1.5mm. Leather: calf. 32026 sf17659, **203** (P4B)
- 15574 From a seam edge, butted and stitched (edge/flesh) at 6mm intervals through diamond-shaped holes. L.645 (incomplete), W.15, T. (leather) 2mm. Leather: calf. 32465 sf17699, **173** (P4B)
- 15575 From the lower part of a scabbard. Closed seam, centre back, stitched at 5mm intervals. L.400, W.58mm, laminated. Leather: calf. 34412 sf17773, **244** (P4B)
- 15576 Longitudinal fold, edges cut. L.180, W.37 (folded), T.1.5mm. Leather: calf. 21903 sf18120, **124** (P4B)
- 15577 Butted seam, running close to the scabbard edge, is stitched, edge/flesh, at 7–8mm intervals through diamond-shaped holes. Edges cut and torn. Fragments (10): max. L.160, T. (leather) 2mm. Leather: calf. 29193 sf18363, **184** (P4B)
- 15578 Torn fragment, possibly from the chape end. A longitudinal seam runs 10mm inside the back face of the scabbard. Upon the front a triquetra is roughly tooled, faint and poorly executed, as though a trial piece. L.71, W.43, T.1mm. Leather: sheep/goat. 22845 sf18622, **121** (P4B) (Fig.1687)
- 15579 One long edge is seamed and has large, oblique slits at 7mm intervals; the other long edge is cut. Both ends are torn. L.105, W.33mm, laminated. Leather: unidentified. 22128 sf7496, **198** (P5A)
- 15580 Closed seam, stitched at 4mm intervals through diamond-shaped holes. Edges cut and torn. Fragments (2): max. L.152, W.32, T. (leather) 2mm. Leather: calf. 20400 sf16807 **196** (P5A)
- 15581 A long strip with a seamed edge, from the back of a scabbard. Stitching, grain/flesh, at 5–6mm intervals. Fragments (3): L.180, W.70, T. (leather) 1.5mm. Leather: calf. 20991 sf16813, **200** (P5A)
- 15582 Torn fragment with awl holes edge/flesh. L.130, W.38, T.2mm. Leather: sheep/goat. 22128 sf18532, **122** (P5A)
- 15583 Seamed, stitching grain/flesh, 4mm apart. Two cut and torn fragments possibly join. L.233mm, W.51 (folded), T. (leather) 1mm. Leather: calf. 22267 sf18561, **120** (P5A)
- 15584 Longitudinal folds showing much wear and closed seam. Edges cut and torn. Fragments (4): L.470, T.1.5mm. Leather: calf. 22309 sf18568, **226** (P5A)
- 15585 Seamed with stitching, grain/flesh, 4–5mm apart. Edges cut. L.89, W.35, T.1mm. Leather: calf. 22376 sf18584, **119** (P5A)
- 15586 A closed seam, stitched on the grain side at 4mm intervals. The mouth is slightly convex in outline with two transverse rows of stitch holes, 13mm below its edge. Twisted and cut, with chape end torn away. L.570, W.64, T.1mm. Leather: calf. 1473 sf463, **249** (P5B)
- 15587 Scabbard from which the seam and one edge have been cut away. The mouth of the scabbard may also have been cut off, leaving a straight transverse outline. A pair of vertical slits in the front face, near the mouth, are for suspension. There are two linear grooves tooled into the front face, and another on the back. The condition of the leather is worn. L.680, W.48, T. (leather) 1.5mm. Leather: calf. 5772 sf1933, **251** (P5B)
- 15588 Re-used as a knife sheath. Handle end of a sheath, closed centre back with a butted seam, edge/flesh. A second seam runs down the centre front, starting 55mm below the mouth, possibly the result of secondary use. Some stitching to the mouth of the sheath. L.90 (incomplete), W.48, T. (leather) 2mm. Leather: calf. 14434 sf5467, **165** (P5B)
- 15589 Remains of a closed seam with stitching at 4mm intervals. The edge of the scabbard was cut, the transverse ends torn. L.108, W.29, T. (leather) 1.5mm. Leather: calf. 21925 sf10721, **236** (P5B)
- 15590 Three fragments with folds and closed seams but there is dissimilarity between the pieces and they may not belong together. Condition: worn, cut and torn. Total L.360mm. 24888 sf16652, **228** (P5B)
- 15591 From the back of a scabbard. Closed seam, stitched at 5–6mm intervals. L.333, W.20, T. (leather) 1.5mm. Leather: possibly sheep or goat. 26940 sf16718, **241** (P5B)
- 15592 A part-closed, part-butted seam, stitched at 5mm intervals. The fragment has transverse and longitudinal cuts as well as one torn edge. L.120, W.40, T. (leather) 1.5mm. Leather: calf. 26900 sf16781, **234** (P5B)
- 15593 Fragment with butted seam, stitched edge/flesh, the ends cut transversely. L.66, W.87mm. Leather: unidentified. 6784 sf16996, **375** (P5B)
- 15594 A tapered fragment that it may come from the lower end of a scabbard. Closed seam, off-centre back, stitched at 4–5mm intervals. Condition: worn, torn and cut. L.140, W.51, T. (leather) 1.5mm. Leather: calf. 21678 sf18079, **227** (P5B)
- 15595 Two fragments, cut and torn, one of which is possibly from the scabbard mouth. It is steeply convex, notched at the apex, with a single transverse tunnel-stitch hole on the inside front, below the notch. Two transverse lines, faintly impressed, 15mm below the mouth of the scabbard. A closed seam, centre back, grain/flesh stitches, 4mm apart. L.110, W.50, T. (leather) 1.5mm. Leather: possibly calf. 21925 sf18129, **126** (P5B) (Fig.1687)
- 15596 Seam, off-centre back, possibly butted, stitched edge/flesh at 3–4mm intervals. Edges are cut and slit. L.135, W.26, T. (leather) 1mm. Leather: calf. 29101 sf18356, **190** (P5B)
- 15597 Closed seam, positioned off-centre back, stitched at 9mm intervals. Edges cut and torn. The top edge, which is cut, may represent the original outline of the mouth. Two slits on the front face, a little below the mouth are not sym-



metrically positioned, but may be for suspension. L.110, W.50, T. (leather) 1mm. Leather: calf. 29463 sf18382, **229** (P5B)

- 15598 Folded and cut; there is no seam. L.115mm, W. (folded) 51, T.1mm. Leather: calf. 22107 sf18525, **118** (P5B)
- 15599 Folded and worn, but no seam. A raised ridge, 4mm wide, runs in a longitudinal/oblique direction. Edges cut and torn. L.190, W.22, T. (leather) 1mm. Leather: calf. 19325 sf16902, **188** (P5Cf)
- 15600 A bevelled seam on one edge, stitched at 5mm intervals through diamond-shaped holes. Other holes relate to the secondary use of the scabbard. The strip is cut longitudinally and torn at each end. L.200, W.40, T. (leather) 2mm. Leather: calf. 16887 sf17123, **192** (P5Cf)
- 15601 A convex-shaped scabbard mouth with binding stitch to front edge. Butted seam, off-centre back, stitching edge/flesh at 6mm intervals. Lined with a flesh split, secured by running stitch 15mm below the edge of the mouth. At 30mm below the apex of the curved mouth is a line of vertical slashes in six pairs with a single, widened slash to each side, which may also have played a part in the suspension of the scabbard. The scabbard leather is truncated by a single, transverse cut immediately below this line of slits. L.48, W.66, T. (leather) 1–1.5mm. Leather: calf. 6257 sf16943, **123** (C6c4; early 12th century) (P6) (Fig.1690)
- 15602 One seamed edge, stitched at 5mm intervals, other edges cut. Two parallel, impressed lines run longitudinally. L.115, W.20, T.2mm. Leather: calf. 10766 sf17065, **371** (B6g4; early 15th century) (P6)
- 15603 One edge stitched, edge/flesh, at 3–4mm intervals. The seam curves in as the strip tapers to a point. Top and bottom edges of the fragment are torn and there is an abraded transverse line, 6mm wide. L.290, W.28, T.1–1.5mm. Leather: sheep/goat. 9322 sf17169, **201** (D6d3; late 13th century) (P6)
- 15604 A strip with one seamed edge, stitched at 3–4mm intervals, and a longitudinal fold; the other three edges are cut. L.130, W.64 (unfolded), T.0.5mm (laminated). Leather: unidentified. 9224 sf17179, **202** (C6e9; mid 13th century) (P6)
- 15605 An irregularly shaped strip, folded longitudinally and cut on all edges. L.210, W.58, T.1–1.5mm. Leather: probably calf. 1423 sf17493, **181** (C6h3; early 16th century) (P6)
- 15606 Butted seam, off-centre back, stitched edge/flesh through fine, rectangular holes at 4mm intervals. Condition laminated, cut transversely and longitudinally. L.110, W.55mm. Leather: unidentified. 5755 sf17941, **370** (D6a17–23; late 12th–13th century) (P6)
- 15607 Strip with diamond-shaped stitch holes to one edge, grain/flesh and edge/flesh, at 5mm intervals. This seam must have travelled from one face of the scabbard onto the other. There are two slits which may have been for suspension, but are not in the regular position. Cut and torn in several directions, condition poor. L.305, W.70 (unfolded), T.1.5mm. Leather: calf. 5975 sf17948, **369** (C6c6; mid 12th century) (P6)
- 15608 No seam survives; all four sides are cut. L.166, W.56, T.1.5mm. Leather: calf. u/s sf7244, **177**

## Fastenings/belts

### Type 1

- 15609 Rectangular strap folded double, with six awl holes at each end where they were stitched together. Fragments of thong remain in one of the ends. Threaded through the other (folded) end is another leather strap, 8mm wide,

knotted, with its ends torn. L. (folded) 73, W.22mm. Leather: unidentified. 29926 sf13424, **375** (P4B) (Fig.1691)

- 15610 This item has two elements: a) a strap, roughly cut and slightly irregular in outline, folded end to end to form a 76mm length of double thickness. Two ends of the strap are stitched together with coarse thong through six diamond-shaped awl holes. W.18mm, T.2mm; b) a narrow strap threaded through the double thickness of the first strap and tied. Both ends torn off. W.7mm. Leather: calf. 35137 sf13581, **224** (P4B) (Fig.1691)

### Type 2

- 15611 Belt end; two layers of leather, truncated at upper end, rounded at the lower end. Two parallel slits, 60mm in length, positioned longitudinally at the lower end. Edges of strap and slits are bordered with stitch holes, at 2mm intervals, made with a diamond-shaped awl. L.175, W.45, single T. (leather) 1.5mm. Leather: unidentified. 15285 sf7161, **374** P6 (B6a1; late 11th century) (Fig.1691)

### Type 3

- 15612 Plain strap, one end cut to form seven thongs, all torn. The opposite end is coarsely digitated with six parallel pulled slots behind, leather abraded and stretched. L.196, W.35.3, T.1.9mm. Leather: calf. 4658 sf17620 (C6g19; mid 14th century) (P6) (Fig.1691)

## Sheaths of knives

### Type A1

- 15613 Of simple design: folded along the back of the handle and blade, and closed with running stitch along the cutting edge of the blade. Leather: thongs employed in crude stitches 8–9mm apart. A V-shaped notch is cut into the edge of the mouth and a slit, for suspension, is positioned near the junction of the handle and blade. L.184, W.40, T. (leather) 2mm. Leather: calf. 27093 sf9665, **156** (P4B) (Fig.1692)
- 15614 Of simple construction, folded into two equal halves and seamed along one edge with holes grain/flesh at 3–4mm intervals, in running stitch. No stitches survive, but close examination suggests that fine thread rather than thong was used. The handle, blade and suspension flap are each delineated with an impressed line, and two further diagonal lines are impressed onto the handle area of the front face. A group of eight fine stitch holes at the mouth end of the suspension flap indicate the attachment of a strap. L.140, W.45 (incomplete), T. (leather) 1mm. Leather: calf. 29926 sf18420, **225** (P4B) (Fig.1692)

### Type A2

- 15615 Areas of the sheath include handle, blade and suspension flap, of which the handle alone is delineated and decorated on the front with a chevron motif. The seam, which lies along the cutting edge of the blade, is not stitched but has 8 rivet holes. Complete except for upper end of suspension flap where the corner is torn away. L.190, W.40, T. (leather) 1.5mm. Leather: calf. 22714 sf7900, **130** (P4B) (Fig.1694)
- 15616 Sheath fragment closed along one edge with running stitch through diamond-shaped holes at 5–6mm intervals, with a double line of stitching along the length of the handle. The area occupied by the suspension flap is compressed and darker in colour. On the front face, the blade is decorated with impressed lines and dots, now faint,



and the handle with two incised chevrons. On the back, the handle is decorated with a series of five incised chevrons which echo a V-shaped notch in the mouth of the sheath. The blade tip and an edge have been torn away. L.130, W.42, T. (leather) 1.5mm. Leather: calf. 28730 sf16614, **239** (P4B) (*Fig.1694*)

## Type B1

- 15617 Complete, but the blade and handle sections are torn apart. Binding seam, centre back, with grain/flesh stitches 6mm apart. Deeply impressed lines delineate the handle and blade which are also infilled with impressed cross-hatched lines. A repeating sequence of longitudinal and transverse impressed lines forms a border around the blade front. At the upper end of the suspension flap four holes are visible on the back, two on the front. L.177, W.44, T. (leather) 1.5mm. Leather: possibly calf. 22574 sfs7716-17, **133** (P4B) (*Figs.1695-7*)
- 15618 Closed centre back with binding stitch; hole slits at 8mm intervals. The knife blade and handle are delineated with an impressed line on the front face. The suspension flap is slit for a thong. Faint diagonal lines decorate the back of the handle area. L.205, W.50, T. (leather) 1.5mm. Leather: calf. 31476 sf12942, **161** (P4B) (*Fig.1697*)
- 15619 Incomplete (blade part missing). Binding seam on back face, grain/flesh, at 2mm intervals. On the front face an impressed line divides the handle portion from the suspension flap. The opening for the handle is notched, step-wise. Faint traces of impressed cross-hatching survive on the handle portion. Two or three small holes in the suspension flap indicate a position for strap attachment. L.105, W.33, T. (leather) 1.5mm. Leather: calf. 22423 sf16006, **139** (P4B)
- 15620 Seamed off-centre back, closed with binding stitch at 7mm intervals. Impressed lines delineate the shape of the handle, blade and suspension flap. On the front the blade is decorated with cross-hatching; on the back, there are transverse lines on the handle. A hole in the suspension flap, near the mouth, is for a thong. At the handle end are a series of parallel cuts. L.120 (tip missing), W.48, T. (leather) 1mm (laminated). Leather: calf. 29736 sf16609, **238** (P4B)
- 15621 Folded fragment, tapering to a point, which suggests the blade part of a sheath. The seam, lying at one edge, possibly closed with binding stitch at 4-5mm intervals. The edges of the blade portion are moulded. L.130, W.30, T. (leather) 1.5mm. Leather: probably calf. 34412 sf17693, **230** (P4B)
- 15622 Closed centre back with binding stitch at 5mm intervals. Blade partly delineated by an impressed line and decoration crudely supplied by a few cross-hatched incisions. The suspension flap has three or four holes and the upper corner is torn away; otherwise complete. L.175, W.47, T. (leather) 1.5mm. Leather: calf. 22153 sf7375, **178** (P5A) (*Fig.1697*)
- 15623 Binding seam, centre back, with grain/flesh slits (no awl holes) 6mm apart. Faintly impressed chevrons decorate handle and blade. Corner of handle area torn away. L.163, W.42, T. (leather) 1.5mm. Leather: calf. 22412 sf7587, **131** (P5A) (*Fig.1697*)
- 15624 Fragment (suspension flap), closed at the back with binding stitch at 8mm intervals. The flap, which is dark in colour, having been compressed, has a slit for suspension near the mouth of the sheath and was closed at the mouth by stitching. At one edge a tooled line delineates part of the handle but the rest of the sheath is missing. Condition laminated. L.95, W.15 (folded), T.1mm. Leather: calf. 22313 sf18569, **353** (P5A)

## Type B2

- 15625 Closed at back with binding stitch at 5mm intervals, the sheath is divided by impressed lines into fields representing the knife handle, blade and suspension flap. On the front, the blade edges are raised by moulding, the blade part recessed and decorated with impressed cross-hatching and stabbed dots. The handle is divided transversely, the upper section decorated with crossed diagonals, the lower with incised chevrons and stabbed dots. The suspension flap is decorated with impressed, cross-hatched lines and has a large hole for a thong. Part of the back face has been cut away. L.143, W.50, T. (leather) 2mm. Leather: calf. 35143 sf13667, **245** (P4B) (*Figs.1698-9*)
- 15626 Closed centre back with binding stitch at 4mm intervals and divided into fields representing the knife handle, blade and suspension flap. On the front, the blade is outlined by a moulded ridge. The handle and blade may have been decorated in tooled relief, but detail is now lost. Suspension flap closed at the mouth by stitching and perforated by a slit and two further holes. L.150, W.45, T. (leather) 1.5mm. Leather: calf. 35137 sf13702, **247** (P4B)
- 15627 Incomplete, handle end missing, with binding seam on back face, grain/flesh, at 4-5mm intervals. The shape of the blade is impressed into the leather and the edges of the sheath are raised in relief. L.68, W.19, T. (leather) 1.5mm. Leather: calf. 22560 sf17476, **140** (P4B)

## Type B3

- 15628 Fragment, closed on the back face with binding stitch, edge/flesh, at 5mm intervals. Subdivided by lines, both impressed and incised, into areas representing the knife handle, blade and suspension flap. The blade may have been delineated along the back edge by a raised ridge, and the blade front is decorated with incised herringbone. The handle is outlined in a faint, incised line and divided transversely into four sections. Each section is filled with incised herringbone accentuated by stab marks along the lines. Six stitch holes in the suspension flap, grouped near the mouth of the sheath, are for strap attachment. The condition of the sheath is worn and its edges are torn. L.140, W.55, T. (leather) 1mm. Leather: possibly calf. 32083 sf12685, **233** (P4B)
- 15629 Incomplete (blade part missing) with binding seam on back face, grain/flesh at 7mm intervals. The design allows for a suspension flap alongside the knife handle, darkened by pressure, and perforated for a thong. Decoration consists of cross-hatching, impressed with a blunt tool. L.100, W.50, T. (leather) 1.5mm. Leather: calf. 29926 sf13347, **138** (P4B)
- 15630 Fragment, representing handle and suspension flap of a sheath from which the blade section has been torn, and closed at the back with binding stitch at 5mm intervals. The handle, suspension flap and possibly the handle/blade junction are delineated by bold, impressed lines. On the front face, both handle and suspension flap are decorated with transverse incisions. The suspension flap is compressed, and closed at the mouth with six small stitches. It is also slit for a thong, and an awl hole marks the boundary between the handle and flap. L.90, W.64, T. (leather) 1.5mm. Leather: probably calf. 35483 sf13976, **242** (P4B) (*Fig.1700*)
- 15631 An unfinished roughout, showing some outline marking incised on the flesh side, impressed on the grain side. There is no seam. L.147, W.51, T. (leather) 1.5mm. Leather: calf. 35264 sf16490, **246** (P4B) (*Fig.1700*)
- 15632 Fragment, representing the suspension flap of a sheath. Closed with binding stitch at 6mm intervals through diamond-shaped holes. The suspension flap is itself blade-shaped, compressed and decorated at the edge with

diagonal incisions. At the halfway point it is slit for a thong and there are two further holes near the mouth of the sheath. The blade part, mostly torn away, was delineated by an impressed line. L.135, W.88, T. (leather) 1mm. Leather: calf. 28738 sf16603, **240** (P4B)

- 15633 Fragment, designed for an angle-backed blade. Closed centre back with binding stitch at 7mm intervals. The sheath may have had a half-length suspension flap, possibly stitched at the mouth. L.180, W.50 (folded), T. (leather) 1.5mm. Leather: calf. 27341 sf17544, **179** (P4B)
- 15634 Fragment of suspension flap, closed centre back with binding stitch at 4mm intervals. The mouth of the sheath is stitched, and a slit in the suspension flap is torn out. Main body of sheath torn away. L.74, W.20, T. (leather) 1mm, laminated. Leather: calf. 32721 sf17731, **331** (P4B)
- 15635 Upper end of a sheath from which the blade part has been torn. Closed at the back with an off-centre seam using binding stitch at 4–5mm intervals. An impressed line delineates part of the handle and suspension flap. Fine stitch holes grouped near the mouth were possibly for strap attachment. L.100, W.53, T. (leather) 1.5mm. Leather: calf. 29904 sf18412, **197** (P4B)
- 15636 An unstitched and undecorated item that could be an unfinished blank, folded along the knife back. Incomplete, cut and torn. L.114, W.48, T. (leather) 2mm. Leather: calf. 22306 sf18566, **117** (P4B)
- 15637 Closed centre back with binding stitch at 7mm intervals. Subdivided with impressed lines into three sections corresponding to handle, blade and suspension flap, the surface decorated with fine, cross-hatched incisions. There are two slits near the edge of the mouth and another two in the suspension flap. Much of the handle end of the sheath is lost through cutting and tearing. L.155, W.45 (incomplete), T. (leather) 1.5mm. Leather: calf. 22013 sf6985, **163** (P5A)
- 15638 A butted seam on the back, stitched at 8mm intervals, positioned 10mm inside the edge. Blade, handle and suspension flap outlined with deeply impressed lines while on the front the blade is partly infilled with impressed zig-zag lines. The suspension flap is perforated for suspension. L.165, W.48, T. (leather) 1.5mm. Leather: calf. 6471 sf5320, **127** (P5B) (*Fig.1700*)
- 15639 Closed at the back with binding stitch at 4mm intervals while a fine line of stitching in the corner of the suspension flap is for strap attachment. Diamond-shaped holes line the edge of the handle. The blade is delineated with a wide, impressed line. L.120, W.40, T. (leather) 2mm. Leather: calf. 19625 sf9339, **169** (P5B) (*Fig.1700*)
- 15640 A rough outline that has no seam, presumably discarded unfinished. L.170, W.60, T. (leather) 1mm. Leather: probably calf. 21646 sf9848, **231** (P5B) (*Fig.1700*)
- 15641 Upper part of a sheath, from which the blade part has been cut and torn away. Closed centre back, with binding stitch at 2–3mm intervals. The suspension flap, darkened by compression, slit for suspension and closed at the mouth by stitching, is crudely decorated with two incised crosses. Indentations on the flap resemble human bite marks. The handle section is delineated on the front with a tooled line and decorated on both faces with transverse and oblique hatched lines. These lines are tooled, sometimes incised. L.103, W.65, T.1mm. Leather: calf. u/s sf7713, **355**
- 15642 A complete item, the design of which allows for the knife and a generous suspension flap. Seamed at the back with binding stitch, grain/flesh, at 4mm intervals, while at the mouth end the suspension flap is top-stitched and perforated for a thong. Blade and handle outlined on the front of the sheath and decorated with zig-zags, all executed by impressing. L.153, W.50, T. (leather) 1.5mm. Leather: unidentified. u/s sf13045, **136** (*Fig.1700*)

## Type B (sub-groups unidentified)

- 15643 Four fragments, closed with binding stitch at 6mm intervals. Impressed lines are possibly outline of knife handle and suspension flap. L.55, W.30, T. (leather) 1.5mm. Leather: calf. 14973 sf16330, **191** (P5B)
- 15644 Handle end of a sheath, closed at the back with binding stitch, grain/flesh, 4mm apart. L.80, W.55, T. (leather) 1.5mm. Leather: calf. 20441 sf16848, **175** (P5B)
- 15645 Offcut, showing a fold and an impressed line, possibly outlining part of a handle or blade. L.75, W.29, T. (leather) 1.5mm. Leather: goat. 19307 sf16900, **187** (P5B)
- 15646 Fragment with one long edge stitched, grain/flesh, at 5mm intervals; the other edge is cut. Back edge of the blade represented by a moulded, longitudinal ridge. Condition very worn. L.128, W.30, T.1.5mm. Leather: calf. 2235 sf54, **366** (A6z4; 13th century) (P6)

## Type C

- 15647 Of simple design, closed along the cutting edge with tunnel stitch at 9mm intervals. At the halfway point, the junction of the blade and handle is marked by a transverse, impressed line on the front and back faces. A slit for suspension, positioned outside the stitched line and near the mouth, has torn out. Little sign of wear. L.200, W.43, T. (leather) 1.5mm. Leather: calf. 32589 sf13246, **160** (P4B)
- 15648 A complete sheath folded along the line of the back of the knife, and closed along the cutting edge of the blade with running stitch at 3mm intervals. Part way down the handle area, and just inside the seam, is a slit for suspension. The blade is delineated with an impressed line and the handle decorated faintly with parallel, transverse strokes. L.170, W.30, T. (leather) 1mm. Leather: goat. 21689 sf9903, **176** (P5B) (*Fig.1701*)
- 15649 Originally of 10th-/11th-century date, this sheath has been redesigned. The old seam, positioned off-centre at the back, was of binding stitch. The new seam lies along one edge and uses a simple running stitch through slitholes at 6mm intervals. The mouth of the sheath was stitched, and the area of the upper handle has a slit for suspension. L.193, W.35 (unfolded), T. (leather) 1.5mm. Leather: calf. 19374 sf6926, **166** (P5Cf)

## Type D

- 15650 Fragment from the blade part of a sheath upon which is tooled the outline of an angle-backed knife blade. A transverse line marks the handle/blade junction and further oblique, but faint, tooled lines occupy the blade area. The sheath is punctured by slit holes, applied at intervals of 6–7mm, in six longitudinal lines. L.138, W.31, T.2mm. Leather: unidentified. 11378 sf2689, **364** (C6e2; 12th/13th century) (P6)
- 15651 Fragment with long edges stitched, grain/flesh, at 7mm intervals. L.110, W.45, T.1.5mm. Leather: unidentified. 4640 sf17890, **363** (A6z4; 13th century) (P6)
- 15652 Butted seam, centre back, edge/flesh, stitched at 7mm intervals. Mouth and tip missing. Almost completely laminated. L.190, W.36, T. (leather) 2–3mm. Leather: calf. u/s sf5448, **167**

## Type E

- 15653 Simple design; seamed along the cutting edge, stitched grain/flesh at 4–5mm intervals using two threads in opposite directions. Decoration, consisting of diagonal hatching to the blade, handle and suspension flap, is sharply impressed (almost incised). L.175, W.40, T.2–

