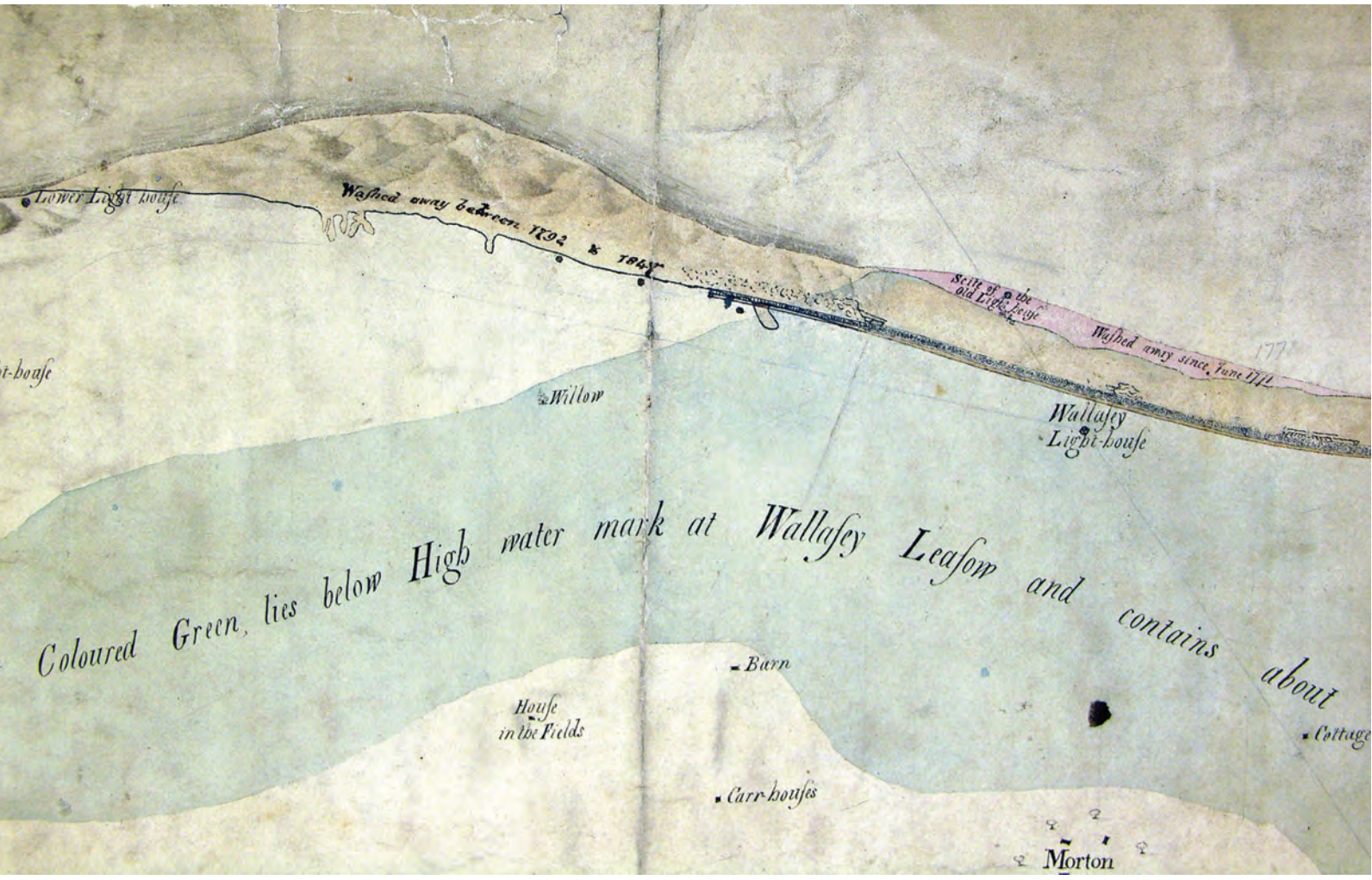
MEOLS

The Archaeology of the North Wirral Coast

Discoveries and observations in the 19th and 20th centuries, with a catalogue of collections

David Griffiths, Robert A. Philpott and Geoff Egan

Oxford University School of Archaeology: Monograph 68
Institute of Archaeology, University of Oxford



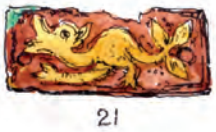
I, *above:* Extract from Eyes Chart (1792/1847) showing Dove Point at Meols (full image, Fig. 1.1.4)

III, *upper right*: Hume's Plate III, Roman Fibulae, from *Ancient Meols* (1863)

IV, *lower right*: later medieval objects (***1027***, ***851***, ***1640***) from *Ancient Meols*

II, *left*: St. Menas Ampulla (300) L 98mm

ROMAN FIBULÆ



21

22

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Foreword by Sir David Wilson

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2007

Online archive: http://ads.ahds.ac.uk/catalogue/resources.html?meols_sal_2007

Published by the
School of Archaeology
36 Beaumont Street, Oxford OX1 2PG

ISBN 978-1-905905-03-4

Designed by Production Line
Printed in Great Britain

Contents

List of Figures

List of Plates

Colour plates (endpapers)

Front:

Back:

List of Tables

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Foreword

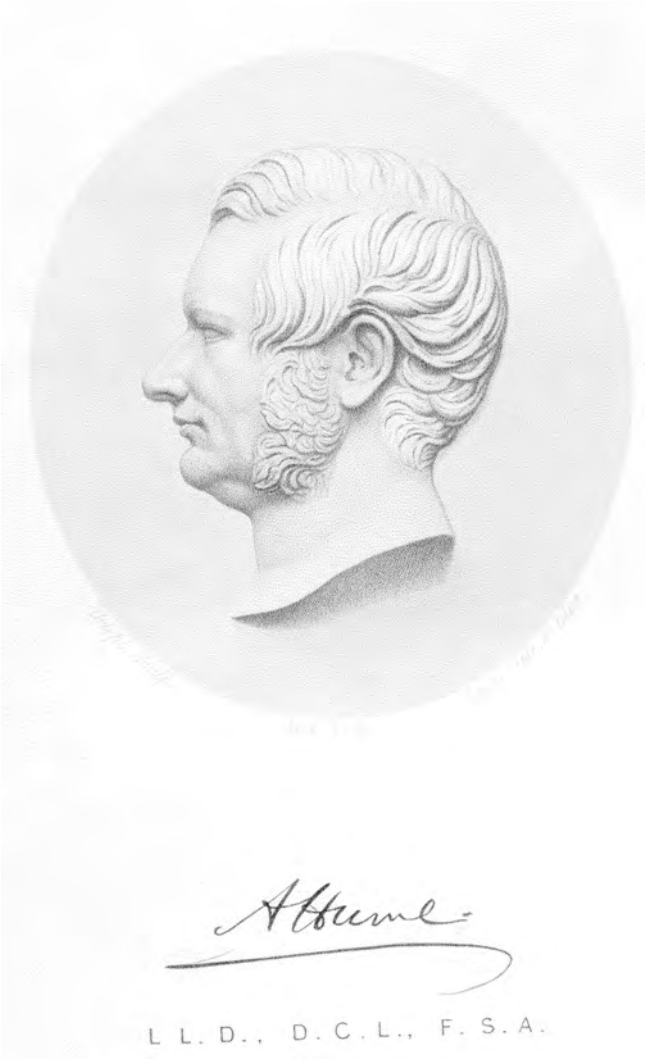
Meols has been known in any detail mostly to a few enthusiastic professional archaeologists for, although rich in finds, the site was last published in a now rare book, *Ancient Meols*, by the Reverend Abraham Hume, in 1863. He illustrated a large number of finds of all periods from the early Iron Age until the sixteenth century. These were washed out on to the beach and which were collected by himself, other antiquarians and local people. Hume was joined over the years by other collectors, but chiefly by Henry Ecroyd Smith, Curator of the Liverpool Museum, until at the end of the century the construction of new sea defences put an end to collecting and recording. The eroding sand-dunes not only produced an enormous body of small finds, but also traces of buildings (the records of which are now unfortunately lost) and stumps of trees from the old ground surface. The numerous artefacts include, as well as many mundane objects, exotic pieces of high quality.

The finds of these pioneers, and some of those found subsequently, have been acquired by several museums, but most are in the Grosvenor Museum, Chester, and National Museums Liverpool. While the collections and the site were never forgotten, it was left to David Griffiths, Robert Philpott, Geoff Egan, and their colleagues, to draw together the accumulated knowledge concerning the site, to provide this catalogue of more than 4000 artefacts and nearly 1000 coins and tokens, mostly of the medieval period, and place them in context. At the same time the opportunity has been taken to summarise the palaeogeographic evidence – the subject of much study for the past thirty years.

What then of ancient Meols itself? For the first time we are presented with a proper interpretation of the site as a beach market or port. The evidence for its Iron Age status is slight, although it is possible that Meols was the point of export for salt, copper and lead. The rich Roman material (mostly dating from the first and second century AD) leaves little room for doubt that Meols was an important port for both military purposes and for local and more wide-reaching trade in raw-materials and manufactured goods. In the post-Roman period it clearly functioned as a beach market of the type found at Llanbedrgoch, in Anglesey, Whithorn in Galloway, and Ronaldsway in the Isle of Man, which served the communities around the Irish Sea, including the monastic centres and V iking towns of Ireland. The place-name 'Meols' is of Norse origin (ON melr, 'sand-hills') and the finds show that it was relatively important in the late tenth and eleventh century at a time of Norse political and commercial activity in the Irish Sea region. In the later medieval period Meols was clearly in close touch with the anchorage east of Hilbre Island, closely related to the major centre of Chester, and became an important – if unofficial – beach market.

The compilers of this remarkable monograph are to be congratulated on a job well done, and one that will last as long as that of Abraham Hume.

Sir David Wilson



Revd Abraham Hume from *Ancient Meols*

'The Professional Archaeologist may discover some faults in [this] treatment of the numerous details, but he will find at the same time a large fund of new and authentic materials; and, if a more correct explanation can be given than is offered here, the writer will be one of the first and heartiest to welcome it.'

Abraham Hume (1814-1884)
Ancient Meols, or some account of the Antiquities found near Dove Point on the Sea-Coast of Cheshire (1863, 397-8)

Preface

This monograph was conceived because of a need to remedy the neglect and obscurity into which had fallen one of the 'Great Sites' of British Archaeology. Meols, which was better known in the 1860s than at any time since, is generally perceived as a 'lost' ancient settlement that is long gone, having been destroyed by the sea over a century ago. Less widely appreciated, however, is the extent of surviving evidence from Meols, principally the 5008 items catalogued here, including surviving and recorded objects. These are objects of metal, stone, pottery, glass, bone, wood, leather, and wool, and alongside them is a rich body of topographic, historical, and palaeogeographic evidence. When regarded less as a 'lost' site and more as a continually-evolving coastal landscape, the evidence from Meols becomes more readily intelligible as a long-term record of human presence and its adaptation to the opportunities and problems created by settlement in this peripheral, but strategic, corner of Britain. There remains much potential for further archaeological field investigation along the north Wirral coast. However, a conscious decision was taken here to synthesise, catalogue, and publish the existing stock of information from Meols before seeking to add to it substantively with further fieldwork or excavation. Hence this volume should be seen not as the final instalment of a long story beginning over 150 years ago, but as a further stage in an unfolding enquiry into a landscape. Future work and the possibility of elucidating new discoveries will inevitably re-shape and supersede any conclusions reached here (5.2), and we are entirely content to welcome this prospect.

Meols is also a great and overlooked story of Victorian antiquarianism. The first individual to realise fully the potential archaeological significance of Meols was Revd Abraham Hume (frontispiece), a Liverpool clergyman, who first became aware of the discoveries in 1846. Hume was soon joined by Henry Ecroyd Smith, who became the curator of Liverpool's first public museum, the precursor of the present-day National Museums Liverpool. The wealthy businessman Joseph Mayer also purchased objects from the site to add to his varied collection of antiquities, which were later given to Liverpool Museum. Hume's greatest contribution was his monograph *Ancient Meols*, published in 1863, which contained an illustrated account of the discoveries and has remained until now the only attempt at a comprehensive treatment of the Meols phenomenon. Hume's monograph was a classic of Victorian antiquarianism, and for its day it was modern, perceptive, scientific, and well-informed. However, it has its limitations as an account of Meols, most obviously because it was published 40 years before even the antiquarian phase of discoveries at Meols ended, and therefore pre-dates many hundreds of further discoveries and observations. In the 1870s, Charles Potter, a Liverpool customs official, began amassing a collection, and he was later joined as a devotee of Meols by Edward Cox. Interest in Meols began gradually to decline when Ecroyd Smith left Merseyside in 1875 and Hume died in 1884, but there was a brief resurgence in the early 1890s when Potter and Cox witnessed the exposure of a significant cluster of structural remains, including stone and wattle buildings, and collected a wealth of finds from in-situ deposits. Their deaths later in that decade, and the fact that the most productive areas of the eroding coastline were rendered inaccessible by the construction of sea defences, led to antiquarian interest largely dissipating by 1900. However, the information and collections resulting from 19th-century antiquarian activity have been supplemented throughout the 20th century by a less numerous, but no less interesting, trickle of finds.

An unknown number of individuals have contributed to the present stock of data, from wealthy and classically-educated Victorian antiquarians taking a deep and committed interest in the finds, and curious but less erudite citizens, to local fishermen and children searching along the shoreline. In more recent times, walkers, beachcombers, and metal-detectorists have all played a part. Structured archaeological observation under rigorous standards of recording has played a negligible role in producing this body of material. Except in the heyday of antiquarian activity along this coast in the 1850s to 1890s, discovery has been guided by little or no awareness of the inter-connectedness of these deposits as an archaeological phenomenon, except in the widest and most anecdotal terms, meaning that much of the material comes from chance finds accompanied by only the most limited locational or contextual information. For this reason it is impossible to reconstruct the whole assemblage, or even to assess accurately the original size of the various period groups represented.

The range of archaeological material from Meols covers almost the entire time-scale of the recognisable human presence in this region, from the mesolithic period through to the point where the objects discovered and the date of discovery become virtually contemporary in the 19th century. However, from the early Iron Age (*c.* 500 BC) until the 16th century AD, the Meols material is extraordinary in range and quantity in north-west England, although in terms of individual types and materials it is

broadly consistent with contemporary objects known singly or in smaller numbers from elsewhere in the region. Imported objects, such as fine metalwork items, accompanied by an extensive series of numismatic discoveries, put beyond doubt the influence of long-distance trading connections, which show a remarkable degree of consistency over the centuries. Observations of the exposed geological and archaeological layers, and descriptions of structures in the eroding sand-dunes add to the available information.

The finds from Meols have remained mostly in unpublished obscurity within museum collections for many decades, although much of the Liverpool collection came to grief as a result of wartime destruction. The pre-1900 volumes of local journals, principally the *Transactions of the Historic Society of Lancashire and Cheshire* (*THSLC*) are heavy with records of discoveries, commentary, and discussion. Cheshire County Record Office, Liverpool City Libraries, and the archives of the Mersey Docks and Harbour Board (held by National Museums Liverpool) contain invaluable resources for the medieval and post-medieval periods, in addition to antiquarian notes and records of the coastal changes of the 18th and 19th centuries. The museums hold in their own archives numerous notes and accession details on the objects. Several 20th-century studies of individual objects or groups of finds exist, some published in local journals, and more latterly others have been produced in unpublished postgraduate theses and dissertations. To these we can add palaeogeographic studies of the north Wirral coast, which have shown that parts of the strata observed by Hume and others survive today; and historical surveys, which have made some sense of the conundrum of why an apparently obscure coastal site produced such an extraordinary range of archaeological material.

Our aim here has been to put the information from Meols together in an integrated and comprehensive study. The principal element of this is the catalogue (grouped under 2, below). This is based on five museum collections (National Museums Liverpool; The Grosvenor Museum, Chester; The British Museum; Warrington Museum; and the Williamson Art Gallery and Museum, Wirral), together with a few Meols finds that remain in private hands. To these are added catalogue entries for those objects illustrated by the 19th-century antiquarians, but which have since disappeared: what qualifies these for inclusion is the substantive record provided by their illustration. Other finds, which were referred to in antiquarian publications but not illustrated, are mentioned here where relevant but have not been considered sufficiently well-documented to include in the catalogue.

It could perhaps have been less complicated task to have catalogued each of these collections separately, but the reasons why material ended up in its particular collection are explained largely by 19th and 20th century circumstances, and therefore are not the primary influence on our archaeological interpretation. Far more important is the need to consider the Meols material together in its typological and chronological groupings. Hence the decision was taken at the beginning of this research project to work with one sequence of catalogue entries and not to divide these by collection. This task has been made possible by two essential factors. Firstly, the Grosvenor Museum, Chester, Warrington Museum, and the Williamson Art Gallery and Museum, Wirral, have generously permitted long-term loans of their collections of Meols material to National Museums Liverpool, where they have been recorded and studied together since 1999. The British Museum has allowed sufficient access for its collection to be recorded, and this information has been combined with that from the other collections. Secondly, computer technology has enabled the construction of a database including descriptions as well as a full illustrative record of every extant find in the form of digital scans and photographs. It has therefore been possible to search and sort the material by type, size, date, and collection; offering a far more flexible and versatile archive to be created than has been possible for earlier generations of scholars. A further essential advance has been the development of low-cost high-quality digital imagery for recording this very large collection.

The Meols finds in almost all individual cases can be linked with accession registers or other museum records. Further confidence in attribution to Meols is conferred by an illustration or mention in one of the numerous antiquarian notes and publications about the site, or an attached label stating Meols, The Ancient and/or Submarine Forest, The Cheshire Shore, Hoylake, or Leasowe (all of which are taken here to be acceptable definitions of Meols). The lack of more detailed information presents problems in providing a secure date or detailed location for the discoveries. A number of objects have been excluded from this study despite their apparent association with the Meols collections, because accession records or labels leave doubt as to whether they are from the area covered by this study (although a group of coins that circumstantial evidence suggests are from Meols are included as a supplementary list to the coin catalogue (S6000 – S6051).

All finds catalogued here are known or at least reported to have been discovered at Meols, and their association with Meols (before any judgement is made about the circumstances and date of their deposit) is the basic qualification for inclusion. The vast majority of the material is uncontroversial. There remain, however, points of debate about whether some individual items count as genuine ancient losses or should perhaps be seen as later introductions of one form or another. This in particular affects the 'exotic' later prehistoric and post-Roman Mediterranean coins (2.24), which seem to some commentators to be curious and perhaps perturbing discoveries to have resulted from genuine ancient losses in the remote extremity of the Wirral coast. Whilst there is overwhelming evidence that the

Meols story as a whole is an unassailably genuine archaeological phenomenon, there is nevertheless room for varying interpretations and views about the date and means by which individual items in the assemblage arrived at Meols. We have not sought to impose a single view or put an embargo upon dissonance in interpretation about any aspect of the material: rather we have sought to cultivate an open-mindedness that recognises that any conclusions drawn now will almost inevitably be superseded or modified by further study. Far more important to us than resolving permanently some of the finer points of argument here is the fact that the material is now published and presented for further thought and discussion. As Hume himself was only too aware, the steady accumulation of knowledge meant that in time his work would require revision (Hume 1863, 397–8). Inevitably some of Hume's identifications and dating of objects have been superseded, though to a remarkable extent his conclusions have stood the test of time and modern scholarship. The quotation from Abraham Hume's *Ancient Meols* (frontispiece) is one which we readily accord, and it is perhaps the excerpt from Hume's work that has the greatest resonance for us.

Until now, the scope and quantity of the Meols material has all but defeated attempts to synthesise and publish it. An overriding sense of particularism, either for type or period, pervades the existing literature. In presenting the first attempt at a comprehensive study of Meols since 1863, the three principal authors of this monograph recognise that the result will be to invite far more questions than to provide answers about this enigmatic body of material. Readers must make of this what they will, but in doing so will have to accept that there are some case-studies in archaeology that do not easily fit prescribed and predictable categories of evidence, but are important and worth studying and publishing nonetheless. Exhaustive searches of archives and repeated attempts to raise public awareness about Meols have been made during the compilation of this monograph. Nevertheless, additional material may yet come to light, in private hands from attics or garages, or even possibly from museum stores around the country – ironically perhaps prompted by renewed interest in Meols as a result of this publication. Further researches and analyses will inevitably cast new light on the finds, and on the Meols landscape itself, perhaps wholly or partly superseding the conclusions presented here. Whatever the fate of our present interpretations and conclusions in the future, one significant advance will remain: that the large, disparate, and unwieldy assemblage of material and information from this important location has been collated, studied together, catalogued, and published. In this, perhaps, we may claim to be the successors of Hume.

David Griffiths, Robert Philpott and Geoff Egan

Acknowledgements

The Meols Documentation and Research Project began in 1999. National Museums Liverpool (NML) has sponsored the project, and provided space, facilities, and equipment throughout. Many NML staff have been involved, but we wish to record our thanks in particular to Janet Dugdale, Keeper of the Museum of Liverpool, for her invaluable support.

This publication has been made possible by Oxford University School of Archaeology, and we wish to record our immense gratitude to Professor Sir Barry Cunliffe, Chair of the Publications Committee and Editor-in-Chief of this Monograph Series, for his patience and support in this drawn-out but ultimately fruitful endeavour.

Long-term loans of Meols collections to National Museums Liverpool were secured from the Grosvenor Museum, Chester, Warrington Museum, and the Williamson Art Gallery and Museum, Wirral. These lending institutions are warmly thanked for their co-operation, and in particular the following curators who were in post at the time of our research visits for their assistance and support: Dan Robinson and Moya Watson of the Grosvenor Museum; Sally Coleman and Colin Taylor of Warrington Museum; James Robinson of British Museum and Colin Simpson of William Art Gallery and Museum, Birkenhead. The prior contribution of Glenys Lloyd-Morgan, archaeological assistant at the Grosvenor Museum until 1993, should also be recorded – her long-standing determination to see Meols published has finally been honoured.

The project received essential external funding from the following:

The British Academy provided a small research grant in 1999 as a means for drawing and recording some of the objects.

A Millennium Commission Sharing Skills Fellowship was secured to enable Geoff Egan to spend significant periods of time in 2001–03 on secondment from the Museum of London, working in NML on the Meols collections as a means of achieving the awards' brief.

Wirral Borough Council generously supported the research, and we wish to record our thanks in particular to Howard Mortimer, Head of Special Initiatives.

Other grants for research, archiving, and publication have been made to the project by the Society of Antiquaries of London, the P. H. Holt Charitable Trust, the Aurelius Trust, the Roman Research Trust, English Heritage, Merseyside Archaeological Society, the Robert Kiln Charitable Trust, the Historic Society of Lancashire and Cheshire, and the Marc Fitch Fund.

Acknowledgements are also due to many individuals who provided help, information, advice, and support in researching and producing this monograph.

We are grateful to Justine Bayley for providing the opportunity for scientific analysis of Meols material at English Heritage Centre for Archaeology (formerly the Ancient Monuments Laboratory), which was carried out by Matthew Ponting and is now published as Appendix 2. Mark Blackburn, Martin Allen, and Adi Popescu of the Fitzwilliam Museum, Cambridge, gave essential and extensive commentaries and advice on the research and presentation of the coins. Roberta Gilchrist and John Cherry gave essential support as referees in funding applications. We are also most grateful to Sir David Wilson, former Director of the British Museum and a former trustee of National Museums and Galleries on Merseyside, for his support of archaeology in north-west England, for advocating the cause of a new inquiry into Meols over many years, and for writing the foreword here.

A large number of people have been involved in the research process. Liz Callander and Laurence Hayes, formerly archaeological assistants at NML, undertook the cataloguing and scanning, respectively, of the finds. Most of the finds were drawn by Nick Griffiths and Mark Faulkner, with the exception of drawings from Janet Axworthy's pottery studies dating back to the 1970s, which were the work of R. Ainslie and the late Peter Alebon. (The names of the individuals who compiled the illustrations in the 19th century publications reproduced here are largely unknown or uncertain). Jeff Speakman, Clare Ahmad, Sarah Pevely and Helen Jones prepared the digital archive and the plates of illustrations. Christine Longworth gave assistance with collections enquiries at NML, and Alan Bowden and Geoff Tresise also of NML, offered essential geological commentaries on the stone objects. We are also grateful to Gary Brown, formerly Assistant Curator Antiquities Section, NML, for help with coin photography in Liverpool Museum, Susan Barker of the Conservation Division, NML, who undertook X-radiography of the ironwork, Nick Herepath, formerly Finds Liaison Officer for the PAS, and Frances McIntosh, the current post-holder, who contributed invaluable information on recent local finds. Further institutional support within NML at the start of the project was provided by Edmund Southworth, the former Curator of the Antiquities Department. Susan Nicholson gave advice on sources for the collectors and for providing a large amount of

information on the collectors and the collections. Gill Chitty and Margaret W arhurst undertook valuable work on the Meols finds in the 1970s, which has helped considerably towards the current publication. Robert Saner's work on the Meols collections for a 1997 Birmingham University MPhil thesis was also an important stimulus to the work presented here. Danny Parker helped with the early stages of the preparation of the digital archive during an Oxford University professional archaeology placement at NML. Brian Clarke's help with reformulating the catalogue was essential. Ann Kelsall copyedited the entire text and catalogue, revealing countless errors and lapses in style, which have now (mostly at least) been corrected. Julian D. Richards and Catherine Hardman of the Archaeology Data Service, Y ork, provided essential help and advice in constructing the digital archive.

We also wish to thank all those who participated in the Meols Research Seminars at NML on 24 September 2001 and 15 May 2006, for their ideas and stimulating discussion, together with audiences at numerous conferences, lectures, and seminars elsewhere in the UK and beyond who have heard versions of the Meols story from all three principal authors over the years.

Individuals' personal thanks and gratitude are recorded as follows:

DG: to James Graham-Campbell, Barry Ager, Arthur MacGregor, Dai Morgan Evans, Helen Geake, Gabor Thomas, Mark Redknap, Colleen Batey , Richard Bailey, Raghnall Ó Floinn, Stephen Harrison and Susan Youngs for essential advice on the early medieval material and information on many parallels, and to Sally Coupar of the Hunterian Museum, Glasgow, for providing the photograph of the Gigha balance-scale bird mount (Fig. 2.4.2). The Director of Oxford University Department for Continuing Education, Dr Geoffrey Thomas, and the Director of Public Programmes within the Department, Philip Healy, have given consistent support and have shown great tolerance and generosity of spirit with regard to the frequent absences in Liverpool of this member of their hard-pressed lecturing staff.

RAP: to Ron Cowell for his expert and willing assistance as ever with questions of sea-level, palaeoenvironment and other matters, and to long-suffering colleague Jeff Speakman for his patient work on the scans. Also to the numerous residents of W irral and neighbouring areas for their unfailing interest in the project which has been the response at public talks in the region over the past seven years. David Griffiths, Geoff Egan, and Nick Griffiths have engaged in countless discussions ranging from the minutiae of individual finds to much wider questions over the significance of this enigmatic series of sites at Meols. Janet Dugdale has proved a staunch supporter of the project at a time when wider financial and political constraints threatened to stifle it. Grateful thanks are due to the following for answering specific questions: Barry Ager, for his comments on the late Roman belt plate and for additional references; Nick Griffiths for drawing my attention to the Westbury finds; and the staff at the Museum of London, Nikola Burdon, Hazel Forsyth, Jenny Hall, and John Clark, for information on fish hooks and weights.

GE: first, to David Griffiths and Rob Philpott for inviting me to take part in assessing the Meols finds; to Martin Pegler, Senior Curator of Firearms, Royal Armouries, Leeds, for information on naval shot, powder flask lids, and musket butt-plates; to the Millennium Commission's Sharing Skills scheme for museum work, a generous grant from which, for my secondment to NML, made possible the detailed appraisal work that was a necessary preliminary to the decision to go ahead with a major publication project. The contributions of the following on points of detail relating to individual objects are gratefully acknowledged in furthering this work: John Allan (Royal Albert Memorial Museum Exeter), John Clark (Museum of London), Andrew Elkerton of the Mary Rose Trust, Giles Guthrie (Maidstone Museum), Ron Homer (Pewter Society), Adrian Jarvis (formerly NML), Tim Padley (Tullie House Museum, Carlisle), Alyson Pollard (NML), Mark Redknap (National Museum of Wales), the late Brian Spencer (formerly Museum of London), Robert van Ven (Archivist, City of Diest), and Leander W olstenholme (formerly NML).

Finally, we wish to thank our families and friends for their forbearance during the long period when Meols was always in competition for the free time that we had to available to spend with them.

1. The Discovery of Meols

1.1 Introduction

David Griffiths and Robert Philpott

Meols: defining the place and its archaeological significance

Meols (pronounced *Mells*) is located on the north coast of the Wirral Peninsula, north-west England (Fig. 1.1.1). The place-name Meols derives from *Melr*, an Old Norse topographical name, meaning 'sand-hills' or 'sand-dunes' (Dodgson 1972, 296–7). The north Wirral coast is 12.5km long from its north-western corner (SJ 20 88) to its north-eastern corner (SJ 30 94). The sandy coastal hinterland is occupied by four townships, from west to east: Little Meols, Hoose, Great Meols, and Wallasey. 'Meols' is a general term that refers to the historic townships of Little and Great Meols (with the narrow township of Hoose between), representing the coastal hinterland along the north-western stretch of the Wirral shore. Meols is therefore not so much a clearly-defined 'site' as a coastal landscape, encompassing maritime, inter-tidal, and terrestrial elements.

This study is concerned with the archaeology of the western two-thirds of the mainland Wirral shore-line, which has suffered significant coastal change and erosion in the past 200 years. The archaeological discoveries resulting from this process, and detailed in this volume, have occurred between SJ 22 90 and SJ 26 92, a distance of approximately 8km. This is an area that has produced archaeological evidence spanning almost the entire human timescale from the mesolithic to post-medieval periods. Influential in the local archaeological background, but otherwise excluded from detailed coverage in this study (because they deserve full-scale treatment in their own right), are the neighbouring Hilbre Islands and the low sandstone dome or reef at the north-west corner of Wirral known as the Red Rocks, both of which are of substantial archaeological interest and potential. These differ somewhat from Meols in that they are composed of harder upstanding sandstone surrounded by water at high tide, and hence are regarded as offshore features (3.3).

The Wirral Peninsula is defined by two major estuaries, to the north-east by the Mersey and to the south-west by the Dee. Prior to 1974, all of Wirral lay within the historic county of Cheshire, the entire peninsula north of Chester having formed one of the Cheshire Hundreds first recorded as such in the

Fig. 1.1.1: Meols, aerial photograph from east showing position of the former Dove Point; Leasowe Embankment in foreground to lower right © NML

Fig. 1.1.2: Meols, Location Map

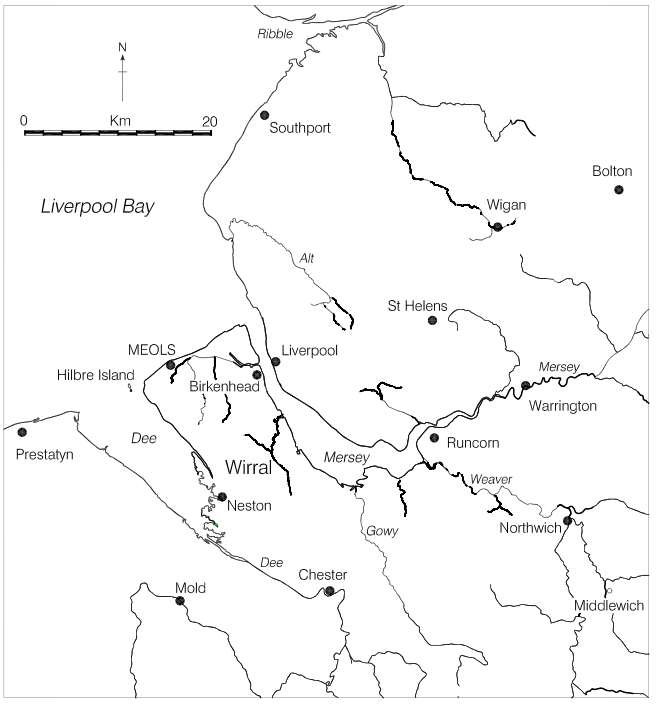


Fig. 1.1.3: Meols, Detailed Map

Domesday Book of 1086. The north shore of Wirral has therefore historically been Cheshire's only genuine sea-coast, a status that in the past has often been foremost in the minds of those writing about its history and antiquities. The northern coastal district of Wirral was for many centuries a remote and thinly populated area, although the ebb and flow of maritime trade and warfare was always an important influence connecting it to the wider world. Prior to its suburbanisation in the later 19th and 20th centuries, the coastal strip was largely open sandy commons, backed by low-lying and unprepossessing agricultural land. Its rural community was dependent largely on farming and fishing, and lived in small scattered hamlets. The construction in 1866 of a railway to Birkenhead helped to effect a rapid transformation of its population and economy in the ensuing decades. North Wirral has become a busy and crowded commuter corridor where later 19th- and 20th-century development has sprawled far beyond the extent of previous settlement. Clusters of modern housing have enveloped the historic village cores, amid stretches of low-lying pasture, smallholdings, caravan parks, light industry, and the truncated remains of what was formerly an extensive coastal dune system.

The northern shore of Wirral faces across Liverpool Bay towards the open waters of the Irish Sea. Its seaward outlook is framed distantly to the east by the flat dunescape of the Sefton coast stretching northwards from the Mersey Estuary, and to the west by the mouth of the Dee Estuary, behind which rises the steeper topography of north Wales. Along much of this low-lying and fragile coastline, inshore tidal channels, sheltered from the open waters of the Irish Sea by extensive offshore sandbanks, provide a permanent anchorage which at high tide allows easy and direct access to deeper water. In the inter-tidal zone, the channels and sandbanks, which are fully covered at high tide, are in a constant state of gradual movement, erosion, and re-deposition. Liverpool Bay is shallow and exposed, with a particularly large tidal range. A spring high tide can rise and fall as much as 10.5m in one cycle. Along the shores of Liverpool Bay and in the two major estuaries, the sea appears and disappears twice a day, leaving miles of mud and sandbanks exposed at low tide. A shifting and changing network of deeper channels, which remain full, or partly full, of water at low tide, provides the means of navigation.

The north Wirral coast has undergone dramatic changes in the past two centuries, and the present coastline is entirely a product of coastal retreat, and subsequent stabilisation through the construction of stone and concrete sea defences to prevent erosion and tidal flooding of low-lying inland areas, which had become a serious problem by the 1820s. Up to 500m of land has been lost to the sea since the late 18th century. The causes of this increased rate of coastal retreat are complex, but the long-term equilibrium of coastal erosion and deposition in Liverpool Bay must have been affected seriously, even if indirectly, by two parallel developments, beginning in the early 18th century, which dramatically altered the natural topography of the two estuaries. The first of these was the progressive hardening and narrowing of the shores of the Mersey at Liverpool with dock walls, wharves and breakwaters, which had the effect of increasing the speed of tidal flow.

The process had begun in 1710–15 with the construction of the first enclosed commercial wet dock in England, and was thereafter joined by the practice of dredging and training the deep water approaches in Liverpool Bay . Furthermore, in 1735–6, shortly after the opening of Liverpool's new dock, and prompted in part by the dramatic commercial success that it brought about, the commissioners and merchants of the rival port of Chester attempted to arrest the long-term decline and silting of their ancient harbour by paying for the excavation of the 'New Cut'; a re-routed course for the River Dee below Chester, which was meant to increase the draught of vessels visiting the city. Ironically, this was almost entirely counter-productive, and in destabilising the tidal equilibrium of the Dee Estuary the silting process was exacerbated, and Chester became all but inaccessible to seagoing vessels within a few decades (Ward 1996; Herson 1996). Millions of tonnes of sand and silt, most of which must have been eroded and transported by the tide from more exposed and vulnerable coastlines nearby , were deposited in the upper estuary as a result of this ill-conceived scheme, leading to much of it becoming dry land over the following century.

Charts and maps of the north W irral coast compiled in the 17th and 18th centuries show a pronounced northward bulge or promontory at Meols, known as 'Dove Point' (Fig. 1.1.4). This was a mass of sand-dunes on a promontory shaped by converging patterns of long-shore drift, and a triangular tidal sandbank extended further to seaward of it, known as the 'Dove Spit', separating two deep-water channels, Hoyle Lake to the west, and Horse or Rock Channel, which led towards Liverpool, to the east. Dove Point was entirely a 'soft' landform, lacking the harder geological structure created by the local red sandstone that was more resistant to erosion, and was composed merely of layers of silt, peat, clay and loose windblown sand. Increased and changed patterns of coastal erosion meant that Dove Point gradually disappeared as a landscape feature between 1800 and 1900 (a process that can be traced in contemporary maps and charts (3.2).

The place-name 'Dove' is possibly a derivation from the Celtic '*Dubh-*' (black), which may refer to the blackish layers of peat and ancient tree stumps (Figs. 1.1.5, 1.1.6) which protruded from the sand and gave this area its alternative local name the 'Ancient Forest', or the 'Submerged Forest' (the tree stumps themselves were known as the 'Meols Stocks'). However, an alternative derivation for the name – from John Dove, a landowner in 1555 – was put forward by the Cheshire place-name scholar J. McN. Dodgson (1972, 299). The forest and peat beds were nevertheless a significant topographic

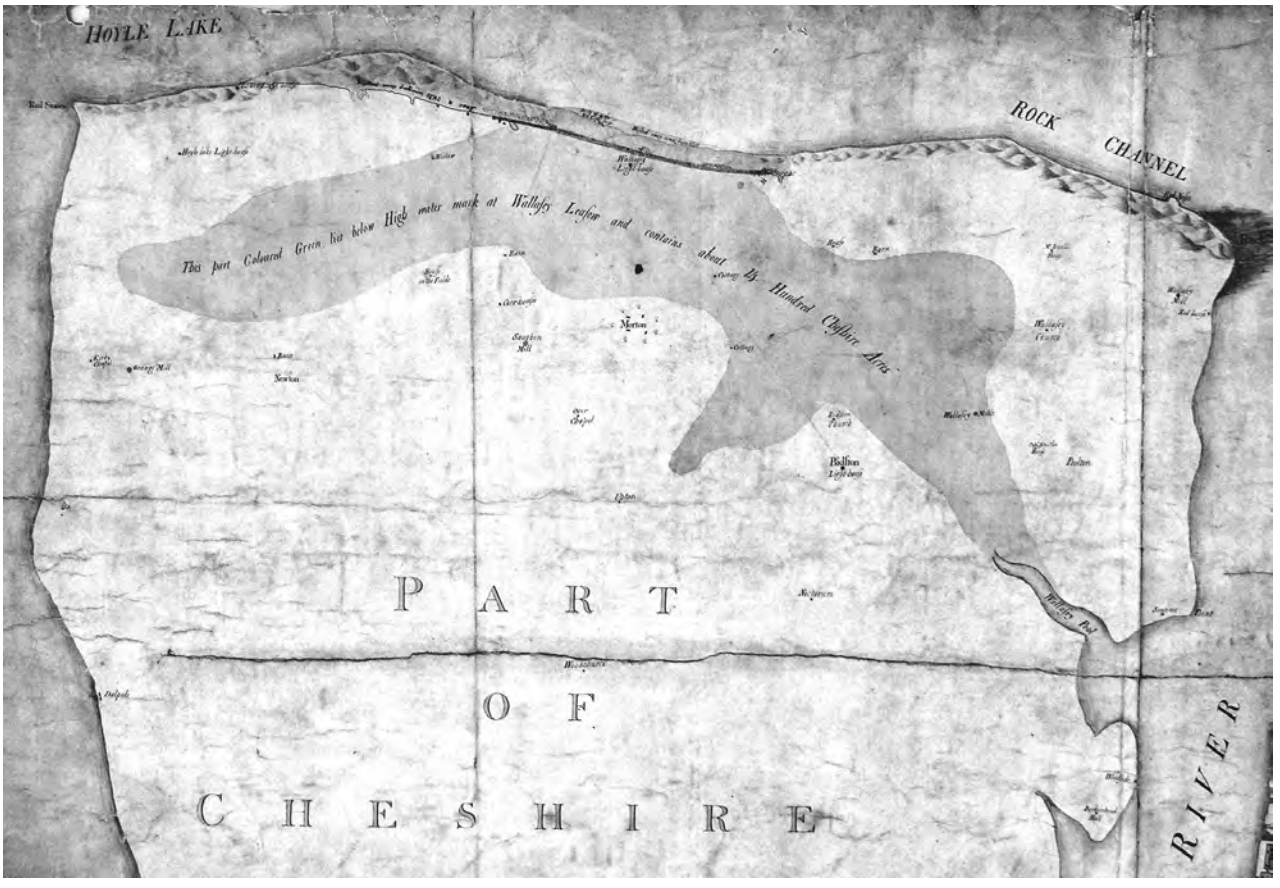


Fig. 1.1.4: Chart of the Wirral coast at Meols by Charles Eyes, 1792, showing Dove Point, with later annotations showing the land lost to the sea by 1847 © NML. (detail I)

Fig. 1.1.5: 'Submerged Forest, Meols' c. 1886, photograph taken looking SW towards Dove Point, with 'Sandhey' behind, by permission of the Historic Society of Lancashire and Cheshire

Fig. 1.1.6: The Forest photographed from a near-identical position in 1913 © NML

feature. Partly due to their gradual erosion and disappearance during the years of coastal retreat, but also due to increased deposition of sand and silt on the foreshore in recent times, only very limited traces of the forest are visible today. However, throughout the 19th and early 20th centuries the tree stumps along the shore were numerous and, in many cases, of impressive size and preservation, providing local inhabitants with the dominant identifying feature of this stretch of coastline.

As Dove Point was eaten away by the sea, with the line of the coast straightening and retreating southwards towards its current position, widespread archaeological deposits were exposed. Far from being a smooth or even process, this happened in an unpredictable and piecemeal way, driven forward suddenly by storms, or stabilised for significant periods by quiet weather. It was this haphazard and random manner of exposure, and the unfolding interest and response that it provoked on the part of generations of self-motivated individuals – local people, antiquarians, and curiosity-hunters – that has shaped the story of discovery presented here. From at least 1814 (which is the earliest documented instance, but almost certainly not the first), archaeological finds have been made in considerable quantity along the north Wirral shoreline and the inter-tidal zone, which stretches up to 500m offshore at low tide. The broad spread of mud and sand between the low and high tide marks was extensively characterised by the remains of the 'Ancient Forest', peat beds, and disintegrating and exposed archaeological layers in various states of erosion and degradation. Amongst the blackened tree stumps, in the hollows and pools left by the tide, objects of flint, metal, and, less often, pottery were frequently found, especially by those with an experienced eye. The sand-dunes along the high-water mark, which were regularly undermined and eaten away by the sea, revealed buried archaeological layers as they shifted and collapsed.

Antiquarian interest

The antiquarian story at Meols began in the second decade of the 19th century, but there is no clear historical point when Meols was 'discovered' as an archaeological phenomenon. Coastal erosion must have exposed ancient archaeological layers on a sporadic basis well before then (1.2). Local knowledge and awareness of the exposed stumps of the 'Ancient Forest' predates any antiquarian involvement (the forest was known as a valuable source of wood for fuel). Local people were probably picking up artefacts in and around the ancient tree stumps for decades before any systematic attempt was made to collect and understand them for their archaeological interest. The earliest known collection was that of a Liverpool merchant, Philip Barrington Ainslie. Ainslie had been shown finds that had been made in 1817, by 'a fisherman called Buchanan, who had found them at an unusually low tide near the remains of the ancient forest'; Ainslie had himself visited the shore on many occasions and had collected other objects (Hume 1863, 49).

Although not the first known collector, the prime mover in recognising the archaeological significance of Meols, and bringing the discoveries to wider academic attention, was the Revd Canon Abraham Hume, an Irishman originally from Hillsborough, Co. Down, and a graduate in classics and mathematics of Trinity College Dublin. In 1844 Hume had been ordained as an Anglican priest in the Chester Diocese and had taken the living of All Saints, Vauxhall, a poor parish of inner Liverpool. A bachelor, and devoted writer of tracts and pamphlets, he already possessed an erudite interest in the classics, and antiquities of the ancient and medieval worlds. Hume was shown a group of ancient finds on a visit to Hoylake in 1846. Mrs Longueville, wife of the Curate of West Kirby, and Hume's host that afternoon, identified them as objects found along the nearby shore and invited Hume's interest. Hume was intrigued:

> 'In the spring of 1846 I happened to be in the parsonage of Hoylake, the village which is situated in the township of Hoose, near the mouth of the Dee, between Great and Little Meols. Observing on the chimneypiece a Roman fibula, a little hammer-shaped object like the tongue of a hand-bell and other articles, I borrowed them for the purpose of exhibiting them at the Literary and Philosophical Society of Liverpool… It appeared that these and numerous other metallic articles had been found there by an old man in the village. He had resided there since 1810; and since about 1828, he had amused himself at intervals with picking up curious pieces of metal when the tide had retired. He did not attach much importance to them, and the best of them were given to children as toys; as the fibula and other objects had been which first arrested my attention' (Hume 1863, 47).

Hume recognised the archaeological importance of the finds and contacted Albert Way, Honorary Secretary of the Archaeological Institute in London, who encouraged him to make the objects more widely known. Hume exhibited the objects at the Congress of the Archaeological Institute at York in July 1846. Hume's network of contacts in the antiquarian world, which included fellow founders of the Historic Society of Lancashire and Cheshire, such as Joseph Mayer and Henry Pidgeon (Fig. 1.1.7), brought the site to attention of a wider audience

Hume's writings on theology, law, and education (which were numerous) attracted the rare honour of doctorates from the universities of Glasgow (LLD, 1844), Cambridge (LLD, 1856) and Oxford (DCL, 1857). He was described in a memoir shortly after his death as 'a man of superior education and classical attainments', 'who possessed a keen sense of humour and a store of ready wit which always made him a welcome guest at parties and public meetings'

(Morley 1887). Hume's learned and evidently charismatic personality was well suited to the task of raising awareness of his ideas and discoveries amongst the mid-V ictorian scientific and literary luminaries of Liverpool and London. Over the following decade, as Hume continued to collect material and simultaneously to publicise the discoveries, it seems that he gained in respect and prestige amongst his contemporaries. The archaeological discoveries made at Meols became something of a minor *cause celèbre* in antiquarian circles in the 1850s and 1860s, thereafter providing a regular theme amongst the meetings and publications of local antiquarian and historical societies. There are hints in some contemporary biographical material that Hume was regarded by some as guilty of undue self-promotion[1], but with the exception of the vitriolic attacks mounted upon him by Joseph Boult in 1865 (described below) almost no sense of more widely-held scepticism or doubt (at least that has survived in written form) seems to have clouded his observations about Meols, perhaps surprisingly for those times of renowned academic and theological disputes. A mark of his success came when the Archaeological Institute of Great Britain and Ireland held its annual visit at Chester in July 1857. An exhibition of objects from Meols was held at the King's School, and Hume gave an account of his discoveries (Anon 1864b, 251–2).

Fig. 1.1.7: Abraham Hume, Henry Pidgeon and Joseph Mayer; portrait photograph marking the founding meeting of the Historic Society of Lancashire and Cheshire, 1848, by permission of the Society

As public awareness of Meols grew , the phenomenon attracted the interest of other commentators, collectors, and curiosity-seekers. Following Hume' s initiative, a number of new individuals began to visit the shoreline, either to search for material themselves or to make contacts amongst the local farmers and fishermen, who were quick to seize the opportunity to make small amounts of additional income from the selling of finds. Some local inhabitants became expert at finding the most productive locations: 'a young man who is deaf and dumb having been amongst the most successful' (Hume 1863, 49). Hume also began to track down some of the unknown number of collectors who had already taken material from the site. There were various rumours and false leads: a Dr Traill of Edinburgh[2] informed him that a large number of 'curious articles' had been found on Hoyle Bank (the offshore sand bar near Meols), but Hume's further enquiries on this matter proved unproductive. In 1859 Hume visited Ainslie, who was by then resident in Guildford, Surrey, and sketched almost 100 objects, although other parts of his collection had already been dispersed as gifts [3]. The wealthy and well-known collector Joseph Mayer visited the shore on occasions, making contact with local people and amassing a collection of 1000 pieces (Hume 1863, 50).

Hume published a range of finds and an account of the discoveries in 1847 (Hume 1847a, b, c). He developed a particular interest in the abundant medieval dress fittings from the site and conducted extensive research into their dating and function, studying church monuments, medieval illustrations, and documents for comparanda, and publishing his conclusions in a long article (Hume 1862) in the new series of the society that Hume himself had recently co-founded, *Transactions of the Historic Society of Lancashire and Cheshire*[4]. In 1863 he published his single most important work on the discoveries, entitled *Ancient Meols, or some account of the Antiquities found near Dove Point on the Sea-Coast of Cheshire,* 411 pages long, and illustrated with 32 lithographs, which depicted 350 of the finds. Hume dedicated the book to the president and members of the Historic Society of Lancashire and Cheshire. During the preparation of this work he borrowed the collections of Mayer , Ecroyd Smith, and Mrs Longueville for extended periods, and through his contacts he was able to draw upon the expertise of great scholars of the day, such as Edward Hawkins of the British Museum, John Y onge Akerman, Charles Roach Smith, and Thomas W right (Hume 1863, vi). Today the book remains fundamental for the study of the artefacts from Meols. Hume set out not simply to place on record the finds from Meols, but also to put the objects in some historical and chronological context, with detailed discussions of their function, classification, parallels, and dating evidence. His erudition and eclectic interests were brought to bear

in this volume, which was an important step in identification and dating of the artefacts from Meols. Comparison with the extant objects shows the high quality of many of the illustrations, which gives some measure of confidence in the depiction of items that no longer survive. In the absence of an established set of conventions of archaeological illustration, objects were occasionally less than convincingly rendered, particularly the more three-dimensional objects, while some of the restored portions of incomplete objects were fanciful (e.g. the Jew's harp on pl. XXII, 8 and the pottery vessel on pl. XXXI, 5). Hume's descriptions supplement the illustrations. However, these are minor criticisms of what is a remarkable work of scholarship for its day[5].

In *Ancient Meols*, Hume acknowledged the contribution of Henry Ecroyd Smith, who had arrived in Liverpool in 1855 and became first keeper of the new Public Museum. Some sections of the text of Hume's monograph were written by Ecroyd Smith. His perceptive comments complemented the observations of Hume in an understanding of the stratigraphy of the shore. Ecroyd Smith took a keen interest in the site and acquired many objects in person, building up what was then the largest single collection, estimated in 1863 at 1100 pieces out of the total of over 3000 brought to light by that date (Hume 1863, 50–1). Ecroyd Smith also seems to have taken a greater interest in the detail of the coastal topography of Meols, perhaps beginning to see it more in terms of what today would be understood as a multi-period archaeological landscape, rather than a mythical or inexplicable Atlantis – a popular misconception of the time that both Ecroyd Smith and Hume sought to counter. At the height of antiquarian interest in Meols in the early to mid-1860s, Ecroyd Smith followed Hume's lead in attempting to garner nationwide publicity for the finds by publishing notes on selected objects of particular interest in London-based reviews such as *The Reliquary* and *The Gentleman's Magazine and Historical Review*, but his most sustained contribution was in his regular bulletins on the 'Produce of the Cheshire Shore' in the form of short updates, discussion, and debate, and lists of discoveries in the previous year. These were part of the regular local round-up section known as 'Archaeology in the Mersey District and Liverpool Notabilia' in the *THSLC* between 1860 and the 1875. During the same period, objects from Meols were exhibited at the Society's meetings. Many were dealt with only in summary fashion and usually no details or descriptions were published, making it impossible to identify them amongst currently surviving collections, and only the more impressive or unusual pieces, such as personal seals or rare coins, tended to be illustrated (e.g. Ecroyd Smith 1868, 16).

As interest in Meols became consolidated, antiquarian attention grew from merely collecting and recording objects, towards attempting to explain their origin and context. In the 1860s Hume and Ecroyd Smith had begun to outline and establish a picture of the vertical strata of peats, soils, and sands, which were visible in the eroding dunes at Dove Point and to link the discoveries of objects of different periods into the stratigraphic sequence (Figs.1.2.3, 1.2.4). However they left frustratingly little in the way of coherent topographical observations of structures and landscape features, although it must be remembered that this was very early days for structured archaeological recording, pre-dating the innovations of Pitt Rivers by two decades. Despite the lack of accurate locational details, Ecroyd Smith nevertheless attached considerable importance to the direct observation of the context of discovery and the application of the principles of stratification.

The publication of *Ancient Meols* in 1863 seems to have stimulated considerable interest and debate in learned circles, and some pointed controversy arose over Hume's observations. Joseph Boult FRIBA, a commentator of geological matters who attended meetings of literary and scientific societies in Liverpool, became Hume's antagonist. Boult had already given a lecture to the Historic Society of Lancashire and Cheshire on 15 May 1856 where he speculated on the origins of the 'submarine forests' of Liverpool Bay (Anon 1856). On 29 May 1865, Boult delivered a further 'communication' to the Polytechnic Society of Liverpool, which was shortly afterwards published as a pamphlet entitled *On the Alleged Submarine Forests on the Shores of Liverpool Bay* (Boult 1865), in which he sought to demolish Hume's case for the survival of ancient land surfaces off the Meols shore, casting doubt on the authenticity of Hume's account of the burials or graveyard found below the high tide mark in 1828 (1.2), describing it as 'mythical' (Boult 1865, 16). In a tract heavy with personal invective against Hume, Boult attacked the 'theory' that the stumps of the forest embedded in the two forest beds had grown *in situ*, and propounded the bizarre view that they had been part of a vast mass of peat that had floated down the Mersey from Chat Moss, a large area of peat bog north of the middle course of the river between Liverpool and Manchester, and had washed up on the Meols shore. Boult accepted that the Romans had reached Warrington, but stated that they had gone no further down the Mersey, and that the Roman antiquities at Meols must therefore have been transported to Meols within the floating bodies of peat. Other Meols antiquities, he argued, had either been washed down the Dee from Chester, or were the result of shipwrecks, or had arrived there as packages of ancient objects lost or left behind by followers of the army of William III in 1689–90 either in their haste to depart or owing to a lack of space on the ships. These packages of objects in time were, he suggested, broken open by the tide and dispersed along the shore.

Hume, piqued and provoked by the ferocity and absurdity of Boult's attack, responded with alacrity. On 10 July 1865 he took the floor at a meeting of the Historic Society of Lancashire and Cheshire to make a point-by-point rebuttal of Boult's arguments, re-

stating his case that the forest had grown *in situ,* that the discovery of burials in 1828 was genuine, and that the antiquities derived from one or more ancient sites which had been exposed and destroyed by the sea. This was, however, far from the end of the controversy. On 9 November 1865, Boult sought to press home his attack by reading another version of his May 1865 paper, this time to the Historic Society. This was subsequently published in volume 18 of the *THSLC* the following year (Boult 1866), although it seems that by that time that he was already on the defensive, complaining bitterly that 'my calculations have been submitted to a not very friendly scrutiny' (Boult 1866, 109). So inflamed was the controversy by this point that Hume felt the need to repeat his July paper one week later on 16 November, after which it was prepared for publication alongside Boult's article in volume 18 of the *THSLC* (Hume 1866a). Hume issued a virtually identical text as a separate pamphlet, 87 pages long (Hume 1863b), which was entitled *Supplement to Ancient Meols: Examination of the Changes in the Sea Coast of Lancashire and Cheshire,* and printed by John Russell Smith of London, his publisher of 1863. With the initiative increasingly back on his side, on 12 March 1866 Hume mirrored Boult's tactic of appealing simultaneously to the two separate learned societies by presenting yet another version of his rebuttal at the Polytechnic Society, thus closing the circle by speaking at the venue where Boult had first gone onto the offensive in May 1865. This was the most unflinchingly confident version yet, entitled *Fallacies and Incorrect Statements on the subject of the Submarine Forest, and their Exposure and Correction,* which was published as a pamphlet shortly afterwards (Hume 1866c).

In his series of rebuttals Hume at one point accused Boult of having dismissed the whole phenomenon of the Meols antiquities as a 'mare's nest' (Hume 1866b, 52). Ecroyd Smith also reserved particular scorn for the theories of Boult. He lambasted Boult's 'extraordinary lucubrations', and dismissed the notions of the 'theorist' who had 'evidently learnt nothing during all these years of the experience of the positions in which the several classes of objects are actually found'; as he expressed it, 'all the known facts are utterly subversive of his groundless theories' (Ecroyd Smith 1871, 130–1). By mid-1866 Hume and Ecroyd Smith seem to have succeeded in discrediting Boult, as it appears that there was no further rejoinder, and subsequent events proved that antiquarian and scientific opinion continued to favour their point of view. Boult continued to publish minor commentaries on antiquarian and geological matters on Merseyside for some years, but thereafter seems to have avoided direct confrontation with Hume or Ecroyd Smith.

Ecroyd Smith's meticulous and even combative approach is also evident in his fierce attack on initial published interpretations of the so-called 'Prehistoric Man of Cheshire'. In January 1864 a skeleton was found by workmen on the shore near to Leasowe Castle, home of Sir Edward Cust. Cust learned of the find and exerted his authority to appropriate the remains of the skeleton. Soon afterwards, Ecroyd Smith, accompanied by a museum curator and geologist, visited the findspot, which had been marked by a post, to see the site at first hand (Ecroyd Smith 1865). They formed the opinion that the burial had been quite shallow as the feet had been eroded by the tide. Furthermore, observation of the stratigraphy at that point suggested that the peat layer was not one of the forest beds, as Cust subsequently claimed, but was a thin and relatively recent deposit of marsh, and as a result the find was probably no more than 300 years old. It therefore came as something of a surprise to Ecroyd Smith when Cust published details of the 'Prehistoric Man of Cheshire' claiming that the body had been buried at a depth of 5 feet below a layer of peat (Cust 1864). Ecroyd Smith published a detailed demolition of Cust's interpretation and conclusions, including his own meticulous observation of the stratigraphy together, significantly, with an indication of the date of finds recovered from the layers, in *The Reliquary.* In the event, radiocarbon dating proved both Cust and Ecroyd Smith wrong, as a sample taken in 2001 showed that the skeleton was in fact Romano-British in date (2.25).

In 1868 two new individuals of antiquarian standing, Charles Potter and John Romilly Allen, appeared on the scene and began to build up their own collections of objects from the Meols shore. Between them they managed to acquire nearly three-quarters of the finds in that year, to Ecroyd Smith's evident regret, although Smith assured readers of the *THSLC* that these finds were 'described as fully as if in the writer's own collection' (Ecroyd Smith 1868, 100). Romilly Allen, who is otherwise well known as an authority on early medieval stone sculpture, figures little in subsequent accounts of the finds from Meols, and his active involvement at Meols must have been relatively transient[6], but Potter remained a devoted collector and observer of Meols almost until his death 30 years later.

In September 1870 the British Association for the Advancement of Science visited Liverpool, including such scientific luminaries as Professor Thomas Huxley, Sir Charles Lyell, Sir John Lubbock, and Sir Henry Rawlinson. The collections of Ecroyd Smith, Mayer, Potter, and Allen were put on display together. Ecroyd Smith delivered an account of the strata and characteristics of the beach and the findspots of the objects, prompting a number of the visitors to inspect the beach strata for themselves (Ecroyd Smith 1871, 132–3).

The zenith of antiquarian interest in Meols occurred in the 1860s, and although sustained attention was devoted to it through the 1870s and 1880s, by then there was a general decline in the numbers of finds per year. By 1875 Ecroyd Smith was in declining health and left Merseyside, living subsequently in Saffron Walden, Essex, and ultimately in Middleham in Yorkshire, where he died in 1889. Ecroyd Smith's curatorial role at the Liverpool Museum was taken

over by his assistant Charles Gatty, whereas Potter thereafter assumed the mantle of principal collector and observer at Meols. Later the same year Potter presented his first paper to the Historic Society of Lancashire and Cheshire on the subject of the geology and archaeology of the Meols shore (Potter 1876). Potter seems to have been the first to observe and describe the remains of structures at Meols in the mid-1870s (1.2). The date of his buildings was uncertain, as there were no associated finds, but Thompson Watkin pronounced them too crude to be medieval and suggested that they might even be 'Britanno-Roman' (1886, 281). On 18 December 1877 Potter exhibited at a meeting of the Historic Society 'An ancient shield of leather, round in shape…the lower side still exhibits the large wooden handle fastened across the semi-circular hollow of the iron umbo (boss). The shield is about 14 inches in diameter…' together with 'A spear-shaped blade, found with the shield' (Anon 1878, 155). On 10 January 1878 Potter exhibited 'A portion of an old double-edged sword blade and two sharpened stake-ends, found on the Cheshire shore at Great Meols, and supposed to be part of an ancient stockade' (Anon 1878, 156). The spear head and an axe head exhibited March 1878 (**399** and **404**) were depicted on the accompanying plate in the subsequent volume of the *THSLC* (Anon 1878, 155–6, pl. VIII, fig. 1, 164).

After Ecroyd Smith left the area in 1875, J. Harris Gibson continued the tradition of regular annual reports in the *THSLC* for a few more years into the 1880s. However, by this time the rate of discovery of finds from Meols was regarded as diminishing, only two coins being reported in 1879, for example, and for a period the enthusiasm of some of the antiquarians and collectors appears to have dwindled somewhat. From this period comes one of the very few precise locations for a discovery on the shore. This records Potter's observation of half a circular structure, which eroded from under the dunes after a powerful storm in August 1885, mentioned only in a manuscript note of a meeting of the Historic Society of Lancashire and Cheshire the following year. The description 'near Shaw's battery' gives a reasonably accurate location (1.2). At the same time, W. Thompson Watkin's book *Roman Cheshire,* published in 1886, devoted a whole chapter to Roman Meols. Potter continued to collect, and a considerable number of finds in the Potter Collection are accompanied by documentation giving their date of discovery as the later 1880s or early 1890s. In the 1880s and 1890s a local fisherman, William Banks, who lived near the shore in Meols, had also collected 'about a hundred brass objects' (Warrington Museum accessions register, 149'04). Edward Walker Cox, an enthusiast for local history and medieval antiquities, had by this time joined Potter in visiting the shore (the two seem to have become good friends, as Cox was named as the executor of Potter's will). There was a brief flourish of renewed archaeological interest in Meols in the early 1890s when it appears that a cluster of particularly rich and complex archaeological layers were being exposed from under the sand-dunes (1.2). Potter and Cox, at times accompanied by the eminent local historian William Fergusson Irvine, observed a series of buildings and other structures on the shoreline on various visits between 1890 and 1893. On 16 November 1893 Potter exhibited at the Historic Society of Lancashire and Cheshire 'the remains of three wooden bowls, taken from the upper deposit of marine silt, or clay, overlying the peat beds, popularly known as the "Submarine Forest"'. The exact location of these observations was not recorded, but may be reconstructed in general terms by mapping the extent of coastal retreat at the time (3.2; Fig. 3.2.3).

From the mid-1890s, however, antiquarian interest in Meols faded rapidly. The construction of a new stone and concrete sea wall across the eroded stump of Dove Point was begun in 1894, which sealed the process of erosion and exposure by eclipsing and immuring the line of disintegrating sand-dunes along the shore, thus depriving collectors of their most reliable and productive hunting-ground. This was coincident with antiquarian attention becoming diverted by the emergence of a number of productive and exciting Roman excavations elsewhere in the region, such as those at Wilderspool, undertaken by Thomas May between 1885 and 1905 (May 1904); at Manchester by F. A. Bruton in 1906–7 (Bruton 1909); and Melandra Castle (Conway 1906), which were revealing the remains of structures and plentiful finds. The deaths of both Potter and Cox in the winter of 1898–9 brought about a rapid dissipation of concern and reporting of what, by that time, must have begun to seem an outdated preoccupation.