2.5mm. Leather: calf. 1502 sf301, **164** (C6e11, D6e3; mid 13th century) (P6)

- 15654 Seamed at the back, off-centre, grain/edge stitches at 4–5mm intervals using two opposing threads to each hole. Areas occupied by handle and blade are, on both faces, delineated with a tooled line. On the front, the handle area is decorated with a foliate design and the blade (most of which is missing) with a roundel containing a bird motif. On the back, the blade has a curvilinear design while that on the handle is linear. There is a pair of suspension slits, centrally positioned on the back of the handle area. Condition: worn and polished surface, some sections torn and cut away. L.105, W.27, T. (leather) 1.5mm. Leather: unidentified. 1792 sf784, **368** (D6f8–g2; late 15th–mid 16th century) (P6) (Fig.1710)
- 15655 Closed seam, centre back, stitched at 6mm intervals on the grain side of the leather. Stitch impressions indicate that two threads passed through each hole in opposite directions. Suspension was at the back, through two pairs of slits positioned along the line of the seam. Areas occupied by the handle and blade are delineated by tooled lines and decorated on the front with stamped fleurs-de-lis, on the back with pairs of obliquely scored lines. L.150, W.33, T.1.5mm. Leather: calf. 10993 sf2735, **362** (D6g2; mid 16th century) (P6) (Fig.1710)
- 15656 Seamed at back, off-centre, stitched grain/edge at 6mm intervals using two opposing threads to each hole. Two pairs of slits in the upper back face for suspension. Areas occupied by the handle and blade are outlined and decorated on the front face with zoomorphic/foliate design against (on the handle) a background of fine cross-hatching. Decoration of the blade back is in half quatrefoils while that of the handle back is linear. L.195, W.33, T.2mm. Leather: calf. 12147 sf2822, **367** (D6e7; early 14th century) (P6) (Fig.1710)
- 15657 Flattened in burial so that position of seam is now uncertain. Stitch holes, grain/flesh, fine and numerous. Decoration, in the form of cross-hatched lines and chevrons, is partly impressed, partly incised. Two slits and two holes near the mouth may have been for suspension. Lower part of the sheath torn away. L.89, W.39, T. (leather) 1.5mm. Leather: sheep/goat. u/s sf7251, **134** (Fig.1710)

## Type F

- 15658 This sheath, of which the lower half of the back face is missing, is divided into two portions for the knife and the suspension flap. The knife occupied less than half of the total area and was marked off from the flap by a strongly impressed line. The knife was about 135mm in total length, 85mm of which was handle. Handle and blade are delineated and decorated with different designs. On the handle are two images, one geometric the other trifoliate, both framed by lenticulate stippled borders with foliate tendrils filling in the gaps. The images, which are paired and joined end to end, are used in a repeating sequence. Upon the blade is a curved foliate design with a plain border. Variations in the design suggest that it was not stamped but impressed by a hand-held tool. On the reverse, the sheath has a tooled border with an inscription R.NO impressed into the upper section of the handle area. Below it the paired geometric and foliate images are repeated. The remaining section, the suspension flap, occupies well over half the total area and has at the back, just inside the outer edge, a closed seam stitched at 3–4mm intervals. Impressions of stitches indicate that two threads passed in opposite directions through each hole. The seam is bordered on the back by a line of hatched triangles. The suspension flap has four other features of interest: a) suspension slits; b) inscriptions on front and back, occupying the upper sections to either side of suspension slits; c) a decorated zone, delineated with a pair

of tooled lines, within which are paired images (identical to those described above) extending from below the suspension slits to the tip of the knife blade; d) moulding on the lower edge, which is also seamed and decorated with impressed hatches and triangles. L.150, W.60, T.1.5–2mm. Leather: calf. 10771 sf2652, **360** (B6g4; early 15th century) (P6) (Fig.1711)

## Sheaths of seaxes

### Group 1

- 15659 Designed for an angle-bladed knife (blade length 170mm, handle length 120mm). The two edges of the sheath were not joined by rivets, and there is no regular seam, but six pairs of holes in the flesh side of the leather indicate that tunnel stitching may have been used. It is unclear how this object was suspended as there are no marks or holes to indicate where straps or metal fittings might have been attached. However, an interesting feature of the joined edges are numerous sub-rectangular marks. Moulding of the spine is developed on this sheath into a strongly decorative feature where it has been allowed to invade the front face along the entire length of the blade back, and in a crescent at the junction of the handle and blade. The handle, blade, spine and suspension flap are all delineated with impressed lines. Within these lines, the handle (front and back), the blade (front and back), the suspension flap (front), and the spine, all carry impressed decoration. The design on the front, occupying the outlined handle and blade, is a broad-bodied interlace, the main junctions of which are marked by fine holes, surrounded by a narrow border containing alternating longitudinal and transverse lines. One edge of the handle is bordered by spots. The moulded ridge is decorated with alternating raised bosses and transverse lines. The suspension flap and spine are decorated in key-pattern. On the back, the blade is cross-hatched, and the handle divided into three equal sections, each occupied by a single large saltire. L.317, W.70, T. (leather) 1.5mm. Leather: calf. 22803 sf8133, **215** (P4B) (Fig.1702)
- 15660 Designed to house a knife with an angled blade (blade length approximately 190mm) and to be carried horizontally. Its edges were closed with a maximum of eight nails bent over at the back, four of which remain. The position and size of three indicate suspension points on the sheath. Other marks along the edge suggest that metal platelets may also have been used. The spine of the sheath, sections of which are missing along the back of the blade, was moulded. The handle, blade and suspension flap are all delineated by an impressed double line, or border. Decorated zones include the handle (front and back), the blade (front and back), the suspension flap (front), and the spine. The design on the front of both handle and blade is a crude, thick-bodied interlace, while that on the back is loosely cross-hatched. The tapering field of the suspension flap is occupied at its broadest part by a single bold line of chevrons, infilled with fine hatching. As the field narrows towards the tip of the sheath the chevrons are replaced by key-pattern. Along the spine of the sheath, wide, longitudinal lines are impressed. The object is worn and torn, and the leather has laminated. L.330 (tip missing), W.66, T. (leather) 2mm. Leather: calf. 34842 sf13279, **214** (P4B) (Fig.1703)
- 15661 Folded along the blade back, joined along the blade edge with metal tacks. Both faces decorated with broad, impressed lines profiling the blade and handle, with the additional outline on the front of a full-length suspension flap. A broad ribbon interlace, crudely executed, fills the outlines of blade and handle on the front, while the suspension flap is decorated with chevrons. Decoration on the back, possibly applied with a two-armed creaser,



consists of transverse subdivisions of the handle and blade into six sections, each occupied by an X-shaped cross. Metal fittings: a) mouth-band of iron, a thin sheet 8mm wide, now flattened; b) rectangular edge reinforcers of iron (9 x 27mm), positioned in pairs at the mouth and at the junction of the blade and handle, attached with non-ferrous tacks. L.319 (tip torn and missing), W.67mm. Leather: unidentified. 6788 sf9676, **115** (P5B) (Figs.1566, 1704–6)

### Group 3

15662 Worn and incomplete fragment from blade part of sheath. Cut transversely through both faces, longitudinally on the back only and torn at the tip. Decoration on the front, executed by tooling, moulding and impressing, incorporates an outline of an angle-backed blade with a border containing a sinuous line. The field enclosed by the blade's outline is filled with a stylised design of birds and foliage. The spine of the sheath, curving over the knife back, has a moulded shape and is decorated with a line of impressed spots. L.135, W.65, T. (leather) 2mm, laminated. Leather: probably calf.15470 sf4332, **347** (P5B) (Figs.1707–8)

### Straps

#### Straps with decorative stitching

15663 Two fragments, delaminated grain, cut edges with central line of buckle-pin holes between two rows of oblique grain/flesh stitch holes. L.148, W.30, T.1.5mm. Leather: unidentified. 13525 sf2476 (B6c2; 12th/13th century) (P6) (Fig.1712)

15664 Three fragments, each with a line of grain/flesh stitch holes running alongside the surviving edge. One fragment has three lines of oblique stitch holes running parallel to the edge, each line of stitching with a continuous thread impression visible. A second small fragment also has these oblique stitches present. Largest L.43, W.34, T.2.8mm. Leather: unidentified. 10511 sf15711 (C6g8; 14th/15th century) (P6) (Fig.1712)

#### Straps with decorative mounts

15665 Single row of grain/flesh stitch holes set in a channel along both edges, holes almost perpendicular to edges, securing a thin lining to flesh face. One end originally folded back and stitched to form a loop, subsequently cut and repaired by the addition of a second strip folded around the cut and secured by stitching through the original holes. Other end grain skived, probably to form a joint with a second, now absent, piece as edge stitches continue over the skive. On the midline are three groups of three domed mounts with integral rivets. One group helped secure the new folded end. The one furthest from the end survives intact, the other two are smaller replacements. The other groups are halfway along the extant length and near the skived end. L.246, W.17, T. (strap) 5.9mm. Leather: cattle, lining unidentified. Analysis of studs: high Pb and Sn (pewter and/or other lead/tin alloy). 3178 sf842 (A6i2; 14th/15th century) (P6) (Fig.1716)

15666 Torn both ends, one end curves just before the break. Two surviving sub-hemispherical studs with square section shanks pierce full thickness. There are holes for at least five more such studs, one of which retains a shank in situ. Two of the stud holes have lozenge-shaped impressions around them suggesting possible alternating circular and lozenge mounts in places. Between the final surviving stud and the neighbouring stud hole, and be-

tween that and the break, are two 4mm holes of unknown function. L.124, W.17, T.6.9mm. Leather: cattle. Analysis of studs: high Sn and Fe (iron studs with tin plating). 9045 sf885 (D6e10; mid 14th century) (P6)

15667 One end torn, the other skived and with broken copper alloy rivet set back from the end, presumably to secure a join or possibly a strap-end. Four copper alloy bar mounts of convex section are each secured transversely with two rivets held at the back with copper alloy roves. A series of closely spaced transverse grain/flesh slits runs the entire length and is transected by an impressed line also running the full length. L.136, W.11, T.4.7mm. Leather: cattle. 12276 sf3006 (D6e5; early 14th century) (P6) (Fig.1716)

15668 Eight fragments, narrow, with iron bar mounts of convex section, secured with separate iron rivets. All ends torn. Largest: L.267 (combined total 664), W.6, T.3.4mm. Leather: cattle. 11305 sf18851 (B6g2; 14th/15th century) (P6) (Fig.1716)

#### Flat plain straps

15669 Torn one end, cut down the other, perforated by five irregularly spaced sub-rectangular holes along midline. L.82, W.21, T.2.8mm. Leather: calf. 36247 sf16478 (P4B)

15670 Two fragments, not adjoining, but of same type. Larger has one torn end, the other is cut with a V-shaped notch in the centre. There is a rivet hole either side of and set back from the notch and a series of central perforations. The entire terminal has been compressed from a buckle-plate or strap-end. L.109, W.21, T.3.8mm. Leather: cattle. 27093 sf17541 (P4B)

15671 Torn both ends, tapering to one end; wider end has a small rectangular slot, possibly a buckle-pin slot. L.81, W.18, T.2.3mm. Leather: calf. 27774 sf17591 (P4B)

15672 Plain tapering strap, roughly cut out, torn at the wider end, six large slits, one of which is torn, run along the centre. Two are pulled toward the narrow end. L.198, W.35, T.2.4mm. Leather: cattle/calf. 31190 sf17632 (P4B)

15673 Torn one end, four perforations along midline, then a buckle-terminal formed by the end being folded over on itself and secured by a thong. The buckle fold has a slot for the pin and has been cut across to release the buckle for re-use. L.106, W.20, T.7.3mm. Leather: calf. 31194 sf17637 (P4B)

15674 Three fragments, abraded and stretched, ends torn. Largest: L.110, W.20, T.1.8mm. Leather: unidentified. 22523 sf18602 (P4B)

15675 Plain strap junction. Two strips are secured in line by a lapped junction with leather thonging, other ends of both are torn. There are 19 other fragments of the same strap assemblage, three adjoining each other; all are delaminated grain or flesh surfaces. Junction: L.175, W.26, T.3.0mm. Leather: unidentified. 26889 sf16720 (P5A)

15676 Plain strap, buckle-terminal with encrusted oval buckle-frame of iron with non-ferrous metal plating. Other end torn. L. (strap) 79, W.9, T.2.5mm. Leather: calf. 22090 sf18519 (P5A) (Fig.1721)

15677 Fragment, torn both ends, possibly perforated near one end. L.163, W.10, T.2.8mm. Leather: unidentified. 1506 sf124 (D6e9; mid 14th century) (P6)

15678 Plain strap with rectangular iron frame with non-ferrous plating articulated to the strap by a leaded tin link. Other end of strap cut down. Three slit perforations along midline. L.89, W.10, T.4mm. Leather: cattle. 5333 sf1759 (D6a17; late 12th century) (P6) (Fig.1721)

15679 Now knotted in the middle, broken at the knot and at both ends. Edges are chamfered, suggesting use with a buckle. L.271, W.21, T.13mm. Leather: probably cattle/calf. 12147 sf7214 (D6e7; early 14th century) (P6)

- 15680 Plain wide strap, buckle-terminal, formed by folding the end back on itself, flesh against flesh, secured with coarse leather thonging. Other end cut away. L.75, W.45, T.2.7mm. Leather: cattle. 5484 sf17471 (C6e1; 12th/13th century) (P6)
- 15681 Torn at both ends, one transverse and four longitudinal perforated slits, possibly for a buckle-pin. L.307, W.16, T.3.7mm. Leather: cattle. 12126 sf18163 (D6e9; mid 14th century) (P6)
- 15682 Four fragments, all probably from the same strap. Three have midline perforations, much abraded and delaminated. Largest: L.276, W.10, T.2.9mm. Leather: calf. 12365 sf18178 (C6e6; early 13th century) (P6)
- 15683 Both sides cut down, one terminal cut diagonally across, the other cut to a point with a series of small perforated slits behind it. L.600, W.11, T.5.5mm. Leather: cattle. 18366 sf18308 (B6a5; 11th/12th century) (P6)

## Browband (horse bridle)

- 15684 Plain strap of thick leather, both ends are skived and folded back, flesh to flesh, secured by an interrupted line of grain/flesh stitches along each edge, the gaps forming a pair of loops at each end. No wear at loops to indicate a buckle or other metal fitting. Complete. L.392, W.18, T.4mm. Leather: cattle. 12629 sf3418 (D6a25; 12th/13th century) (P6) (Fig.1717)

## Flat straps with stitched sides

- 15685 Torn both ends, very widely spaced grain/flesh stitch holes run along each side. Midline is raised and abraded. L.160, W.30, T.2.1mm. Leather: cattle. 29926 sf18421 (P4B)
- 15686 Broad strap, cut and torn both ends, grain/flesh stitch holes along each edge. Possibly a stiffener from a folded strap. L.106, W.46, T.1.7mm. Leather: calf. 22050 sf18631 (P5A)
- 15687 Slightly curving, cut transversely across one end, other end torn. Grain/flesh stitch holes run along each edge, stopping 30–35mm from the cut end. Abraded midline region with four perforations. L.203, W.36, T.2.3mm. Leather: calf. 18541 sf5221 (P5B)
- 15688 Strap junction, two overlapped ends at 90°, with a 15 x 13mm central perforation, bordered by a single row of grain/flesh stitch holes and a number of apparently random stitch holes. Also grain/flesh stitch holes running down each side of both straps; some thread survives. L.83, junction W.65, T.3mm. Leather: unidentified. 10795 sf17054 (C6g1; early–mid 14th century) (P6)
- 15689 Two fragments, torn both ends, grain/flesh stitch holes along each edge, grain surface highly abraded. Largest: L.184, W.27, T.3.2mm. Leather: probably cattle. 5348 sf17920 (C6e1, D6a16; 12th–13th century) (P6)
- 15690 Slightly curved, two adjoining fragments, both of thick leather. One cut-down end, otherwise torn. Sides irregular with widely spaced grain/flesh thong holes along full length, the impression of which survives. (Assembled) L.643, W.60, T.4.1mm. Leather: cattle. u/s sf514

## Flat straps with oblique stitch holes along each side

- 15691 Torn both ends, grain/flesh stitch holes, set diagonally along each edge. Two buckle-holes on midline. Poor condition. L.78, W.20, T.2.3mm. Leather: unidentified. 13228 sf2470 (B6f5, C6f6; early 14th century) (P6)
- 15692 Cut and torn across both ends, with oblique grain/flesh stitching along each side, with a small unstitched area

which suggests it was originally folded at this point. L.127, W.20, T.3.6mm. Leather: cattle. 12406 sf3169 (B6c9; 13th century) (P6) (Fig.1717)

- 15693 In poor condition, broken and torn, one extant edge with a single row of grain/flesh stitch holes at a 45° angle to the edge. Also 22 scraps not apparently from the strap. L.72, W.22, T.2.6mm. Leather: unidentified. 5906 sf17997 (C6c3, D6a5; late 11th/early 12th century) (P6)

## Double-layered flat strap

- 15694 Torn both ends, two strips laid flesh to flesh and secured together by two double rows of oblique grain/flesh stitch slits. One surface abraded. L.303, W.20, T.6.9mm. Leather: cattle/calf. 13228 sf3374 (B6f5, C6f6; early 14th century) (P6) (Fig.1717)

## Folded straps with parallel rows of stitching

- 15695 Strap terminal fragment, torn, delaminated flesh surface only. One side torn off, the other is folded in to the centre back, but has no butt seam. The terminal has a V-shaped notch with four thong holes, possibly for a buckle. L.35, W.31, T.2.9mm. Leather: unidentified. 20431 sf16912 (P4B)
- 15696 Cut down both ends, both sides folded flesh to flesh and secured to front face by two rows of coarse grain/flesh stitches. At one end, a similarly constructed though narrower strap fragment is enclosed and held by the grain/flesh seam in addition to crude leather thonging. Both ends are slashed along the midline and there is a third such slash midway along the length. L.216, W.36, T.5.3mm. Leather: cattle/calf. 1478 sf1180 (P5B) (Fig.1718)
- 15697 Both sides folded flesh to flesh and secured to front face by two rows of grain/flesh stitching, torn both ends. L.106, W.19.5, T.4mm. Leather: cattle/calf. 1473 sf17490 (P5B) (Fig.1718)
- 15698 Both sides folded flesh to flesh and secured to front face by two rows of grain/flesh stitching, torn both ends. L.128, W.18, T.3.5mm. Leather: calf. 1423 sf17492 (C6h3; early 16th century) (P6)

## Plain folded straps with central butted seams

- 15699 Fragment, cut down edge with a row of oblique grain/flesh stitch holes. Also an associated stiffener fragment with matching seam. Largest (stiffener): L.70, W.10.5, T.1.4mm. Leather: both calf. 22560 sf15992 (P4B)
- 15700 Strap, apparently complete, possibly a handle, edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam along half its length and also for a short length at the other terminal. Both terminals have several thong holes, presumably for attachment. L.240, W.32, T.9.7mm. Leather: cattle. 9450 sf18788 (P4B)
- 15701 Strap junction. Two straps crudely thonged together at a right angle. Both straps have edges folded flesh to flesh and secured with a thonged edge/grain butt seam. The thong remains in situ on the longer strap and at the junction. The shorter strap is torn both ends, the larger is torn one end and has an edge/flesh seam at the other. The grain surface is largely delaminated on both straps so the edge/flesh seam is now visible from the grain side. L.205, W. (straps) 38mm, T.10mm. Leather: cattle/calf. 29263 sf10956 (P5B) (Fig.1718)
- 15702 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam. One end is cut down, and has a series of thong holes on one side of the back



seam. At the other end, the folded edges do not run to the end, making it single thickness. This end was originally folded back and secured via four thong slits either side. There is a damaged slot in the centre for a buckle-pin. L.432, W.43.5, T.7.6mm. Leather: cattle. 5262 sf1308 (D6d1; late 13th century) (P6) (*Fig.1718*)

- 15703 Almost complete, edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam. One end, though partly torn, was folded back and secured via three pairs of thong holes. A slot indicates that the fold held a buckle. The other end is partly cut, partly torn and has further, more random, thong slits, perhaps to secure a second strap. L.332, W.42, T.7.7mm. Leather: cattle. 9224 sf3191 (C6e9; mid 13th century) (P6) (*Fig.1718*)
- 15704 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam. Five oblique midline slits run off one end, both ends torn. Grain surface almost completely delaminated. L.110, W.24, T.5.9mm. Leather: calf. 16526 sf4348 (D6a13–14; mid 12th century) (P6)
- 15705 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam. One end is cut in a shallow convex curve, with a network of coarse thonging behind it. On the midline, further slits for finer thonging occur with thong present. The other end has been roughly cut, though a slot indicates that the strap was folded back for a buckle. The fold and an additional reinforcement piece, were held to the back of the strap with further thonging (absent). This end was presumably cut down to remove the buckle for re-use. L.538, W.40, T.8.7mm. Leather: cattle/calf. 13902 sf5104 (B6c3; 12th/13th century) (P6)
- 15706 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam, one end cut obliquely across, the other roughly cut down. There is a 25mm long longitudinal slit on the midline, near one end, which pierces the full thickness to one side of the back seam. L.191, W.22, T.8mm. Leather: calf. 17418 sf7242 (C6c4, D6a6; early 12th century) (P6)

## Folded straps with additional stitching

- 15707 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam apparently sewn with a single thread, torn both ends. A stiffener consisting of a plain strip is enclosed within the strap and secured by means of a double row of stitch holes each side of the back seam, piercing the complete thickness of the strap. L.391, W.27, T.4mm. Leather: cattle/calf. 32746 sf13606 (P4B) (*Fig.1718*)
- 15708 Three fragments, plus 19 scraps. Edges folded flesh to flesh and secured to each other at the back with an edge/grain butt seam. A plain stiffening strip is enclosed within the strap. Two parallel rows of grain/flesh holes pierce the front face along the full length, but were apparently not stitched. L.109, W.31, T.3.6mm. Leather: cattle/calf. 29904 sf18411 (P4B) (*Fig.1719*)
- 15709 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam apparently sewn with a single thread, cut across one end, the other torn. A stiffener consisting of a plain strip is enclosed within the strap and secured by means of a double row of stitch holes each side of the back seam, piercing complete thickness of the strap. Cut end has a V-shaped notch in the centre where there is the impression on both faces of a plate, rectangular at front, circular at rear. Two rivet holes indicate the method of securement. L.320, W.39, T.5.7mm. Leather: unidentified. 26871 sf9398 (P5A) (*Fig.1718*)
- 15710 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam, torn both ends. A stiffener consisting of a plain strip is enclosed within the

strap, but not secured by additional stitching, though there is a row of stamped dots either side of the back seam. The front is plain. L.141 W.18, T.4.2mm. Leather: unidentified. 29242 sf10377 (P5B) (*Fig.1718*)

- 15711 Edges folded flesh to flesh and secured to each other at back with an edge/grain butt seam, torn both ends. There is also a single row of grain/flesh stitch holes along each edge, which may originally have secured a stiffener. There are two torn holes on the midline for mounts or buckle-pin and the remains of a damaged third at one end. The other end has a damaged slit that may have been for a buckle-pin. L.101, W.24, T.5.4mm. Leather: cattle/calf. 16517 sf2475 (D6a9; early 12th century) (P6)

## Strap folded longitudinally

- 15712 Plain strap, complete, looped round so that the terminals meet. A scatter of thong holes with thonging is present at each end. One edge is cut, the other is a hide edge. L.100, W.47, T.3.6mm. Leather: cattle. 21925 sf10698 (P5B) (*Fig.1720*)

## Strap terminals

- 15713 Strap terminal, torn off. Squared terminal with nine pulled thong slits distributed over one half, which is unabraded, suggesting it was overlain by a second strap at that point. L.52, W.41, T.2mm. Leather: cattle/calf. 27413 sf17877 (P3)
- 15714 Strap terminal, torn off. Rounded, slightly obliquely cut terminal with seven thong slits, possibly for a strap junction. L.38, W.30, T.2.2mm. Leather: cattle. 5975 sf17951 (C6c6; mid 12th century) (P6)

## Fastenings and suspension straps

### Slotted strips, folded

- 15715 Strip, folded end to end, both ends rounded and slotted longitudinally for 48mm and 56mm. L.98, W.27, T.1.8mm. Leather: calf. 22815 sf8362 (P4B) (*Fig.1722*)
- 15716 Strip, irregular, tapering slightly to both ends with a pulled slit behind each terminal, the central area is abraded. L.154, W.24, T.2.1mm. Leather: calf. 26902 sf17880 (P4B)

### Slotted strips, straight

- 15717 Strip, squared ends, slit longitudinally behind each end with a narrower strip looped around each end and passed through the slit. L.462, W.24, T.3.4mm. Leather: cattle; one narrow strip is calf. 23619 sf7778 (P4B)
- 15718 Two strips. One is complete, sides roughly cut, ends cut transversely across. Small pulled slit at each end. Other is of irregular width, bifurcated at one end, behind which is a central slit. Other end is torn but has a similar slit. (i) L.136, W.15, T.2.4mm; (ii) L.179, W.27, T.1.3mm. Leather: calf. 35483 sf16382 (P4B)
- 15719 Strip, one end square cut with a pulled slit, the other torn across another slit. Knotted near centre, grain surface abraded. L.159, W.23, T.2mm. Leather: calf. 35144 sf16530 (P4B)
- 15720 Strip, torn across one end, the other square cut with a slit, pulled at outer end. L.70, W.18, T.2mm. Leather: calf. 23880 sf16690 (P4B)
- 15721 Strip, complete, roughly cut out, tapering slightly to one end, short slit behind each terminal, slightly abraded grain surface. L.165, W.17mm. Leather: unidentified. 34765 sf17842 (P4B)

- 15722 Strip, torn across both ends, one has a slit running 50mm longitudinally from the tear. L.450, T.23, T.2.2mm. Leather: calf. 14883 sf6188 (P5A)
- 15723 Two strips, one is torn one end and cut at the other end which has a longitudinal slit behind it. The other strip is knotted around and passes through the slit. It is torn both ends. L.83, W.22, T.1.7mm. Leather: calf. 22226 sf7499 (P5A)
- 15724 Two strips originally forming two loops with the free ends knotted and interlocked together through slits at the ends. One strip now torn. L.130, W.35, T.1.5mm. Leather: cattle/calf. 7589 sf2166 (P5B)
- 15725 Two strips, tapered to each end and secured together by each passing through a slit in the other then passing back through its own slit. One free end is split longitudinally and the other is tapered and compressed. L.305, W.16, T.1.7mm. Leather: calf. 21510 sf9396 (P5B)

## Other suspension fastenings

- 15726 Two strips, different widths, both tapered, knotted together by interlocking loops. L.175, W.26, T.7mm. Leather: calf. 30274 sf11128 (P4A)
- 15727 Strip, torn both ends, in two delaminated pieces. One end was originally knotted to another strip, but now encloses a fragment only L.184, W.28, T.1.7mm. Leather: calf. 21887 sf11688 (P4B)
- 15728 Strips, two knotted together through a V-shaped cut in the terminal of one. L.531, W.32, T.2.8mm. Leather: calf. 32217 sf13046 (P4B)
- 15729 Strip, complete, now folded over, with a pointed and a slightly rounded end. Two open pulled slits, one near rounded end, the other at the fold. L.210, W.17, T.2mm. Leather: unidentified. 21478 sf19479 (P5B) (Fig.1722)

## Knotted thongs

- 15730 Thong pointed at each end and knotted in the centre. L.95, W.12 (knot), T.1.4mm. Leather: cattle/calf. 30274 sf11142 (P4A)
- 15731 Thong, as above, delaminating. L.134, W.9 (knot), T.4.3mm. Leather: unidentified. 2317 sf162 (P5A)
- 15732 Thongs, four, in two knotted pairs. Largest: L.66, W.23mm. Leather: cattle/calf. 19599 sf8210 (P5B)
- 15733 Two thong fragments knotted together at one end, other ends torn. Abraded grain surface. L.165, W. (knot) 10mm. Leather: unidentified. 5348 sf17919 (C6e1, D6a16; 12th–13th century) (P6)

## Strap or strip fragments with no diagnostic features

- 15734 Strip, narrow, torn both ends, abraded. L.46, W.9, T.1.6mm. Leather: unidentified. 25900 sf16710 (P4A)
- 15735 Strip, torn both ends, slightly tapered throughout, four small torn holes along midline at centre. Grain surface abraded. L.111, W.21, T.2.6mm. Leather: cattle. 35090 sf16456 (P4B)
- 15736 Strip, torn both ends, tapered throughout, perforated by small ragged oval holes along midline, plus smaller holes throughout. Delaminated grain surface only, extremely abraded. L.71, W.32, T.1.9mm. Leather: calf. 4548 sf17622 (C6g18, 15th/16th century) (P6)

## Pouches and purses

- 15737 Purse fragments, badly biodeteriorated and broken into many fragments; no reconstruction possible. One frag-

ment has widely spaced thong slits running parallel to the edge. A second fragment, which appears to have joined to it, has another piece folded over the edge and sewn to it by a line of thong slits at right angles to the edge, in the manner of an attached flap. Largest: L.87, W.60, T.3.6mm. Leather: calf. 30186 sf10814 (P3)

- 15738 Six possible pouch drawstring fragments, cut and torn down, all with large drawstring slits. Largest: L.149, W.32, T.1.6mm. Leather: calf. 22438 sf15988 (P4B)
- 15739 Pouch, one half, curved bag section with grain/flesh closed seam around the edge. Three integral suspension straps emerge from top, the two outer ones longer than the middle one. All end in a point and one outer terminal has a longitudinal slit close to the end. L.153, W.63, T.2.1mm. Leather: sheep/goat. 28088 sf17211 (P4B) (Fig.1723)
- 15740 Possible pouch drawstring fragments (5), two adjoining, all torn, all with paired perforations, probably for a drawstring. Largest (adjoining pair): L.60, W.26mm. Leather: unidentified. 28730 sf17261 (P4B)
- 15741 Possible pouch drawstring fragment, torn both ends, four pulled thong slits at one end. Also two featureless scraps. Fragment: L.104, W.53, T.1.5mm. Leather: calf. 34391 sf17768 (P4B)
- 15742 Purse back panel, widening from top to double-convex lower edge. The grain surface of this portion is highly abraded and bulges slightly from use with an edge/flesh butt seam to join it to the other (absent) panel of the bag. In the centre are four slits in a lozenge pattern linked by thread impressions or edge impressions from an applied piece (absent), with a fifth hole in the centre. The top consists of two broad flaps separated by a large circular central opening with a short square slot at its base. The tops of the flaps are abraded and folded over to accommodate the girdle, and secured by thong holes. They are bordered by fine oblique grain/flesh stitch holes with continuous thread impressions on the grain surface. The top and the main body are separated by a row of grain/flesh holes with a continuous thread impression present on the grain side. H.178, W.157, T.4.2mm. Leather: cattle/calf. 10771 sf2650 (B6g4; early 15th century) (P6) (Fig.1723)
- 15743 Purse front panel fragment, torn and cut down, double row of grain/flesh slits from decorative stitching borders one edge. Probably associated with 15744–6. L.143, W.116, T.1.8mm. Leather: unidentified. 10766 sf17040 (B6g4; early 15th century) (P6)
- 15744 Purse front panel fragment, torn and cut down, damaged double row of grain/flesh slits along one edge. L.227, W.116, T.1.5mm. Leather: unidentified. 10766 sf17067 (B6g4; early 15th century) (P6)
- 15745 Purse front panel fragment, cut down, a row of fine grain/flesh slits borders a curved edge and a similar row forms a semi-circle within this. L.231, W.77, T.1.1mm. Leather: unidentified. 10766 sf17068 (B6g4; early 15th century) (P6) (Fig.1723)
- 15746 Purse fragment, entirely cut down, a row of grain/flesh slits runs across the middle. L.227, W.116, T.1.5mm. Leather: calf? 10766 sf17077 (B6g4; early 15th century) (P6)
- 15747 Drawstring pouch, three fragments of sheet, two joining. Two adjacent cut edges at right angles, one of which has a protected edge within which is a sequence of large, pulled holes, some doubled. Behind this is an irregular row of very fine grain/flesh holes and 120mm below that is a fold line. Fold line area has a scatter of pulled slits concentrating toward the cut edge, some with grain surface thong impressions. The detached fragment also has a fold and a large pulled slit. Adjoining fragments: L.220, W.112, T.1.6mm. Leather: sheep/goat. 13902 sf18477 (B6c3; 12th/13th century) (P6)

## Archer's bracer

- 15748 Bracer, made from a roughly cut-down shoe sole, sub-lenticular in shape, with a large slit in each side, no surviving seams. The fastening latchet and the buckle-strap from a Style 11b shoe both pass through the slits at the edge of the guard, their wide bases preventing them passing through entirely. The iron buckle is held by the folded strap terminal which is tunnel stitched down. L.127, W.57.9, T.3.2mm. Leather: guard probably cattle, straps calf. 4829 sf811 (C6g6; late 14th century) (P6) (Figs.1724–5)

## Balls

### Bundle of thongs

- 15749 Ball of fine thonging, sub-spherical, bundled together and secured by winding thonging around the surface. L.65, W.45, T.30, T. (individual thongs) 1–1.5mm. Leather: cattle/calf. 34343 sf12970 (P4B)

### Ball of two-part construction

- 15750 Two halves of a leather ball, roughly circular, with a grain/flesh stitching from a closed seam together with narrow leather thong around most of the circumference, three larger grain/flesh holes complete the circuit. L.102, W.73, T.2.3mm. Leather: calf. 32676 sf13439 (P3) (Fig.1727)

### Balls of three-part construction

- 15751 Circular panel with grain/flesh stitching around the edge, part of edge torn off. L.78, W.70, T.1.6mm. Leather: calf. 27915 sf11665 (P4A)
- 15752 Circular panel, torn, with paired grain/flesh stitch holes around the edge. L.70, W.67, T.0.9mm. Leather: unidentified. 27915 sf17611 (P4A) (Fig.1727)
- 15753 Circular panel, as CM90. L.66, W.67, T.2.6mm. Leather: calf/cattle. 29926 sf18419 (P4B)

### Balls of multiple construction

- 15754 Lenticular panel, one end torn off, grain/flesh stitching around the edges. L.98, W.36, T.1.0mm. Leather: calf. 34424 sf17776 (P4B) (Fig.1727)
- 15755 Lenticular panel fragment, torn, surviving edge with grain/flesh stitching. L.63, W.20, T.1.4mm. Leather: calf.22267 sf16296 (P5A)
- 15756 Lenticular panel, torn and cut-down. L.80, W.21, T.2.3mm. Leather: sheep/goat. 15471 sf18727 (P5B)
- 15757 Sub-lenticular fragment, one end torn off, a row of grain/flesh stitching runs down each side. L.30, W.11, T.0.9mm. Leather: delaminated, unidentified. 6472 sf19168 (P5B)

## Elliptical panels

### Lozenge-shaped, plain

- 15758 A slit at each end, one end torn. L.88, W.47, T.2.7mm. Leather: unidentified. 22153 sf18539 (P5A)
- 15759 Oval slit at each end, two further slits at each side, three of which bear lead alloy plugs or rivets. A fine impressed line creates a border around the edge and there is an indiscernible design within the interior, perhaps an arrangement of zig-zag lines. L.98, W.34, T.1.7mm. Leather: calf. 29156 sf16544 (P5B) (Fig.1729)

- 15760 Irregular, one end torn away. L.80, W.24, T.1mm. Leather: calf. 21674 sf18074 (P5B)

- 15761 Slit perforations at both ends, roughly cut out. L.71, W.31, T.2.5mm. Leather: unidentified. 15622 sf18742 (P5B) (Fig.1730)

### Lozenge-shaped, stitched

- 15762 Perforations at each end, one terminal torn off. Grain/flesh stitching holes around the edge with continuous thread impressions visible. Large hole worn in the centre. L.107, W.28, T.1.7mm. Leather: calf/cattle. 31478 sf12887 (P4B) (Fig.1729)
- 15763 Two matching pieces, laid flesh to flesh, with grain/flesh stitching around the edge, continuous thread impressions present on grain surface. Oblique central slit, two perforations at one end, other torn away. L.91, W.24, T.5mm. Leather: calf, delaminated. 21497 sf8868 (P5B) (Figs.1729–30)
- 15764 Two narrow leaf-shaped panels, matching, laid flesh to grain, with paired grain/flesh stitching around the edge. L.89, W.23, T.3.9mm. Leather: calf. 21510 sf9378 (P5B)
- 15765 Two matching pieces, laid flesh to flesh, with grain/flesh stitching around the edge. One end torn away near middle, other cut and torn off. Slit perforation in centre. L.60, W.31, T.5mm. Leather: calf. 15526 sf18733 (P5B)

### Lozenge-shaped with elongated terminals, plain

- 15766 Circular-shaped panel with one elongated, pierced terminal, other torn off. Central section has several shallow impressions. L.57, W.26, T.1.6mm. Leather: calf. 29459 sf18380 (P4B) (Fig.1729)
- 15767 Narrow perforated terminals and central hole. Impressions around the edge similar to the tooth marks seen on some offcuts and objects. L.97, W.25, T.2.5mm. Leather: cattle. 7589 sf2170 (P5B) (Figs.1729–30)
- 15768 Elongated terminals, each perforated by a 6mm pulled slit. L.132, W.35, T.1.5mm. Leather: calf. 15791 sf7169 (P5B) (Figs.1729–30)
- 15769 Elongated, perforated terminals, one torn, and central perforation. L.96, W.28, T.1.9mm. Leather: calf. 15745 sf18752 (P5B)

### Lozenge-shaped with elongated terminals, stitched

- 15770 Elongated, pierced terminals. Grain/flesh stitch holes around the edge without thread impressions, stopping before terminals. Grain surface unworn. L.139, W.30, T.1.5mm. Leather: calf. 29222 sf11669 (P4B) (Figs.1729–30)
- 15771 Two matching pieces, apparently sewn together grain against flesh by grain/flesh stitch holes around wider section. Perforations on both terminals just outside the stitched section; one has a second perforation close to the end. L.103, W.26, T.3.5mm. Leather: calf. 29835 sf13053 (P4B) (Figs.1729–30)

### Elliptical slashed panels

- 15772 Lanceolate panel, with four parallel slits; the attenuated terminals each have a slit in the end. L.113, W.29, T.2.8mm. Leather: cattle/calf. 26501 sf8832 (P4B) (Fig.1731)
- 15773 Lanceolate panel, single slash in interior. One terminal partly torn away, both have slit in each end, the surviv-

ing slit appears to have had a thong passing through it. Two separate narrow thong fragments, one knotted. L.79, W.39, T.1mm. Leather: cattle/calf, delaminated. 34290 sf19297 (P4B)

- 15774 Lanceolate panel, with ten parallel slits and with a small closed slit at each terminal. L.126, W.41, T.3.2mm. Leather: cattle/calf. 9572 sf2095 (D6a9; early 12th century) (P6)
- 15775 Lanceolate panel, with nine surviving parallel slits, torn away obliquely across one side. No slit present on the surviving terminal. L.70, W.40mm. Leather: calf. 9572 sf2099 (D6a9; early 12th century) (P6)
- 15776 Lanceolate panel, with nine parallel slits. L.90, W.42, T.3.6mm. Leather: probably cattle/calf. 11763 sf2927 (B6g4; early 15th century) (P6)
- 15777 Lanceolate panel, with seven parallel slits. One terminal has a small slit, the other is slightly torn but appears not to have been slit. L.106, W.36, T.3.6mm. Leather: cattle/calf. 15285 sf5294 (B6a1; late 11th century) (P6) (Fig.1731)
- 15778 Lanceolate panel, with seven parallel slits. One terminal torn away, other has a slight cut into one edge. L.80, W.24, T.2.5mm. Leather: cattle/calf. 9322 sf17168 (D6d3; late 13th century) (P6)

- 15779 Lanceolate panel, attenuated moulded ends, fine grain/flesh running stitch, single thread (absent) around the perimeter. Eight slashes on the interior penetrating the grain surface only. L.144, W.42, T.1.3mm. Leather: cattle/calf. 5981 sf17960 (C6c3, D6a5; late 11th/early 12th century) (P6) (Fig.1731)

## Discs

- 15780 Small, roughly cut, small rounded perforation at centre. L.27, W.26, T.1.6mm. Leather: calf. 18602 sf5306 (P4B) (Fig.1732)
- 15781 Roughly cut, large rounded perforation at centre. L.34, W.33, T.1.4mm. Leather: calf. 22868 sf8061 (P4B) (Fig.1732)
- 15782 Roughly cut, large rounded perforation at centre. L.34, W.32, T.0.9mm. Leather: goat? 25371 sf8487 (P4B)
- 15783 Roughly cut, large rounded perforation at centre. L.32, W.31, T.1.9mm. Leather: unidentified. 22103 sf11482 (P5B)
- 15784 Roughly cut, large rounded perforation at centre. L.24, W.24, T.3mm. Leather: cattle. u/s sf1777

## Other discs

Small Find	L.	W.	T.	Leather	Context	Period
13190	35	35	0.7	unidentified	32549	3
8139	51	40	2.4	cattle/calf	24203	4B
9915	30	27	2.3	calf	28021	4B
14035	30	29	0.9	sheep/goat	35483	4B
17648	35	32	1.7	cattle/calf	31476	4B
17770	31	31	1.8	calf	34412	4B
9649	25	22	3.2	cattle/calf	27118	5A
10009	50	48	2.2	calf	21962	5B
12811	38	37	1.4	unidentified	29156	5B
247	25	24	2.2	sheep/goat?	2587	B6w2; early 15th century
1991	43	41	2.4	cattle	5484	C6e1, D6a16; 12th–13th century
17917	19	18	3.5	cattle	5348	C6e1, D6a16; 12th–13th century

## Vessel bases

- 15785 Disc, sub-circular, one edge very abraded and torn, large opened slit close to one edge and two grain/flesh holes opposite. L.67, W.59, T.5mm. Leather: cattle. 10768 sf2643 (B6g4; early 15th century) (P6) (Fig.1732)
- 15786 Disc, central perforation, small concave curve in one side. L.115, W.110, T.4.3mm. Leather: cattle. 10546 sf3941 (C6g6; late 14th century) (P6) (Fig.1732)

## Washers

- 15787 Disc with central perforation, most of one half torn away, abraded ring approximately halfway between the centre and the outer edge. L.30, W.23, T.1.1mm. Leather: calf. 22868 sf19482 (P4B)
- 15788 Large irregular central hole. Flesh surface completely delaminated. L.47, W.44, T.1.8mm. Leather: unidentified. 27807 sf12834 (P5A)
- 15789 Stiff, abraded, roughly cut probably from a shoe sole, angular outer edge, large central hole removed by similar angular cut with edges skived from flesh surface. Three grain/flesh stitch holes run tangentially across part of

the central hole and a curving cut runs from it to the outside edge of the disc. L.45, W.44, T.3.6mm. Leather: probably cattle. 11296 sf2746 (B6c7; late 11th–early 12th century) (P6) (Fig.1732)

- 15790 Of thick hide, both faces compressed, grain abraded except for a central groove. L.27, W.25, T.4.3mm. Leather: unidentified. 11784 sf3262 (B6c2–6; 12th–early 13th century) (P6) (Fig.1732)
- 15791 Roughly cut out central hole 24 x 21mm. Abraded so that no grain pattern is visible, probably re-used sole leather. L.46, W.43, T.3.2mm. Leather: probably cattle. u/s sf3326

## Other items of decorated leather

- 15792 Strip, cut straight across one end, obliquely across the other. Two small triangular cut-outs are present at the straight end. Grain surface abraded with an incised irregular design of rough lines, inverted Vs, curves and leaf shapes. L.89, W.22, T.1.7mm. Leather: unidentified. 20186 sf16829 (P5A) (Fig.1733)
- 15793 Possible bookbinding corner fragment, torn, with two tunnel stitches along the cut edge. Decorated with impressed paired parallel lines forming three cells each containing



a single stamped eight-petalled floral motif. L.75, W.57, T.1.9mm. Leather: probably sheep/goat. 11356 sf2849 (B6c8-g?; medieval-early post-medieval) (P6) (Fig.1733)

gesting that it may have been cut down from an object for re-use. L.62, W.32mm. Leather: probably cattle/calf. 5348 sf17918 (C6e1, D6a16; 12th-13th century) (P6)

## Binding strip

15794 Folded longitudinally flesh to flesh, grain/flesh stitching with continuous thread impression runs along the edge. Torn both ends, abraded. L.284, W.12 (folded), T.3.0mm. Leather: sheep/goat.10464 sf18941 (C6g7; 14th/15th century) (P6)

## Thonged fragments

15795 Four strip fragments. Two are laid flat parallel to each other, with the other two shorter fragments laid one on top of each, flesh to flesh. A narrow leather thong holds one pair together by passing through a series of grain/flesh slits, then crosses to the other pair at one end. L.40, W.19, T. (leather) 1.5mm. Leather: goat, 34842 sf13278 (P4B)

15796 Fragments, offcuts and scraps, unconserved. Fragment, strip form, with second, narrower strip threaded through three slits along its length. Main strip has one apparent cut terminal, other end cut down. Narrow strip torn at both ends. Narrow thong, coiled. Two secondary offcuts, eight fragments of tertiary trimmings, many tiny scraps. Strip: L.38, W.14, T.10.7mm. Leather: unidentified. 35086 sf16172 (P4B)

15797 Fragment, sub-rectangular, all edges plain cut, three slits in a line to one side of midline, fourth slit other side. L.50, W.31, T.1.2mm. Leather: calf. 21887 sf18117 (P4B)

15798 Two sheet leather fragments, irregular shape, torn and cut down all round, laid one on top of the other with considerable overlap, roughly thonged together with in situ leather lace. L.185 W.115, T.2.1mm. Leather: cattle. 4292 sf513 (C6i4; 16th-19th century) (P6)

15799 Fragment, probably secondary offcut, thong passing through two slits and torn off both ends. L.35, W.23, T.2.2mm. Leather: unidentified. 11854 sf17362 (B6f4; early 14th century) (P6)

## Patches

15800 Possible patch fragment, torn and cut down, one edge has a widely spaced grain/flesh running stitch, the adjoining (cut down) one has a ferrous concretion halfway along its existing length, possibly the remnant of a stud or rivet. L.64, W.54, T.0.5mm. Leather: calf. 34877 sf17859 (P3)

15801 Small, sub-semicircular, torn in half, very fine grain/flesh stitch holes around periphery. L.38, W.34, T.0.8mm. Leather: calf. 17599 sf16425 (C6c6; mid 12th century) (P6)

15802 Rectangular, rounded corners, one corner torn off. Grain/flesh running stitch around the periphery, grain surface abraded at both ends. L.75, W.56, T.1.5mm. Leather: cattle/calf. 6257 sf16942 (C6c4; early 12th century) (P6)

15803 Small, circular, applied by grain surface to another item and secured by edge/grain stitches around periphery. L.22, W.21, T.1.0mm. Leather: possibly sheep/goat. 9334 sf17186 (D6a25-b1; late 12th/early 13th century) (P6)

15804 Fragment, torn, two partial edges survive, tunnel stitches around periphery. Similar to clump sole, but leather rather thin. L.72, W.49, T.2.7mm. Leather: possibly calf. 11687 sf17399 (B6g4; early 15th century) (P6)

15805 Semicircular, grain/flesh binding seam around the curve and widely spaced grain/flesh stitch holes across the slightly curved base, but not following the curve, sug-

## Cut-down pieces

15806 Strip, broad, sides cut down to flattened S shape, folded transversely in half flesh to flesh and secured with a split thong seam at the ends. The thonging is backstitched, passing through slits in itself. L.197, W.56, T.1.8mm. Leather: cattle/calf. 27093 sf17540 (P4B)

15807 Sheet fragment, large, in three adjoining pieces, plus three non-adjoining and a number of small scraps. Two adjacent cut edges at right angles, the others torn. Sub-elliptical hole bordered by edge/flesh stitching present in centre of the fragment near to one torn edge. Grain surface heavily abraded. L.374, W.198, T.1.6mm. Leather: sheep/goat. 22377 sf18586 (P5A) (Fig.1734)

15808 Sheet leather object, double layer, secured by two lines of split thong stitching that curve asymmetrically across one surface, appearing as a plain running stitch on the other. A similar parallel row is mostly damaged and survives as torn thong holes. A scored line runs at a right angle from the split thong stitching to a cut-down edge, and itself has short tears leading from it in a herringbone pattern. Adjacent to this is a rough hole, rectangular on the upper face, round on the other. Four separate fragments are probably associated, two forming a tapered point, torn across a line of transverse thong holes which are very like those on the main object, but a match cannot be obtained. L.294, W.161, T.4.2mm. Leather: cattle/calf. 28005 sf9893 (P5B) (Fig.1734)

15809 Strip, cut down at each end, both edges folded back flesh to flesh, but cut down just beyond the fold. L.245, W.45, T.13mm. Leather: possibly deer. 16465 sf4555 (D6a19; late 12th century) (P6)

15810 Sheet fragment, large, sub-triangular, cut down and torn. A line of grain/flesh stitch holes runs from apex where cut edges meet towards torn base. Two lines of stitching with thread impressions on the flesh side only indicate the former position of an elliptical repair patch or decorative appliqué. L.409, W.284, T.1.8mm. Leather: sheep/goat (probably sheep). 10832 sf17029 (C6g1; early-mid 14th century) (P6) (Fig.1734)

## Cut-down seams

15811 Two sheet fragments, both cut-down edge fragments with widely spaced rows of grain/flesh stitch slits. Largest: L.340, W.28, T.1.1mm. Leather: sheep/goat. 27440 sf17562 (P4A)

15812 Sheet edge, cut down, surviving edge straight for most of its length then curves 90° at one end. Grain/flesh closed seam along full length of this edge, stitch holes paired, single thread (absent). L.294, W.37, T.1.9mm. Leather: goat. 21644 sf10339 (P5B)

15813 Strip, wide, both sides may be cut down, both ends are folded in flesh to flesh and have very fine edge/flesh butt seams. L.66, W.87mm. Leather: unidentified. 6284 sf16996 (P5B)

15814 Fragment, cut-down strip, pointed at both ends, short surviving original edge with edge/flesh butted seam, becoming grain/flesh in places. L.157, W.18, T.2.4mm. Leather: unidentified. 11642 sf17389 (B6c7; late 11th-early 12th century) (P6)

15815 Rough strip, one cut end, the other part cut, part torn. A row of five grain/flesh slits runs along midline. L.160, W.21, T.1.6mm. Leather: possibly calf. u/s sf16436



## Other cut-down seams

Small Find	Leather	Context	Period
18429	calf	30039	4A
17712	calf	32585	4B
17461	cattle	5415	C6c6, D6a7; mid 12th century

## Other cut-down items

Small Find	Leather Type	Context	Period
16474	calf	35060	4B
16767	calf	25371	4B
17484	unidentified	22490	4B
17739	unidentified	32924	4B
16840	unidentified	20605	5A
18547	calf	22208	5A
18600	calf	22051	5A
9334	calf	19625	5B
16951	cattle	6530	5B
18104	unidentified	21854	5B
18110	calf	21858	5B
16837	calf	20205	5Cr
34	cattle	2195	A6z4; 13th century
16560	calf	16605	B6b4; late 12th century
17187	cattle	9334	D6a25–b1; late 12th/early 13th century
17188	?sheep/goat	9334	D6a25–b1; late 12th/early 13th century
17355	?pigskin	11712	B6g4; early 15th century
17383	cattle	11632	B6a6; 11th/12th century
18670	sheep/goat	13315	B6c2–6; 12th–early 13th century

## Hand leather or working surface

- 15816 Sheet fragment, torn all round, with scattered random grain/flesh holes throughout. L.117, W.93, T.2.7mm. Leather: cattle/calf. 27509 sf19485 (P4B)

## Cutting platforms

- 15817 Strip, torn both ends, sides roughly cut down, rough, incised grid pattern over the entire grain surface. L.229, W.21, T.1.4mm. Leather: calf. 32721 sf17729 (P4B)
- 15818 Sheet fragment, in two adjoining pieces, triangular, truncated apex, cut down. Grain surface badly abraded with an incised grid pattern across most of it. L.226, W.71, T.2.1mm. Leather: calf. 14883 sf16341 (P5A)

## Boarded leather

- 15819 Strip, both ends cut down, wide central band of transverse lines or creases. L.175, W.45, T.1.6mm. Leather: calf. 31207 sf17641 (P4B)

- 15820 Strip, torn both ends, with fine transverse creases over entire length, delaminated flesh surface. L.105, W.16, T.1.4mm. Leather: unidentified. 34053 sf17744 (P4B)

## Pigskin fragments

- 15821 Three fragments, two possibly joining, the larger with a whipped edge/flesh seam running along each edge suggesting it may be torn from a lining. Largest: L.74, W.60mm. Leather: pigskin. 9224 sf17153 (C6e9; mid 13th century) (P6)
- 15822 Strip, cut down but retaining a short remnant of butted edge/flesh seam on one edge. L.141, W.27mm. Leather: pigskin. 11712 sf17355 (B6g4; early 15th century) (P6)

## Untanned calfskin

- 15823 Crumpled mass of hide, retaining hair, probably not tanned. Mass: L.290, W.210, H.80mm. Leather: calf. 6395 sf16257 (P5B) (Fig.1569)

## Finds from the Coppergate watching brief site (1981–2.22)

### Shoes

Examples of all these shoe types can be found in the catalogue of shoes from 16–22 Coppergate. None of the shoes from the watching brief was decorated.