The last recorded antiquarian visit to Meols in the 19th century tradition was made in March 1905, when Robert Newstead and F. W. Longbottom of the Chester and North Wales Archaeological Society visited the shore and collected some material, the disappointing extent of which seems only to have confirmed a sense of Meols having by then become a 'lost' site. This conclusion was perhaps emphasised by the presence of the massive, newly-completed sea wall, which created a very different landscape to the one that had been familiar until a decade earlier. It is perhaps instructive as to the markedly lowered profile of Meols in the first half of the 20th century that, despite Newstead's long archaeological career in Liverpool and Cheshire, during which he was Honorary Curator of the Grosvenor Museum for many years, excavated numerous features of Roman Chester, and conducted a brief inconclusive excavation on Hilbre Island, he seems never again to have taken any significant interest in Meols.

Finds and research in the 20th century

Interest in Meols amongst archaeological researchers during the early to mid-20th century was confined mainly to the mention of particular objects or small groups of objects as examples within wider thematic

studies. The publications of Hume, Ecroyd Smith, and Potter, and to a lesser extent the museum collections themselves, were quarried on an occasional basis by artefact researchers, but often contributed little more than an outlying dot on a distribution map. G. C. Dunning included the Iron Age ring-headed pin **82** in his publication of swan's-neck and ring-headed pins (Dunning 1934), while R. Feachem's examination of Dragonesque brooches in Britain included two Meols finds: **110** and **111** (Feachem 1951). The *London Museum Medieval Catalogue* (LMMC 1940) contained a number of references to Meols finds, in recognition of the value of Hume's work of reference, and in the late 1940s the medievalist Claude Blair began to create a typology for the Meols brooches, a work that was never to see completion or publication (2.5).

The 19th-century collections have, nevertheless, been supplemented throughout the 20th century by a less numerous but no less interesting trickle of finds, which, by providing an element of continuity and comparison for the earlier more numerous discoveries, take on an importance beyond their actual quantity. A group of Roman coins was found on the shore at some time before the 1930s (the Herd Collection) but these did not find their way into a museum collection until the 1990s (see below). In 1955 the St Menas ampulla **300** was discovered by a local man digging on the beach for lugworms, and promptly published (Thompson 1956). This may have been the catalyst for members of the Hoylake Historical Society to search for fresh material from the Meols shore, with some success. Their collection was displayed for many decades in Hoylake Library, labelled with discovery dates in 1955 and 1956, before being donated to the Williamson Museum and Art Gallery, Birkenhead. The ampulla also seems to have stimulated a renewed burst of scholarly interest in Meols. The publication of John Bu'Lock's paper in 1960 in the *THSLC* highlighted the significance of the early medieval finds and discussed the context from which they were derived (Bu'Lock 1960), Michael Dolley catalogued the Anglo-Saxon coins from Meols in the Grosvenor Museum (Dolley 1961). Whilst this succeeded in applying the results of developing scholarship to individual items, resulting in firm identifications and refining the typological and chronological sequences, there was little wider discussion of the character or significance of the site from which they had come. This pattern continued through the 1970s and 1980s, with groups of Meols finds appearing in studies of agricultural implements (Rees 1979), Roman ear -rings (Allason-Jones 1989), and wooden artefacts (Morris 1984).

Interest in the subject of Meols amongst the Wirral public, coinciding with a general rise in the profile of local history, was rekindled in the mid-1970s by the re-discovery of part of the Ecroyd Smith and Mayer Collections in Merseyside County Museums, which were thought to have been lost in the W orld War II, but which had merely lost their identifying labels. This stimulated a fresh burst of academic activity on the Meols collections, resulting in a seminar entitled 'Ancient Meols' held at the Grosvenor Museum, Chester on 25 February 1978, and three studies of groups of Meols material. The first was a useful publication of the Meols metalwork, coins, and one flint artefact then known in Merseyside County Museums (Chitty and Warhurst 1977), followed by a catalogue of the medieval and post-medieval pottery from the Ecroyd Smith Collection, by Janet Axworthy (unpub. 1978). The third, by Glenys Lloyd-Morgan (1980), examined the known Roman material in Merseyside County Museums and the Grosvenor Museum. At about the same time Susan Nicholson compiled a catalogue of prehistoric metalwork in the Merseyside County Museums (now National Museums Liverpool) which included the three Celtic coins from Meols (Nicholson 1980, 24, nos 34–6). Margaret W arhurst catalogued the coins from Meols in the same collection as part of the sylloge devoted to the numismatic collections of the museum (Warhurst 1982). In 1977 Barri Jones organised a seminar on Archaeology and Coastal Change at Manchester University; his published paper considered the role of Meols, concluding 'it is a site that cries out for an integrated research programme' (Jones 1980, 97).

During the 1990s two academic theses focused on Meols. The first, a Durham University PhD thesis by David Griffiths, examined the early medieval finds for a study of the Irish Sea province in the period AD 800–1100 (Griffiths 1991). The second, an MPhil thesis submitted to Birmingham University by Robert Saner (1997), attempted the daunting task of cataloguing all the surviving material from Meols. Resulting from these two studies was a clear sense that a comprehensive review and publication of *all* the known archaeological material from Meols was essential if any greater understanding of the site was to be achieved, and this proved to be the catalyst for the current work.

Notes

1 A pamphlet entitled *The Porcupine*, dated 1 February 1868, carried an anonymous article on 'Dr Hume' s Mission', a missionary tour of South America that Hume undertook whilst convalescing from a railway accident in 1867, which accused Hume of immodesty and a 'flashy talent' (Liverpool City Record Office).

2 Thomas Stewart T raill (1781-1862), a physician originally from Orkney, was resident in Liverpool 1803-33 before returning to Scotland.

3 Ainslie died on 18 June 1869; his will (proved 30 July 1869) contains no mention of his collection of antiquities.

4 Hereafter abbreviated *THSLC*.

5 Hume was preparing a second edition when he died in 1884. His handwritten notes on a copy of the 1863 edition, detailing the materials of the finds (an element not covered systematically in the first edition) have survived and are in Liverpool City Record Office.

6 In 1883 Romilly Allen donated a fine lead mirror case **2014** to the British Museum. This had been found in 1862 (Ecroyd Smith 1862; Hume 1863, 361), suggesting that his own collection was in part obtained from others, rather than collected independently.

1.2 Topography of the Meols shore

David Griffiths and Robert Philpott

Sources of topographic information

The extent and range of the finds from Meols are in marked contrast to the generally poor, inexact, and insubstantial amount of information that exists about the site or sites from which they were derived. In attempting to reconstruct the location and the character of the settlements from which the artefacts were recovered, the observations of the antiquarians provide valuable, though limited, information. Most useful are the observations of Ecroyd Smith, Potter, and Cox. These were published in summary form as 'Produce of the Cheshire Shore' in the annual round-up reports of 'Archaeology in the Mersey District' in the *THSLC* between the early 1860s and the later 1870s, and subsequently as a series of individual articles. Prior to the 1860s, locational information and references to structures and other remains on the shore were inexact, anecdotal, and speculative. This may reflect the intense focus of interest that Hume and Mayer had brought to bear upon the artefacts as objects of art and culture, together with Hume's tendency to explain their origins and presence by reference to sites and historical parallels elsewhere, as opposed to taking a detailed interest in recording their archaeological context on the Meols shore. Hume's choice of parallels for Meols – the sand and sea-inundated medieval settlements of Dunwich (Suffolk), Formby (Lancashire), and 'Ravenspur' (Ravenserodd, East Yorkshire) – seem in retrospect to be highly apposite and perceptive (Hume 1863, 380–86, and 5.2). Initially, soon after the discovery of the first objects in 1846, Hume visited the Meols shore several times and interviewed the unnamed collector 'to secure accuracy' (1847a, 54), in the process familiarising himself with the topography of the shore and checking the locations at which the discoveries had been made. It is less certain to what extent he continued to visit the shore himself, leading up to the publication of *Ancient Meols* in 1863. It seems that he may have been content to visit the area on an occasional basis, relying on local contacts to procure a supply of objects for him. Hume evidently seems to have preferred to concentrate most of his energies on publishing and promoting his own and Mayer's collections; whereas, from his arrival in Liverpool in 1855, Ecroyd Smith began the practice of making regular inspections, which involved getting to know the topography and stratification of the eroding shoreline in greater detail. Ecroyd Smith's practice of short, factual, annual reports coupled with systematic cataloguing now appears more modern and far-sighted than Hume's more florid style. It is interesting that in the 1870s, 1880s, and 1890s Potter and Cox followed closely Ecroyd Smith's example, rather than Hume's. Sensational, if occasional, revelations to the national scientific and antiquarian elite gave way to a more humdrum, but perhaps more systematic, style of local reporting.

Location of the discoveries

The middle decades of the 19th century were very early days for anything approaching modern recording standards in British archaeology, and very few finds or observations are located in a way that is immediately intelligible or straightforward to reconstruct today. The Ordnance Survey 25 inch/1 mile scale did not appear until the early 1880s, and the practice of using grid co-ordinates to locate discoveries was not adopted until the 20th century. Instead, 19th-century observers habitually used a series of commonly understood local markers as references. Some of these, such as Leasowe Lighthouse, have survived, but others, such as various minor buildings, and the Dove Marks (an aligned pair of wooden navigational signboards) have not; and, in the case of the Dove Marks, their location may in any case have not been permanently fixed at the time. The huge changes wrought to the coastal landscape in the 20th century have made reconstructing the precise locations of the Meols discoveries difficult, to say the least, and it is only possible to do so within broad terms. To compound these frustrations, it is clear from Potter and Cox's published summaries that they had sketched at some level of measured detail the structural remains that they observed, but a search of the unpublished archives of the Historic Society of Lancashire and Cheshire has revealed no trace of these drawings. Some photographs of the shore do survive from the 1880s onwards [1]. These are landscape views showing the 'Ancient Forest', but it is very difficult to discern any recognisable archaeological remains in them (Figs 1.1.4, 1.1.5). In mitigation, however, it must be recognised that the disaggregating effects of marine erosion on the layers, the destabilisation and movement of the sand-dunes, the usually only partial visibility, and the generally confused, untidy, and mud-infested inter-tidal environment in which the archaeological material was discovered, would have made accurate archaeological recording a challenge under any circumstances, let alone those of a time when archaeology in Britain was in its infancy. The only contemporary map that aimed explicitly to show the precise location of finds on the Cheshire shore 'Map of the Hundred of Wirral (North) Cheshire' (Fig. 1.2.1) was drawn to accompany Ecroyd Smith's paper 'Numismatic Waifs and Strays' (Ecroyd Smith 1873c, pl. V). A note on p. 21 states that the map is 'to illustrate the exact position where the British, Roman, Anglo-Saxon, early English, and medieval remains are deposited' (Ecroyd Smith 1873a, 21). It shows 17 separate findspots, subdivided by periods. Four of these are labelled as 'Roman and British' and these occur north-north-east of Leasowe Castle, north-east of Dove Point, north of Hoylake Station, and on the Hilbre Islands. 'Anglo-Saxon and Danish' findspots are confined to a point north of Hoylake Station and on Hilbre.

Archaeological material has appeared along the whole north Wirral coastline, although the central

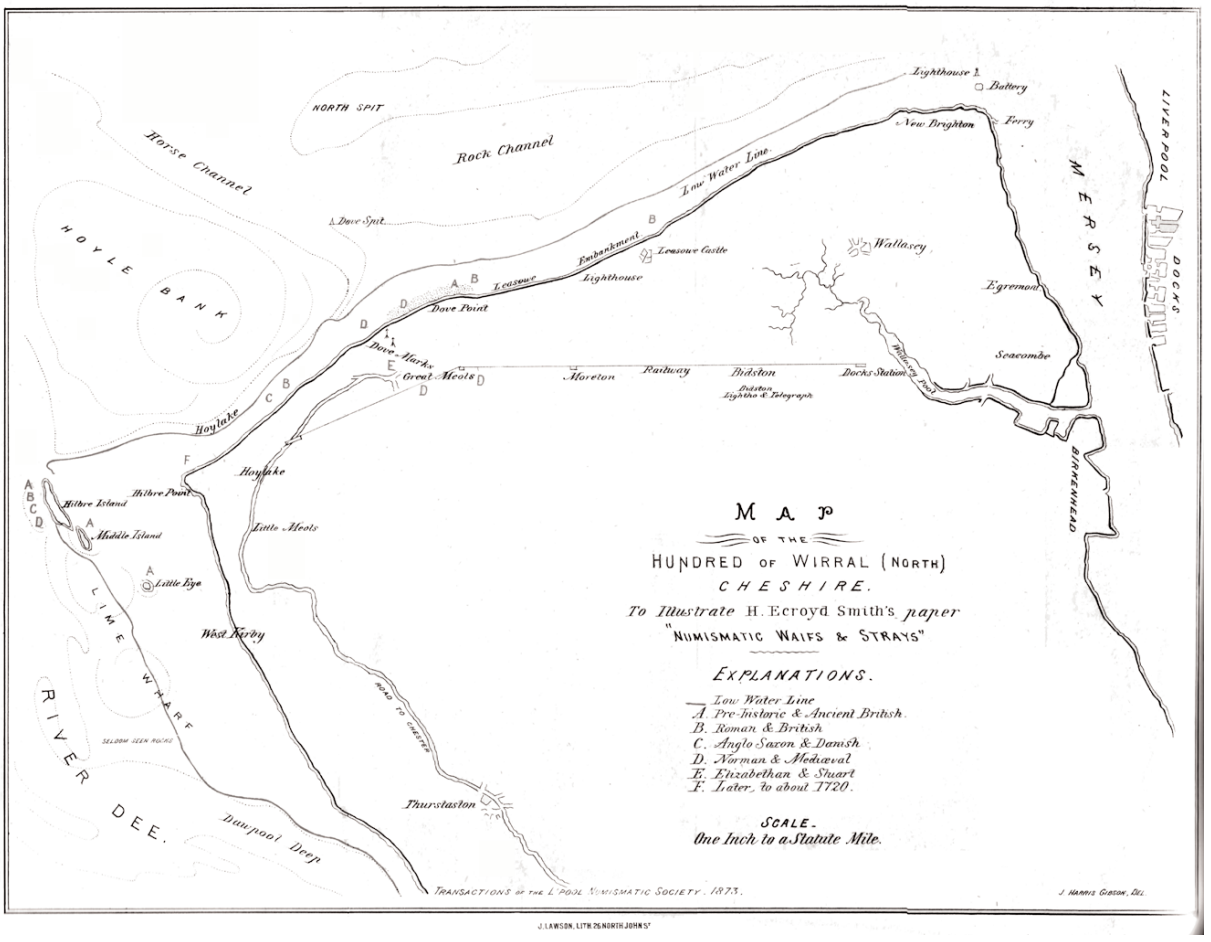


Fig. 1.2.1: Ecroyd Smith's map of coin finds (Ecroyd Smith 1873c, Fig. V, opp. p.42).

and western section between approximately NGR SJ 22 90 and SJ 26 92 accounts for the great majority . Objects were identified as coming from Meols by their attribution in notes, labels, and, in some cases, ink inscriptions on the object itself, as from 'Meols', 'Ancient Meols' 'The Ancient Forest', 'The Meols Stocks', ' Cheshire Shore', 'Sea Coast of Cheshire', 'Hoylake', or 'Leasowe'. Material bearing any of these descriptions, together with that documented in the series of 19th-century notes and publications on the phenomenon of 'Meols' or the 'Cheshire Shore', and that surviving in museum collections designated as of Meols material, has been accepted here as of relevance to this study . In many cases, individual object labels, previous publication, and survival in museum collections can be reconciled as corroborating each other. In other cases, we may have only one or two of these factors to support an identification with Meols. It is uncertain as to what extent findspots described as from 'Meols' or the 'Meols shore' correspond precisely with the historic borders of the townships of Great Meols or Little Meols. A few modern finds, notably those near Leasowe Castle, which were made within the borders of the historic township of Wallasey, have been included.

The findspot of individual items found in the 19th century was usually specified on an individual basis only when an object was outside its 'normal' range of distribution on the shore. Amongst the material from the 'Cheshire Shore' or from 'Meols' is probably a small amount from Hilbre Island that has lost its precise attribution, as well as some material found some distance inland from the shore, as Hume himself observed (1863, 392). This catalogue includes finds made along this coastline or within a narrow zone along the shore, while several medieval and a few Roman objects found either at Hilbre or on the shore close to the island were included by Hume in *Ancient Meols* and cannot necessarily be distinguished now (Hume 1863, 392). A small number of finds were made some way behind the shore, notably an undated soapstone spindle-whorl 'decorated with annulets', at Great Meols 'half a mile from the beach' (Ecroyd Smith 1866, 211–2), one (unidentifiable) Roman sherd was found 'inland' (Ecroyd Smith 1871a, 130), while two keys were also found 'a quarter of a mile from the beach, but yet upon or in the artificial "medieval stratum", which must have been of great extent, for abraded as it has been by the sea for a long course of years, it is yet proved to underlie the meadows to some distance inland' (Ecroyd Smith 1867a, 186).

However, far from the Meols finds simply being a generalised and indiscriminate spread across the north Wirral coast, it is clear from the writings of Hume, Ecroyd Smith, Potter , and Cox that the discoveries were focused around a number of distinct and, in some cases, discrete locations. These concentrations of finds, particularly it seems from the Roman and Anglo-Saxon periods, which were confined to restricted parts of the shore, suggest that the activities or settlements were confined to particular foci. The antiquarians did make a number of observations on location with respect to contemporary landmarks. Careful comparison with 19th-century maps enables us to define a series of broad zones from which the finds were recovered.

There is no doubt in this coastal landscape that the position of the settlements or the activities such as trading that have produced the finds concentrations, were heavily influenced by the convergence of two elements: the existence of suitable land for settlement and habitation, which in the early periods must have been the dry islands of slightly higher land; and the existence of protected beaches or tidal pools suitable for mooring or beaching vessels.

Early prehistoric finds

We are reliant on the often patchy documentation accompanying the finds to deduce their provenance and, even when there is some information in the form of accession registers or handwritten labels, this is rarely an easy or straightforward task. A typical example is the small collection of prehistoric lithics from the Meols shore (2.1), which due to the casual way in which they were accessioned and stored together in the 19th and early 20th centuries, can today only with difficulty be distinguished from other finds from Red Rocks, the Hilbre Islands and elsewhere, which are excluded from this catalogue. Nevertheless it is clear that the 'Ancient Forest' (encompassing 'Hoylake', 'Meols', 'Great Meols', and 'Leasowe') did produce a distinct succession of finds that in many cases must have been retrieved from *in-situ* deposits within and below the Upper Peat Forest Bed (3.1). Precise locations are usually impossible to reconstruct for antiquarian finds, although some objects found in the later 19th century are accompanied by handwritten notes explaining their vertical position in the coastal strata, if not their findspot (e.g. a piece of neolithic pottery **67**). Even more recent finds, such as a Bronze Age dagger **68**, found by a metal-detectorist on the shore at Leasowe in *c.*1983, are rarely accompanied by precise locational information.

Later prehistoric finds

The only explicit reference to the location of later prehistoric finds is in the 1873 coin map that shows 'Pre-historic and Ancient British' coins (Fig 1.2.1). However, the discovery of three Iron Age swan's neck pins (**83-85**) in November 1893 (Potter Collection

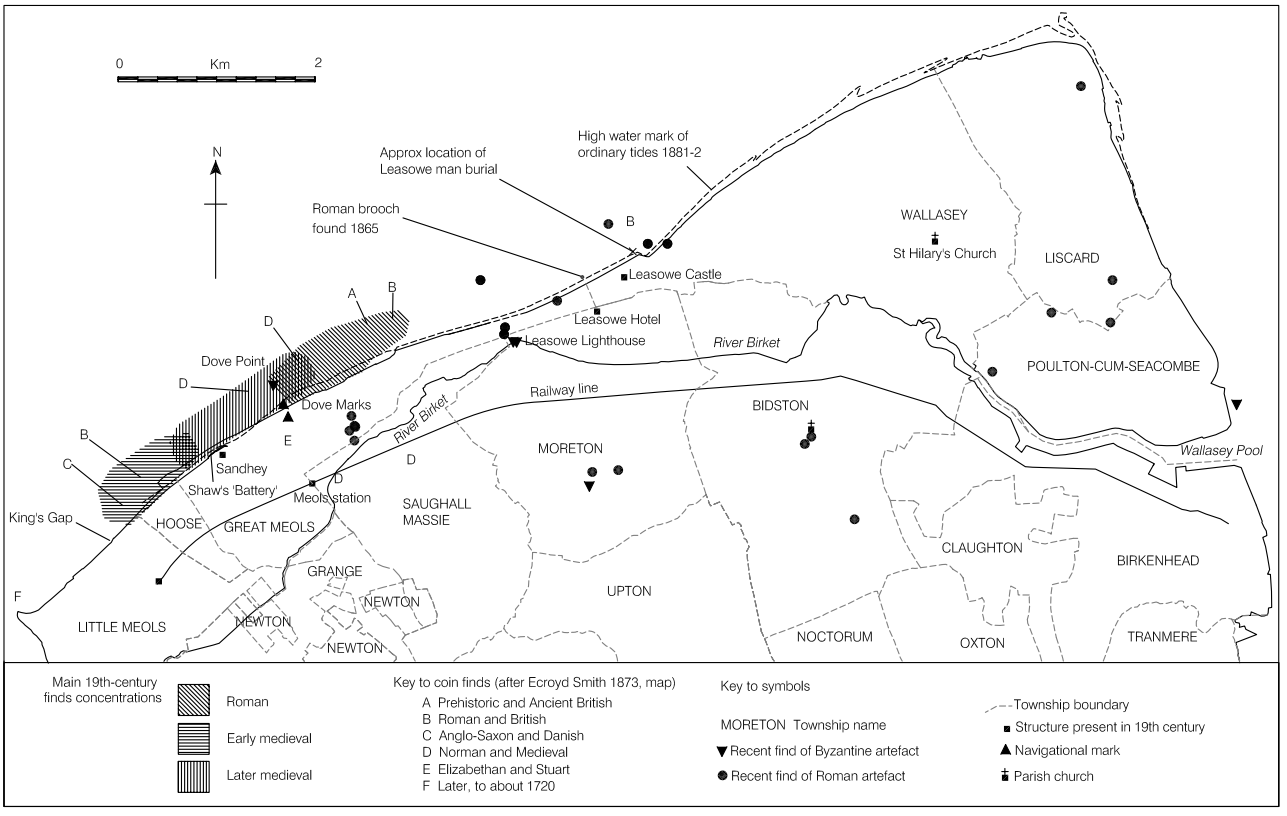


Fig. 1.2.2: Location of discoveries with landmarks visible in the 19th century

notes) may have been linked to the appearance on the shore of circular buildings in the late 1880s and early 1890s (as discussed below), which Potter considered to be prehistoric at the time and are indeed more likely to have been Iron Age than Romano-British.

Roman finds

Ecroyd Smith and Hume were careful to distinguish between the findspots of Roman and medieval artefacts, indicating that the locations where they occurred were almost mutually exclusive. Hume states that the Dove landmark is the place at which 'the antiquities are procured', and the section to seaward at Dove Point produced the 'principal Roman fibulae' (1863, 22). 'The line from Leasowe lighthouse along the shore to the Dove landmark, is nearly a mile and a half, and both extremities of it are interesting. At the latter place the antiquities are procured; at the former the land is low, and the irruptions of the sea are prevented by a large artificial embankment. At Dove Point, a section to seaward presents the following appearances:...4. Large forest bed, three feet thick, containing trunks of gigantic trees. *On this portion the principal Roman fibulae have been found*' [original emphasis]. Thompson Watkin noted, 'almost opposite this channel [i.e. Hoyle Lake], where the water was deepest, and where what is now known as the 'Horse Channel' leads out to sea between the banks, the Roman remains chiefly occur' (Thompson Watkin 1886, 274).

The concentration of most Roman finds at Dove Point is confirmed by Ecroyd Smith (1867, 19), who noted, 'the Roman articles found on the strand lie immediately opposite the wasted promontory or point which undoubtedly existed here, to the exclusion of medieval ones, which are almost wholly contained in the remarkable, long-cultivated and thoroughly artificial stratum of soil'. According to Hume, 'the oldest, or Roman articles are found in the upper stratum of the old forest turf, amongst the trunks and roots of trees; but their range is extremely limited, and they are found chiefly to the east of Dove Point' (Hume 1863, 391). Hume and others stated that the Dove landmarks were constantly being moved further inland every few years owing to the 'tidal ravages'. Ecroyd Smith considered that the Roman and Saxon settlements lay on a 'once considerable and elevated promontory', which was by his day 'reduced to a small sandbank only visible at low water and constantly decreasing in volume' (Ecroyd Smith 1865, 11). The promontory, known then as Dove Spit, lay 'nearly opposite to the present village of Great Meols' (Ecroyd Smith 1865, 22). He speculated that the ancient settlement lay up to a mile out from the high water mark or spring tide of his day (Ecroyd Smith 1865, 11). Thus, if he was correct, the core of the Roman settlement probably lay several hundred metres out from the present sea wall.

Elsewhere Ecroyd Smith (1867, 19) noted 'the all but complete absence of Romano-British domestic pottery among the various ornaments of metal of this period has with abundant reason been accounted for, through the complete abrasion by the sea of the very site of the Roman as of the Saxon and Norman buildings'. Ecroyd Smith also went to some pains to rebut Charles Potter's conclusions over the presence of Roman pottery mixed with medieval; 'it is within our knowledge that the only Roman pottery found in the neighbourhood was neither obtained from the stratum in question, nor even near it. Not half a dozen pieces have as yet been recognised, and one of these was found inland and quite beneath the bed which he confuses with the land surface, from which it is quite distinct' (Ecroyd Smith 1871, 130).

Outlying finds helped to reinforce the findspots of the majority of the Roman material. A Roman brooch (now unfortunately unidentifiable individually amongst the surviving finds), was picked up on the blue clay or silt 'on the shore opposite the Leasowe Hotel nearly a mile and a half north-eastwardly of any previous known find known to the writer'; this had the effect of extending 'the longitudinal areas of the antiquarian site, exclusive of Hilbre Island, to four miles' (Ecroyd Smith 1866, 206–7). Ecroyd Smith also recorded an unidentified Roman coin north of Leasowe Castle on his 1873 map. Y et another relevant find is the Romano-British skeleton, which was termed at its discovery in 1864 'the Prehistoric Man of Cheshire', found on the shore near Leasowe Castle (Anon 1864a; Cust 1864), and which is discussed in detail (1.3, 2.25).

Further recent finds have occurred in the area around Leasowe Castle and lighthouse (*c.* SJ 26 92). These have not so far been accompanied by later finds, and hence confirm that the area saw a significant concentration of Roman activity, but that later activity migrated further westwards. The gradual removal by erosion of the triangle behind Dove Point in the 19th century suggests that the greatest extent of the horizontal erosion occurred between Dove Point and the present shoreline, with the width of the strip of eroded land gradually diminishing to either side of the point. Nearer the foot of the triangle, south-east of the triangle' s apex at Dove Point, the loss of land is correspondingly slight. This may offer the best possibility for intact early deposits surviving. It may be significant that some of the Roman coins found in recent years **5108, 5112, 5116, 5117** (2.24) are from the south-eastern part of the Dove Point triangle, where reduction of the coast has been least severe, owing to the erection of the 1829 sea-wall.

Early medieval finds

Anglo-Saxon material was restricted to a short stretch of coast, to the west of the area that produced Roman finds. Hume noted 'certain Saxon examples, chiefly coins, being found nearly a mile to the west [of the Roman finds], and on the clay' (Hume 1863, 392). The separation of Anglo-Saxon finds from Roman is confirmed by Ecroyd Smith. He recorded

that a sceatta 'was found in the very limited *littoral* bounds within which the purely Saxon remains have occurred' (Ecroyd Smith 1866, 215), and on another occasion he referred to 'one [Roman fibula]… found by the writer upon a short range of the shore where *Saxon* objects have almost exclusively occurred, and lying considerably to westward of the Roman area' (Ecroyd Smith 1869a, 210). The antiquarians remarked consistently that early medieval finds remained at all times scarce by comparison with the later medieval material.

Later medieval and post-medieval finds

By contrast with the rate of recovery of Roman material, during the period of active collecting from the 1850s to the 1890s, later medieval finds were very much in the majority . The smaller number of post-medieval finds could largely be accounted for by losses from fishermen, sailors, and other casual visitors, and by discoveries made in places other than the beach proper , including a certain amount of material from the 'King's Gap', the location near the Hoyle Lake where W illiam III's army encamped in 1689 before departing for Ireland (SJ 213 892).

With rare exceptions, the medieval finds were found consistently further to the west than the Roman ones, and the two areas of finds were almost mutually exclusive. Ecroyd Smith stated, 'it must not, however, be supposed that the classes of finds occur indiscriminately, inasmuch as the Roman are exclusively confined to the north-eastern or Leasowe end, and to the more wooded part of the ancient forest … whilst the medieval articles have been mostly picked up upon the Hoylake side of the Dove marks, a few objects of intermediate age being exposed in wind-opened gullies of the sand-hills themselves' (Ecroyd Smith 1866, 14–15).

Stratigraphic observations

Hume was content to report the observations of others. From his geological colleagues he was aware of the principle of stratification, and he drew the sequence of early land surfaces with the intercalated 'blue silt' layers (Fig. 2.3). Similarly he understood the principle of dating the deposits from the finds within them (Hume 1863, 22–4). *Ancient Meols* contains a treatise on the geology of the Meols shore, in which Hume contrasted the layers visible in the

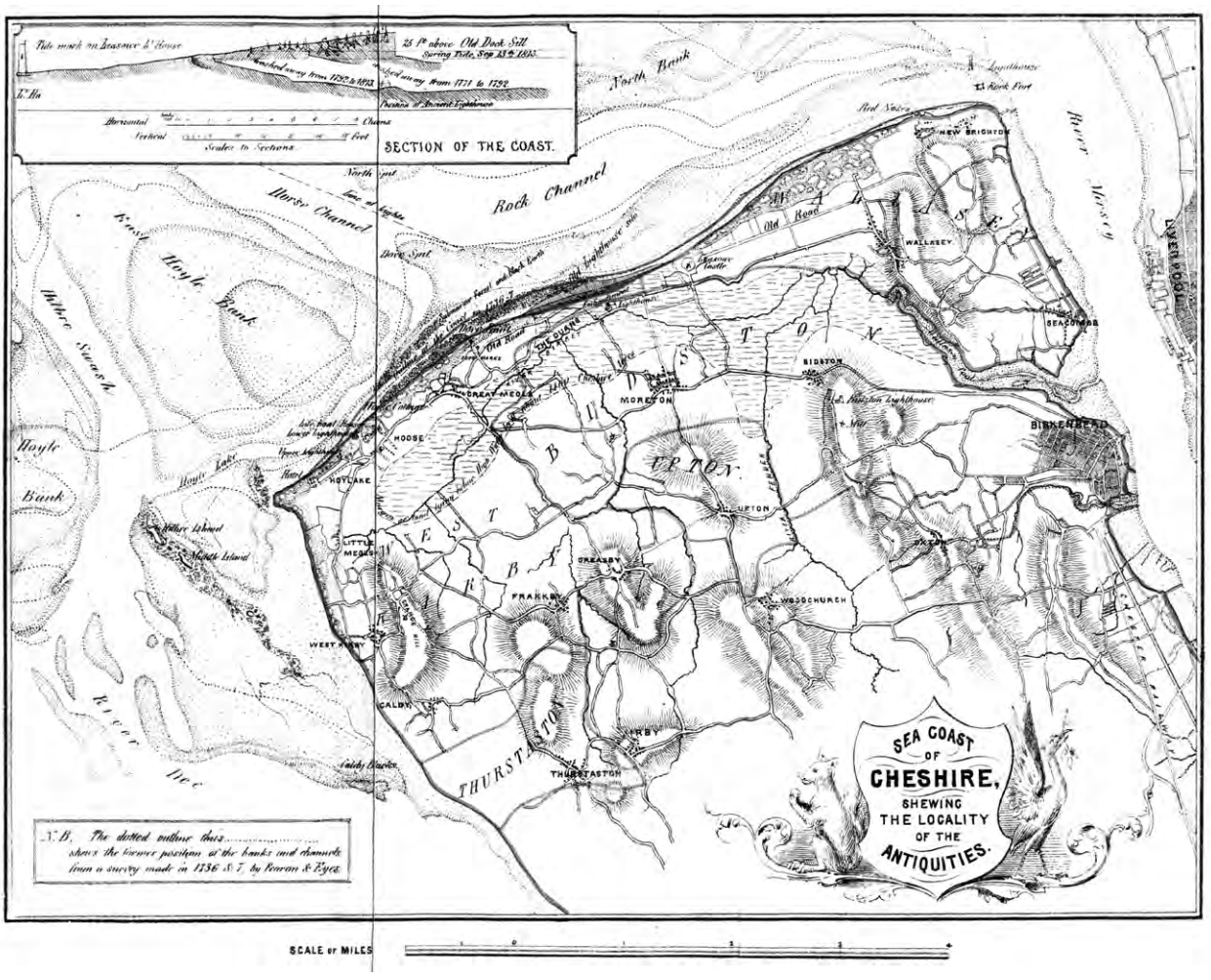


Fig. 1.2.3: Hume's map and strata diagram (Hume 1863, folded opposite p.1)

vicinity of Leasowe Lighthouse [SJ 253 913], which lacked an overburden of dune sand, with those on the shore at Dove Point 'a mile and a half to the west' [i.e. SJ 230 905 by this description]. At Dove Point, Hume witnessed 'three distinct surfaces, all of them more or less below the tide. He suggested that the upper surface, a peaty cultivation soil with 'recent shells, bones and teeth', had supported the 'early English' people who inhabited the sea-margin', whereas the middle layer – the black beds containing the huge tree stumps of the 'Ancient Forest'– he argued had been the forest amongst which 'walked the Romans, the contemporary tribes of the Cornavii [*sic*], and probably the earliest Saxons' (Hume 1863, 24); whereas for the lowest of the three layers – another forest bed – he did not pose any theory of human occupancy, on the grounds of lack of evidence.

Hume's observations are clearly recognisable in modern sedimentological terms (3.1) although it turns out that he was wrong in suggesting that the middle of his three layers – the Upper Forest Bed – was contemporary with Roman settlement. This resulted from the fact that the principal Roman brooches were reported to have been found on the upper 'forest bed', i.e. amongst the stumps of the 'Ancient Forest'. This particular forest layer has, however, produced radiocarbon dates from 3910±40 BP (SRR-1493) to at least 3695±110 BP (Q-620) (Cowell and Innes 1994, 28–9), suggesting that more fragile Romano-British occupation deposits above it had been eroded by tidal incursion and sea level rise, depositing denser metal finds on the more resistant 'forest bed' below (Fig. 1.2.4).

The upper stratigraphical layer that came to the attention of Hume and his colleagues was the so-called 'artificial stratum or soil bed' that contained almost exclusively medieval finds (a fact noted by Ecroyd Smith, above). The agricultural soil observed in the exposed layers on the shore had a distinctive appearance. It was easily distinguishable from the earlier layers, and contained traces of what appear to have been medieval agricultural features:

> 'When, after a concurrent high wind and tide, a fresh portion of the surface of this old soil is uncovered, it is not uncommon to trace clearly the furrows left by the ploughshares of the "forefathers of the hamlet"' (Ecroyd Smith 1866, 213).

In 1866, Ecroyd Smith discussed in detail the composition of the so-called 'artificial soil', in the context of a skull of *Bos longifrons,* an early cattle breed, and a worn tusk of the *Sus scrofa*, or wild boar, which had come from the deposit.

> 'The specimens washed out of the shore bank have been in the *artificial stratum* of soil (D) which extends above the Western portion of the forest peat (here gradually diminishing in thickness), for several hundred yards, itself superpiled by drift sand to very varying heights. It is an admixture of the bog and sand, with the addition of a little marl, a perfect amalgam of all the available material, which has evidently constituted for many centuries the arable land of the long extinct village of Meols, which must have been situate a mile to the Northward of the present hamlet' (Ecroyd Smith 1866, 213).

The majority of medieval objects up to the later 1860s were not collected from obvious buildings or middens, but were in the 'artificial stratum' of soil (Ecroyd Smith 1868, 103). This deposit was extensive. Two medieval keys mentioned:

> '… were found a quarter of a mile from the beach, but yet upon or in the artificial 'medieval 'stratum', which must have been of great extent, for abraded as it has been by the sea for a long course of years, it is yet proved to underlie the meadows to some distance inland' (Ecroyd Smith 1867, 186).

Ecroyd Smith's conclusions anticipated the modern archaeological principle of stratification, by dating the deposit based on the finds found within it.

> 'The archaeological products of this artificial soil have gained the especial attention of the writer, and he thinks they bear strongly on the present subject. They consist, he conceives, of 12–15th century articles, a few perhaps being later *but none earlier*, as metal buckles, ornaments and other attachments of straps, rings, a few coins of Edward I and II, portions of leathern shoes and wooden pails, crocks &c.; whilst the osseous remains are those which might naturally be expected, mostly stray bones of the domesticated animals of the locality, viz. – ox, horse, sheep, goat and dog, the last of by far the most frequent occurrence' (Ecroyd Smith 1866, 213).

Thus, if Ecroyd Smith was correct, the source of most of the medieval objects by his day was the erosion of former arable soils around the settlement rather than the village nucleus and its structures, and the deposit containing the medieval objects was quite distinct from those containing Roman finds.

In a discussion of the stratigraphic sequence, Potter described the 'land surface or cultivated soil'. This he considered to be variable in depth from one to four feet (0.3–1.2m). 'It is a sandy, peaty soil, and through its length there is the strongest proof of a long period of tillage', the evidence consisting of very broken land mollusca shells and edible sea shells which were heavily broken (Potter 1876, 127).

Ecroyd Smith was a firm advocate of the need to observe carefully the stratification of the shore deposits in order to understand the context of the finds, and was outspoken in his criticism of those who did not apply the same rigour in their approach.

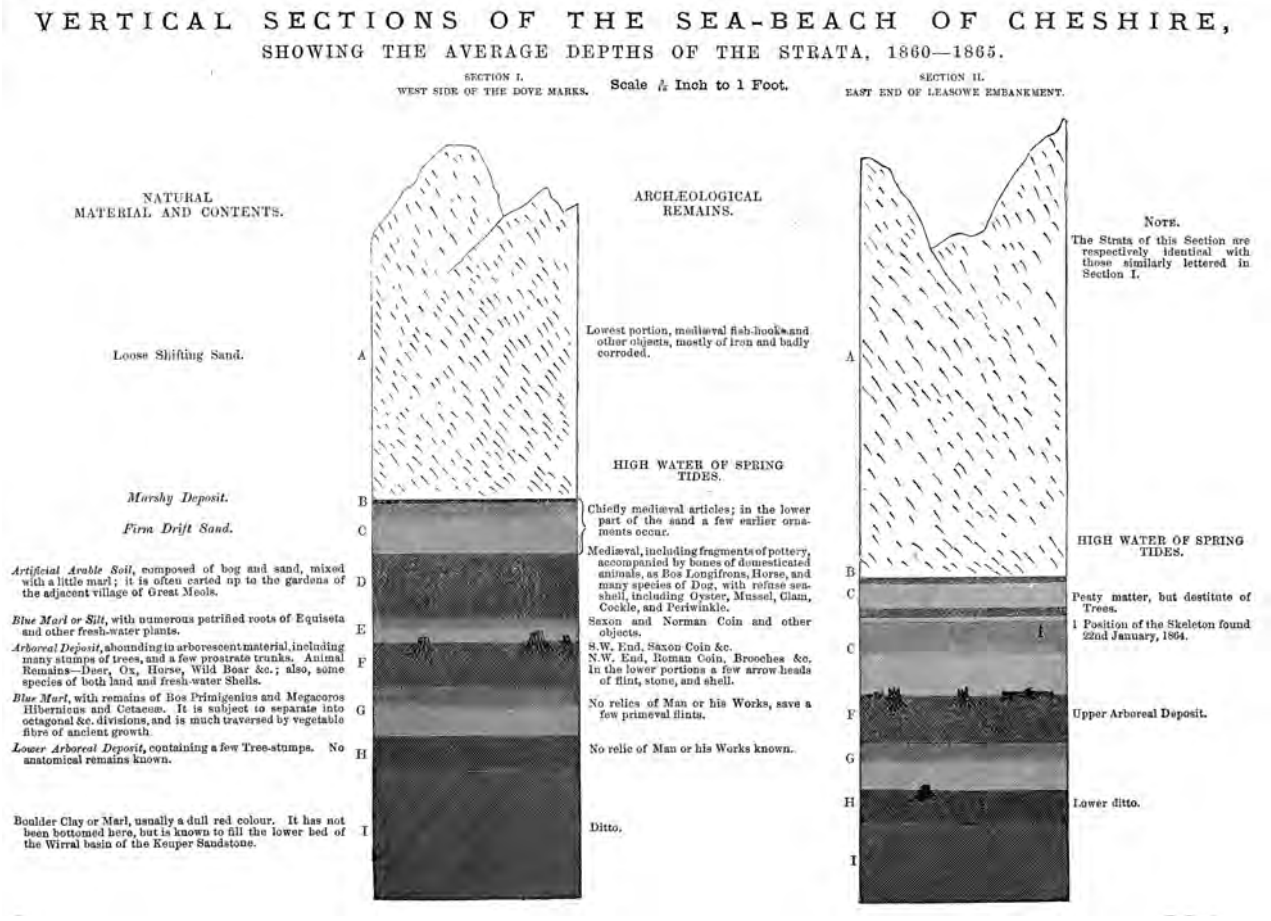


Fig. 1.2.4: Reproduction of Ecroyd Smith's diagram of the Meols strata (Ecroyd Smith 1866, pl. II), with levels of finds labelled

When Potter first came on the scene, Ecroyd Smith allowed him the benefit of the doubt over his interpretations, expecting he would in time, with greater familiarity and further examination, come to understand the stratification. However, when Potter published a paper read before the Geological Society of Liverpool (Potter 1869), Ecroyd Smith issued a public rebuttal of Potter's views and methods in the *THSLC*. In particular, he seized upon Potter's claims to have found Roman pottery in the 'artificial' soil bed that Ecroyd Smith had dated from finds to the medieval period. Ecroyd Smith demonstrated to Potter that the sherds were medieval rather than Roman in date: 'It is within our knowledge that the only Roman pottery found in this neighbourhood was neither obtained *from* the stratum in question, nor ever *near* it', and furthermore he accused Potter of confusing the layers in question (Ecroyd Smith 1871a, 129–30)[2].

Human remains: the 1828 'burial ground' and Lees Kirk

Hume saw the 1820s as having been a time of particularly rapid erosion at Meols. On 19 March 1828, the *Liverpool Courier* reported that during surveys for a ship canal to connect the Dee and Mersey (which was never built), an engineer, Mr Nimmo, working on the shore 100–200 yards below the high-tide mark opposite Leasowe Lighthouse (SJ 253 913) had discovered 'skeletons in their hundreds... deposited side by side in an easterly direction' and that 'their number, and the regularity with which they were deposited, leave no doubt on the mind that this was an ancient place of sepulture...this spot would be within the shore line of 1771, the upper surface of which was not actually carried away, but lowered and displaced, by the removal of the subjacent beds, or otherwise' (Hume 1863, 16–7). Hume linked these observations to the (otherwise unlocated) Lees Kirk (Hume 1866b, 44), a former chapel attached to St Hilary's Church, Wallasey, mentioned in Bishop Gastrell's *Notitia Cestriensis* of 1715[3]. Hume also stated that 'at very low tides traces of tombstones have been found'. It is therefore striking that a sandstone recumbent gravestone bearing a medieval quatrefoil motif (**3339**) was discovered embedded in the masonry of the Leasowe Embankment close to the lighthouse during repairs in 1920, the embankment having originally been constructed from locally available materials in 1829.

Cox (1896, 45-6) speculated that despite the absence of any record of a church or churchyard, this report could have represented a 'Saxon or Danish' graveyard. Other 19th-century writers (e.g. Boult 1866) were inclined to reject the observations as unreliable, perhaps because they could not be fitted within their pre-conceived framework of ecclesiastical parochial graveyards. An alternative context might be provided by late Romano-British burial practice which saw the development of ordered east-west cemeteries, with graves disposed in rows with the head to the west, and lacking grave furniture (Thomas 1981, 232; Philpott 1991, 226-7). Cemeteries of this type persisted into the post-Roman period, to become the usual form of Christian burial in the medieval and later eras. Within the north west a cemetery at Southworth Hall Farm, near W inwick contained over 800 grave slots, disposed east-west, though almost entirely lacking skeletal material due to the acid soil, and apparently also lacking grave furniture (Freke and Thacker 1990). The cemetery is not well dated but the burial rite, orderly arrangement and presence of three distinct phases of use argue for a long-lived and probably Christian cemetery, perhaps in use between the 5th and 11th century. An alternative explanation is thus plausible for the Leasowe burials. The early 19th century accounts of the observation of the Leasowe cemetery need not be rejected imply for the lack of a suitable ecclesiastical context, but instead can be seen to fit into a late Roman or early medieval British tradition of burial, entirely appropriate for a port which saw activity throughout that period. Given the discovery of the burial just opposite Leasowe Castle (below and 2.25), it may be that the burials found in the early 19th century may have formed part of a discrete small ordered cemetery, associated with the Roman settlement at Dove Point, rather than a later ecclesiastical burial place.

In 1846, a few weeks after Hume' s initial discovery of finds in Hoylake Parsonage, a Dr Carson found an ancient skull on the shore, and, continuing his researches, he procured other bones (Hume 1847a 53), but these or any record of them seem not to have survived.

In his report for 1868, Ecroyd Smith stated that 'by far the most valuable discovery of the year' was that of *human cremated remains* [his emphasis], which he suggested were of the Romano-British period. He continued:

> 'The writer, accompanied by a young friend, was lingering in the gathering shades of an August evening near the old, forest stumps…when a circular patch of black matter on the blue clay attracted his attention. Though already ravaged by the tide, it nevertheless retained what proved to be portions of the cremated head of a child, of from 8 to 10 years of age, including fragments of the crown and the back of the skull and a couple of incisors. The blackened brain and charcoal confined nearly to the capacity of the skull, had naturally given the idea of an internment in a round hole or possibly an urn, though no signs of such a receptacle remained. The absence of fragments of other and larger bones, however , excited suspicion to the correctness of this view, and led to a further search, resulting in the discovery of portions of the leg bones extended at length' (Ecroyd Smith 1869, 211–12).

Ecroyd Smith referred in the same report to the 'notorious' discovery of an inhumation at Leasowe in 1864 (below), believing this to be of recent origin.

The 'Leasowe Man' skeleton: background

On 22 January 1864 a human skeleton was discovered immediately north of Leasowe Castle at approximately SJ 266 921. It was found when reconstruction work on the Leasowe Embankment resulted in disturbance of the foreshore peats (Cust 1864; Busk 1865). Two conflicting accounts exist of the circumstances of discovery . According to Sir Edward Cust, the owner of Leasowe Castle, the near-complete adult male skeleton lay extended beneath a peat bed in a mixture of blue clay and sand resting upon glacial till, about 5 feet from the surface of the peat. The bed of peat had been covered by a large sand-hill that was washed away by the action of the sea at the time of the discovery. Henry Ecroyd Smith refuted Cust's account of the stratigraphical position of the burial (1865, 211–3). Ecroyd Smith, who visited the site soon after the discovery but after the remains had been removed, considered that the skeleton lay at no great depth, the bones of the feet having already been exposed and removed by tidal action, a view corroborated by two respected museum curators who saw the location soon after discovery. Ecroyd Smith stated that 'no great age could be assigned to the stratum' in which the burial was found, concluding that a thin layer of marshy peat immediately underlying the sand-dunes as shown on his section diagram of the stratigraphy at the burial location (reproduced here as Fig. 1.2.4), but above and quite distinct from the two forest beds, would account for the peat-staining on the bones. He concluded that the burial was no more than 300 years old.

The find attracted considerable interest, and was hailed by Cust as the 'Prehistoric Man of Cheshire', to the disapproval of Ecroyd Smith. The discovery was the subject of correspondence between Cust and George Busk, V ice-President of the Ethnological Society of London, and the eminent geologist Charles Lyell (letters on file at the Natural History Museum, London). This skeleton was donated to become part of the collections at the Royal College of Surgeons, London, which still has original documents related to the discovery, but it is now part of the osteological collections at the Natural History Museum (New catalogue number: NHM P A SK 137) and is described in detail below. Recent radiocarbon dating

has shown that the skeleton is a male inhumation of the Roman period, leading to the term 'Prehistoric Man of Cheshire' being dropped in favour of 'Leasowe Man'. This, accompanied by other analyses, is reported upon below (2.25).

Observations of structures on the Meols shore

In the first half of the 19th century, the remains of structures had apparently been seen in the inter-tidal zone. Dr Traill (see also 1.1) reported to Hume that 'at the low water of spring tides the foundations of houses could have been distinctly traced at a recent period on the Hoyle bank' (Hume 1847b, 69). However, despite the continuing rapid erosion, it was to be some years before structures were again seen on the shore. In *Ancient Meols*, following a lengthy discussion of the Swiss lake villages that were being publicised at the time, Hume commented that in comparison, neither buildings nor stakes, platforms or wicker-work had been found on the Meols shore and the argument for the existence of early settlements rested solely on discrete concentrations of finds (Hume 1863, 376; 394). However, perhaps not realising its potential connection with the locations of the medieval finds, he did mention that 'the remains of an ancient house, like the Hall or proprietary mansion of the neighbourhood, existed till within the last century; and portions of buildings still standing contain some of its materials worked up in them'. In his supplement to *Ancient Meols* (1866b, 33), Hume added 'it is supposed to have been one of the old half-timbered houses of Cheshire, resting on brickwork'[4]. Hume also described 'an ancient well, or spring of fresh water, rises far within the area covered by the tide; and tradition asserts it was formerly covered by a brick archway, and that it was last used by the attendants on the lighthouse which has been obliterated' (Hume 1863, 390–1). Hume noted on that 13 July 1857, 'butts of land or marks of ridges were visible to the Leasowe side of Dove Mark, and Hoylake side of Dove Spit' (Hume 1863, 10), and in 1866, Hume told the Historic Society of Lancashire and Cheshire 'I have myself found water-worn paving stones at the seaward base of the sand-hill(s), apparently the remains of a farm-yard' (Hume 1866a, 33).

If Hume showed gradually increasing interest in describing the physical remains on the shore in the 1860s, Ecroyd Smith's more prosaic style, combined with an acute awareness of the importance of the stratigraphic context, was perhaps better suited to describing the fragmentary and often confusing traces of archaeological remains that he witnessed during this decade. On 18 October 1861 Ecroyd Smith exhibited part of a medieval shoe, which is described as 'found near the ruins of probably the last house of the ancient village of Meols' (Anon 1862). It is uncertain whether this was the 'hall', which Hume referred to later in *Ancient Meols*. Neither writer gives a location or description of the building(s) but the implication is that certain structural remains from the medieval settlement were still visible. In 1866 Ecroyd Smith speculated that the 'long extinct village of Meols, … must have been situated a mile to the Northward of the present hamlet, still called Great Meols' (Ecroyd Smith 1866, 213).

It is possible that traces of associated structures may have been missed at this time, but within a decade it is clear that more extensive and unmistakeable remains of buildings had begun to emerge. They were exposed in a strip of land that was revealed after the overlying sand-dunes had been removed and was then eroded rapidly by the tide. These occurred just as Ecroyd Smith left the scene, and it fell to Charles Potter to take up the mantle of observation and description of the Meols shore.

Medieval buildings

In 1874 Potter exhibited at the Historic Society of Lancashire and Cheshire a section from the puddled floor of a house 'now buried under the sandhills' (Anon 1875, 174). In 1876 he wrote that he had seen:

> 'the remains of ancient dwellings, three or four of which I have had the opportunity of examining immediately after their exposure by heavy storms and spring tides occurring at one and the same time. The floors are made of puddled clay derived from the lower *Scrob[icularia]* clay. What remains of the walls, which in one varied from nine to fifteen inches in height, shows that they were made of wood framework, filled in with puddled clay similar to the floor, the puddle being worked up to a good smooth surface. The perpendicular timbers of the framework were supported on long irregularly-squared blocks of sandstone, two of which had holes cut into their surface for the foot of the timber to rest in. The floors in all cases which I have examined are raised above the surface soil to a height varying from a few inches to fully two feet, each being considerably below the *Bithinia Tentaculata* beds' (Potter 1876, 139–40).

In March 1876 Potter presented a 'diagram' (which has not survived) to the Historic Society in which he explained how he had discovered the remains of a house on the shore at Meols and described the form of construction. 'It was on the upper surface; and the wooden posts which supported the roof had each been set on a round flat stone. There was a hole in the centre of each stone, and a projection in the centre of the base of the post which fitted into it' (Anon 1876, 187). At the meeting of Historic Society of Lancashire and Cheshire on 10 January 1878, he had exhibited 'two sharpened stake-ends, found on the Cheshire shore at Great Meols, and supposed to be part of an ancient stockade' (Anon 1878, 156). Potter recorded that,

'There may occasionally be seen in the lower *Scrob.* bed long, narrow drain-like cuttings, filled with peaty materials' (Potter 1876, 140, n.), which he interprets, without supporting evidence, as excavations for clay to construct houses.

In a later account, Potter described similar dwellings, with:

> '… floors raised by a layer of sand, on which clay was laid, and carefully puddled to a thickness of four or six inches. The walls were timber-framed, the foot of the timber resting on large rough blocks of sandstone which were let into the earth. The stones were probably obtained from the hills bounding the southern side of the marsh… It may be presumed that these houses were thatched with reeds derived from the adjacent marsh It may be presumed that the dwellings were dry and comfortable… one room, well-exposed on the side facing the sea, measured more than twenty-one feet between the walls; its length in the opposite direction could not be established' (Potter 1890, 149).

The dwellings were situated amidst lines of stakes:

> 'Where the sand, including the 'talus' of the low sand cliffs, has been swept away by storms from the shore, the sharpened ends of stakes, deeply driven into the soil, are frequently exposed. The stakes are seldom more than a foot apart and were interlaced with gorse, broom and willow withies'.

In this account he also mentioned metalworking debris 'molten lead and bronze lumps, a mould core of bronze and quern stones, together with spindles and spindle whorls'.

Potter actively collected material from Meols throughout the 1880s. The early 1890s saw a sudden increase in the visibility of archaeological remains, suggesting that the process of erosion had reached the point where a significant medieval settlement focus was being exposed from under the wind-blown dune sand. Potter's close collaborator E. W. Cox began to record his own observations in the *THSLC*, in the process presenting what is perhaps the most graphic description to have survived:

> 'As the fretting of the sea removes the blown sandhills, there appears, a few inches below the level of spring tides, an ancient surface, showing traces of cultivation. Upon this the remains of medieval and older houses are continually washed out, together with ploughs, spades, and other agricultural implements; showing that this was arable land. The houses are mostly built on rough sandstone foundations, set in clay, with clay floors, and the walls of the upper part of rough stakes and wattled work. These seem to have lined an irregular village street. On one occasion, in 1890, traces of the wheels of carts, horses feet with round shoes, and the footsteps of cattle and men, who wore pointed shoes, were for a short time visible on the ground below the high tide; the by side of the road there were refuse heaps containing bone, shellfish, fragments of iron, coal, cloth and shoes similar to footmarks' (Cox 1895, 43–4).

The following year, in the early summer of 1891, Cox observed the exposure of two rectangular buildings, projecting diagonally from under a sand-hill, one measuring 16 x 10 feet (approximately 4.9 x 3.0m), the other 12 x 9 feet (approximately 3.6 x 2.7m). Their floors were of blue clay, and the wall foundations, one to two courses high, were of stones largely unworked but a few with tooling. The upper part of the walls was wattle and daub with rough oak posts 3–4 inches in diameter. The posts had been driven in between the stones of the wall foundations or, in some cases, set into shallow sockets cut into the stones. The interiors contained nothing but hazelnut shells and, in the corner of the smaller house, a small pile of coal. Associated with each house was a midden, in which were found animal bones, fragments of iron and pieces of coarse woollen cloth and leather. The leather included pieces of shoe with pointed toes, which were dated by Cox to the 13th or 14th century. In fact, the surviving shoes in the Potter Collection with only one exception date to the late 14th–15th century (**3200–3261**). Near these first buildings were other structures: 'from these houses southward were traces of the lines of wattled buildings, apparently without stone foundations or clay floors', which he interpreted as long narrow 'sheds' or cattle shelters. About 100 feet [approximately 30m] away from these were two clay-walled structures 2 feet thick [0.6m], about 60 feet long, and twelve wide [18.3 x 3.7m] (Cox 1896, 247–8).

On this occasion too, Cox described footprints, two of which were 'deep, clear and perfect, as if done yesterday; the whole of these marks having been filled-in by light brown sand and thus perfectly preserved until exposed by the tide'. He also mentioned that 'careful drawings were made on the spot of most of these remains, which were obliterated by the action of the tides within about a fortnight of their first discovery' (Cox 1896, 248). Unfortunately these drawings do not appear to have survived.

Potter supplied further information on the remains observed at this time:

> 'When visiting the shore in the company of Messrs. Edw. W. Cox and W. Fergusson Irvine, in the spring of 1892, we came across the uncovered patch of an old track, or road: its direction was E by W. On this were deeply-impressed wheel marks, 5 feet apart, the breadth of the wheels being 9 inches. The horses had been shod with the very broad mediaeval shoes, and the driver with the sharp-pointed shoes of the same period, which left an impres-

sion 11 inches in length, by 4 1/2 inches at their greatest width. There were also the foot-prints of cattle. In my collection I have leather pointed shoe soles, and broad horse shoes so similar that they might possibly have formed these very impressions. The marks were deeply impressed in the soil, and as sharp and fresh as if made within twenty-four hours previous to exposure' (Potter 1893, 243).

The apparent clustering of buildings and the existence of an irregular 'village street' on which stood some of the medieval buildings, together point to a small nucleated settlement rather than a dispersed plan. Cox's reference to lines of wattled buildings, which he termed 'cattle sheds', and two further clay-walled buildings 100 feet away, which measured 60 x 12 feet, could be interpreted as a reference to buildings of the longhouse type, possibly of the early medieval period. These are not common discoveries in rural north-west England. The few that have been excavated and recorded, such as the fragmentary hall-type building excavated at Tatton, Cheshire (Higham 2004, 108–9) and the upland farmstead at Gauber High Pasture, Ribblehead, North Yorkshire (King 2004), suggest that whilst an elongated rectilinear plan is a common feature, the means of construction were adapted to suit local circumstances and availability of materials. At the excavated Viking-period trading site of Llanbedrgoch, Anglesey (Redknap 2004), fragmentary circular buildings of the later prehistoric or pre-Viking period were stratified beneath up to six longhouse-style dwellings with rectilinear plans, side benches and central hearths. Building 2, a large hall-type building was constructed almost exclusively of timber, but Building 1, a smaller dwelling, had stone wall-footings and a hard-laid floor of stone at one end, presumably for the accommodation of animals.

There is however little reason to doubt Cox's conclusions that the two more substantial stone-footed rectangular buildings that he observed in 1891 were later medieval in date. The buildings were apparently single-bay cottages, each the size of a single room, with separate outbuildings as byres. The construction methods are consistent with medieval techniques, using dwarf walls or foundations in which the vertical timbers were set either on pad stones set into the ground, driven between the foundations, or set in shallow slots in the surface of the foundation. Floors were of puddled clay, a feature found at a small, probably 13th century, building at West Derby (Philpott forthcoming, b). Two other buildings observed by Cox had clay walls, 2 feet (0.6m) thick and 60 feet (18.3m) long by 12 feet (3.7m) wide, a technique of construction that survived into the post-medieval period in the Lancashire Fylde (Watson and McClintock 1979, 15) and may be represented in a late 12th or 13th century excavated example at Fazakerley, Merseyside (Wright 1996). Although individual structures cannot be dated, the settlement appears to demonstrate the shift away from the long-houses, as exemplified by the two long clay-walled structures, towards a separation of dwellings and outbuildings, a process that was at its height in the 14th century (Dyer 1986). In the case of Meols buildings it is uncertain whether the four structures observed by Cox were in contemporary use or represent different phases of settlement.

As to the location of the medieval settlement, it is unfortunate that neither Potter nor Cox gave precise locations for the buildings they observed. The only cartographic hint is provided by the position of the symbol for 'Lost Town' at Meols on the plan illustrating Cox's article on 'Traces of Submerged Lands of the Coasts of Lancashire, Cheshire and North Wales' (Cox 1895a). The centre of the symbol lies at about SJ 213 914, which is about 2km north-west of the current village green of Great Meols, although the small scale of the plan makes this subject to a considerable margin of error. However, a further clue as to the location of these buildings lies in their relatively late date of observation in the 1890s, coupled with mapping the degree of coastal movement that had occurred by then. Unlike the observations of the period prior to 1850, the location of the coastline in the 1880s and 1890s is clearly visible in the first and second edition 25 inch/1 mile Ordnance Survey maps (Fig 1.2.2). A comparison of the 1884 map with a modern map suggests that only a small strip of land was lost after this date, before the construction of sea defences prevented any further coastal retreat. This suggests strongly that, far from coming from an offshore location, as Cox's map implies, and was indeed probably the case for a substantial proportion of the Roman finds that were made earlier in the 19th century, the later medieval focus observed in 1890–93 was close inshore to the present-day line of the coast, to the extent that the 1894 sea defences may well have been built across part of it. Hence Ecroyd Smith's original view (1866, 213) that the finds from the 'soil bed or artificial stratum' must have been discovered on agricultural land to the *south* of the ancient village appears to be incorrect, and suggests in fact that the medieval finds of the 1850s and 1860s were probably retrieved from the *northern* periphery of the settlement, as the core of the buildings were, at that time, yet to be discovered.

Circular buildings

Coastal erosion revealed at least three circular structures. The only reasonably precise location for one of these is given in a handwritten record of the meeting of the Historic Society of Lancashire and Cheshire of 18 March 1886, which records amongst the proceedings 'Mr Potter A Communication on ancient circular hut on Cheshire Shore'[5]. A further handwritten note amplifies this, 'Mr Potter showed a drawing of a semicircle of blocks of Sandstone, part of the foundations of a circular Hut found on the Cheshire Shore in the peat formation near Shaw's Battery, after the storm of 13 August 1885'.

The location of 'Shaw's Battery' is not marked on contemporary Ordnance Survey (OS) maps, and local records have produced no mention of a formal fort or battery, such as that which still survives at Perch Rock, New Brighton. However, a strong case can be made for a location north-west of Great Meols village and on the western side of Dove Point. The only landowner called Shaw on the coast was John Ralph Shaw, High Sherriff of Cheshire, of Arrowe Hall, who in the 1870s and 1880s owned a large house and estate called Sandhey (visible in Figs 1.1.4 and 1.1.5) on the Meols shore (Roberts 1986, 6). Shaw had constructed a stone embankment to prevent the sea washing away the house and land, and 'on the shore hundreds of sticks – driven into the ground, fastened together, – were required to break the force of the sea waves dashing on to the stone embankment' (Roberts 1986, 6). The form of the embankment with its flanking walls as shown on the 1871 25 inch/1 mile OS map resembles a gun battery, which may have provoked the local, perhaps ironic, name Shaw's Battery, as a defence against the sea [location *c.* SJ 223 901].

In 1890 Potter wrote:

> 'We are now able to say where some portion of the settlement was, and give a fairly good idea of the character of their dwellings. The earliest dwelling was the round, stone-built house, which has already been brought under the notice of the Society. In this, timber does not appear to have been used, the stones being sunk in a trench and set in puddle, the material being obtained from between the upper and lower peat. This bed is known to geologists as the lower Scrobicularia clay. It is an estuarine deposit, of a fine saponaceous character, well adapted to the purpose of puddling, and setting of stone-work, or filling between timber. It seems to have been used for this purpose from pre-historic times (to which period I ascribe the circular dwelling), to within a comparatively recent period. .... The floor of the round house was the then and present surface-soil on which it was built' (Potter 1890, 149).

In 1891 Cox noticed the remains of another circular building, shortly before two well-preserved medieval buildings appeared, but it was destroyed before a proper record could be made. The following year more structures of this type came to light:

> 'About a foot below the medieval floor level, and about eighteen inches below the line of the spring tides, a circular hut was exposed, which I only saw after it was broken up by the tide; but in April 1892 I was fortunate enough to find the foundation of another circular hut, one half of which was visible beyond the scarp of the sandhill. The stones were partly rough, but had a few pick marks and holes cut in them in which to set the stakes for a conical roof... All of these residences have their upright stakes preserved, but in soft condition, to a uniform height of about 15 to 18 inches, above this height all trace is gone' (Cox 1895, 44).

Very importantly, Cox recorded that one circular hut lay 'about a foot below the medieval floor -level' (Cox 1895, 43), giving an explicit stratigraphical relationship. The observation of a medieval building overlying a circular hut suggests that the location of these structures, which as usual was not given precisely by Cox, points to the area of medieval finds as the more likely location for this structure. Cox considered that they were 'British' (i.e. prehistoric) in date, based on the evidence of a 'British funereal urn' found on the shore. One observation of potential value is that the remains were $1^1/_2$ to 2 feet below the level of the high spring tides (Cox 1895, 44).

This was not the only circular building observed below the high water mark on this shore. Some years before 1895 another circular hut had been found on the coast east of Meols, near New Brighton 'some distance below high-water mark'. The position of the latter can be narrowed down to some extent, since Cox noted 'during spring tides the bar from Rock Point to Wallasey Hole was nearly laid bare, and disclosed a number of stones, three or four feet thick, stretched across from one side to the other, giving the appearance of a ford. This is not far from the position where a circular hut was uncovered at a later date' (Cox 1895, 44, 47).

In north-west England circular structures are found in settlements dating from the Bronze Age (Kirkby and Irby: Philpott and Adams forthcoming), Iron Age (Mellor: Noble and Thompson 2005; Great Woolden Hall: Nevell 1999; Lathom: Cowell 2000; 2002) to the Roman period (Irby: Philpott and Adams forthcoming; Wilderspool: Hinchliffe and Williams 1992, 103, fig. 63). As regards the date of the Meols circular structures, there is no mention of associated material found in or around them that might give some indication of date, though this negative evidence by itself tends to support Cox's suggestion of a prehistoric date, since Romano-British structures would be likely to produce at least a few sherds of pottery or other finds so close to a Roman occupation site.

There also appears to have been a physical separation between the circular buildings and the concentration of Roman finds. In at least one case a circular building lay under a medieval structure. On numerous occasions the antiquarians stress that the Roman and medieval finds occurred in different areas, the medieval material being found consistently 'on the Hoylake side of the Dove marks' (Ecroyd Smith 1866, 14–15). This provides an indication of the general area of the settlement nucleus before evidence about the medieval structural began to emerge in the 1890s. It may be significant that three Iron Age swan's neck pins were found on the shore in November 1893 (83-85), shortly after the time the circular buildings were being exposed on the shore,

although no associations are recorded that confirm a connection. Potter himself considered one circular building to be prehistoric rather than Roman and a late prehistoric date is most likely.

Roman structures?

If a later prehistoric date is accepted for the circular structures, as seems probable, then no certain Romano-British structures have been identified at Meols. An indication that substantial buildings may have been present at Meols occurs in the form of two fragments of Roman combed flue-tile, labelled 'T ile Meols Cheshire' in the NML collection. The tile may have one of two sources. They either emanate from one or more structures in the settlement itself, and therefore are indicative of a substantial heated building, such as a bath-house, or they were brought in as part of a ship' s cargo. In support of the latter theory, the short-lived manufacture of roof tile at Tarbock, north of the Mersey , will have required shipment by water to Chester, from the Mersey to the Dee. The legionary tile-works at Holt upstream from Chester also indicates transport by water of bulky goods, which may on occasion have been shipped further afield, noting the distribution of Leg XX tile stamps originating in Holt as far as the North W ales coast (Philpott 2000, 96, fig. 4.15). The discovery of stray fragments of box flue-tiles at the rural site of Court Farm, Halewood, suggests that small quantities of this kind of material are not a reliable indicator of such buildings (Adams and Philpott forthcoming).

Undated structures and features observed in more recent times

There is little evidence that any archaeological attention was paid to the deteriorating remains of the 'Ancient Forest' in the early- to mid-20th century, as by this time the general orthodoxy amongst those aware of the endeavours of the previous century was that the site of Meols was now irretrievably lost to the sea. However, observations on the shore by Philip Wain in May 1981 during the reconstruction of the sea wall at Great Meols revealed what were interpreted as two separate alignments of posts, forming rectilinear structures (Wain 1981). The first structure consisted of one post *in situ* with the post-holes of five others and fragments of woven wattle in the clay between the post-holes, measuring approximately 2m long, with a return at either end approximately 1m long. The second structure was an alignment with five posts *in situ* and two further posts in a wall at right angles. The structures were about 80 feet (24m) from the sea wall (SJ 240 912). No datable artefacts were found and the function and date of the structures is unknown. This report was an amateur effort by an interested but untrained local teenager, but was nevertheless perceptive, and gives a convincing description of what in retrospect seem to be fragmentary later prehistoric or medieval post-and-wattle structures in the final stages of disintegration. This suggests that, at this time, fragments of the ancient settlement were still discernible along the high tide line. The beach had been badly disturbed and churned up by construction traffic, in the process possibly removing layers of protective silt from above the archaeological layers.

Recent monitoring of the shore since the later 1990s has revealed the line of a buried ditch, in an exposure of boulder clay close to Leasowe Lighthouse, though no indication of date was obtained. A series of about 30 parallel stake alignments, interwoven with wattle were still visible in 2007 on the shore close to Leasowe Lighthouse. The stone tail of the Leasowe Embankment was constructed with slots to accommodate these, providing a *terminus ante quem* for them in 1829 or its subsequent rebuilding in 1864. The most likely interpretation is that they either form the supports for stake nets for fishing, or are early coastal protection measures designed to trap sand and prevent erosion, of a type that were reported to have been built at 'Shaw's Battery' at Sandhey (SJ 223 901; Fig. 1.2.5).

Two observations in the 20th century behind the shoreline have a bearing on the archaeological potential of the immediate hinterland of Meols. The first is was the discovery, some time before 1938, of a narrow (0.9m wide) clinker -built vessel, with a rounded bow, buried in blue clay about 8 feet (2.4m) below the modern surface during demolition of the old Railway Inn in Great Meols. If the account of clinker-construction is accurate, in a northern European context, the vessel could date to any period from the late Iron Age to post-medieval period, since clinker construction in primitive form was present in the Hjortspring boat already by *c.* 200 BC and in a much more developed form, for example, in the Nydam boat of *c.* AD 400, before making its appearance in Britain at Sutton Hoo about AD 625 (Goodburn 1986). Michael Stammers (pers. comm.) noted that the Railway Inn vessel resembled early medieval dug-out boats from the Mersey at Warrington (McGrail and Switsur 1979) and the medieval Kentmere boat, which produced a radiocarbon date centred on 1320±130 and was essentially a dug-out with sides increased in height by wash-strakes of clinker construction (W ilson 1966). Without further investigation it is uncertain whether the Railway Inn vessel was deliberately buried, sank in some inland channel, possibly an early course of the River Birket, or was abandoned on the edge of open water from the former marsh or wetland in the 'western depression' behind the shore. The second find was the discovery of a possible logboat in 1961 in building work at Claremount School, Moreton (SJ 2712 9042; MSMR 2970-006) 3.5km east of Meols and south of the River Birket. Together these serve to emphasise the extent of change in the landscape behind the sea wall, and demonstrate the complexity of the drainage pattern within the wider landscape.

Notes

1 Liverpool Record Office 060/HSL/1-4.
2 Recent dating of borehole samples from remaining parts of the upper part of the artificial soil bed has confirmed Ecroyd Smith's view that it was formed during the medieval period, with radiocarbon determinations of cal AD 1010-1220 (925±50 BP; GU-1311) and cal AD 1298-1435 (550±40 BP; SRR-1402) (Kenna 1986, 15; Cowell and Innes 1994, 30). The soil bed itself is overlain by a phase of dune slack and sand-dune formations (3.1).
3 F. R. Raines (ed.) 1850, Chetham Soc 21.
4 The reference to brickwork suggests that the building was unlikely to be earlier than the 16th century.
5 Liverpool RO 060 HSL, Historic Society of Lancashire and Cheshire Papers.

1.3. Methods of artefact retrieval and the formation of collections

David Griffiths and Robert Philpott

Methods of retrieval

There exists very little detailed record of the circumstances of discovery of much of the material from Meols. Most of the objects were picked up by local people or by the antiquarians from exposed layers and deposits at low tide on a piecemeal basis. Prior to 1846 very little helpful information at all has survived on the details of where, when or by whom these discoveries occurred; but after 1846 the attention of Hume and his antiquarian colleagues began to cast some light on the process of discovery . Hume described the mechanism by which material was removed from the occupation or other deposits:

> 'the sea assists at their finding, by disintegrating the turf bog in which hundreds more probably lie buried, and washing them out, like the nuggets of the gold-digger , from the surrounding particles of earth' (Hume 1863, 365–6).

Ecroyd Smith also observed the process by which metal objects were deposited on the shore (1866, 203). The tides eroded the sand-hills and sandbanks on the landward side, depositing the artefacts within them 'into hollows in the blue silt, forest soil or ancient arable land, as the case may be'. The objects were found washed out from eroding land surfaces along the coast after a combination of moderate spring tides and north-easterly winds had removed the overlying sand-dunes (Hume 1863). Thus, Hume and Ecroyd Smith believed that many of the objects were generally not found *in situ*, but already displaced, having been eroded by wave action from old land surfaces which were formerly covered by sand-dunes. Ecroyd Smith considered that this accounted for the lack of pottery and for the usual scarcity of animal bones, which are lighter than the metal objects and are washed away by the same combination of high winds and high tide that cause the erosion:

> 'during rough weather it is probable the higher tides excavated and carry out of the reach of observation matter of this kind, which through loss of the much of the animal gluten are light, and thus easily borne away , whilst objects of metal are left exposed or washed into adjacent holes; with the exception of the teeth, which through the hardness of the enamel are less likely to decay' (Ecroyd Smith 1866, 213).

Although the great majority of the finds appear to have been found on the surface, there is a hint that some digging took place to find objects. C. B. Robinson, for example, examined the surface and 'occasionally dug into the black earth, in connection with which most of the objects were found' (Hume 1863, 50). Ecroyd Smith (1869, 206) refers to 'incidental delving' and later , Cox also referred to digging for finds in what had been recognised as medieval middens (Cox 1896, 248).

Selectivity and completeness of retrieval

The completeness of retrieval represents a significant element in the size of the assemblage. The material discovered earlier in the 19th century, such as the Roman brooches illustrated by Hume (1863, pls III and IV), seems to have consisted of more complex and eye-catching pieces, mostly if not exclusively metalwork and of high 'curiosity' value. This is perhaps to be expected when retrieval was carried out in ignorance of any notion of archaeological inquiry and guided merely by an undirected and casual sense of seeking the unusual and strange. At this time it seems that the additional incentive of the prospect of making money from selling the material was less of a consideration, as Hume describes some of the metal finds being given away to local children to play with. Only after Hume' s arrival on the scene in the later 1840s, the increased publicity which he generated, and the subsequent advent of other competing collectors, did financial considerations begin to play a larger role in the minds of beachcombers and searchers. However, as the motivation for local people to search for artefacts took on a more urgent and, perhaps to modern sensibilities, unpalatable character, the level of archaeological oversight and understanding was also improving. The diligent attentions of Ecroyd Smith in particular , with his broader sense of knowledge of the contexts producing the finds, and his discriminating judgements on the various claims and theories on Meols that were bandied about at learned meetings, provided a significant element of control over the recording of what might otherwise have been an unstructured free-for -all. It is clear from Ecroyd Smith's published notes and his contributions to *Ancient Meols* that he took a genuine and, for those days, unusually far-sighted interest in

more mundane and fragmentary types of material, such as sherds of medieval pottery and clay pipes. These were informative archaeologically, but could hardly have been expected to command a high price, or to hold any great interest for the pure curio-seeker.

As the 19th century progressed, the style of retrieval and collecting moved in the direction of completeness and thoroughness. Diligent recovery, often involving the collection of small and insignificant fragments of metal, the purpose date and function of which in some cases remains obscure today, suggests that the collection strategies were unusually thorough for the time. The poor quality and visually undistinguished appearance of some of the surviving items in the Potter Collection suggests that his material, at least, was not filtered to select only complete or impressive objects. Indeed Potter himself wrote, commenting on the apparent decline in the number of finds in the mid-1870s: '…the surprise is, considering the careful manner in which these relics have been sought for, that in number they are so few' (Potter 1876, 140–41).

Rate of recovery of finds

Hume suggested that the 1820s and 1830s had been the time when the most significant destruction of archaeological deposits was occurring at Meols, and he therefore viewed his own intervention as coming somewhat late in the day. The overall rate of recovery of finds appeared to diminish over the course of the 19th century: 'In 1814 they were found in much greater abundance; and the difficulty of procuring them has since increased' (Hume 1863, 395). Hume, Ecroyd Smith, and Potter all remarked in the 1860s and 1870s upon how relatively few items of all kinds seemed to be appearing each year compared with the 1820s and 1830s. Conversely, they were satisfied that the level of collection and retention of material had continued to improve throughout the century, compared with the relatively few pieces that had been retained in the early days (Hume 1863, 359; Potter 1876, 140–1). In 1876 Potter noted that the measures taken to prevent erosion, by which he meant the Leasowe Embankment (constructed in 1829 and partially reconstructed in 1864), had reduced the extent of the area over which finds were recovered.

There was also, over the century, a general decrease in the number of Roman finds from what were apparently large numbers in the period prior to Hume's arrival in 1846, to a virtual cessation by the 1880s and 1890s. Conversely, the number of later medieval and post-medieval finds, including a greater proportion of iron and organic materials, such as wood and leather, increased as a proportion of the overall total towards the end of the century. The Potter Collection, which in contrast to the Ecroyd Smith or Mayer collections includes material collected after the early 1870s, contains the majority of items of these more varied and in many cases more fragile materials. This accords with the contemporary accounts by Potter and Cox, which suggest that, particularly in the early 1890s, archaeological materials were being retrieved by them directly from their primary contexts within and amongst substantial structural remains largely of the medieval period (1.2), and were not as subject to displacement by the tidal action as had been the finds from the mid-century decades described by Hume and Ecroyd Smith in the 1850s and 1860s.

From year to year the pattern of erosion and exposure of ancient deposits varied, affecting both the absolute numbers of objects as well as the proportions representing each period. Only Ecroyd Smith kept a consistent record of annual discoveries (which is documented between 1862 and 1868, with a further total for 1874; Table 1.3.1). The first detailed record began in 1862, when 90 finds were recorded; the majority were later medieval, about 20 were post-medieval, and only four were Romano-British, two of which actually came from Hilbre (Hume 1863, 359–60). The Roman finds formed only a small proportion of the finds in any one year, usually 5–10%. The relatively small number in both absolute and relative terms provides a further indication that the nucleus of the Roman settlement, where the deposits richest in artefacts might be expected, had largely been removed by erosion by that time. Hume certainly concluded as much in his statement that the greater difficulty in procuring objects meant 'the inference is that the principal inhabited spot is becoming more and more completely washed away, and that we are now only on the outskirts, picking up such objects as the tide separates or washes out from the enclosing earth' (Hume 1863, 395).

The three years 1863–5 were a relatively prolific period according to writers at the time. They produced 452 finds, of which 150 were found in Little Meols village, and were classified at the time as 38 prehistoric, 32 Romano-British, 13 Saxon, 177 medieval, 40 post-medieval (a few not from the shore), suggesting in the order of 7–10% of the finds from the shore were Roman. In 1866, the finds were: 23 prehistoric, 10 Romano-British, 2 Saxon, 178 medieval, 25 post-medieval (some doubtful attributions); a total of 238, of which around 4% were Roman. In 1868 the total is given as 282 objects, 'primeval [i.e. prehistoric] 22, Romano-British 15, Anglo-Saxon 3, medieval 219, Late English 23' (Ecroyd Smith 1869a, 217), giving a proportion of Roman finds nearer to 5%. Given that the dating of the artefacts is not always completely reliable, some latitude is needed within the figures, but they demonstrate the order of magnitude and relative proportions by period. By 1874 the number of finds was diminishing, with a record of Roman 7, Anglo-Saxon 5, medieval 136, post-medieval 2 objects. In a seven-year period between 1862 and 1868, the only years for which we have a sequence of totals, no fewer than 1968 objects were found, giving an average of over 280 finds per annum.

Table 1.3.1: Number of finds per year as recorded by Ecroyd Smith 1862–74

Year	Prehistoric	Roman	Anglo-Saxon	Medieval	Post-medieval	Total
1862		4		66	20	90
1863–5	38	32	13	177	40	452 (including 150 from Little Meols)
1866	23	10	2	178	25	238
1867						906
1868	22	15	3	219	23	282
1874		7	5	136	2	150

In 1876, Potter estimated an average of approximately 150 finds per year , and was surprised there were not more: erosion being 'at the rate of three yards per year' and given a depth of approximately a foot on average for the productive layer , 'it will be found that not more than one specimen is sifted out of seventeen and a half cubic yards' (Potter 1876, 140–1). There was almost certainly a marked increase in 1890–93, but lacking Ecroyd Smith's style of annual museum records at this point, we are unable to reconstruct the precise return.

History of the museum collections

A summary of the antiquarian activity at Meols, together with an assessment of the authenticity of their discoveries, can be found in Appendix 1. The artefacts collected by the various individual collectors were mostly held in private collections, some of which were dispersed and lost to later scholarship, but several were donated to local museums on the death or retirement of their owners.

From the start of collecting in the early 19th century to the early 20th century when the antiquarian phase of collecting appears to have ceased, at least 22 individuals are recorded as having objects from Meols (Appendix 1). Their collections range from single finds, through the modest assemblage of the Meols fisherman W illiam Banks, which appeared to consist of approximately 100 items, to great compilations numbering thousands of objects, acquired largely by purchase, such as those of Joseph Mayer, Charles Potter or Henry Ecroyd Smith. By 1863 Hume estimated that 4000–5000 objects had been found at Meols. Hume bequeathed his collection to the museum of the University College (the precursor of Liverpool University) [1] but it seems thereafter to have been dispersed. Some, perhaps much, of it came into Potter' s possession, but other elements seem to have been lost to posterity.

It is impossible now to reconstruct the complex relationships between the various collections. Not all of the collections existed simultaneously , as some collectors died before others began to collect. Some groups of finds passed from one collector to another, a process we can occasionally trace through the 19th-century publications of distinctive pieces, but many others appear to have been dispersed without trace. There was some amalgamation and consolidation of the collections, but inevitably some material (like much of Hume's) was dispersed and lost.

Three of the largest collections were destined for local museums. Joseph Mayer' s collection, said to consist of approximately 1000 objects was given to Liverpool Public Museum in 1867. It was joined a few years later by 2958 objects, which comprised the majority of Ecroyd Smith' s substantial collection – 'the result of nearly 20 years very careful and often laborious collecting' as he expressed it in the letter offering it for sale – which was sold to Liverpool Museum in 1874 [2]. The two Liverpool Museum groups are the best documented of the museum collections; indeed they are the only ones with contemporary documentation extending beyond the briefest of summaries in accession registers. The record cards for both Mayer' s and Ecroyd Smith' s collections in Liverpool Museum survive (including the so-called 'Gatty slips', after their compiler Charles Gatty, although Gatty' s descriptions are cursory and objects are rarely illustrated, and then only by relatively crude thumbnail sketches). A tragic postscript occurred on the night of 3–4 May 1941 when the Liverpool Museum building in W illiam Brown Street was devastated by an incendiary bomb during a week of intense air -raids on the city (Fig. 1.3.1). Precautions against damage from aerial attack had been inadequate, and many of the museum' s galleries and stores were burnt out in a night of uncontrolled destruction. The collections were heavily damaged and disrupted, and much of the Meols material, along with many other cultural treasures, was not recovered from the ashes and rubble. Despite the best efforts of post-war curators to reassemble and repair what they could, there are still large gaps in the current Meols collections, which ironically are all the more conspicuous due to the unusual detail of the surviving pre-W orld War II accession documentation.

Ecroyd Smith sold a small 'representative group' of 90 objects, found in 1856–7, to the British Museum in 1858. Marked 'Hoylake' (which as a significant centre of population was perhaps regarded as a better-known place-name than Meols outside the immediate district) these lay unremarked and unstudied in the museum vaults until their existence was realised during the early stages of this publication project in 2000. A noteworthy aspect of this group is their generally indifferent quality. A few pieces amongst them, such as Roman brooches (**108, 117, 127**) and a lead/tin pendant bearing a human bust **1973,** are distinctive and impressive, but most of the rest are minor dress accessories and of unprepossessing appearance and quality. To these was added, in 1883, the fine lead mirror case **2014** donated by J. Romilly Allen.

Cox does not seem to have possessed a collection of objects, perhaps being content with his role as a commentator and writer. Potter's, however, was and

has remained, the largest of the personal collections to survive. The Potter Collection is more extensive than just those objects collected by Potter himself or on his behalf. It encompasses the Mrs Longueville Collection (the objects on the Hoylake Parsonage mantelpiece seen by Hume in 1846) and, although not clearly documented as such, it seems therefore that much of Hume's own collection had somehow passed into Potter's possession by the 1890s. T. S. Gleadowe, who had come into possession of Potter's collection of objects[3], donated them to the Grosvenor Museum, Chester, sometime before 1911 (Shone 1911, 51), although they were not formally accessioned until 1913.

From the time of its foundation in 1885, the Grosvenor Museum, Chester, began to receive reports and discoveries from Meols. As the principal museum in Cheshire, it gradually came to be seen as a more appropriate home for Cheshire-derived material than Liverpool. Towards the end of the 19th century, with Mayer and Ecroyd Smith both dead and the antiquarian phase of collecting on the wane, the personal links between the Meols collectors and Liverpool Museum began to dissipate. Throughout the first three-quarters of the 20th century it was Chester, rather than Liverpool, which took over the role of the official 'local museum' for Meols. However, two more local museums possess Meols collections. Perhaps surprisingly in view of their strong connections to Chester, in 1905–6 Newstead and Longbottom donated a group of Meols objects to Warrington Museum and Art Gallery, which seems to have consisted largely of William Banks's collection, which one of them had acquired (Acc. No. 205–210.1905, Newstead; Acc. No. 241–245.1906, Longbottom). The Warrington collection (now numbering 173 objects) has since been supplemented by a few more recent individual finds found by metal detectorists for whom this was their local museum. The Williamson Art Gallery and Museum, Birkenhead, holds a collection of 112 objects from Meols – these comprise the collection of the Hoylake Historical Society, formerly displayed in Hoylake Library, while the remainder constitutes a donation from the Historic Society of Lancashire and Cheshire (Bailey and Gladstone 1913).

Fig. 1.3.1: Aftermath of the May 1941 incendiary bombing: a gallery of Liverpool Museum © NML

Other Meols finds followed the British Museum group out of the local region. In 1868, Ecroyd Smith (1868, 101) recorded that 'some objects have been sold to parties at a distance at present unknown, a fact greatly to be regretted, but no hold can be sustained upon the chief finder and vendor'. In the 1980s a group of Meols finds was rediscovered in the basement of Verulamium Museum, St Albans, Hertfordshire, with a batch of old printed labels stating their Cheshire Shore provenance. These finds were transferred to Liverpool Museum before October 1988 and are now included in this catalogue. There is no record in the Verulamium Museum of the transaction or of how these finds came to be in their possession. Once in Liverpool Museum, the finds were given temporary 'T *n*' numbers. The labels are retained with the group of finds in Liverpool Museum, but have been separated from the individual finds. It has not been possible to resolve the origins of this acquisition by Verulamium Museum; it may be that this was an unreturned loan from Chester or Liverpool from many years ago, or that they were acquired from an unnamed collector.

With local government reorganisation in 1974, which took the northern half of the Wirral Peninsula out of Cheshire and into the new county of Merseyside, Liverpool Museum[4] once again became the natural 'local' museum for the north Wirral area, and it began to reassert itself as the recipient of the majority of reports and queries about Meols from the public. From the 1970s the popularity of metal-detecting introduced a new method of retrieving finds to the north Wirral coast. However, only a small number of new archaeological finds have been reported from the shore and the land behind the sea-wall. Amongst those notified to Liverpool Museum are two Byzantine coins and a further example from nearby Moreton, which was a chance find (**5123-5125**). The significance of these finds is that they were closely located and for almost the first time it proved possible to pinpoint them on a map. In 1991, two important discoveries were reported to Liverpool Museum and were subsequently acquired for the collection. The first was a group of ten Roman coins including four Augustan pieces (**5009-5012**), which had been found by a local resident at Meols and given to the donor, Mr Ken Herd, as a boy in the 1930s; the original finder and date of discovery were not recorded. The second was a highly unusual silver coin, a tetradrachm of Tigranes the Great of Armenia, which had been found on the embankment at Leasowe, although not certainly authentic (**5003**, 2.24). These two finds represented a significant addition to the number of coins dating to before the Roman conquest reported from the site and brought about a resurgence in interest in the pre-Roman activity at the site.

Scope and extent of the catalogue

The result of the activity detailed above means that almost two centuries of antiquarian enquiry, observation, and collecting on the north Wirral coast have resulted in a huge, unwieldy, and frequently confusing reservoir of information spread between five museums, at least three major archival holdings, and published notes and articles dating back to the 1840s.

Most of the objects in this study have, until now, been accessioned under group headings but individually uncatalogued and unpublished. All have been lacking synthesis with the rest of the collections and the history of the site itself, which may serve to shed more light on their context and, ultimately, on the past human presence in the coastal margin. Due to the restrictions of the way in which the archaeology of Meols has been revealed, there is clearly a limit to what may be said about individual components of the data-set. However, our intention is to relate as much of it as we can to the wider picture of past activity at Meols, and thereby bring to a wider audience the importance and excitement of this enigmatic archaeological story.

Prehistoric and medieval material from the Hilbre Islands and a collection of prehistoric finds from Red Rocks (3.3), are held in collections in the Grosvenor Museum, Chester, National Museums Liverpool (Hilbre), and the Manchester Museum (prehistoric lithics from Red Rocks). These are sufficiently coherent and geographically separate from the Meols discoveries to merit study on their own right: hence their associated artefacts are not included in this catalogue, although they do of course form part of the wider contextual study.

Notes

1 Hume died on 21 November 1884, his will was proved on 13 April 1885.

2 Ecroyd Smith moved away from Merseyside in 1875, initially to Saffron Walden, Essex. He died on 25 January 1889 at Middleham, Yorkshire, his will was proved on 2 March 1889; he does not appear to have kept any antiquities in his private possession after he left Liverpool.

3 Potter's will (proved 4 January 1899) in merely bequeathing his effects to his wife contains no specific mention of his collection, presumably it was subsequently sold.

4 What is now National Museums Liverpool (NML) began as the Liverpool Public Museum; it was known for most of its existence as Liverpool Museum, but has had a number of name-changes in recent decades: the post-1974 name Merseyside County Museums gave way to National Museums and Galleries on Merseyside, which itself has now been superseded. All of these names occur in the documentation of the Meols collections.

2. Catalogue

2.0 Organisation of the catalogue

The aim of the catalogue has been to collate all of the known archaeological material from Meols that our researches have so far identified, spanning the earliest human presence through to *c.* AD 1850 when the date of objects and the date of collecting become contemporaneous.

The five museum collections housing Meols material are the Grosvenor Museum, Chester; National Museums Liverpool; Warrington Museum and Art Gallery; the British Museum, and the Williamson Art Gallery and Museum, Wirral. The origin of the material in the various museum collections, together with details on the collectors and relevant museum documentation, is dealt with in detail in Appendix 1.

The objects have been numbered in a sequence matching the structure of the catalogue. Their publication number, their archive number (which are in random sequence) and the museum or other collection in which they are houses are tabulated and correlated in Appendix 3 (below).

To allow for major sections to start on round numbers (at least in multiples of ten), and to create a small contingency for any necessary revisions, there are a few minor gaps where small groups of numbers have been left void and do not carry a catalogue entry – these are clearly marked in the text. Extant material (mostly held in the museum collections) that has been examined and recorded at first hand is numbered in conventional bold style – e.g. **1450**. Finds that were published with an illustration by Hume, Ecroyd Smith, Potter, and others, or on their behalf, in the 19th century, but the whereabouts of which are now unknown, are also included in the catalogue. These are numbered in italic bold style – e.g. ***1451***.

Other finds that are merely referred to in 19th-century publications, but not illustrated, have not been entered in the catalogue because we no longer have adequate information about these finds to make their designation under date and type certain, although they are referred to in commentary where appropriate. The exception to this rule is the coin catalogue (2.24), where issue and date are considered sufficiently diagnostic to be determined by written description alone; hence 19th-century reports are included here in full.

The information below has been compiled either from examination of existing finds or from examination of drawings or written descriptions of material now lost. For the extant material, almost every item was scanned on a flatbed scanner or photographed with a digital camera to compile a detailed visual record of the collections. Many have been drawn by Nick Griffiths or Mark Faulkner. The decision to select an object for drawing was based on its uniqueness, its particular interest, or the potential for a drawing to elucidate aspects of the object's form and appearance that were more difficult to capture using digital photography. Some coins were unavailable at the time of photographic visits due to staff constraints so have been entered in the catalogue but not illustrated.

As part of the recording process, all objects were assigned an archive number. This was an arbitrary numerical sequence intended to control information on location, to assist in retrieving the objects and to allow cross-referencing to the images. The published catalogue has been re-numbered in a coherent sequence (the Publication Number). A concordance of reference numbers against catalogue number on the database enables finds to be matched up with museum numbers and scans or photographs.

The catalogue is presented as an on-line database with links to digital scans or photographs of the material through the Archaeology Data Service (ADS): full online reference, p. iv.

Order of catalogue

The catalogue has been compiled by a range of individuals specialising in period and/or material groups. To preserve the integrity of individual contributions, the order of the catalogue reflects the sections as submitted by individual contributors to this volume. All cataloguing conventions observed are current – no 19th-century conventions have been retained except where they remain unchanged. For prehistoric, Roman, and most early medieval material it was most practical to group all known finds under period headings. The more extensive later medieval, post-medieval, and miscellaneous material has been dealt with in material based-groups (e.g. non-ferrous metalwork) and also by period where possible. Where a group of objects is functionally distinctive but a sufficiently long-lived type to blur clear period associations (e.g. fishing equipment, hones), these have been catalogued together in functional groups. The structure and order of entries within each section has been adapted to the chronology, hierarchy of importance, and differing conventions pertaining to artefact studies in each individual case. There are differences in order, convention, and emphasis between sections of the catalogue. The authors have not sought to erase these, and indeed take the view that it is not possible or even desirable to attempt to reconcile current practice in cataloguing, e.g. prehistoric lithics, with that of post-medieval metalwork; hence some dissonance will inevitably remain in the style of presentation of this material.

Order of catalogue entries within sections

Within sections from the Iron Age onwards, a broad functional scheme has been adopted by which to order and group material, based on a scheme developed by the Museum of London (Egan and Pritchard 1991), as follows:

(inward to outward looking)

People:	Dress accessories; grooming tools.
Buildings:	Fixtures, fittings, heat, and light; food storage, preparation, and serving; cutlery (knives, spoons).
Domestic pursuits:	Spinning; cloth seals; sewing; toys.
Trade and communication:	Seals/writing; coins; weights.
External activity:	Metalworking (iron, lead, etc); agriculture, fishing, and boats; hunting and riding; militaria; things spiritual; religious figurines, pilgrim badges, and tombs.
Order:	With objects of similar type, smallest first, and then plainest or simplest first, more complex later.

Illustration coverage within the catalogue

For reasons of practicality and scale, it was never our intention to illustrate every object from Meols in this publication, but to give sufficient graphic coverage to convey the importance of every significant group and type of material in the collections. Selectivity has been a necessity. Items have been selected for illustration in the plates on the grounds that they are important in themselves as individual items, or that they are representative of a homogenous larger group, the salient features of which may be conveyed by one or two illustrations. Some items are illustrated front and back where appropriate, or with cross-sections or X-radiographs. In some cases a 19th-century drawing of a surviving find shows an aspect or feature that is no longer visible due to corrosion, loss or breakage; these are therefore illustrated using both recent and 19th-century images. A small further selection of objects, including glass objects, has been depicted in colour endplates.

GENERAL CATALOGUE CONVENTIONS

1234 Extant find that survives in museum or private collection
1234 Non-extant find, but illustrated in 19th century – hence included
c. = circa
D = diameter
H = height
L = length
Th = thickness
W = width
Wt = weight
g = grams
'brass', 'lead' etc. = materials, from 19th-century records of non-extant objects
'gr' = grains (archaic), weight, from 19th-century records of non-extant coins
Pl. = plate in this volume – Meols items only
Fig. = figure in this volume – maps, illustrations, and comparanda
fig. / pl. = figure / plate in other publications

Where individual catalogue groups require their own terminology and abbreviations (e.g. 2.10, leather objects) these have been included within the individual sections.

2.1 Prehistoric material: 9th millennium BC to *c.* 500 BC

Ron Cowell

Fifty-nine pieces of struck flint have been inspected. Most of these belong to the Grosvenor Museum, Chester; three to the Williamson Art Gallery and Museum, Birkenhead, and two to National Museums Liverpool (Appx 3). A further five, which have not been located, have been identified from published sources.

The records relating to the material at the Grosvenor Museum are of varying exactness. It is clear that there are at least two locations from which material has been collected. One of these is the 'Submerged Forest', to which nine pieces can confidently be attributed (Potter Collection, 26.P.1977). The other is the 'terrace of Red Rocks, opposite Hilbre', from which 20 pieces have been identified, but which are not included here. There are four pieces within the Meols collection at the Grosvenor Museum without specific provenance. The rest of the material at the Grosvenor Museum belongs to a small collection, comprising 40 pieces, which is bagged as coming from 'Meols, provenance not certain' (113.P67). The three pieces from the Williamson Museum are provenanced to the 'Hoylake collection', indicating that they were retrieved by members of the Hoylake Historical Society, probably during the 1950s when a range of other material was collected from the Meols shore.

The catalogue below arranges the diagnostic elements of the collections by period. The larger number of pieces, for which chronological attribution is less specific, has been grouped according to typology.

DIAGNOSTIC OF PERIOD

Early mesolithic

1 Pl. 1
Obliquely blunted point type microlith. Made from dark grey brown chert, probably north Welsh in origin;
L 38mm, W 10mm, Th 4mm, Wt 1.3g.

2 Pl. 1
Flint blade, pale grey, with a retouched notch on the side;
L 39mm, W 11mm, Th 3mm, Wt 1.2g.

3 Pl. 1
Complete flake. Banded grey brown chert; probably north Welsh in origin; L 29mm, W 20mm, Th 6mm, Wt 3.9g.
4 Pl. 1
Core rejuvenation flake. Grey brown chert, probably north Welsh in origin, with two opposed platforms and evidence of platform preparation; L 46mm, W 27mm, Th 10mm, Wt 10.7g.
5 Blade, dark grey brown chert, probably north Welsh, very fine regular retouch on tip probably represents use; L 24mm, W 10mm, Th 4mm, Wt 1.5g.

These pieces suggest an early mesolithic phase of activity in the Meols area. Two pieces, both illustrated in Shone (1911, fig. 4), are fairly well attributed to the 'Submerged Forest'. The obliquely blunted microlith made of chert, probably from north Wales, should date as early as the 8th millennium cal BC on stylistic grounds. The form of the flint blade, which may be an unfinished microlith, is of different raw material from **1**, but its form and proportions suggest it is potentially of the same date.

Of the four unprovenanced lithics from the 'Meols' collection (no named collector), two pieces (**3**, **4**) are of the same north Welsh chert as item **1**. In the storage box containing the former four 'Meols' pieces there is a slip referring to flint '*chips*' from the 'Submerged Forest', ascribed to F. W. Longbottom. However, only *one* piece, a natural flint nodule, can be linked to this documentation, but as it suggests that there should be other pieces in this collection, these four pieces are possible candidates. Additionally, item **1** from the better provenanced Potter Collection, suggests that the two chert pieces **3** and **4** would not be out of place in a 'submerged forest' context, which, on the limited evidence available, may be the most likely provenance for them. From the general 'Meols' (113.P67) collection, item **5** is also included here on the basis of the similarity of its raw material to the former pieces.

Later mesolithic/early neolithic
6 Pl. 1 Core with blade removals. Two platforms, removals all way round, bi-polar technology;
L 34mm, W 10mm, Th 4mm, Wt 3.7g.
7 Blade, complete, secondary removal, 15% cortex on right-hand (RH) side; L 27mm, W 12mm, Th 4mm, Wt 1.1g.
8 Tertiary flake, bi-polar removal from possible blade core; L 29mm, W 20mm, Th 9mm, Wt 5.1g.
9 Pl. 1 Blade, complete, tertiary removal, possibly utilised around the pointed tip. L 31mm, W 13mm, Th 4mm, Wt 1.8g.
10 Pl. 1 Blade, complete, tertiary removal, with retouch/extensive use along edge; L 32mm, W 13mm, Th 4mm, Wt 1.8g.
The above are made of pale blue flint with extensive creamy grey surface patination, on **10** this is more limited and the flint more purplish blue, but it is probably a less mottled version of the same type. This is the most common flint and surface appearance in the material from Meols.
11 Pl. 1 Core, with blade removals. Two platforms, removals both sides, bi-polar technology. Light grey brown flint, patchy light blue-grey patination; L 30mm, W 15mm, Th 7mm, Wt 3.1g.
12 Truncated tertiary bladelet with retouch or use on both sides. Light honey colour, boulder clay flint;
L 17mm, W 8.5mm, Th 3mm, Wt 0.5g.
13 Blade, pale grey chert, damage around natural tip may be through bi-polar removal;
L 24mm, W 09mm, Th 6mm, Wt 0.9g.
14 Blade, oblique invasive retouch. Burnt, probably grey brown chert, possibly north Welsh;
L 21mm, W 11mm, Th 3mm, Wt 0.7g.

Although there are no pieces in the collection with key chronological characteristics of the later mesolithic, such as micro-triangle microliths (Jacobi 1978; 1987), the blade-associated technology of these pieces potentially places them in the later mesolithic period. However, given the lack of typological clarity in this group and the fact that blade technological traits are shared with early neolithic assemblages, it is possible that some of the above material could belong to the latter period.

Early neolithic
15 Pl. 2
Large leaf-shaped arrowhead, recorded as being in Potter Collection, Grosvenor Museum, but not located (Shone 1911, fig. 4).
16 Pl. 2
Medium-sized, slender leaf-shaped arrowhead, recorded as being in Potter Collection, Grosvenor Museum, but not located (Shone 1911, fig. 4).
17 Pl. 2
Medium-sized, slender leaf-shaped arrowhead, recorded as being in Potter Collection, Grosvenor Museum, but not located (Shone 1911, fig. 4).
These pieces can more confidently be ascribed to the early neolithic period, on account of their distinctive form. From the images, they appear likely to be made of light-coloured flint, which could possibly represent the same kind of patination as seen in the group above.
18 Pl. 1
Sharpening flake, possibly from fairly large scraper, or possibly even an axe or adze. Light grey brown flinty chert, even creamy grey patination on one side; L 15mm, W 31mm, Th 7mm, Wt 3.7g.
This piece is less easily ascribed to a particular part of the neolithic and a date somewhere between the 4th and mid-3rd millennium cal BC is suggested.

Late neolithic
19 Pl. 1
Transverse arrowhead, right-hand side (RHS) broken off, retouch along curved left-hand side (LHS), tangs lower and upper RHS. Same flint as items **6–10**, though white patination is more cream than grey;
L 39mm, W 16mm, Th 2mm, Wt 2.1g. From 'Submerged Forest'.

Late neolithic/early Bronze Age
20 Pl. 1
Denticulate scraper, probable Group VI volcanic tuff (Langdale origin). Difficult to tell if this is a reworked fragment from a neolithic group VI axe brought into the area, or whether the source is a glacial erratic, although the surface is unweathered and the former seems more likely; L 37mm, W 32mm, Th 14mm, Wt 15.1g.
This is another of the small unprovenanced group tentatively ascribed to the F. W. Longbottom Collection (see **3** and **4** above).
21 Broken flake, probably fragment from polished implement. Same purple blue flint as **10**, little patination. Damage around tip may be through later use; L 26mm, W 14mm, Th 6mm, Wt 2.3g.
22 Pl. 1
Triangular arrowhead, slightly invasive retouch along both sides. Same flint as **10**, although little patination. This could be a candidate for an unfinished barbed and tanged arrowhead; L 18mm, W 13mm, Th 1mm, Wt 0.4g.
23 Pl. 1
Triangular arrowhead, slightly invasive retouch along two

sides, similar surface to **18**. This example, from the nature and location of the retouch, does appear finished; L 33mm, W 17mm, Th 3mm, Wt 2.1g. From the 'Submerged Forest'. Green (1980; 1984) suggests arrowheads such as the last two are not a type in their own right but may be blanks for neolithic leaf or Bronze Age barbed and tanged arrowheads.

Early Bronze Age
24 Pl. 1
Complete barbed and tanged arrowhead, medium grey, local boulder clay flint, barbs 6mm long, 5mm wide, tang 5mm long, 5mm wide; L 27mm, W 24mm, Th 4mm, Wt 1.7g. From the 'Submerged Forest'.
25 Pl. 1
Barbed and tanged arrowhead, broken at tip, brown flint, barbs 6mm and 8mm long, 6mm wide, tang 7mm wide, 6mm long; L 26mm, W 29mm, Th 4mm, Wt 3g. From the 'Submerged Forest'.
These arrowheads from the Potter Collection may be the 'arrowheads' previously recorded from the Cheshire Shore as 'two finely barbed... in flint' (Ecroyd Smith 1871a). They are also illustrated in Shone (1911, fig. 4). They can be defined as 'fancy' in type (Green 1980). The two examples above are representative of Green's (1980) Ballyclare type, found in small numbers in the west and north of Britain, but flint versions in particular are suggested as coming mainly from Ireland.
26 Pl. 1
Large arrowhead with broad tang and vestigial barbs. Made of ?rhyolite; L 51mm, W 28mm, Th 7mm, Wt 11.1g. From the 'Submerged Forest' (Shone 1911, fig. 4).
27 Pl. 1
Complete, large barbed and tanged arrowhead with vestigial barbs. Made of ?rhyolite;
L 47mm, W 23mm, Th 4mm, Wt 6.7g. From the 'Submerged Forest' (Shone 1911, fig. 4).
28 Pl. 2
The plate in Shone (1911, fig. 4) which shows the above four arrowheads from the Potter Collection, also includes another crude, probably partly made, barbed-type arrowhead, which has not been located.
29 Hume (1863, pl. XXI, 2) illustrated a further small barbed and tanged arrowhead, with one barb broken off, ostensibly made of flint, which has not survived in any of the collections.

NOT DIAGNOSTIC OF PERIOD

The rest of the material from the 'Meols' collection is more difficult to date, as the types could belong to any of several periods. They are arranged below by typological group and raw material type.

Scrapers
30 Pl.1 Scraper, largish, thick thumb-nail shape, worked on the end and both sides. Light grey flint, limited pale blue-grey patination, as **10**; L 24mm, W 23mm, Th 9mm, Wt 5.4g.
31 Pl. 1 Scraper, on a chunky flake, edge formed by five wide facets, probable use damage around the end. Pale blue grey flint heavily mottled with creamy grey patination, similar appearance to **19**; L 25mm, W 22mm, Th 10mm, Wt 5g.
32 End scraper. Crude *ad hoc* piece on a primary flake of boulder clay derived flint, honey-grey colour, not patinated; L 29mm, W 20mm, Th 9mm, Wt 5g.
There are too few of these, and there is no pattern of style or raw material use within this small group, to suggest a specific chronological horizon for their occurrence at Meols.

Other implements
33 Pl. 1 Utilised piece. Tertiary flake, dorsal face has invasive retouch over most of the surface and on the LHS half of ventral face, general shape approaching leaf arrowhead, ?discarded in manufacture. Same flint and patination as **6**; L 24mm, W 17mm, Th 7mm, Wt 2.3g.
34 Flake, retouched along LHS. Same flint and patination as **6**; L 20mm, W 14mm, Th 2mm, Wt 1.1g.
35 Small flake, probably from implement re-sharpening, with some probable use damage to dorsal side, on butt end. Same flint and patination as **6**; L 10mm, W 20mm, Th 5mm, Wt 1g.
36 Flake, possibly bi-polar removal, with fine retouch around curved LHS. Light grey brown flint, creamy white patination in areas; L 23mm, W 20mm, Th 5mm, Wt 2g.
37 Piercer, burnt flint, fine retouch to modify slightly natural point on core trimming piece;
L 21mm, W 23mm, Th 5mm, Wt 1.5g.
38 Fragment of retouched small flake or blade, slightly bluish, grey flint, no patination;
L 11mm, W 13mm, Th 3mm, Wt 0.4g.
None of these pieces belongs to a standard typological group; they mainly fall into a category of miscellaneous or *ad hoc* retouch. These are difficult to date as there is so little well-dated comparative material to draw upon. The blanks used for most of these pieces would not be out of place in mesolithic technology and the few quantified, but not stratified, assemblages from the region show these types alongside mesolithic or early neolithic types, the nearest being at Irby (Cowell in prep.a). There is far less comparative material for later assemblages, however, to be sure that this applies specifically to the earlier period.

Waste flakes and debitage
39 Pl. 1
Segment of wide blade, damage along LH dorsal side may be through utilisation, same flint as **6**, ventral surface appearance as **19**; L 20mm, W 24mm, Th 2mm, Wt 2.1g.
40 Wide blade, broken segment. Extensive cream mottled patination as **19**; L 17mm, W25mm, Th 4mm, Wt 2.5g.
41 Flake, difficult to tell whether the slight damage on one side of the natural tip is from use or bi-polar removal technology. Light grey brown flint, same appearance as **36**; L 25mm, W 17mm, Th 5mm, Wt 2.5g.
42 Debitage, blade-like, butt end of blade, some core preparation, same flint and creamy grey patination as **36**; L 14mm, W 15mm, Th 3mm, Wt 0.5g.
43 Tertiary flake, light grey brown flint, same appearance as **36**; L 21mm, W 16mm, Th 2mm, Wt 1.0g
44 Flake, tertiary removal, complete, same flint and patination as **6**; L 23mm, W 12mm, Th 3mm, Wt 0.8g.
45 Blade, complete, edge damage along RHS and on lower LHS, some, but probably not all, may be post-depositional. Same flint as **6**; L 30mm, W 16mm, Th 5mm, Wt 1.9g.
46 Flake, same flint and patination as **6**; L 20mm, W 13mm, Th 5mm, Wt 1.0g.
47 Small flake, same flint and patination as **10**; L 16mm, W 12mm, Th 3mm, Wt 0.5g.
48 Flake, same flint and patination as **6**; L 18mm, W 20mm, Th 4mm, Wt 1.4g.
49 Small flake, tertiary removal. Same flint as **6**, patination same as **10**, showing the purplish blue flint and the faint bluish grey flint are the same; L 20mm, W 12mm, Th 3mm, Wt 0.8g.

50 Small flake, tertiary removal flake. Same flint and patination as **6**; L 19mm, W 14mm, Th 4mm, Wt 1g.
51 Flake, tertiary removal, probably bi-polar. Purplish blue flint, same as **10**, a little pale grey patination on ventral side; L 25mm, W 14mm, Th 7mm, Wt 1.9g.
52 Small flake, purplish blue grey flint, same as **10**, little patination; L 15mm, W 15mm, Th 4mm, Wt 0.9g.
53 Flake, tertiary removal, purplish blue local flint, same **10**, no patination; L 18mm, W 14mm, Th 2mm, Wt 0.7g.
54 Small flake, tertiary removal, purplish blue-grey flint, no patination, probably bi-polar removal;
L 15mm, W 14mm, Th 3mm, Wt 1.1g.
55 Flake, light grey flint, a little patination, bi-polar technology; L 20mm, W 21mm, Th 5mm, Wt 3.4g.
56 Debitage blade chip, some damage around tip, possibly through use. Pale grey brown flint, very light patination, similar to **41**; L 12mm, W 14mm, Th 2mm, Wt 0.5g.
57 Debitage, waste chunk, pale grey local flint, no patination, some damage around a natural point may reflect use as a piercer; L 11mm, W 16mm, Th 5mm, Wt 1.1g.
58 Flake, tertiary removal, bi-polar flake, red local flint, no patination; L 22mm, W 15mm, Th 6mm, Wt 1.1g.
59 Small flake, light grey brown flint or chert, limited damage at tip, may be bi-polar removal;
L 17mm, W 14mm, Th 4mm, Wt 1g.
60 Debitage, angular trimming piece, pale grey , chert-like flint, edge damage probably post-depositional;
L 20mm, W 11mm, Th 6mm, Wt 1g.
61 Debitage, tertiary chunk, probably bi-polar removal, dark grey local flint, no patination;
L 22mm, W 14mm,Th 8mm, Wt 2.7g.
62 Flake, primary removal, complete, pale brown grey local flint, slightly water-worn;
L 30mm, W 27mm, Th 5mm, Wt 6.3g.
63 Large primary natural flake, local flint, water -worn surface, retouch and or utilisation subsequently along RHS and tip; L 63mm, W 33mm, Th 13mm, Wt 35g.
This group of material relates to various kinds of flakes and waste from the knapping process, and is difficult to date. Neither can there be any certainty that differences in the nature of patination of the flint represent distinct chronological periods. However, there are some pieces (**36**, **40**) that have the creamy patination shared with the late neolithic arrowheads. The most common material is represented by blue flint, ranging from purple-blue to pale blue, with variable amounts of light white-grey patination. This range is found both on types that appear most likely to be mesolithic (**6**, **10**), and on implements that are probably of late neolithic or early Bronze Age date (**21**). The evidence, such as it is, therefore suggests that this material echoes that of the more diagnostic items; that it represents a span of time from the mesolithic to the early Bronze Age.

Miscellaneous
64 Pendant, natural pebble, naturally smoothed surface with small drilled perforation;
L 24mm, W 16mm, Th 8mm, Wt 3.2g.
Stone
65 Green-coloured tuff, thin-sectioning showed it is petrological Type XV (Langdales, Cumbria). The wear pattern suggests an adze. L 86mm, W 38mm, Th 24mm. Marked 'Meols cc.206'.
66 Perforated adze, with side facets, polished blade, ?possible Bronze Age re-use of neolithic axe. Found in blue silt in the bank of the old course of River Birket (Moffatt 1977, no. 50); L 142mm, W 60mm, Th 32mm. Weight not available.

DISCUSSION

The documentation for the above material does not include any information as to the exact circumstances of its discovery, other than the few pieces from the 'Submerged Forest' associated with the Potter Collection. The nearest information of this kind is restricted to a description of '21 flint arrowheads and other small instruments' in black, white, and red 'flint' from the 'upper woody deposit or the thin superincumbent bed of clay' (Ecroyd Smith 1866). There is, however, no way of distinguishing how far this is the same material that survives in the collections. The red flint in particular can be identified as local boulder clay flint, although there is only one piece in the 'Meols' collection, while the white flint is probably the patinated material, which is the main type of extant flint in the museum collections.

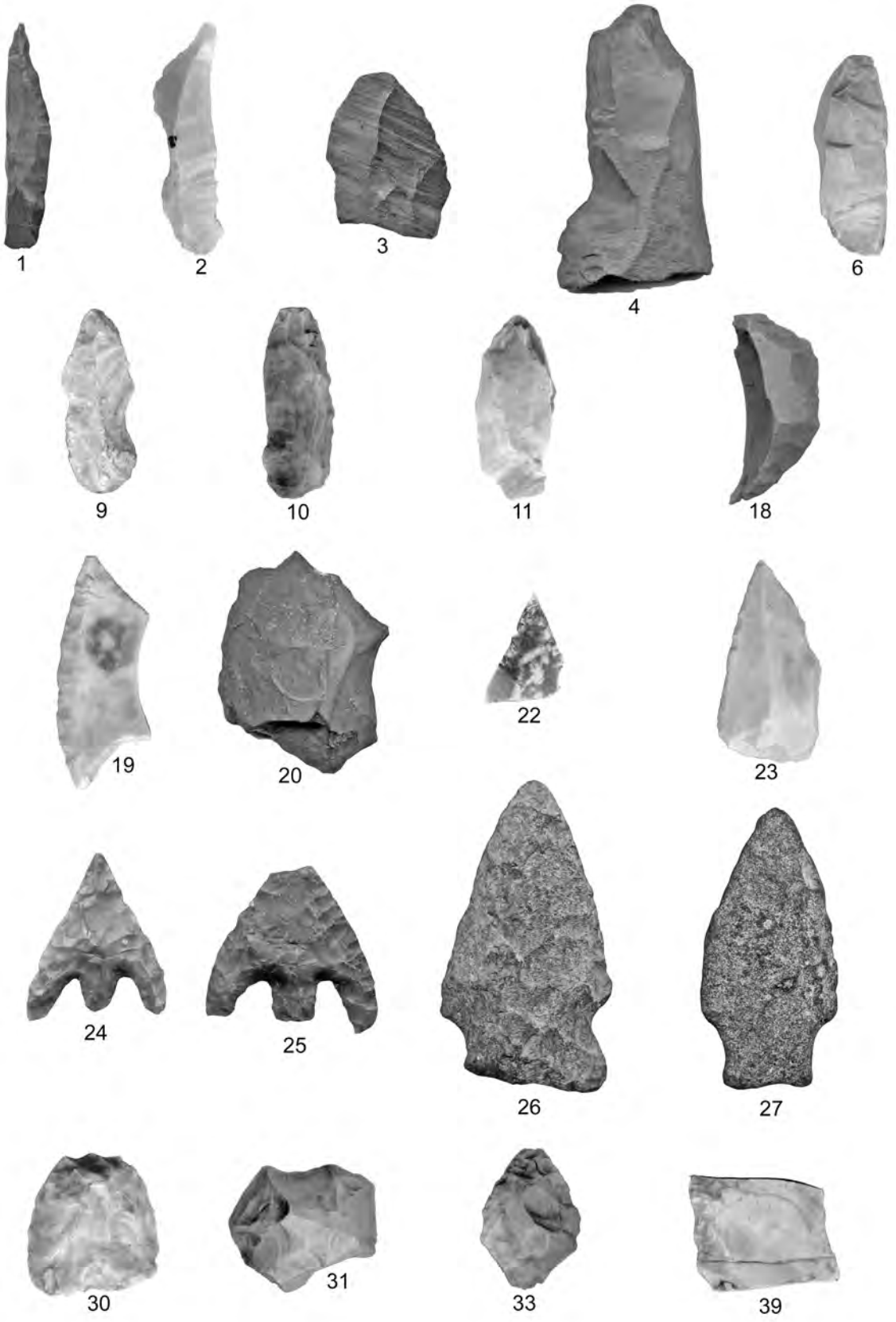
It is therefore difficult to know how many sites the material from the collections represents and in what kind of locations they were found. Thus, from the existing evidence it is difficult to recreate how human groups adapted to the landscape at the local level. A few very general observations can be made, mainly on the basis of the type of raw material used.

Early mesolithic *c.* 8500 BC – 7200 cal BC
The earliest human activity in the Meols area, limited to five struck pieces, mostly chert, relates to the early mesolithic period. It is not clear if they all come from the same site, but even if they represent activity at several points in the present coastal area around Meols, they are still significant. The main assemblages using this type of material have previously been recorded only in limited areas of the W irral; on the T riassic sandstone ridge near Greasby and Irby, *c.* 5km inland, and 2km to the south of that, on the sandstone slopes overlooking the Dee estuary , at Thurstaston (Cowell 1992). The Meols material shows that activity of this period extended beyond these inland sandstone ridges onto the lower ground in the present coastal plain.

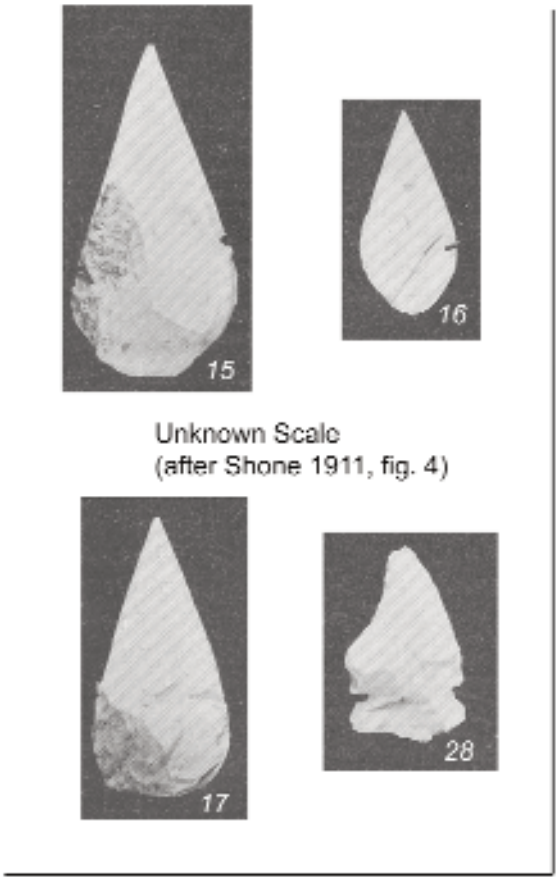
The Meols material, recorded as being from the 'Submerged Forest' is likely to be from an earlier land surface than that of the 'lower Forest Peat Bed', as the dates for the trees in this bed are later 6th millennium BC. In a few places a thin band of sand or clay underlies the peat bed, indicative of some marine or estuarine deposition locally before *c.* 5900–5700 cal BC (Innes *et al.* forthcoming), which is well into the later mesolithic, by which time stone tool technologies and resource procurement strategies on the Wirral had changed from the early part of the period.

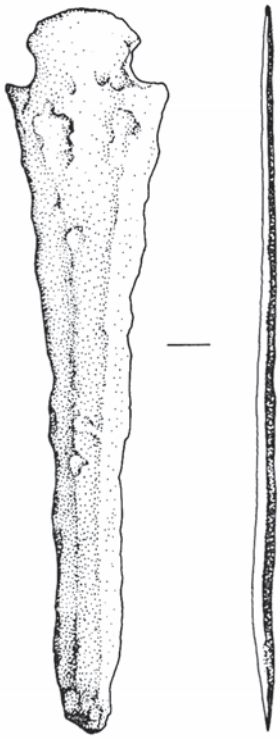
Later mesolithic/early neolithic *c.* 7200–3200 cal BC
Much of the later material from Meols is more difficult to place chronologically. There are some technological traits that provide some guidance, which might be supplemented by the surface character of most of the flint. This relies on the presence or absence of patination, or the natural chemical modification of the surface, which has occurred in response to natural factors associated with soil and other environmental factors. Differently patinated material suggests sites with different environmental conditions and thus potentially of different dates or location.

The basic type of flint from the boulder clay , in its unpatinated condition, consists mainly of dark and light grey, pale brown and honey , and, occasionally, red flint, which is found fairly widely across Merseyside. In its white or cream mottled form it tends mainly to be found close to



Pl. 1. Early prehistoric: lithics





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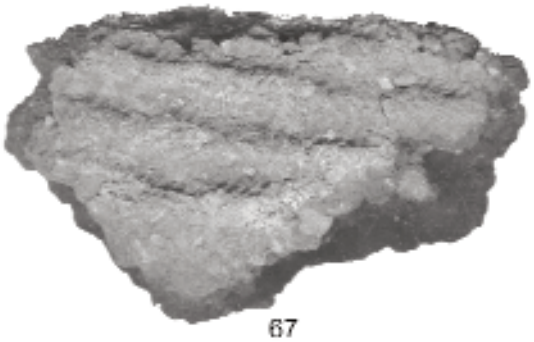

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Pl. 2. Early prehistoric: lithics, ceramic and metal

the coast, of both W irral and Sefton (Cowell and Innes 1994). Most of the flint from the 'Meols' collection is either purple-blue or pale brown-grey material, which has been mottled either cream white, which is often quite extensive, or grey white. The Meols material is not water - worn, suggesting that it may be the particular combination of soil and atmospheric conditions in coastal areas that causes the patination.

The typological affinities of some of the Meols patinated pieces suggest a potential later mesolithic or early neolithic date for a proportion of the material, based on similarities between two flint cores (**6**, **11**) from Meols and those from a site at Irby, which come from a residual assemblage with some later mesolithic typological indicators (Cowell in prep a). This suggests that other similarly patinated material included in the non-diagnostic group may also be of this date, and that a majority of the material may belong to this period. However, some of the material assigned to the later mesolithic could belong to the succeeding early neolithic period, as technology and some aspects of typology are very similar between the two periods. There are other more certain early neolithic pieces (**15–17**) from the 'Cheshire Shore' as represented by three leaf arrowheads recorded only from illustrations (Shone 1911), which show that such a context is possible.

Later neolithic *c.* 3200–*c.* 2400 cal BC
Those pieces that can be dated reasonably confidently to the later neolithic or perhaps early Bronze Age, as certain types continue in use through the chronological boundary (**20–21**), use both the same flint as, and are patinated in a similar way to the suggested mesolithic pieces. This suggests a degree of discard in similar locations close to contemporary coastal areas in both this period and in the mesolithic.

Early Bronze Age *c.* 2400–1500 cal BC
What is noticeable is that some of the least contentiously provenanced material, from the 'Submerged Forest' (Potter Collection) is different from much of the material in the 'Meols' (113.P67) collection, with seven of the nine items being unpatinated in the former collection. Other than the early mesolithic pieces, the other unpatinated material dates to the early Bronze Age (**24–29**). Though, even here, the location 'Submerged Forest' is too vague to know how these two phases of activity relate to each other geographically. The fact that the two 'fancy' early Bronze Age arrowheads are not patinated suggests that they may have been brought from the slightly wider area into the forests around Meols. One example is made of brown flint, which is found more commonly in Cheshire assemblages, than from east of the Mersey (Cowell 1991; 2005).

Pottery
67 Pl. 2
A fragment of coarse gritty pottery with lines of whipped cord impressions has also been found on the shore at Meols (Varley 1964) in the Grosvenor Museum. This is probably of late neolithic Peterborough type. It is accompanied by a handwritten label by 'CP' (Charles Potter) stating 'This type of pottery is very rare on the Cheshire Shore, I once found fragments of what appeared to be an entire crock, they were exposed in the horizontal face of the outcrop surface soil at the base of the sandhills, but were in too soft a state for removal'.
This piece of pottery is unique in this part of the region, and prehistoric pottery is rare across most of north-west England (Royle and Woodward 1993).