#### Style 2: Low-cut slip-on shoes with a seam at centre back

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
230	uppers				cattle/calf	2050	Anglo-Scan.

#### Style 3: Shoes with one-piece uppers joining with a side seam

Style 3b-: Shoes with one-piece uppers joining with a side seam with a sole with a rounded seat

This category includes those finds which can be identified as being of the general Style 3 and as having a heel stiffener, but which cannot be further classified.

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
454	sole, uppers	1	b2	230	calf	1247	Anglo-Norman

Style 3--: All Style 3 finds that are too fragmentary to be further sub-typed

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
183	sole, upper	1	b2		cattle	1055	u/s
210	uppers				calf	1055	u/s

#### Style 8: Front-fastening footwear with one-piece uppers

Style 8d: Front-lacing one-piece ankle-boots

15824 Boot, uppers only, almost complete, front-laced, left foot. One-piece wrap around, grain/flesh construction seam, vertical medial edge/flesh butt closing seam, becoming front of quarter above throat height and finished with edge/flesh binding seam. Longitudinal opening in vamp, running down instep from vamp throat, lateral edge continuing up to form front of quarter. Bordered by two lace holes on each side, the medial pair retaining two laces

formed from a single bifurcated strip, the terminal of which secures it on the inside of the shoe. Lateral edge of vamp opening and edge of lateral quarter have blind whip stitches, and the impression of a reinforcement cord or edge of a tongue. Medial edge has edge/flesh binding seam. Top edge is plain cut. Low, wide semicircular heel stiffener, lasted in at the base, blind whip stitches on curved edge. L.250, W.100, T.2.2mm. Leather: calf. 1545 (medieval) sf108

15825 Boot, vamp only, front-fastened, right foot. One-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled backward from last-ing margin. Longitudinal opening in vamp, medial side only survives, other side torn away. Where opening meets throat there are two adjacent slits on the medial side for

a surviving bifurcated tie strap. Surviving edge of vamp has blind whip stitches. L.140, W.112, T.2.3mm. Leather: calf. 1545 (medieval) sf429

- 15826 Boot, vamp only, front-fastened, right foot. One-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, set well back, angled backward from lasting margin. Longitudinal opening in vamp, partially cut down. Single surviving slit at medial throat for surviving tie strap. Surviving edge of lateral vamp has blind whip stitches and reinforcement cord or tongue impression, medial side has whip stitches only. Much of quarters cut down, but blind whip stitches indicate wide triangular heel stiffener, lasted in at base. L.236, H.62, T.3.1mm. Leather: calf. 1384 (16th century) sf152
- 15827 Boot, uppers only, front-fastened, right foot. One-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, set well back, angled backward from lasting margin then sharply forward again to meet an edge with edge/flesh binding seam for a large triangular insert. Longitudinal opening in vamp, only lateral side survives, rest of vamp torn away. Two slits at lateral throat. Surviving edge of lateral vamp has blind whip stitches and reinforcement cord impression, running three-quarters of the way up the front of the lateral quarter. Top edge plain cut. Blind whip stitches indicate tall triangular heel stiffener, lasted in at base. L.236, W.153, T.2.9mm. Leather: calf. 1506 (16th century) sf463
- 15828 Boot, uppers only, front-fastened, right foot. One-piece wrap around, grain/flesh construction seam, closing seam torn away. Longitudinal opening in vamp, lateral side only survives, medial side torn away. Two small slits adjacent to edge of opening with extant lace fragment. Surviving edge of lateral vamp has blind whip stitches and reinforcement cord impression, running up the front of the lateral quarter, only a short remnant of which survives, the remainder torn away. A second row of blind whip stitches runs almost horizontally from junction of throat and quarter. Blind whip stitches indicate tall triangular heel stiffener, lasted in at base. L.245, H.91, T.1.8mm. Leather: calf. 1506 (16th century) sf473

## Style 8e: One-piece ankle-boots fastened at the front with buckles and straps

- 15829 Boot, uppers only, front-buckled, right foot. One-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled backward from lasting margin. The medial quarter extends forward to form an integral rectangular flap, edge/flesh butt seamed into vamp throat. Longitudinal opening in vamp, running from vamp throat, edge on lateral side continuing up to form front of quarter. Where opening meets throat, there is a slit on the medial side for an absent buckle strap (buckle survives in corroded state) and a pair of slits on lateral side for surviving bifurcated strap. Both edges of vamp opening have blind whip stitches, and the impression of a reinforcement cord. Top edge is plain cut at fore, finished with whip stitch round heel, possibly for top band. Wide truncated triangular heel stiffener (absent) was lasted in at base, sides blind whip stitched into quarter. A teardrop-shaped hole is cut out of heel stiffener area, its periphery finished with edge/flesh whip stitch. L.315, W.176, T.2.1mm. Leather: calf. 1545 (medieval) sf84
- 15830 Boot, uppers only, front-buckled, right foot. One-piece wrap around, grain/flesh construction seam, vertical medial edge/flesh butt closing seam. The medial quarter extends vertically from the closing seam and is finished with edge/flesh whip stitch. Medial vamp throat torn away, lateral side of longitudinal opening survives, continuing up to form front of quarter. Where opening meets throat there is a slit on the lateral side for an extant

buckle strap complete with tinned iron buckle. Buckle strap wraps around buckle and forms two tails which pass through slit in vamp where tail of one is secured by passing it through a slit in the other. Surviving edge of vamp opening and edge of lateral quarter have blind whip stitches, and the impression of either a reinforcement cord or tongue. Top edge is plain cut. Wide triangular heel stiffener (absent) was lasted in at base, sides blind whip stitched into quarter. L.305, W.118, T.1.8mm. Leather: calf 1545 (medieval) sf86

- 15831 Boot, uppers only, front-buckled, right foot. One-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled backward from lasting margin. The medial quarter extends forward to form an integral rectangular flap, edge/flesh butt seamed into vamp throat. Longitudinal opening in vamp, running from vamp throat, edge on lateral side continuing up to form front of quarter. Where opening meets throat, there is a slit on the medial side for an existing fastening strap and a similar slits on the lateral side for a surviving buckle strap. Buckle strap wraps around extant buckle and forms two tails which pass through a slit in the vamp where the tail of one is secured by passing it through a slit in the other. There are two secondary slits in vamp wing behind lateral throat. Both surviving edges of vamp opening and edge of lateral quarter have blind whip stitches, with the impression of either a reinforcement cord or a tongue on the lateral side only. Top edge of boot is plain cut. Wide triangular heel stiffener (absent) was lasted in at base, sides blind whip stitched into quarter. Patch holes at base of heel and medial joint. L.395, W.152, T.2.4mm. Leather: calf. 1545 (medieval) sf95
- 15832 Boot, front-buckled, left foot. Sole: oval toe, wide asymmetrical tread, very narrow waist, narrow seat, rear of seat torn off. Edge/flesh construction seam. Uppers: vamp only of a two-piece upper, grain/flesh construction seam, vertical edge/flesh butt closing seams both sides, continue onto straight-edged throat. Longitudinal opening in vamp, running down instep from vamp throat. Where opening meets throat, there is a slit on the medial side for an absent fastening strap and a pair of slits on the lateral side for fragmentary bifurcated buckle strap. Lead alloy buckle is circular with asymmetrical cross-bar and iron pin. Both edges of vamp opening have blind whip stitches, and the impression of a reinforcement cord or tongue edge. A triangular cut out of the lasting margin at the medial joint has peripheral edge/flesh stitches. Two adjacent stitch holes beyond lasting margin are probably a repair to a gape. Rand fragment, flat strip, edge/flesh construction seam. Sole: L.235, W. (tread) 78, W. (waist) 25, W. (seat) 40, T.5.3mm. Size: Adult 1½. Leather: cattle, uppers calf. 1545 (medieval) sf139
- 15833 Boot, substantially complete, front-buckled, right foot. Sole: oval toe, medium asymmetrical tread, very narrow waist, long narrow seat, rear of which is worn away. Edge/flesh construction seam, worn toe at great toe metatarso-phalangeal joint. Uppers: one-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled backward from lasting margin, then forward to vamp throat, edge/flesh butt seam. Longitudinal opening in vamp, bordered by edge/flesh whip stitch on medial side to secure a sub-rectangular tongue, and blind whip stitch on the other to secure a reinforcement cord. On the medial side of the opening a strap terminal passes through a slit in the vamp. It is T-shaped to hold it in place. The other end is torn, but has one end of a fastening hole. On the lateral side are two slits which originally retained the buckle-strap, now missing. Top edge is plain cut, high at the front and lower at the back. Blind whip stitches indicate the position of a triangular heel stiffener, now absent. This was originally lasted in at the base, though the lasting margin is torn away in this area. Sole: L.218, W. (tread) 77, W. (waist)

29, W. (tread break) 43, T.4.8, max. surviving quarters height 141mm. Leather: uppers calf. 1545 (medieval) sf434 (Fig.1662)

15834 Boot, uppers only, front-buckled, left foot. One-piece wrap around, grain/flesh construction seam, medial edge/flesh butt closing seam, angled backward from lasting margin. The medial quarter extends slightly forward to form a small integral rectangular flap, edge/flesh butt seamed into vamp throat. Longitudinal opening in vamp, running down instep from vamp throat, edge on lateral side

continuing up to form front of quarter. Where opening meets throat, there is a slit on the medial side for an existing fastening strap secured on the inside by widening of the strap terminal. A similar slit on the lateral side is for a surviving buckle strap (buckle absent). Buckle strap originally wrapped around buckle and formed two tails which passed through slit in vamp where they were secured with blind whip stitches. Both surviving edges of vamp opening and edge of lateral quarter have an edge/flesh butt seam. Top edge of boot is plain cut. L.422, H.153, T.3.3mm. Leather: calf. 1506 (16th century) sf415

### Other Style 8e

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
446	upper, heel stiffener				cattle/calf	1545	medieval

### Style 8-: Front-fastening shoes with one-piece uppers, not further classifiable

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
394	upper	2			cattle	1506	16th century

### Style 9: Side-lacing footwear

#### Style 9b: Footwear of two-piece construction lacing at the side

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
466	quarters				calf	1506	16th century

#### Style 9-: Side-lacing footwear, not further classifiable

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
427	reinforcement					1545	medieval

## Style 11: Buckle- or latchet-fastened shoes

### Style 11-: Buckle- or latchet-fastening shoes, not further classifiable

15835 Shoe uppers, vamp only, latchet-fastened, fragmentary, badly torn around periphery. Remnant of edge/flesh butt

closing seam and a U-shaped throat, the side of which is bordered by blind whip stitches and a reinforcement cord impression. Adjacent to this is a flesh surface cut, reinforced by blind whip stitches. L.110, W.126, T.1.7mm. Leather: calf. 1506 (16th century) sf472

### Other Style 11-

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
417	quarters, latchet	2			cattle	1506	16th century

## Separately typed soles

15836 Shoe sole, right foot, pointed toe, medium asymmetrical tread, very narrow waist and elongated narrow seat, worn

away at lateral rear. Edge/flesh construction seam, L.217, W. (tread) 80, W. (waist) 27, W. (seat) 34, T.4.8mm. Leather: cattle. 1506 (medieval) sf124

### Other separately typed soles

Arranged by sole type, in period and small find number order. These are not necessarily complete and the find may include other components and fragments.

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
<b>Sole type c1</b> 323	sole	2	c1	164		2093	Anglo-Scan.
<b>Sole type c</b> 443	sole	2	c			1545	medieval
<b>Sole type d1</b> 451	sole	2	d1			2093	Anglo-Scan.
452	sole	2	d1	267		2093	Anglo-Scan.
<b>Sole type e1</b> 89	sole	2	e1		cattle	1545	medieval
371	sole, vamp	2	e1	148		1545	medieval
430	sole	2	e1	240		1545	medieval
432	sole		e1			1545	medieval
69	sole, clump sole, rand	2	e1			1478	16th century
124	sole	2	e1			1506	16th century
459	sole	2	e1			1506	16th century
<b>Sole type e2</b> 439	sole	2	e2			1545	medieval
440	sole	2	e2			1545	medieval
51	sole	2	e2		cattle	1384	16th century
66	sole	2	e2		cattle	1384	16th century
410	sole	2	e2			1506	16th century
460	sole	2	e2			1506	16th century
468	sole	2	e2		cattle	1506	16th century
<b>Sole type e3</b> 90	sole	2	e3a			1545	medieval



Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
<b>Sole type e4</b>							
457	sole		e4			1384	16th century
226	sole	2	e4	256	cattle	1055	u/s
479	sole	2	e4	232		1055	u/s
<b>Sole type e5</b>							
442	sole	2	e5			1545	medieval
368	sole, clump sole, uppers, heel stiffener, rand	2	e5		calf	1205	15th/16th century
65	sole, uppers, rand		e5		calf	1384	16th century
126	sole		e5			1506	16th century
359	welt, insole	4	e5			1506	16th century
408	sole	2	e5	238		1506	16th century
409	sole	2	e5	225		1506	16th century
413	sole, upper	2	e5	137	calf	1506	16th century
455	sole	2	e5		cattle	1384	16th century
458	sole		e5			1384	16th century
469	sole	2	e5			1506	16th century
382	sole, uppers	4	e5		cattle	1055	u/s
<b>Sole type e</b>							
406	sole	2	e			2093	Anglo-Scan.
87	sole	2	e			1545	medieval
431	sole	2	e			1545	medieval
433	sole	2	e			1545	medieval
441	sole	2	e			1545	medieval
392	sole		e		cattle	1477	14th century
395	sole	2	e			1506	16th century
411	sole	2	e			1506	16th century
412	sole	2	e			1506	16th century
414	sole	2	e			1506	16th century
461	sole	2	e			1506	16th century
464	sole	2	e			1506	16th century
465	sole	2	e			1506	16th century
402	sole	2	e			1776	u/s

## Unclassifiable footwear components

This category includes all those components and fragments which are too incomplete for further classification.

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
174	upper					1832	Anglian
62	toggle				cattle/calf	1480	Anglo-Scan.
327						2093	Anglo-Scan.
452	sole	2	d1	267		2093	Anglo-Scan.
453	clump sole					2093	Anglo-Scan.
93	sole, heel-riser, uppers, top band				cattle/calf	1247	Anglo-Norman
388	uppers				cattle	1247	Anglo-Norman
88	sole	2				1545	medieval
94	sole					1545	medieval
97	drawstring					1360	medieval
424	clump sole					1545	medieval
425	rand					1545	medieval
426	uppers					1545	medieval
428	tongue				calf	1545	medieval

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
435	uppers					1545	medieval
436	strap				calf	1545	medieval
437	clump sole					1545	medieval
438	rand					1545	medieval
444	sole	2				1545	medieval
445	clump sole, rand					1545	medieval
447	uppers					1545	medieval
448	rand					1545	medieval
449	top band				sheep/goat	1545	medieval
450	lace			453		1545	medieval
385	uppers				cattle	1205	15th/16th century
120	clump sole				cattle/calf	1506	16th century
126	sole		e5a			1506	16th century
188	clump sole				cattle	1478	16th century
213	uppers				calf	1384	16th century
396	sole	2			cattle	1506	16th century
397	clump sole					1506	16th century
398	clump sole					1506	16th century
399	sole	2				1506	16th century
400	uppers				cattle	1506	16th century
416	upper	2				1506	16th century
418	uppers				calf	1506	16th century
419	heel stiffener					1506	16th century
420	sole					1506	16th century
421	clump sole					1506	16th century
422	midsole	4			calf	1506	16th century
455	sole	2	e5a		cattle	1384	16th century
456	clump sole					1384	16th century
462	heel stiffener					1506	16th century
470	sole	2				1506	16th century
471	vamp				cattle	1506	16th century
474	clump sole				cattle	1506	16th century
476	rand				cattle	1506	16th century
227	sole, uppers	2			sheep/goat	1055	u/s
383	sole					1055	u/s
403	clump sole					1776	u/s

## Scabbard

- 15837 Fragments (a–d), belonging to two or more scabbards.
- a) Scabbard mouth convex and finely stitched, comprising front face only, cut along both edges. Lower end of scabbard missing, cut and torn away. At upper end, two adjacent slits for suspension, elongated by downward cuts. Between the slits, the impression of a strap-slide, 100mm long, rod-shaped with campanulate terminal at top. To either side of the suspension slits, an impressed transverse line and a hole are possibly the result of wear from the strap. Both edges of the scabbard very worn. L.480, W.65, T.1.5mm. Leather: calf.
- b) Scabbard mouth, convex and finely stitched. Butted seam, off-centre back, stitched at 6–7mm intervals. On front, two irregular slits for suspension. Below the slits abraded marks suggest two lines radiating downward. Lower edge cut and torn. L.165, W.68, T.1.5mm. Leather: calf.
- c–d) Two fragments, probably from either side of a butted seam and possibly from the lower part of (b). All other edges are cut. L.250, W.60, T.1.5mm. Leather: calf. 2050 (Anglo-Scandinavian) sfs359 and 363

## Straps

### Flat plain straps

- 15838 Strap, torn both ends, abraded, midline row of small, square-section holes probably from decorative mounts originally. L.57, W.9, T.1.8mm. Leather: sheep/goat. 1545 (medieval) sf373

### Flat straps with stitched sides

- 15839 Broad strap, cut down one end, other end torn. Grain/flesh stitch holes both sides which probably secured it to a second layer. L.204, W.39, T3.4mm. Leather: cattle. 1384 (16th century) sf53

### Slotted strips

- 15840 Two strips, abraded, interlocked at one end by each passing through a slit behind the end of the other. The other ends are both torn. L.192, W.9, T.1.9mm. Leather: possibly sheep/goat. 1384 (16th century) sf366

## Binding strip

- 15841 Folded longitudinally flesh to flesh, grain/flesh stitching with continuous thread impression runs along the edge, cut one end with additional grain/flesh stitch holes, torn at the other. Leather: sheep. 1205 (15th/16th century) sf369

## Discs

- 15842 Central perforation. D.100, T.4.3mm. Leather: cattle/calf. 1545 (medieval) sf137
- 15843 Roughly cut with multi-faceted appearance. Small, pulled slit at centre, another off-centre and a third close to the

edge. The flesh surface has numerous cuts that occasionally penetrate the full thickness. L.112, W.107, T.2.6mm. Leather: cattle. 1545 (medieval) sf375

## Cut-down pieces

- 15844 Two sheet fragments, cut down, both with widely spaced grain/flesh stitch holes around surviving edges, connected by continuous thread impressions on the flesh side. Also two strip fragments with grain/flesh stitch holes but lacking thread impressions, so may have been fillers rather than edge binding strips. Six scraps, probably broken from the main fragments. Largest: L.340, W.119, T1.5mm. Leather: sheep/goat. 1480 (Anglo-Scandinavian) sf63

## Finds from 22 Piccadilly (1987.21)

### Shoes

Examples of all these shoe types can be found in the catalogue of shoes from 16–22 Coppergate

#### Style 3: Shoes with one-piece uppers joining with a side seam

Style 3a2: Shoes with one-piece uppers joining with a side seam, fastening with a drawstring, with a sole with a pointed heel extension

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
709	sole, upper, drawstring	1	a	220			2279	4.1

Style 3-2: Shoes with one-piece uppers joining with a side seam, fastening with a drawstring, sole type unknown

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
746	vamp						2291	4.1

#### Style 4: One-piece ankle-shoes with flap and toggle fastening

Style 4a4: One-piece ankle-shoes fastening with top band flaps and toggles

- 15845 Ankle-shoe, toggle-fastened, uppers fragment only, part of fastening flap, delaminated, grain/flesh seam around cut edge for top band latchet, other edges torn. L.52, W.39, T.1.7mm. Leather: unidentified. 2142 sf499 (P4.2)
- 15846 Shoe, top band latchet fragment, folded strip, grain/flesh stitch holes along one edge, both ends torn. L.93, W.35, T.1.6mm. Leather: unidentified. u/s sf630

#### Style 5: One-piece shoe with flap and toggle fastening

- 15847 Shoe uppers, almost complete, torn, probably left foot. One-piece wrap around, grain/flesh construction seam, medial closing seam, angled back from lasting margin, grain/flesh closed seam. Throat area badly torn but has two partial narrow latches on lateral side, projecting from top edge. Both have sub-lanceolate perforations, function unknown. Behind these, the top edge is low, plain cut, and runs straight toward the back, where it rises unevenly, before falling again on the far side. It then runs straight again to the closing seam, but the top edge is folded and blind whip stitched down. There are two large, pulled perforations, widely spaced, beneath the lateral top edge. Largest uppers fragment: L.301, W.109, T.1.7,

max. surviving uppers height c.85mm. Leather: calf. 1041 sf314 (P2) (Fig 1646)

#### Style 7: One-piece ankle-shoes and boots with a front flap

Style 7b1: One-piece ankle-shoes and boots with one front flap integral, the other a separate insert, stitched to the quarter

- 15848 Ankle-shoe, fragmentary, front opening, left foot. Sole: oval toe, wide almost symmetrical tread, slight waisting, seat torn off. Edge/flesh construction seam, additional row of grain/flesh stitches at lateral waist. Tread has been clumped. Uppers: quarters only, one-piece wrap around, construction seam torn off, vertical medial edge/flesh butt closing seam. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter ends in a vertical edge/flesh seam for a separate flap/insert. Edge/flesh binding seam on front of integral flap indicates that flaps were not stitched together. Surviving flap was stitched into the vamp throat at the bottom with edge/flesh butt seam. Top edge and front of surviving flap finished with edge/flesh whip stitch with adjacent parallel row of decorative drawstring slits in grain surface with thread impression of embroidery. Tear in body of quarter repaired with edge/flesh stitches. Uppers: L.182, W.80, T.1.6mm, Leather: sheep/goat? 3086 sf415 (P4.2)
- 15849 Ankle-shoe, uppers only, front opening, left foot. One-piece wrap around, edge/flesh construction seam, verti-

cal medial edge/flesh butt closing seam. Lateral quarter extends forward to form an integral rectangular flap stitched into the vamp throat at the bottom with an edge/flesh butt seam. Medial quarter torn away. Top edge finished with edge/flesh whip stitch, continuing down front of integral flap suggesting flaps were not joined. Single surviving drawstring slit in body of lateral quarter with extant drawstring remnant. Vamp stripe of plait stitch tunnel stitch holes, no surviving thread. Low semicircular heel stiffener lasted in at base, sides blind whip stitched into quarter. L.290, W.157, T.1.4mm. Leather: sheep/goat. 3053 sf335 (P4.3)

15850 Ankle-shoe, complete, front opening, right foot. Sole: oval toe, wide almost symmetrical tread, slight waisting, wide seat. Edge/flesh construction seam. One-piece wrap around uppers, grain/flesh construction seam, medial edge/flesh butt closing seam, slightly angled back from lasting margin. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter has a separate flap/insert, edge/flesh butt seamed to its fore. Flaps meet at the front but edge/flesh binding seams indicate that they were not stitched together. Both flaps are stitched into the vamp throat at the bottom with an edge/flesh butt seam. Top edge finished with edge/flesh whip stitch. Vamp stripe of paired tunnel stitch holes, no surviving thread. Low semicircular heel stiffener lasted in at base, blind whip stitched along curved edge. Sole: L.248,

W. (tread) 82, W. (waist) 78, W. (seat) 70, T.3.0mm. Size: Adult 3. Leather: sole cattle; uppers sheep/goat. 3053 sf343 (P4.3)

### Style 7c1: One-piece ankle shoes and boots, with one front flap integral, the other a separate insert, stitched to a projection on top of the vamp wing

15851 Ankle-shoe, uppers only, front opening, left foot. One-piece wrap around, edge/flesh construction seam, medial vertical edge/flesh butt closing seam set almost at back of heel. Triangular insert in quarter at closing seam, edge/flesh butt seam. The lateral quarter extends forward to form an integral rectangular flap. On the medial side, the separate flap/insert (absent) was edge/flesh butt stitched to a vertical projection on the vamp wing. Both flaps were edge/flesh butt stitched into the vamp throat at the bottom. There is a pair of vertical drawstring slits on each side behind the flap. Top edge of shoe is finished with edge/flesh binding stitch, as is front of integral flap indicating that flaps were not stitched together. Large grain/flesh holes at rear in shape of low semicircular heel stiffener. L.226, W.159, T.1.9mm. Leather: sheep/goat. 3071 sf374 (P4.2)

### Style 7--: Shoes and boots with one-piece uppers, with no other diagnostic features preserved

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
340	insert						3053	4.3

### Style 8: Front-fastening footwear, with one-piece uppers

#### Style 8e: One-piece ankle-boots front-fastening with buckles and straps

15852 Boot, uppers only, front-buckled, right foot. One-piece wrap around, grain/flesh construction seam, vertical medial edge/flesh butt closing seam, angled backward from lasting margin, originally with small triangular insert making up base of vamp at this point. Medial quarter originally had a further sub-rectangular insert edge/

flesh butt stitched to its fore, with its base edge/flesh butt stitched to throat. Longitudinal opening in vamp, running down instep from vamp throat. Where opening meets throat, there are two slits on lateral side for buckle straps. One survives, strip form, folded round bar of buckle with both terminals passing through slit, then secured with blind whip stitches. On medial side, a single slit with fastening strap survives, the other having been carried by the missing insert. Strap has a ferrous concretion at its base. Both edges of vamp opening have blind whip stitches for a tongue. Top edge is plain cut. Wide truncated triangular heel stiffener (absent) was lasted in at base, sides blind whip stitched into quarter. L.335, W. 69, T.2.5mm. Leather: calf. 2009 sf1264 (P6)

#### Style 8-: Front-fastening shoes with one-piece uppers, not further classifiable

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
666	uppers, toggle				cattle/calf		4004	5.1
62	vamp, lace				sheep/goat		2009	6



## Style 9: Side-lacing footwear

Style 9-: Side-lacing footwear, not further classifiable

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
36	uppers, quarters, heel stiffener, reinforcement				cattle/calf		2012	6
215					cattle		2090	6

## Shoe top band

15853 Wide top band fragment, folded lengthways in half with grain/flesh seam along the open edge. One end torn, the

other has a whipped seam. Grain surface is completely delaminated. L.177, W.41, T.2.6mm. Leather: unidentified. 3130 sf629 (P3)

## Separately typed soles

Arranged by sole type, in period and small find number order. These are not necessarily complete and the find may include other components and fragments.

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
705	sole	2	d2		cattle		4004	5.1
1295	sole	2	e1	220			4002	5.1
5	sole	2	e2				2003	6
643	sole	2	e3				4002	5.1
311	sole, uppers	2	e5				2009	6
35	sole, rand	2	e				2012	6
65	sole	2	e				2011	6
618	sole	2	e				4000	7

## Unclassifiable footwear components

This category includes all those components and fragments which are too incomplete for further classification.

15854 Sole fragment, right foot, pointed toe, broken across tread, worn through at great toe, edge/flesh construction seam. L.112, W.73, T.4.9mm. Leather: unidentified. 3053 sf342 (P4.3)

15855 Shoe fragments (13) not all certainly from same shoe. Two sole fragments, toe and behind tread, probably from same shoe, edge/flesh construction seam. Ten uppers fragments. Vamp fragment, throat, torn off across instep,

grain/flesh construction seam, throat has edge/flesh butt seam. Vamp stripe of raised ridge formed by fine, tight grain/flesh stitches, thread absent. Vamp fragment, toe, torn off across instep, edge/flesh construction seam. Insert, truncated triangle, edge/flesh butt seam along two edges, edge/flesh binding seam long the other. Fine tunnel stitches adjacent to one edge and running across from one edge to another. Quarters fragment, top edge, finished with edge/flesh binding stitch, adjacent parallel row of fine tunnel stitches. Lace or drawstring fragment, tapers to one end, other torn. Other fragments are unidentified uppers fragments. Uppers with vamp stripe: L.59, W.170, T.1.3mm. Leather: sheep/goat. 3053 sf357 (P4.3)

*Other unclassifiable footwear components*

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period
528	uppers						3115	3
566	uppers						3115	3
384	uppers				cattle/calf		2162	4.1
435	uppers, vamp						3080	4.1
441	uppers, vamp, insert						3080	4.1
442	uppers						2188	4.1
500	uppers, vamp						2186	4.1
574	top band, lace				sheep/goat		2203	4.1
575	uppers, drawstring, lace				cattle/calf		2206	4.1
576	uppers, drawstring				sheep/goat		3088	4.1
588	uppers						2214	4.1
718	uppers						2189	4.1
732	sole	2					2280	4.1
772	uppers				cattle/calf		2301	4.1
782	uppers, rand						2301	4.1
860	sole, heel stiffener	1					2291	4.1
879	uppers				cattle/calf		2280	4.1
1270	uppers, drawstring				sheep/goat		2267	4.1
1272	insert, drawstring				cattle/calf		2267	4.1
1273	insert, top band					incised	2280	4.1
1277	sole, quarters				cattle		2280	4.1
1279	uppers, reinforcement						2291	4.1
287	uppers, drawstring				cattle/calf		2142	4.2
301	uppers, toggle				cattle/calf		2142	4.2
1282	uppers				cattle/calf		3071	4.2
349	uppers				cattle/calf		3053	4.3
675	sole	2					4004	5.1
704	uppers				cattle/calf		4004	5.1
1296	rand						4002	5.1
1298	clump sole				cattle		4004	5.1
1300	vamp				cattle/calf		4004	5.1
29	rand						2009	6
30	sole, vamp, quarters, rand				cattle/calf		2012	6
61	quarters				cattle/calf		2009	6
63	sole, rand, lace, strap	2	--a				2009	6
64	welt				cattle/calf		2045	6
83	uppers, lace						2042	6
114	clump sole						2042	6
146	uppers						2042	6
150	sole, uppers, lace						2042	6
183	rand						2012	6
316	rand				cattle/calf		2009	6
932	uppers, rand						2003	6
3	insole							u/s

*Sword scabbard*

Number in bold = corpus number in Cameron 2000

**Non-grouped**

15856 Butted seam, off-centre, stitched edge/flesh at intervals of 5–6mm. The ends are cut. L.55, W.50, T.1–2mm. Leather: possibly deer. 3116 sf563 **372** (P4.1)

*Sheath*

15857 A folded strip with a closed seam running up the centre, stitched at 5mm intervals, grain/flesh, on the grain side of the leather. The outline of the piece is slightly tapered. Condition poor, laminated, and torn at each end. L.65, W.35mm. Leather: unidentified. 3086 sf1283 **352** (P4.2)

## *Straps*

### **Flat plain straps**

- 15858 Three fragments, not certainly adjoining, plain strip form; one fragment has a surviving plain cut end, others all torn. L.201, W.17, T.1.5mm. Leather: unidentified. 2267 sf1269 (4.1)
- 15859 Two adjoining fragments. Strap tapers towards one end, all ends torn, crudely pierced midline perforations, additional perforations piercing flesh surface only. Assembled dimensions (cannot be straightened): L.152, W.15.4, T.3.4mm. Leather: probably cattle. 4002 sf634 (P5.1)

### **Flat straps with stitched sides**

- 15860 Two fragments, all ends torn, grain/flesh stitch holes with impressions of fine thread run down both sides. Largest: L.102, W.11, T.1.8mm. Leather: cattle/calf. 2186 sf1267 (P4.1)

### **Flat straps with oblique stitch holes along each side**

- 15861 Strap, possibly an unused buckle terminal, with a horizontal slit, possibly for buckle-pin on midline, set back from the cut and torn end, other end torn. Roughly cut out with grain/flesh stitching slits both sides and across terminal end. L.70, W.30, T.3.1mm. Leather: cattle. 4004 sf1302 (P5.1)

### **Plain folded straps with central butted seams**

- 15862 Fragment, both ends and most of one edge torn off, the other folded back flesh to flesh and originally secured with an edge/grain butt seam. There is a single larger perforation either side of the seam. L.37, W.30, T.9.3mm. Leather: probably cattle/calf. u/s sf1288

## *Balls*

### **Balls of multiple construction**

- 15863 Lenticular panel, torn, grain/flesh whip stitching around the edge. L.80, W.45, T.1.4mm. Leather: sheep. 2045 sf76 (P6)
- 15864 Lenticular panel, torn into two pieces, grain/flesh stitching around the edge. L.75, W.36, T.2.5mm. Leather: sheep. 2045 sf131 (P6)

## *Discs*

- 15865 Roughly cut out, angular, no central perforation. L.46, W.42, T.2.5mm. Leather: unidentified. 2007 sf22 (P6)
- 15866 Grain completely delaminated and/or abraded away. Defleshing marks, central perforation. L.37, W.36, T.4.1mm. Leather: probably cattle/calf. 2012 sf34 (P6)

## Finds from Bedern Foundry (1973.13)

### Shoes

Examples of all these shoe types can be found in the catalogue of shoes from 16–22 Coppergate. None of the shoes from the Bedern Foundry was decorated.

#### Style 7: One-piece ankle-shoes and boots with a front flap

Style 7b1: One-piece ankle-shoes and boots with one front flap integral, the other a separate insert, stitched to the quarter

15867 Ankle-shoe, uppers only, front opening, right foot. One-piece wrap around, grain/flesh construction seam, vertical medial edge/flesh butt closing seam. Lateral quarter extends forward to form an integral rectangular flap. Medial quarter had a separate flap/insert (absent) edge/flesh butt seamed to its fore. Flaps met at the front but edge/flesh binding seam indicates that they were not stitched together. Both flaps were stitched into the vamp throat at the bottom with an edge/flesh butt seam. Top edge and front of integral flap finished with edge/flesh whip stitch. Behind closing seam and in corresponding position on lateral side are pairs of vertical drawstring slits. L.219, W.98, T.2.1mm. Leather: sheep/goat. 4204 sf1726 (P0.1)

Style 7b/c3: Boots with drawstring fastening passing through vertical thonged loops

15868 Uppers fragment, quarter, edge/flesh construction seam, other edges torn. Thong remnant held in two of a series of seven slots. L.111, W.69, T.2.8mm. Leather: sheep/goat. 2612 sf2986 (P1.2)

#### Style 9: Side-lacing footwear

Style 9b: Footwear of two-piece construction lacing at the side

15869 Reinforcement piece, bifurcated strip joined only at base. Broken into five adjoining pieces. One side survives to full height and has ten lace holes. Grain/flesh binding stitch all round. Largest fragment: L.59, W.18, T.1.9mm. Leather: sheep/goat. 4222 sf3099 (P3.2)

### Other Style 9b

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
1764	quarters, heel stiffener				cattle	4227	3.2
3000	reinforcement				cattle/calf	4227	3.2
3530	uppers				cattle/calf	4222	3.2

### Separately typed soles

15870 Shoe sole, waist to seat only, broken off in front of this. Very narrow waist, narrow seat. Edge/flesh construction

seam, some surviving thread. L.100, W. (waist) 25, W. (seat) 43, T.4.5mm. Leather: cattle. 4222 sf1750 (P3.2)

### Other separately typed soles

Arranged by sole type, in period and small find number order. These are not necessarily complete and the finds may include other components and fragments.

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
2980	sole	2	c1	260		2612	1.2
2987	sole	2	e1	150	cattle	2612	1.2
1748	sole	2	e1		cattle	4222	3.2
1758	sole	2	e1		cattle	4208	3.2
1641	sole, rand	2	e2	231	cattle	2612	1.2
3091	sole	2	e			4113	1.2
2996	sole	2	e			4113	2.1
1632	sole	2	e			4072	2.3
2995	sole	2	e		cattle	4072	2.3
3098	sole	2	e			4222	3.2

## Unclassifiable footwear components

This category includes all those components and fragments which are too incomplete for further classification.

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Context	Period
1639	sole	2			cattle	2612	1.2
1656	sole	2			cattle	4127	1.2
2981	sole	2			cattle	2612	1.2
2982	sole	2				2612	1.2
2984	vamp				cattle/calf	2612	1.2
2985	uppers					2612	1.2
2988	sole	2			cattle	2612	1.2
2997	rand				cattle	4113	2.1
1589	sole	2				4072	2.3
1634	clump sole					4072	2.3
2989	clump sole					4072	2.3
2990	clump sole					4072	2.3
2991	clump sole					4072	2.3
2994	rand					4072	2.3
3095	clump sole					4072	2.3
3529	clump sole					4072	2.3
1753	sole	2				4227	3.2
1757	uppers				cattle/calf	4222	3.2
1770	sole					4227	3.2
2998	clump sole					4227	3.2
2999	rand					4227	3.2
3001	top band				sheep/goat	4227	3.2
3005	uppers, heel stiffener, rand					4222	3.2
3006	quarters				cattle/calf	4222	3.2
3007	clump sole					4222	3.2
3008	sole	2				4222	3.2
3009	sole	2			cattle	4222	3.2
3010	sole	2			cattle	4222	3.2
3011	sole	2				4222	3.2
3012	rand					4222	3.2
3014	heel stiffener					4222	3.2
3015	uppers					4222	3.2
2973	sole				cattle	2656	3.3
3090	rand					2574	3.3

## Sheath

Number in bold = corpus number in Cameron 2000

15871 Seamed at back, close to the cutting edge of the blade. Stitched edge/grain at 5mm intervals on the outside of the sheath. Stitch impressions suggest the use of a double thread. Two pairs of suspension slits on back face of handle area. Tooled lines delineate areas occupied by the handle and blade which, on the front face, are decorated with zoomorphic and foliate designs. On the back the blade is decorated with trefoils separated by an angular border, and the area of the handle has lines and zig-zags. L.158, W.34, T.2mm. Leather: calf. 2962, sf1500 **365** (P1.2) (Fig.1710)

## Straps

### Strap with tooled and painted decoration

15872 Girdle, wide strip, both ends broken, decorated with design consisting of an impressed axial line with curved oblique lines projecting above and below it at regular intervals. Each has three stamped dots at the tips arranged in a triangle. All decoration has been painted red with cinnabar. L.336, W.47, T.3.9mm. Leather: probably cattle. 4227 sf1747 (P3.2) (Figs.1712–13)

### Straps with decorative mounts

15873 Broken at both ends, with four copper alloy bar mounts of convex section, each secured with separate rivet. Un-



clear whether there were roves. Leather almost completely biodeteriorated. L.35, W.9, T.4.7mm. Leather: unidentified. 2960 sf1499 (P1.2)

- 15874 Two straps joined with two copper alloy baluster mounts, each secured with two separate (probably iron) rivets that are hammered over square copper alloy roves at the back. The inner ends of the straps have been skived for a neater join and the outer ends cut down. L.75, W.18, T. (leather) 2.7mm. Leather: cattle. Analysis of mounts: high Cu, Sn and traces of Ag (copper alloy studs probably originally tinned). 2655 sf1361 (P3.2) (Fig.1716)

### Flat plain straps

- 15875 Two fragments, possibly adjoining, smaller torn both ends, larger torn one end, buckle terminal at the other formed by folding the end over and securing it with a row of grain/flesh stitching each side; some thread survives. Fragment of iron buckle frame present. Midline perforations run 425mm along strap from broken end.

Largest: L.830, W.16, T.4.2mm. Leather: cattle. 2439 sf1333 (P4.2) (Fig.1721)

- 15876 Broken into two possibly adjoining fragments. Largest: L.195, W.11, T.2.0mm. Leather: calf. 2489 sf3004 (P4.2)

### Flat straps with stitched sides

- 15877 Cut down both ends, grain/flesh stitch holes run down each side. Five buckle holes present (with a possible damaged sixth) along midline. L.189 W.22, T.4.7mm. Leather: cattle. 2656 sf1394 (P3.3)

### Cut-down items

- 15878 Irregularly shaped, one edge/flesh butt seam, all other edges roughly torn, circular indentations from rivets on one face along one edge, stitches max. 5.6mm apart. L.147.9, W.56.2, T.1.2mm. 4204 sf1717 (P0.1)

## Finds from the College of Vicars Choral, Bedern

(site areas specified at the end of each entry)

### Shoes

Examples of all these shoe types can be found in the catalogue of shoes from 16–22 Coppergate

#### Style 2: Low-cut slip-on shoes with a seam at centre back

15879 Shoe, low cut, slip-on, right foot. Sole: oval toe, wide asymmetrical tread tapering back to seat with triangular heel-riser. Lasting nail holes in centre of tread and centre of heel-riser. Much of lateral edge and waist area torn away. One-piece upper, no closing seam, 'back' seamed to heel-riser. Quarters are higher than heel-riser at top where they are grain/flesh closed seamed together. Construction seam is tunnel stitched, becoming edge/flesh at the heel-riser. Grain/flesh on the uppers. Narrow crescentic insert edge/flesh butt stitched in at throat, extending half way toward back of shoe, behind which top edge is finished with edge/flesh binding seam. Sole: L.285, W.93, T.1.7mm. Size: Adult 3. Leather: cattle/calf. (unprovenanced except to Bedern) u/s sf7796

#### Style 4: One-piece ankle-shoes with flap and toggle fastening

##### Style 4a2: One-piece ankle-shoes, fastened with two toggles on a single flap

15880 Ankle-shoe uppers, almost complete, toggle fastened, right foot. Probably pair to 15881. Grain/flesh construction seam. One-piece wrap around, medial closing seam, grain/flesh closed seam. Lateral quarter extends to form a wide flap which passes over instep and is secured by means of two 'coffee bean' toggles, now absent, though the terminal of one remains in situ. This passes through a perforation and is held by making a second toggle of its interior terminal. Toggles originally fastened to a pair of loops low down on the medial quarter. Lower loop is extant. It is rectangular, cut from leather sheet and the toggle passed through a horizontal slit, with two longitudinal slits running from it. Other end is bifurcated and the terminals pass through two perforations where they are left loose. Back of quarter cut out for heel-riser. Top edge and periphery of flap are finished with edge/flesh binding seam. Upper torn into three pieces. L.325, W.125, T.2mm. Leather: sheep/goat. 1976.14.I, 25 sf20 (P0) (Fig.1637)

15881 Ankle-shoe uppers, torn, toggle fastened, left foot. Probably pair to 15880. Grain/flesh construction seam. One-piece wrap around, medial closing seam, grain/flesh closed seam. Lateral quarter originally extended to form a wide flap which passed over instep, but now torn away. Toggles originally fastened to a pair of loops low down on the medial quarter, both extant. These are rectangular, cut from leather sheet and the toggle passed through a horizontal slit, with two longitudinal slits running from it. Other ends are bifurcated and the terminals pass

through two perforations where they are tied together. Back of quarter cut out for heel-riser, extensively torn in this area. Top edge and periphery of flap is finished with edge/flesh binding seam. Uppers torn into three pieces. L.207, W.106, T.1.9mm. Leather: sheep/goat. 1976.14.I, 25 sf23 (P0) (Fig.1638)

#### Style 7: One-piece ankle-shoes and boots with a front flap

##### Style 7b/c3: Boots with drawstring fastening passing through vertical thonged loops

15882 Front flap insert, sub-rectangular, two adjacent edges with edge/flesh butt seam for attachment to vamp throat and quarter or vamp wing projection, other two with edge/flesh binding seam, corresponding to front and top edges. Two extant thongs each held in a series of slits, foremost has six slits, rearmost five. L.106, W.102, T.3.5mm. Leather: calf? 1973–5.13.IV, 1643 sf2964 (P1)

##### Style 7--: Shoes and boots with one-piece uppers, with no other diagnostic features preserved

15883 Shoe, vamp only, right foot. Grain/flesh construction seam, medial edge/flesh closing seam, angled back from lasting margin, quarters torn off at throat on lateral side. Throat has edge/flesh butt seam. Vamp stripe of four incised lines for three rows of embroidery (absent). L.122, W.114, T.2.6mm. Leather: sheep/goat. 1973–5.13.IV, u/s sf2955

#### Separately typed soles

15884 Shoe sole, left foot; sole type b2. Oval toe, wide asymmetrical tread, wide waist, wide seat. Worn through at metatarso-phalangeal joint of great toe, medial seat torn away, lateral seat edge torn away. Edge/flesh construction seam. Tunnel stitches indicate clumping to tread and seat. L.240, W. (tread) 94, W. (waist) 72, T.1.9mm. Size: Adult 3. Leather: unidentified. 1978–9.14.II, 1649 sf779 (P1A)

15885 Shoe sole, left foot; sole type d2. Oval toe, wide asymmetrical tread, wide waist, wide seat. Worn through along medial lasting margin and centre seat. Lateral edge has rolled up onto top of foot from toe to joint. Edge/flesh construction seam. Tunnel stitches indicate that tread was clumped twice with separate toe and seat clumps, later with clump over complete area. Seat has also been clumped at least twice. L.250, W. (tread) 87, W. (waist) 68, W. (seat) 70, T.6.2mm. Size: Adult 3. Leather: unidentified. 1973–5.13.IV, 1643 s2956 (P1)

## Other separately typed soles

Arranged by sole type, in period and small find number order

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn.	Context	Period	Trench
2958	sole	2	c1	240	cattle		1643	1	1973-5.13.IV
721	sole	2	c2		cattle		1784	1	1978-9.14.II
292	sole, top band, rand	2	c2	175	cattle		1359	8	1978-9.14.II
798	sole	2	c		cattle			u/s	1973-5.13.IV
680	sole, upper, rand	2	d2		cattle		1784	1	1978-9.14.II
2957	sole	2	d2	217	cattle		1643	1	1973-5.13.IV
872	sole	2	d3				1113	1	1973-5.13.III/IV
775	sole	2	d				1643	1	1973-5.13.IV
2967	sole	2	d				1643	1	1973-5.13.IV
1356	sole	2	d		cattle		3005	6	1976.13.V
309	sole	2	e1	220	cattle		1393	7	1978-9.14.II
2067	sole	2	e2				5346	7	1976-9.13.X
2089	sole	2	e2				5346	7	1976-9.13.X
2185	sole, rand	2	e2				5367	7	1976-9.13.X
2068	sole, rand	2	e2		cattle		5338	8	1976-9.13.X
2463	sole	2	e4		cattle		5467	6	1976-9.13.X
729	sole, clump sole, uppers	2	e5				1793	1	1978-9.14.II
2639	sole	2	e5	237			6357	6	1976-9.13.X
276	sole	2	e5	230	cattle		1359	8	1978-9.14.II
277	sole	2	e5				1359	8	1978-9.14.II
280	sole	2	e5		cattle		1359	8	1978-9.14.II
281	sole	2	e5	215	cattle		1359	8	1978-9.14.II
291	sole, uppers, vamp, rand	2	e5	240			1359	8	1978-9.14.II
306	sole, uppers, rand	2	e5	210			1359	8	1978-9.14.II
2522	sole	2	e		cattle		5495	6	1976-9.13.X
2037	sole	2	e		cattle		5342	7	1976-9.13.X
2369	sole	2	e				5310	7	1976-9.13.X
3018	sole	2	e				5273	7	1976-9.13.X
3019	sole	2	e				5273	7	1976-9.13.X
3021	sole	2	e				5273	7	1976-9.13.X

## Unclassifiable footwear components

This category includes all those components and fragments which are too incomplete for further classification.

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period	Trench
11	uppers						21	0	1976.14.I
20	upper, loop				sheep/goat		25	0	1976.14.I
23	upper, loop				sheep/goat		25	0	1976.14.I
2975	sole	2					1151	0	1973-5.13.III
3527	midsole						1702	0	1973-5.13.IV
7960	sole, uppers, insole, midsole, nails			254	cattle		1702	0	1973-5.13.IV
675	rand						1784	1	1978-9.14.II
687	uppers, top band, reinforcement						1784	1	1978-9.14.II
713	sole	2					1784	1	1978-9.14.II
722	uppers				cattle/calf		1748	1	1978-9.14.II
724	sole	2			cattle		1794	1	1978-9.14.II
726	clump sole				cattle		1795	1	1978-9.14.II
727	sole	2					1793	1	1978-9.14.II

Small Find	Parts Present	Con. Type	Sole Type	Shoe Size	Leather Type	Dectn	Context	Period	Trench
728	uppers				cattle/calf		1793	1	1978-9.14.II
729	sole, clump sole, uppers	2	e5a				1793	1	1978-9.14.II
772	sole	2			cattle		1794	1	1978-9.14.II
774	sole	2					1640	1	1973-5.13.IV
799	sole	2					1643	1	1973-5.13.IV
901	rand						1120	1	1973-5.III/IV
2960	clump sole						1643	1	1973-5.13.IV
2961	uppers						1643	1	1973-5.13.IV
2963	clump sole						1643	1	1973-5.13.IV
2965	quarters						1643	1	1973-5.13.IV
2966	vamp				calf		1643	1	1973-5.13.IV
2970	sole	2					1643	1	1973-5.13.IV
3003	uppers						1643	1	1973-5.13.IV
781	sole	1					1655	1A	1973-5.III/IV
811	rand						1092	2	1978-9.14.II
2625	rand						6361	3	1976-9.13.X
382	sole	2					1505	6	1978-9.14.II
384	sole	2					1505	6	1978-9.14.II
2471	latchet				cattle/calf		5467	6	1976-9.13.X
2503	sole	2			cattle		5466	6	1976-9.13.X
2596	sole, clump sole	2					6367	6	1976-9.13.X
2616	sole	2					6357	6	1976-9.13.X
2635	rand						6357	6	1976-9.13.X
2969	uppers, rand						5495	6	1976-9.13.X
5037	sole	2			cattle		1505	6	1978-9.14.II
352	sole						1470	7	1978-9.14.II
353	sole						1479	7	1978-9.14.II
2092	clump sole						5346	7	1976-9.13.X
2099	clump sole						5346	7	1976-9.13.X
3020	sole	2					5273	7	1976-9.13.X
3022	sole	2					5273	7	1976-9.13.X
3023	sole	2					5273	7	1976-9.13.X
3024	sole	2					5273	7	1976-9.13.X
3094	sole	2					5273	7	1976-9.13.X
271	sole, rand	1					1359	8	1978-9.14.II
281	sole	2	e5a	215	cattle		1359	8	1978-9.14.II
282	sole, uppers, rand	2					1359	8	1978-9.14.II
284	uppers, top band						1359	8	1978-9.14.II
287	clump sole						1359	8	1978-9.14.II
289	vamp, quarters, rand						1359	8	1978-9.14.II
305	sole, vamp, top band, rand	2					1359	8	1978-9.14.II
310	clump sole						1359	8	1978-9.14.II
3025	quarters	5					5338	8	1976-9.13.X
5042	toggle						1359	8	1978-9.14.II
2952	vamp							u/s	1973-5.13.IV
2953	sole	2						u/s	1973-5.13.IV
2954	sole	2						u/s	1973-5.13.IV

## Sheath

Number in bold = corpus number in Cameron 2000

15886 Carefully moulded and curved over the angled back of knife blade (L.120mm). Closed seam on the back, just inside cutting edge, stitched on the grain side of the leather. The areas occupied by the handle and blade are delineated with tooled borders and decorated on the front of the handle and both faces of the blade with a trifoliate design including a fleur-de-lis on a rod. Decoration is impressed into the surface, with additional cross-hatching (2 lines per mm) applied to some areas. L.195, extant W.30, T.1.5mm. Leather: calf. 1978-9.14.II, 1359G sf313, **361** (P8) (Fig.1710)

## Straps

### Straps with decorative mounts

15887 Four fragments with closely spaced copper alloy bar mounts, convex section, integral rivet which is hammered over a copper alloy washer at the back. Ends of mounts exhibit saw marks. All ends of strap torn. Largest: L.43, W.7, T.5mm. Leather: unidentified. 1978-9.14.II, 1154 sf247 (P7)

15888 Five main fragments with extant circular mounts or impressions of them. Mounts of wheel form with six wavy spokes radiating from centre, secured with a central rivet from back of strap. Each mount surrounded by four rivets with roves at front and back. Strap junction: straps

cross perpendicularly and are held by five copper alloy rivets in quincunx layout. Centre rivet originally secured missing mount, rivet layout as described above. Lower strap is broken at both ends and has the impressions of two absent mounts. Upper strap is broken at one end and has a fringed terminal at the other formed by cutting into the leather four times. Two of the other straps each have a loop at one end formed by a fold held by the mount and rivet arrangement; the loops may have retained a

metal fitting, but not a buckle as there is no notch for the pin. Each strap also retains part of a cross strap with the same mount and rivet arrangement (one is absent) and each also had a third mount absent in both cases. The fourth fragment is broken both ends and originally had two mounts. The fifth is part of a fringed terminal as on the cross straps. Strap junction: L.153.2, W.94.7, T.7.9mm, strap width typically 28mm. Leather: cattle. 1976-9.13.X, 5346C sf2101 (P7) (Figs.1714-15)



## Finds from Other Sites in York

Number in bold = corpus number in Cameron 2000

### *Knife sheath from excavations at 6–8 Pavement* (1972.21, published in AY 17/3)

This catalogue entry uses the original catalogue numbers and entries published in AY 17/3, followed by Esther Cameron's descriptions and comments (EC).