Bronze
68 Pl. 2
Bronze dagger. Rounded butt with two side notches and a flattened mid-rib along the blade. Found by metal-detectorist on beach at Leasowe, *c.* 1983, L 103mm, W 23mm (Cowell 1995).
The style of this piece marks it out as middle Bronze Age (Burgess 1974). It is of a type rarely found in north-west England, so it lacks an interpretative framework within which it can be explained in social, political, or depositional terms. The lack of site contextual information for the findspot also makes it impossible to say whether it represents a casual loss, deliberate deposition, or belongs to a settlement.
[69-79: numbers not used]

2.2 Later prehistoric material: *c.* 500 BC to AD 1–50

Robert Philpott

IRON AGE METALWORK

The Iron Age assemblage from Meols is small, but regionally highly significant. The earliest finds are three swan-neck pins (Longley 1987, 104), a ring-headed pin (Hume 1863, pl. XXII, 7, p. 226) and an arched bow brooch of La Tène I type, the latter probably of 5th century or possibly early 4th century BC date (Colin Haselgrove pers. comm.). For the middle and later Iron Age, coins represent not only the most closely datable finds, but also objects for which the original place of manufacture can be determined. They consist of three Carthaginian silver coins dating to 220–210 BC, and three Celtic coins of the 1st century BC (Watkin 1886, 277–84; Laing and Laing 1983; Chitty and Warhurst 1977, 35; Longley 1987, 104). Two of the Celtic coins are billon Class II staters of the Coriosolites, a tribe who inhabited Brittany and the Channel Islands, dated to *c.* 75–50 BC (Warhurst 1982, xxi, pl. I). The third Celtic coin is a gold piece of uncertain type, variously identified as a Westerham quarter stater, current in the Durotrigian area (Laing and Laing 1983, 7), a Mack Type 138A (British L: Whaddon Chase stater) or 148 (British M: Wonersh type stater), giving a date in the 2nd half of the 1st century BC (Matthews 1999, 183), or a possible Corieltauvian stater of the late 1st century BC to early 1st century AD (2.24) One probable Iron Age find is a La Tène III brooch of Hawkes and Hull Type 4, probably of the 1st century BC (Hull and Hawkes 1987, 184). Although broken, the characteristic loops of the bow make the attribution to this scarce type almost certain. A group of four spiral finger-rings may date to the late Iron Age, although an early Roman date is possible. A further introduction during the Iron Age date is the foot of a copper -alloy patera, probably dated to the later 1st century BC or early 1st century AD. A group of four Augustan *asses* struck in the period 15 BC to AD 11/12 may represent a hoard, although the precise circumstances of discovery are not recorded; if so the high degree of wear may indicate their introduction soon after the Roman conquest.

Brooches
Meols has produced two Iron Age brooches. Ecroyd Smith records a previously unrecognised Iron Age brooch ***80***

found in 1867, an arched bow brooch of type La Tène I 1A or 1B dated to the 5th to 4th century BC (Ecroyd Smith 1868, 104–5, fig. 19), but it is no longer extant. The second is a La Tène III brooch with multi-looped bow, which survives in the Grosvenor Museum, Chester **81**.
Iron Age brooches are rare in north-west England and few examples can be cited. Brooches of La Tène I type are not common in western Britain. By the early 1980s only three La Tène I brooches had been recorded from the whole of Wales. A La Tène I brooch from Moel Hiraddug, Flintshire (about 22 km from Meols across the Dee estuary) was described as the first brooch of its kind to be found in north Wales, with the next nearest to that findspot being the southern Marches at Sutton Walls, Herefordshire (Guilbert 1982, 41 n. 75). Subsequently, an example of a Type 1A brooch, assigned to the period 475/50–400/375 BC, was found in an inhumation grave at Bromfield, Shropshire (Mackreth 1995, 69–70). A La Tène II/III brooch was found in a post-hole at Irby, Wirral (Cool forthcoming; two separate cereal grains from the same feature yielded identical dates of cal BC 410–200 BC (OxA-8485, OxA-8486) (Philpott and Adams forthcoming).

La Tène I arched bow brooch Type 1A or 1B
80 Pl. 3
L *c.* 38mm; the brooch has a high rounded bow and what appears to be a circular-sectioned rod bow. The bow curves sharply in reverse towards the foot. The catchplate appears to be damaged. The figure indicates the pin and part of the coil are missing (Ecroyd Smith 1868, 104–5, fig. 19).
Smith describes it as 'like the modern "Gipsy-pin", this most useful little brooch has been made (cast) all in one piece, – the brooch proper flanged behind, and the pin with an elastic coil atop'. Known only from Smith's illustration, it does not appear to survive in any collection.
Colin Haselgrove (pers. comm.) suggests it is probably Hull and Hawkes (1987) Type 1A, but Type 1B is not out of the question, with the date most probably 5th century BC, but possibly early 4th century. Haselgrove dates La Tène I A and B brooches to the 5th or 4th century BC (1997); this assumes the foot is damaged. Two parallels at Wetwang Slack, East Yorkshire, of La Tene I style, have a slightly more angular bow, but otherwise appear very similar, although in the Meols piece the bent over foot and pin are missing (Dent 1982, 442, fig. 4, nos 205 and 327).

La Tène III brooch with multi-looped wire on bow
81 Pl. 3
29x1.5x7mm; copper alloy wire, oval in section, coiled into two loops with part of a third surviving, broken at either end. Hull and Hawkes Type 4.
There is little doubt that this is part of a La Tène III brooch (cf. Hattatt 2000, no. 728). Three examples of this type of brooch have previously been recorded in England: two from Glastonbury and one at Woodeaton, Oxon (Hull and Hawkes 1987, 184–6). The more complete Glastonbury example (Hull and Hawkes 1987, no. 0082) lacks the pin and foot but has a double row of wire loops along the bow. The Woodeaton example was twisted into five loops, a sixth forming the spring and half a loop forming the catch; it measured 31mm long (from drawing) (Kirk 1949, 9, fig. 2, no. 1). Geographically, the nearest parallel cited by Kirk was from Hallstatt, but the bow is more highly arched, while Italian Iron Age parallels also exist. Hawkes notes that, on the continent, brooches with looped wire features are seen from as early as the 6th century BC, but continental examples have dummy springs rather than simple coiled loops. The small group in Britain need not date to before the 1st century BC and may be an insular development (Hull and Hawkes 1987, 184).

Fig. 2.2.1 La Tène III brooch from Woodeaton, Oxon.

Ring-headed pins
Examples of ring-headed pins from Crickley Hill, Glos (Dixon 1994, 243, fig. 214, M5, M8–11), Rainsborough, Northants, and elsewhere suggest the type begins in the very early Iron Age, if not before, rather than in the 4th century BC or later date as suggested by Dunning (1934). A copper-alloy example from Runnymede occurred in a late Bronze Age context, probably of 7th century BC date (Stead 1993, 53–4). Examples are rare in north-west England, although a 'crook pin' of related type was found in 1975 in Hutton parish, Lancashire (B. Edwards pers. comm.). Iron Age sites in north Wales have produced ring-headed pins (e.g. Prestatyn: Blockley 1989, 100, fig. 42, no. 1; Dinorben: Savory 1964, 131–2, fig. 19, nos 1 and 2; Savory 1971, fig. 13 no 13).
82 Pl. 3
L 43 mm; head d. 13 mm; shaft d. 1.5 mm; copper-alloy, broken off at base (Hume 1847, 17, fig. 47; 1863, pl. XXII, 7, 226; Dunning 1934, 289).

Swan-neck pins
Dunning considered that the swan-neck pin reached this country in the 5th century BC and was in use for a relatively short time (Dunning 1934, 272); they are rare by comparison with ring-headed pins. An iron swan-neck pin was found at Beeston Castle, Cheshire, but the broken head indicated it could have been a ring-headed pin (Stead 1993, 53–4, fig. 36, no. 5). As a copper alloy ring-headed pin was found in a late Bronze Age context at Runnymede Bridge, probably of 7th century BC date, Stead suggests that the iron examples may date to the start of the use of that metal in the country. The three Potter pieces were all found in November 1893 and have similar alloys, originally about 10% tin bronze with small amounts of lead (Appx 2).
83 Pl. 3
L 54mm, D 4mm; corroded shank of circular cross-section, the loop is broken just above the neck.
84 Pl. 3
L 42mm, Th 3mm; corroded shank of oval cross-section, the loop is broken just above the neck.
85 Pl. 3
L 56mm, D 3mm (max.); corroded shank of circular cross-section, the loop is broken just above the neck.

Spiral finger-rings
Four coiled or spiral rings are recorded from Meols; three survive in museum collections, while the fourth was illustrated by Hume from Ecroyd Smith's collection ***89***. All four are of wire rather than ribbon type (Jope and Wilson 1957, 79). This long-lived native type had its origin in the mid Bronze Age, and was at its height in the later Iron Age. Although it continued into the Roman period it was not very popular then (McGregor 1976, 135; Cool 1998b, 57–8), but is still found in the Anglo-Saxon period (Cool

and Mills 1993, 93). The fact that it persisted to the late Roman period is indicated by 4th-century examples from Lankhills cemetery, Winchester (Clarke 1979, fig. 80, 250) and Lowbury, Berks (cited in Savory 1964, 135). Anglo-Saxon examples are recorded from 5th- and 6th-century contexts, usually in inhumation burials, and take a variety of forms, from rings of two or three coils to scarcely overlapped terminals (MacGregor and Bolick 1993, 169–71). In north-west England, the late Iron Age or early Roman period is most likely for these items.

Spiral finger-rings are discussed by Savory (1964, 135–7). The distribution map drawn by Jope in 1957 emphasises the concentrations in southern Scotland and southern England, with a void in the Midlands and northern England (Jope and Wilson 1957, fig. 3) but recent finds in the Welsh Marches and north of England emphasise the illusory nature of the intervening gap.

Numerous parallels can be cited. Four coiled or spiral rings are recorded from Colchester (Crummy 1983, 47, nos 1758–1761). They are present in large numbers at Sheepen, Colchester (Hawkes and Hull 1947, 330) and also at Maiden Castle, Dorset, where 13 examples were found dating to the period of the late 1st century BC to first half of the 1st century AD; they were in use there as both finger and toe rings, while four other examples come from late Iron Age/early Romano-British graves at Poundbury, Dorset (Cool and Mills 1993, 93, fig. 68) and three 1st century AD examples are known from Baldock (Stead 1986b, 128). An example from a site at Kingsholm, Gloucester, which saw early Roman military occupation, was in later disturbed layers (Pitts 1985, 31, fig. 12, no. 12). In northern England the type is represented on native sites such as Thorpe Thewles, Cleveland, where two examples occurred in late Iron Age phases (Allason-Jones 1987, 77, fig. 50, nos 4 and 7), and at Dalton Parlours villa, West Yorkshire (Cool 1990b, 79, no. 7). In Wales, two were found in the Iron Age hillfort of Dinorben, Denbigh, which was re-used in the Roman period (Savory 1964, 135–7, fig. 17, 3 and 16), while two more from the hillfort of the Breiddin, Powys were thought more likely to be Iron Age than Bronze Age (Coombs 1991, 139, fig. 56, nos 166–7), and at Prestatyn, in north Wales (Henig 1989, 100, fig. 41, nos 1, 3). They also occur on northern military sites, such as Castleford, West Yorks (Cool 1998b, no. 172).

The finds from Meols indicate activity in the late Iron Age and early Roman periods, with a strong showing in the pre-Flavian period. A late Iron Age or early Roman date for the group is probable. X-ray fluorescence analysis of **88** indicates bronze with a trace of zinc, indicating that it is unlikely to be earlier than 1st century BC (Ponting 2004, 3–4).

86 Pl. 3
D 20mm external, Th 1.5mm; copper alloy. Oval section. Surface corroded and pitted in parts.

87 Pl. 3
D 21mm external; copper alloy. Variable section from D-shape to oval. Surface corroded and pitted so no trace of any decoration visible.

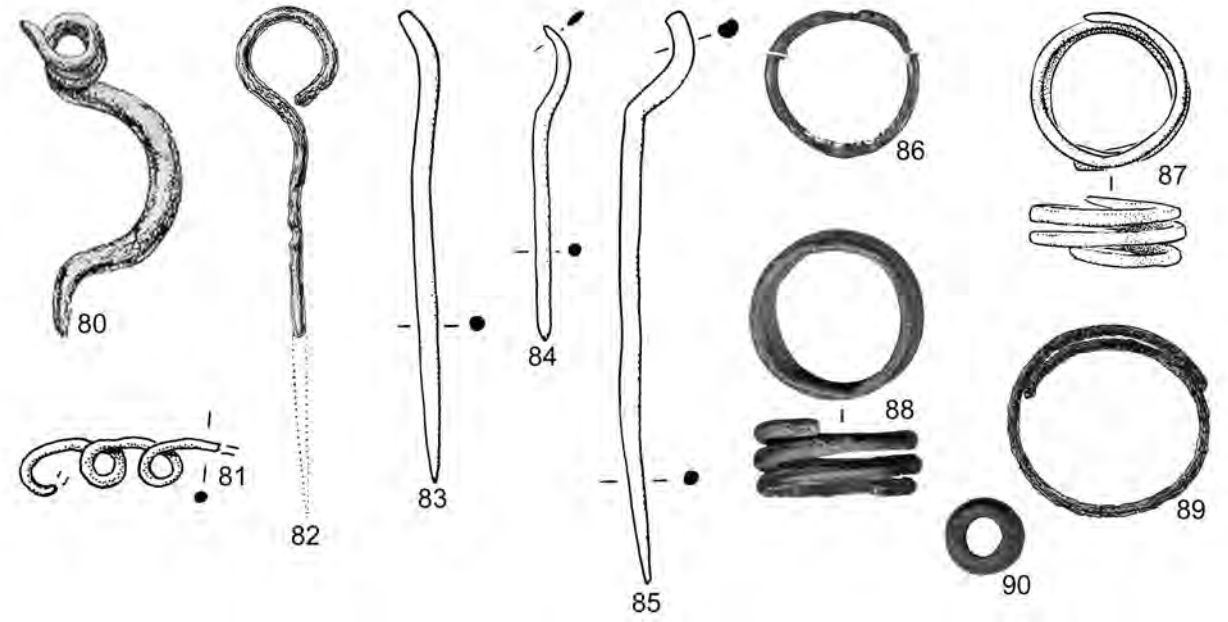
88 Pl. 3
D 22mm W 8mm; Th diam. rod 2.5mm; bronze with trace of zinc (XRF analysis). Plain rod of D-shaped section twisted into a spiral of almost three coils. Terminals obliquely cut off.

89 Pl. 3
D *c.* 25mm; 'Brass or bronze'. Portion of a spiral ring, which may have had another complete coil, and may have terminated in small knobs (Hume 1863, 247, pl. XXIV, 4).

OBJECT PROBABLY OF IRON AGE DATE

Ceramic bead

90 Pl. 3
D 9.5mm, H 6mm; D (perforation) 5.5mm; biconical in form with large central perforation. The orange-red fabric contains many rounded sand grains, consistent with a source in the widespread local Boulder Clay.



Pl. 3. Iron Age metalwork

Ceramic beads are more characteristic of prehistoric than Romano-British contexts, and are known from a variety of Bronze Age and Iron Age contexts, including the Somerset lake villages (Savory and Gardner 1964, 186; Musson 1991, 160). One from the Bronze Age and Iron Age hillfort at the Breiddin was recovered from an Iron Age post-hole (Musson 1991, 160, fig. 65, no. 324) while a bead at the Iron Age and Romano-British site of Dinorben, Denbighshire, of cylindrical form measuring 9 x 9mm, was found close to Roman pottery, but may have survived from an Iron Age occupation phase (Savory and Gardiner 1964, 186, fig. 31.2).
[91-99: numbers not used]

2.3 Roman material: AD 1–50 to 400–450

Robert Philpott

The Roman assemblage from Meols
The collection of Roman finds from Meols is unusual in the region, both for its size and composition. The material comprises several functional categories: personal ornaments (pins, beads, finger-rings, and ear-rings), dress accessories (brooches, belt fittings, and a dress fastener), personal equipment (a cosmetic palette pestle), coins, vessels of pottery, metal, and, in one case, glass, building materials (tile), probable religious items (model objects, a phallic amulet) and miscellaneous items (e.g. a box hinge). A small quantity of military items consists of a distinctive mid-1st century AD belt buckle, a probable Romano-British spear-head and a probable late-4th to early-5th century buckle-plate. There are also several classes of objects that are not closely datable, but which may include some Roman material. They include such type-fossils as fish hooks, plain spindlewhorls, lead weights, stone hones, plain finger-rings, and pins, as well as stone querns, which do not survive. Two soda glass beads (**3379**, **3390**) may be Roman in date or may re-use imported glass from the eastern Mediterranean (2.15).

The coin list is substantial (2.24). W. Thompson Watkin (1886, 278–84) recorded over 100 coins, and more have been recovered since. In size the coin list is greater than the finds recorded to the present from Middlewich or Holt, but a little over half the size of that from the extensively excavated site at Wilderspool (Shotter 2000c, 13). The Roman coin list begins in the Republic, with coins of Augustus, Claudius, and Nero from the pre-Flavian period (Thompson Watkin 1886, 282), ending with a coin of Magnus Maximus (AD 383–88). Shotter considered that the coin finds, which he lists as 91 pieces, are 'not related to a known site' (2000, 100–1). For certain types of object, it is one of the larger assemblages in north-west England. By far the largest identifiable category of other objects is brooches, of which over 70 were recorded by 1886 (Thompson Watkin 1886, 278–9), while Allason-Jones (1989) listed no fewer than 31 Roman ear-rings from the Potter Collection alone, and the recent work has increased that to a total of nearly 40. In stark contrast, Roman pottery, which is so prolific on almost all excavated urban and military sites, is represented at Meols by a surprisingly small group of sherds. Indeed, the scarcity of Roman pottery provoked comment by the antiquarians during the 19th century (Hume 1863, 325; Ecroyd Smith 1868, 105–6). This may be a product of the processes of deposition and recovery of the finds, rather than a representative sample of what was in use at the Roman settlement. The high proportion of metal items, notably coins and brooches, by comparison with ceramic or other materials, reflects the sifting of the occupation deposits by the sea and differential deposition of relatively dense metal artefacts on the shore, often in small pockets, while less dense pottery has apparently been washed away.

DRESS ACCESSORIES AND PERSONAL ORNAMENTS

Belt fittings (all copper alloy)
100 Pl. 4
31 x 36 x 4mm; belt buckle with a broad, semi-circular hoop, which flattens to meet a transverse bar at the base, with two inturned scrolls. Dated AD 43 – mid-60s or before. Grew and Griffiths (1991), Type B.
The definitive study of pre-Flavian military belt buckles has been undertaken by Grew and Griffiths (1991). The Meols piece conforms to their Type B buckle, of which they list 17 examples with a plain bar (Grew and Griffiths 1991, 49, 71–4, fig. 14), though not the Meols example. This type was developed in military workshops in Upper Germany, probably in the AD 20s or 30s, and in Britain they are found on Claudian sites. Site finds indicate that they had 'largely disappeared by the 60s, or perhaps even earlier' (Grew and Griffiths 1991, 51). The only exceptions, apart from Richborough, are northern sites, consisting of Holt, Manchester, and Chester, where they were thought likely to have remained in use into the Flavian period.
101 Pl. 4
18 x 40mm; rectangular belt plate with two copper-alloy domed rivets, and a hole for a third, now missing. The rear of the buckle-plate is missing, as is the separate belt-loop. The narrow plate is decorated with a concave rectangular frame with tooled decoration inside. Late 4th to early 5th century. Hawkes and Dunning Type IIIA (B. Ager pers. comm.).
Hawkes and Dunning's Type IIIA was defined as having a separate plate from the loop, either cast or in sheet metal and folded double over the hinge-bar of the loops. In form they are semi-circular or a broad rectangle (Hawkes and Dunning 1961, 59). In Type IIIB the plate is cast in a single piece with the loop. Despite having a separate plate of Type IIIA, the present piece shares some characteristics with Type IIIB, notably in the decorative scheme and proportions. The closest parallel to the Meols piece in terms of decoration is a Type IIIB buckle from an Anglo-Saxon grave at Long Wittenham, Oxfordshire (Hawkes and Dunning 1961, 60, fig. 20, g), which has a billeted border, vertical grooving at the top, and two rivets. An unprovenanced, but probably Kentish, find in the Royal Museum, Canterbury, has a similar narrow rectangular plate with a near-rectangular grooved and tooled border, and a grooved top (Hawkes and Dunning 1961, 68, no. 3, fig. 19 *bis*). An example from the Anglo-Saxon cemetery site at Highdown, Ferring, W Sussex, of Type IIIB has rather similar decorative scheme to the Meols piece, though the plate is cast integrally (White 1986).
Hawkes and Dunning Type IIIA buckles are not found on Anglo-Saxon sites. Continental examples came into fashion *c.* 370. In Britain the type has a date range a little later than its continental counterparts, from the late 4th to the first quarter of the 5th century. An example from Grave 376 at Lankhills, Winchester, is independently dated to *c.* 390–410, while another Type IIIA piece in Grave 283 indicates that the type was present before AD 400 (Clarke 1979, 276–7).

The distribution of the general type of late Roman belt fittings and brooches, of which this type forms a part, remains resolutely southern and eastern, with only a few northern examples and none in virtually all of Wales, the west midlands, and north-west England (Jones and Mattingly 1990, map 9.2). However, recent finds of a Hawkes Type 1B belt-buckle and plate from a hillfort at Pen y Corddyn, Abergele, Denbighshire (Burnham *et al.* 1993, 271, fig. 4), and a triangular buckle from Caerwent (Arnold and Davies 2000, 33–4, fig. 2.14) do indicate that the general type is not wholly absent from western Roman Britain.

102 Pl. 4

D 12mm; stud or dumbbell-shaped fastener, copper alloy; with neat symmetrical section, central depression. (Ecroyd Smith 1867, 186, fig. 10).

These fasteners, designed to join two straps, date from the second half of the 2nd to the mid-3rd century and later (cf. Oldenstein 1976, Taf. 47, 494–503). An example from Vindolanda was found in a context dated *c.* 275–300 (Bidwell 1985, 122, fig. 41, no. 34); but at *c.* 25mm measured twice the diameter of the Meols example. South Shields has produced two similar 'studs'; one decorated with an incised line, the other plain (Allason-Jones and Miket 1984, 236–7, nos 868–9). At Baldock a decorated example has notched decoration around the slightly larger disc, from a 3rd- or 4th-century context (Stead and Rigby 1986, 134, fig. 58, no. 355). The British and German examples demonstrate that they are often found in military contexts (Oldenstein 1976).

Looped stud

103 Pl. 4

13 x 15mm, 12mm to back of loop. The domed head has eight incised lines radiating from a central dot. The underside has a rounded loop attached to the edge of the dome. Late Iron Age or early Romano-British.

A slightly larger example from Camerton, Avon, has a plain head, with similar rounded loop, and is dated to the 1st century BC to 1st century AD; Ralph Jackson suggested a connection with Wild's Class IV button-and-loop fastener (Jackson 1990, 39, no. 82). An example from Wroxeter has a hollowed centre and five raised lobes on the surface; the loop is slightly angular (Kenyon 1938, 224, fig. 15, no. 5). There is a resemblance to Roman military harness fittings of a type with the more usual rectangular loop, though a round loop is found occasionally (e.g. MacGregor 1976, 134, fig. 8, no. 9).

Button-and-loop fastener

104 Pl. 4

L 28.5mm; corroded and damaged plain head of uncertain (rectangular or disc) form, triangular loop with pear-shaped piercing. Wild Group Vc or VIb (Lloyd-Morgan 1978, 29, no. 7), 1st–2nd century AD.

In a survey of button-and-loop fasteners, Wild (1970) concluded that they served as horse-harness fittings, where the head of the fastener was inserted through a slit or loop in another section of leather. Wild suggested, from their frequent discovery on military sites, that they were items of military equipment. However, the origin of the form is clearly non-Roman as the earlier classes (I and II) developed during the late Iron Age in Britain and later forms were considered to have developed in Roman Britain under native inspiration (Wild 1970, 146). He noted that there is no evidence for manufacture of these objects after the end of the 2nd century (Wild 1970, 146). The largest group of these items in the region is from Chester. Lloyd-Morgan (1978) published five examples from there (including two listed by Wild), two more from Heronbridge near Chester, and another from the Chester area. Major excavations at the fort in Ribchester produced only one, and these items were seen here as evidence of native interaction with the military personnel of the fort; five examples were recovered from Walton-le-Dale, which is interpreted, by contrast, as having a strong civilian component (Howard-Davis 2000, 246). The presence of several button-and-loop fasteners, including some with the boss and petal motif (Wild Type III), in the fort in Castleford, W. Yorks demonstrates their use in a Flavian military context (Bishop 1998c, 63–4).

Brooches

Brooches figure prominently amongst the Roman finds from Meols. Contemporary illustrations, descriptions, and the few surviving pieces allow the broad classification of at least 30 brooches. Hume (1863, 55) had recorded a total of 48 from the Cheshire shore, of which 34 were described as 'Roman Fibulae, common type' (pl. III), eight more were later and 'rarer forms' (as his pl. IV). Of these, Hume illustrated 15 Roman fibulae and four penannulars of post-Roman date (Hume 1863, pls III, IV, XIII) but there is no doubt that the illustrated pieces represent the most visually impressive of the range, being enamelled, elaborately decorated, or unusual. However, decorated brooches formed a large proportion of the total in any case; Hume, for example, noted that at least half of the 48 brooches known to him from Meols were enamelled, which was an unusually high proportion (1863, 326–7). Ecroyd Smith illustrated one Iron Age brooch (1868, 104–5, fig. 19) but no Roman examples. By 1886 Watkin recorded no fewer than a total of 'about seventy *undoubted* Roman fibulae' (1974, 278) of which he figures three previously illustrated by Hume (Watkin 1886, 278, figs 3, 4, and p. 279 unnumbered text figure) as well as three others for the first time, one of which belonged to Charles Potter (Watkin 1886, 278, upper text figure) and two which were in his own collection (Watkin 1886, 278, figs 1 and 2). Watkin selected two of Hume's figures explicitly because they illustrated particular styles of decoration. This gives a total of 18 Roman brooches illustrated in 19th-century publications. An Aucissa brooch was found by a metal-detectorist at Leasowe in 1981 (Petch 1987, 236).

Only 13 brooches now survive in museum collections. In 1874 Ecroyd Smith listed 26 brooches in his collection alone (Liverpool Museum archive). All of Ecroyd Smith's brooches and all but one of Mayer's were destroyed in the Second World War. The late 19th-century Gatty Catalogue record cards have thumbnail sketches of nine brooches, six in the Mayer Collection and three, the latter all of Wirral type, from Ecroyd Smith's collection which allows a broad classification to be attempted. The sole survivor of Mayer's Meols collection is a dragonesque brooch **109**. Two other brooches in Liverpool Museum, amongst material from the Cheshire Shore returned from Verulamium Museum in the early 1980s, are a Wheel Brooch **143** and a Colchester type **107**. In the Grosvenor Museum collection there are three brooches, including the Aucissa brooch first seen in Hoylake parsonage by Hume in 1846. Three brooches found in 1856–7 were sold by Ecroyd Smith in 1858 to the British Museum, where they remain (Acc. Nos 58.9–16.1–3). Previously unrecognised Roman pieces include an incomplete fibula in Warrington Museum **134** and a fragment of a disc and trumpet brooch **133** and an unusual object, possibly a serpentine wire brooch **251**, in the Williamson Art Gallery and Museum.

It is impossible now to determine the full range or relative proportions of the types represented in the brooch assemblage, as most of the 70 or so are lost or destroyed. The 19th-century illustrations and examination of surviving pieces in museum collections mean that over 30 brooches from Meols can be described with some confidence.

Typology

The brooches include a number of early types. Two Aucissa brooches are known. The first was found in 1846 and is in the Longueville Collection in the Grosvenor Museum, Chester, **105** (Hume 1863, 72 and pl. IV, 1a, 1b, 1c); the other **106** was found just east of Leasowe Castle in 1981, and is now in Warrington Museum (Petch 1987, 236). Aucissa brooches are usually dated to the period Augustus-Nero, and introduced by the Roman army, they occur in Britain from the conquest until they were abandoned in favour of British-made brooches *c.* AD 60/65 (Crummy 1983, 8–10). The type is scarce in the Roman north, with only one example, for instance, recorded from the Stanegate (Snape 1993, 12). Meols has produced two other mid-1st century brooches, both of Colchester type dating to the early- to mid-1st century **107, 108**. Colchester brooches are largely confined to areas traditionally identified as 'Belgic', but they occur in small numbers in Yorkshire (Dearne and Parsons 1997, 41–2) and the northern frontier zone. A wheel brooch from Meols is of a type dated usually to the Claudian-Flavian period, but an example at or near Hadrian's Wall indicates the type survived in use at least into the AD 120s (Simpson 1979, 331–2; Mackreth 1996a, 70).

The presence of pre-Flavian brooches in northern England is often attributed to survival in use, or pre-Roman contact between natives in the north and those in southern Britain; two of the three Colchester brooches from South Shields were considered to represent the survival of early brooches as late as the Trajanic period (Snape 1993, 97–100) though Mackreth has argued for an earlier date (1996b, 5–6). Individually, items such as the Aucissa brooches may have survived in use for some time beyond their date of manufacture, so the appearance of the occasional pre-Flavian brooch on sites not founded until the Flavian period, for example the Stanegate forts, Chester or Castleford, is not wholly unexpected. Snape has argued that, in the north, a small proportion of brooches survive in use up to two or three decades after their usually accepted date (1993, 97). The suggestion that the presence of pre-Flavian objects in the north represents survival into the Flavian period has been made for other artefacts, including pre-Flavian military belts (Grew and Griffiths 1991, 51). However, coins from Meols demonstrate activity at the site during the Claudian-Neronian period, since coins of this period did not long remain in circulation in any quantity and did not survive into the Flavian period. The presence of no fewer than three (or possibly four) mid-1st century AD brooches amongst the 15 or so that can be ascribed to a particular type, suggests that, rather than odd survivals into the Flavian period, they are as likely to be genuine losses of the pre-Flavian period. The unprecedented quantity of mid-1st century AD material for a site in the north-west of England supports the view that the site was in occupation throughout the middle years of the century, spanning the period of the Roman conquest and occupation of southern Britain.

Compared with other regions of England, few brooches have been published from north-west England, excavation reports having rarely more than a handful of examples, and there is no standard corpus from the region. Assessing the regional patterns of brooch use, chronology and relative proportions of types has only recently been possible through the finds reported to the Portable Antiquities Scheme (PAS; www.finds.org.uk). This represents a valuable random sample of types in use within the region. A survey of brooches found in Cheshire, by far the most prolific of the north-western English counties, shows the overwhelming popularity of two types: dolphin/Polden Hill brooches (conflated owing to difficulty in determining the spring attachment in damaged pieces), which together comprise 71 of a total of 176 brooches (40%); and trumpet brooches (49 of 176 brooches: 28%), the latter invariably with a plain rather than acanthus moulding at the waist-knob (Herepath 2004). Few other types are represented by more than three or four examples; significantly they include headstud and Wirral brooches (at 6% and 7%, respectively). Plate brooches form only 8.5% of the total, with single or a few examples of each of a range of types.

The findspots of the Portable Antiquities Scheme material are widely dispersed across the county, and include the margins of Romano-British settlements, but do not, for instance, reflect the use of brooches at the legionary fortress and adjacent civil settlement at Chester. Thus, they represent predominantly a civilian and rural pattern of brooch use. The sample clearly does not in itself distinguish between brooches manufactured in the region or those imported into it from neighbouring or more distant regions. Small numbers of types known to have sources in neighbouring regions, such as the three Wroxeter brooches, may point to the movement of people or represent the thinning distribution on the margins of manufacturing or marketing zones. However, given the widespread evidence for bronze-working within the region, at rural and industrial settlements, as well as additional evidence of enamelling at Wilderspool, which has been suggested as the place of manufacture of some enamelled brooches (Thompson 1965, 76, 86), it is likely that the majority of the common types of brooch in circulation were made within Cheshire or neighbouring districts. This is supported by the one direct piece of evidence of brooch manufacture, significantly of one of the most popular local forms. A trumpet brooch mould, dated AD 90–100/120, was found at the Roman industrial site at Prestatyn (Blockley and Day 1989, 184–7; Mackreth 1989, 96). Furthermore, the distribution of one distinctive form of enamelled brooch, the Wirral brooch (Philpott 1999b), demonstrates such a strong local clustering that it must represent the output of a local workshop, perhaps even a single itinerant craftsman. The Wirral type has a distribution strongly concentrated in Wirral and Cheshire, with a thin scatter in north Wales, north-west England and the Midlands, and a few outliers in the northern frontier region, Scotland and elsewhere. Finds made since the initial publication have reinforced the concentrations in the Wirral Peninsula and Cheshire, suggesting a core circulation area in northern Cornovian territory. Although few appear in dated contexts, the type appears to belong to the early 2nd century. An example, unusually found stratified in a closed context, at Ribchester, was assigned to Phase 3, AD 117–125, though it was considered possibly residual (Olivier 2000, 239, fig. 52, no. 12). The presence of such a concentration at Meols reinforces the regional distribution of the type in the Wirral Peninsula, whilst also providing a graphic illustration of the use of the port through which the outlying northern examples may have travelled to reach their ultimate destination. At least six 'Wirral type' brooches can be positively identified from Meols **117–122**, of which only one, in the British Museum, survives; a

probable seventh example is illustrated by Hume (1847, fig. 5), though the diagnostic front of the brooch is not visible. However, in reference to a Wirral brooch that Hume illustrated, Watkin observes, 'four others had blue enamel apparent on them, another was similarly treated in yellow, and another had a mixture of yellow and white' (1886, 278), implying that there were six examples of the same type known to him.

The Meols material contains examples of a number of other types, which are well represented amongst the Cheshire Portable Antiquities Scheme sample. The brooch assemblage reflects the location of the settlement on the periphery of two neighbouring zones, northern England and the west Midlands. Alongside predominantly northern types, such trumpet, headstud and dragonesque brooches, as well as less common types, such as Thealby Mine, the presence of Wroxeter type and Chester type brooches and particular Colchester derivative forms ***112–113*** confirms its position within the distribution zone of brooches circulating within the west Midlands and Welsh Marches.

Late 1st-century types include two headstud brooches with rectangular enamelled cells of a type that is considered to have gone out of use by AD 100 (Mackreth 1985; Cool 1998a, 30–1). The single unenamelled example of the three dragonesque brooches illustrated by Hume and published by Feachem (1951) survives in Liverpool Museum. Plain examples appear to be earlier than enamelled, so a date in the second half of the 1st century is likely (cf. Cool 1998a, 32–3). Trumpet brooches, which are common amongst Cheshire brooches recorded by the Portable Antiquities Scheme, are represented by at least six examples at Meols, as well as one fragmentary disc and trumpet form. Trumpet brooches develop before AD 75, but date in general to the late-1st to mid-2nd century (Bayley and Butcher 2004, 160–3). Meols has examples usually dated to the late 1st century as well as probable 2nd-century examples (**127-*132***).

Few undecorated brooches are illustrated in the 19th-century works, and it is likely that the plain forms are under-represented in the published record. Modern chance finds from Cheshire show a relatively high proportion of dolphin and Polden Hill brooches, which are usually undecorated, but occasionally have a triangular panel of enamel on the bow (Herepath 2004). The Gatty Catalogue sketches suggest that at least some plain 'Dolphin' brooches were originally present amongst the Meols material, redressing the balance slightly in favour of this type. It is likely that amongst the 30 or so brooches for which no illustration or description survives, a good proportion were dolphin/Polden Hill types.

Only one Romano-British penannular brooch is recorded from Meols, a Fowler Type A variant, of a type which is not closely datable **144**. The Portable Antiquities Scheme records indicate that the penannular brooch is not a common find in rural Cheshire or more widely in the lowland north west of England (Herepath 2004, 10), and excavations in the region tend to confirm the pattern, with only one example recorded from a rural site, at Halewood (Adams and Philpott forthcoming), while one example of Fowler Type A2 has been found in excavations at Middlewich but at least eight in Chester itself.

A recent study suggests that penannular brooches might be appropriate to either sex, while those with headloops may have been worn by women, the loop serving to link with a necklace or chain a pair of brooches which were used to pin either side of a tunic (Croom 2003).

All of the brooches are copper alloy.

Aucissa

105 Pl. 4

L 41mm, W 14mm ; the head is rolled over the axis-bar . The head has one and a half ring and dot ornament with knurled line below it. The bow has a median ridge consisting of two raised lines either side of central knurled line. The edges of the bow are knurled. Foot consists of a dome with simple moulding in upper half. Pin and catch-plate intact. Illustrated by Hume (1863, 72, pl. IV, fig. 1 a, b, c); Collingwood Group C. Dated Claudian-Neronian (AD 43–68). Hattatt (2000), fig. 176, no. 305 closely resembles this piece in decoration of the head and bow.

106 Pl. 4

L 52mm, W at head (max.) 12mm; the pin is hinged in a tube formed by rolling back the top of the bow . The axis-bar is now missing. Two zones, each consisting of three rows of decoration, each with a raised line either side of 'bead' row. Bow with median ridge, tapering to narrow foot; the usual foot-knob is lost. Inner surface of bow flat. Hinged pin also missing. Discovered by Mr W . Gibbons with a metal detector , July 1981 on beach 'about 6 feet from the sea wall and below High Water Mark' east of Leasowe Castle, SJ 267 922 (Petch 1987, 236). Date: Claudian-Neronian (AD 43–68).

Colchester type

107 Pl. 4

L 52mm, W (spring) 18mm; Th 21mm; one-piece brooch, D-shaped section rod bow , wings, six-coil spring with external chord and hook, undecorated catchplate. Pin broken but otherwise intact. Ex-Verulamium Museum. '?Meols shore' ; in the absence of an attached label it is regarded as probably from Meols.

Cf. Baldock (Stead 1986a, 112, fig. 42, no. 54). The Colchester type is dated to the early-mid 1st century and has a strong south-eastern England distribution (Stead 1986a, 123; Olivier 1996, 242).

108 Pl. 4

L 35mm, W 3mm; slender fairly straight bow , tapering; gently angled at top of bow . Undecorated, very short wings and undecorated bow; the catchplate, separate spring and pin are all missing, though part of the narrow hook at the head survives Findspot 'Hoylake'. Note on BM label 'Colchester A Standard', Hull Type 90. cf. Simple Gallic brooch: cf. Stead and Rigby (1989, 89, B3), though with shorter wings. This has some characteristics of the Simple Gallic type, in particular the straight narrow bow , and the short undecorated wings, together with a relatively long upper bow (cf. Stead and Rigby 1989, 89); the type is dated at King Harry Lane Cemetery, Verulamium to Phases 1 and 2 (AD 1–40, AD 30–55 respectively: Stead and Rigby 1989, 98–101).

Dragonesque

109 Pl. 4

43 x 18mm; S-shaped body with D-section, flattening at head and foot. Decorated with groups of punched annulets on the body, head and foot. The eye and nostril are marked with annulets. No trace of enamel. Pin missing. Hume (1863, 67, pl. III, 8); see also Bulmer (1938, 151, no. 2); Feachem (1951, 36, fig. 6, no. 2); Chitty and Warhurst (1977, 24, fig. 1, no. 2). Late 1st century.

110 Pl. 4

45 x 13mm; S-shaped body with five vertical parallel compartments for enamel on the body. When illustrated by Hume, the piece retained the loop and part of the shaft of the pin. Hume (1863, 79, pl. III, 10); Bulmer (1938, 152, C3); Feachem (1951, 36, fig. 5, C3). Kilbride-Jones attributed the Meols piece to his 'West Brigantian Style', current

in the period AD 50–100 (1980, 174). He considered that the Dragonesque brooch was a Brigantian development and his maps indicate the predominantly northern distribution (1980, figs 47, 49, 52). He illustrated one close parallel to the Meols piece, from Corbridge (1980, 172, fig. 48, no. 11) which has a single row of enamel-filled cells. Cool suggested the date range extended into the early 2nd century and notes that Kilbride-Jones's regional names do not necessarily indicate exclusive manufacture within each region, and certainly do not reflect the distribution of use (1998a, 32–3).

111 Pl. 4

L 45mm; the brooch is illustrated in Hume, but does not survive. It lacked the head, foot and pin; two curvilinear decorative elements either side of a central parallel-sided panel can be identified from the drawing, but the illustration suggests it was in poor condition. The Gatty Catalogue card for the Mayer piece M5752 describes this as 'Portion of a fibula?' with a reference to Hume (1863, pl. XIII, 17). Hume's annotated manuscript of *Ancient Meols* notes that this was of brass with green enamel while his published text (1863, 151) notes 'it contains some remains of enamel in four yellow points', cf. Hull T200. Hume (1863, 151, pl. XIII, 17); Feachem (1951, 36, fig. 3, no. 25). The curvilinear decoration on the body is paralleled by examples, also incomplete, from South Shields (Bulmer 1938, fig. 3, no. 16), and from Richborough (Bayley and Butcher 2004, 125, no. 350). Bayley and Butcher (2004, 171–2) conclude that the type is most numerous in northern Britain where they were presumably made, and are found in the early conquest phase during the Flavian period.

Colchester derivatives

112 Pl. 4

L 48mm; the head is square with a flat top and short wings which are 'comma-shaped' in section, with a groove at the top at the back, encasing the spring mechanism (Hume 1863, pl. III, 2a, b). The terminals of the wings are decorated with a row of dots around the edge, and further dots are found on the front of the wings. The bow is thick at the top, is framed by a groove, and tapers rapidly towards the foot. The enamelling was set in different colours, probably alternating (one copy of Hume is hand-coloured to show blue rectangular enamel cells surviving), within a tapering recessed panel, at the foot of which was a small circular inset for enamel. The front of the bow is flattened, giving a D-shaped profile. The pin appears to be hinged. The foot takes the form of a simple rounded moulding with a slight projecting moulding above. Late-1st to early-2nd century.

Several parallels are known from the lowland north west of England and north-east Wales. A group of three hinged brooches from Prestatyn (Mackreth 1989, 91–2, nos 5–7) share the characteristics of a tapering enamel panel on the front of the bow, a spot of enamel at the base of the panel, square flat-topped head, and hinge. Mackreth notes that the similarities between the three brooches suggest that they are products of a single craftsman. There are minor divergences from the Meols piece in that the panel of the latter has a series of broad rectangular cells of a single colour rather than two contiguous strips of alternating colours, and also as illustrated has a flatter face than the Prestatyn pieces; the Meols example has also dot and circle design on the wings. The overall similarities are close enough to postulate a common workshop.

Several examples from north-west England include a virtually identical piece found at Halsall, West Lancashire in 1991 (NML), with one from Hale, Cheshire (Portable Antiquities Scheme (PAS) LVPL 1591), while a small example from South Wirral has a flat head and triangular panel on the front.

Mackreth observes that the distribution is restricted and, despite two outliers from Colchester, the type occurs more in the Upper Severn valley than elsewhere (Mackreth 1989, 92). The occurrence of the type at Prestatyn, two separate Wirral sites, and in West Lancashire has the effect of extending the existing distribution further north, across the Mersey.

113 Pl. 4

L 62mm; the bow is humped over the wings with decoration apparently continuing over the top. The bow is decorated with a narrow central ridge with moulded lenticular bosses arranged to form a series of perhaps seven four-petalled flowers decoration either side. The wings are short and have a central concave waist. The foot consists of two circular double mouldings with a conical terminal. The brooch is illustrated by both Hume (1863, pl. IV, 4) and Watkin (1886, 278, fig. 4). Watkin describes it as 'very hansomely [*sic*] ornamented, though without enamel, and shews, also, the cross-bar. It has, probably, the most massive appearance of any that have been found' (Watkin 1886, 278–9). Collingwood Group H. Hattatt illustrates a brooch from Petersfield, Hants, with the same lentoid pattern along a decorative central rib, but much less massively decorated (2000, fig. 159, no. 380). A much smaller piece from Corbridge has a similar diagonal 'lentoid' or notched decoration either side of a central spine, but on the Corbridge example the notches on each side are parallel rather than arranged in crosses (Snape 1993, 34, fig. 5, no. 10). Snape cites parallels for the Corbridge piece at Jewry Wall, Leicester (Kenyon 1948, 249, fig. 80, no. 8) and Old Winteringham (Stead 1976, 198, fig. 100, no. 6). Mackreth (1994, 163, no. 16) publishes an example from Alcester, Warwickshire, referring to the Meols example. He sees this as one example of a family of brooches with the main distribution in the Severn Valley and its eastern catchment, though examples are known from all over Roman Britain. The general type of Colchester derivatives he suggests has a date range of *c.* AD 75–150 with a few surviving as late as AD 175.

Wroxeter type

114 Pl. 4

L 60mm; the upper bow has a series of ?three ridges between which were recesses which originally may have held enamel bands (Hume 1863, pl. III, 1). The head of the brooch has two steps, the lower decorated with a horizontal zigzag line, the upper apparently undecorated, with a probable cast headloop. The centre of the bow is decorated with an enamelled circular stud (light-blue in the hand coloured plate), below which is a semicircle of small decorative dots. The lower bow seems to be undecorated, and narrows to a small foot formed by two small rounded bosses.

The type has several elements in common with the Wroxeter type, in the D-shaped headplate, stepped head, cast head loop, bow characterised by vertical parallel grooves, and a pair of rounded bosses at the foot (cf. Bayley and Butcher 2004, 169, fig. 142, T151). The main difference is the presence of a circular enamelled boss at mid-bow instead of a plain half-moulding found on some trumpet brooches. The dating for Hull's T151 ranges from Flavian to Hadrian's Wall forts, while one survives in the Chepstow hoard dated *c.* 200 (Bayley and Butcher 2004, 169).

This piece shares a number of stylistic features with a group of 'unclassified' brooches from Gloucestershire. A brooch found near Hucclecote villa has a similar zigzag line on the head, a slightly larger version of the head of the Meols brooch, the ridged upper bow with recesses for enamel and a foot composed of two bosses (Cracknell 1990, 204, fig. 3, no. 15). The central boss at the bow is paralleled by others in the group, although the two illustrated pieces have a cross filled with enamel (Cracknell 1990, 204, fig. 3, nos 16 and 17). Cracknell sees this group as a varied and complex one, characterised by the decorated upper bow and central boss or inset in at mid-bow. In date they range from the 1st century AD to 150/175; cf. Hattatt (2000, fig. 190, no. 984), from Wiltshire.

115 L 51mm; Ecroyd Smith (1874, 93) reported the discovery of a 'bow or lyre-shaped *fibula* (brooch), 2 inches long; the upper face or breast has three parallel and linear hollows for the reception of coloured pastes, traces of which remain. This is the commonest type of the Roman brooch as found here and elsewhere'. A footnote states '*vide Ancient Meols*, Plate III, fig. 1, for approximate type' (see above ***114*** for discussion).

116 Pl. 4

L 50mm, W (head) 15mm; bow brooch with a D-shaped head-plate. Remains of pin for attachment of lost stud in centre of bow, which protrudes through to back of bow. Upper bow is square in section, lower bow is D-shaped and tapering, with a foot consisting of two small bosses and a faint third one in between. The head lacks the spring mechanism and pin, but has the intact catchplate. This has the characteristic headplate of the 'Wroxeter type' brooch, but lacks the grooves of the upper bow and the simple central moulding of the type.

Wirral type

117 Pl. 4

L 62mm; headloop damaged, three channels for enamel and some residual enamel left. The central channel has traces of two squares of green enamel, while the outer channel has one red square. Worn and head loop worn away, possibly through water action. Pin missing. The absence of surviving enamel in the channels and the worn and damaged head-loop indicate that this is not the piece illustrated by Hume (1863, pl. III, no. 5) and Watkin (1886, 278, fig. 3).

118 Pl. 4

L 64mm; headloop, stepped head, three grooved channels for alternating rectangles of scarlet and green enamel, a boss at the centre of the bow, apparently missing on this example. The foot has a rounded or disc moulding. The illustrated example has a pin. Illustrated by both Hume (1863, 72, pl. III, no. 5) and Watkin (1886, 278, fig. 3). Liverpool Museum's copy of Hume's *Ancient Meols* has been annotated '18.11.74.96' (an Ecroyd Smith Collection accession number).

119 Pl. 5 No dimensions. The Mayer Collection contained a 'fibula of bronze; Roman; inlaid with green & red enamel; found on the Cheshire Shore', the thumbnail sketch shows this to be a Wirral type brooch, and the absence of a headloop through damage and the Mayer accession number indicates it is not the same piece that was recorded in Ecroyd Smith's possession in 1863 (Hume 1863, 71, pl. III, 5).

120 Pl. 5 L 53mm.

121 L 53mm.

122 L 53mm.

Three examples of this type are recorded in the Ecroyd Smith Collection in Liverpool Museum, labelled 'three Roman bronze fibulae with traces of enamel still upon one; all of the same type'; L. about 21/8 in' (53mm).

123 L 60mm; Hume (1847, fig. 5) illustrates a brooch from rear and side view, which appears to be a further example, though the characteristic enamelled panels on the front of the bow are not illustrated nor mentioned in the text. Globular moulding at foot, hinged with intact catchplate and headloop. The intact headloop but missing pin indicates it is not illustrated by Hume in 1863.

Headstud type

124 Pl. 5

L 40mm; this is illustrated on Hume's hand-coloured plate with 11 rectangular enamel panels alternately in turquoise and dark blue/indigo enamel (Hume 1863, pl. III, 4). There is a stud above the enamelled panel and short wings, the latter decorated with vertical grooves (for the latter feature see Goodburn 1984, 25, fig. 6, no. 29, or *Tripontium*: Mackreth 1973, 134, fig. 23, 8) with a ?cast head-loop. The foot appears to consist of two projecting mouldings, the smaller above the larger. There is no sign of the elaborate sprung mechanism of example such as Collingwood's type piece and the brooch appears to have been hinged. (Collingwood Group Q; Snape Group 3.1). AD 70–100.

125 Pl. 5

L 39mm; illustrated by Hume (1863, pl. III, no. 7) but not extant. This piece is similar to the preceding (***124***) but the boss is a projecting dome, the rectangular insets are monochrome light blue and the foot has a semi-circular double moulding with a narrow waist; there is a hint that the back of the foot is flat. There is a suggestion of vertical grooved lines on the wings. In this and the other headstud example (pl. III, no. 4) there is no sign of grooves framing the panels. The head loop appears to be cast rather than a wire loop for a spring, but this is not clear. AD 70–100. A parallel from Corbridge Red House (Snape 1993, 32, fig. 4, no. 5) is closely similar except it is sprung with a wire loop and spring mechanism, apparently replaced by a hinge and cast loop on the Meols example. Although the type occurs in southern England, the headstud has been considered to have a northern origin, since a far greater variety is present in the north (Collingwood and Richmond 1969, 296; Snape 1993, 14). Snape has argued for a development from the spring to hinge. The Meols piece would apparently be classified as Snape Group 3.1Di with cast stud, fixed headloop, hinged pin, and enamelled bow. An example from Chelmsford suggests the type originated before AD 80 and continued into the Antonine period (Snape 1993, 15). Mackreth suggests a date in the last third of the 1st century AD for the decorative scheme with rectangular enamelled cells (1994, 165); a date confirmed by analysis of finds from Castleford, West Yorkshire (Cool 1998a, 30).

Headstud variant/Thealby Mine type

126 Pl. 5 L 67mm; the brooch appears to have a cast headloop integral with a stepped and knurled head (Hume 1863, pl. IV, 2). The crossbar is short with stepped decoration. The bow is plain and slender, tapering gradually to the prominent foot which appears to be plain with a curved front and flat back.

The Thealby Mine type is related to the headstud but lacks the latter's defining stud (Snape 1993, 16). Dearne reserves the term Thealby Mine type for a narrow type, preferring the term headstud variant for this plain type, which simply lacks the headstud itself (Dearne 1998, 57). The type is usually dated to the 2nd century AD and is almost invariably found in the north of England (Bayley and Butcher 2004, 98). In the north of England, some pieces have been

recorded from Stanegate, but none from the Hadrian's Wall forts (Snape 1993, 16).
A close parallel from South Shields has deeply moulded but rather short crossbar and a large headloop (Allason-Jones and Miket 1984, 104, no. 70), while others from that site, including nos 69 and 66, have general similarities with the Meols piece. The tapering stepping of the wings is paralleled on a headstud brooch from Aldborough (Bishop 1996, 52, fig. 30, no. 313), and another from Victoria Cave, Settle (Dearne 1998, 55, fig. 13, no. 8.14). An example in Ribchester Museum has ribbed wings and a plain stepped head, without the knurled decoration of the Meols piece.
The stepped and knurled head with what appears to be a cast headloop on the Meols piece closely resembles the upper part of the Wirral type brooch. The apparent cast headloop and type indicate a 2nd-century date.

Trumpet
127 Pl. 5
L 26mm, W 18mm; devolved plain trumpet brooch of 'Backworth type' with simple waist mouldings flat at the back, head based on a flat D-shaped plate, and headloop (broken) cast in one with the bow. Hinged. Broken at mid bow, so foot and catchplate, as well as hinge, missing. (For the Backworth type see Collingwood and Richmond (1969, fig. 104, no. 51); Type Rii; see also Hull (1968) for discussion of types). Bayley and Butcher Group C. Probably 2nd century (Bayley and Butcher 2004, 161).
128 Pl. 5
L 58mm; the brooch has a very small head and slender upper bow with grooves on the upper surface, leading to a circular boss, illustrated as yellow in the hand-coloured plate (Hume 1863, pl. III, 3), above a triangular moulding. The lower bow appears to have a flattish face. The foot is small and consists of a single small moulding. This piece has some characteristics in common with a brooch from Derby (Mackreth 1985, 293–4, fig. 128) although the Meols piece appears to have a yellow enamelled boss on the centre of the bow and a small arrow shaped moulding below the boss. The upper bow appears to have three grooves, and the end swells into a flattened trumpet shape, with a loop shown as set behind the trumpet, but possibly bent out of position. The lower bow ends in a simple moulding, although the precise form is not clear from the illustration.
129 Pl. 5
L 48mm; trumpet brooch with a small head, two ridges converging towards the head on the upper bow and exaggerated central waist knob moulding set with small enamelled beading in alternating colours (illustrated in Hume (1863, pl. III, 6) as red and yellow). The lower bow appears to have a pronounced central ridge; the moulded foot has a narrow enamelled beaded band at the base, resembling that on the boss. No evidence is visible for the form of pin attachment. Bayley and Butcher (2004), Group D (decorated). Collingwood dated his Group Ri to the Flavian period, with the adoption of the acanthus moulding on the waist-knob occurring about AD 100 and continuing especially in the north of Britain during the first half of the 2nd century (Collingwood and Richmond 1969, 297). A parallel for the exaggerated central waist knob moulding and the large projecting moulding at the foot was found at Manchester, in Phase 3a deposits dated *c.* 160–200, but there the decoration was knurled only rather than enamelled as in the Meols example (Bryant *et al.* 1986, fig. 5.5, no. 3194). A further parallel for the small head and exaggerated central moulding was found at Corbridge (Allason-Jones 1988, 161, fig. 76, 10).
130 Pl. 5
L 54mm; standard undecorated trumpet brooch apparently with the spring held on a single lug, large full-round waist-moulding of 'acanthus' form, and ridge and groove mouldings below the button. The lower bow appears to have a prominent ridge, and the large foot consists of two ridged mouldings with a small projecting terminal. The pin is missing (Hume 1863, pl. III, 9). cf. Bayley and Butcher (2004, 160–1), Group A. A close parallel occurs at Wilderspool, with acanthus moulding on a central waist button, which is separated from the upper and lower bow by simple cross mouldings; it lacks, however, the foot and was thought to be of one-piece construction (Webster 1992, 92, fig. 49, no. 5). The Wilderspool piece does not date before AD 100. Another similar piece was found at Aldborough (Bishop 1996, 55, fig. 31, no. 323), with further parallels cited by Bishop at Old Penrith and Newstead. Another close parallel comes from Richborough (Bayley and Butcher 2004, 92, fig. 73 no. 216) A rather similar piece with a rounded waist moulding was found at South Shields, but the Meols piece lacks any evidence of decoration on the lower bow (Allason-Jones and Miket 1984, 98, no. 31). Bayley and Butcher (2004, 160–1) suggest this is a long-lived 'classic' type originating before AD 75 at Baginton, and occurring in Hadrianic and Antonine contexts in northern Britain.
131 Pl. 5
L 58mm; trumpet brooch with cast head loop integral to the D-shaped headplate, with a simple moulding around the top of the bow, the trumpet head being small (Hume 1863, pl. IV, 3). The central moulding consists of a knop of three cross-mouldings, the centre one wider than the others, carried only half-way round the bow, with a fourth cross-moulding forming the end of the upper bow. The lower bow has faint oblique parallel lines (?incised) above the foot, which has a stop-moulding above a narrow waist and a truncated conical base; the latter appear to carry all round the brooch. The figure of this piece in the Liverpool Museum copy of Hume has been annotated by Gill Chitty with the accession number '18.11.74.101', indicating an Ecroyd Smith piece; Hume confirms that this piece belonged to Ecroyd Smith (1863, 72). Collingwood Group Riii. Hull calls this the 'Chester type' as it is common there, including one example from a late-1st-to early-2nd century deposit (1968, 42). Mackreth points to two close parallels for the Meols piece at Derby (1985, 291, fig. 128, nos 31 and 32) where he notes a distribution concentrated in the Marches and southern Pennines. The dating is not well established, but Mackreth suggests the first half of the 2nd century. There is a fairly close parallel at Wroxeter (Bushe-Fox 1913, 26, fig. 10, no. 8), in a deposit dated *c.* AD 110–30. The Wroxeter piece has three projecting mouldings, which taper down from the upper to lower; on the Meols piece the central moulding is the largest. The central moulding is similar to Collingwood 1930, fig. 62, no. 54 and a headplate closer to that of Collingwood 1930, fig. 62, no. 58. Hattatt published an almost identical piece from Wall, Staffs (2000, fig. 187, no. 439). A less close parallel at South Shields has mouldings confined to the front of the bow but the foot and head are incomplete (Allason-Jones and Miket 1984, 100, no. 42). A piece from Richborough, Kent, has a smaller head loop and simpler waist mouldings. Bushe-Fox concluded that the trumpet brooches developed in northern Britain but this sub-group of Collingwood's Group R is a secondary development with a distribution in the south and west (Bushe-Fox 1949, 116). Bayley and Butcher (2004, 92–3;

160–4) define their Group C as a devolved type where the head is based usually on a flat plate and tends to be elongated in form. The distribution of this type concentrates in the south and west of Britain, although manufacture may have taken place in the West Midlands.
132 Pl. 5
'Fibula of bronze. Roman; found on the Cheshire Shore'. Known only from a crude sketch in the Gatty Catalogue, the piece appears to be a trumpet brooch probably with three mouldings which appear to carry halfway round the bow. The incomplete headloop indicates it is not the piece figured by Hume (1863, pl. IV, 3).

Disc and trumpet
133 Pl. 5
L17mm, W 13mm, Th 3mm; int. D (disc) 8mm; fragment only consisting of a subrectangular plate with circular panel with central knob; damaged and broken. Probably originally held enamel, but no trace survives. Upper part has start of curving bow with oval section; other end has trace of upper end of catchplate. Probably originally with four lugs at corners of rectangular plate, but there are damaged hints of narrow oval bow of brooch. Cf. Nor'nour (Hull 1968, 44, fig. 17, no. 111) and Richborough (Cunliffe 1968, pl. XXIX, no. 34). Richardson (1960) considered the type in detail, noting that about one in five of the examples known in 1960 had enamel of one colour in the circular field while most had two (Richardson 1960, 204). She notes it is a northern British type of brooch, dated 150–200, a date broadly in keeping with Summerfield's (1997, 276) suggestion of a mid-2nd-century date for this Trumpet variant (Hattatt 1989, fig. 44, table 1 shows the distribution of known examples).

Bow brooch, uncertain type
134 Pl. 5 Plain fibula bow, subcircular and hollow in section; head and foot missing. Probably a Colchester type or Colchester derivative, but the missing head and foot make identification uncertain. The top of the bow has been filed flat since discovery and there are file marks on front of the plain undecorated bow.
135 The simple sketch on the Gatty Catalogue shows a bow brooch with a stud or boss in the centre of the bow, a damaged headloop and a small rounded foot moulding. The type is uncertain.
136 Pl. 5
Uncertain bow brooch with pin and ?spring in T-bar.
137 Pl. 5
Uncertain type, possible trumpet brooch with traces of moulding in mid bow.
138 Pl. 5
A Colchester-derivative ('dolphin brooch') with narrow wings with ridges at the ends, and a mid rib down the bow. Probably late 1st-early 2nd century.
The above (***136-138***) are listed only as 'Three imperfect Roman bronze fibulae, found on the Cheshire Shore' in the Gatty Catalogue Mayer acc. no. 5719. Described from crude thumbnail sketches on the Gatty Catalogue.
139 L *c.* 70mm 'Portion of an iron ?fibula in very decayed condition' (illustration in Gatty slip).

Bow brooch
140 Pl. 5 L *c.* 55mm; probable cast looped head, with step to D-shaped headplate; end of axis bar visible, suggesting sprung between two lugs. The bow is decorated at mid point with an ?integral cast boss. Catchplate intact. Foot shown with three simple mouldings. Illustration in Watkin (1886, 278, no. 2). Watkin Collection in 1886.

Developed T-shaped
141 Pl. 5
L *c.* 70mm. T-shaped brooch 'set with small stones' of light blue colour in a line along the centre of the bow; a larger 'stone' has dropped out of its socket at head of bow. The bow appears to be rounded in section. The pin and catchplate are present. Illustrated by Watkin (1886, 278, no number), when it was in the Potter Collection.

Hinged dolphin
142 Pl. 5
L *c.* 60mm. High arched bow with oblique moulded lines on bow as decoration. The wide cylindrical crossbar has three raised bands of knurled decoration. There is a small foot moulding, the catchplate as illustrated is damaged. Watkin Collection in 1886. Bronze but 'silvered over' [= tinned?]. Illustrated by Watkin (1886, 278 no. 1). Cf. Hull Type T94B (Bayley and Butcher 2004, 89). Hattatt (2000, fig. 157, no. 352) illustrates several dolphin type brooches with extended and decorated crossbars. Some have a central raised rib on the bow and oblique decorated lines.

Wheel
143 Pl. 5
D 30mm; a flat circular plate, outlined with incised lines, surrounds a concave-sided lozenge formed by four voids. The centre of the lozenge has two incised concentric circles round a central circular hollow. Six small rounded lugs around the edge. Small catchplate intact, pin missing. Ex-Verulamium Museum '?Meols shore'. Hull Type T266. Most examples of the type are from mid 1st-century contexts (Bayley and Butcher 2004, 155) and Mackreth notes that they are neither common nor well dated but suggests they occur as late as AD 75 while one from Hadrian's Wall or nearby indicates a date of the 120s or later (Mackreth 1996a, 70). Parallels from Camulodunum, in a ditch fill (from Period III, dated to AD 43–8) (Hawkes and Hull 1947, 326, pl. XCVIII, no. 177), another from Balkerne Lane (Crummy 1983, 17, no. 86) and Thornwell Farm, Chepstow, Gwent (Mackreth 1996a, 70, fig, 41, no. 8) differ only in having a projecting central knob. Crummy gives a Claudian-Flavian date. Parallels are known at Wroxeter in a Flavian context (Atkinson 1942, 208, fig. 36, H86) and an unprovenanced example (Hattatt 2000, 343, fig. 202, no. 1003). Green notes that wheel brooches may have had a connection with a Romano-Celtic sky god, a provincial version of Jupiter, although this may not have been of significance to the wearer (Green 1981, 255). She notes the existence of a wheel-god cult in northern Britain, exemplified through sculpture from Birdoswald, Maryport, Castlesteads and Netherby (Green 1981, 256).

Penannular
144 Pl. 5
Incomplete, one terminal survives, ending in a broad, flat, and probably originally disc moulding, separated from a narrower rounded moulding by a groove. Despite surface damage through corrosion, the knob does not appear to be milled. The slender shank is corroded, but circular in section. Pin missing. D of shank 3.5mm.
An unclassified variant of Fowler Type A3, with a flat terminal instead of the usual terminal knob and no sign of milling. Fowler (1960, 174–5) dates type A3 from the 1st century AD up to the Anglo-Saxon period, some occurring in graves of that period.
Penannular brooches with flat-ended terminal mouldings are not common. A close parallel is provided by an

example from the barracks *praetentura* at Newstead, Borders, occupied from AD 79 and abandoned by *c.* AD 185 (Curle 1911, pl. LXXXVIII, 15). A less precise parallel, with an additional moulding, is provided by an iron brooch from Dalton Parlours, West Yorkshire (Mackreth 1990, 94, no. 4).

Fibula pins
Two detached copper-alloy fibula pins survive; a third, which the dark patination suggests is from Meols, is amongst material that includes some certain Meols finds, returned from University of Liverpool to Liverpool Museum in 1985. Another was in the Mayer Collection, known only from a sketch on the Gatty slip (***148***).
145 Pl. 5
L 25mm, W 5mm (max); loop (circular ?drilled hole) in head, large triangular projection below head, tapering circular section.
146 Pl. 5
L 39mm, W 3mm; circular loop at head, small triangular projection below; flattened at top, tapering to circular section.
147 Pl. 5
L 42mm, W 7mm; tapering pin, semicircular loop at head, projection below it; upper shank flattened, lower shank circular as far as point.
148 Copper alloy, not extant, sketch in Gatty slip catalogue. No dimensions given.

Pins
There are a number of small copper-alloy dress pins from Meols. In an unstratified collection, it is often difficult to assign pins with certainty to either the Roman or early medieval period. Several pins, including the biconical-headed and globular-headed pins, have been assigned with varying degrees of certainty to the early medieval period, where the predominant number of securely identified examples lies.
149 Pl. 5
L 42mm, D of head 3mm; flat head formed of rough wire, Cool Group 4. Cool noted that the type is not common and dates from the early 2nd century through to the 4th century (1990a, 154–7). An example from Leicester has a similar central ring and depression on the head (Kenyon 1948, 263, fig. 89, no. 11).

Finger-rings
Several Romano-British finger-rings have been identified. Others may be present amongst the ear-rings, as it is not always possible to distinguish them from slender finger-rings (cf. Johns 1996, 132). Several flat strip rings, some with simple decoration, are not closely datable, but they are more likely to be Roman than later.

Guiraud type 2
150 Pl. 5
Bezel 15 x 15mm approximately; ring of simple expanded bezel form. ?Oval countersunk bezel, copper alloy. Loop of flattened rectangular section. Most of loop and part of bezel missing; originally bezel held ornament or intaglio. Goodburn notes that examples of this type are generally 2nd century in date (Goodburn 1984, 31, fig. 10, no. 60) while Cool observes that this is the commonest finger-ring in Britain during the first two centuries AD (Cool 1998b, 58). A close parallel at Castleford came from an Antonine context (Cool 1998b, 58, fig. 18, no. 170).
151 Pl. 5
21 x 20mm; ring with ?oval bezel on thickened part of ring; 'vacant space for stone' (Hume 1863, 247, pl. XXIV, 7).
152 Pl. 5
D 16mm, maximum diameter of section 2mm; circular cross-section, with incised line either side of expanded flattened bezel, which retains a circular hole for attachment for a lost bezel plate. Small size suggests child's ring. Examples are found in Verulamium (dated AD 170–215) (Goodburn 1984, 31, no. 61) and Poundbury in a 4th-century AD child's grave (Cool 1993, 96, fig. 68, nos 28, 29). Cool suggests that butt-jointed rings are a late Roman type but few dated examples are recorded.

Simple flat strip ring
153 Pl. 5
D 18mm; W 6mm; flat thin strip, slight tapering at one end, row of single punched dots around centre of ring 5.5mm apart; 2mm overlap at terminals. Examples with this type of simple punched-dot decoration are recorded from Woodeaton, Oxfordshire (Smith 1998, 160, no. 6.19) and a Roman context at Hengistbury Head, the latter with a wavy rather than plain edge (Cunliffe 1987, 156, fig. 112, no. 60).
154 Pl. 5
D 14–16mm; W 3.5 x 0.5; penannular, flat band made from plain rectangular strip; terminals obliquely cut.
155 Pl. 5
D 17mm; W 3.5; penannular, flat band from rectangular strip, with zone of zigzag incised decoration. A comparable piece from a late-3rd to mid-4th century votive deposit at Gadebridge Park villa, Hertfordshire has an S-pattern (Neal and Butcher 1974, 147, fig. 65, 257).

Guiraud Type 6
Metal wire rings finished in some type of knot or cross-over pattern, are a basic design found in Romano-British as well as earlier and later contexts, often occurring in bronze (Johns 1996, 47–8). Hume illustrates three examples, all now lost, two of which appear to have flat bands with ?incised decoration (1863, pl. XXIV, 8, 9, 12).
156 Pl. 5
23 x 21mm; simple wire ring overlapped at thinner terminals in two knots (Hume 1863, pl. XXIV, 9).
157 Pl. 5
23 x 21mm; illustration suggests flat band narrowing and twisted to overlapping knots. The band has two parallel incised lines with row of dots between (Hume 1863, pl. XXIV, 8).
158 Pl. 5
20 x 19mm; illustration suggests flat band narrowing and twisted to overlapping knots. The band has two parallel incised lines separating three rows of dots (Hume 1863, pl. XXIV, 12).

Armlet
The majority of copper-alloy armlets from Roman sites in Britain date to the late-3rd or 4th centuries AD (Crummy 1983, 37). Late Roman types tend to be narrow, and grave-finds indicate they were often worn in groups.
159 Pl. 5
L 53mm+, Th 3.5mm; copper-alloy cast armlet with deeply grooved upper face in false-cable pattern and flat back, incomplete. This corresponds to Clarke Type D2c, which are strip bracelets with an invariable D-shaped cross-section and continuous repetitive decoration (Clarke 1979, 302–6, with further parallels). Two examples from Grave 143 in the Lankhills cemetery, Winchester are dated to AD 350–70 (Clarke 1979, fig. 77, nos 164, 165). An example with similar ribbing from Woroxeter has a horse's head terminal (Mould 2000, 124, fig. 4.8, no. 48).

Ear-rings

Approximately 38 reasonably certain ear-rings of probable Roman date are recorded from Meols, with a further six possible examples. Allason-Jones identified 31 ear-rings or fragments in copper-alloy from Meols in the Potter Collection in the Grosvenor Museum, Chester (Allason-Jones 1989, 102–5, nos 345–375). The types represented are given in Table 2.3.1; the great majority are of the simple Type 1 and its decorated counterparts, Type 2, and simple looped versions (Type 3) while the more elaborate Type 9, the spiral form, is represented by only a single specimen. Other examples mentioned by Allason-Jones cannot be associated with extant specimens in the collections. Since Allason-Jones's survey of the Meols finds in Chester, three further examples have been located in Warrington Museum **176, 178, 195**, and another in the British Museum **164**. Hume (1863, pl. XXV) illustrates five certain and one possible example of which two survive.

In some cases, in the absence of contextual information that might be provided, for example, by its position within a grave, it can be difficult to distinguish between finger-rings and ear-rings on formal grounds alone (Allason-Jones 1989, 18; Johns 1996, 132). At Lankhills cemetery, Winchester, for example, one very light ring with pointed terminals was found around the finger-bone of a skeleton (Grave 326, dated AD 350–80) (Clarke 1979, 318, fig. 87, no. 402). None of the Meols finds has a context, and the division between ear-and finger-rings is necessarily subjective in some cases. **190** has broad terminals and a short overlap and may be a finger-ring.

It is generally considered that, with the possible exception of some foreign troops who may have continued their own native practices, ear-rings were probably worn only by women in Roman Britain (Allason-Jones 1989; Johns 1996, 126–7).

At the time of Allason-Jones's survey, the Meols assemblage with 31 examples was one of the largest recorded from Britain, compared with 16 copper-alloy ear-rings from London, 13 from Caerwent, seven each from Gloucester and Chester, and 33 from Richborough. The high total from Meols is due in part to the favourable conditions for preservation of metal, but also to the assiduous recovery of small metal items by collectors.

Allason-Jones notes that some Type 1 ear-rings appear to have had pendants, which are now missing, and cites the example of an ear-ring from Derby Racecourse with a pendant annular ring. All three of the Warrington pieces, unusually, now have a suspended ring, but of the two pieces illustrated by Hume (1863, pl. XXV, 2 and 3) neither was shown with an additional ring at that time and they may have been added after their publication.

Type 9 with a flat spiral coil, represented by a single example at Meols, occurs mostly in pre-Flavian contexts (Allason-Jones 1987, 8; Johns 1996, 134).

Table 2.3.1: Types of Roman ear-ring from Meols (typology after Allason-Jones 1989)

Type		*Possible examples*	*Total*
1	25	6	31
2b	2		2
2e	3		3
2h	2		2
3	3		3
9	1		1
	36	6	42

All are penannular ear-rings, in copper-alloy and undecorated, unless otherwise stated. The typology is that of Allason-Jones (1989).

Type 1

160 12 x 9mm; max thickness of shaft 3mm; penannular, shaft thickens midway, tapering to fine points at terminals, slight overlap. Corroded D-shaped section.

161 D 12mm, Th 2.5mm; plain thick ring, circular section, tapering at terminals.

162 Pl. 5, 13 x 2mm, Th 2.5 x 1.5mm; oval section, one blunt end, tapers gradually to point at other.

163 15 x 2mm, W (band) 2.5mm; flattened oval section, tapering at either end to flattened terminals.

164 D 16mm, Th 1mm; corroded, simple circular section tapering to a point.

165 16 x 13.5mm, W 1.5mm; D-shaped section, tapers to one sharply pointed terminal and one blunter terminal, with ring bent inwards slightly at the point of overlap.

166 17 x 16mm, Th 2.5mm. Thick round shaft tapering rapidly at ends to blunt points.

167 17 x 16mm, W 1.5mm; flattened narrow band of D-shaped section, with thin tapering terminals to a point.

168 17 x 16mm, 2.5 x 1.5mm section, oval; thickest in centre, penannular, very slender tapering terminals.

169 D 17mm, Th 2mm; folded sheet, with prominent internal seam, penannular with long slender overlapping terminals. Circular in form, D-shaped in section.

170 D 17mm, Th 3mm; penannular thick ring almost circular, with thick pointed terminals. Oval profile in section.

171 19 x 15mm; rectangular but squashed; Th 3 x 0.5mm. Flat narrow strip, rectangular in section, with equally tapering terminals.

172 19 x 16mm, flattened oval in section with tapering ends, one sharper than the other, and short overlap.

173 19 x 18mm, W 1mm, Th 2mm, flattened oval in section with one fine sharp tapering end, other tapers to blunter point, and short overlap.

174 20 x 19mm, W (ring) 1mm, Th 2mm; flattened oval in section with tapering ends, one sharper than the other, and short overlap.

175 D 19mm, W 2.5mm, Th 0.5mm; flat band, with tapering terminals, one more than other; flat rectangular section.

176 20 x 15mm, W 3mm; roughly circular section, one end tapering to blunt terminal, other end jagged and thicker; small suspended ring suspended.

177 Pl. 5, 21 x 20mm; W (ring) 4 x 3mm; sub-square in section, flattened outer surfaces, and heavy shaft tapering at both ends to sharp point. Irregular seam on outer edge of ring so forged.

178 21 x 22mm, W 2mm; circular section, tapering to a sharp points, corroded; small ring suspended; the outside of the ring (Hume 1863, 252, pl. XXV, no. 3).

179 23 x 18mm; Th 2.5mm; heart-shaped 'penannular' form; tapering to point at one end and blunter point at other, oval section.

180 24 x 17mm; Th (ring) 2mm; iron; two tapering ends, one is bent almost at right angle 8mm from the end; the other is also bent less sharply inward. Profile of ring is rounded internally and angled on outer ridge (wedge-shaped). Surface corroded but no recognisable decoration.

181 24 x 22mm; Th 3.5mm; circular section, strongly tapering to either end and thick in middle; slight overlap of terminals.

182 D 19mm; slender ring of uncertain section, terminals tapering to a point, with pendent bead (Hume 1863, pl. XXV, 6).

183 D 19mm; thicker in centre of ring with terminals tapering to a point (Hume 1847, fig. 45).
184 D 22mm; plain ring with tapering ends (Hume 1863, pl. XXV, 1).

Possible (Type 1) ear-rings or finger-rings
185 D 15mm, Th 1.5mm; plain penannular ring, circular section, tapering slightly at ends.
186 L 16mm; sketch in accession register shows penannular form, one narrow tapering end, other end thicker than rest of shaft and blunt. Object not available for inspection.
187 D 17mm, 1.5 x 2mm; penannular, overlapping terminals with very slight tapering at one end; flattened oval section.
188/ D 19mm, 5mm max. x 0.5mm; penannular flat strip with tapering slightly overlapping ends, rectangular in section; damaged circular in plan.
189 D 21mm. W 2mm; flattened D-sectioned penannular ring, tapering slightly at both ends.
190 22 x 21mm; Th of shaft 3mm; D-shaped in section, and D-shaped in plan, with slight overlap of terminals; one blunt end, tapering to narrower other end.

Type 2b ear-ring
191 D 18.5mm; most of ring of consistent 2.5mm thick section. Tapering at terminals to blunt points; one group of 3 oblique incised lines. Circular in section.
192 Pl. 6
27 x 21mm, 4 x 2mm shaft; oval in form with one narrower terminal angled in to overlap the broader, blunt terminal. Three zones of oblique transverse lines, one in centre, one near each terminal. Type 2b. Elongated oval section.

Type 2e ear-rings
193 Pl. 6
D 21mm, 3 x 2mm shaft; D-shaped section, tapering to sharp points; continuous zone of oblique grooves round most of outer surface, though terminals plain. Potter Collection, probably that listed by Allason-Jones no. 367.
194 Pl. 6
D 21mm, Th 2mm; lozenge-shaped in section, incised transverse lines along whole of one outer face only. Tapering gradually towards either end.
195 Pl. 6
25 x 27mm, W 2.5mm; smaller ring D 10mm, W 1mm; oval-sectioned, terminals taper to a point; three groups of three incised grooves on the outer face; small ring suspended, latter has flattened profile.
Illustrated by Hume (1847, no. 46; 1863, 252, pl. XXV, 2) and formerly in Hume's collection.

Type 2h ear-rings
196 16 x 14mm. W (band) 3.4mm, Th 0.5mm; flat band tapering towards one straight end and more so to the other pointed end. Outer face has central band of indistinct milled decoration, with oblique parallel lines on either side.
197 23 x 21mm; possible ear-ring with one larger bead-like moulding flanked on each side by a small moulding (Hume 1863, pl. XXV, 4).

Type 3 ear-rings
198 Pl. 6
D 16mm, Th 1mm; oval section, D-shaped, with slender tapering ends overlapped and hooked. No decoration.
199 Pl. 6
D 18mm, Th 1.5 x 1.0mm; flattened D-shape in section, terminals twisted together, undecorated.
200 Broken and one-third of loop surviving. Flattened D-shape ring, with terminals twisted together. Th (ring) 2 x 0.5mm.

Type 9 ear-ring
201 Pl. 6
D 18mm; ear-ring of wire coiled at one end and a hook and loop at the other. A pendent ?bead is shown in Hume (1863, pl. XXV, 5). cf. Baldock (Allason-Jones 1989, 8, fig. 3 no. 121).

Grooming equipment

Cosmetic set pestle
202 Pl. 6
L 50mm, W 16mm, Th 3.5mm; crescentic solid object, copper alloy, tapering ends with integral circular ring in centre of concave side of bow; metal of ring worn thin near top.
A corpus of 'cosmetic sets' was published by Ralph Jackson (1985) from late Iron Age and Roman Britain. These two-piece sets consisted of a mortar in the form of an elliptical bow with a grooved channel from one end to the other, and a suspension loop. The pestle is also elliptical and looped, the latter appearing in the centre or at one end, and is solid, rod-like and smaller in size (Jackson 1985, 165). A consideration of the form and context of discovery led Jackson to the conclusion that they were used for grinding cosmetics such as face- or eye-paint (Jackson 1985, 172).
Jackson observed that the majority of the, admittedly few, pieces from dated contexts belonged to the 1st or 2nd century AD, noting that the only firmly dated later piece, of the 3rd century AD, was worn and in a residual context (Jackson 1985, 175). Furthermore, the wide diversity in form and detail contrasts with the far greater standardisation of Roman military equipment, and the distribution emphasised burials, temples, and less Romanised settlements; he concluded 'there is no justification for classing them with Roman military bronzes' (Jackson 1985, 169, 172). By 1993 the distribution had widened so that he could point to no single sphere of use and he concluded that they were in common, everyday use (Jackson 1993, 167). The Meols piece is one of a growing number to add to Jackson's original published corpus of 99 examples, which by 1993 had already grown to over 300 specimens (Jackson 1993, 167).
The Meols piece belongs to a class of 'pestle' in which the loop is attached to the concave side of the bow. Examples are recorded from Chichester, Hockwold, Richborough, Colchester, and Stonea (Jackson 1985, nos 57–8, 93–5).

Vessels
Fragments from two Roman bronze vessels have been recorded, of which only one survives.
203 Pl. 6
L 25mm W 3.5mm; handle of a Roman copper-alloy bowl; incomplete, triangular in section with flat back. Part of the narrowing at one terminal survives (Hume 1863, pl. XXIX, 8). Hume (1863, 312) described as 'a large ring, flat on the underside, and bevelled on the upper; the bevel, or chamfer, sloping more gradually to the outer circumference than to the inner'.
This is paralleled by a handle attached by a human head escutcheon or mount to a Roman bowl of biconical form found at Westbury, Wilts, and now in Devizes Museum (nos 616, 627). The Westbury example has two opposed penannular handles, each with a small curved projection close to each terminal, but is of similar dimensions to the

Meols piece and, like it, narrows at the terminals. The finds from Westbury, which include material from the 1st to 4th centuries AD, were collected during iron ore extraction so are effectively unstratified (N. Griffiths pers. comm.). The triangular section and unusual size of this heavy moulded ring also resemble an unusual penannular 'brooch' from Richborough, Kent, about which Bayley and Butcher comment that this is sufficiently unlike most penannular brooches to raise the possibility that it was adapted to this use by the addition of the pin (Bayley and Butcher 2004, 142, fig. 105, no. 432). The Richborough example has a complex crescent-shaped element attached to the terminal, making it a more complex piece than the Meols example.

204 Pl. 6

Minimum dimensions 42 x 16mm (plate reduced by an unspecified amount).

Roman patera foot. The object was described as a 'tray shaped object of uncertain use' with 'four sharp projections on one side, and is very strongly made' (Ecroyd Smith 1866, 186, pl. II, fig. 14).

Lloyd-Morgan (1980) noted 'there can be little doubt that it is the foot of a patera of the 1st century AD, and probably dating to the first half' (den Boesterd 1956, 5, no. 12 for a complete example; T assinari 1975, nos 31–4, p. 36, pl. IX).' Den Boesterd' s observation that patera feet more commonly occur on the swan' s neck saucepans of Augustan date is confirmed by other closer parallels noted on the continent, including a shallow, long-handled patera of Roman date in the aristocratic cremation burial, T omb B at Goeblingen-Nospelt, Luxembourg, dated to 25–10 BC, where two of the three feet take the form of the Meols piece (Böhme-Schöneberger 1993, Abb. 3; Reinert 1993, fig. 3, no. 4a). At Magdalensberg, in the province of Noricum, and in the T ransdanubian areas, similar plain and unpierced bronze feet are found in Augustan contexts (Sedlmayer 1999, Tafel 51, 2–4).

Two biconical copper-alloy strainer bowls from a hoard of vessels found at Kingston Deverill, W ilts, have a single detached D-shaped handle with triangular section and two curving spurs projecting from the hoop, similar to those on the Westbury piece (Worrell 2006, 461–2, figs 31–32).

Zoomorphic mount

205 Pl. 6

L 16mm, W 4mm, H 20mm; gunmetal mount in form of a three-dimensional stylised bird, probably a swimming duck. The upper and lower parts of the beak meet to form an oval suspension loop; the eye is marked by a faint depression and there is an incised 'eyebrow' above each. The neck is thick, leading to the small body , set at right angles to the neck. The edges of the wings are indicated by a distinct ridge, an incised line marks a fold in the wings. The underside is damaged, but there are traces of an oval attachment. Possibly a fitting for a copper-alloy vessel. The composition of the gunmetal, an alloy of copper , tin, and zinc, rules it out as a late prehistoric object and a Roman date seems certain.

Occasional stylised bird-shaped mounts have been recorded from Roman Britain. A small bird mount of Roman date (found in a pit A21 associated with fragments of several iron helmets) in deposits dated AD 49–65 at Camulodunum (Hawkes and Hull 1947, 332, pl. XCIX, no. 17) is similar in general type, though there is no suspension loop. A bird-mount at Corbridge has a stylised bird with hooked beak and spatulate tail; it is perched on a square-sectioned shank ending in a circular -sectioned rod, and is suggested as decoration for a folding stool. A stylised bird, which is undated but, in view of the findspot, thought to be late Iron Age or Romano-British, was found in South Somerset (Read 2001, 1, fig.2, no. 14); the simple spare lines of the bird and the circular section stud or rivet on the underside for attachment provide parallels with the Meols piece. There are some broad similarities with a range of Roman crude stylized bird brooches of three-dimensional form (e.g. Hattatt 2000, figs 219, 220, 222). A mount in the form of a sitting bird is found as a decorative attachment on a copper -alloy strainer bowl from Kingston Deverill, Wilts. The presence of a handle from a copper-alloy vessel of this type may provide a connection between mount and handle **1906** (Worrell 2006, 461–2, fig. 32).

Box hinge

206 Pl. 6

Pair of copper-alloy double-spiked loops linked to a ring of irregular oval section, forming a box hinge. The loops have blades tapering to a point; these were set in the wood of a box; the looped heads have incised lines along the edges. Four of the six examples from Colchester are from Claudian or Neronian deposits, the exceptions being from a house dated AD 150–400 and deposits dated AD 100–300; a close parallel there (no. 4059) is Claudian (Crummy 1983, 119–20). A female cremation burial from Cemetery A at Skeleton Green, Herts, shows the arrangement whereby pairs of spiked-loops (mostly in iron but one in copper-alloy) were attached to copper -alloy rings as fittings for a wooden funerary casket; the associated pottery was Vespasianic (Partridge 1981, 314–6, fig. 120, k–m). Most examples are mid- to late-1st century , but it may possibly be later . A simple version with a narrower 'split tag' was recorded from Ribchester , Lancashire (Howard-Davis 2000, fig. 61, no. 108), from Phase 2.1 (*c.* AD 79–117/125).

Copper-alloy nails

Crummy has observed that the distinction between nails and studs is subjective. Some nails have heads designed to project above the surface as a decorative element, a key feature of studs (Crummy 1983, 115). Small copper -alloy nails with domed or spherical heads are common finds in Roman contexts, occurring for instance at Colchester (Crummy 1983, 115), Baldock (Stead 1986b, 134, fig. 57, 338–9, fig. 58, 340, 343), V erulamium (Goodburn 1984, 49, fig. 18, 161), and, closer to Meols, at Pentre Farm, Flint (Webster 1989, 68, fig. 23, 31).

207 Pl. 6

L 33+mm, D of head 12mm; nail or stud with flattened spherical head and thick but incomplete shaft. 'Small bronze nail' according to Hume (1863, 239, pl. XXIII, 15), who suggested a medieval date. Possibly a Roman nail or stud (cf. Colchester: Crummy 1983, 115, fig. 116, no. 2992).

208 Pl. 6

L 22+mm, D of head 7mm; flattened domed head and thick but broken shaft (Hume 1863, 239, pl. XXIII, 14).

Model objects and amulets

Axes are the most common form of model object found in Roman Britain, but others include spears, hammers, knives, and pots. Some take the form of items of jewellery, such as brooches, pendants, or pins (Green 1975, 54; 1981, 253). Green cites 11 axes from military areas of Roman Britain (Green 1981, 256–8, fig. 2). Their significance is difficult to determine, and although they may simply be good-luck charms, a connection with the cult of the sky-god is suggested by continental examples dedicated to

Jupiter. South-eastern British examples are often decorated with symbols and patterns, suggesting that they had a ritual significance rather than simply being toys (Green 1975, 59), an interpretation supported by their occasional discovery at temple sites (Stead and Rigby 1986, 136). North-west England is not well represented for model objects, although Green notes two lead spears from Chester (Green 1981, 267, nos 3a, 3e). The same site has produced a total of six model objects, including a lead adze-hammer and bronze knife and a lead anvil. Green considers that the model smiths' and carpenters' equipment were either talismans, appropriate to the artisans whose tools they represented, or they were appropriate offerings to a smith god, such as a local version of Vulcan (Green 1981, 262).
A 'Roman phallus, in bronze' was found on the shore 'near Hoylake' in 1860 and exhibited at the Lancashire and Cheshire Historic Society by H. Ecroyd Smith (Anon 1861, 329). This does not survive and was not illustrated. Phallic amulets are a well-known category of find from Roman Britain (Greep 1994, 84–5). Although often found on military sites, they are not exclusive to military contexts. The phallic symbol itself is found displayed in a variety of public ways on walls, floors, or at entrances, and it has been observed that these are often places of potential danger. The absence of phallic amulets from temples and shrines suggests that they were associated with personal protection rather than possessing votive significance. The amulet was considered to confer potency or virility on its owner (Crummy 1983, 139).

Model axe
209 Pl. 6
L 34mm; W 13mm, D (shank) 2.5–3.5mm; simple axe with oval-sectioned shaft, tapering blade.

Model hammer
210 Pl. 6
L 37mm W 10.5mm; hammer -shaped pendant with suspension loop above a collar . Asymmetrical hammer-head, one side subrectangular in section, the other wedge-shaped. The shaft is sub-rectangular in cross-section. Illustrated by Hume (1847, 17, fig. 50), and again but less accurately (Hume 1863, 264, 312, pl. XXIX, 13), there described as possibly a bell clapper or a chatelaine pendant.

Spindlewhorls and weights
Hume (1863, 151–7) recorded 44 spindlewhorls, comprising 34 of lead, 7 of 'terra cotta' (ceramic) and 3 of stone. At least two more ceramic whorls were found in December 1865 as recorded in the Gatty Catalogue (Acc. no. 18.11.74.58): 'Two spindle whorls, one in red glazed pottery, & the other in fired clay , found in excavating for the Hoylake Railway, in the clay above the old forest bed, Decr 1865; purchased of Mr H. E. Smith'. It is uncertain whether the 'red glazed pottery' was samian ware or medieval pottery, although Ecroyd Smith records a 'T erra Cotta Spindle Whorl 1 1/2 inch in diameter, formed apparently from a piece of Samian ware' since some of the surface survived (Ecroyd Smith 1866, 210), which could refer to the same find.
Spindlewhorls are pierced objects which have been defined by several key criteria (Crummy 1983, 67). Crummy stated they should have a perforation with a minimum diameter of 5mm, to allow insertion of a spindle. The diameter and thickness should be even, the sides smooth, and the hole central to ensure that the spindle rotated evenly. Finally the overall diameter should not exceed 50mm. However, ethnographic parallels suggest that the size and shape are not important and it is even possible to spin with a rectangular -shaped whorl. W eight has been considered a critical factor in the function of the whorl, but analysis of whorls at Birdoswald shows a wide range of weights with no particular clustering (Summerfield 1997, 288). Further analysis suggests that the diameter of the perforation shows some change over time; anything with a hole less than 5mm is not a spindlewhorl, Roman examples have a diameter of 5-7mm, while V iking and later medieval spindlewhorls have a diameter of 9-11mm (Crummy 1983; W alton Rogers 1997, 1735-45). According to this criterion, the majority of spindlewhorls should be assigned to the early medieval and later medieval periods (2.13).
The presence of a high proportion of lead examples undoubtedly reflects the proximity of Meols to the lead-mining region across the Dee in Flintshire, which provided a ready source of this dense, but malleable and easily worked, metal for such small objects. At Roman sites distant from lead sources, such as Colchester or Birdoswald, spindlewhorls are most commonly ceramic or stone (Crummy 1983, 67; Summerfield 1997, 288–9).

Stone, plano-convex profile
211 Pl. 6
Ext. D 42mm, int. D 9mm; grey siltstone.

Ceramic, plano-convex profile
212 Pl. 6
Ext. D 44mm Th 6mm; half only , cut from body sherd of Cheshire plain orange ware with red slip on upper surface. Central hole damaged but approximately 8mm diameter.

Lead alloy, conical profile with hexagonal hole
213 Pl. 6
Ext. D 21mm, int. D 6mm, Wt 12.8g; off-centre hole, near circular in shape but the meniscus on the base and rough surface of the conical sides indicates that this was cast in an irregular hole.
214 Pl. 6
L 16mm, D 4.5mm, Wt 6.8g; hexagonal off-centre hole.
215 Pl. 6
L 20mm, D 9mm, Wt 15.6g; irregular with an off-centre hexagonal hole.
Three of these four objects have a hexagonal hole. The crude workmanship of three, with an irregular conical profile, is paralleled amongst a group of metal-detector finds from south W irral, which has a variety of similarly crude objects with irregular conical profiles, some also with hexagonal holes. These finds are from a site that has produced numerous Roman finds, including several brooches, coins, and metalworking waste, suggesting a Romano-British date for this irregular class of lead objects. Two examples from W ilderspool, described as 'weights', are almost circular with a central neat pentagonal hole and a rounded disc profile, from Romano-British contexts (Hinchliffe and W illiams 1992, 157, fig. 84, 5, 6). The function of the objects is uncertain. If spindlewhorls, they required a chamfered hexagonal shaft to the spindle. A further example from Southworth Hall, near a recorded Romano-British enclosure, has an irregular conical profile, with a circular hole.

Stone, disc or flattened biconvex profile (Roman)
216 Pl. 6
Ext. D 47mm, int. D 8mm; grey siltstone.
217 Pl. 6
Ext. D 31mm, int. D 9mm; made from a polished

phosphate nodule.
218 Pl. 6
Ext. D 29mm, int. D 8.5mm; grey sandstone.
219 Pl. 6
Ext. D 38mm, int. D 9mm; grey/purple mudstone.
Flat disc-like stone spindlewhorls with a central pierced perforation are found, for example, in Roman contexts at Castleford (Clarke 1998, 258, fig. 112, nos 69–70), Wilderspool (Andrews 1992, 162, no. 19), and South Shields (e.g. Allason-Jones and Miket 1984, 350, no. 14). Parallels for flat stone discs with central holes occur at the Iron Age and Romano-British enclosure at Collfryn, Powys, where two flat discs and others with a more rounded profile are recorded; one flat disc (Britnell 1989, 128, fig. 32, no. 1) is from a Romano-British context; the others at the site are uncertain, but possibly Iron Age. However, very similar examples were found in medieval contexts at Beeston Castle, Cheshire (Ellis 1993, 60–61), suggesting that caution is required when assigning these to any given period.

Needles
Two main types of Romano-British copper-alloy needle have been identified by Crummy (1983, 65–7). Type 2 has a flat spatulate head, while Type 3 is distinguished by a narrower shank and a groove above and below the eye. Two short needles of unusual form at Meols do not conform to these two Roman types. However, they are not a medieval form and have some characteristics in common with recorded Roman examples.
220 Pl. 6
L 22mm D of shaft 2.5mm; pear-shaped eye, head broadens at eye and rounded end.
221 Pl. 6
L 29mm D of shaft 2.5mm; flattened head, with pointed end and large circular eye.
A longer, but broken, example from Ilchester, Somerset (Leach 1982, 252, fig. 122, no. 125) also has a flattened head but subrectangular-sectioned shank. Verulamium has a simple needle with broad flattened (though not spatulate) head, and circular eye (Goodburn 1984, 43, fig. 16, no. 126). A small needle at Castleford, of similar form to the Meols example (Cool 1998c, 92, no. 435) has a large head and circular eye, was unstratified and not certainly Roman.
222 L 28mm surviving, D 2mm; the narrow shaft is grooved along opposite sides; incomplete eye and shaft also broken. Probably Crummy Type 3 (Crummy 1983, 67) but damage to the Meols specimen precludes certainty; its narrow shank has the groove below the eye. 3rd–4th century.
223 L 49mm, 2 x 1.5mm shaft; copper-alloy pin or needle; lower part of shaft only is present. Oval in section with groove along length.

Iron spearhead
224 Pl. 6
L 58mm, W 15+mm; incomplete leaf-shaped spearhead with closed socket, blade damaged: known only from Hume's illustration (1863, pl. XXI, 5) so the section is not recorded. Probably an example of Manning's Group of small-bladed spearheads, although a little smaller than the principal range of blade-lengths of 45–65mm. Parallels noted at Richborough (Bushe-Fox 1949, 152–3, pl. LIX, 290), interpreted as a lance-head, and *c.* 70mm long.

Glass vessel
No Roman vessel glass survives in the present collections. Ecroyd Smith records the discovery of a 'small fragment of a basin, bluish in colour, and with a finely grooved concentric line', observing that only two or three fragments of Roman glass had been found on the shore (Ecroyd Smith 1866, 210). The only fragment of probable Roman vessel glass that can be identified was illustrated by Watkin (1886, 280).
225 Pl. 6
50 x 29mm; body sherd of coloured glass vessel with relief decoration of a standing human figure and raised border below. Illustrated by Watkin (1886, 280), who described it as 'a portion of a dark sherry-coloured vessel found at Dove Point in 1884 by Mr. Charles Roeder, of Manchester ... though rude and Britanno-Roman, it shews distinctly a human figure, and some other ornamentation which cannot be satisfactorily identified. The whole of the design upon it is in relief, and there is a higher raised band, or moulding (which probably has run completely round the vessel) beneath the feet of the figure. The glass at this point is 1/4 inch thick, but where not ornamented only about 1/8 of an inch. The fragment is considerably water-worn, and "ground" by the washing of the sea' (Watkin 1886, 280–1). Dr Rachel Tyson notes that this is very likely to be a fragment of a mould-blown Romano-British sports-cup (e.g. Price and Cottam 1998, 63–4). Similar figures are sometimes found on ovoid cups, but the cylindrical cup is far more common. It is found in all sorts of colours including 'sherry' as Watkin describes, or 'yellow/brown' (Price and Cottam 1998). They may show gladiators, chariot racing, sometimes boxers or wrestlers, and have a band around the bottom. Dates to *c.* AD 50/55–75/80; fairly common in southern Britain and occasionally found in northern Britain.

POTTERY

Only 16 sherds of Roman pottery are present, in three modern collections, including a ceramic spindlewhorl **212** catalogued above under spindlewhorls. That this low total is not an accident either of selective recovery by antiquarians, or of modern filtering of the collection, is confirmed by no fewer than three of the later 19th-century collectors. Hume commented on the surprisingly small quantity of Roman pottery found at Meols. 'Some fragments of dark slate-coloured ware, and probably of sepulchral urns, are apparently all we have to note' (Hume 1863, 325). The 'dark slate-coloured ware' is likely to be Black-burnished ware and domestic rather than funerary. A few years later Ecroyd Smith recorded that 'not half a dozen pieces have as yet been recognised, and one of these was found inland' (Ecroyd Smith 1871, 130). By 1886 Watkin noted 'a few small fragments of plain "Samian" ware, and of black Upchurch ware, have been discovered, but none that is embossed' (Watkin 1886, 280).

Ecroyd Smith recorded the discovery of three sherds, two of black-burnished ware found in 1867, and an oxidised sherd found a few years later: '2 Terra-cotta. Fragments of Urns … of the black ware made in 'smother kilns', … during the Romano-British period, (if not later) at Upchurch in Kent …. In constant use for domestic purposes as well as mortuary ones, this ware is of common occurrence upon Roman sites of occupation; but upon the Cheshire shore, where every vestige of a tenement has long been washed away. Pottery of this period is so rare that only two pieces have hitherto been noticed by the writer, one of which, like each of the present examples, has probably formed part of a cinerary urn, considering the distance from the port or settlement on the vanished promontory; they occurred in the centre of the coast-range

to which the Romano-British objects are all but wholly confined upon the mainland' (Ecroyd Smith 1868, 105–6) 'Terra cotta. A fragment of reddish brown pottery, pervaded by finely pulverised quartz. The site of the Roman settlement here having long since been washed away, the fictile remains of this era are of extremely rare occurrence' (Ecroyd Smith 1873a, 128).

Three large sherds of amphora include one piece which is heavily water-worn. The source of most sherds lies outside the region, notably the Spanish amphora sherds, two Gaulish samian sherds, a North Kentish mortarium, and Black Burnished 1 (BB1) from Dorset. The emphasis of the finds is on imported or traded wares using the west coast trade route, which introduced similar wares to military sites such as Chester, Segontium, and the northern frontier zone (cf. Carrington 1988; Webster 1993).

Samian ware
Margaret Ward
226 Pl. 6
D approximately 220mm; rim-sherd and part of the flange of a bowl of form Ritterling 12. Its surfaces are a dull brown-red, and the calcareous fabric is buff. The bowl appears to have been a product of the early potteries producing samian ware in South Gaul (see Bulmer 1980, 14). The rim of this vessel was fairly rudimentary and its flange was undecorated and almost flat. This single, small fragment provides no evidence of a spout. The interior of the rim gives an indication of the rounded moulding at the point at which the sherd has broken away from the main body of the vessel.
The closest parallel for the form of this vessel may be a bowl from Colchester (Oswald and Pryce 1920, pl. 71.2; see also Webster 1996, 49, fig. 34.A). Webster notes that the type classified as Ritterling 12 is predominantly pre-Flavian. Instances of uncertain date, but which were considered to have been pre-Flavian and possibly Claudian, have been recorded at Trent Vale, Stoke-on-Trent (Simpson 1968, 35–6). In the fortress at Usk, Ritterling 12s were found in both Phases I and II (Tyers 1993, 136). Some early Flavian examples are also known, but it is improbable that these were made any later than *c.* AD 80.
According to Oswald and Pryce, the Colchester bowl mentioned above was probably made in the Claudian period. The Meols sherd certainly represents pre-Flavian production of samian ware in South Gaul, and its form and fabric combine to suggest that its origin was Claudian.
227 Body sherd of Central Gaulish Drag. 18/31 dish. Small highly abraded fragment, but grooved where the vessel was once repaired with a rivet; AD 120–50.

Other pottery
228 Amphora, abraded foot of a cylindrical amphora. Dark buff – mid brown external surface, core dark brown buff-grey fabric; southern Spain, late-1st to 2nd century AD (P. Carrington). L: 135mm, W 70mm. Marked 'Foot of Amphora/Meols/Cheshire' in three lines; part of an old hexagonal museum label in red adheres to surface.
229 Amphora, body sherd, junction with handle (not present). Marked 'Fragment of Amphora Junction of handle, Meols, Cheshire'. Dressel 20, South Spanish, 106 x *c.* 143mm.
230 Amphora, body sherd. Surfaces abraded and water-worn. External surface orange brown, internally mid to dark grey, light grey core. Probably from a globular amphora of South Spanish origin. *c.* 106 x 128mm. Marked in faint old ink 'H46', possibly for Hilbre or Hoylake 1846.
231 Pl. 6 Rim and wall sherd of mortarium. Hard smooth fabric with smooth fracture; very pale brown (Munsell 10YR 8/4) with light red (Munsell 2.5 YR 6/6) core in places. Small, rare sub-angular grey (?flint) trituration grits combined with scoring, on inside wall and top of rim. Low bead and flattish rim. A typical product of the Flavian mortarium factories located in Kent, or less likely, Northern Gaul (Hartley 1977, Group II, rim type 3c; *c.* AD 65–100+). (Peter Carrington). Marked in ink 'Mortarium Meols Cheshire' with hand-written paper label 'Mortarium from Meols shore'.
Peter Carrington (Chester Archaeology) made the following observations:

> 'Hartley (1977, 6–7, 12–13 and fig. 2.2) records four stamped mortaria of this type from Chester: 2 of Q. Vaerius Veranius and 2 of Gracilis. She also notes that mortaria from this source had a generally coastal distribution, while those from their major competitors, on the Radlett-Brockley Hill area between Verulamium and London, were distributed overland (Hartley 1977, 12–3 and 17, fig. 2.2). As a coastal site, Chester is fairly strongly represented (cf. York, further inland, but more favourably near the *east* coast, with five stamps), but even so Radlett-Brockley Hill products dominate, possibly reflecting a more vigorous industry.'

232 Pl. 6 Black-burnished ware (BB1), plain-rimmed dish, undecorated. Gillam Type 330, dated by him to AD 330–70; the type is a long-lived and common and dates from the mid-2nd to mid-4th century (cf. Exeter: Holbrook and Bidwell 1991, 94, 99–100). Mounted on card with another sherd of BB1. Found 17 June 1956.
233 Black-burnished ware (BB1), fragment of shoulder of jar; uncertain form. Mounted on card with another BB1 sherd. Found 17 June 1956. Not closely datable, but overall date range for the ware in north-west England, *c.* AD 120–350.
234 Body sherd, form uncertain. Dark grey core; internally pale orange; thin dark orange external surface. Label reads 'Upchurch cinerary urn'.
235 Body sherd of ?flagon. White painted exterior, orange core and internal surface. Fine sandy fabric. Roman.

Counter or disc
236 Pl. 7 D 24–25mm, Th 4mm; body sherd of vessel, crudely chipped to disc or counter. Sandy light orange fabric. Roman.

BUILDING MATERIAL

Combed box flue-tiles
237 100 x 73mm, Th 15–20mm; fragment, combed with eight-toothed comb. Knife-trimmed end of tile and part of knife-cut aperture. Two parallel combed zones converging. Hard purplish red fabric, with some large white inclusions and a little sand. Inner surface sanded. Old ink inscription 'Tile Meols Cheshire', more recent marking '18.11.74.63.L.P1'.
238 105 x 86mm, Th 18–20mm; fragment, upper surface has combed parallel decoration in three different directions. Dark orange-brown surfaces with reddish purple core, hard fabric contains large white rounded inclusions and a little sand. Marked in ink 'Tile Meols Cheshire'. Currently listed in Liverpool Museum's collection under Acc. no. 18.11.74.10. However, the description in the Gatty Catalogue card for this accession number has 'Portion of a medieval flooring tile, pale red ware, pattern

in relief, labelled 'Gt Meols Beach, 1873' The accession card therefore appears to refer to a different find.
[239–249 numbers not used]

MISCELLANEOUS OBJECTS OF POSSIBLE ROMAN DATE

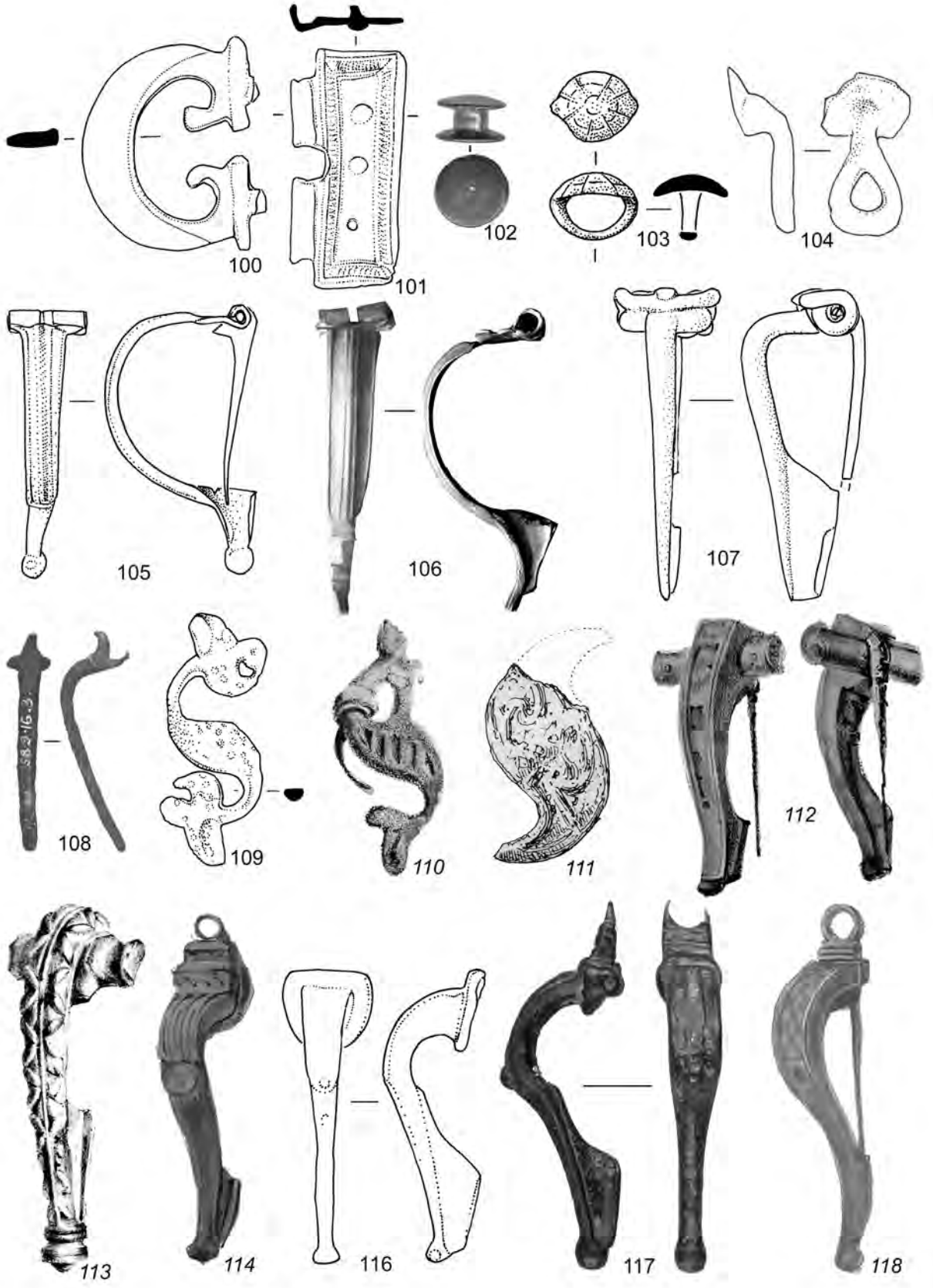
Buckle
250 Pl. 7 D-shaped buckle, eccentric form (?recent compilation, item not counted for statistical purposes) (Chitty and Warhurst 1977, no. 52, showing additional sheet collar on 'bar'). This extremely crude item consists of three potentially anomalous components: a roughly bent sheet frame with expanded terminal loops, two rows of inconsistently applied punched motifs, each of six rectangles (2 x 3 in pairs respectively medium, long, and short) along the outside edge, and a series of roughly filed grooves transversely along its top; a fairly neat rod with the ends hammered over in the manner of rivets (but far too long for the frame); an extremely roughly hammered pin with the loop at a right angle to the flat shaft.
This curious ensemble of adapted, inconsistent components is hardly assignable to the mainstream of accessories from any period. Although it was doubtless capable of acting as a buckle, it is doubtful that it was ever actually used in earnest in this way (there must be some suspicion that it was put together from separate finds for a gullible collector). The rod serving for a bar may actually have served that function in some other item, but it is difficult to see any rational person using the other two components in the way implied by the assembled whole. Although there are superficially similar items amongst Roman military accessories (e.g. Colchester: Crummy 1983, 129-30), dating remains debatable.

Possible wire brooch
251 Pl. 7
L 35mm, W 24mm; L (head) 12mm; W (head) 5mm; wire of circular section, doubled into a total of four surviving loops, with a hollow conical head, formed by hammering out and folding the end. The other end is broken but there is a suggestion of a fifth loop.
The function is uncertain. It has fairly close resemblance to an object from Dinorben tentatively identified as a Roman serpentine brooch with similar but tighter loops, which is bent to form 'five ox-bows' but is broken at each end (Savory 1964, 135, fig. 16, 2). A more remote parallel is suggested from Attermire Cave, Settle (Anon 1927, 64), now in Leeds Museum, which has been linked to Dragonesque brooches via examples from Newstead, Victoria Cave, and Maiden Castle; Savory suggests a date not later than the 2nd century AD for the Dinorben example (Savory 1964, 134–5).

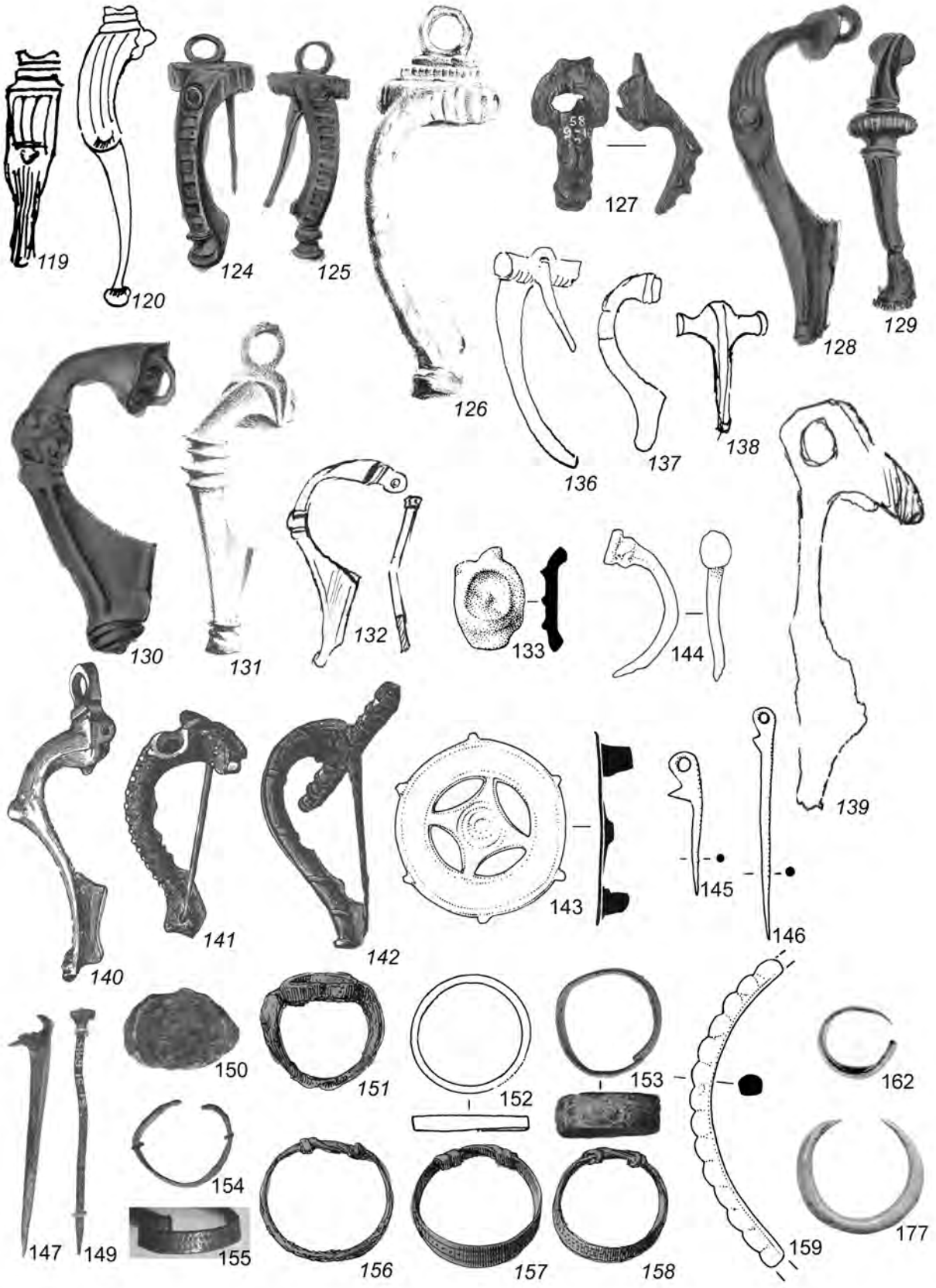
Decorated disc of uncertain function
252 Pl. 7
D 26mm; Th 2.5mm; int. D 9mm; the body is a 1:2 tin:lead pewter with approximately 2% copper. Two flat concentric panels of dark niello surrounding a band of red copper, now largely lost; the centre is open. The concentric panels are inlays of a silver/copper sulphide niello on a thin sheet of pure copper backed with pewter. The material that was between the bands has corroded or dissolved away. The niello contains no lead, which suggests that it may be earlier than medieval (silver/copper/lead niellos appear in the 13th century). Copper/silver niello is commonest in the early medieval period (la Niece 1983, 286), whilst Roman niello is usually silver or copper sulphide, rarely both (Appx 2). No sign of attachment survives on the back, but two opposed indentations on the edge of the plate may represent original attachment points.
The piece has a superficial resemblance to a seal box lid, although it could be an ink well lid. The large central hole and lack of pin attachment suggests a possible Roman inkwell cover; an example in copper alloy from the Walbrook, London, was circular with central hole but is nearly twice the diameter, at 46mm (Merrifield 1965, pl. 138, no. 1).

Uncertain object
253 Pl. 7
L 96mm; copper alloy. Hume's drawing (1863, 76, pl. V, 13) suggests an angled neck, a collar near the angled terminal, and a tapering shank which thickens away from the angled end. Possibly a damaged surgical instrument (cf. Exeter: Allason-Jones 1991, 257–60, fig. 117, no. 113). Ligulae, which have the flat angled neck, usually have a slender shank. The drawing is not sufficiently clear to determine whether this is an incomplete surgical instrument, a stylus, or other implement. The beautiful ornamentation mentioned by Hume is not evident on the illustration.

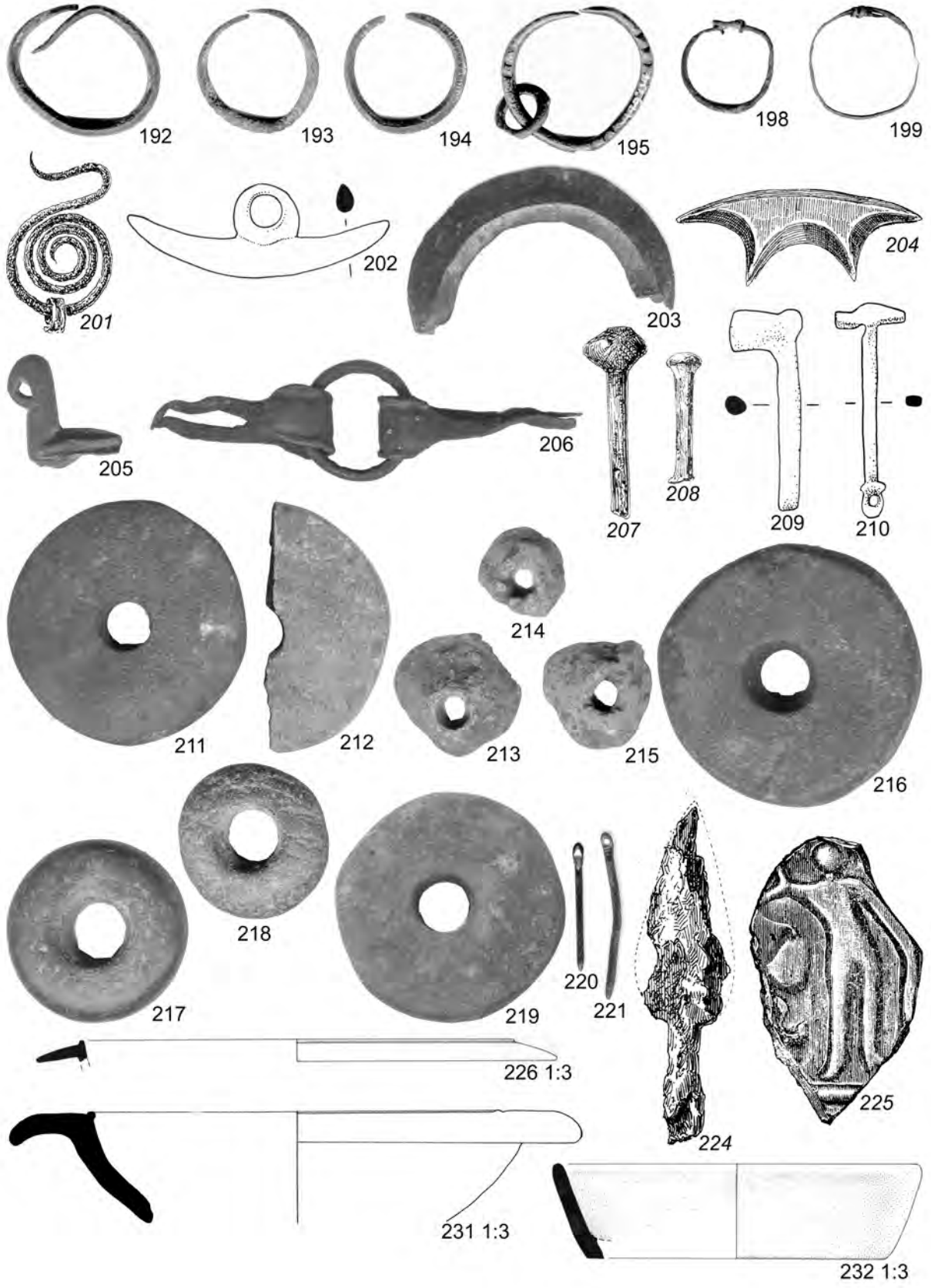
Miscellaneous stone objects (probably Roman)
Two stone objects, no longer extant, were illustrated by Hume (1863). Their date and function are uncertain, although elements in common with Roman material have resulted in their tentative attribution to this period.
254 Pl. 7
Possible shale tray fragment. Hume illustrated an object of uncertain function, described simply as of 'stone' (Hume 1863, 314, pl. XXX, 6). It has a frieze of geometric decoration between inner and outer borders. It appears to be the edge of a stone (perhaps slate or shale) tray (cf. Crummy 1983, 71, 2021); a close parallel in form though with a different edge pattern is found in the trencher of Kimmeridge shale placed in a richly furnished Flavian cremation burial at Grange Road, W inchester (Biddle 1967, 233–4, fig. 6).
The distribution of shale trenchers is heavily concentrated in Dorset, the source of Kimmeridge shale. Seventeen of the 21 rectangular examples identified to 1967 were from that county, with London then the northernmost findspot. They date from the late-1st to earlier 2nd century AD (Biddle 1967, 248–50). If correctly identified, this piece is well outside its core distribution area, though not apparently unprecedented. A shale 'tablet' with a border of incised overlapping semicircles from Holt, Denbighshire, appears to be another example (Grimes 1930, 128, fig. 56, no. 35).
255 Pl. 7
Rectangular slate object, possibly an inlay. Edges bevelled, circular hole in centre and three incised concentric circles around it. Not extant, described from illustration (Hume 1863, pl. XIV, 4). Measured from plate at 49 x 53mm; Mayer Collection 7752 (2 1/8 x 1 7/8 in). No information on thickness.
An apparently less well-finished piece in shale from Segontium is rectangular in shape with a central deep drilled hole. It was interpreted as a possible mould or, more relevant to the Meols piece, an inlay with the hole originally containing a lost inset (Allason-Jones 1993, 206, fig. 10.22, no. 490). Birdoswald has produced a flat fine-grained hard sandstone with two concentric incised circles and a central hole (Summerfield 1997, fig. 236, no. 305); over four times larger than the Meols piece; this too lacked an obvious function.



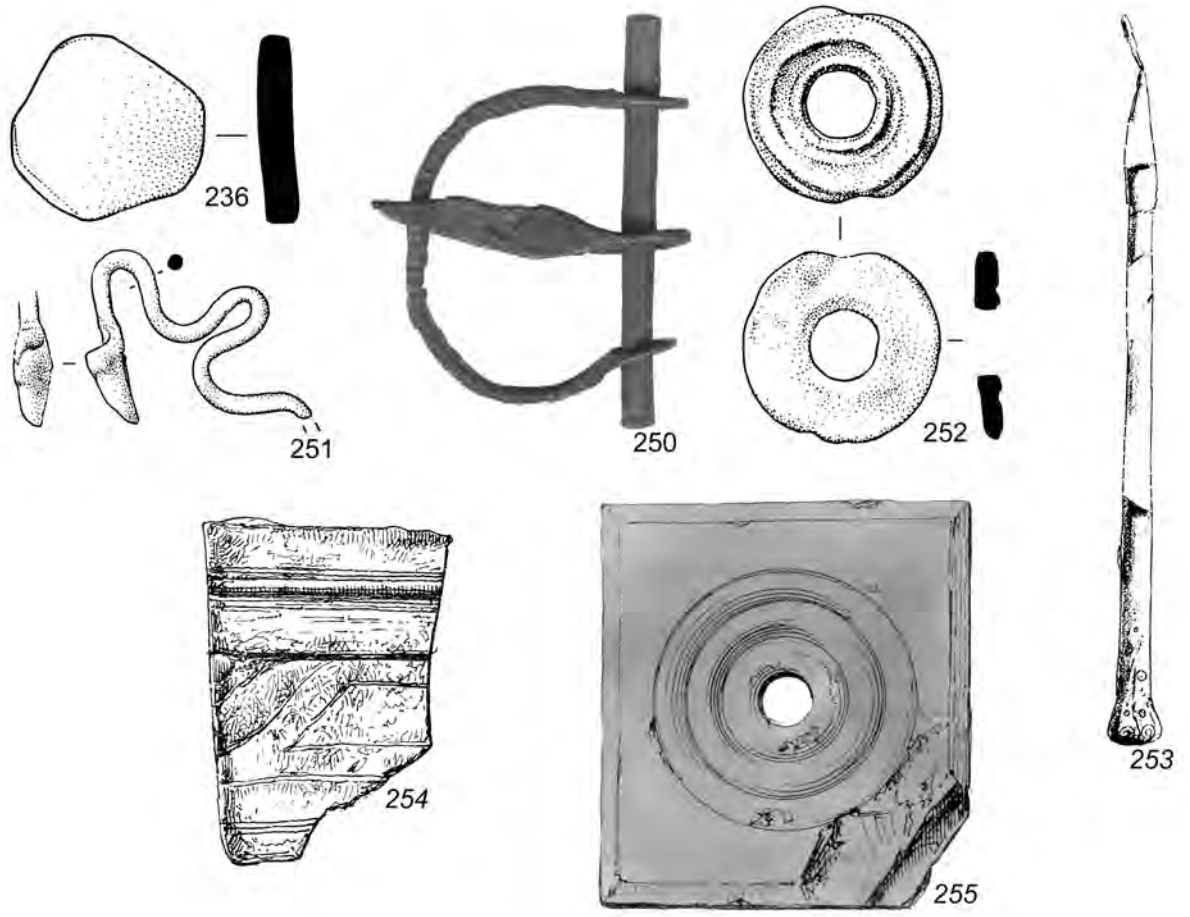
Pl. 4. Roman: belt and strap fittings and brooches



Pl. 5. Roman: brooches and other personal ornaments



Pl. 6. Roman: ear-rings, model objects, vessels, etc.