- 681 Complete scabbard for a knife and its handle. The back is straight and the opposite edge shouldered. There is a seam on one of the sides just inside this edge. On the other side the blade section is decorated with an incised geometrical pattern, and the handle section with a three-strand plait running over the back. L.170, W.50mm. III, 14 sf5334 (*Fig.73; Pl.VIb*)  
E.C.: Complete sheath, for a straight-backed knife with a blade length of approximately 70mm. Closed with a butted seam, back face, close to the cutting edge and to the edge of the suspension flap. Perforations for stitches are slit with a knife at 3mm intervals. The spine of the sheath is moulded and particularly pronounced on the front face of the blade. Decorative fields are confined on the front face to the handle and blade, on the back to the handle alone. On the front, the blade is delineated with an impressed line and accentuated by a moulded surround. The area of the suspension flap is compressed. Other than this, decoration is executed by incision. Interlocking triangles on the blade are interspersed with pierced dots. The handle is divided transversely into two zones which extend to both faces. The zone nearest the blade is decorated with chevrons, the other, nearer the mouth, with a loose interlace. A slit in the suspension flap, 40mm below the mouth, is for a thong. Three small stitch holes at the mouth of the sheath mark the closure of the suspension flap. L.170, W.55, T. (leather) 1.5mm. u/s **218**

### *Scabbards recovered from excavations at 5–7 Coppergate* (1974.8, published in AY 17/3)

These catalogue entries use the original catalogue numbers and entries published in AY 17/3, followed by Esther Cameron's descriptions and comments (EC).

#### Scabbards of swords

- 638 Scabbard fragment for a broad-bladed knife or sword L.320, W.60mm. sf19 (*Fig.73*)  
E.C.: Lower portion of a scabbard which has been cut and torn. Seamed off-centre back, with a closed/butted hybrid (one edge overlaps the other), stitching edge/flesh on one, grain/flesh on the other, at 5mm intervals. L.320, W. 60, T. (leather) 1.5mm. u/s **219**
- 641 Fragment, with stitch holes for butted seam along one edge L.170, W.50mm. sf24  
E.C.: Fragment cut from the mouth end of a scabbard. Closed seam, centre back, stitched grain/flesh at 5–6mm intervals. The outline of the scabbard mouth is convex. The condition of the leather is worn. L.170, W.60, T. (leather) 1.5mm. u/s **217**

### *Sheaths from the Parliament Street sewer trench* (1976–7.11, published in AY 17/4)

These catalogue entries use the original catalogue numbers and entries published in AY 17/4, followed by Esther Cameron's descriptions and comments (EC).

#### Sheath of knife

- 755 Sheath for a small knife, curved along its length. On the front face a broad relief moulding running half way along the back of the sheath from the tip bifurcates and divides the decoration roughly into two. Above the bifurcations the decoration is subdivided with a lozenge-shaped field in the centre surrounded by four sub-triangular fields. Each is filled with an embossed interlace or fret. Below the lobes is a narrow, tapering fret-filled field. Near the open edge of the sheath, which was originally sewn, is a row of coarse beading, with a second half-row of beading inside it. On the rear face the decoration reflects the shape of the knife inside. The handle is filled with an incised fret, and the blade area with an incised simple plant scroll. There is a row of embossed beading along the open edge. L.175, W.74mm. sf47 (*Fig.107; Pl.XIII*)  
E.C: A complete sheath, closed along the cutting edge with tunnel stitch. Moulding to mouth and spine is particularly noticeable along the back of the blade, where its convex outline is accentuated. It also extends onto part of the front face where it forms a crescent-shaped feature at the junction of the handle and blade. Images of knife handle and blade are outlined on each face of the sheath and decorated by impressing with a fine-edged tool. With the exception of the moulded feature on the front, decoration is applied to all fields of the front, back, suspension flap and spine. On the front face, the handle is subdivided into a central lozenge and four corner sections, filled with an angular type of interlace, similar to that occupying the adjacent outline of the knife blade. Two series of spherules alongside the seamed edge occupy the suspension flap. The spine of the sheath is decorated with longitudinal lines, the central one highlighted with a series of dots. On the back, a simple figure-of-eight interlace on the blade and a series of concentrically arranged rectangles on the handle create a more open effect. Within the suspension flap lie another series of spherules and two plain borders. The style of decoration suggests a possible 9th-century date. A hole for a thong is positioned in the suspension flap near the mouth end of the sheath. L.170, W.45, T. (leather) 2.5mm. u/s **208**

#### Sheaths of seaxes

##### Group 2

- 753 Sheath for an angle-backed knife, riveted together along the open edge with iron rivets. The decoration on the front face is divided into fields reflecting the shape of the blade and handle of the knife within. Both are filled with flaccid zoomorphic interlace. Separating them is a circular field filled with a crouched animal. Between these fields and the riveted edge is a long panel filled with in-

terlocking hatched triangles. On the reverse there are only two fields representing the blade and handle, both filled with an incised net pattern. L.340, W.75mm. sf73 (Fig.107; Pl. XI)

E.C.: Complete, designed for a knife with an angled blade. Closed along the cutting edge with rivets, though only the holes survive. Signs of wear around the mouth of the sheath and concentric marks centred on the riveted edge at the handle/blade junction suggest that this sheath may once have had metal fittings. The moulding of the sheath along its spine, particularly over the back of the angled blade, is a distinctive feature. The knife handle and blade are delineated by impressed lines in a double border on the outer faces of the sheath. Decoration is impressed, applied to four fields on the front face, two on the back. On the front, the handle and blade are decorated with zoomorphic interlace in repeating modules of figures-of-eight in Urnes or Jellinge style. A circular field, marking the blade/handle junction, is separately outlined and decorated with a crouched animal. The suspension flap is infilled with a series of interlocking triangles, hatched. A loose, net-like interlace is impressed upon the back of the knife handle and blade. L.340, W.72, T. (leather) 2–3mm. u/s 207

### Group 3

- 754 Sheath for an angle-backed knife; only the tip survives; it is riveted together along the open edge with iron rivets. The front face is decorated with debased foliate ornament within a raised frame which is obliquely slashed. On the rear face the main panel has a similar frame, but is filled with formalised acanthus ornament. The tip, separated from the rest of the field by a transverse moulding, is filled with a simple plant scroll L.175, W.64mm. sf48 (Fig.107; Pl. XII)
- E.C.: The tip of a sheath, the rest having been torn away. Closed along one edge by stitching (a double thong of leather occupies a hole near the surviving iron rivet) and by rivets (spaced at approximately 50mm intervals). The front and back faces of the blade, and its back edge, are decorated in foliate design with hatching. Decoration raised in relief, and hatching incised. Laminated into two layers. L.160, W.60, T. (leather) 2–3mm. u/s 205

### *Sheaths and scabbards from excavations in Coppergate* (1906, previously unpublished)

#### Sheath of seax

- 15889 The handle end of a sheath, closed along one edge by rivets. No rivets survive but holes are spaced at approximately 50mm intervals. Decorative designs impressed onto front and back faces of the sheath occupy fields representing the knife handle, the suspension flap and spine of the sheath. The design on the handle front is composed of acanthus-like scrolls which fill every available space. A similar design on the back is executed by simple outlines. The suspension flap is decorated on the front with a series of spirals, on the back by a line of key-pattern. The latter is also used down the spine of the sheath. At one end of the fragment two curved, transverse lines mark the junction of the handle and blade. Black, contorted (possibly by heat) and laminated. L.170, W.60, T. (leather) 2mm. YORYM 2000.2399, 206 (Figs.1707, 1709)

#### Sheath of knife

- 15890 Complete, designed for a knife with a blade length of 30mm. The seam lies just behind the cutting edge, but

there are no stitch holes. The handle, blade and suspension flap are delineated with impressed lines. On the front face each field is decorated: the handle by an interwoven design with impressed dots, the blade by an extra line of delineation and the flap by key-pattern. On the back, delineation of the handle and blade is more cursory, and the two fields are filled with cross-hatching in parallel grooves, possibly indicating the use of a double-armed creaser. The suspension flap is unusual in that it extends the entire length of the sheath. Two slits at the mouth were probably for a thong. The back of the knife blade, from handle to tip, was convex, and the sheath has been moulded to this shape. L.115, W.30, T. (leather) 2mm. YORYM 2000.2400, 204 (Figs.1692–3)

### Chape of scabbard for a sword

- 15891 Copper alloy, U-shaped, with a knob at the base, and a zoomorphic extension to each face at the upper end, for attachment to the scabbard. The field enclosed by this framework is filled, front and back, with cast openwork in Jellinge style, featuring a crouched beast. Although angular on the outside, the chape is elliptical in internal cross-section. L.85, W.42mm. YORYM 551.49.47, 253

### *Sheath from Hungate* (previously unpublished)

#### Sheath of knife

- 15892 The sheath includes areas for the handle, blade and suspension flap. Closed centre back with a binding stitch, grain/flesh, at 8mm intervals. Traces of decoration on both faces are faint. The suspension flap is slit for a thong. L.190, W.40, T. (leather) 1.5mm. YORYM 1971.321.311, 210 (Fig.1697)

### *Sheath from 23 Market Street* (found 1955, previously unpublished)

#### Sheath of knife

- 15893 Complete (two pieces), closed by a binding seam, centre back. The sheath includes areas for the handle, blade and suspension flap. The blade possibly delineated by a grooved line. The suspension flap is compressed and has two slits for a thong. L.158, W.42, T. (leather) 1–2mm. YORYM 1955.10.8, 209 (Fig.1697)

### *Unprovenanced scabbards from York* (previously unpublished)

#### Scabbards of swords

##### York type 3

- 15894 Scabbard leather, almost complete, closed centre back with a butted seam, stitched at 6mm intervals through fine holes. The outline of the scabbard mouth is convex and finished with binding stitch. A little below the mouth, a raised feature indicates the use of a tapering strap-slide beneath the leather and vertical slits positioned to either side for suspension. The scabbard is slit from mouth to tip, with further damage in the region of the strap-slide. L.703, W.65, T. (leather) 1.5mm. YORYM 1977.73.1, 213 (Fig.1686)

15895 Scabbard leather with tip cut away. Closed at back with a butted seam, stitched at 7mm intervals, changing to a closed seam near the mouth end and stitched at 10mm intervals. The outline of the scabbard mouth is slightly convex. A pair of slits on the front face for suspension and a raised feature on the front suggests a tapering strap-slide. L.480, W.65, T. (leather) 1.5mm. YORYM 1977.73.2, **212** (Fig.1686)

15896 The upper part of a scabbard, the lower part having been cut away. A closed seam, off-centre back, is stitched grain/flesh at 6mm intervals. Some sewing yarn 2–3mm thick survives: animal fibre, spin/twist not clear (P. Walton Rogers, pers. comm.). The mouth of the scabbard is straight and finished with binding stitch. Two pairs of slits in the front face for suspension. L.180, W.55, T. (leather) 2mm. YORYM 1977.73.3, **211** (Fig.1686)



## Provenances

Finds were recovered from contexts on the sites as follows; context numbers are given in Roman type, catalogue numbers in italics.

### 16–22 Coppergate

1359: 15377; 1423: 15605, 15698; 1473: 15390, 15406, 15427, 15538, 15550, 15586, 15697; 1478: 15696; 1502: 15653; 1506: 15677; 1570: 15456; 1792: 15654; 2235: 15646; 2317: 15731; 2334: 15400; 2403: 15357; 2473: 15369; 2484: 15531; 2587: 15464; 3178: 15665; 3519: 15374; 4289B: 15477; 4292: 15798; 4484: 15498; 4548: 15736; 4640: 15651; 4658: 15612; 4704: 15518; 4772: 15505; 4829: 15748; 4885: 15501; 5238: 15455; 5245: 15487; 5262: 15702; 5333: 15485, 15678; 5348: 15417, 15689, 15733, 15805; 5406: 15540; 5415: 15457, 15462, 15481; 5484: 15489, 15680; 5673: 8963; 5716: 15488; 5755: 15486, 15606; 5772: 15587; 5906: 15693; 5975: 15401, 15461, 15541, 15607, 15714; 5981: 15469, 15520, 15779; 6211: 15394; 6257: 15601, 15802; 6284: 15513, 15813; 6287: 15392; 6297: 15375; 6357: 15515; 6395: 15823; 6471: 15638; 6472: 15757; 6528: 15422; 6578: 15536; 6784: 15593; 6788: 15661; 7369: 15517; 7589: 15724, 15767; 8033: 15409, 15410, 15514; 8800: 15528; 9045: 15666; 9224: 15425, 15604, 15703, 15821; 9322: 15603, 15778; 9323: 15471, 15472; 9327: 15478; 9334: 15803; 9428: 15465, 15479, 15542; 9450: 15402, 15463, 15527, 15700; 9572: 15774, 15775; 10464: 15500, 15794; 10511: 15510, 15511, 15664; 10515: 15509; 10546: 15497, 15507, 15786; 10766: 15602, 15743, 15744, 15745, 15746; 10768: 15508, 15785; 10771: 15658, 15742; 10781: 15503; 10794: 15502; 10795: 15688; 10832: 15810; 10993: 15655; 11045: 15490; 11112: 15466; 11121: 15459; 11296: 15789; 11305: 15668; 11356: 15793; 11378: 15650; 11416: 15467; 11530: 15506; 11641: 15458; 11642: 15814; 11687: 15468, 15804; 11713: 15470; 11712: 15822; 11763: 15776; 11784: 15790; 11818: 15473; 11854: 15799; 12126: 15681; 12147: 15656, 15679; 12276: 15667; 12365: 15682; 12406: 15692; 12485: 15519; 12629: 15684; 13228: 15691, 15694; 13363: 15482, 15483; 13465: 15484; 13525: 15495, 15496, 15663; 13902: 15705, 15747; 14388: 15547; 14434: 15588; 14454: 15423; 14515: 15534; 14548: 15391; 14595: 15448; 14883: 15722, 15818; 14973: 15643; 15192: 15370; 15285: 15611, 15777; 15470: 15662; 15471: 15756; 15494: 15539; 15526: 15765; 15622: 15761; 15745: 15769; 15791: 15768; 16100: 15493; 16404: 15521; 16410: 15522, 15523; 16465: 15809; 16517: 15711; 16526: 15704; 16605: 15499; 16608: 15474; 16653: 15491; 16876: 15516; 16887: 15399, 15475, 15600; 17418: 15706; 17599: 15460, 15801; 17626: 15454; 17699: 15480; 18366: 15504, 15683; 18541: 15687; 18602: 15381, 15780; 18927: 15359; 18991: 15382; 19269: 15411; 19307: 15645; 19325: 15599; 19374: 15649; 19599: 15732; 19625: 15639; 19626: 15361, 15419; 19743: 15453; 20178: 15476; 20186: 15792; 20400: 15580; 20431: 15695; 20441: 15644; 20442: 15535; 20808: 15529; 20991: 15581; 21478: 15729; 21497: 15763; 21502: 15393; 21510: 15371, 15439, 15533, 15725, 15764; 21592: 15537; 21644: 15812; 21646: 15640; 21674: 15760; 21678: 15594; 21689: 15648; 21863: 15372, 15396; 21887: 15414, 15727, 15797; 21903: 15576; 21925: 15589, 15595, 15712; 22013: 15637; 22050: 15686; 22090: 15676; 22103: 15783; 22107: 15416, 15598; 22108: 15492; 22119: 15530; 22128: 15579, 15582; 22153: 15389, 15622, 15758; 22226: 15723; 22267: 15583, 15755; 22270: 15405; 22306: 15636; 22309: 15584; 22313: 15624; 22376: 15585; 22377: 15807; 22391: 15512; 22412: 15623; 22423: 15619; 22438: 15738; 22452: 15354; 22523: 15674; 22560: 15571, 15627, 15699; 22574: 15380, 15398, 15413, 15426, 15617; 22590: 15452; 22714: 15615; 22803: 15659;

22815: 15715; 22845: 15578; 22868: 15781, 15787; 23080: 15353; 23619: 15717; 23704: 15360; 23880: 15720; 23881: 15449; 24888: 15590; 25232: 15553; 25371: 15782; 25380: 15433, 15569; 25900: 15734; 25934: 15544; 26181: 15418; 26501: 15772; 26631: 15412; 26871: 15709; 26889: 15446, 15675; 26900: 15592; 26902: 15430, 15716; 26940: 15591; 26949: 15376; 26953: 15434; 26957: 15403, 15442; 27018: 15556; 27093: 15383, 15428, 15613, 15670, 15806; 27203: 15557; 27221: 15395; 27341: 15633; 27368: 15356; 27413: 15713; 27440: 15811; 27495: 15447; 27509: 15572, 15816; 27555: 15524; 27681: 15397; 27774: 15671; 27807: 15788; 27809: 15546; 27915: 15751, 15752; 28005: 15808; 28032: 15435; 28033: 15378; 28043: 15451; 28064: 15429; 28088: 15739; 28348: 15551; 28410: 15420; 28730: 15432, 15616, 15740; 28738: 15632; 28883: 15363; 28904: 15424, 15525, 15570; 29101: 15596; 29156: 15373, 15532, 15759; 29193: 15577; 29222: 15362, 15770; 29242: 15710; 29263: 15701; 29457: 15440; 29459: 15766; 29463: 15597; 29528: 15436; 29736: 15445, 15620; 29835: 15365, 15404, 15415, 15771; 29904: 15635, 15708; 29926: 15385, 15609, 15614, 15629, 15685, 15753; 30148: 15558; 30186: 15737; 30274: 15494, 15554, 15726, 15730; 30286: 15555; 31190: 15672; 31194: 15673; 31206: 15358; 31207: 15819; 31476: 15618; 31478: 15762; 32026: 15573; 32083: 15628; 32115: 15526; 32217: 15728; 32240: 15431; 32443: 15559; 32465: 15560, 15574; 32589: 15450, 15647; 32676: 15750; 32721: 15634, 15817; 32746: 15707; 34053: 15820; 34207: 15364; 34289: 15549; 34290: 15773; 34341: 15384; 34343: 15749; 34391: 15408, 15741; 34412: 15575, 15621; 34424: 15754; 34582: 15443; 34765: 15721; 34789: 15379, 15441, 15552; 34842: 15660, 15795; 34877: 15800; 35065: 15444; 35086: 15548, 15561, 15567, 15568, 15796; 35090: 15735; 35137: 15438, 15610, 15626; 35143: 15625; 35144: 15719; 35147: 15366, 15562, 15563, 15565; 35160: 15421; 35225: 15407, 15437; 35252: 15566; 35264: 15368, 15631; 35281: 15386; 35332: 15367, 15388; 35447: 15545; 35483: 15355, 15387, 15564, 15630, 15718; 36247: 15669

Unprovenanced: 15543, 15608, 15641, 15642, 15652, 15657, 15690, 15784, 15791, 15815

### Watching Brief

1205: 15841; 1384: 15826, 15839, 15840; 1480: 15844; 1506: 15827, 15828, 15834, 15835, 15836; 1545: 15824, 15825, 15829, 15830, 15831, 15832, 15833, 15838, 15842, 15843; 2050: 15837

### 22 Piccadilly

1041: 15847; 2007: 15865; 2009: 15852; 2012: 15866; 2045: 15863, 15864; 2142: 15845; 2186: 15860; 2267: 15858; 3053: 15849, 15850, 15854, 15855; 3071: 15851; 3086: 15848, 15857; 3116: 15856; 3130: 15853; 4002: 15859; 4004: 15861

Unprovenanced: 15846, 15862



## Bedern Foundry

2439: 15875; 2489: 15876; 2612: 15868; 2655: 15874; 2656: 15877;  
2960: 15873; 2962: 15871; 4204: 15867, 15878; 4222: 15869, 15870;  
4227: 15872

## College of the Vicars Choral, Bedern

Bedern North-East/Aldwark cellar  
(1976.14.I, 1978–9.14.II)

25: 15880, 15881; 1154: 15887; 1359G: 15886; 1649: 15884

## Bedern South-West (1976–9.13.X)

5346C: 15888

## Bedern long trench (1973–5.13.IV)

1643: 15882, 15885; unprovenanced: 15883

## Unprovenanced except to Bedern

15879

## Appendix: Quantifications of shoes of each style

Table 385 Shoe Styles 1 and 2 by period within site

Period	Style	
	1	2
<b>16-22 Coppergate</b>		
3	–	10
4A	–	–
4B	4	50
5A	–	16
5B	1	28
5Cf	–	–
5Cr	–	1
6	–	1
u/s	–	3
<b>Coppergate watching brief</b>		
Anglo-Scan	–	1
<b>Bedern College</b>		
u/s	–	1
<b>Total</b>	<b>5</b>	<b>111</b>

Table 386 Shoe Style 3 by period within site

	3a1	3b1	3-1	3a2	3b2	3-2	multiple slots	3b3	3a4	3b4	3-4	3b5	3a-	3b-	3--
<b>16-22 Coppergate</b>															
3	–	4	2	–	–	–	–	1	1	1	–	–	–	1	1
4A	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–
4B	5	18	2	1	6	3	4	10	–	17	1	1	–	5	14
5A	–	7	–	–	1	1	–	–	–	1	–	–	1	1	3
5B	1	16	2	–	3	1	7	2	–	10	1	–	–	2	6
5Cf	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
5Cr	–	–	1	1	–	–	3	–	–	–	–	–	–	–	–
6	1	–	–	2	–	–	–	2	–	–	–	1	–	1	1
u/s	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–
<b>Coppergate watching brief</b>															
Anglo-Norman	–	–	–	–	–	–	–	–	–	–	–	–	–	1	–
u/s	–	–	–	–	–	–	–	–	–	–	–	–	–	–	2
<b>22 Piccadilly</b>															
4.1	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–
<b>Total</b>	<b>7</b>	<b>45</b>	<b>7</b>	<b>5</b>	<b>10</b>	<b>6</b>	<b>14</b>	<b>17</b>	<b>1</b>	<b>29</b>	<b>2</b>	<b>2</b>	<b>1</b>	<b>11</b>	<b>27</b>

Table 387 Shoe Styles 4 and 5 by period within site

	4a1	4a2	4a3	4a4	4a-	4--	5	Other Anglo-Scan.
<b>16-22 Coppergate</b>								
3	1	-	2	1	3	2		1
4A	-	-	-	-	-	-	-	-
4B	12	-	11	5	19	8	-	-
5A	2	-	2	2	3	1	-	-
5B	1	-	4	1	3	2	-	-
5Cf	-	-	-	-	-	-	-	-
5Cr	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-
u/s	1	-	-	-	1	-	-	-
<b>22 Piccadilly</b>								
2	-	-	-	-	-	-	1	-
4	-	-	-	1	-	-	-	-
u/s	-	-	-	1	-	-	-	-
<b>Bedern College</b>								
0	-	2	-	-	-	-	-	-
<b>Total</b>	<b>17</b>	<b>2</b>	<b>19</b>	<b>11</b>	<b>29</b>	<b>13</b>	<b>1</b>	<b>1</b>

Table 388 Shoe Styles 6-8 by period within site

	6	7a1	7b1	7a1/7b1	7c1	7b2	7b/c3	7--	8a	8b	8c	8d	8e	8-
<b>16-22 Coppergate</b>														
4A	-	-	-	-	-	-	-	-	1	-	-	-	-	-
4B	-	-	1	-	-	-	-	-	-	-	-	-	-	-
5A	-	-	-	-	-	-	-	1	-	-	-	-	-	-
5B	-	-	-	-	1	-	-	-	1	-	-	-	-	-
5Cf	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5Cr	-	-	-	-	2	-	-	3	-	-	-	-	-	-
11th/12th century	1	6	9	1	5	1	3	6	-	-	-	-	-	-
12th/13th century	2	-	11	-	6	4	5	3	1	1	-	-	-	-
13th/14th century	-	-	-	-	1	-	-	1	1	1	4	-	-	2
14th/15th century	-	-	3	-	-	-	2	3	-	-	1	-	-	2
15th/16th century	-	-	-	-	-	-	-	-	1	-	-	1	-	-
16th-19th century	-	-	-	-	1	-	-	-	-	-	-	-	-	-
u/s	-	-	-	-	-	-	-	-	-	-	1	-	-	-
<b>Coppergate watching brief</b>														
medieval	-	-	-	-	-	-	-	-	-	-	-	2	6	-
16th century	-	-	-	-	-	-	-	-	-	-	-	4	-	1
<b>22 Piccadilly</b>														
4.2	-	-	1	-	1	-	-	2	-	-	-	-	-	-
4.3	-	-	2	-	-	-	-	-	-	-	-	-	-	-
5.1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
6	-	-	-	-	-	-	-	-	-	-	-	-	1	1
<b>Bedern Foundry</b>														
0	-	-	1	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	1	-	-	-	-	-	-	-
<b>Bedern College</b>														
1	-	-	-	-	-	-	1	-	-	-	-	-	-	-
u/s	-	-	-	-	-	-	-	1	-	-	-	-	-	-
<b>Total</b>	<b>3</b>	<b>6</b>	<b>28</b>	<b>1</b>	<b>17</b>	<b>5</b>	<b>12</b>	<b>22</b>	<b>5</b>	<b>2</b>	<b>6</b>	<b>7</b>	<b>7</b>	<b>7</b>

**Table 389** Shoe Styles 9–11 by period within site

	9a	9b	9-	10	11a	11b	11-
<b>16–22 Coppergate</b>							
4A	–	–	–	–	–	–	–
4B	–	–	–	–	–	–	–
5A	–	–	–	–	–	–	–
5B	–	–	–	–	–	–	–
5Cf	–	–	–	–	–	–	–
5Cr	–	–	–	–	–	–	–
11th/12th century	1	1	–	–	–	–	–
12th/13th century	–	–	1	1	–	–	–
13th/14th century	–	1	5	–	1	–	–
14th/15th century	5	2	4	1	1	3	3
15th/16th century	–	–	1	–	–	–	–
16th–19th century	–	–	1	–	–	–	–
u/s	–	–	–	–	–	–	–
<b>Coppergate watching brief</b>							
medieval	–	–	1	–	–	–	–
16th century	–	1	–	–	–	–	2
<b>22 Piccadilly</b>							
6	–	–	2	–	–	–	–
<b>Bedern Foundry</b>							
3	–	4	–	–	–	–	–
<b>Total</b>	<b>6</b>	<b>9</b>	<b>15</b>	<b>2</b>	<b>2</b>	<b>3</b>	<b>5</b>





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## Summary

This volume, the collaborative work of a number of authors, presents the surviving evidence for the manufacture and the use of leather artefacts at York during the Anglo-Scandinavian and medieval periods. It is based around the internationally important group of Anglo-Scandinavian leatherwork from 16–22 Coppergate, along with a smaller amount of medieval material recovered from the site, supplemented by groups recovered from the Coppergate watching brief, excavations at 22 Piccadilly, and at the site of the Foundry and College of Vicars Choral at Bedern. Over 5,000 items of leather dating from the later 9th century through to the 15th century are represented, some 550 of which have been fully catalogued in this fascicule. The close dating of the deposits belonging to the earlier years of occupation at Coppergate makes the 9th- to 11th-century material of particular significance.

A summary of the excavations that produced the leather described in detail in this volume is provided, followed by a description of the nature of the individual leather-bearing deposits which attempts to identify possible workshop waste. The evidence for leatherworking being undertaken at Coppergate in tenements B and C during the mid 10th–mid 11th century is considered. A report on the conservation of the leatherwork and the changes in conservation techniques over time is provided. The surviving evidence for leatherworking in the city during the Anglo-Scandinavian and medieval periods is summarised, including that from historical documents and from York street names. Leatherworking tools including currier's knives, slickers, creasers and awls have been found, as well as a wooden shoe-maker's last. The environmental evidence for tanning and leatherworking in York is considered and an attempt is made to correlate the animal bone evidence with the leather recovered.

Waste leather from both the processing of hides and the manufacture of items, particularly shoes, was found. Discarded unusable parts of animal hides, including a rare occurrence of a fragment of untanned hide apparently preserved by Stockholm tar, are suggestive of the initial processing of hides. Flesh shavings from paring down the thickness of hides during the currying process were recognised at Coppergate,

as well as trimmings from the cutting out and shaping of pattern pieces during shoe manufacture. Shoe parts frequently showed signs of repair and shoes apparently made from the recycled parts of others (translated shoes) were recognised, both indicating the activities of cobblers. Shoe-making activity was at its height in the 10th century; cobbling was also being undertaken at this time and continued throughout the medieval period. There is evidence for the refurbishment of knife sheaths in the Anglo-Scandinavian period, a phenomenon not previously recognised elsewhere.

While a general outline of the methods of shoe-making and sheath and scabbard making and the decorative techniques employed is given, the leather items themselves are described in more detail. These include shoes, knife sheaths, sword scabbards, straps, purses, elliptical panels, balls, an archer's wrist guard and a range of miscellaneous items. Woollen and linen thread preserved within stitch holes has been identified and there was a single occurrence of cinabar used to colour a leather strap.

Shoes represent the largest category of manufactured leather to be recovered. A small number of shoes made from a single piece of leather were found in Anglo-Scandinavian deposits, but the vast majority of the shoes from both Anglo-Scandinavian and medieval contexts were of turnshoe construction. The correlation between shoe styles and sizes was studied and examples of abnormalities of the foot as seen in the footwear are described. An important corpus of knife and seax sheaths and sword scabbards was also recovered and several kinds of sheaths typical of the Anglo-Scandinavian and medieval periods were identified. To allow the important Anglo-Scandinavian shoe and sheath assemblages to be seen in context the Anglo-Saxon background and contemporary material from elsewhere in the British Isles is summarised. The possibility that the differences in technology exhibited in the Anglo-Scandinavian footwear, sheaths and scabbards might reflect the cultural mix in the population at the time is explored. Finally, the similarities between the York leather and leather assemblages recovered throughout north-west Europe from both the Anglo-Scandinavian and the medieval period are noted.

## Résumé

Le présent volume, fruit de la collaboration de plusieurs auteurs, présente les indices restant encore de la fabrication et de l'utilisation d'objets façonnés en cuir à York pendant les périodes anglo-scandinave et médiévale. Il se base sur l'ensemble d'objets en cuir d'importance internationale découverts au 16-22 Coppergate, ainsi qu'une moindre quantité de matériel médiéval découvert sur le site, augmenté d'ensembles découverts lors de la mission d'observation de Coppergate, des fouilles du 22 Piccadilly, ainsi que sur le site de la Foundry et du College of Vicars Choral de Bedern. Plus de 5000 objets en cuir datant de la fin du 9^{ème} siècle au 15^{ème} siècle sont représentés, dont 550 ont été entièrement catalogués dans ce fascicule. Etant donné la datation précise des dépôts appartenant aux premières années d'occupation de Coppergate, le matériel datant du 9^{ème} siècle au 13^{ème} siècle est d'une importance toute particulière.

Un résumé des fouilles dont provenait le cuir décrit en détail dans le présent volume est fourni et est suivi d'une description de la nature des différents dépôts où ont été découverts les articles en cuir, description ayant pour but l'identification de possibles déchets d'atelier. Les indices de travail du cuir à Coppergate dans les logis B et C entre le milieu du 10^{ème} siècle et du 11^{ème} siècle sont examinés. Un rapport concernant la préservation des articles en cuir et les changements de techniques de préservation avec le temps est fourni. Les indices restant encore de travail du cuir dans la ville pendant les périodes anglo-scandinave et médiévale sont résumés, y compris les indices extraits des documents historiques et des noms de rues à York. Des outils de travail du cuir, y compris des couteaux de corroyeurs, des lisseurs, des plisseurs et des alènes, ont été découverts, ainsi qu'une forme de cordonnier en bois. Les indices environnementaux de tannage et de travail du cuir à York sont examinés et on essaie d'établir une corrélation entre les indices fournis par les os d'animaux et le cuir retrouvé.

Des déchets de cuir provenant et du traitement des peaux et de la fabrication d'articles, tout particulièrement des chaussures, ont été découverts. Des parties de peaux rejetées parce que non utilisables, y compris la rare découverte d'un fragment de peau

non tanné, apparemment préservé par du goudron de Stockholm, suggèrent un traitement initial des peaux. Des rognures de chair, enlevées pour réduire l'épaisseur des peaux au cours du corroyage, ont été reconnues à Coppergate, ainsi que des rognures provenant de la coupe et de la formation de pièces du modèle pendant la fabrication des chaussures. Des parties de chaussures montraient fréquemment des signes de réparations, et des chaussures apparemment fabriquées à partir de parties recyclées d'autres chaussures (chaussures transférées) ont été reconnues; ces deux faits témoignent des activités de cordonniers. Le 10^{ème} siècle fut le point culminant de la fabrication de chaussures; à cette époque, il y avait également de la cordonnerie qui continua pendant toute la période médiévale. Il y a des indices de remise à neuf de gaines de couteaux au cours de la période anglo-saxonne, un phénomène unique qui n'avait jamais été reconnu ailleurs.

On trouvera un aperçu général des méthodes de fabrication des chaussures, ainsi que de la fabrication de gaines de couteaux et de fourreaux d'épées et des techniques décoratives, mais les articles en cuir eux-mêmes sont décrits de manière détaillée. Ces articles englobent des chaussures, des gaines de couteaux, des fourreaux, des lanières, des bourses, des panneaux elliptiques, des balles, une protection de poignet d'archer et divers autres articles. Des fils de lin et de laine préservés dans des trous de piqûres ont été identifiés ainsi qu'un unique exemple de cinabre utilisé pour colorer une lanière en cuir.

Les chaussures représentent la plus grande catégorie de cuir fabriqué retrouvé. Un petit nombre de chaussures fabriquées à partir d'un seul morceau de cuir a été découvert dans les dépôts anglo-scandinaves, mais la grande majorité des chaussures provenant de contextes anglo-scandinave et médiéval étaient des chaussons retournés. La corrélation entre les styles et les pointures des chaussures a été étudiée, et des exemples d'anormalités du pied constatées dans les chaussures sont décrites. Un important ensemble de gaines de couteaux et de seax ainsi que de fourreaux d'épées a également été retrouvé, et plusieurs sortes de gaines typiques des périodes anglo-scandinave et médiévale ont été identifiées. Un résumé du milieu socioculturel anglo-scandinave et

du matériel contemporain provenant d'autres sites dans les îles Britanniques permet de situer les importants ensembles de chaussures et de gaines anglo-scandinaves dans leur contexte. On explore la possibilité que les différences technologiques dont témoignent les chaussures, les gaines et les fourreaux

reflètent le milieu culturel varié de la population de l'époque. Finalement, on fait remarquer les similarités entre le cuir d'York et les ensembles de cuir retrouvés dans tout le nord-ouest de l'Europe, tant à l'époque anglo-scandinave qu'à l'époque médiévale.

## Zusammenfassung

Dieser Band, eine Zusammenarbeit von mehreren Autoren, stellt den überkommenen Befund für die Verarbeitung und den Gebrauch von Lederartefakten in York aus den anglo-skandinavischen und mittelalterlichen Zeiträumen vor. Er basiert auf der international bedeutenden Gruppe von Lederarbeiten anglo-skandinavischen Datums aus 22 Coppergate im Verein mit einer kleineren Gruppe mittelalterlichen Materials aus dieser Fundstelle und im weiteren Zusammenhang mit Fundgruppen aus den Feldbeobachtungen in Coppergate, den Ausgrabungen in 22 Piccadilly und der Fundstelle der Gießerei und des Kollegs der Vicars Choral in Bedern. Über 5000 Ledergegenstände, die vom ausgehenden 9. Jahrhundert bis zum 15. Jahrhundert datieren, werden vorgestellt; von ihnen sind in diesem Fascikul 550 eingehend katalogisiert. Die eingegrenzte Datierung der Schichten in den frühen Jahren der Besiedlung in der Coppergate geben dem Material aus dem 9. bis 11. Jahrhundert besondere Bedeutung.

Eine Zusammenfassung der Ausgrabungen, die das Ledermaterial, welches in diesem Band eingehend beschrieben wird, ergeben haben, wird vorgelegt; es folgt die Beschreibung der Art der einzelnen, lederenthaltenden Ablagerungen, wobei versucht wird mögliche Werkstattabfälle zu identifizieren. Der Befund für mögliche Lederverarbeitung auf den Parzellen B und C in Coppergate in der Zeit von der Mitte des 10. Jahrhunderts bis zur Mitte des 11. Jahrhunderts wird betrachtet. Ein Bericht über die Konservierung der Lederarbeiten und über den Wandel in den Konservierungstechniken im Laufe der Zeit wird vorgelegt. Der überkommene Befund für Lederverarbeitung in der City während der anglo-skandinavischen Zeit und während des Mittelalters, einschließlich der Beweise aus historischen Dokumenten und den Straßennamen Yorks wird zusammengefaßt. Werkzeuge für die Verarbeitung von Leder einschließlich Messer zur Lederzurichtung, Lederglätter, Falzeisen und Ahlen, sowie ein hölzerner Schusterleisten wurden gefunden. Der Umweltbefund für Gerberei und Lederverarbeitung wird betrachtet und es wird versucht, den Befund der Tierknochen mit dem des gefundenen Leders in Beziehung zu bringen.

Lederabfall aus der Aufbereitung von Häuten und der Herstellung von Gegenständen, besonders von

Schuhen, wurde gefunden. Fortgeworfene, unbrauchbare Teile von Fellen, einschließlich des seltenen Beispiels eines ungegerbten Fellstückes, das anscheinend in Pech (Stockholm tar) erhalten war, deuten auf Anfangsstadien der Fellverarbeitung hin. Fleischschnipsel, die bei Reduzierung in der Dicke der Häute während des Zurichtungsprozesses anfielen, wurden in Coppergate festgestellt, ebenso vorhanden waren Abfallstücke, die beim Ausschneiden und Formen von Mustern für die Herstellung von Schuhen anfielen. Schuhteile zeigten häufig Anzeichen für Reparaturen und Schuhe, die anscheinend aus wiederverwendeten Teilen anderer Schuhe gefertigt waren, wurden ebenfalls festgestellt. Beides deutet auf die Aktivität von Schustern hin. Die Herstellung von Schuhen erreichte ihren Höhepunkt im 10. Jahrhundert; Flickschuster waren zu dieser Zeit und durch das gesamte Mittelalter hin hier tätig. In der anglo-skandinavischen Zeit gibt es Befunde für die Ausbesserung von Messerscheiden, ein Phänomen, das bisher anderswo noch nicht festgestellt wurde.

Bei einem allgemeinen Überblick über die Methoden für die Herstellung von Schuhen und Messer- und Schwertscheiden und den Techniken zu deren Verzierung, werden gleichzeitig die Ledergegenstände selbst eingehend beschrieben. Zu diesen Gegenständen gehören Schuhe, Messer- und Schwertscheiden, Riemen, Geldbörsen, elliptische Einsatzstücke, Bälle, ein Gelenkschutz für Bogenschützen und eine Anzahl von Gegenständen verschiedener Art. Woll- und Leinenfäden, die in den Stepplöchern verblieben waren, wurden identifiziert und in einem Fall wurde die Verwendung von Zinnober zur farblichen Verzierung eines Lederriemens festgestellt.

Schuhe waren der Hauptanteil des aufgefundenen, verarbeiteten Leders. Eine kleine Anzahl von aus einem Lederstück gefertigten Schuhen, wurden in den anglo-skandinavischen Schichten gefunden, jedoch war der größte Teil der Schuhe aus den anglo-skandinavischen sowie den mittelalterlichen Kontexten aus mehreren Teilen zusammengesetzt (turnshoe construction). Die Beziehung zwischen Schuhstil und Schuhgröße wurde untersucht und Beispiele für Abnormalitäten in den Füßen, wie sie sich im Schuhwerk widerspiegeln,



werden beschrieben. Weiterhin wurde eine wichtige Gruppe von Messer-, Sax- und Schwertscheiden festgestellt und verschiedene Scheidentypen, die für die anglo-skandinavische Zeit und für das Mittelalter typisch waren, wurden identifiziert. Damit diese wichtigen anglo-skandinavischen Schuh- und Scheidengruppen im Zusammenhang mit dem angelsächsischen Hintergrund betrachtet werden können, wird das gleichzeitige Material aus anderen Teilen der britischen Inseln zusammengefaßt. Die

Möglichkeit, daß die Unterschiede in der Technik, die sich in dem anglo-skandinavischen Schuhwerk, den Messer- und Schwertscheiden aufzeigen, eine kulturelle Vermischung in der Bevölkerungszusammensetzung dieser Zeit widerspiegeln, wird untersucht. Schließlich werden die Ähnlichkeiten zwischen dem Leder aus York und Ledergruppen, die in Nordwesteuropa für die anglo-skandinavische Zeit und das Mittelalter gefunden worden waren, aufgezeigt.

## Abbreviations

Most abbreviations are those recommended by the Council for British Archaeology, but the following are used in addition. Other abbreviations used in bibliographic references in the text are explained in the Bibliography below.

EHD 1	<i>English Historical Documents c.500–1042</i> , ed. D. Whitelock (London, 1955)	VCH	Victoria History of the Counties of England: Yorkshire. Vol.3 (Folkstone and London, 1974)
EYC 1	<i>Early Yorkshire Charters</i> vol.1, ed. William Farrer (Edinburgh, 1914)	YMB	<i>York Memorandum Book</i> , ed. M. Sellers. Vols.1 and 2. Surtees Society <b>120</b> and <b>125</b> (1912 and 1915)
Pipe	Pipe Roll, 27 Henry II. Pipe Roll Society 30 (1909)	YPR	York, Borthwick Institute of Historical Research, Probate Registers.

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# Index

By Sue Vaughan

Illustrations are denoted by page numbers in *italics*. *f* = figure appearing on a foldout. Places are in York unless otherwise stated.

- Aachen (Germany), sheath 3381, 3391  
Acton (Suffolk), brass 3369  
Alanus corveisor 3223  
Aldwark, 7/9, leather fragment 3423  
All Saints North Street parish 3224  
Alne, Richard de 3225  
Amersfoort-Hoogland (Netherlands), shoe 3277  
amulet covers 3435  
animal bones, as indicators of leatherworking 3231–2  
    available evidence 3232–4  
    discussion 3234–5  
archer's bracer 3403, 3404–5, 3417, 3504  
Århus (Denmark), awl 3243  
Armagh budget 3264  
Arnaldus allutarius 3223  
assemblages  
    compared 3426–8; *see also* cultural influences  
    nature of 3203–4  
        Bedern 3212  
        Bedern Foundry 3211–12  
        16–22 Coppergate 3204–10  
        Coppergate watching brief 3210  
        22 Piccadilly 3210–11  
awls 3237–8, 3239, 3422  
    handles 3238, 3240, 3242–3  
    use of 3256, 3261
- Back Swinegate, 18, leather finds 3424  
bag, part of 3421; *see also* pouches and purses; saddle bag fragment; water bag fragment  
Baile, land owned by saddlers 3223  
balls 3405  
    multiple construction 3406–7, 3408, 3504, 3519  
    two- and three-part construction 3406–7, 3504  
Barbican Car Park, leather finds 3424  
bark fragments 3230, 3231  
Barker Hill (St Maurice's Road) 3225, 3226  
Barker Lane (Gregorelayne) 3225, 3226  
Barker rawes 3226  
Barker Row 3226  
Barker Tower 3226  
Barkergate 3226  
barkers 3222, 3223  
Bath, sword 3365  
Baude, John 3226  
Bayeux tapestry 3367, 3416, 3417, 3435  
bear skin 3234  
Beatrix filia Nicholai Cordewaner 3223  
beaver skin 3234  
Bedern, College of the Vicars Choral  
    animal bones 3231, 3232, 3233, 3234, 3415  
    excavation summary 3201–2  
    leather finds  
        assemblage 3212  
        catalogue 3523–6  
    leatherworking tools 3237, 3238, 3240  
    location 3200
- Bedern Foundry  
    animal bones 3232, 3233  
    excavation summary 3202–3  
    leather finds  
        assemblage 3211–12  
        catalogue 3520–2  
        sewing threads 3259–61  
    leatherworking tools 3235, 3236, 3237  
    location 3200  
Bellamy, William 3223  
belt-makers 3222  
belts  
    associated with swords 3367, 3368, 3369, 3496  
    miscellaneous 3423, 3425  
Benson, George 3227–8, 3419, 3420  
Bergen (Norway)  
    sheaths 3388  
    shoes 3344, 3417, 3431, 3432  
Beverley (E Riding)  
    awl 3243  
    discs 3412  
    scissors 3240  
    shoes 3243, 3319, 3321, 3344  
binding strips 3413, 3506, 3514  
birch bark 3231  
Blake Street, 9  
    animal bones 3232–3  
    land in 3223  
    leather finds 3423  
boarding 3255, 3507  
bookbinders 3222, 3223  
bookbinding fragment 3263, 3412, 3413, 3505  
bottle-makers 3222, 3223, 3224  
Bridge Street, 1–9, leather fragment 3423  
bridle fragment *see* horse equipment  
Bristol, elliptical panels 3410  
Broomfield (Essex)  
    sheath 3354, 3371  
    strap-slide 3355  
Buckland (Kent), sheath 3354  
bucklers 3222, 3223–4; *see also* *skjaldari*  
buckles  
    archer's bracer 3404, 3405  
    shoes 3313, 3321, 3326–8, 3335  
    straps 3400, 3401  
bunions 3351–2  
Bures, Sir Richard de 3369  
butchery 3232  
buttons, discs used as 3412
- calfskin 3265, 3266, 3267  
    untanned 3220, 3221, 3254, 3507  
Castile, arms of 3389  
Castor (Cambridgeshire), chape 3365  
cat skins 3233–4  
cattle hide 3232, 3234–5, 3265, 3266, 3267  
Cerde, Alphonso de la, sarcophagus of 3389



- chapes 3365, 3366, 3391, 3528  
 Charavines (France), last 3243  
 churches  
   All Saints Pavement 3423  
   St Andrew 3423  
*cingulum militaire* 3369  
 clothing fragments 3424  
 cobblers 3222, 3347  
 cobbler's waste/workshops 3204, 3212, 3255, 3419  
 Codex Aurea, plaque 3432  
 Coffee Yard, leather finds 3423  
 cofferers 3222  
 College of the Vicars Choral *see* Bedern  
 colour, leather 3214, 3215; *see also* pigment  
 Coney Street  
   leather fragment 3425  
   messuages 3223  
   saddlers 3224  
 conservation 3213  
   active conservation 3214–15  
     freeze-drying 3216, 3217  
     solvent dehydration techniques 3215–16  
     water-based treatments 3216  
   condition  
     pre-conservation 3213  
     post-conservation 3218–19, 3220  
   reshaping and reconstruction 3217, 3218, 3219  
   special items 3219, 3220, 3221  
   storage and packaging  
     pre-conservation 3213  
     post-conservation 3217–18  
   washing and recording 3214  
 Coppergate, 1906 excavation, leather finds  
   catalogue 3528  
   sheaths 3369, 3371, 3379, 3384  
 Coppergate, 5–7  
   leather finds 3422  
     scabbards 3360, 3527  
     shoes 3302, 3304  
   structural evidence 3227–8  
 Coppergate, 16–22  
   excavation  
     site description 3187–90  
     summary 3190–1, 3192–5, 3196–7  
   leather finds  
     assemblage: Period 3 3204; Period 4A 3204; Period 4B 3204–5; Period 5A 3205, 3206; Period 5B 3206–7; Period 5Cf and 5Cr 3207; medieval period 3207–10  
     catalogue: archer's bracer 3504; balls 3504; binding strip 3506; cut-down pieces 3506–7; decorated fragments 3505–6; discs 3505; elliptical panels 3504–5; knotted thongs 3503; patches 3506; pouches/purses 3503; scabbards 3494–6; sheaths 3496–500; shoes 3439–93; slotted strips 3502–3; strap/strip fragments 3503; straps 3500–2; thonged fragment 3506; vessel bases 3505; washers 3505  
     scabbards and sheaths, distribution 3356–9, 3360  
     sewing threads 3259–61  
   leatherworking evidence  
     environmental 3230  
     osteological 3232, 3233–4  
     structural 3229–30  
   leatherworking tools 3235, 3236–40, 3242, 3243, 3244  
   leatherworking waste 3245, 3246–7  
     distribution 3247, 3248–53, 3254  
     location 3188  
 Coppergate watching brief  
   leather finds  
     assemblage 3210  
     catalogue 3508–14  
     location 3188  
     summary 3197–8  
 Cordoba (Spain), tanning technique 3222, 3266  
*cordwain* 3266  
 cordwainers 3222, 3223, 3224, 3225  
 Coventry (W Midlands)  
   sheath 3388  
   shoes 3243, 3319, 3321  
 'craft of saddlers' 3222  
 Criblet (Switzerland), coin pouches 3403  
 cultural influences  
   international 3431–6  
   sheaths 3431  
   shoe construction styles 3428–9  
     implications of 3429–31  
 curriers 3222, 3223, 3224, 3225  
 currier's knives 3235, 3236  
 currying waste 3204, 3230, 3254, 3255  
 cut-down pieces 3413, 3414–15, 3506–7, 3514, 3522  
 Davygate 3223, 3423  
 decoration  
   by artefact type  
     bookbinding 3263, 3412, 3413  
     fragment 3262, 3412, 3413  
     girdles and straps 3220, 3263, 3392, 3393–5, 3417  
     purses 3263, 3402  
     scabbards 3263–4, 3364  
     sheaths 3263–4, 3370–6, 3377, 3378–86, 3387, 3388, 3389  
     shoes 3262, 3263, 3314, 3316, 3317, 3319, 3331, 3340, 3341–6, 3417  
     techniques 3262  
     colour 3263  
     mounts 3263  
     stitching 3263  
     tooling and incising 3262–3  
 deerskin 3222, 3267  
 delamination 3213  
 Delémont (Switzerland), shoe of St Desiderius 3343  
 Deventer (Netherlands), shoes 3312  
 discs 3411, 3412, 3505, 3514, 3519  
 dog collar 3395  
 Dorestad (Netherlands), shoes 3277, 3312, 3433  
 double-armed leather creasers 3236, 3237  
 drawstrings  
   repairs 3348  
   on shoes  
     Style 1 3278  
     Style 2 3288  
     Style 3 3288, 3289–90, 3291, 3294, 3295–9  
     Style 7 3314, 3315, 3319, 3320–3  
 Dublin (Ireland)  
   awl handle 3243  
   leather finds 3426  
     elliptical panels 3409, 3410–11, 3435  
     scabbards 3364, 3365, 3367  
     sheaths 3372, 3377, 3380, 3388, 3391  
     shoes 3287–8, 3294, 3296, 3310, 3340, 3427, 3432  
 Dundurn (Perth and Kinross), shoe 3429  
 Durham (Co. Durham), leather finds 3426  
   sheaths 3372, 3376, 3388  
   shoes 3344, 3427



Edward the Confessor 3417  
 Edward I 3223  
 Edward III 3389  
 Edwinus tanur 3223  
 Elisenhof (Germany)  
     elliptical panels 3435  
     shoes 3277, 3279–80, 3433–4  
 elliptical panels 3408–10, 3411, 3435, 3437, 3504–5  
 Ely (Cambridgeshire), shoe 3319  
 embroidery, on shoes  
     Anglo-Scandinavian 3263, 3312, 3342  
     medieval 3263, 3314, 3316–17, 3341, 3342–4, 3424  
     status associated with 3417  
     thread 3259, 3260  
 Exeter (Devon)  
     balls 3408  
     discs 3412  
     hand leather 3256  
 eye patches 3435  
  
 fastenings *see* belts; slotted strips; suspension fastenings  
 Feasegate, shoes 3261, 3287, 3294, 3299, 3304, 3418–19  
 fellmongers 3222, 3256  
 felters 3223  
 Fishergate, 46–54, animal bones 3232, 3234  
 flax *see* linen thread  
 foot pathologies 3351–3  
 footed hose 3275  
 Foss Islands Road, offcut 3423  
 Fossgate, 44–6, shoe 3424  
 fowling 3435  
 Freeman's Roll 3223  
 furriers 3222  
  