Pl. 7. Roman: ceramic disc and miscellaneous objects

2.4 Early medieval material: AD 400–450 to 1050–1100

David Griffiths

The surviving or recorded and identifiable early medieval objects from Meols, which number just over 100 pieces, although far less numerous than the later medieval objects, are still the largest collection of this period from any single location in north-west England (excluding hoards). Chester, the acknowledged centre of population and economic life in the region at this time, has produced far fewer individual site finds of this period. Moreover, the Meols material spans the early medieval period, including not only later Anglo-Saxon and Viking material, but some (much rarer) objects from the post-Roman period of the 6th to 8th centuries AD. The relative proportions of finds across the period are reflected remarkably consistently in the Meols coinage, which includes three post-Roman Mediterranean coins of the 6th century, two primary (**5126-5127**) and four secondary *sceattas* of the 8th and 9th centuries (**5128-5132**), two Hiberno-Norse coins (**5772-5773**) and 27 Anglo-Saxon silver pennies of the 10th and 11th centuries (**5133-5159**) (2.24).

Objects that are unambiguously attributable to the early medieval period, or at least predominantly so, are catalogued here. In addition, there are objects of various materials with very long-lived forms and types, which span the early and later medieval periods and cannot be attributed to either with certainty; these are therefore catalogued with their main material group (e.g. leather sling pouch **3278** and whetstone **3328**).

CERAMIC: THE ST MENAS AMPULLA

David Griffiths and Susanne Bangert

300 Pl. 8 and II
H 98mm; W (body) 65mm (max.); L (neck) 35mm; D (mouth) 21mm; Th body (max) 18mm; a pink buff fabric clay ampulla with two handles, cylindrical neck and flattened disk-like decorated body; in form, a scaled-down amphora. The body is a thick flat hollow disc with rounded sides, with a neck which has been attached separately, as have the two looped handles, only one of which is complete. The neck has a plain moulding, above which the neck swells before tapering in just below the aperture. The object is in a fabric varying at the surface in colour from red, light red, reddish yellow through to buff and pinkish grey. The interior is light brown. There are numerous visible white calcareous inclusions in the fabric up to 1.5mm long. Type: C.2, similar to Witt 2000, cat. no. 29–30. Place of manufacture: Abu Mena in the Maryût [*Mareotis*] *c.* 45km SW of

Alexandria, Egypt. Date: *c.* 500–650 AD; this example probably not from the earliest period.

Obverse: this side has a circular field surrounded by a circle of impressed dots (indistinct triangles) and shows a standing figure facing front with arms outstretched from the elbows, to either side is an indistinct recumbent figure (animal). The design is abraded and indistinct. It almost certainly represents St Menas standing between two kneeling camels, a scene that is commonly found on better preserved ampullae.

Reverse: much less well preserved decoration. The right-hand part of the circular field has short radiating spokes from the frame. The design is very abraded and unclear, but appears to have a long curving design. The surface is spalled to the left.

Condition: the two decorated faces and the base are heavily abraded, with spalling of the surface of the reverse. However the neck and handles are relatively unabraded and retain their surface detail. This may suggest that the piece remained buried neck down with the base and 'reverse' exposed; the spalled surface does have some smoothing, as if by water. The aperture is blocked with a hard grey matter, which is evidently dried solid mud, suggesting that the whole inside chamber of the ampulla is similarly affected.

Circumstances of discovery

The ampulla was found in 1955 by a local fisherman digging for lugworms at low tide on the Meols shore. The circumstances were described in a note by F. H. Thompson, then Curator of the Grosvenor Museum, in the *Journal of the Chester Archaeological Society*:

> 'Although the coastal site of Meols, near Hoylake, is not now so prolific of antiquities as in the days when the Rev. A. Hume could devote a whole book to cataloguing the Romano-British, Saxon and Medieval finds made there, single specimens are occasionally recovered. One of more than usual interest is shown here [the ampulla], found in 1955 in a peat layer two feet down below the sand at a point 300 yards seaward of Dove Point, and subsequently presented to the museum by Mr Brian Gunning' (Thompson 1956).

It was displayed shortly after its accession to the Grosvenor Museum, and a number of convincing plaster replicas were made for sale in the museum bookstall. The Hoylake Historical Society Collection at the Williamson Art Gallery has one, and at least one more exists in private ownership. Unlike many of the other items of imported 'exotica' from Meols, which derive from the antiquarian period in the 19th century, the St Menas ampulla therefore has a relatively recent and well-documented individual provenance. It is a relatively unusual and exotic find, but is by no means the only example from Britain or even from the locality. Another example was found near the shore of the inner Mersey Estuary (*c.* SJ 563 812), at Preston Brook, near Halton, Cheshire, in 1981 (Fig. 2.4.1), now in Norton Priory Museum. The Preston Brook ampulla is inscribed with the blessing of St Menas in the Alexandrian dialect of Greek, but is missing its handles. A local boy dug it up from disturbed topsoil alongside a footpath that was under construction as part of a new housing development. The significance of its location is difficult to interpret. No fieldwork was undertaken prior to the housing development, and the find occurred in what had been a field away from any recognised ancient or medieval settlement. It is, however, situated close to the edge of the estuary floodplain, which was tidal until recent centuries but is now reclaimed, with its margin marked by the course of the Bridgewater Canal. In an intriguing further parallel to Meols, a Byzantine copper *follis* of Justinian I was found in July 2000 by a metal detectorist at Preston on the Hill, only 800m from the ampulla findspot.[1] The nearest place-name Preston [Priest's farm], for which Preston on the Hill is the origin, implies an early ecclesiastical presence (Dodgson 1970, 156), but there are, so far, no recognisable indications of post-Roman settlement in the Halton or Preston area, although excavations in 1967 at nearby Halton Brow, produced evidence of a Roman rural settlement (Brown *et al.* 1975). Halton has a medieval castle, and Norton Priory, an Augustinian monastery founded in 1115, lies 2km to the north-west of the find-spot. A further find of a worn *follis* of Justinian was reported to the PAS in early 2007: this was found on the Wirral shores of the Mersey Estuary at Seacombe, *c.* 7km east of Meols.[2]

The small number of other discoveries of St Menas ampullae in Britain are similarly affected by uncertainty over their provenance and context. R. S. M. O'Ferrall considered one found near the Roman Ryknield Way near Derby to be a medieval import or curiosity (O'Ferrall 1951). At Burgate, Canterbury, a St Menas ampulla was found in 1868 'during excavations', and three others of dubious provenance (one of which may have also been found near Burgate) are also in private possession in the Canterbury area; according to the Canterbury Archaeological Trust two of these may have been found at or near Faversham, Kent. An example is recorded in the registers of the Yorkshire Museum as having been found in York (Acc. no. 614.47A C927), and there is a reference in the 1891 *Handbook of Antiquities of the Yorkshire Philosophical Society* to two further examples from Shincliffe, Co. Durham (Bangert 2006). Susanne Bangert's doctoral research (Bangert forthcoming) shows that the equally sparse and largely unstratified spread of discoveries from Germany and France confirm a disparate and uncertain picture of the dates at which these objects were imported from the eastern Mediterranean and of the context of their use. In more modern times, however, this has become a relatively well-known and accessible type of object, because museum collections specialising in the Near East have accumulated considerable numbers by direct acquisition from Egypt and elsewhere around the south-eastern Mediterranean, where they are much more numerous (e.g. Liverpool Museum has 54 examples, and the Ashmolean and British museums rather more).

No St Menas ampullae have yet been discovered in Cornwall, Wales, Ireland, or Scotland. Of the English finds, most are found in at least some very general proximity to Roman settlements or communications, but also similarly to medieval foci including monasteries, where pilgrimage may have been a factor. Direct importation in the post-Roman / early medieval period cannot be ruled out. The discovery in the Meols hinterland in 1987 and 1991 of three Byzantine coins of the mid- to late-6th century AD (**5123-5125**, 2.4; Philpott 1999a), which are in broad terms contemporaneous with the St Menas ampulla and also derive from the south-east Mediterranean, is certainly noteworthy – as a cluster of four such objects is not only regionally significant, but particularly unusual in that all were found relatively recently, and separately, as stray finds. There is a broad, if sparse, pattern of post-Roman Mediterranean objects found in northern and western

Britain, such as the sherds of North African and Phocaean Red (A-ware) slipwares and Bii-Biv amphorae found at Tintagel and other sites in the 'Celtic West' (Thomas 1990), a Latin inscription possibly to the mid-6th century Byzantine Consul Justinian on stone at Penmachno, Caernarfonshire (Fulford 1989), and a 7th-century Byzantine intaglio from Cefn Cwmwd, Anglesey, found during excavations for road-widening in 1996 (Roberts *et al.* forthcoming). For the Meols find, in particular, the discovery of the three 6th-century Mediterranean coins in the Meols hinterland appears to offer some circumstantial support to the interpretation of the St Menas ampulla as a genuine post-Roman import, to the extent that Bangert, and Harris (2003, 148), accept the Meols find as by far the most likely amongst the British discoveries, and even to some extent the European finds, to be 'original'.

St Menas and Abu Mena

There is some uncertainty over the identity of St Menas; he is variously described as a Phrygian martyr or an Egyptian who lived and died in Egypt, although there may have been two St Menas who were confused by the hagiographers. According to one account he was a soldier martyred in AD 296 under Diocletian, his body was miraculously transported from his place of death in Asia Minor to a desert place 45km south-west of Alexandria, where it was guarded by two camels that refused to leave the corpse's side. The cult grew up around the shrine at this spot, which became known as Abu Mina. In its heyday in the 5th century it was the most popular Christian shrine in Egypt, with an international reputation based on the saint's reputation as a 'wonder-worker' whose legendary achievements, according to some sources, included curing the daughter of Constantine I of leprosy (Meinardus 1961, 353). A small town grew up around the shrine, catering for pilgrims (Drescher 1946, ii–xi). Abu Mena was extensively damaged at the time of the Persian invasion of Egypt in the early 7th century (Grossmann 1998, Meinardus 1961, 357). In the 8th century a rebuilding of the main church was finished. A dispute over possession of the shrine between the Chalcedonians and the Monophysites (Copts) occurred in the mid-8th century, which was resolved in favour of Copts. It is not until the patriarchate of Jacob (819–30) that there is a clear reference to disruption of the pilgrimage to the shrine owing to war between the 'Madlajites and the Egyptians' (Drescher 1946, xxvi). Later in the same century the church at the shrine was robbed of its marble, and under Shenoute (859–80) the shrine was pillaged of its land and property by the Beduin (Meinardus 1961, 362). The sources do not mention that the shrine was totally destroyed, but archaeological excavation indicates that Abu Mena, although continuing to exist into the 10th century, ceased to play a significant part in the life of the church (Drescher 1946, xxix; Engemann 1989). Extensive excavations at Abu Mena by a major German expedition took place at the turn of the 19th and 20th centuries (Kaufmann 1906), and have been continued at intervals since then by Egyptian and American teams.

The popularity of the pilgrimage is attested through the widespread distribution of the ampullae in which pilgrims possibly brought back water or oil from the shrine. These have been recovered from as far afield as Cologne, Marseilles, Dalmatia, and Heidelberg (Drescher 1946, xi, pl. V, VI; Meinardus 1961, 356, n. 16). The flasks may have been used to contain water from the shrine, whose efficacy was testified to by a pilgrim from Smyrna who wrote in a graffito 'take the lovely water of Menas and pain disappears' (Meinardus 1961, 356, 365, n. 57).

Note on early medieval ceramics from Meols

The preponderance of metalwork in the Meols collections has been noted (1.3). However, in the light of the presence of post-Roman metalwork ***301–303***, Byzantine coins **5123-5125**, and a wide, if sparse, spread from coastal areas of western Britain, it is perhaps more perplexing that there are no known recorded or collected sherds of imported post-Roman pottery from Meols, such as the A, B, or even the slightly later Gaulish D, and E wares of the 6th–7th centuries, which have been found regularly, even if mostly in relatively small numbers, at settlement and market sites in western Britain and Ireland (Thomas 1990).

Also absent, perhaps surprisingly given its frequent appearance in 10th–12th-century urban contexts in Chester and Dublin, is 'Chester W are', otherwise known as 'North Midlands Ware', a hard gritty vessel ware often with rolled or stamped decoration (2.16) The process of retrieval of ceramics at Meols has been less straightforward than that of other materials (1.3 and 2.16), with evidently only the eye-catching glazed medieval sherds together with some prehistoric and Roman examples coming to the attention of the antiquarians. 20th-century discoveries have been few and *ad-hoc*, as the St Menas ampulla illustrates; it is therefore possible that any post-Roman pottery may simply have been missed, not picked up, or not understood by collectors to be of sufficient archaeological interest, or (by local shore-pickers) to be of sufficient pecuniary interest, to merit collection.

Fig. 2.4.1: St Menas Ampulla from Preston on the Hill, Cheshire (Norton Priory Museum) Scale: cm

EARLY MEDIEVAL NON-FERROUS METALWORK

David Griffiths

The spread of discoveries of material of the early medieval period seems to have been focused somewhat further to the west of the Dove Point erosion zone than many of the

Roman finds, and indeed some of the later medieval finds (1.2). There are tantalising hints in 19th-century accounts of further objects that have not survived. For example Hume (1863, 357–8) described a bronze bowl of thin hammered metal with a lip turned over horizontally, measuring 9½ inches in diameter by 2½ inches in height, which despite no 'distinguishing mark' he compared to the bronze hanging bowls in the Faussett collection (see Bruce-Mitford and Raven 2005). Some of the early medieval objects in the Potter Collection were the subject of a study in the late-1950s, perhaps prompted by rising interest in Meols following the discovery of the St Menas ampulla, which resulted in two articles in the *THSLC;* by J. D. Bu'Lock on the non-numismatic artefacts (Bu'Lock 1960) and by M. Dolley on the coins (Dolley 1961). Whilst these articles drew some much-needed attention to a hitherto neglected and little-known cluster of finds, they provided only a partial picture, not having covered a significant number of objects of this period, including all of those in museums other than the Grosvenor Museum, Chester.

Dress accessories
(copper alloy unless otherwise specified.)

Penannular brooches
301 Pl. 8, sub-type G1.7 (plain hoop/single dot), D 12mm.
302 Pl. 8, sub-type G1.5 (ribbed hoop/single dot) D 11.5mm.
303 Pl. 8, sub-type G1.8 (plain hoops/terminals) D 12mm.
These three penannular brooches were recorded by Hume (1863, pl. IV, nos 5, 6, 7), and are not extant. Hume described them all as bronze, ***301*** belonged to Mayer and the other two to Ecroyd Smith. Apart from the drawing in Hume's *Ancient Meols*, no other reference exists to them in the antiquarian literature. All three conform to E. Fowler's Type G, which she dated to the 5th–6th centuries AD (Fowler 1963, 140, 143). J. Graham-Campbell's re-working of Fowler's typology (Graham-Campbell 1976) sub-divided Type G into four categories with a longer chronology than Fowler allowed for, and within this scheme the Meols brooches fall into Type G1 (which agreed with Fowler's early post-Roman date for the type as a whole). Graham-Campbell's G1 type was further refined and recalibrated by T. Dickinson (1982), whose classification was applied to the Meols brooches as follows:
301, sub-type G1.7, is also found in an Anglo-Saxon cemetery at Longbridge Park, Warwickshire, with examples recorded by Dickinson also coming from Cadbury Congresbury, Somerset (Rahtz 1992) and Goss Moor, Roche, Cornwall (Hencken 1932, 201).
302, sub-type G1.5, is paralleled by examples from Wooler, Northumberland (Miket, in Rahtz *et al.* 1980, 296); from a cemetery at Bensford, near Rugby, Warwickshire (Akerman 1855, pl. XVIII, 4); and Grave 31 at Fairford, Gloucestershire (Wylie 1852, 23, pl. V 5).
303, sub-type G1.8, is based on examples from Grave 30 in a 6th-century cemetery at Driffield, East Yorkshire (Meaney 1964, Driffield I), and a 6th-century burial (Grave 7) at Londesborough, East Yorkshire (Swanton 1964, 273–74), and a further example comes from St Kew's steps, Worlebury, Somerset (Dickinson 1982).
The distribution of sub-type parallels in Dickinson's revised scheme shows that both eastern and western zones of Britain are represented. For Type G1.5 and G1.7, the areas where Dickinson identified examples from cemeteries are both very much towards the western and/or northern fringe of the spread of furnished burials of the 6th century. The wider distribution of Type G1 includes a sparse spread of examples across the English Midlands, but overall shows a general bias towards the 'Celtic West', with a regional group prominent in the Severn/Somerset area, with outliers of G1.1 and G1.2 sub-types at Padstow, Cornwall; Twlc Point, Gower, Glamorgan; Castell Collen, Powys; Trevor Rocks, Llangollen, Denbighshire; and Luce Sands, Galloway, as well as Meols. Later types of penannular – G2, G3, and G4 – are exclusively western, and almost exclusively northern, in distribution, where apart from a single sub-type G3 found in the Trewhiddle Hoard, Cornwall, all are from southern and western Scotland and northern coastal counties of Ireland.
A further example was excavated at Carlisle Cathedral (Keevill, forthcoming). Graves 138, 523, 707, 983, and 1159 at Birka, Uppland, Sweden, contain G1 variants (Arbman 1940, pl. 50).

Annular brooch
304 Pl. 8
D 43mm; a single annular copper-alloy broadband annular or quoit brooch, conforming to Ager Type E (Ager 1985, 33), from a type that had a long period of usage from the 4th to the 7th centuries AD, with the greater likelihood that the Meols example represents the latter end of the spectrum (B. Ager, pers. comm.). These distinctive annular brooches were described by Ager as derived from North Germanic types, which he described as 'predominantly Scandinavian' (Ager 1985, 17). Nevertheless, the closest parallels in England for the Meols brooch are distributed in the south and east, principally in female graves. The punched circle motif occurs on examples from Little Eriswell, Suffolk, and Walton, Buckinghamshire (Ager 1985, 51–4). There are two holes: the larger, which is located in line with an indentation in the inner rim (and which the decorative pattern respects) is almost certainly original. However, its opposing hole interrupts the decoration, is rather smaller and less worn, and therefore could well be a secondary modification. The use of opposing holes is also found on an annular brooch from Rønvik, Bodø, Norway (Sjøvold 1962), a locality known for its rich Viking-period sites including a major 10th-century hoard including Chester-minted coins. The Norwegian parallel suggests tentatively that a residual deposition at Meols, after a long period of primary and secondary use, during the Viking period may be an alternative hypothesis to a direct early Anglo-Saxon importation.

Nummular brooches
305 Pl. 8
(Bu'Lock 1960, 11 fig. 4I), lead. D 19.5mm; corroded (most of original edge is lost): circular brooch; cross of false oval cabochons in relief, echoed by linear outlines dividing cross-hatched field into four areas; circular line defines perimeter band with transverse hatching; pin missing but catch loop survives. (?)Early 11th-century; probably based on the 'jewel-cross' design on some pennies of Cnut, Harold I, and Harthacnut, issued during 1030–7 (North 1975, 121, and pl. 11, nos 22, 24–6, 29–30).
306 Pl. 8
D 26mm, (Ecroyd Smith 1867, no. 16); circular lead brooch with cross, opposed cross-hatching on arms of cross and hatching in the fields, which also had false stones (pellets).

Buckles
There are eight stylised zoomorphic buckles from the early medieval period, three falling into Anglo-Scandinavian types, and five later Anglo-Saxon or Anglo-Norman types. All are copper alloy.

Anglo-Scandinavian types
307 Pl. 8
L 25mm, W 25.5mm; this is the most distinctive V iking art-styled example, a cast sub-triangular buckle frame. The outer edges of the frame are formed by the necks of two animals with definite forehead and snout biting the bar. The necks of the beasts devolve into stylised hooked fronds, which terminate at the apex of the frame in a simple outward-turned fleur -de-lys motif with a pear -shaped bulb at its centre. The back is undecorated. The design is reminiscent of the Anglo-Scandinavian variant of the Ringerike style of the late-10th to early-11th centuries. The fronds backing the heads are also found on a piece from the River Thames at Barnes (W ilson 1964, no. 34; Fuglesang 1980, no. 49). Comparable to the Barnes piece is a buckle from a grave at Stenvik, Nord T røndelag, Norway (Trondheim Mus. T4621) and a buckle from Sonderholm, Aalborg, Denmark (D4929, Fuglesang 1980, pl. 10a), which has a simpler casting with carved decorative details. Metalwork displaying details characteristic of the Ringerike Style was in production in England in the 11th century (where it is associated with the W inchester Style), and two other objects from Meols **334, 393**. There is also a substantial corpus of Ringerike-influenced objects in wood from V iking Dublin (Lang 1988). Although it is not possible completely to discount a direct Scandinavian origin for this, it seems more likely that this piece originated in the insular V iking milieu of the early 11th century.
308 L 27mm, W 30mm; a fragment of a D-shaped buckle frame, which is missing one side and most of the bar . It is a worn and corroded example, but the pronounced shoulders and crude fleur -de-lys projection at the tip are also reminiscent of the Ringerike style, although it is a humbler and less distinctive rendition than in **307**. Its shape is closely comparable to the Meols stirrup mount **393**, also a Ringerike-influenced object.
309 Pl. 8
L 36mm, W 15mm; a buckle plate is no longer extant, but recorded by Hume (1863, pl. VII, 6) and also the pre-1941 archive of Liverpool Museum, suggesting that it may have been lost or destroyed during the 1941 bombing of the museum. A buckle plate with frame missing, it comprised a waisted sub-triangular plate with (from the hinge) a double roundel, a panel of three transverse alternate lines of chevrons and dots, a larger concentric roundel occupying the expanded portion of the plate, and either a smaller roundel or (more likely) a rivet in its apex at the inner belt attachment end, The concentric roundel motif on a waisted plate, usually above a stylised zoomorphic snout at the terminal, is present on a number of broadly 10th-century pieces from the Irish Sea region, including from the Isle of Man on bridle mounts from the V iking graves at Balladoole (Bersu and W ilson 1966, pl. V) and Cronk Mooar (Bersu and W ilson 1966, pl. XVI), and Knock-y-Doonee (Manx Museum); a buckle from a stratified 10th-century context at Whithorn (Hill 1997, 371, no. 4); a buckle from Grave V (also 10th century) at Peel Castle (Graham-Campbell in Freke 2002, 91–2), and strapends from Dublin (Christchurch Place, NMI E122:17157; Fishamble Street III, NMI E190:7045; and on a bridle mount from Christchurch Place, NMI E122:14689, dated to a stratified 11th-century context). This type of material is not found in such recognisable clusters outside Ireland, Scotland, and the Isle of Man, and therefore adds to the growing evidence for an 'Irish Sea' metalwork style of the 10th century, or at least a recurrent fashion for certain motifs and themes, such as the concentric roundel. Haldenby (1998, 38, Group 21) recorded three single examples, recent metal-detected finds, which appear to come from Yorkshire or the East Midlands, although their location is not specified.

Later Anglo-Saxon or Anglo-Norman types
310 Pl. 8
W 18mm; this fragment has the head at the apex of the loop, with shoulders on either side decorated with single dot motifs. D. M. W ilson (1964, 154, no. 49) dated a buckle with a single head forming the apex of the loop as 9th–11th century. An example from Old Sarum, Wiltshire, was dated by Hinton (1974, 60, no. 32) to the 'Late Anglo-Saxon period'. A close parallel from Fishergate, Y ork, like the Meols piece has accentuated shoulders (Rogers 1993, 1348, no. 5314). Although it was found in a post-medieval context, it was described as 'clearly residual' and dated to the 9th century, partly on the basis of Bu'Lock' s broad estimate at a date for the Meols example (Bu'Lock 1960, 22, fig. 7g), a date which now seems at least a century too early. Metal-detected finds from Whissonsett, Norfolk (Norfolk SMR no. 31879) and Maltby , Lincolnshire (Scunthorpe Museum) of very similar pieces further suggest the type originated in southern or eastern England.
Four more zoomorphic buckles from Meols belong to a loosely-dated late Anglo-Saxon or Anglo-Norman group spanning the 10th to 12th centuries, typified by discoveries at Winchester (e.g. Middle Brook Street, Hinton 1990, 513–4 no. 1110). These bear some superficial resemblance to late Roman / early Anglo-Saxon buckle groups, such as Hawkes's Type IIIa (Hawkes and Dunning 1961, 59), but the balance of probability with regard to date lies with the later Winchester parallel. Other examples dates to the 10th and 11th centuries have been found at Beverley (A. R. Goodall 1991, 148–9, fig. 114.583) and Wharram Percy (A. R. Goodall 1979, 108, fig. 55, 11), and a probably residual example from Bedern, York (Ottaway and Rogers 2002, 2891–2, no. 14316). Stylised zoomorphic buckles continued in use in the Irish Sea region into the 11th century, as demonstrated by a copper -alloy example from an 11th-century mud bank at Fishamble Street I, Dublin (NMI E141:2608).
311 Pl. 8
L 25.5mm, W 32mm; dolphin-styled head terminals backed by raised ridges biting frame; pin complete and still mobile.
312 Pl. 8
L 14mm, W 14.5mm; very stylised heads bite a partially worn or possibly slightly expanded bar with protruding lappets at the snout tips.
313 Pl. 8
L 16.5mm W 17mm; worn and corroded, similar to **312** with ridged snouts biting bar , but lacking lappets and smaller, thicker, and rounder in cross-section. An almost identical parallel was found by metal detector at Thirsk, North Yorkshire, in 2006 (G. Egan, pers. comm.).
314 Pl. 8
L (frame) 17mm, W 25mm, L (plate) 48mm, W (plate) 15mm. Copper-alloy, frame and plate intact, although the pin is missing. The frame is zoomorphic in form but undecorated; the plate has a series of pecked lines forming a diamond or chevron pattern, with three iron rivets intact.

Zoomorphic buckle or brooch pin
315 Pl. 8
L 17mm, Th 2mm; brooch pin with integral loop, fronted by a simple zoomorphic head defined by two rounded ears.

Mounts

316 Pl. 9 and IV

L 33.5mm, W 19.5mm, Th 5.5mm; a rectangular cast copper-alloy plaque with down-turned edges on three sides leaving one open inner end. The underside is undecorated. The upper face is decorated with a central single-bordered sunken panel, surrounded by four bordered sunken channels, separated by small bars, around the edge. At one end of the central panel is a triangular panel, which has a faint triquetra motif inside it. The central and external panels are decorated with chip-carved interlace. There are six attachment holes. Two of these, on either side of the triquetra panel at the 'outside' closed end, are bevelled and are certainly original as they are integral to the design. The other four, one at the corner of the triquetra panel and three ranged equally along the opposing 'inner' edge may be secondary. The central hole of the three is larger, so may be original, but the others are considerably smaller, obviously interrupt the design, and are therefore secondary. Chip-carved interlace-filled sunken panels are a recognisable feature of the pre-Viking Irish metalworking tradition of the 8th century (Henry 1965, 109). Frequently gilded (although no trace remains of this on the Meols piece, if it ever was), this type of decoration is seen on brooches, mounts, and buckles. A fine Irish-style pseudo-penannular brooch from Llys Awel, Abergele, Denbighshire (Redknap 1991, 40) is a good example from a neighbouring coastal area within sight of Meols. Two more pieces of Irish-style pre-Viking metalwork have been found recently at Arnside, Cumbria (Youngs and Herepath 2001; Youngs 2002). A penannular brooch from Deer Park Farms, Co. Antrim (Lynn 1988, 47) is also comparable in its use of interlace in sunken panels bearing simple geometric chip-carved interlace. The evidence for re-use implied by the intrusion of the secondary holes implies a change of function – possibly from a relatively static one, such as a part of ecclesiastical display (e.g. a book mount), to a more mobile one, such as a piece of personal dress ornament (e.g. a strap end). Another common adaptation for pieces of metalwork of this type was to have been used as decoration for Viking lead weights. This evidence for long use and adaptation, together with the presence of significant numbers of such small Irish-style pieces in Scandinavia (Blindheim 1978) suggest that this object is more likely to be associated with Viking-period activity at Meols than with pre-Viking contacts.

317 Pl. 9

L 17mm, W 14mm; a copper-alloy mount of triangular shape. One edge is a break across four attachment holes, and its terminal resembles a stylised zoomorphic snout, which is further emphasised by the presence of two complete holes ('eyes') in the plate, but these could be secondary. It is difficult to assign this object to a particular period, but it is included here due to its possible zoomorphic characteristics.

318 Pl. 9

L 18.5mm, W 13.5mm; a worn copper-alloy plate with punched decoration, incomplete; Z-shaped pattern of dots remaining. Incomplete: survives as trapezoidal sheet fragment with two original sides; punched dots along opposed sides and in oblique band across surviving portion; traces of gilding.

Possibly part of a buckle plate or strap end, etc. (the tooling is an isolated instance from Meols apart from annular brooch **304**.

319 Pl. 9

D 23mm (Hume 1863, pl. XIII, 13); 'lead'; a fragment of a disc mount. It is discernible from the drawing (which is not one of Hume's clearest) that it bore a zoomorphic design with a coiled animal with a lentoid-shaped eye, biting a lappet. Two external attachment lugs survived and there was the broken stump of another – it is possible that up to five of these existed when it was complete. The indications from Hume's drawing are that this is a piece displaying elements of the Urnes style of Late Viking Art, dating to the 11th century. Numerous Urnes-influenced pieces of metalwork have been found in Britain and Ireland, many of which are small and utilitarian (e.g. Wilson 1964, 203, no. 141; Margeson 1997, 37–8, fig. 43). The broad geographical distribution of more recent discoveries of this type of object is weighted towards the Danelaw and East Anglia (www.finds.org). Copper alloy is far more common than lead amongst these; perhaps raising doubt with regard to Hume's identification of its material.

Strapends

Sixteen early medieval strapends (seven extant) have been recorded from Meols. All the surviving examples are copper alloy; Hume's notes on the manuscript of his unpublished second edition of *Ancient Meols* indicate that the non-extant ones were also all of 'brass' (i.e. copper alloy).

Small metal strapends are common finds, especially in Late Anglo-Saxon contexts, and like the hooked tags, tend to carry simple incised or cast designs. Their broader chronology begins in the late Roman period, where they appear as belt equipment (Hawkes and Dunning 1961) and continues well into the medieval period. They were used to weight the ends of straps, bracelets or ties of leather or woven material, apparently largely in personal apparel. Amongst the Anglo-Saxon / Viking varieties, there is a strong zoomorphic tendency in form and design which is well-represented at Meols. Most excavated examples come from urban or ecclesiastical sites, but metal detecting activity in the last two decades has expanded the range of these objects many times over, suggesting that they were in wide and general circulation in middle to later Anglo-Saxon England. Many have been found at so-called 'productive sites' (4.4). Gabor Thomas has recently published a typology (Thomas 2003; 2004) into which the Meols strapends fit convincingly.

Zoomorphic types

320 Pl. 9

30 x 7.6mm; a simple elongated strap end with a stylised zoomorphic animal-head terminal (backed by two small curved incisions representing ears), and with a panel of very worn incised decoration with intersecting curved lines and a dot, possibly representing a very simple and abstract zoomorphic form,. It conforms to G. Thomas's Class A, Type 2 (patterned strapends), some of which have zoomorphic terminals. There are a derivation of 9th-century type found in England (Thomas 2003, 2), but may well have been made as late as the 10th century.

321 Pl. 9

40 x 11mm (Hume 1863, pl. XI, 10); although wider in shape appears stylistically to have been a closely comparable piece to ***320***, with a stylised animal-head terminal, the drawing suggests it was decorated or patterned in some way,

322 Pl. 9

L 31mm (Potter 1889, 4); a further example conforming to G. Thomas's Class A, Type 2. A stylised zoomorphic strap end with a single attachment hole, decorated with a panel of incised decoration, possibly itself zoomorphic in some form, but difficult to interpret from Potter's drawing alone.

323 Pl. 9
31 x 33mm; a corroded and incomplete strap end, missing the terminal and with two opened attachment holes, comprising a hammered plate bent decorated with ring-and-dot motifs in three irregular rows order within a single plain border. It probably once had a zoomorphic terminal; although the terminal is now missing it conforms in every other way to G. Thomas's Class A, Type 2 (**320** and ***321***, above). Haldenby (1998) includes Bu'Lock's (1960) illustration of it in his Group 18 'Ring and dot types'. Although most examples have come from eastern and southern areas of Anglo-Saxon England, the potential for circulation in the Irish Sea region is shown by a similar, complete example, albeit with hatched rather than plain borders, which was found during recent excavations for a gas pipeline at Mayfield, near Portlaw, Co. Waterford, Ireland (Graham-Campbell 1998, 166).
324 Pl. 9
55 x 11mm (Hume 1863, pl. XI, 5); this was another zoomorphic example with an animal head terminal backed by two ears and transverse grooves in relief (G. Thomas's Class B, Type, 1, Thomas 2003, 4–5), dated to between the 9th and 11th centuries. The crescent or fan-shaped motif between the attachment holes is a 9th-century trait that has some parallels in Pictish art on stone and metal. However it is found on a strap end from South Newbald, East Yorkshire (Leahy 2000, fig. 6.4.1), which should perhaps caution against too strong a northern and western affiliation.
325 Pl. 9 29 x 7mm; this is a worn example, a very rectangular-shaped terminal that may be a simple variant of Thomas's Class B, Type 1. It has bevelled edges and the remains of transverse banding. There is a trace of a double-ended cross motif on the spine; the snout is very stylised and two ears are just discernible above it.
326 Pl. 9
51.5 x 7.5mm (Hume 1863, pl. XI, 1); this had opposed animal heads at either end of the shaft (Thomas 2003, Class B, Type 4), a trait seen on examples from Scandinavia, such as some of the strap end mounts from Borre, Vestfold, Norway (Thomas 2003, 5). Slightly smaller and less rectilinear examples were found in an 8th- to mid-9th-century context at Portchester Castle, Hampshire (Hinton and Welch 1976, 216, fig. 136, no. 52), at the Brough of Birsay, Orkney (Curle 1982, 63, no. 432), Goswick, Northumberland (Wilson 1964, pl. XVII, 128) and the two East Yorkshire 'productive sites' at Cottam (Haldenby 1994, 53, fig. 2.5) and South Newbald (Leahy 2000, 59–60 figs 6.3.14 and 6.4.5). The triangular ears evident at the terminal head of the Meols piece are associated with Irish metalwork, are visible on the example from Dundrum Sandhills (see also **331**) and are also visible on Irish shrine mounts such as the *Soiscél Molaise* (Henry 1967, 120).
327 Pl. 9
34 x 10mm (Hume 1863 pl. XI, 15); this was an unambiguously Anglo-Saxon piece. Sub-rectangular with a flattened animal-head terminal with ears separated by a central ridge, and at the other end two attachment holes (one broken), it had at least one panel of interlace seemingly in a Y-shape into three fields, the lower two of which have what appear to be tiny zoomorphic representations. Hume's drawing is enough to identify the piece as a relatively humble version of the Trewhiddle-style strap end type, named after the distinctive designs in the silver hoard of *c.* AD 868 found near St Austell, Cornwall (G. Thomas's Class A, Type 1, Thomas 2003, 2). Many examples of these have been found in both silver and copper alloy. In Hume's annotations for the unpublished second edition of *Ancient Meols* this piece is 'brass'. A nearby parallel is the metal-detector find of a copper-alloy Trewhiddle strap end from Hale, on the north bank of the Mersey (Philpott 2000b, 194–7). These, whilst rare in north-west England, are found widely across southern and eastern England; they range from moderate to high status in the case of very elaborate examples, and date from the 9th century.
328 Pl. 9
40 x 8mm; probably a round-eared zoomorphic strap end: 'multi-headed' in G. Thomas's typology (Class B, Type 4, Thomas 2003, 4–5). However, signs of perforation at the terminal suggest a possible alternative explanation as a strap distributor, comparable to an example from the Viking grave at Cronk Mooar, Isle of Man (Bersu and Wilson 1966, fig. 43).
329 Pl. 9
23 x 9mm (Hume 1863, pl. XI, 20) 'brass'; apparently a zoomorphic piece with opposed scrolls may represent a snout and ears, or perhaps an attempt at rendering interlace of a type occasionally found on Danelaw strapends such as one excavated from 10th-century levels in Ipswich (G. Thomas, pers. comm.). It had mouldings on its surface and was broken around its mid-point. The rather poor drawing in Hume does not permit further conclusions to be drawn.
330 Pl. 9
47 x 10mm (Hume 1863, pl. XI, 8); a split end strap end with strong transverse bars or ridges and what the drawing appears to depict as a plain acorn knop at the terminal. G. Thomas's Class B (Thomas 2003, 6), dated broadly to the 11th century, is the closest match amongst his typology; and there are two examples from Hedeby (Capelle 1968, Taf 24, nos 3 and 4), which are not dissimilar.

Double-sided, or with interlace in panels
331 Pl. 9
39.5 x 14mm (Hume 1863, pl. XI, 2); a fragment with an interlaced panel in a rectangular border on both sides, and conforms to G. Thomas's Class B, Type 5 (Thomas 2003, 5). The terminal is missing; a rivet remains in a single attachment hole, which is in a plain field. The interlace in the decorative panels is incised, and although not of high-quality execution represents a four-strand single-bordered pattern. This piece resembles a number of buckles and strapends found in the Danelaw and the Irish Sea region. A strap end forming a close parallel was found in sand-dune layers at Dundrum Sandhills, Co. Down (HMSO 1966, 139, no.16). A strap end from Franciscan Way, Ipswich, Suffolk, has a ring-knot form of interlace in a similar field (Thomas 2003, no.18). There is, in fact, almost as much justification for interpreting this piece as a buckle plate; a buckle from Whithorn, Galloway, from a stratified 10th-century (Hill 1997, 371, no.4) has a similar field of interlace, as also does a strap end from Christchurch Place, Dublin (NMI E122:9537). These are, in their use of roundels, similar to Meols buckle plate ***309***.
332 Pl. 9
26 x 11mm, split-end fragment of a double-sided Irish or Hiberno-Norse strap end in G. Thomas's Class F (Thomas 2004, 4–5). It has a single rivet bordered by a split triangular panel of incised hatching with billeted outer borders. On one face the central panel, although worn, is divided laterally and there appears to be a worn ring knot or section of ring-chain of Borre-style affinity in its centre, the central panel on the other side is continuous to the break. Parallels include an example from Christchurch Place, Dublin (Lang 1988, fig. 11), and two unpublished

strapends from the W erburgh Place excavations (G. Thomas, pers. comm.), together a number of examples from eastern England (e.g. Thomas 2000, 248, fig. 21 A).
333 Pl. 9
21 x 17mm (Hume 1863, pl. XI, 18); a relatively crude drawing suggests the broken attachment end of a strap end with a panel of interlace, there are hints in the drawing of attachment holes close to the corners, a possible parallel is the strap end from Aggersborg, Denmark (Roesdahl 1978, 116, fig. 13).

Openwork variants
334 Pl. 9
47 x 24.5mm, a cast openwork piece, somewhat larger than the other copper alloy strapends. It is composed of a series of four symmetrical fronds bifurcating from a central stem and ending in inward-curving lobed terminals, with a rectangular plate with three rivets at the attachment end. The design appears to owe something to the Ringerike Style of 10th–11th century art (see **307**, above), and is probably a simple rendition of the Winchester Style of the early 11th century, a late Anglo-Scandinavian variation that is found generally on objects and in manuscripts produced in the southern part of Anglo-Saxon England during the reign of Cnut (but where London is equally likely to have been a centre for manufacture as W inchester). It conforms to Thomas's Class E, Type 1 (Winchester Style), the distribution of which extends from southern England to Y ork (Thomas 2004, 2–3).
335 Pl. 9
41 x 19mm (Hume 1863, pl. XI, 11) 'brass'; this was a cast openwork example with a small snout, 11 symmetrical circular decorative holes, and a pronounced ridge defining a rebate with two attachment holes beyond. Although the drawing does not strongly suggest a plant-scroll element in the decoration, it may have been worn or misinterpreted by Hume's illustrator, and in every other way it conforms to G. Thomas's Class E, Type 1 of cast openwork strapends of the Winchester Style.

Hooked tags
There are eight hooked tags, all from the Potter Collection. Only one, **343**, was recorded in the 19th century (Hume 1863, pl. IX, no. 2). They conform to two-sub-types based on circular and triangular shape of the plate. Five are circular; three are sub-triangular . All are copper alloy , except **340**, which is silver inlaid with niello. Griffiths (1988) associated them with a similar group of five examples from Chester (Griffiths 1994), dating them to the 10th–11th centuries (and incorrectly described **340** as lead, not silver). More recently, G. Thomas has written a discussion of two hooked tags from V esle Hjerkinn, Norway (Weber 1987), which includes a round-up of Scandinavian and Russian parallels (Thomas forthcoming). For the circular and sub-triangular plated variants represented at Meols, Thomas agreed broadly with the dating scheme outlined in Griffiths (1988).
Hooked tags are common artefacts deriving from excavations on a wide range of later Anglo-Saxon and Anglo-Scandinavian urban and rural sites and increasingly from metal-detecting activity. They were possibly used as garment or purse fasteners, sewn or riveted singly or in rows to textile or leather . The hooks are almost always integral to the plate, rather than a separate attached element. The majority are of copper alloy , although silver and lead alloys form a significant sub-group, and some examples are made of iron. Silver examples, such as those from the 10th-century hoards from T etney, Lincolnshire (Wilson 1964) and the Forum, Rome (Graham-Campbell and Okasha 1992, 223), are evidently of high status. Evidence for manufacturing comes from excavations at Lincoln, where at least 30 triangular and five circular thin sheet copper alloy plates of a similar size to complete tags were found at the Flaxengate excavation site (Roesdahl *et al.* 1981, 101, G2–G5). Others from Broadgate East, Danes Terrace and St Paul-in-the-Bail appear to be unfinished examples. A further unfinished circular plate was found at West Parade, Lincoln (J. Mann, pers. comm.).

Circular and elliptical plates
336 Pl. 9
L 17.2mm, W 7.6mm; corroded incomplete plain circular plate with both attachment holes broken through.
337 Pl. 9
D 11.3mm.
338 Pl. 9
D 11.8mm.
These are complete circular plates with central hole surrounded by six raised cast concentric rings and two attachment holes.
339 Pl. 9
L 35mm, W 9.4mm; elliptical plate, with remains of two projecting lugs for the attachment holes, There are two holes in the plate, the central one of which may be decorative and is evidently primary , the other is close to the attachment end and therefore may be a secondary replacement for one of the broken lugs. The plate is decorated with three very faint fields forming a Y -shape centred on the middle hole, with traces of very worn concentric lines between. A copper-alloy tag from Y ork decorated with a triquetra (Waterman 1959, 77, no. 11) echoes the form closely, whereas silver examples from Canterbury and 'East Kent' bear similar decorative divisions into three fields (Graham-Campbell 1982, 145).
340 Pl. 9
D 11.7mm; silver circular plate with projecting rounded perforated lugs (one complete), the hook [broken] has a tiny collar moulding where it joins the plate; inlaid knot design within circular single-bordered field representing a swastika-type motif attached to the border. The niello inlay is partly damaged, but where niello is missing the channels remain.

Triangular plates
341 Pl. 9
L 14.2mm, W 10.5mm; corroded and incomplete triangular plate with broken attachment holes, hook is also broken, (cf. Cathedral Green, W inchester, nos 1426 and 1427, from contexts dated respectively to AD 1110 and late-11th century, Hinton in Biddle 1990a, 550–51).
342 Pl. 9
L 17mm, W 11.5mm; triangular plate (complete), decorated with simple punched line around the perimeter . (cf. example from Cirencester , Gloucestershire: McWhirr 1976, 26–7).
343 Pl. 9
L 40mm, W 16mm (Hume 1863, pl. IX, 20); elongated triangular plate with complete hook, v-shaped incisions in top separating lugs, plate decorated with ring-and-dot motifs. Similar examples have been found in W inchester (no. 1416, dated to a late-11th to early-12th century context is the closest parallel in terms of decoration, but other elongated hooked tags from W inchester, e.g. 1408–11, 1413–5 and 1417 are from contexts dated to between the mid-10th and early-12th centuries: Hinton in Biddle 1990a, 550–51).

Disc-headed pins

344 Pl. 9

L 26mm, D (head) 19mm, is a silver disc-headed pin. It is damaged and reduced in size by wear, with the pin shank broken off at stump, but still discernibly a very impressive piece. It is decorated on one side with cast and file-finished geometric interlace with central boss and a double-bordered roundel above the shanks, which is differentiated from the head by a transverse groove suggesting a collar. A highly conspicuous and valuable form of dress jewellery, these objects are typified by the linked group of three pins from the River Witham, Lincolnshire, dated by D. M. Wilson to the 8th century (Wilson 1964, 134). In discussing the Meols example amongst a number of examples of differing materials from South Ferriby, Lincolnshire (Kitson-Clark 1941) and Hitchin, Hertfordshire, Wilson suggested that the Meols pin may also have been part of a linked set. As its original sides (where the attachments would be) are worn away, it is difficult to substantiate this theory.

345 Pl. 9

L 49mm, a lost fragment of a disc-headed pin (Hume 1863 pl. XXIII, 6), was apparently decorated with an expanded-arm cross similar to that on a silver disc-headed pin from Pontefract, West Yorkshire (Bailey 1970); other examples of pins with expanded-arm crosses are known from Kegworth, Leicestershire (Wilson 1964, 134), Roos, East Yorkshire (Kitson-Clark 1941), and Birdoswald, Cumbria (Cramp 1964, 90, pl.1). An example from Whitby (Peers and Radford 1943, 60, no. 60) and three more recent discoveries from Cottam, East Yorkshire (Haldenby 1992, 52) were discovered with mainly 9th-century material, suggesting that Wilson's 8th-century date range should be expanded forwards to include the early 9th century.

346 Pl. 9

L 91mm, D (head) 16mm; a small copper-alloy circular disc-headed pin with single perforation. It has affinities with a range of disc-headed pins from Northumbria and the Irish Sea region, and probably dates to the 9th–10th centuries. The silver pins from the Talnotrie Hoard (Kirkcudbright, Galloway), deposited in *c.* 875 (Wilson 1964, pl. IV) although decorated, are similar in shape and have identical perforations. Unperforated, but otherwise similar, copper-alloy examples are known from the Viking grave at Knock-y-Doonee, Isle of Man, High Street Dublin (decorated with an expanded arm cross, NMI E71: 10757) and simple examples decorated with ring and dot from Whitby (Peers and Radford 1943, 61) and York (Waterman 1959, 78, fig. 11) emphasise the northerly distribution of this general type of pin.

There is an iron disc-headed pin arguably of early medieval date, **391**, below.

Small dress pins

Because of their relative functional simplicity these small copper-alloy dress pins are sometimes alternatively described as stick pins. They are classified by shape of the pin-head, with method of manufacture also being a diagnostic feature (Ross 1991). Later medieval examples often tend to be made of wound wire, whereas earlier pins are usually cast. It is often difficult to be certain that unstratified cast examples are early medieval or Roman in date, as very similar forms occur in both periods. Diagnostic features taken by some specialists to indicate a middle to later Anglo-Saxon, rather than a Roman, attribution, include the presence of a collar below the head (Leahy 2000, 70–1) and an expanded or hipped shank, although this is less common. Whilst recognisably early medieval traits, their absence is not altogether a contrary indication in favour of a Roman date.

Biconical-headed pins

These are known from both Roman and Anglo-Saxon contexts, and seem to have been based on a Roman form that was resurrected in middle to later Anglo-Saxon England. The majority of copper-alloy parallels for the Meols finds come from Anglo-Saxon contexts; similar examples are also known from Roman contexts in bone. Two simple biconical pins without median band, **347** and **348**, here catalogued as early medieval, are in fact difficult to classify with certainty as either Roman or Anglo-Saxon objects, as parallels exist in both period contexts, e.g. Roman: (Cool 1990a, 152, fig. 1, no. 2); Verulamium (Frere 1984, fig. 17, no. 134); Colchester (Crummy 1983, 29, no. 480); early medieval: Whitby Abbey (Peers and Radford 1943, 61); Anglian York (Rogers 1993, 1362, no. 5358), Hamwic (Hinton 1996, 27, Type Ca1i).

347 Pl. 9

L 19mm, D (head) 7mm; the slightly longer and less worn of the two, slight collar, shank incomplete.

348 Pl. 9

L 17mm, D (head) 7mm; has a thicker shank, slight collar, shank incomplete.

Both of these examples have slight collars below the head, which are perhaps more akin to Anglo-Saxon examples of the 8th–10th centuries from elsewhere.

349 Pl. 9

L 34mm D (head) 4mm; has no collar and, compared with other more securely-identified early medieval examples, has an unusual asymmetrical shape with a flat cone on top and a deeper and more rounded one below. This example is particularly difficult to assign with confidence to either the Roman or early medieval periods: it is included here primarily to facilitate direct comparison with the other biconical pins.

Biconical heads with flattened edges or 'median bands'

These are more easily attributed to the early medieval period than the simple biconical type. The three extant Meols examples of this type are all pin-heads with shanks corroded and broken off, the fourth (lost) pin was identical.

350 Pl. 9

D 7mm; worn and corroded head, slight collar above stump of shank.

351 Pl. 9

D 7mm; slightly better preserved than **350**, with a more pronounced collar, shank incomplete.

352 Pl. 9

D 8mm; has a flattened top so the lower 'cone' is dominant, with a pronounced collar above shank break.

353 Pl. 9

L 30mm, D (head) 7mm; (Ecroyd Smith 1867, no. 21), found 1866.

Excavations in the Middle Anglo-Saxon trading centre at Hamwic, Hampshire, produced a group of biconical headed pins (Hinton 1996, 27–8, Type Ca2i). An almost complete biconical pin was found in 1930 at Chester Amphitheatre (Grosvenor Museum 453.123). Four examples have been found in York (Mainman and Rogers 2000, 2577). Examples from Whitby (Peers and Radford 1943, 61, no.3), Barking Abbey, Essex, and St Albans Abbey, Hertfordshire, seemed some years ago to give them a peculiarly ecclesiastical distribution, but the spread of more recent metal-detected finds from 'productive sites' have tended to dilute this picture. An example of this is the

site of South Newbald, East Y orkshire. Twelve biconical-headed pins with median band were found here (Leahy 2000, fig. 6.6.7–13, fig. 6.7.6–7, 21, 28–29), along with a range of other objects that bear striking similarity to some of the Meols pieces.

'Watch-winder' head
This style, a further variation on the biconical theme, has a smaller, flatter head with decoration of vertical grooves.
354 Pl. 10
L 102mm, D (head) 5.5mm; complete, collar; shaft expands slightly. (Hamwic: Hinton 1996, Type Ca1ii),

Polyhedral-headed dress pins
355 Pl. 10
L 23mm; head has nine facets decorated with ring and dot motifs, slight collar, shank broken. There is a close parallel from South Newbald, East Y orkshire (Leahy 2000, fig. 6.7.13).
356 Pl. 10
L 19mm; head has 13 facets; collar; broken shank.
357 Pl. 10
L 56mm; head has 13 facets, each decorated with 1–4 ring and dot motifs; shank tapers with two rows of vertical dots, broken near original point.
358 Pl. 10
L 29mm; elongated cuboid head with collar , each facet decorated with worn ring and dot; corroded with broken shank. A very similar example was found at South Newbald, East Yorkshire (Leahy 2000, fig. 6.7.15).
359 Pl. 10
L 30mm (Hume 1863, pl. XXIII, 9); similar to **352** with slightly shorter head.
360 Pl. 10
L 63mm; complete, but worn, dodecahedral head decorated with punched dots, slightly expanded lower shank has worn double transverse grooves slightly below its median point.
361 Pl. 10
L 40mm; (Ecroyd Smith 1867, no. 22) found 1866, large head.
These pins were cast in copper alloy (or silver) and finished with filing and punched ring and dot motifs on head facets. Copper-alloy examples are known from later Anglo-Saxon contexts, at Lower Brook Street, W inchester (Hinton in Biddle 1990a, 557–8. nos 1432, 1433); Hamwic, Southampton (Addyman and Hill 1970, 67, nos 5–8, Hinton 1996, 22–3 Types Bb1 and 2); Maxey (Addyman 1964, 63, fig. 17); with less recent discoveries from Whitby Abbey (Peers and Radford 1943, 6, fig. 13, nos 2–4) and York (Waterman 1959, 78, fig. 11, nos 5, 6, 7, 12). Four stratified examples were excavated at 16–22 Coppergate, York (nos 10103, 8815, 5197, 7177), all of which are dated to the 10th century (Caple 1992). In excavations at 46–54 Fishergate, York, six examples were discovered, one of which came from 8th–9th century deposits, three from 10th–12th century deposits, and one was residual in a post-medieval context (Mainman and Rogers 2000, 1361). One example was excavated from Fishamble Street II, Dublin (NMI E172:1600). Metal-detected finds have been common, the PAS database shows examples from eastern England, in particular from Yorkshire to East Anglia, with fewer in southern England, but very few indeed from outside these regions (www.finds.org).

Globular- or spherical-headed small dress pins include those with plain heads, heads decorated with ring and dot ornament, and 'wrythen' heads.

Undecorated globular-headed dress pins
362 Pl. 10
D 5.5mm; a corroded pin with a slender shank, L 29.5mm, no collar.
363 Pl. 10
L 16mm, D 10.5mm; has a simple globular head with casting flaw, unfinished. The shaft terminates in a stub which would have been drawn out into the shank when finished. There is no evidence of a break.
364 Pl. 10
L 45mm, D (head) 2.5mm; a complete pin with a spherical head and collar and expanded shank (Hamwic: Hinton 1996 type Aa2iii),
365 Pl. 10
L 22mm (Hume 1863, pl. XXVI, 17).
Moulds for globular-headed pins have been excavated from the Mote of Mark, Kirkcudbright (Laing and Longley 2006, 114), Dunadd, Argyll (Lane and Campbell 2000, 126, nos 674, 764); and Garranes, Co. Cork (Ó Riordáin 1942, 122, nos 291b,e, 460). The apparently unfinished nature of **363** suggests that manufacturing could have been taking place at Meols.

Globular heads, decorated with ring and dot ornament
366 Pl. 10
L 16mm, D 7mm; its head is decorated with two punched ring and dot motifs in worn facets; broken shank, corroded. There is an identical parallel from South Newbald, East Yorkshire (Leahy 2000, fig. 6.6.4).
367 Pl. 10
L 14mm, D 6mm; has a head decorated with dots in no particular order, point complete but is probably secondary after a break, shank is square in section rather than round and shows evidence of secondary filing, possibly to sharpen it for re-use as a pointer. Some Roman decorative nails are not dissimilar, having a square section (e.g. ***207, 208***).

'Wrythen' heads
These have a pattern of spiral grooves wrapping around the head, with its origin at the top, and heads decorated with ring and dot motifs. Other characteristics include collars below the head and expanded or swelling shafts, both of which are present on some pins of this type but not others. One was found at Coppergate, York (Mainman and Rogers 2000, 2577–9, no. 10442). Hinton (1996, 20–21, Type Ab2ii) discussed a significant group from Hamwic, which are largely of middle to later Anglo-Saxon date.
368 Pl. 10
L 32mm, D (head) 8mm; corroded, the shank is broken; there is a worn collar below the head.
369 Pl. 10
L 65mm, D (head) 7mm; a complete pin with collar and expanded shank.

Ringed pins
Ringed pins are distinctive type group amongst early medieval metal dress pins, comprising a long shank and small mobile ring hinged upon or through the head. They were cast in two parts and then finished and assembled with tooling and filing. The head is usually decorated with cast and/or incised designs, and the shanks sometimes also have panels of simple incised decoration, and the rings are frequently nicked. Although their antecedents lie in the Irish metalworking tradition of the pre-Viking period rather than in Scandinavia, they are without doubt the type of dress pin that most prominently and unequivocally signifies the material culture of the Hiberno-Norse world of the 9th–12th centuries, and its diaspora in Britain and the North Atlantic Viking settlements.

There are 19 objects from Meols that are ringed pins, or can be identified as parts of ringed pins. All surviving pieces are of copper alloy . There are eight surviving complete or near-complete ringed pins with both ring and shank extant, two shanks with ring missing and four rings of appropriate size and material that have the characteristic deep transverse grooves that can be identified as parts of ringed pins. There are four non-extant pieces, three of which were recorded by Hume (1863, pl. V) and cannot be identified as any of the surviving pieces. A fourth non-extant ringed pin ***372*** was possibly made of silver , or of silver-gilded copper-alloy, and survived in the Liverpool Museum collection until the late 1970s, when it went missing.

The following have been grouped using the classification and chronology developed by T. Fanning for the 263 ringed pins found in excavations of Viking Dublin between 1962 and 1981 (Fanning 1994), which includes many pins from well-dated stratified contexts. Dublin also produced evidence for their manufacture in the form of a clay mould bearing both ring and pin matrices from Christchurch Place (Fanning 1994, 116), although Fanning was also able to point to a series of discoveries of ring moulds from pre-Viking sites across Ireland, indicating the ringed pin's long gestation in the Irish metalworking tradition.

In Britain, ringed pins have been found mainly in Anglo-Scandinavian urban centres, although there are a number of single finds from Viking graves in Scotland, and most recently one from the Viking cemetery excavated in 2004 at Cumwhitton, Cumbria. Excavations and stray finds at York so far total *c.* 18 (Waterman 1959; Mainman and Rogers 2000), a similar number to Meols. Chester has produced five examples, including a particularly fine example of the polyhedral-headed type from a 10th-century context in excavations at Crook Street (Lloyd Morgan, in Ward 1994, 27), a polyhedral-headed pin shank from Foregate Street (Thompson 1958, 72, fig. 3), a baluster-headed pin from the Deanery Field (Newstead and Droop 1936, 37, pl. xix, no. 8), and a crutch-headed pin (a type not represented at Meols) from a pre-Norman context in excavations at Linenhall Street (Thompson 1962, 59). A further, very corroded, although complete, shank in the old collections at the Grosvenor Museum (Acc. no. 172.S.1976) is unprovenanced; the greater likelihood is that this is a Chester pin, but an attribution to Meols cannot be ruled out completely.

Plain-ringed, loop-headed type

This sub-type, where the top of the shank is hammered into a flat plate, which is bent or looped around the ring attachment point, is described by Fanning as the simplest, most numerous, and long-lived variant of the ringed pin. Although some examples can be dated as late as the 12th century, the balance of stratified dates and associations amongst Fanning's corpus favours the 8th–10th centuries (Fanning 1994, 16–17), putting the plain-ringed loop-headed class as the second-earliest group after the spiral-ringed class (no examples of which have occurred at Meols).

370 Pl. 10

L 91mm; a very solidly-cast loop-headed pin of a rather more standard size and shape found across the Viking world. The loop head expands slightly from the shank and is decorated with four vertical ridges. The ring is bevelled and the lower end of the shank has been part-flattened above the break.

371 Pl. 10 and V

L 82mm; a very simple functional pin, unusually for this type it is undecorated and rather slender compared with most examples,. It was found in November 1893 at a time of increased exposure and discovery along the Meols shore (1.2) and was stored at the Grosvenor Museum for many years sewn onto a card alongside three Iron Age swan-necked pins **83–85** marked 'Hair Pins, Novr. 1893'.

372 Pl. 10

L 127mm; was very similar in shape and form to **370**, albeit of a finer and lighter manufacture. It was present in Liverpool Museum until the 1970s when it is recorded as having been stolen, but a reasonably clear photograph of it remains on record. The head was decorated with vertical grooves, and there was a flat panel immediately below the loop. The bevelled ring was cross-hatched close to its connection with the pin head. Close examination of the photograph appears to show a vertical seam on the shank, indicating that the shank might have been wrought rather than cast. The more lustrous sheen on the pin visible in the surviving photograph may indicate that the pin was made of silver, or gilded with silver, possibly explaining its attraction to its thief. It was almost identical to a pin from High Street, Dublin (Fanning 1994, DRP50), which came from a context dated to the second half of the 10th century.

Plain-ringed baluster-headed type

This sub-type is distinguished by Fanning (1994, 23) as having fillets or collars above and below the central faceted portion of the perforated or bored pin head. These, like the plain ringed loop-headed type, have their origins in pre-Viking Irish metalwork, and Fanning noted two early examples from Rathianaun, Co. Sligo, which date to the 5th century. However the majority favour a 9th–12th century date range, and the 11 examples from the Dublin excavations that Fanning catalogued are predominantly from early to mid-10th-century layers.

373 Pl. 10 and V

L 83.7mm; has a cuboid head with a lozenge-shaped motif in a square field; the lozenge is worn but appears to be subdivided into four. The shank is broken.

374 Pl. 10 and V

L 69.5mm; very similar to **373**, but its ring is slightly larger and of finer casting. The head design of a lozenge-shaped motif in a square field is also clearer and there is a pronounced collar at the top of the shank. A very similar baluster headed pin from Christchurch Place, Dublin (Fanning 1994, DRP64) came from a cobbled surface dated to the mid-10th century.

375 Pl. 10 and V

L 150.5mm; a plain-ringed baluster -headed ringed-pin shank (complete). **1714**, D 19mm; a twisted copper alloy brooch is currently (and very convincingly) attached to the shank in the normal ring position; this curious marriage is assumed to result from an ill-advised episode of post-discovery 'rationalisation'.

Plain-ringed polyhedral-headed type

These have a cast and filed faceted head, often decorated with an incised quatrefoil knot, and are the most numerous in Dublin (Fanning catalogued 81 examples) and also the most frequently found outside Ireland. The broad emphasis of dates within Dublin strongly favours the mid-10th to early-11th-century date range. Unlike the baluster -headed type, there are few indications that this type was current in pre-Viking Ireland.

376 Pl. 10 and V

L 41mm; in poor condition with a corroded and pitted surface and a broken shank. It has been cast in a rather brighter, brass-like copper alloy than most of the other

Meols ringed pins. The pin head is decorated on one side with a faint quatrefoil knot, and on the other with a small incised cross in a lozenge-shaped field.
377 Pl. 10 and V
L 56mm; an incomplete shank with a polyhedral head decorated with a punched dot design.
378 Pl. 11
L 52mm; the lower half of a pin shank of slightly expanded profile (with tip missing) bearing narrow panels of incised cross-hatched lines, which is reminiscent particularly of the polyhedral-headed ringed pin type. This feature, apart from providing decorative interest, helped to keep the pin securely embedded within the cloth of the garment.
379 Pl. 11
L 138mm (Hume 1863, pl. V , 1); a complete pin with a bevelled ring, the head was decorated with a cross-hatched design.
380 Pl. 11
(Hume 1863, pl. V , 14); drawn open-ended by Hume without showing whether it was complete or had a broken shank. It had a cuboid head above a collar with a design of punched dots and possibly a faceted top. The ring was plain.
381 Pl. 11
L 120mm (Hume 1863, pl. V, 4); complete, with a square head decorated with a diagonal hatched design, and a plain ring.

Kidney-ringed, polyhedral-headed type
This type is less common than plain-ringed polyhedral-headed ringed pins. Fanning (1994, 36–41) quoted 29 examples excavated in Viking Dublin up to 1981, the stratified contexts of which indicate that the kidney-ringed pins are slightly later in date than the plain ringed variants, some are associated with late 10th-century layers, but the majority come from 11th century contexts. They are also less widely distributed than plain-ringed types, with the majority of parallels coming from Ireland, the Hebrides, and Iceland, and Dublin seems to be their place of manufacture.
382 Pl. 11 and V
L 69.5mm; a good example of the kidney-ringed polyhedral-headed type. It has a thick, only partly mobile cast ring, which is heavily moulded with transverse grooves and has stylised zoomorphic terminals at the attachments. The ring is attached by projecting tenons into a comparatively large faceted pin head, which is decorated on both sides with a lozenge-shaped field further divided into four fields, one of which has a punched dot. There are further punched dots in the facets to the upper and lower sides of the pin head. The shank is plain and broken. Of the Dublin examples, Fanning's DRP169, from a Fishamble Street context dated to the second half of the 10th century, is the most similar to the Meols piece.