 Gally Hills (Surrey), shoes 3429  
 gaming counters 3412  
 Garlande, John de 3257, 3347  
 Gaufridus le Bucler 3223  
 Gaufridus sellator 3223  
 Gdansk (Poland), shoes 3296, 3431, 3434  
 George Street, leather finds 3425  
 Gillygate 3223  
 Girdlergate 3225, 3227  
 girdlers 3222, 3223, 3224  
 girdlers' guild 3223, 3225  
 girdles 3220, 3263, 3392, 3393–5, 3417, 3521  
 Gloucester, leather finds 3426  
     elliptical panels 3409  
     scabbards 3363, 3365  
     sheaths 3379, 3381, 3383, 3384, 3385, 3391  
     shoes 3333, 3427  
 glove panels 3408  
 Glovergail 3225, 3227  
 glovers 3222, 3223, 3224, 3226  
 glovers' guild 3222, 3225  
 Gniezno (Poland), shoe 3278  
 goatskin 3233, 3235, 3265, 3266, 3267  
 Groningen (Netherlands), shoes 3312  
 guilds 3222, 3223, 3225, 3437  
  
 hair ornaments 3411, 3435  
 Hall, John 3226  
*hallux rigidus* 3353  
*hallux valgus* 3352, 3353  
 hammer toe 3353  
 Hampsthwaite (N Yorkshire), brass 3403  
  
 hand leather 3256, 3507  
 handle grips 3411  
 handles, leather 3401, 3410; *see also* awls  
 Harford Farm (Norfolk), sheath 3355  
 harness fragments *see* horse equipment  
 harness-makers 3222  
 Hedeby (Germany)  
     elliptical panels 3409–10, 3435  
     last 3243  
     sheaths 3377, 3388, 3389, 3435  
     shoes 3278, 3294, 3312, 3431, 3432, 3434, 3435  
     slotted strips 3401  
     straps 3435  
 hemp, used in thread 3259–61  
 heraldic motifs 3386, 3388, 3389  
 Hereford, scabbard 3365  
 Hexham (Northumberland), sheath 3379, 3383  
 hide preparation/processing *see* leatherworking  
 High Ousegate, 25–7  
     leather finds 3419–20  
     tanning pits 3227–8, 3420  
 Holy Trinity Goodramgate parish 3224  
 Holy Trinity King's Court parish 3224  
 Hornpot Lane 3225, 3227  
 horns, goat 3233  
 horse equipment 3369, 3394, 3395, 3396, 3397, 3501  
 Hosier Lane 3225, 3227  
 Hull (Kingston upon Hull)  
     discs 3412  
     elliptical panels 3409  
     purse 3403  
     sheath 3388  
     shoes 3243, 3261  
 Hungate, leather finds 3419  
     sheaths 3369, 3373–5, 3388, 3528  
     shoes 3287, 3295, 3304, 3307  
  
 identifying tags 3412  
 incised lines 3256  
 indentations 3262  
 inscriptions  
     last 3243, 3244  
     sheath 3388  
     *see also* maker's marks  
 insect remains 3230–1  
 international contacts 3431–6  
 Iona (Argyll and Bute), shoes 3274, 3340, 3428  
 Ipswich (Suffolk), sheath 3355  
 Isle of Man, scabbards and sheaths 3365, 3367, 3391, 3431  
  
 Johannes coriarius 3222  
  
 Keen Edge Ferry (Berkshire), seax 3416  
 Kilkummin (Ireland), shoe 3280  
 King's Court 3224  
 King's Lynn (Norfolk)  
     awl handle 3243  
     shoe 3321  
 King's Square, leather finds 3421, 3423  
 knives 3390  
 knotted thongs 3402, 3503  
 Konstanz (Germany) shoes 3314, 3326  
  
 laces 3313, 3321, 3325, 3326, 3328, 3329–32  
 Lagore Crannog (Ireland)  
     awl handle 3243  
     last 3243

- lasts 3240, 3243, 3244, 3256, 3422  
latchets 3333, 3334  
Lawrence Street, 148, animal bones 3231  
Layerthorpe Bridge 3230–1  
leather species  
    identification 3235, 3267  
    types of *see* leatherworking, species used  
leathersellers 3222  
leatherworking  
    evidence for  
        documentary 3222–6  
        environmental 3230–1  
        osteological 3231–5  
        street-names 3226–7  
        structural 3227; 16–22 Coppergate 3229–30; 25–7 High Ousegate and Coppergate 3227–8; 6–8 Pavement 3228, 3229  
        *see also* waste leather  
    location 3203, 3224, 3225  
    organisation of 3436  
    production, scale of 3436–7  
    species used 3265–6  
        sheaths and scabbards 3266–7  
        shoes 3266  
        other items 3267  
    trades 3222  
leatherworking tools  
    iron 3235, 3236–40  
    wood 3240–3, 3244  
Leicester, shoes 3243  
Leiden (Netherlands)  
    scabbards and belts 3367  
    sheaths 3388  
Lembecksburg (Germany), shoe 3278  
Liebenau (Germany), sheath 3372  
Lincoln, leather finds 3426  
    balls 3406, 3408  
    scabbard 3364  
    sheath 3377  
    shoes 3427  
linen thread 3259–62, 3270, 3430  
Little Stonegate, 14, leather finds 3424  
Littleton bog (Ireland), seax 3391  
London  
    leather finds 3426  
        balls 3406  
        discs 3412  
        elliptical panels 3409, 3410  
        girdles 3393  
        handle grip 3411  
        pouches 3401, 3403  
        scabbard 3364  
        sheaths: decoration 3389; fitting from 3355, 3382; post-Conquest 3387, 3388; pre-Conquest 3371–2, 3375, 3377, 3379; seax 3383, 3384, 3391  
        shoes 3427–8; decoration 3263, 3342, 3343, 3344, 3345, 3346, 3417; leather 3265–6; rands, use of 3258; repairs 3348–9; sewing medium 3259, 3261; size 3338, 3340; soles 3274; Style 2 3287; Style 3 3291–4, 3296, 3300–1; Style 4 3305, 3308; Style 7 3316, 3319, 3321; Style 8 3323–4, 3326, 3328; Style 9 3329, 3331; Style 10 3332–3; Style 11 3333, 3335  
        slotted strips 3401  
        straps 3394, 3399  
        teeth marks 3265  
    leatherworking tools 3243  
    seax 3390  
lorimers 3223, 3224, 3225  
Lottorf Mose (Germany), shoes 3288, 3433  
Lounelithe 3223  
Low Petergate, leather finds 3421  
Lübeck (Germany), shoes 3432  
Lund (Sweden), shoes 3296, 3431  
  
*Machault*, discs 3412  
maison dieu, shoe-makers 3223  
maker's marks  
    shoes 3340  
    sword 3365, 3366  
Manchester, scabbard 3367  
Margaret of France 3389  
Market Street, leather finds 3369, 3373, 3420–1, 3425, 3528  
Marketshire 3187  
marking-out lines 3262  
Mason, Thomas 3226  
Mecklenburg (Germany), shoe 3434  
Micklegate, 1–9, leather finds 3423–4  
Middelburg (Netherlands), shoes 3279, 3305, 3312  
Middleton (N Yorkshire), cross 3385, 3416  
Monk Bar 3224, 3226  
Monkgate  
    County Hospital Site, leather finds 3324, 3423  
    land in 3222, 3223  
Monmouth, shoe 3261  
moss stuffing, shoe 3333  
moulding 3262  
mounts, decorative 3263, 3369, 3393, 3394–5, 3417  
    catalogue 3500, 3521–2, 3525–6  
mystery plays 3224–5  
  
*nålebundet* sock 3280, 3433  
Naumburg Cathedral (Germany), sculpture 3367  
Nicholaus allutarius 3223  
Nicholaus lorimer 3223  
North, John 3226  
North Street  
    animal bones 3231  
    leather finds 3287, 3425  
Norton Priory (Cheshire), awl handle 3243  
Norwich (Norfolk)  
    leather finds 3426  
    sheath 3388  
    shoes 3291, 3305, 3308, 3427  
    street-names 3227  
Novgorod (Russia)  
    lasts 3243  
    shoes 3431, 3434  
  
Odo sellator 3223  
offcuts *see* waste leather  
ordinances 3223–4  
Oseberg ship burial (Norway)  
    awls 3242–3  
    shoes 3434  
Oslo (Norway)  
    elliptical panels 3410  
    last 3243  
    shoes 3431, 3435  
otter skin 3234  
Ousegate 3223  
oval panels 3435  
Oxford (Oxon)  
    awl handle 3243

leather finds 3259, 3307, 3426–7, 3429  
 Ozengell (Kent), sheath 3355, 3372

pads 3406–7  
 pall mall 3406  
 Palmer Lane 3231  
 pampootie 3277, 3427  
 parchment-makers 3222, 3223, 3224, 3225  
 Paris (France), shoes 3305  
 Parliament Street, miscellaneous sites, leather finds 3388, 3421–2, 3423, 3425, 3426  
 Parliament Street, sewer trench, leather finds 3422  
   catalogue 3527–8  
   elliptical panel 3409  
   sheaths 3262, 3354, 3377, 3379, 3381, 3383, 3385, 3391  
   shoes 3243, 3294, 3320, 3344–5  
 parmenters 3222  
 patches 3256, 3506  
 pathology *see* foot pathologies  
 patoners 3223, 3224  
 Pavement, 6–8  
   leather finds 3422  
     conservation 3215  
     sheath 3369, 3376, 3527  
     shoes 3261, 3287  
   leatherworking evidence 3228, 3229, 3231  
   leatherworking tools 3238, 3239, 3242, 3243  
 Pavement, 22, leather finds 3425  
 Pavement/Parliament Street, leather finds 3423  
 Peasholme Green  
   Adams Hydraulics II site 3231  
   Haymarket Car Park 3423  
 pelters 3223, 3225  
 Perth (Perth and Kinross)  
   elliptical panels 3410  
   shoes 3261, 3314, 3344  
   teeth marks 3265  
*pes cavus* 3353  
 Petergate  
   land in 3223  
   watching briefs 3425–6  
 Piccadilly, 22  
   excavation summary 3198–9  
   leather finds  
     assemblage 3210–11  
     catalogue 3515–19  
     leatherworking tools 3237, 3240  
     location 3188  
 Piccadilly, miscellaneous sites, leather finds 3424, 3425  
 pig bristles 3256, 3257  
 pigment 3220, 3263, 3392  
 pigskin 3232, 3233, 3267, 3507  
 pine marten skin 3234  
 plant remains 3230–1  
 point-maker 3223  
 poll tax returns 3224  
 pouch-makers 3223, 3224  
 pouches and purses  
   circular panels interpreted as 3406  
   cultural influences 3435  
   decoration 3263  
   described 3402–3, 3419, 3424, 3503  
   leather species 3267  
   *see also* purse-makers  
 Purey Cust Nuffield Hospital, leather finds 3423  
 purse-makers 3222  
 purses *see* pouches and purses

rabbit skin 3234  
 Radulfus Fleeth allutor 3223  
 rand, use of 3257, 3258, 3269, 3270, 3271  
 rawhide 3220, 3221, 3254, 3507  
 Reading (Berkshire), shoes 3331  
 Redeness, William de 3225  
 Reginaldus Feltere 3223  
 Repton (Derbyshire)  
   scabbard 3365  
   seax, carving of 3355  
 Ribe (Denmark), shoes 3434  
 Ricardus sellator 3223  
 rivelin (rivlin) 3277  
 rivets  
   elliptical panels 3408  
   sheaths 3261, 3262, 3380, 3381, 3431  
   straps 3394  
 rivlin *see* rivelin  
 Rogerus sellator 3223  
 Rouen (France), shoes 3274

saddle bag fragment 3413, 3415  
 saddle trapping 3422  
 Saddler Lane 3225, 3227  
 saddlers 3222–3, 3224, 3225, 3226, 3227  
 St Andrewgate  
   animal bones 3231  
   leather finds 3423, 3425  
 St Crux parish 3224, 3225  
 St Denys parish 3224, 3225  
 St George's Field 3423  
 St Lawrence parish 3224, 3225  
 St Margaret parish 3224, 3225  
 St Martin Coney Street parish 3224, 3225  
 St Maurice's Road *see* Barker Hill  
 St Michael Spurriergate parish 3224, 3225  
 St Peter the Little parish 3224, 3225  
 St Peter le Willows parish 3224, 3225  
 St Samson parish 3224, 3225  
 St Saviourgate, leather finds 3423  
 Samson sellarius 3222  
 scabbard-makers 3222  
 scabbards  
   Anglo-Saxon background 3354, 3355  
   Anglo-Scandinavian  
     circular impression 3365, 3366  
     construction 3261, 3391  
     cultural associations 3435  
     decorative techniques 3262, 3263–4, 3364  
     disposal of 3255–6  
     distribution, 16–22 Coppergate 3358–9, 3360  
     leather species 3266–7  
     lining 3365  
     metal fittings 3365  
     mouths of 3362, 3363  
     scabbard plates 3364–5  
     status 3416  
     summary 3365–6  
     suspension of 3363, 3364  
     swords 3390–1  
     types and quantities 3360–1  
   medieval 3366, 3367  
     construction 3257, 3261  
     decorative techniques 3262, 3263–4  
     disposal of 3255–6  
     leather species 3266–7  
     suspension of 3367, 3368, 3369

- scabbards (*contd*)
- by site
    - 5–7 Coppergate 3527
    - 16–22 Coppergate 3494–6
    - Coppergate watching brief 3513
    - 1–9 Micklegate 3424
    - 22 Piccadilly 3518
    - 12–18 Swinegate 3424
    - unprovenanced 3528–9
  - Scandinavians, evidence for 3280, 3428–30
  - Schleswig (Germany)
    - ball 3406
    - elliptical panels 3410
    - sheaths 3388, 3435
    - shoes 3291, 3296, 3314, 3431, 3432, 3433, 3434, 3435
    - slotted strips 3401
    - straps 3392, 3399
    - teeth marks 3265
  - scissors 3240
  - seams
    - sheaths and scabbards 3257, 3261–2
    - shoes 3257, 3258, 3259
    - straps 3259
  - seaxes 3390, 3415, 3416; *see also* sheaths
  - shears 3239–40
  - sheathers 3222, 3223, 3224
  - sheaths
    - Anglo-Saxon background 3354–5, 3527
    - Anglo-Scandinavian
      - blade forms 3390, 3391
      - catalogue: Coppergate 3496–8, 3499–500, 3528; Hungate 3528; Market Street 3528; Parliament Street 3527–8; Pavement 3527
      - conservation 3217, 3218
      - construction techniques 3261–2, 3265
      - cultural associations 3391, 3430, 3431, 3435
      - dating 3377
      - decoration 3263–4, 3377–9
      - disposal of 3255
      - distribution, 16–22 Coppergate 3356–7, 3360
      - leather species 3266–7
      - quantity and types 3369–70: seaxes 3379, 3380–5, 3391; Type A 3370–2; Type B 3373–6, 3377, 3378; Type C 3377, 3379
      - roughouts 3255
      - status 3416
    - medieval
      - catalogue: Bedern 3525; Bedern Foundry 3521; Coppergate 3498–9; Piccadilly 3518
      - construction techniques 3261–2
      - dating 3388
      - decoration 3263–4, 3386, 3387, 3388, 3389
      - leather species 3266–7
      - quantity and types 3385, 3387, 3388–9; Type D 3387; Type E 3386, 3387; Type F 3387, 3388
      - status 3416
      - suspension of 3389
    - York, from other locations in
      - 5–7 Coppergate 3422
      - 25–7 High Ousegate 3419
      - Hungate 3419
      - Low Petergate 3421
      - Market Street 3420
      - 1–9 Micklegate 3424
      - Parliament Street 3421, 3422
      - Skeldergate 3423
      - Swinegate 3424, 3425
  - sheepskin 3222, 3223, 3232, 3235, 3265–6, 3267
  - shield-makers *see* bucklers; *skjaldari*
  - shoe lining 3314
  - shoe-makers
    - documentary evidence 3222, 3223, 3227
    - maison dieu 3223
    - shop 3421
    - tools 3240, 3243, 3244
  - shoes
    - assemblage compared
      - 8th–9th century 3426–7
      - later 9th and 10th century 3427–8
    - catalogue
      - Bedern 3523–5
      - Bedern Foundry 3520–1
      - 16–22 Coppergate 3439–93
      - Coppergate watching brief 3508–13
      - 22 Piccadilly 3515–18
    - children's 3338–9
    - conservation 3214, 3217, 3219, 3220
    - construction methods 3256, 3257, 3258, 3259, 3430–1
      - parts 3276–7
      - seams 3268, 3269
      - sewing medium 3258–61
      - soles 3272, 3273, 3274
      - types: single-piece construction 3268, 3269; Type 1 turnshoe construction 3268, 3269, 3270; Type 2 turnshoe construction 3269, 3270–1; Type 3 turnshoe construction 3269, 3271; Type 4 turn-welted construction 3269, 3271–2; Type 5 welted construction 3269, 3272
    - cultural influences, Anglo-Scandinavian 3428–30, 3431–5
    - decoration 3340
      - cut-outs 3345–6
      - embroidery 3341, 3342–4
      - flesh side, use of 3345
      - impressed 3340, 3341
      - openwork 3346
      - scraped and incised 3345–6
      - thonging 3344, 3345
    - leather species 3265–6, 3267
    - quantification by style 3533–5
    - refurbishment and repair 3255, 3258, 3346–7, 3349
      - extent of 3349–50
      - incidence of 3350–1
      - types of: clump repairs 3347–8; margin repairs 3348; uppers repairs 3348–9
    - sizes 3336–40
    - status implied by 3417, 3424, 3428, 3429
    - styles 3274, *f*3274, 3312–13
      - and gender 3339–40
      - Style 1, single-piece 3275–7, 3278–81; distribution 3282
      - Style 2, low-cut slip-on with centre back seam 3281, 3282–6, 3287; dating and distribution 3287, 3288
      - Style 3, one-piece uppers joining with a side seam 3288, 3289–302
      - Style 4, one-piece ankle-shoes fastened with flaps and toggles 3302, 3303–10, 3311; distribution 3308
      - Style 5, one-piece shoe with flap and toggle fastening 3311, 3312
      - Style 6, ankle-shoe fastening at the front with integral laces 3313, 3314
      - Style 7, one-piece ankle-shoe and boot, with front flaps 3314, 3315–18, 3319, 3320–3
      - Style 8, front-fastening shoe and boot with one-piece uppers 3321–3, 3324–8
      - Style 9, side-lacing 3328, 3329–31

- Style 10, front-laced of two-piece construction 3331, 3332, 3333
- Style 11, buckle or latchet-fastened 3333–5
- miscellaneous 3312
- York, from other locations in
- Barbican Car Park 3424
  - Blake Street 3423
  - Coffee Yard 3423
  - 5–7 Coppergate 3422
  - 15 Davygate 3423
  - Feasegate 3418–19
  - Fossgate 3424
  - 25–7 High Ousegate 3419–20
  - Hungate 3419
  - King’s Square 3421
  - Low Petergate 3421
  - 23 Market Street 3421
  - 1–9 Micklegate 3423–4
  - Monkgate, County Hospital 3423
  - Parliament Street 3421–2, 3423, 3426
  - Pavement 3422, 3423
  - Petergate 3425, 3426
  - Piccadilly 3424, 3425
  - St Andrewgate/Spen Lane 3425
  - Skeldergate 3423, 3424, 3425
  - Swinegate 3424, 3425
  - Walmgate 3425
  - Yorkshire Museum lift building 3424
- see also* foot pathologies
- Shrewsbury (Shropshire), purse 3403
- silk *see* embroidery
- Skeldergate 3225, 3226
- 14, leather finds 3425
  - 23–28, Albion Wharf, leather finds 3424
  - 58–9
    - animal bones 3232
    - leather finds 3215
    - 64–74, archer’s bracer 3405
  - City Mills, leather finds 3318, 3319, 3422–3
- Skerne (E Riding), sword 3365
- skidders 3222, 3223, 3224, 3225
- skjaldari* 3226
- slaves 3280, 3433
- slickers (sleakers) 3235, 3236
- slings 3410–11, 3435, 3437
- slotted strips 3401, 3502–3
- Southampton (Hampshire)
- elliptical panel 3410
  - sheath 3388
  - shoes 3243
- species identification 3235, 3267
- Spen Lane, leather finds 3425
- spur leathers 3395, 3396, 3415, 3423
- Spurriergate 3224
- spurriers 3224, 3225
- squirrel skins 3234, 3415
- Staraja Ladoga (Russia), shoes 3278, 3312, 3434
- status 3415–16, 3424, 3428–9
- stitching *see* seams; thread
- Stockholm (Sweden), purse 3403
- Stockholm tar 3221, 3254
- strap-ends 3435
- strap-slides 3355, 3363, 3366, 3367, 3391
- straps
- cultural information 3417, 3435
  - leather species 3267
  - sewing threads 3259, 3260
- types 3392
- buckled 3400, 3401, 3424
  - decorated 3392, 3393, 3500, 3521
  - flat, plain 3396, 3397, 3500–1, 3513, 3519, 3522
  - flat, stitched 3396, 3397, 3501, 3513, 3519, 3522
  - folded 3397, 3398–9, 3501–2, 3519
  - with mounts 3393, 3394–5, 3500, 3521–2, 3525–6
  - scabbards/sheaths, associated with 3367, 3368, 3369, 3389
  - miscellaneous 3502, 3503
- see also* girdles
- street-names 3226–7
- stretcher frame 3228, 3229
- suspension fastenings 3401, 3402, 3503
- Sutton Hoo (Suffolk), shoes 3258, 3428
- Svendborg (Denmark)
- elliptical panel 3410, 3435
  - pouches 3403
  - sheaths/scabbards 3388, 3435
- Swinegate
- 12–18, leather finds 3294, 3301, 3314, 3319, 3321, 3424
  - 20–24, leather finds 3425
- swords 3390–1, 3416; *see also* scabbards
- Tanner Row 3224, 3225, 3226
- tanners 3222, 3223, 3224–5, 3226, 3436
- tanning
- environmental evidence 3230–1
  - osteological evidence 3231–5
  - physical evidence
    - 5–7 Coppergate 3227–8
    - 16–22 Coppergate 3229–30
    - 25–7 High Ousegate 3227–8, 3420
    - 6–8 Pavement 3228–9
- tawers 3222, 3223, 3229
- teeth marks 3262, 3264, 3265, 3435
- tennis 3406
- tent panel 3422
- Tesedale, William 3223
- Thames, River, scabbard 3365
- Thomas le cainturer 3223
- thongs
- associated with
    - ball 3406
    - elliptical panels 3411
    - scabbards and sheaths 3261–2
    - shoes 3256, 3258–9, 3270, 3271; Style 1 3275; Style 2 3281, 3288; Style 3 3288, 3291, 3296; Style 4 3303, 3307, 3309; Style 7 3319; Style 8 3326
    - bundle of 3405, 3504
    - thonged fragments 3413, 3419, 3506
  - see also* knotted thongs
- thread
- scabbards and sheaths 3261
  - shoes 3256, 3258–60, 3275, 3281, 3430
  - see also* embroidery
- Tiel-Koornmarkt (Netherlands), shoe 3312
- toggles, on shoes
- Style 4 3302, 3303–7, 3308, 3309, 3310–11
  - Style 5 3311, 3312
  - Style 8 3313, 3321, 3322–3, 3324–5, 3326
- tools *see* leatherworking tools
- Tower Street, 1–2
- animal bones 3232–3
  - leather finds 3422
- trade 3428, 3431, 3432, 3433



- La Trinidad Valencera*, wine bag 3413  
 Trondheim (Norway), sheaths 3391  
*Trox scaber* 3230, 3231
- Uhtredus sellator 3223
- vessel bases 3411, 3412, 3505
- Walmgate 3223, 3225, 3226  
   animal bones 3231, 3232, 3233  
   leather finds 3423, 3425
- Walmgate Bar, maison dieu near 3223
- washers 3411, 3412, 3424, 3505
- waste leather  
   dating 3203  
   distribution, 16–22 Coppergate 3247, 3248–53, 3254  
   types 3245, 3246–7  
     cobbling waste 3255  
     currying waste 3254, 3255  
     roughouts 3255  
     sheaths and scabbards 3255–6  
     untanned skin 3254  
     miscellaneous 3256
- York, from other locations in  
   Aldwark 3423  
   All Saints Church 3423  
   Blake Street 3423  
   Coffee Yard 3423  
   Feasegate 3419  
   Foss Islands Road 3423  
   Hungate 3419  
   King's Square 3423  
   Little Stonegate 3424  
   Low Petergate 3421  
   Market Street 3425  
   North Street 3425  
   Parliament Street 3422, 3423, 3425  
   Pavement 3422, 3423, 3425  
   Peasholme Green 3423
- Petergate 3425  
 Piccadilly 3425  
 St Andrewgate 3423, 3425  
 St George's Field 3423  
 St Saviourgate 3423  
 Skeldergate 3423, 3424  
 Swinegate 3424, 3425  
 Walmgate 3423, 3425
- water bag fragment 3413, 3414
- Waterford (Ireland)  
   elliptical panels 3410  
   scabbards 3367  
   sheaths 3372, 3380, 3387, 3388  
   shoes 3296
- wealth 3416–17
- Wedelspang Mose (Germany), shoe 3278
- whitawayers 3222
- Whithorn (Dumfries and Galloway)  
   discs 3412  
   teeth marks 3265
- Wickhambreux (Kent), strap-slide 3355
- willow 3355
- wills 3223, 3224
- Winchester Bible*, belt 3367
- Winchester (Hampshire)  
   leather finds 3426  
     balls 3405, 3406  
     shoes 3258, 3311, 3427, 3429  
     sling 3410  
   Old Minster frieze 3367, 3416
- Wolin (Poland)  
   last 3243  
   shoe 3278
- wool  
   in scabbards 3255–6, 3391  
   thread 3259, 3260, 3261, 3270
- Wroclaw (Poland), shoes 3312
- York Memorandum Book 3223
- Yorkshire Museum lift building, leather finds 3424