Rings from ringed pins
383 Pl. 11, L 15mm; a fragment of tapering ring with cross-hatched grooves, which, although bent out of shape, is extremely similar to the type of ring normally found on ringed pins.
384 Pl. 11, D 15mm; a slightly distorted ring bearing two groups of grooves.
385 Pl. 11, D 20mm; a ring with projecting tenons; about half of the upper surface is grooved.
386 Pl. 11, D 16mm; a ring with three groups of grooves. A slightly cruder version than **379**, it bears a similarity in patina and proportionate size to shank **372**; these may even possibly have been originally together.

Ringed pin or penannular brooch / ringed pin hybrid
387 Pl. 11 and V
L 135mm, is an unusually large example. It has a loop head on expanded shank with a transverse groove below the head. The shank is of flat cross-section, which is unusual for classic ringed pins. It may originally have been even longer, as the present point is secondary , having been sharpened from the remaining portion after a breakage. It may in fact be something of a hybrid between ringed pin type and a penannular brooch, resembling closely a penannular brooch from Nordby, Hof, Vestford, Norway, included in a classification of Scandinavian copies of Irish penannular brooches under Group IV, B (Graham-Campbell 1987, 243). A silver example from Birka, Uppland, Sweden, is also noteworthy in this context (Graham-Campbell 1984). The Meols pin stands somewhat apart from the other ringed pins from Meols, which conform more readily to the classic Dublin types, and therefore could possibly be a Scandinavian rather than Irish-manufactured piece.
388 D 41mm, is the ring which was accessioned at the Grosvenor Museum together with the shank, and is almost certainly the original ring, but is loose and detachable, and has therefore been catalogued in its own right. It is also large for this type, and penannular with two groups of cross-hatched grooves.

Lobe-headed pin
389 Pl. 11
L 82mm, is a copper -alloy lobe-headed pin with an expanded shank, complete except for an apparent twist or slight damage to the extreme point. The pin head is small and plain. Lobe-headed pins are distributed around the Irish Sea at market sites and are, like ringed pins, apparently a Hiberno-Norse phenomenon characteristic of market sites around the Irish Sea, dating to the 11th and early 12th centuries. Many are decorated on the head or upper shank, occasionally with inlaid designs, which in some cases resemble runic representations. Three have been found in Chester, at the Legionary Bath House (Lloyd-Morgan in Ward 1994, 97–8), a fine example with a triple spiral-decorated head and a runic 'k' on the upper shank, Princess Street (Newstead and Droop 1939, 39, Grosvenor Museum Acc. CC 103.1939) and more recently , a silver gilded example in 2005 in the Amphitheatre excavations (D. Garner and J. Edwards, pers. comm.). Many more examples have been found in excavations at St John's Lane and Fishamble Street, Dublin (NMI E173:3572, NMI E:190:660), Waterford (Scully, in Hurley et al. 1997, 440–8), and Whithorn (Hill 1997, 367, nos 32–37), with some of the latter group coming from 11th century contexts. The majority of stratified dates from Dublin, Waterford and Whithorn favour the mid-11th to early-12th centuries. The earliest stratified context at Dublin for an example of this type dates to around 1025.

Domestic and agricultural implements

Bells
390 Pl. 11 and V
L 33mm, D 21mm; a small hexagonal pyramidal copper -alloy bell, the panels of which are slightly concave (clapper missing), with a square attachment loop atop a collar at the apex. This bell belongs to a type that is increasingly being recognised as characteristic of the Danelaw and Irish Sea in the 10th century, although examples have also been found at a settlement at Freswick, Caithness, Scotland, and from Viking period pagan graves at V atnsdal, Iceland (Batey 1988). Within the Irish Sea region, apart from Meols, there

have been three discoveries of such bells on the Isle of Man, in a 10th-century child's grave (grave VII) at Peel Castle, Isle of Man (Graham-Campbell 2002, 94–5), with another example in cemetery earth nearby, and a further example from disturbed ploughsoil over a possible early Christian burial place at West Nappin, Jurby Parish. Single examples have been discovered during G. Eogan's excavations at Knowth, Ireland, and at Llanbedrgoch, Anglesey, a Viking-period market and settlement site with a number of artefactual parallels to Meols (Redknap 2000). Discoveries have occurred in 10th and 11th century excavated contexts at Lincoln (Batey 1988, 214–5) and Goltho, Lincolnshire (Beresford 1987, 175–6), with a further example from a 12th–13th century context at Northampton, which was considered by its excavators to be residual (Williams *et al.* 1985, 7–8, and fig. (M) 16, CU49). In recent years a spread of metal-detected finds from East Yorkshire and East Anglia, as reported to the PAS, have far outnumbered the group surveyed by Batey in 1988, and the balance of probability now favours those areas as the origin of these objects. Their function is difficult to establish with certainty, as they would have been too small to make anything other than a very limited ringing sound; hence they are probably largely ornamental and a symbolic part of personal apparel (the contexts of the Manx and Icelandic finds suggest a funerary connection).
[**2600** is an iron bell, which could be early or later medieval in date, see 2.6]

Drinking horn terminal
391 Pl. 11
L 91mm, D (terminal) 19mm (Hume1863, pl. XXI, 9); the drawing depicts a tapering cylinder with sub-spherical terminal, 'brass'. The depiction implies that the object was hollow, but does not clearly convey its means of attachment. It is evidently a drinking-horn terminal, probably copper-alloy or silver; a high-status Viking object, and possibly Scandinavian in origin. Parallels have been found at Ballinderry Crannog, Co. Westmeath (Hencken 1942, 43, 45, no. 344) Carraig Aille, Co. Limerick (Ó Riordáin 1950, 64–7), Gjønnes, Hedrum, Vestfold, Norway, female grave (Petersen 1940, 169–70), Huseby, Børsa, Sør Trøndelag, Norway (Trondheim Mus. 8533); Hyrt, Vossestrand, Hordaland (see Petersen 1940, 171).

Fig. 2.4.2: Drinking horn terminal from Gjønnes, Vestfold, Norway (Petersen 1940, 169–70, Fig. 132b)

Trade items

Balance-scale attachment
392 Pl. 11
L 28mm, H 11mm; copper alloy; a small hollow object in the form of a bird with an oval body and a prominent head / beak and tail. It has three loops for attachment or suspension, all of which are broken, one on top in the middle of the back, and the remains of three more around the inverted rim below. Two almost identical birds with loops placed exactly like the Meols object, were found in 1849 as part of a largely complete merchant's balance-scale with four lead weights (one of which was in the form of a spindle whorl), in the excavation of a Viking grave on Gigha, Argyll, Scotland (Bryce 1912–13; Grieg 1940, 29–30), the objects are now in the Hunterian Museum, Glasgow. The two birds were, according to Grieg, placed at either end of the balance beam, attached by the upper loop (possible via a hook), where the lower loops would create an equal spread for three fine chains or threads to suspend the scale pans. Another complete example with two birds from Jåtten, Rogaland, Norway, was found with eight lead weights and a bronze penannular brooch (the reassembled scale balance is illustrated in Petersen 1940, 161, fig. 133). The striking similarity between these examples allows the Meols object to be identified with some confidence as a Viking find. The birds come in pairs, but only one has surfaced at Meols. The delicate size and decoration of this type of balance scale suggests a use for measuring small quantities of valuable materials, possibly silver.

Fig. 2.4.3: Bird mount from balance-scale, Gigha © Hunterian Museum

Horse equipment

Stirrup mounts
393 Pl. 11
L 56.5mm, W 43mm; a copper-alloy plate with pronounced shoulders and a trilobite or fleur-de-lys projection at its apex, in the centre of which is the upper attachment hole. The base of the plate is bent inwards slightly and there are two opened attachment holes in its slightly corroded edge. On the front, an incised design of a snake or dragon's head with lentoid eye and pointed snout in profile atop a stylised knot resembling a body, surrounded by four diagonal lobed fronds within a square border, over which four curved bands create a rhomboidal field merging with the apex. It is almost certainly a stirrup mount, and is included by Williams (1997, 474) within his broadly-designated 'Unclassified Class B' group, which apart from this

piece is characterised exclusively by pieces from eastern and southern England. The Ringerike stylistic affinities of the design suggest London or W inchester as places of manufacture, echoing in particular those found on buckle **307**, and is similarly likely to date from the end of the 10th century to the early 11th century.
394 Pl. 11
L 18mm, W 14mm; described as lead in pre-1941 Liverpool Museum archive (5764M) (Hume 1863, 131, pl. XII, 23) but as brass in Hume' s handwritten notes on this unpublished second edition of *Ancient Meols*, a sub-rectangular piece with five attachment holes separated by a raised X-shaped moulding, it bears a similarity , in a simplified form, to W illiams's Unclassified Class B stirrup-strap mounts (Williams 1997, 98 ff).

EARLY MEDIEVAL IRON OBJECTS

David Griffiths, with contributions by Patrick Ottaway

Knives

Whittle tang knives
The whittle tang knife has a long history , and it can be difficult to date individual specimens in the absence of any distinctive metallographic or decorative feature. There are, however, a small number of 'angle back' or curved knives from Meols that may be dated on the basis of form to the early medieval period (cf. Ottaway 1992, 561–2).
395 Pl. 11
58 x 28mm; almost certainly of Anglo-Saxon date, as it has a blade with what is sometimes known as an 'angle back', meaning that the back rises from the shoulder before sloping down at an angle to the tip. Numerous similar knives are known from 7th- to 11th-century contexts (Ottaway 1992, 561–2).
396 Pl. 11
100 x 18mm (Potter 1876, 183, 1); had an angle back and is therefore similar to **395**.
397 Pl. 12
L 53mm (tang), 63mm (blade), W 14mm (blade rems.); one edge corroded. Narrow, slender blade with sloping shoulders, a reverse S-shape. Blade tapers to a point. Handle missing. Heavily worn.
398 Pl. 12
L 21mm (tang), 83mm (blade), W 15mm (blade); short tang. Blade tapers to a point. The curve at the top supports an early date.

Tools and agricultural implements

Axe
399 Pl. 12
157 x 87mm at the cutting edge; it has a flat top ('poll'), rounded lugs either side of the socket, and a blade symmetrical in cross-section. Axes are not easy to date closely, as their form does not change rapidly during the Anglo-Saxon, Viking, and medieval periods (see also 2.6, later medieval ironwork). However, the Meols axe corresponds to medieval T ype IVB in the London Museum Medieval Catalogue (LMMC 1940, 55, fig. 11) and Goodall's Type 5 (Goodall 1980, 23). An axe similar to this, if rather shorter in relation to the width of its blade, comes from a probable V iking period context at Y ork (Waterman 1959, 71–2, fig. 5, 6), but two axes which are, perhaps, particularly comparable in terms of form, size, and proportions to this example come from Degannwy Castle, Gwynedd, found unstratified in the bailey of 1245–63, and Montgomery Castle, Powys, found unstratified in a site occupied 1223–1649 (Goodall 1980, *B19–20*). **399** was found in the winter of 1877–78, and was presented to the Historic Society of Lancashire and Cheshire by Potter together with **402**, a bent arrowhead, **404**, a spearhead, and a description of a shield possibly resembling **408**, a shield boss (Potter 1878, 154–5). Potter also described 'a portion of an old double-edged sword blade and two sharpened stake-ends, found on the Cheshire Shore at Great Meols, and supposed to be part of an ancient stockade' (Potter 1878, 156) (1.2) (For the implications of this apparent group association, see **402** below.)

Riding equipment

Spurs
Hume's drawings show two fragments of the backs of spurs, with short pointed goads of a form usually dated to the middle to later Anglo-Saxon period (Ottaway 1992, 699–700).
400 Pl. 12
L 42mm, L (goad) 20mm (Hume 1863, pl. XVI, 6).
401 Pl. 12
L 41mm, L (goad) 21mm (Hume 1863, pl. XVI, 7).

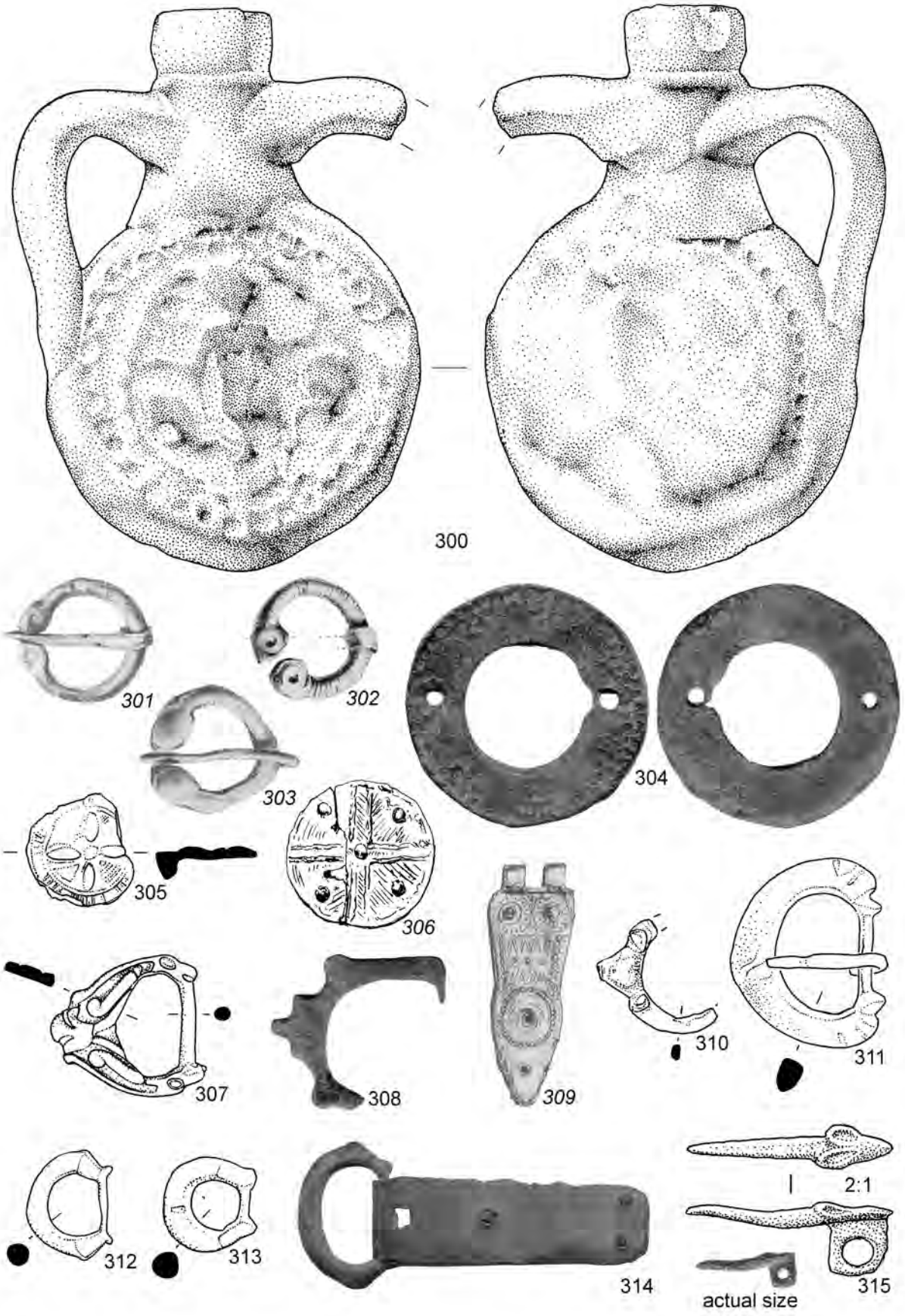
Weapons and armour

Arrow head
402 Pl. 12
91 x 82 x 9mm; has a lentoid blade of triangular cross-section. Unfortunately the object has been crudely conserved with varnish over surface corrosion in the 19th century, so no surface detail can be detected. It has been bent over into a U-shape, which may suggest that it was made from a poor -quality iron, as an object with a high steel content would usually snap under pressure. The presence of a tang indicates that this is late Anglo-Saxon / Viking Age in date; for comparable items see, for example, arrowheads from Y ork (Ottaway 1992, 710–1). If its original context was funerary, it is possible that the object was deliberately bent as part of ritual damage. **402** was found in the winter of 1877–78 in proximity to other iron objects, **399** (an axe), **404** (a spearhead) and **408** (a shield boss). The association between the discovery of these objects may be coincidental, however all have some similarity to V iking-period comparanda from elsewhere, **402** and **404** securely so, although **399** and **408** also have equally strong medieval parallels. If a V iking-period link between **402** and **405**, and somewhat more ambiguously , with **399** and **408**, can be accepted, their contemporaneous discovery may indicate that they formed part of a grave assemblage that was exposed by erosion during winter storms at this time (1.2).

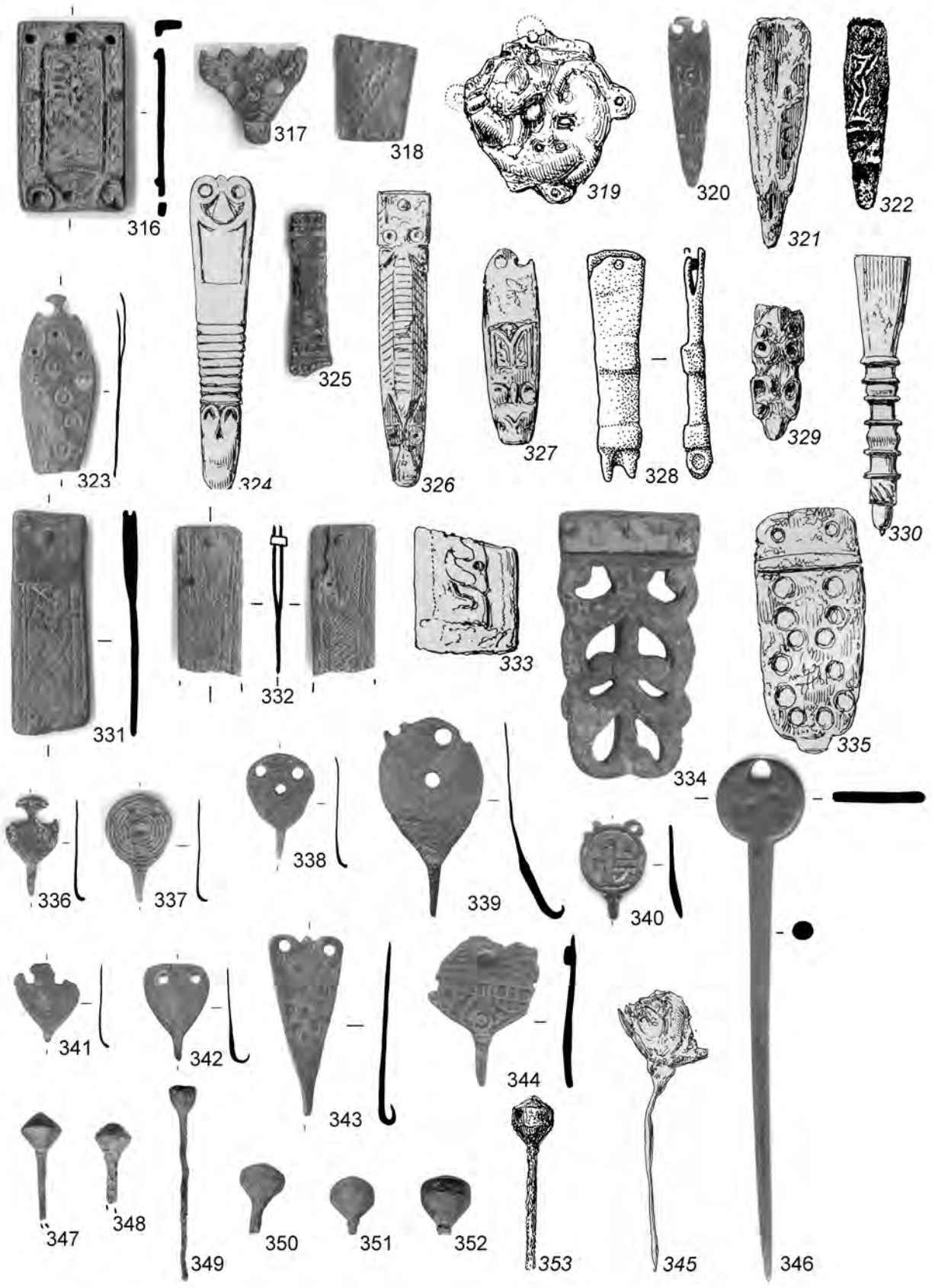
IRON OBJECTS PROBABLY OF EARLY MEDIEVAL DATE

Arrowhead

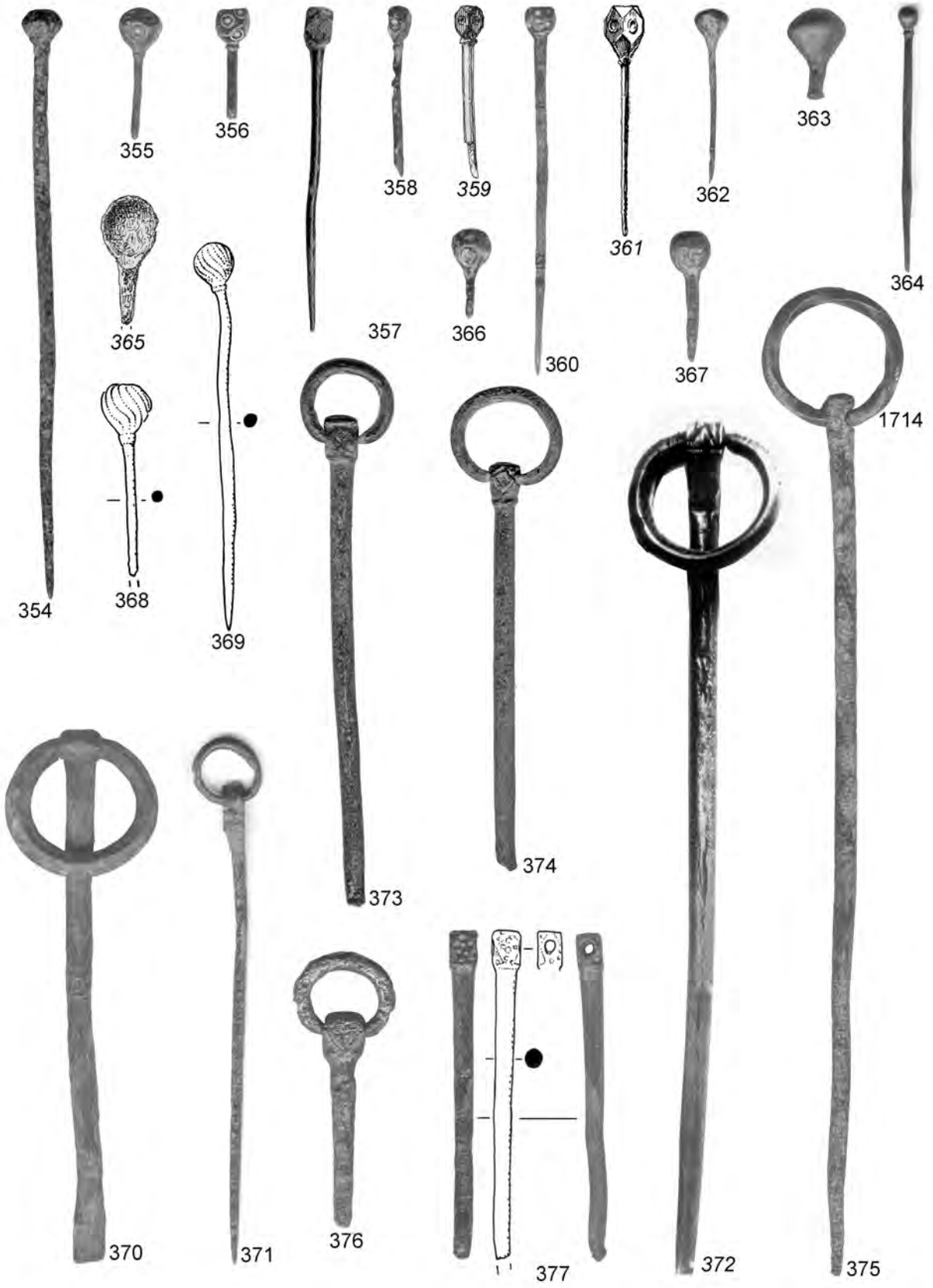
403 Pl. 12
95 x 19 x 4.5mm; is a tanged arrowhead with a blade, the sides of which are convex and curve in to meet at the tip. The edges appear to have been roughly hammered, perhaps to harden them. It is difficult to date this object, but tanged arrowheads are usually from late Anglo-Saxon or V iking contexts, although the pronounced shoulders on this blade are unusual.



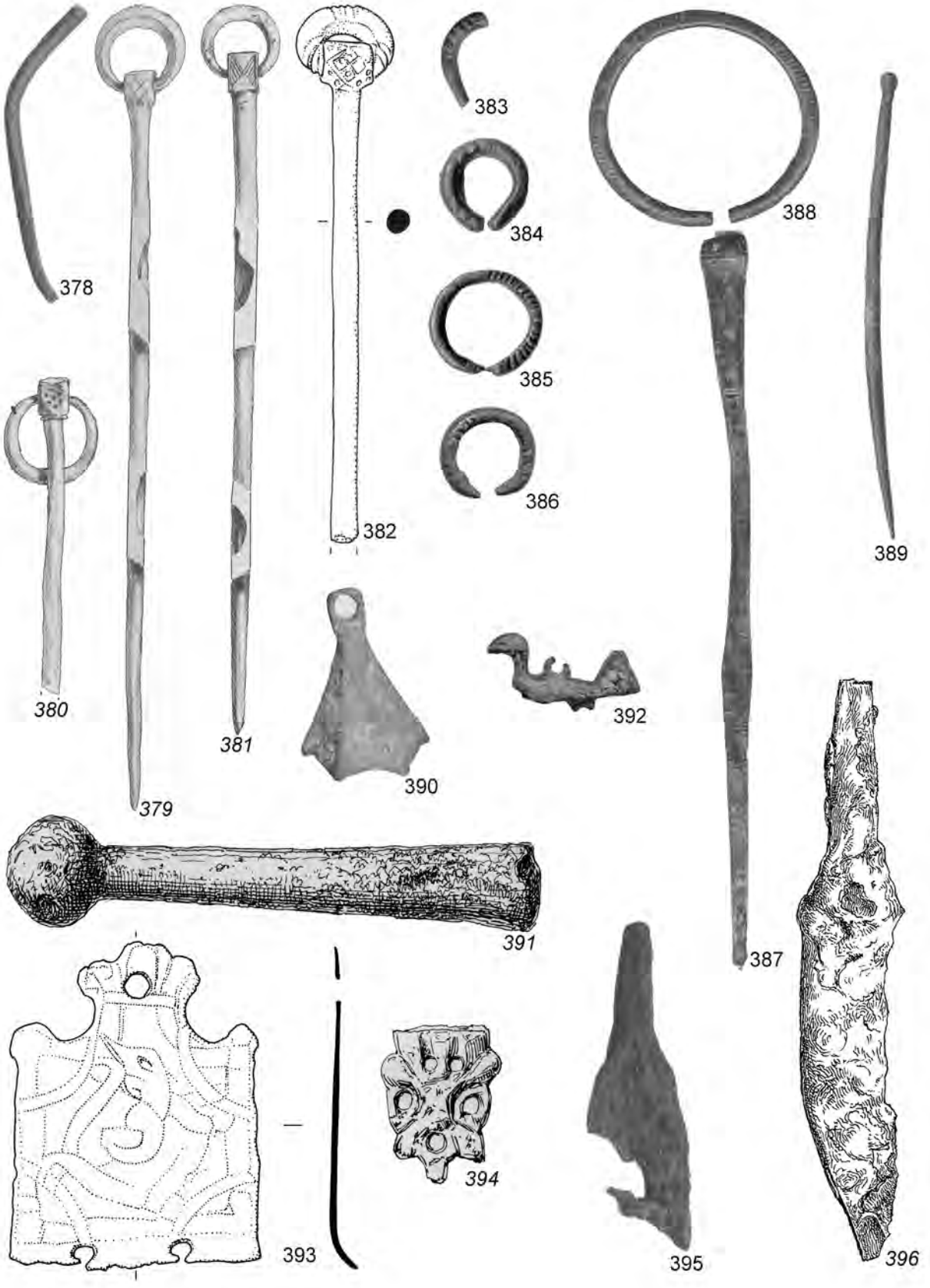
Pl. 8. Early medieval: St Menas Ampulla, brooches and buckles



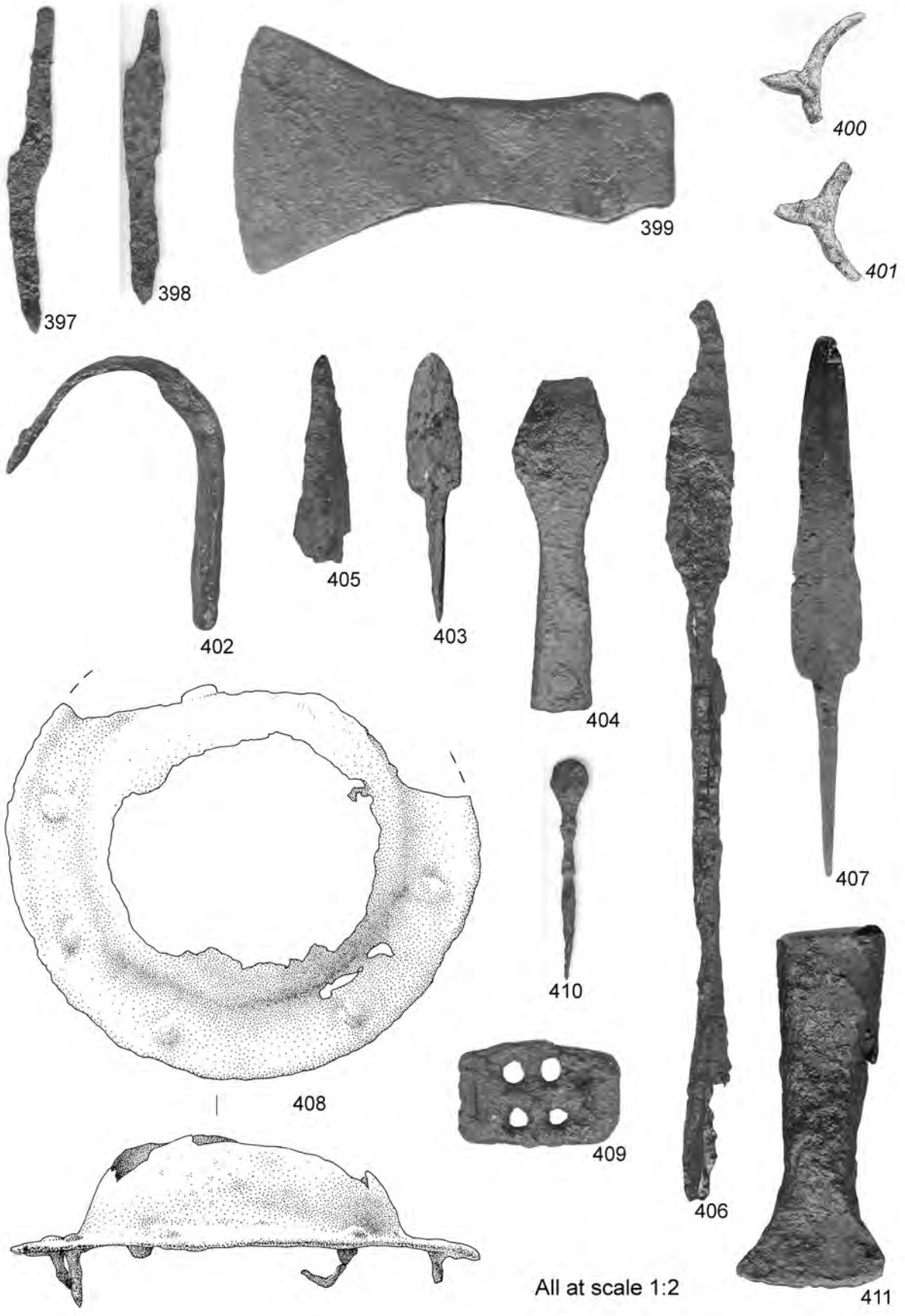
Pl. 9. Early medieval: mounts, strapends, hooked tags and pins



Pl. 10. Early medieval: small dress pins and ringed pins



Pl. 11. Early medieval pins, bell, mounts and knives



Pl. 12. Early medieval weaponry and miscellaneous

Spearheads
404 Pl. 12
118 x 31 x 21mm; socketed, leaf-shaped blade which is broken at the tip (Potter 1878, 155–6, pl. VIII, 4). This is probably late Anglo-Saxon / Viking Age, although spearhead blades of this period are usually more elongated than this example appears to be (see also **399**, above).
405 Pl. 12
74 x 20 x 13mm; socketed, the blade, now incomplete, has a lozenge-shaped cross-section with slightly concave facets. This is difficult to date, but is possibly pre-Norman.
406 Pl. 12
315 x 23 x 2mm; socketed spearhead, with a narrow shaft above the socket and below a narrow blade, but now damaged. There is no ready parallel for this object, but it is possibly a later Anglo-Saxon / Viking period attribution.
407 Pl. 12
189.5 x 25 x 6mm; tanged spearhead, with a tapering blade of lozenge-shaped cross-section, the facets being slightly concave. The blade edges appear bent in places, suggesting a poor-quality iron with low carbon content. Dating this object is difficult. Spearheads of Roman and later date are usually, though not always, socketed. Later Anglo-Saxon / Viking Age arrowheads are usually tanged, but this object appears too large to be an arrowhead, and the form of the blade does not immediately suggest it is of the period. It is included here on the basis of the tang and to facilitate comparison with the other spearheads.

Shield boss
408 Pl. 12
D 263mm; domed in the centre, although the top is now missing, and has a flange around the edge through which it was nailed onto a wooden shield. Found in winter of 1877–78 (see **402**, above).
The evidence of parallels to support an attribution to the Viking period includes two hemispherical shield bosses, somewhat similar in form, which are recorded by Rygh (1885, 562–3) in his review of finds from Norway. Another domed boss came from a Viking grave at Ballateare, Isle of Man (Bersu and Wilson 1966, 59–60, fig. 36). These objects are, however, rather smaller than **408**, with diameters of 152mm and 130mm, respectively, for the objects in Rygh's catalogue and 154mm for the Manx item. Similar unpublished examples are found in Bergen and Trondheim museum collections, including from Røstad, Sør Trøndelag, Stimle, Hordaland, and Eid, Gloppen, Sogn og Fjordane (all western and mid-Norway). However, a later medieval attribution cannot be ruled out, and it must also be mentioned that, in general, pre-Norman shield bosses from England usually appear to have variants on a cone shape. If the apparent association of its discovery with other Viking-period weapon finds in the winter of 1877–78 (see **402**, above) were to be judged as insufficient to prove a secure relationship, an alternative explanation is therefore, that **408** may come from a buckler, a small round shield of 14th – mid-15th century date, which usually had a domed boss. Bucklers were usually used by civilians and their body guards or by unmounted knights (Laking 1920, 242–3; Blair 1958, 182). Examples are shown in marginal illustrations in the Luttrell Psalter of *c.* 1340 (fo. 49).

Possible strap end
409 Pl. 12
55 x 35mm; a plate pierced four times with large rounded holes; at each end there is a slot to which fragments of what appear to be loops or links are attached. It is plated with non-ferrous metal. A probable strap end.

Pin
410 Pl. 12
L 77.5mm; a corroded iron disc-headed pin with two baluster mouldings on the expanded part of the shank. It was described as a stylus by Bu'Lock (1960, 10, fig. 3f), but the circular shape of the disc head suggests this is unlikely as styli usually have flat upper edges for scraping and smoothing wax or clay surfaces.

Hoe blade
411 Pl. 12
L 123mm; a short blade in line with a closed socket. Objects like this are often described as 'celts' in Scandinavian publications (e.g. Petersen 1951, 159, 517), although the term is also applied to other socketed blades rather different from this example, which occur in quantity in Scandinavia, usually in Viking-period or equivalent contexts. Petersen commented on an object very similar to this piece, saying that it has a form peculiar to the Telemark region (Petersen 1951, fig. 94). From England, there are objects identified as socketed woodworking chisels (Ottaway 1992, 529–31), but they have longer blades, which are slightly curved. Petersen considered the 'celt' to be a tool for the clearance and breaking up of ground, and so it would probably be appropriate to describe this object as a socketed hoe blade, but whether it is truly of Viking period date is difficult to say.
[412-414: numbers not used]

Note
1 Information from PAS, find LVPL-1440.
2 Information from PAS, find LVPL-874C64.

2.5 Later medieval non-ferrous metalwork and evidence for metal working: AD 1050–1100 to 1500–50

Geoff Egan

DRESS ACCESSORIES

The conventions used in the catalogue descriptions below generally follow those in the most recent publication of medieval London *Dress Accessories* (Egan and Pritchard 1991), but some terms and categories have been changed or newly created in order to cater for different emphases within the assemblages listed below, with the intention of presenting these objects as clearly as possible.

Since dress accessories, as is frequently the case in finds groups, comprise the largest assemblage of non-ceramic finds recovered at Meols, some general points that are more widely relevant for the later medieval material discussed in this volume are best made in introducing this very large category. There is a total of 1294 surviving non-ferrous dress accessories (not including fragments) together with 93 which do not survive but for which we have an extant illustration; these are listed individually below under a wide range of headings.

Dating is, inevitably for objects recovered in circumstances that did not include the recording of a stratigraphic sequence, based largely on the implications (sometimes limited to general stylistic inference) of comparanda from dated sequences elsewhere. The broad chronological patterns observed in the material recovered at particular

times during the periods of retrieval at Meols can be helpful, but only at a non-specific level. The entire span of the later Middle Ages, *c.* 1050–1500, seems to be represented, with the main focus in the 13th–15th centuries, and fewer items from the late-11th and 12th centuries (not dissimilar to the pattern evident at London and several other major urban centres). The late-15th/beginning of the 16th centuries is relatively difficult to pinpoint among the assemblages, and perhaps this too is part of the broader national picture rather than simply a function of the relative sparsity of comparanda to aid identifications. There is a very marked decline in sheer numbers of all categories of material culture with the start of the early modern period; a phenomenon that is again generally evident in many places across the country , though here it seems particularly acute, to the extent that it can be taken as part of the evidence for a marked decline in the settlement. There are, for example, no sheet-made buckle frames of this date (as in a manufacturing assemblage from London, and with comparable accessories much more widely distributed across the country (Egan forthcoming e) and only two later hooked clasps are recorded (*3037-* **3038**).

Whilst the great majority of the dress accessories from Meols are of copper alloy , with some, mainly larger , buckles of iron (the largest of this metal are thought to be from horse equipment, **2818-2844**), a notable component of the assemblage is the significant numbers made of lead/tin, which regularly fail to survive in adverse soil conditions. Most of the small number of copper-alloy items selected for analysis are gunmetal, with a very few of brass. Coins aside, the dozen surviving finds of silver, as part of a wider pattern, are restricted to brooches (all *c.* 80% fine) and finger rings, with the unusual addition of a bell clapper. No object primarily of gold seems to have survived from the single certain brooch and the very limited number of finger rings attested by antiquarian publications, but now all lost. Silver coatings may not have been recognised in the absence of comprehensive chemical analysis, but a few of the copper-alloy dress accessories are gilded (buckles **755**, **775**, and **829**, strapend **1516**, mounts **1027** and **1073**, finger ring **2361**, pendant **1458**, casket mounts **2083** and **2090**, and harness pendant **2327**).

Most of the accessories are made up of a limited number of necessary components, with occasional additions for the sake of fashionably ornate elaboration, copper -alloy clasp **890** comprises 12 metal parts. Enamels seem to be restricted to mount **1027**, brooch *1640* and buckle plate *851* with a lion regardant is on a field painted blue in some copies of *Ancient Meols*, suggesting enamel (Pl. IV). Several accessories are in the Saxo-Norman decorative tradition, which can be difficult to assign accurate dating (see **305**, **310–314** listed under 2.4 early medieval material), buckles **755**, **759–63**, and **847**; strapend **1544**; pin **1888**; mount (non-dress) **2089** as well as scabbard chape **2154**.

Animal heads are evident on buckles **450** and **637–641**; strapends **1544**, **1545**, **1601** (?an ape); brooch **1698** has a two-headed animal body (as well as swivel **2325** and **2371** listed under Unidentified items probably of later medieval date). Figurative accessories or ones including figurative elements are not common and tend to be upmarket versions – buckle **728**; king's head clasp **903**; bird clasp **902**; head clasp **901**; bird bar mount **1262**; bar mount head pendant **1250**; grotesque monster mount **1027**, brooch **1698**; lion passant buckle plates *851*, *852*). Engraved plates for accessories necessarily raise these items to a more labour -intensive, and therefore presumably more expensive, bracket – buckles **756**, **816**, **847**, **849**, (?also on frame **762**); strapends **1571**, and **1606**, which is unusually for an item with tooling, of lead/tin; (see also horse harness pendant **2327**). Openwork is evident in strapend **1572** and mounts **1067**ff, **1149**, **1153**, **1159**, **1160-66**, as well as lead/tin strapends **1612-1616**. A few items have writing, often religious references, though whether this was actually readable by any of the inhabitants of Meols is uncertain (several of these attractive items are now lost): **Timete Dominum** (*2317*); **In Ivesv** (*2318*); **Iesus Nazarenus** (etc.) see brooches **1761**, *1766*, *1767*, **1816**, *1825*; see also knife handles **2152**, **2153**; **IHC**, etc. – (?) mount **1169**; strapend; *1621* (with '**S**'); **Crede Mihi** on seal matrix *2323*; **Ave (Maria) (gracia plena)**: on brooch **1764-5**; strapend **1616**; seal matrices **2310-12**; strapend *1503*, brooch *1765*; **Mari(a)** on strapend **1617**; brooch **1732**; cf. (?) **M** on post-medieval buckle **3003** and lost (?)'**m**' mount **1076**. Secular legends are: **AVI** (? = Amor vincit omnia) on pendant **1972**; **Be m(eri?)** on leather strap **3269A** with pellet mounts; (?)**b** on strapend **1602**; **R** on mount **1072** and finger ring **1976**. **S** on mount *1077* and on strapend **1621** (along with IHC); (?)**S/Y** on mounts **1073-5**; eyelet **1500**. Uninterpreted legends are on: brooch **1696** (possible false lettering); (?brooch) pin **1809**; (?)dagger holder **2346**; mirrorcase **2014**; *1501* a lost lead/tin strapend: '**Ioh†Bon**'.

Repairs or replacements are evident in several of the copper-alloy buckles and other strap accessories. Notably clumsy, substitute rivets are evident in buckle plate **559**. These could, perhaps, cumulatively be indicative of a period when it proved difficult for the inhabitants of the settlement to get repairs effected by anyone with the usual modicum of skill that characterises the many instances of re-attaching or repairing of similar accessories elsewhere.

Other non-specialist repairs include: **713** and **804** – rough rivets; **587** and **754** – protruding rivets – cf. **559**; **584** – oversized rivet; **590** – two bent-over rivets (of the five); **561**, **697** – tacksheets as rivets; **825** – plate, poor repair; **314** (listed under Early medieval) – square holes for pin and rivets; **898** clasp –- wire repair. Later 'post-medieval-'form spiralled-sheet rivets (Egan 2005a, 101, fig. 87) are anticipated in buckle plates **723** (with parallels assigned to the 13th/14th centuries), **559** (parallel assigned to mid-13th century), **588** (parallel assigned to late-14th century), **844** and cf. **804** (a tube rather than spiralled sheeting, but a similar eccentricity).

There are small groups apparently of manufacturing discards/seconds of copper alloy among the brooches (thought to focus on the 12th/early-13th century) **2245**ff, discussed in detail below (2.5); and lead/tin buckles **2291**ff, and perhaps also strap loops **1487**ff (the latter are completely unknown in these alloys elsewhere) from the late-14th–15th century, with incompletely cast spindle whorl **2293** potentially from the same industry. Items that appear completely unworn (e.g. among **1362**ff) or have been recovered in what seem anomalously large numbers compared with the patterns emerging elsewhere (e.g. purse suspenders **1264**ff) raise further questions, which remain open, about their place of manufacture and their status as saleable or owned goods at the site.

Tables 2.5.1–2.5.6 attempt to summarise the broad picture of the recovery of medieval dress accessories in different locations, as reflected in publications of major assemblages, which are frequently used as first resorts when seeking comparanda. Figures cited for Hume 1863 were given by him as totals recovered at that time (by no means all of those items were individually described and illustrated, and so many are not now identifiable). Most of the figures are for urban sites, but some for two rural sites

in Buckinghamshire at which retrieval was particularly productive are also given. There are inevitably several difficulties in compiling these numbers, not least different ideas of dating as the subject has developed (some authors have taken context dates within the site sequence to be those of the objects, while others have recognised residuality in specific instances by giving a significantly earlier date for production) and there are occasional basic misidentifications. Some rectification has been attempted for both factors in the figures presented below. At Norwich, residuality appears to be common, and to err on the side of caution, a number of stylistically medieval items from post-1500 deposits in that publication are not included here (there appears to be no significant difficulty at the earlier end of that sequence). Even if all potentially medieval accessories of appropriate categories found in post-medieval contexts were to be included, this would make relatively little difference to the overall chronological profile for this city, falling far short of doubling the figures for one of the smaller assemblages considered here. Residuality is also very evident at Winchester, though in the publication a considerable effort has been made to give probable dates of manufacture (often drawing on what was then very recently available information as the subject developed rapidly with a flood of publications in the 1980s).

The extremely different soil and other site conditions affecting survival, and archaeological or amateur approaches to retrieval (including extensive use of skilled metal-detecting at London and on the Buckinghamshire sites) all make direct comparisons between the published assemblages difficult. Each of the assemblages from which the statistics are taken was retrieved under different circumstances, ranging from cumulative decades of speculative searching on the part of many individuals at Meols, to the more focused metal-detecting within the overall framework of a detailed stratigraphic sequence recorded by full-time archaeologists at the two largest London sites. Apart from Deevy's figures for Irish brooches, which result from a full national survey , they each represent a particular programme of field recovery from a specific area, influenced by factors first of discarding, then of survival in the ground, next of opportunity and method of recovery , and lastly of availability for publication when the opportunity arose. In the case of the items in the present catalogue, this follows sustained curation by amateur collectors, and subsequently successive museum staff, by whom an extensive mass of metalwork, often scraps unidentifiable at that stage, were deemed worth passing on to future generations. These differing factors inevitably constrain some of the comparisons one would like to make and they also weaken the validity of some of the conclusions it is tempting to draw . One thing, however , is abundantly clear from even a swift perusal of the raw figures derived from the various syntheses: despite the vigorous efforts of intensive archaeological fieldwork since the 1970s on the part of a greatly increased, full-time work force, the Meols later medieval assemblage (for all the quirks of its detailed history) remains an extraordinarily extensive and valuable resource for the study of the material culture of that period. Not only is this group of material unique in the north-west, it comprises by far the largest and most varied, non-urban accumulation of later-medieval material in the country.

The basic conundrum, the survival and recovery of so many objects in the context of an unremarkable fishing-settlement, which may have occasionally served as an informal customs-outpost for Chester (there were certainly no full-time staff), but which lacked even a parish church, remains impressive, the more so when seen against what the best efforts of recent urban archaeology can come up with in populous centres. The full significance of this part of the archaeology of Meols may be that its unique survivals permit the tentative, radical suggestion that in

Table 2.5.1: Buckles (?for dress: large iron examples thought to be from horse equipment are not included)

Site	*Reference*	*Date*	*Copper alloy*	*Iron*	*Lead/tin*	*Total*
Meols	This catalogue	Suggested *c.* 1050–1550	339 (+ 21 clasps)	31	32 (+ 12 clasps)	*361 (+ 33 clasps)
Meols	Hume 1863, 100 and 102	?Post-Roman	244	13	5	262
Exeter	A. R. Goodall 1984 and I. H. Goodall 1984	*c.* 1200–1500	11	–	–	11
London	Egan and Pritchard 1991	*c.* 1150–1450	178	115	184	478
Norwich	Margeson/Goodall 1993	*c.* 1050–1500; these figures ignore items residual in post-1500 deposits	15	6	–	21
Southampton	Harvey/Goodall 1975	*c.* 1000–1600	16	2	–	18
Winchester	Goodall 1990 and Hinton 1990b	*c.* 1050–1550	90	32	–	122
York	Ottaway and Rogers 2002	*c.* 1050–1500	37	31	2	73 + 3 foundry wasters
Great Linford, Bucks	Zeepvat 1992	*c.* 1100–1500	13 + 1 clasp	4	–	17 + 1
Tattenhoe/ Westbury, Bucks	Ivens 1995	*c.* 900–1500	15	3	–	18

*Hume also noted two of silver; if these have not been lost, they have presumably been re-interpreted as brooches in this prese nt publication.

England from *c.*1050 to *c.* 1500, everyday material culture, as evident in this publication, was very similar right across the country, from the rural north-west England to the urban south-east. At least the similarities (once the regional variations in ceramics that loom so large in the received archaeological consciousness are recognised as a special case) are potentially more impressive than any differences.

For all the drawbacks, the figures in Tables 2.5.1–2.5.6 give a basic idea of the relative orders of magnitude, along with emphases within these, of these particular categories of common finds across the nation, as reflected in some of the most frequently used publications to date. It is against this background that the staggering scope of the medieval finds detailed below can most readily be appreciated. While London might, for a variety of reasons, be expected to produce material culture in plenty, the second largest assemblage in England on the criteria outlined, by a considerable margin from the next biggest, is that presented here, from the settlement at Meols. Again and again in looking through the Meols finds, it was striking to find that several of London's most notable individual objects from recent excavations, initially hailed as remarkable manifestations of urban sophistication or fashions that could only have been devised against the background of wealth and the European communications of a busy metropolis, were present here, too, even if poorly preserved and fragmentary (e.g. clasp **903**, brooch **1793**, necklace **1974**). One has only to look at the range of English and Continental links implied by the scrappy pilgrim souvenirs (despite the loss of several since their publication in the 19th century) to take the point.

Table 2.5.2: Mounts (?for dress)

Site	*Reference*	*Date*	*Copper alloy*	*Iron*	*Lead/tin*	*Total*
Meols	This catalogue	Suggested c. 1050–1550	390	–	121	511
Meols	Hume 1863, 151*	'Bosses and studs,' ?post-Roman	83	–	40	123
Exeter	A. R. Goodall 1984	c. 1200–1500	5	–	–	11
London	Egan and Pritchard 1991	c. 1150–1450	329	33	120	482
Norwich	Margeson/Goodall 1993	c. 1050–1500	9	–	–	9
Southampton	Harvey 1975	c. 1050–1600	8	–	1	9
Winchester	Hinton 1990c and e	c. 1000–1600	89	–	–	89
York	Ottaway and Rogers 2002	c. 1050–1500	35	8 'fittings'	–	42 + 3 foundry wasters
Great Linford, Bucks	Zeepvat 1992	c.1100–1500	6 (+n)	–	1	7+
Tattenhoe/ Westbury, Bucks	Ivens 1995	c. late-11th – early-16th/ 10th – mid-16th centuries	18	–	–	18

Hume also listed one of silver (cf. Ecroyd Smith 1868, 2) – (?)lost. He seems not to have included 'rosettes' (? = foliate mounts), shield-shaped and bar mounts in these totals.

Table 2.5.3: Strapends

Site	*Reference*	*Date*	*Copper alloy*	*Iron*	*Lead/tin*	*Total*
Meols	This catalogue	Suggested c. 1050–1550	65	1	24	90
Meols	Hume 1863, 124	?Post-Roman	108	–	13	121
Exeter	A. R. Goodall 1984	c. 1200–1500	4	–	–	4
London	Egan and Pritchard 1991	c. 1150–1450	153	21	11	185
Norwich	Margeson/Goodall 1993	c. 1050–1500	5	–	–	5
Southampton	Harvey 1975	c. 1100–1600	2	–	–	2
Winchester	Hinton 1990a	c. 1050–1600	25	–	–	25
York	Ottaway and Rogers 2002	c. 1050–1500	14	–	–	14
Great Linford, Bucks	Zeepvat 1992	c.1100–1500	7	–	–	7
Tattenhoe/ Westbury, Bucks	Ivens 1995	c. late-11th – early-16th/ 10th – mid-16th centuries	5	–	–	5

The Meols figures here are broadly similar to those for London, but with slightly less prominence for lead/tin. Four of the five silver brooches form a tightly coherent group in terms both of fashion and in the weights of the precious metal used, suggesting a single workshop may perhaps have been the origin of these accessories. It is unclear whether the disparate evidence for silver refining recovered at Meols (which is not closely dated) has any relevance. It is possible that manufacture was carried out locally, though Chester is a plausible, nearby alternative.

This category, because of the symbolism of gold for marriage rings (the one item an individual of limited means might afford of this material during an entire lifetime) is the only one among T ables 2.5.1–2.5.6 to include this metal among the Meols finds (even if the items in question, published in 1863, appear to have been lost). Finger rings of silver, which are not prominent in recovered later medieval assemblages until the advent of the metal detector, are represented by single finds from the majority of places considered, including Meols.

The prominence of copper alloy is a consistent feature of all the preceding tables. At Meols, therefore, this is simply part of the national pattern. Several medieval copper-alloy buckles and other accessories similar to those in repertoires of production waste now becoming recognised at foundry sites in London, Y ork, Dublin, and elsewhere (Egan 2003 and Egan forthcoming b), are a prominent feature of the Meols assemblage. Such items were probably manufactured in every major town. A few of these high- and late-medieval Meols finds were, through

Table 2.5.4: Totals – all strap accessories

Site	*Reference*	*Date*	*Copper alloy*	*Iron*	*Lead/tin*	*Total*
Meols	This catalogue	Suggested c. 1050–1550	815	32	189	1036
Meols	Hume 1863		435	13	68	556
Exeter	A. R. Goodall 1984 and I. H. Goodall 1984	c. 1200–1500	11	5	4	20
London	Egan and Pritchard 1991	c. 1150–1450	660	169	315	1145
Norwich	Margeson/Goodall 1993	c. 1050–1500	24	9	25	38
Southampton	Harvey/Goodall 1975	c. 1100–1600	18	9	2	29
Winchester	Goodall 1990, Hinton 1990a–c and e	c. 1100–1600	122	89	25	236
York	Ottaway and Rogers 2002	c. 1050–1500	73	38	[?]2	126
Great Linford, Bucks	Zeepvat 1992	c.1100–1500	43 (+N)	4	1	48+
Tattenhoe/ Westbury, Bucks	Ivens 1995	c. late-11th – early-16th/ 10th – mid-16th centuries	38	3	–	41

Table 2.5.5: Brooches – all of forms with separate pins unless indicated otherwise; there no frames of iron

Site	*Reference*	*Date*	*Copper alloy*	*Lead/tin*	*Silver*	*Gold*	*Total*
Meols	This catalogue	Suggested c. 1050–1550	93	42	5	–	140
Meols	Hume 1863, 81, 84, and 87	Post-Roman*,	63	45	11	–	119
Exeter	A. R. Goodall 1984	c. 1200–1500	5	–	–	–	5
London	Egan and Pritchard 1991, 270	c. 1150–1450	23	22 (+22*)	2	–	69
Norwich	Margeson/ Goodall 1993	c. 1050–1500	7	–	–	–	7
Southampton	Harvey 1975	c. 1100–1600	2	1	–	–	3
Winchester	Biddle and Hinton 1990	c. 1050–1600	20	2	–	–	23
York	Ottaway and Rogers 2002	c. 1100–1600	7	3	2	1	13
Great Linford, Westbury, Bucks	Zeepvat 1992	c. 1100–1500	1	–	–	–	1
Tattenhoe/ Bucks	Ivens 1995	c. late-11th – early-16th / 10th–16th centuries	3	–	1	–	4
Ireland	Deevy 1998 annular form only	c. late-12th–16th centuries (+ 1 copper -lead/tin composite)	58	10	57	14	140

*includes 'circular brooches', (?this includes some 'buckle brooches' and 'fermails') with integral pins
Figures indicated thus are, or include some, assignable pilgrim souvenirs, brooches of allegiance etc. (with integral pins), i. e. the main figures relate only to separate-pin secular brooches.

Table 2.5.6: Finger rings

Site	*Reference*	*Date*	*Copper alloy*	*Lead/tin*	*Silver*	*Gold*	*Total*
Meols	This catalogue	Suggested c. 1050–1550	8 (+ 3 lost)	2 (+ 2 lost)	1 (+ 1 lost)	- (1 lost)	11
Meols	Hume 1863, 246	Post-Roman, includes 'circular brooches', (?this includes some 'buckle brooches' and 'fermails') with integral pins	'bronze' 15	'lead' 2	1	2	20
Exeter	A. R. Goodall 1984	c. 1200–1500	2	–	1	–	3
London	Egan and Pritchard 1991, 335	c. 1150–1450	12	15	–	5	32
Norwich	Margeson/Goodall 1993	c. 1050–1500	2	–	–	–	2
Southampton	Harvey 1975	c. 1100–1600	3	–	–	1	4
Winchester	Hinton 1990d	c. 1050–1600	28	4	1	3	36
York	Ottaway and Rogers 2002	c. 1050–1600	6	1	1	2	10
Great Linford, Bucks	Zeepvat 1992	c. 1100–1500	–	–	–	–	–
Tattenhoe/ Westbury, Bucks	Ivens 1995	c. late-11th – early-16th / 10th–16th centuries	1	–	1	–	2

lack of closely dated parallels, mistaken in the late-1960s for pre-Norman accessories (see Bu'Lock 1960, 24–5 and 22, fig. 7e–i).

Only recognised during the most recent work is a small group of copper-alloy brooches and waste pieces (**1650, 2245** etc.) that suggest local manufacture by cold working, perhaps in the late-12th to early-13th centuries. This particular group so far has few traced parallels to confirm the proposed dating. There is also a limited number of later medieval copper-alloy items (some in multiples of identical accessories, notably strap loops), which appear crisp and unused, and also some lead/tin accessories, again including possibly unused strap loops. Accessories that show no sign of wear , particularly when they occur in some numbers, may represent trade stock, by however means they came to be at the site. A few other categories in lead/tin are more obviously wasters through lack or excess of metal used. The limited evidence suggesting local silver refining and working has already been mentioned in passing, but it is not possible to connect it with any particular objects, even though (as noted above) several of the few silver brooches recovered seem to form a coherent group.

The relatively small showing of iron (with no mounts at all of this metal) is presumably because of adverse burial conditions; salt in seawater may have meant that small objects of ferrous metal soon spalled and broke apart even if they appeared sound at the time of recovery. There is no mention by the 19th-century collectors that sheet accessories of this metal had survived even in such poor condition that they were not worth retaining, and so, despite the survival of a number of larger items of iron, it is possible that they had already corroded beyond recognition by the early 1800s (there is no reason to suppose they were simply not available at the settlement).

The lead/tin accessories from Meols, prominent overall in terms of decoration as well as numerically, are of great interest. Their survival in some numbers contrasts with the situation at several of the urban centres featured in Tables 2.5.1–2.5.6. The conditions favouring their preservation at London, where their prominence in the late medieval period was first demonstrated (Egan and Pritchard 1991, 18–20), must have been echoed at Meols. Their presence in some numbers in the context of an apparently unremarkable village is potentially of considerable significance. The tabulated figures for York, where lead/tin constitutes just 2% of the strap accessories, could otherwise have been taken as an initial indication that these might have been a southern (?lowland-zone) fashion, but at some 12% (almost an eighth) of the Meols medieval strap-fittings assemblage, and apparently showing here a similar , dramatic surge in popularity in the 15th century, as in the capital, this cannot have been the case. Some specific categories, such as plain buckles and clasps with integral sleeves (**605**ff and **934**ff) are more prolific at Meols so far than at any other location, while strap loops of lead/tin are completely unknown elsewhere (**1487**ff). Several of these strap loops show no clear sign of use, and may possibly have been manufactured or traded at the site. This is certainly the readiest inference to be drawn from lead/tin buckle wasters/discards **2291** and **2294.**

The categories of finds with the largest numbers from Meols, even of routine accessories, raise questions about consumption at the site, and these can be applied to its medieval assemblage as a whole. The most extreme instance is probably the total of 185 strap loops recovered, of various forms, represented by two metals, but essentially all the same basic item. They are known elsewhere, surviving on straps only singly (i.e. no instance of multiples on the same strap has been traced). This total may be set alongside a recent estimate of the population of an average English village in *c.* 1300 of 150 people (Dyer 1989, 189). The implication is a scale of representative recovery unmatched even by any urban assemblage in the country, whatever town is considered; the retrieval of items apparently used singly simply does not come near this total for any comparable category of material culture. The implications, particularly given what is known about small size of the settlement at Meols from the documen-

tary side, are remarkable. Even if some of the Meols strap loops were never used, the scale of recovery against the likely population is difficult to credit. To put it at its most simplistic, the possibility that virtually every inhabitant of the settlement around that time (which datable parallels suggest was the high point of this particular accessory) is represented by one of the recovered loops, or (allowing for some variation in dating) that even half of the population is represented, remains unparalleled by levels of archaeological retrieval anywhere else. Other prolific categories of Meols finds do not match this, but when seen against the likely medieval population size are, nevertheless, also extraordinary (e.g. the 15 identical purse suspenders **1265**ff (elsewhere, these are a relatively uncommon category, and if not purely a fashion statement, their function might mean they are an indicator of relative wealth in the form of coins carried on the person ready for use). Overall, there seems to be too much in terms of material culture from the site to match such indications of population size as can be gleaned from the admittedly scant historical record. Even if some of what has survived represents local manufacture, it seems to have been on a much greater scale than was appropriate simply for local customers.

BUCKLES

According to Hume (1863, 100 and 102) a total of 248 buckles with single frames were recovered: 151 whole and 97 fragments (229 were 'brass', of which 139 were whole, 13 were iron, of which eight were whole, four were lead, and there were two silver fragments, both the last are now lost or have been re-interpreted as brooches); additionally, there were 16 double frames, all of brass except one of lead.

As late as 1960, Bu'Lock regarded those he was confronted with from a common and widespread series of high-medieval oval buckle frames with knops and other non-figurative decoration (his 'type II') as heavily stylised, zoomorphic forms dating from the 9th–12th centuries (Bu'Lock 1960, 24–5 and 22, fig. 7e-i: 7g was arguably correctly identified).

Overall, the assemblage that has come down to us includes six of the forked-spacer form (**596**ff), which have seen long wear or rough treatment. All of these are broken or have lost sheets (the same applies to the corresponding strapends **1591, 1627** and fragments) and there are three of the so-called 'lyre' form **764–6**. **728**, with its eccentric orientation, has naturalistic decoration. Further high-quality buckles are **522**, **789** (with hatched sides), **563**, **674**, **682**, **705A** have filed decoration continued onto back): all are (?)well finished (cf. **656**). In contrast, **686** is perfunctory and lacks decoration. Frames **723–5** were manufactured by the low-technology method of bending a length of metal. Faults are evident in **456**, (?)**540** and (a minor one) **455**. **805** and **846**, and pin **460** appears to have been worn in slightly eccentric ways. **760** seems to have been over-filed during fettling.

There are few definable medieval shoe buckles of forms known widely elsewhere; **434** is a local variant of a plain lead/tin form and **437** is a slightly larger, more decorative one, while evidence from Germany suggests D-shaped **632** may have been for a patten. Another specialised form is the wide **796**, for a sword belt. Lead/tin example **435** is a simple form, unparalleled in these metals.

The typology used here for buckles is broadly similar to that used in Egan and Pritchard (1991), but like that one, it was devised primarily for the assemblage being considered. It therefore differs in detail where alternative emphases were felt more appropriate for the specific range of material present. In particular, examples of several common forms of 14th- and 15th-century oval and rectangular copper-alloy frames that were produced in the same foundries in London (though the present Meols finds may well have been made elsewhere, probably in more than one place) have been grouped together in an attempt to aid understanding within such a sizeable assemblage. No single scheme can be regarded as universally applicable, rather the different emphases and absences observed in a given assemblage may be used to determine the divisions and groupings that most help an understanding of each particular series of finds. Of the surviving buckles recovered from Meols 167 are assigned to these groups – just over half of the total attributed to the present period.

Pins not described are missing. Those that are present are, or appear to be, of the same basic metal as the frame, where this is not specified.

All plates are folded, with a slot for the pin unless otherwise indicated (**446, 451, 540, 566, 578, 579, 713, 723, 753** and **808** have holes for pins), and are recessed for the frame, again unless otherwise indicated.

Plain circular frames

Copper alloy

The mouldings on the heavy pins of **430** and **432** are often associated with large, robust frames of this shape. Without their pins these simple items can be difficult to differentiate from rings used for other purposes, notably curtain rings, though in those the frame is usually irregular (see **2026**ff). **416**, **419**, **424**, and **426** actually have the latter's distinctive, irregular profile, but their pins define their use as buckles (it is unclear whether this could be a secondary function).

415
Irregular, relatively deep frame, D 13mm; corroded (?)sheet pin.

416 Pl. 13
Irregular frame, D 14mm; blunt, wire pin is slightly bent from use.

417
Corroded; D 16mm; sheet pin is bent from use.

418
Corroded: (presumably originally circular) D 16mm; the corrosion has almost eaten through at one point.

419 Pl. 13
Irregular frame, D 18mm; much evidence of file finishing; wire pin has blunt tip that has split.

420
Irregular frame, D 18mm; prominent filing marks on frame; tip of wire pin is missing.

421
Incomplete: irregular frame, D 19mm; blunt, wrought-wire pin.

422
D 19mm; wrought pin.

423
Slightly irregular inner edge (outer edge is smooth), D-section frame, D 21mm; wear as from pin concentrated at one point.

424 Pl. 13
Irregular frame, D 23mm; sheet pin.

425 Pl. 13
D 26mm; sheet pin.

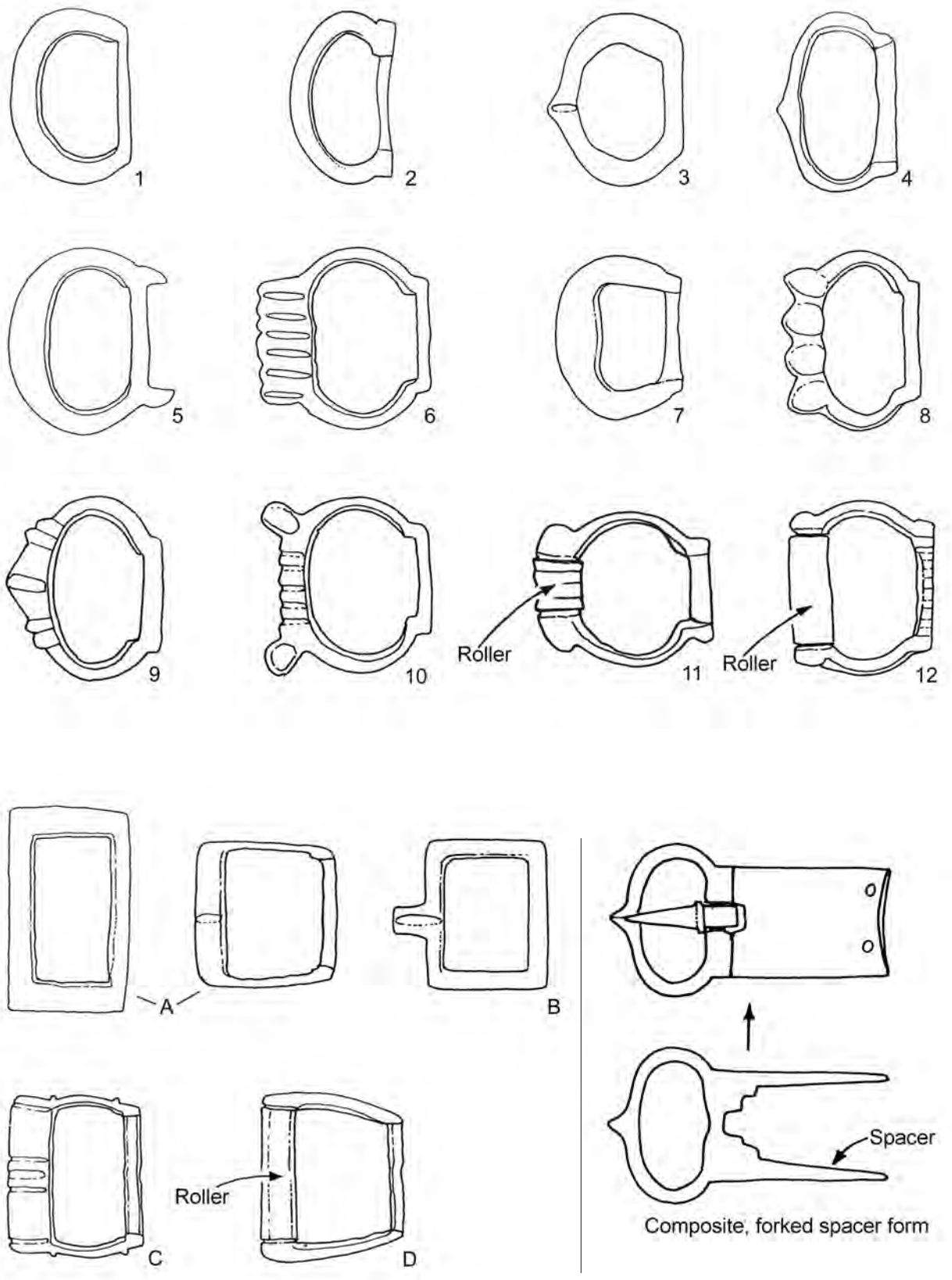


Fig. 2.5.1: Buckles: typological scheme (drawn by Nick Griffiths)

426 Pl. 13
Irregular frame, D 27mm; sheet pin.
427
D 31mm; slightly irregular.
428
D 31mm.
429
D 40mm; markedly uneven irregularities in frame (including a constriction) probably result from corrosion.
430 Pl. 13
D 40mm; cast, blunt pin has grip with three ridges (cf. stylised animal head) and is worn by frame.
Cf. following two items, and Egan and Pritchard (1991, 57, nos 32–3 and 37), assigned to the late-14th century.
431
Half of frame survives, D 43mm; cast pin has grip at loop (the former is worn by the latter).
432 Pl. 13
D 48mm; worn from pin.
433 Pl. 13 (Hume 1863, pl. VIII, 8), D 19mm, with a (?)sheet pin is (?)lost.

Lead/tin
434 Pl. 13
D 14mm; triangular section; prominently cut from sprue; worn as from pin; lead-rich pewter (Appx 2).
Presumably a local variant of the simplest standard form of shoe buckle (rather than circular in section, like those from London and elsewhere (Egan and Pritchard 1991, 62–4, nos 115ff, assigned to the 14th/early–15th centuries; Egan 2001, 93 and 110, no. 4 is production waste for similar accessories from Salisbury). This series probably continued in use into the early-16th century.
435 Pl. 13
Plain frame: D 27mm.
Possibly not a buckle frame (it is difficult to parallel this simple ring, which is listed here by analogy with some of the preceding copper-alloy ones). Lead/tin might be more appropriate for a brooch frame, though the absence of any restriction for the movement of a pin argues against this.

Circular with central bar

Copper alloy
436
Thick frame, D 25mm, with narrow bar (corroded through at one point).
A slightly less common variant on late-medieval shoe buckles in the capital (Egan and Pritchard 1991, 66, fig. 40, nos 215–19, again assigned to the early-15th century).

Lead/tin
437 Pl. 13
D 21mm; raised, bevelled band along centre of frame with hint of beading along edge.
This was a common form of late-medieval shoe buckle in London; cf. Egan and Pritchard (1991, 66–7, nos 221–59), assigned to the early-15th century.

Three-quarter circle/sub-oval frames
These relatively plain frames have apertures somewhat less than a full circle and more than half a one (for similar items in which the bars are offset see **524**, etc.) The difficulty of assigning some of the following items to one of the categories in the heading rather than the other means it is better with this present assemblage to list them together as a single grouping (a few could arguably have been listed under Plain oval forms).

Copper alloy
438
18 x 10mm; thick outside edge and narrowed bar; loop of (?)wire pin survives.
439 Pl. 13
16 x 13mm; thick outside edge; notch for missing pin.
440
18 x 13mm; somewhat thick outside edge (the marked narrowness of the bar is presumably exaggerated by erosion).
441
18 x 16mm; thick outside edge with notch for missing pin; bar recessed.
442 Pl. 13
14 x 17mm; narrowed bar with hole for rivet.
443 Pl. 13
16 x 18mm; markedly thin frame, with very narrow bar.
444
14 x 19mm; narrowed bar.
445 Pl. 13
37 x 24mm; prominent file marks on frame and wrought pin, which has irregular tip.

With plate
446 Pl. 13
14 x 16mm (18 x 6mm); narrowed bar; notch in thick outside edge for missing pin; plate has holes for pin and single, thin rivet (not bent in closure).
The unsuitable, wire-like rivet is presumably a replacement.

Circular/sub-circular with offset bar (including ornate versions)
These have frames in which the aperture is more than a full circle. Several are otherwise comparable with those listed below as oval (these are probably part of the same production repertoire as those ones).

Copper alloy
See also **464**, below.
447 Pl. 13
15 x 12mm; angled pin rest has notch flanked by pair of tiny, oblique ridges; recessed, offset bar.
448 Pl. 13
14.5 x 14mm; lipped outside edge has notch for missing pin; bar offset and recessed.
449
17 x 17mm; bar offset and recessed.
450 Pl. 13
41.5 x 53mm; slightly asymmetrical frame is broken: arrow-shaped rest for missing pin; bar offset.
Pin rest perhaps derived from animal-head motif (cf. Egan and Pritchard 1991, 61 and 65 buckle/brooch no. 212, assigned to the late-14th century).

With plate
451 Pl. 13
14 x 16mm (30 x 10mm); narrowed bar is recessed; plate has holes for pin and two rivets (a rough one, presumably a replacement, survives).

Oval

Copper alloy
This is a very large and diverse grouping. None of the frames is precisely symmetrical lengthways. The simplest are arguably **448–9**. Those with thick outside edges having a range of different mouldings, and the bars usually offset,

proliferated from the 13th to the early-15th centuries (with predecessors going back to the Saxon period). Many of those listed are paralleled by finds elsewhere. This includes some from manufacturing sites, notably in London, and also in York, Dublin, and other towns (Egan 1996, 85–8; 2003; forthcoming b; Mortimer in Ottaway and Rogers 2002, 2708–17; Hayden 2000, 105–7, fig. 10).

Nine basic designs from this major series can be suggested among the frames listed as 'oval' below . There may be differences in the periods of fashion for each of these; if so, they have still largely to be worked out. It should be possible further to clarify the repertoire and the dating of additional, less common forms from evidence elsewhere. See on square/rectangular plates for discussion of further associated forms, which were also part of the repertoire of the same manufacturers, judging from assemblages of wasters/discards found at two production sites in London (Egan 2003, 246–7, fig. 2, and 249–50; Egan forthcoming b). Variants of most of these designs were probably being manufactured together at several foundries in different towns. Forked-spacer frames for composite buckles (see **596**, etc.) were also produced at the same foundries. The range is such that relatively few similar frames, even when discovered at the same location, seem to be mould-identical. Some versions of the basic designs grade towards others through several variants, differing from each other only in minor respects (see, for example, **448** etc., above; **553**, **556**, and **694** are very similar to each other , though the former are listed below as oval and the latter as square/rectangular). The gilding on **755** seems to be characteristic of a few of the early frames from this series, while the extensive tooled grooving on **789** (not of the series) suggests a similar or even earlier date. Some frames with animal-head terminals apparently biting the bar at each side (see **311**, **312** and **313**, and **314** with a plate, all in early medieval section) are a fashion that originated in the Saxon period, though it may have persisted into the Norman period.

There are 12 suggested regular 'basic-design' groupings for oval frames of the high Middle Ages in England in the present state of knowledge of production groups (in London and elsewhere), as listed below . They are distinguished mainly by features of the outside edges, which in the majority are thicker than the bars. The groupings are applicable also to frames with plates (Fig. 2.5.1):

[1] The simplest oval frames of all, with thick outside edges and simple, narrow bars (the former sometimes with provision for the pin, and the latter can be recessed).

[2] Simple frame, again with thick outside edge, but narrow bar is offset (and may be recessed); the sides tend to be rounded in section (there may be a variety of minor ornamental or other details, and the frame may be a three-quarter circle).

[3] Plain (as **[1]**) but with angle or protrusion on outside edge to cater for the pin.

[4] Bar offset (as **[2]**) and has an angle or protrusion on outside edge to cater for the pin (bar usually narrow).

[5] As **[1]**, but with projection at each end of inside edge (the frame outline overall is comparable to a lombardic letter 'C').

[6] Thick outside edge sometimes widened into a distinct tab, with multiple grooves (may include pin notch); bar usually narrow and may be offset.

[7] Thick outside edge is internally biconcave, and may be so externally (bar usually narrow and offset).

[8] Multiple knops on thick outside edge (these are more or less well defined; there are usually four, but variants elsewhere may have different numbers, e.g. Ottaway and Rogers 2002); the form can merge with **[6]**; bar usually narrow and offset. This form is represented in London by a mould for producing 144 frames at one casting, as well as by wasters/discards (Egan forthcoming b; Egan and Pritchard 1991, 122, fig. 80 shows only half of the mould).

[9] Angled thick outside edge with flanking small projections, often with grooves; (bar usually narrow and may be offset).

[10] Outward-angled knops (often pronounced) flanking transverse grooves on thick outside edge; bar usually narrow and may be offset. (This form can grade into the preceding one).

[11] With narrow sheet roller on outside edge, which can take on a distinct, rod-like form, and may protrude to the sides; (bar usually narrow and offset).

[12] With broad sheet roller; bar usually narrow and offset; (these frames were apparently interchangeable between buckles and clasps).

[1] *Simple ovals with thick outside edges*

Parallels suggest a focus in the 13th and 14th centuries, probably with earlier antecedents. V ariants with similar profiles are usually flat (though the outside edges may be set at an angle as **478**, **483** and **790**, and in some instances the angled edge is biconvex, as with **520** – these may all be relatively early versions). A relatively broad, flat variety consistently exhibits prominent file finishing (which has occasionally produced a faceting effect) – **460**, etc.

Cf. Egan and Pritchard (1991, 264), assigned to the late-14th century.

452

11 x 13.5mm; bar recessed.

453

14 x 18mm; outside edge has pair of transverse grooves; bar recessed.

454 Pl. 13

15 x 18mm; outside edge has pair of transverse grooves; bar recessed.

455 Pl. 13

14 x 21mm; sheet pin; (a minor casting fault on the back has apparently had no effect on this accessory' s ability to function).

456 Pl. 13

Markedly asymmetrical frame: bar offset on one side only; 15 x 21mm.

Cf. **560** (with plate).

457 Pl. 13

14 x 22mm; narrowed bar; main, curved part of frame, including flat outside edge, has two paired lines of opposed, punched triangles around; sheet pin.

This form of tooling is unusual on a buckle frame; (?) 12th- to early-13th-century.

Cf. Hinton 1990, 515–6 and 522–3, nos 1135 and 1219, respectively assigned to the mid/late-13th century and (presumably residual) in the (?)16th century.

458 Pl. 13

22 x 25mm; outside edge has three transverse grooves slightly offcentrally; bar slightly distorted.

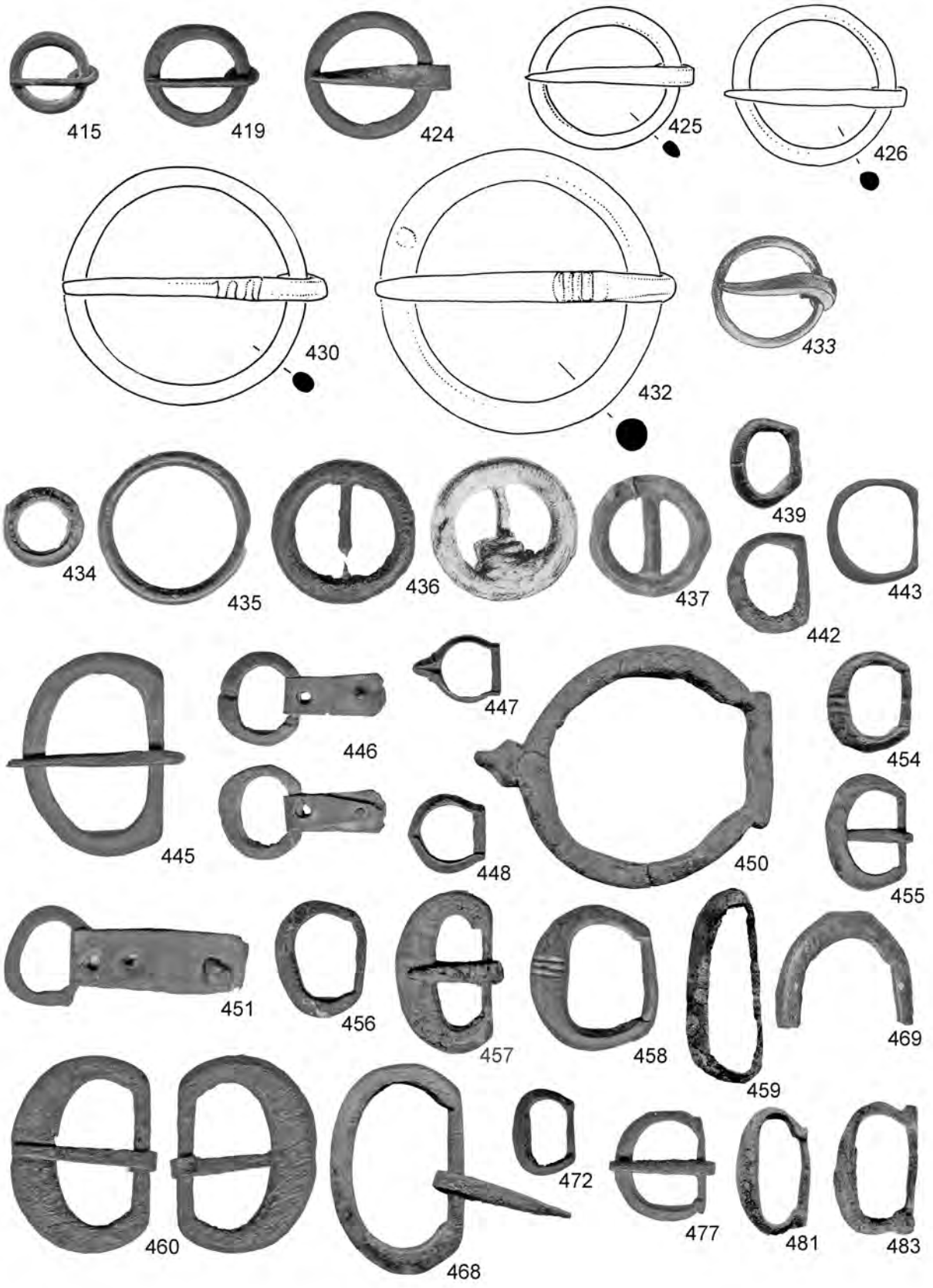
There is a slight hint of the biconcave aperture of group**[7]**.

459 Pl. 13

Distorted:13.5 x 34mm; (the sides are thinner than in most others of this form).

460 Pl. 13

22 x 34mm; thick outside edge and narrowed; slight angle at corners of the latter; prominent filing marks on frame; the flat-ended, sheet pin (which appears from the bevels of the frame to have been mounted the wrong way round) has



Pl. 13. Later medieval buckles

apparently worn a groove in the frame.
The pin is presumably a replacement.
461
24 x 34mm; bar incomplete; (pin missing).
462
22 x 36mm; prominent file marks; pin missing.
463
23 x 36; as preceding, but wrought pin.
464
24 x 36mm; notch for cast pin, which has transverse ridge.
465
24 x 36mm; wrought pin.
466
23 x 37mm; prominent file-finishing marks.
467
23 x 37mm; prominent file-finishing marks; pin could be bent sheeting, but ridge around loop suggests it is cast.
468 Pl. 13
24 x 37mm; prominent file finishing marks; sheet pin mounted upside-down.
469 Pl. 13
Fragment: 21+ x 24mm; flat area on surviving side where filing was not completed.
470
Fragment similar to preceding item: 22+ x 16mm.
471
Fragment: similar to preceding items; 23+ x 27mm.

[**2**] *Simple ovals with offset bars*
Cf. Egan and Pritchard (1991, 68 and 70, nos 271, 274 (though the bar there is more offset) and 277), all assigned to the late-13th/early-14th century, and Geddes and Carter (1977, 288–9, fig. 130, no. 9), assigned to the late-13th/early-14th century.
472 Pl. 13
10 x 14mm.
473
13 x 15mm; very thick outside edge; bar recessed.
474
16 x 15mm.
475
12 x 16mm; recessed bar broken and bent.
476
Frame corroded (right through on outside edge): 13 x 18mm; bar slightly recessed; sheet pin.
477 Pl. 13
16 x 19mm; blunt sheet pin.
478
30 x 19mm; outside edge is at an angle; bar recessed.
'January 1851' on accompanying card (presumably an indication of the date of discovery).
Cf. **483–4** and **790.**
479
Incomplete: 14 x 20mm; part of one side and recessed bar are missing.
480
16 x 20mm; bar recessed.
481 Pl. 13
14 x 22mm; pin missing.
482
17 x 22mm; slightly asymmetrical.
483 Pl. 13
Corroded: 14 x 23mm; outside edge is at an angle; bar is recessed, and projects at sides.
484 Pl. 14
Incomplete: 18 x 26mm; outside edge is at an angle and has engraved lines along both edges; bar missing.
485 Pl. 14
16 x 28mm; bar recessed.
486 Pl. 14
17 x 32mm; bar recessed; notch for sheet pin.
487
Incomplete and possibly distorted: 19(?) x 12mm; bar missing.
488
One side (about half of the frame) survives: 12 x 13+mm; broken off at notch for pin in thick, outside edge; bar narrowed.
489
Distorted fragment: (?) *c.* 13 x 18mm; outside edge, one side and part of bar survive (?similar to **476**).
490 Pl. 14 (Hume 1863, pl. VIII, 4) 16 x 27mm.
491 Pl. 14 (Hume 1863, pl. VIII, 6) 17 x 25mm.

[**3**] *Simple oval, with lip or protrusion for pin*
(no dated comparanda traced)
492
12 x 15mm; lip for missing pin; bar recessed.
493 (Hume 1863, pl. VIII, 7), 15 x 27mm, had a pronounced notch for the pin and a ?circular section bar.

[**4**] *With lip or protrusion for pin, and offset bar*
(Cf. Egan and Pritchard 1991, 74–5, no. 306–10 (with plates), assigned to the late-14th century).
494 Pl. 14
Incomplete: 11 x 13mm; notched lip for bent wire pin; one side missing.
495 Pl. 14
17 x 17.5mm; lip notched for missing pin; bar offset.
496 Pl. 14
13 x 18mm; outside edge angled to notch for pin; bar offset and recessed.
497 Pl. 14
18 x 22mm; angled pin rest with notch is flanked by outward-angled groove to each side; bar offset and recessed.
498 Pl. 14
17 x 29mm; markedly asymmetrical and frame distorted: outside edge has pair of obliquely grooved knops centrally flanking notch for missing pin (these features are offcentred); narrowed bar offset with thickened ends.
499 Pl. 14 (Hume 1863, pl. VIII, 1).
28 x 37mm; frame worn and broken through; rectangular, notched pin rest; narrowed, narrowed bar; the anomalously thin wire pin is presumably a replacement.
500 Pl. 14
27 x 38mm; similar to preceding item; offset, narrowed bar and notched, rectangular rest for sheet pin.
501
Fragment: 11 x 16mm; outside edge has protruding rest with notch for missing pin between pair of transverse ridges, one side and stub of bar survive.
502 Pl. 14 (Hume 1863 pl. VIII, 13) 12 x 12mm; had a wire pin.

[**5**] *Simple form, but with projections at ends of bar*
Cf. Egan and Pritchard 1991, 71–2, nos 284–5, assigned to the late-14th century; the similarity to a lombardic letter **C** or **D** is probably coincidental.
503 Pl. 14
32 x 35mm; notch for sheet pin.
504
29 x 36mm; outside edge is worn offcentrally from missing pin.

505
Slightly distorted: 29 x 41mm.
506 Pl. 14 Hume 1863, pl. VIII.2 appears similar , 29 x 35mm, but had what appears to be a wire pin.

[6] *Outside edge or tab has multiple (more or less transverse) grooves (may include pin notch)*
Both defining features are varied in prominence. The form can grade into square/rectangular group **C**.
Cf. Egan and Pritchard 1991, 73, no. 294, assigned to the late-13th/early-14th century.
507
Parts of bar and side broken off: 13 x 16mm; notch for pin, flanked by groove to each side.
508 Pl. 14
14 x 16mm; four grooves asymmetrically placed; bar recessed.
509
15 x 16mm; pair of grooves flanking notch for missing pin; bar slightly recessed.
510 Pl. 14
16.5 x 16mm; vestigial grooves.
511 Pl. 14
17 x 17mm; tab has series of grooves; offset bar recessed.
512
15 x 18mm; slightly thickened outside edge, three vestigial grooves; bar slightly recessed.
513
16 x 18mm; four grooves asymmetrically placed; bar recessed.
514
16 x 18mm; three grooves asymmetrically located; bar recessed.
515 Pl. 14
19 x 20mm; tab has seven transverse grooves; bar offset.
516 Pl. 14
15 x 21mm; pair of grooves flank notch for pin, and two outer grooves; offset bar is recessed only on one side.
517 Pl. 14
Incomplete: 16 x 22mm; unusually, the outside edge, which has a series of grooves at the corners and a notch for pin, is offset (the missing bar too was offset).
518 Pl. 14
18 x 22mm; tab has eight angled grooves (two groups, each of four); bar offset; sheet pin.

[7] *Outside edge internally biconcave (bars are narrowed and recessed)*
Presumably of comparable 13th/14th-century date to most of the other buckles listed in the present groups.
519 Pl. 14
16 x 13mm.
520 Pl. 14
12 x 19mm; slightly bilobed outline from flat-section outside edge and sides at an angle and with notch for pin; narrowed (round-section) bar protrudes at sides.
521 Pl. 14
16 x 19mm; outside edge has three transverse grooves; incomplete sheet pin is split along most of surviving shaft and unevenly broken off.
522 Pl. 14 (+Bu'lock) presumably Bu'Lock (1961, 22, fig. 7i), despite minor differences
17.5 x 20mm; central notch for distorted wire pin is flanked by three grooves on each side; bar recessed. An elegant accessory with only one precise parallel traced (Roberts 2007, 56, presumably from south-east England; Margeson 1993, 25–6, no. 132, excavated in Norwich, presumably residual in a context assigned to the 17th century, has several points of comparison).
523
21 x 25mm; outside edge has three transverse grooves; wrought pin.

[8] *Multiple knops (more or less well defined); they vary between rounded and angular; bars are offset*
Cf. Egan and Pritchard 1991, 72–4, nos 292, 302, 314, and 318, which are assigned to the mid-13th century , and (?)early-15th century (manufacturing evidence in London is assigned to the late-13th/14th century – Egan forthcoming b).
524
Incomplete and slightly distorted: *c.* 10 x 13mm; parts of one side and recessed bar are broken off; four uneven, pointed knops.
525 Pl. 14 (Hume 1863, pl. VIII,11).
13 x 14mm; six transverse ridges defining knops, the outer pair being slightly angled outwards; cast pin has flanged, transverse ridge.
526
12 x 15mm; thick outside edge has three knops defined by ridges; very narrow bar is recessed.
527 Pl. 14
16 x 20mm;six transverse ridges flanked by vestigial knops; bar offset and recessed; sheet pin.
528 Pl. 14
20 x 22.5mm; four knops, the outer two being slightly angled; sheet pin.
529
19 x 23mm; similar to preceding item, but pin missing.
530
Incomplete and corroded: 20 x 23mm; pair of knops flank asymmetrical moulding (cf. pair of smaller knops); bar recessed.
531
17 x 25mm; four knops; bar recessed.
532
18 x 25mm; as preceding item.
533
17 x 26mm; as preceding item.
534 Pl. 14
18 x 26mm; as preceding item.
535
19 x 26mm; as preceding item.
536
Incomplete and distorted: 23 x 27.5mm; thick outside edge has three grooves to each side of larger notch for missing pin; part of offset bar (which projects at corner) is broken off.
537
Fragment: 11+ x 15mm; ill-defined, uneven knops and transverse grooves; parts of both sides survive.
538 Pl. 14
Incomplete and corroded: 15 x 16mm; narrowed, offset bar broken off; outside edge has corner knops flanking four slight knops; hint of gilding.
The gilding is most unusual on this form of buckle, and suggests a relatively early date.

[9] *Angled outside edge with grooves and small projections (bars are offset)*
Cf. Egan and Pritchard 1991, 73–4, nos 295, 297, and 300, assigned to the late-13th–late-14th centuries. **796**, listed under Fragments, may be from a large version.
539
15 x 18mm; thick outside edge is angled with notch (for missing pin) and flanked by ridges; bar offset and recessed.
540 Pl. 14
16.5 x 18.5mm; outside edge has angled notch (for missing

pin) flanked by grooved ridges; bar offset and recessed. This unusually crisp (?unused) accessory has an arched profile (?uniquely in the series), possibly the result of an accident during manufacture.
541
18 x 21mm; outside edge has notched lip flanked by paired ridges; narrowed bar is recessed.
542
Fragment of outside edge: 12mm+ x 18mm; notched lip is flanked by ridges.
543 Pl. 14 (Hume 1863, pl. VIII, 12) (outside edge accreted in illustration) 16 x 18mm; wire pin.

[**10**] *With outward-facing corner prongs (bars are offset)*
Cf. Egan and Pritchard 1991, 73–4, no. 299, assigned to the late-14th century.
544 Pl. 14
18 x 19mm; notch for wire pin, which is bent from use; recessed bar is broken.
545 Pl. 14
24 x 20mm; the frame is nearly circular; outside edge has three transverse grooves; bar recessed.
546
21 x 21.5mm; notch for missing pin is flanked by two others.
547
21 x 22mm; notch for sheet pin.
548 Pl. 14
21 x 22mm; outside edge has five transverse grooves; bar recessed.

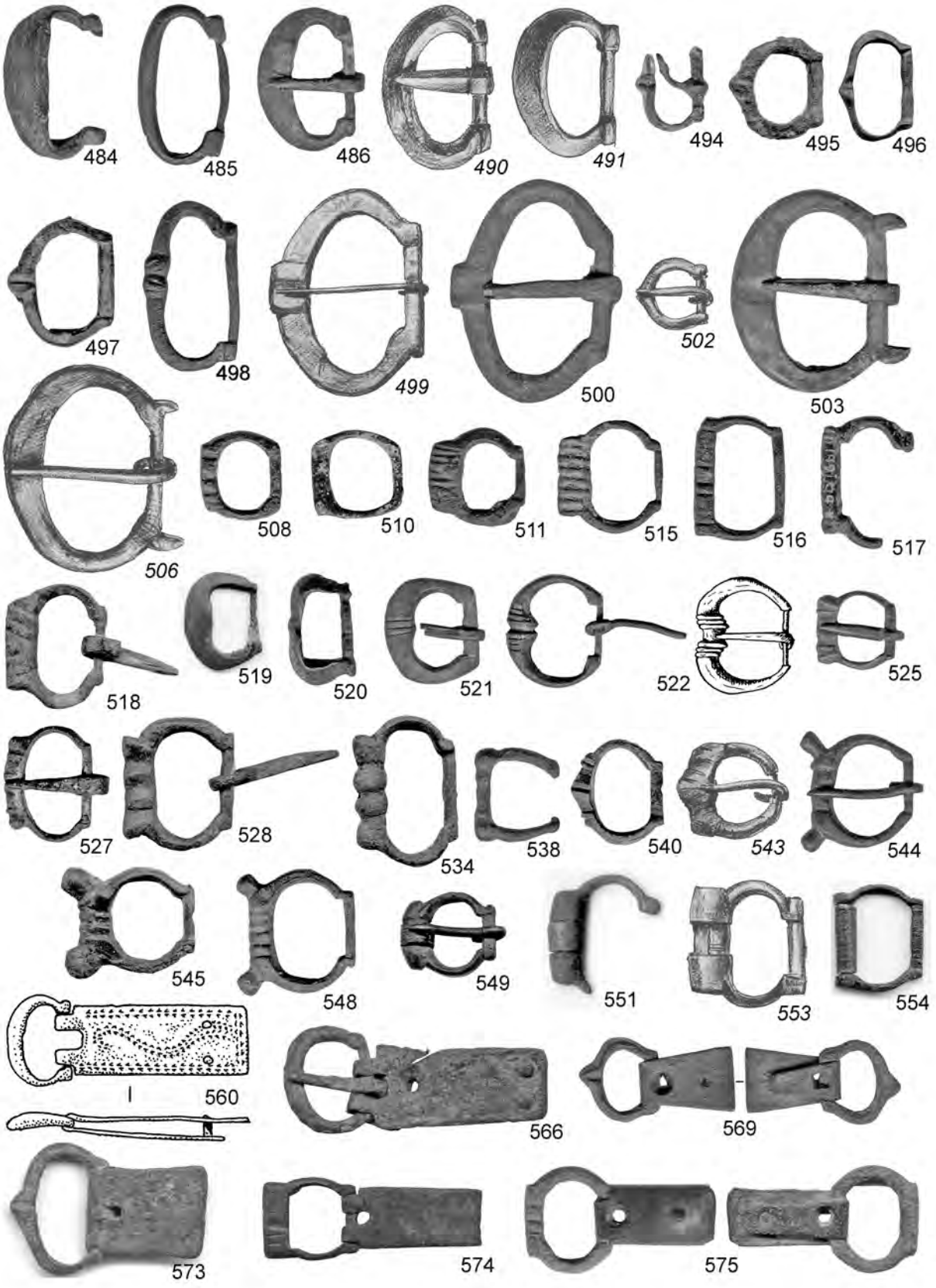
[**11**] *With narrow sheet roller (or recess for one)*
Cf. Egan and Pritchard (1991, 73–4, nos 288, 293, 298 and 301, and 76–7, no. 315 (with a plate)), assigned to the late-13th/early-14th century.
549 Pl. 14
15 x 18mm; thick outside edge is recessed for roller with series of circumferential grooves; bar offset and recessed; wire pin.
550
Fragment: 9+ x 19+mm; outside edge has central recess (for missing roller).
551 Pl. 14
Fragment: 20 x 22+mm; outside edge has central recess for roller; missing bar would have been offset.
552
Fragment: surviving W 30mm; thick, outside edge has central recess for roller.
553 Pl. 14 (Hume 1863, pl. VIII, 9), 20 x 22mm; central recess for roller.

[**12**] *With broad sheet rollers*
There is arguably continuity of form between those listed here as oval and ones listed below as rectangular; the attribution to one or other category is in some cases disputable. The frames of the present category appear to have been interchangeable with those for corresponding clasps. Examples in which the pivoting element is missing or distorted may be unassignable between these two categories. One is listed following the present items.
Cf. Egan and Pritchard (1991, 76, nos 315 and 317 (with plates)), assigned to the late-13th/early-14th century.
554 Pl. 14
16 x 19mm; offset bar and outside edge, the latter with a roller.
555
16 x 19mm; outside edge protrudes slightly at sides and has a roller.
556
17 x 23mm; edges offset and recessed; with roller.
(similar to **694** listed under Rectangular frames)
557
Incomplete and distorted: 16 x 21mm; outside edge is narrowed for roller between side protrusions; surviving, distorted side was originally convex.
As **593** (with plate).
Frame from a buckle as preceding items or from a clasp(?):
558
Corroded on one side: 15 x 18mm; sides slightly convex; outside edge recessed for incomplete, bent (?)roller; bar slightly recessed.

With plates
All main groups are represented, except [**5**].

[**1**] *Simple oval*
559
15 x 18mm (33 x 13mm); frame has thick outside edge and narrowed bar; tapering plate has slot for bent sheet pin, ragged, engraved lines along sides and inside edge, and holes for three rivets, of which two of sheeting (bent, U-folded strips) survive (the short back of the plate does not extend as far as that by the inside edge); buckle and rivets a similar, unalloyed copper (Appx 2).
The rivets are perhaps replacements, though the metal used in all parts appears uniform.

[**2**] *Oval with offset bar*
560 Pl. 14
12 x 15mm (32 x 11mm); thick outside edge and offset, narrowed bar; plate has edge decoration along sides of paired lines of punched, opposed triangles, and similar , sinuous paired line
centrally; two slightly protruding rivets.
561 (Newman 2006, 139, fig. 5.22).
12 x 15mm (26 x 12mm); asymmetrical frame has thick outside edge and offset and narrowed bar; corroded plate (one hinge at fold is broken) has engraved line along three sides, and central row of holes for three missing rivets.
562
Corroded: 10 x 16mm (24 x 9mm); three knop-headed rivets in plate with angled corners in inside edge; pin missing.
563
Corroded: 11 x 16mm (38 x 12mm); thick outside edge and offset and narrowed bar; plate, obscured by corrosion, has slot for (?)sheet or wire pin, engraved lines along edge(s) and five dome-headed rivets.
A high-quality accessory.
564
13 x 16mm (20 x 9mm); plate (broken off at back) has holes for wire pin with blunt tip and single protruding rivet.
565
Very corroded: frame presumed to have been oval with offset bar: 9 x 16mm (trace of plate W 4mm survives; pin missing.
566 Pl. 14 (Newman 2006, 139, fig. 5.22).
Corroded: 15 x 19mm (34 x 24mm); asymmetrical frame, with slightly thickened outside edge; narrowed offset bar; sheet pin is bent from use; slightly tapered plate (damaged by cutting, and incomplete at back) has ragged engraved line along one edge with hints of possible further decoration, and holes for three rivets, of which it retains two tack-like, ones with irregular domed heads.



Pl. 14. Later medieval buckles

[3] *Simple oval, with lip or protrusion for pin*
567 (Newman 2006, 139, fig. 5.22).
16 x 16mm (21 x 7mm); frame has notched lip and recessed bar; plate has holes for pin and single rivet (both missing).

[4] *With lip or protrusion for pin, and offset bar*
Cf. Egan and Pritchard (1991, 74–5, no. 307–10), assigned to the late-14th century.
568
Corroded: 13 x 14mm (13+ x 10.5mm); (?)slot for wire pin; plate incomplete.
569 Pl. 14
14 x 14mm (16 x 11mm); outside edge has angled rest with notch for pin; bar offset and recessed; taper of plate continues onto back; holes for missing pin and single missing rivet.
Cf. **496**, which lacks a plate.
570 (Newman 2006, 139, fig. 5.22)
19 x 14mm (25 x 15mm); frame has lip with notch and offset, narrowed bar; plate has convex inside edge and retains the two rivets.
571
19 x 15mm (17 x 13mm); lip has notch for pin; bar offset; incomplete plate retains both rivets.
572
15 x 19mm (17+ x 13mm); thick outside edge has angled pin rest with notch; bar offset; incomplete, folded plate with slot for pin retains part of single hole at break.
573 Pl. 14
18 x 23mm (20 x 15mm); frame has lip with groove for missing pin; bar offset and narrowed; plate (unrecessed, but worn) has holes for pin and two rivets; leather survives from strap.

[5] – *none known with a plate*

[6] *Outside edge or tab has multiple (more or less transverse) grooves (may include pin notch)*
574 Pl. 14
(Newman 2006, 139, fig. 5.22) 16 x 14mm (24 x 10mm); thick, offset outside edge (which gives an almost rectangular form overall) is angled in section, with four transverse grooves and pin rest; narrowed, offset bar; bevel-edged plate has single rivet retaining (?)leather from strap.
Cf. **706** and **709**.
575 Pl. 14
18 x 15mm (19 x 9mm); plate (which is smaller at back) has one hole for missing pin and one hole for rivet.
576
Corroded: 16 x 16mm (21 x 7mm); frame is slightly thick at corners; narrow plate has holes for missing pin and single rivet.
577
14 x 17mm (16 x 7mm); thick outside edge has three transverse grooves, one of which would act as a pin notch; incomplete, relatively narrow plate (unrecessed) tapers and has holes for wire pin (incomplete) and for (?)single missing rivet.
578 Pl. 15
(Newman 2006, 139, fig. 5.22).
15 x 21mm (26 x 12mm); frame has slightly convex sides and outside edge has four transverse grooves; plate with convex-angled inside edge has opposed, punched triangles forming central zigzag and perimeter lines along three sides; holes for pin and two rivets (all missing).

[7] *Outside edge internally biconcave (bars are narrowed and recessed)*
579
12 x 17mm (21 x 12mm); slightly asymmetrical; thick outside edge is angled in profile with protruding, notched pin rest; bar offset; folded plate has slot for sheet/wire pin and retains single rivet.

[8] *Multiple knops (more or less well defined); they vary between rounded and angular; bars are offset*
580
12 x 15mm (9+ x 6mm); plate has hole for missing pin and is broken off at hole for attachment.
581 (Newman 2006, 139, fig. 5.22).
14 x 15mm (25 x 11mm); thick outside edge has (?) five knops (the same moulding is present on both faces); offset, narrowed bar; blunt, sheet pin; the plate has lines of opposed, punched triangles along both sides and also twice transversely, flanking the single rivet, which has two further similar paired lines obliquely inside the field thus defined.
582
20 x 19mm; frame similar to **583**, but outer knops more angled; retains sheet pin and small fragment of folded plate.
583 Pl. 15
16 x 20mm (36 x 12mm); frame with four knops; plate (incomplete at back) has holes for missing pin and four rivets, two of which survive; perimeter lines of tooled, opposed, elongated triangles along sides and inside edge.
584
18 x 22mm (23 x 14mm); thick outside edge has three knops (of original four; an outer one has corroded away; both the side ones would have been slightly angled outwards) and offset and recessed bar; incomplete plate has offcentral slot for missing pin, and single, oversized rivet.

[9] *Angled outside edge with grooves and small projections (bars are offset)*
585
Corroded: 16 x 13mm (10 x 8mm); outside edge has notched lip flanked by ridges; bar offset and narrowed; apparently short plate is obscured by corrosion and has single rivet; pin missing.
586
17 x 21mm (25 x 15mm); thick outside edge has angled pin rest with notch and flanked by angular knops, each with a groove; bar offset and recessed; incomplete, folded plate has slot for pin and hole for single, missing rivet with another, gouged one (presumably a replacement).

[10] *With outward-facing corner prongs (bars are offset)*
587
21 x 19mm (24 x 11mm); thick outside edge has four grooves and pair of blunt corner knops set at angles; bar offset and narrowed; incomplete plate has slot for missing pin, holes for four rivets, of which two survive (slightly protruding), and paired lines of punched, opposed triangles along sides.
588 Pl. 15 (Newman 2006, 139, fig. 5.22).
20 x 22mm (37 x 11mm); thick outside edge has recess with five transverse grooves, flanked by two prominent, angled knops; bar offset and narrowed; plate has somewhat ragged sides, and roughly gouged slots for the wrought, sheet pin and for two rivets apparently made from sheet strips.
The plate is presumably a replacement to keep the impressive frame in use.

[**11**] *With narrow sheet roller (or recess for one)*
589
20 x 18mm; thick outside edge has a central recess for the bent-sheet roller with a tiny circumferential ridge centrally; wire pin; scrap of plate survives.
590 Pl. 15
20 x 21mm (35 x 13mm); frame has thick outside edge with knop-like terminals; sheet roller is multiply grooved circumferentially; bar offset and narrowed; plate has slot for bent, sheet pin, pair of ragged engraved lines along sides and inside edge, and holes for five wire rivets, all of which survive (two of them being bent around at the back).
591 (Hume 1863, pl. VII, 1; Chitty and Wärhurst 1977, no. 34); 20 x 25mm (41 x 19mm) (?) sheet pin, five rivets for attachment.
592 Pl. 19 [also listed under Mounts following **1023**] 38 x 22mm; was a buckle and plate with a square mount (Hume 1863, pl. VII, 4).

[**12**] *With broad sheet roller*
593
18 x 16mm (25 x 13mm); frame has outside edge with roller flanked by slight knops, and narrowed, offset bar; plate has slot for missing pin, and single rivet.
594
14 x 22mm (23 x 17mm); outside and inside edges offset ; incomplete folded plate has back broken off, slot for pin and hole for single, missing rivet.

Frame sharing features of groups [6] *and* [8]*(?)*
595
The frame combines characteristics of both groups: 18 x 20mm (29 x 12mm); worn frame has thick outside edge with traces of transverse grooves, slightly projecting at sides and offset and narrowed bar; plate has inward-angled inside edge (roughly cut), holes for pin and three rivets (one of which survives) punched from the back, and double lines of punched, opposed sub-triangles along sides.
Cf. **717** (with a sub-rectangular frame) and strapend **1521** for the inside edge.

Rounded frames with forked spacers

Copper alloy
There are eight of these (plus one ?lost) and also 13 of the corresponding forms of buckle/strapend plates **1594, 1626**, along with several possible fragments. Not one of these composite accessories, the most accomplished of the later medieval mass-produced buckles, has survived complete in its original state from Meols. It is difficult with the three fragments listed last to see just how they could have become so badly damaged. The frames are (or are presumed to have been) oval, apart from **596** and ***604***, which are circular.
Similar items have been found widely across England (e.g. Egan and Pritchard 1991, 79–82, nos 322–30), from deposits assigned to the late-14th/early-15th centuries, perhaps lasting just into the 16th century – see ***604***. They may be the form described in a document of 1344 (Egan and Pritchard 1991, 80, nos 323 and 326), which have the same aperture form as all the following (apart perhaps from **602**) and are assigned to the late-14th century).
596 Pl. 15
15 x 13mm (21 x 9mm); circular frame with vestigial lip; the incomplete (?replacement) sheets, the upper one with a doubly engrailed inside edge, are held by one rivet (originally two) and both appear to fall short of the frame by enough margin to fit the missing pin into the gap.
See Ottaway and Rogers (2002, 2890–1, no. 13338) for a similar find from York from a deposit assigned to the late-15th/early-16th century Egan (2005b, 339 and 352, fig. 159, no. 2) for one from Coventry from a deposit assigned to 1385–1423, and Margeson (1993, 26 and 28, fig. 13, no. 138) for one from Norwich (residual as found); this particular form may be among the latest of the category , though it may have had a long duration.
597 Pl. 15 (Hume 1863, pl. 7.13).
Incomplete: 17 x 18mm; frame, with lipped pin notch, is complete; only stubs of spacer survive.
598
Incomplete: frame, 16 x 20mm, is broken through at one point; ends of spacer are broken off (one side is notably thin); wire pin survives.
599 Pl. 15
18 x 20mm (22 x 12mm); lipped pin notch; the aperture between the prongs is narrowed by a single rebate on each side; (plate sheets missing).
600 (probably Hume 1863, pl. VII, 7).
20 x 21mm (18 x 14mm); prominent file-finishing on frame; outside edge partly narrowed (?from corrosion); plate sheets missing; distorted wire pin.
601
Fragment: (22 x 16m); spacer (16 x 11mm) and inside edge of frame survive, along with cast pin (bent) with collar.
602
Fragment: one side only of spacer (L 18mm) and rounded frame; surviving 29 x 8mm overall.
This spacer may, in contrast with the others listed here, have comprised two simple prongs joined without further moulding at the bar (cf. Hinton 1990c, 517–18, fig. 131, no. 1159, from Winchester, assigned to the 14th century).
603
Fragment of frame and spacer: (22 x 11mm); cast pin with collar survives.
604 Pl. 15 (Hume 1863, pl. VII, 9); a circular frame, 34 x 12mm.

Sub-round frames with integral strap sleeves

Lead/tin
N.B. in descriptions of integral lead/tin sleeves for buckles and clasps: four (i.e. two main) faces all joined = 'full sleeve'; front and back sheets/tabs only = 'open sided'.
The frames of **605** and **608** are circular, **606** is sub-oval, **607** is D-shaped (**856** may have been similar), and incomplete **610** (more decorative than the others) is also oval, while surviving narrow fragment **611** suggests a different rounded form. (?)Separated frame **609** appears to be from another oval version. Buckle plate **855** comes closest to **611** and **606**. There is some local manufacturing evidence for these accessories in the form of waster **2291** (listed under Metalworking) which is closest in form to **606**, though it is markedly neater in detail than all those listed in the present group.
605 Pl. 15
40 x 9mm; frame has lip notched for pin (worn here); full-sleeve plate (incomplete) is roughly holed for missing pin and single missing rivet (rust may be from both of these).
606 Pl. 15 (Hume 1863, pl. VII, 15).
30 x 17mm; slightly asymmetrical frame has notched lip for pin; integral, open-sided plate retains inserted iron bar and has holes for single iron rivet; loop of iron-wire pin survives; tin (Appx 2).
607 Pl. 15 (Hume 1863, pl. VII, 14).
28 x 18mm; D-shaped frame with lip notched for pin,

blending into integral, open-sided strap, with raised lines along the sides; pierced holes for pin and single rivet (both missing).
608
40 x 18mm; as **611**, but more corroded.
609 Pl. 15
Oval frame only (perhaps slightly distorted): 22 x 20mm; small section missing at rounded inside edge; notched lip for pin (missing) is flanked by moulding, which continues onto the underside; tin (Appx 2). Presumably cut off an integral plate, as in the preceding items.
610
Incomplete and corroded: 22 x 23mm; protruding pin notch is flanked by paired grooves; surviving fragment of offset plate appears to have decorative border of beading, though this could perhaps be corrosion.
611
Frame is fragmentary (one side only, possibly distorted): 25 x 13+mm; open-sided plate is narrower; lead-rich pewter (Appx 2); rust (?)from iron rivet; trace of (?)leather strap; missing pin has left imprint on plate; excess metal remaining in a couple of areas may be attributable to careless trimming rather than the complete omission of this process; (presumably of the present category – it appears not to have had the straight sides of **757**).
See also 'lyre-shaped' **764**, etc.

Double oval

Copper alloy
612 Pl. 15 (Hume 1863, pl. IX, 3).
Worn: 21 x 29mm; sub-oval loops; biconvex outside edge has notched, lipped pin rest; bar has collars defining rebate for missing pin; narrowed inside edge continues to each side as thick lateral knops. Presumably later medieval.
613 Pl. 15
Incomplete: 21+ x 29mm; surviving loop is rounded, the other almost completely broken off.
It is most unlikely that this was a single-oval frame with projections, as on **503** etc., though it could have been used in its present state
614 Pl. 15
38 x 34mm; rounded loops, both with oblique grooving.
615 Pl. 15
Fragment: 19 x 9+mm; surviving edge, angled at centre, and part of one side.
616
Fragment: 20+ x 24mm: most of one rounded loop, part of the other and the bar broken off.
617 Pl. 15
(Hume 1863, pl. IX,1) with minor variations, and Egan and Pritchard (1991, 82–3, no. 342) (with a slightly different profile), assigned to the early-15th century.
618 Pl. 15
(Hume 1863, pl. IX, 2) was also of this basic form; incomplete (the metal is not certain – cf. Egan and Pritchard (1991, 84–5 and 87–8, nos 344 of copper alloy and 347 of lead/tin), both assigned to the early-15th century).

Lead/tin
619 Pl. 15
Incomplete, distorted and corroded: 26 x 27mm in surviving state (estimated 40 x 28mm originally); pin missing.
620
Incomplete and distorted (twisted off at one end); 32+ x 34mm.

D-shaped
(Sides meet bar nearly at right angles – the plainest which might be listed under this form, **442–44** are listed as three-quarter circles.).

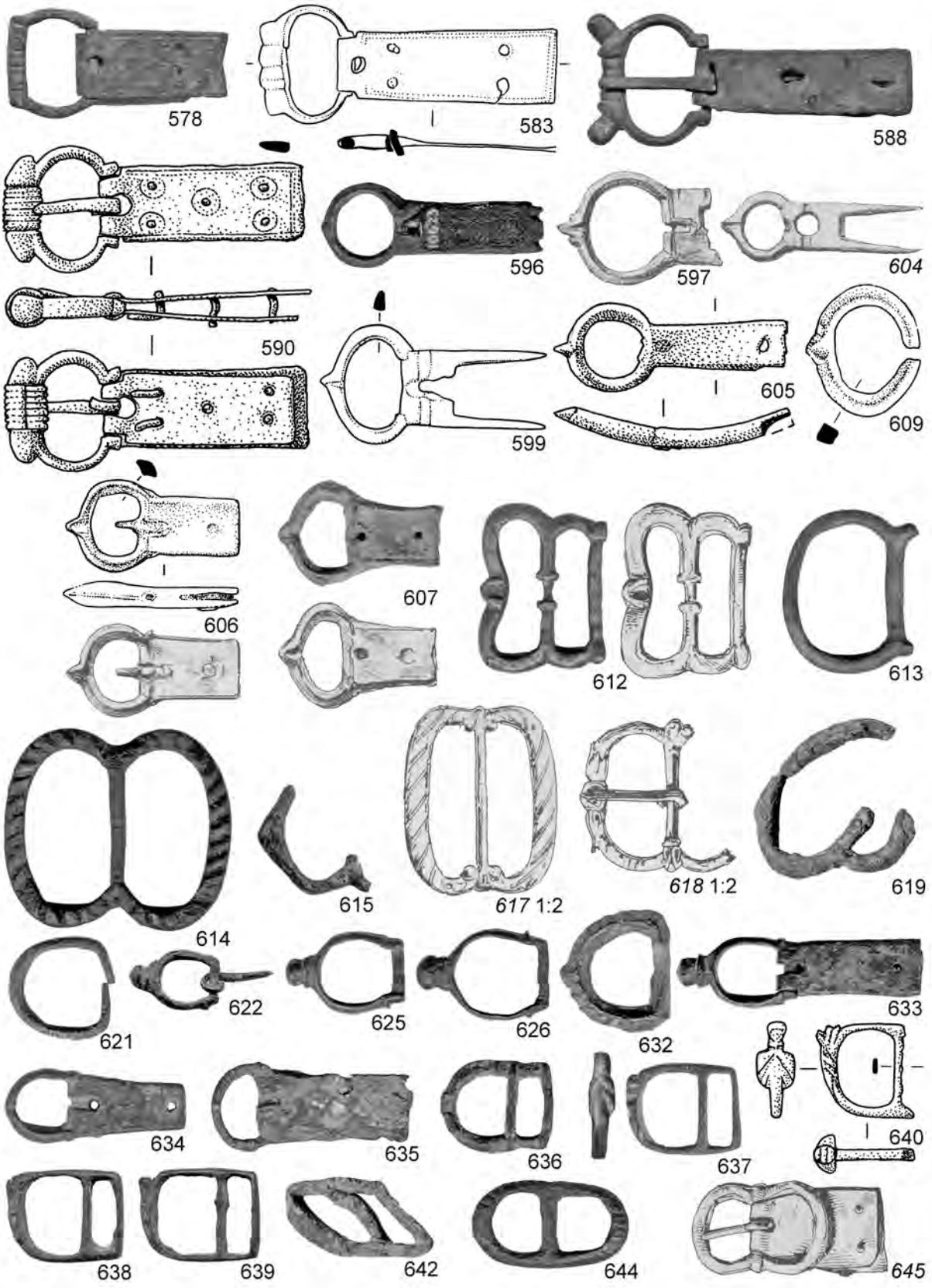
Copper alloy

Plain
621 Pl. 15
18 x 17mm; inside edge is discontinuous.

Slightly elongated, with knops
The following eight items seem regularly to have functioned as buckle frames, as shown by a pin or an appropriate plate (these features are respectively present below only on **622** and **633**, cf. Egan and Pritchard (1991, 94, no. 421, fig. 59) with a plate and assigned to the late-14th century). They have vestigial lateral ridges near the basal corners (**631** and **632** lack the relevant parts). **1622** is of the same form as the present items, with lateral ridges, but it was apparently used as a strapend. Eight further, similar items with the addition of integral rivets are presumably a form of strap loop (see **1354**ff, listed under Mounts – these all lacking the lateral ridges on the frames). Some could have had alternative functions, possibly acting as pendants (smaller , circular versions such as **1251** were probably all pendants hung from bar mounts, perhaps purely as ornament). T wo indeterminate fragments are listed here, at the end of those thought on present indications to be buckles. The presence or absence of ridges has no obvious practical implication, so both varieties lacking rivets might have been interchangeable.
622 Pl. 15
15.5 x 11mm; wire pin.
623
21 x 13mm.
624
22 x 13mm; mark in centre of bar could perhaps be damage from a pin or a similar lost component to that surviving on strapend **1622**.
625 Pl. 15
21 x 14mm.
626 Pl. 15
23 x 15mm.
627
23 x 15mm.
628 (Hume 1863, pl. X, 6).
23 x 15mm.
629
20 x 30mm (no ridges).

Indeterminate fragments (lacking the base where a rivet might or might not have been present)
630
13+ x 14mm.
631
21 x 17mm; one potential lateral ridge survives.

Lead/tin
632 Pl. 15
Crude: 19 x 20.5mm; irregular profile for outside edge from series of transverse ridges – largest protrusion is in centre, where there is an arrow-like configuration; some wear from missing pin. The crispness of the angles suggests little use. An unusual form, though what appear to be parallels (with pins of iron) survive in place on two late medieval pattens from Lüneburg in Germany (Haak 2004, figs 1, lower, and 2).



Pl. 15. Later medieval buckles

D-shaped with plate
633 Pl. 15
22 x 13mm (24 x 9mm); pin missing; single rivet.
Cf. **622**ff. Copper alloy.
634 Pl. 15
15 x 12mm (20 x 10mm); notch for missing pin; pair of ridges near inside edge; slot for missing pin; hole for single missing rivet. Lead/tin.
635 Pl. 15
Corroded: 10 x 15mm (26 x 11mm); slot for wrought pin; single rivet survives. Lead/tin

D-shaped with central bars

Copper alloy
636 Pl. 15
19 x 15mm; pair of transverse ridges on outside edge define rest for missing pin; bar continues as raised ridge over sides.
The following five items comprise a distinct group, characterised by the highly stylised animal heads (each slightly different) on the frame's outside edge or, in the case of **641**, its side.
It is not certain that these items were buckle frames. No parallel with a pin to confirm this identification has been traced, though **640** has wear consistent with that from one. Alternatively, they could have acted as strap loops, a category apparently represented from Meols by a single-loop version having the animal head and with a rivet.
The present group of these unusual items appears to be the only multiple find from a single site (cf. Ivens 1995, 349 and 356, fig. 156.122 W estbury no. 100, excavated in Buckinghamshire in a deposit assigned to the late-14th/16th centuries, there taken to be a buckle). A 14th-century date may be appropriate (these accessories are unlikely to be much later).
637 Pl. 15
18.5 x 11mm.
638 Pl. 15
20 x 16mm.
639 Pl. 15 (Hume 1847c, fig. 20; 1863, pl. X, 1)
21 x 16mm.
640 Pl. 15
Incomplete (inside edge and corresponding side broken off); 15mm+ x 14mm; animal head has asymmetrically positioned notch between snout and eye, worn presumably by missing pin.
641
Incomplete: only outside edge survives, W 18mm; animal head located on side.
Cf. also ***1353*** (Hume 1847c, no. 12; 1863, pl. X, 12), a lost strap loop of similar design.

Lead/tin
The apparent curvature of the outside edges could perhaps be the result of distortion.
642 Pl. 15
Distorted and corroded: *c.* 24 x 14mm; thick outside edge.
643
Distorted and corroded: *c.* 22 x 15mm.

Double D-shaped frame (oval with central bar)

Copper alloy
644 Pl. 15
26 x 16mm; angled frame has series of transverse grooves along perimeter.
Cf. Hinton 1990c, 515 and 517, fig. 130, no. 1147, assigned to the late-13th/early-14th century (?possibly residual) – this has grooves only along the inner loop of the frame.
645 Pl. 15
(Hume 1863, pl. IX, 4) 24 x 15mm; shown complete with plate and pin attached.

Ornate double frames

Copper alloy
646 Pl. 16
22 x 15mm; D-shaped/trapezoidal frame with central bar; the latter part has a rectangular , notched rest for the missing pin.
Perhaps shown, with pin and folded sheet plate (bar ?wrongly delineated) in Ecroyd Smith (1867, pl. 1, no. 11) (items in the Ecroyd Smith collection, found in 1866).

Lead/tin
647 Pl. 16
38 x 23mm; round ends, moulded with pin notch etc. and with beading along perimeters; concave sides each with triple reel-like moulding; holes for missing bar (presumably of iron from the traces of rust).
Could be 15th- or 16th-century.

Rectangular/square
Several are slightly trapezoidal or ovoid (the point at which some of these begin to be listed instead as trapezoid or oval is a matter of fine judgement – see **666**, etc.).

Copper alloy
The main groupings may be distinguished for the items listed below (including ones with plates) analogous to groupings for oval frames (the outside edges in **C** and **D**, and some of **A** and **B** are thick; decorative grooves are usually transverse) (Fig. 2.5.1):
[**A**] Plain, simple forms.
[**B**] As [**A**], but with a lip for the pin.
[**C**] (Usually) multiple grooves in outside edge; some have slightly convex sides and other traits similar to those of oval group [**6**], above (some, e.g. **674**, are tooled on the back). **685–6** seem to come closest to these from their outlines, despite their lack of grooves.
[**D**] With sheet roller.

[**A**] *Plain, simple forms*
Cf. Egan and Pritchard (1991, 96, nos 434–6 (with plates)) assigned to the late-14th century.
648
Corroded: 14 x 11mm; slightly trapezoidal; notch for missing pin; narrowed bar.
649
12 x 12mm; slightly trapezoidal; notch for missing pin.
650
14 x 12mm; notch for missing pin.
651
32 x 12mm; cast pin has ridge at loop.
652
14 x 13mm; slightly trapezoidal; thick outside edge has notch for missing pin.
653 Pl. 16
15 x 13.5mm; slightly trapezoidal; notch for missing pin.
654 Pl. 16
14.5 x 14mm; slightly trapezoidal.
655
15 x 15mm; notch for sheet pin.

656
18 x 30mm; pentagonal-section frame is still sharp, with prominent marks from filing; sheet pin.
657 Pl. 16
21 x 31mm; sheet pin.
658
22 x 33mm; loop of sheet pin survives.
659
22.5 x 35.5mm; prominent file-finishing marks; cast pin has transverse ridge.
660
Distorted fragment of presumed plain frame; 36 x 8+mm.
661
Fragment: bar and part of one side missing; 12 x 11mm; crisp filing marks (without the pin notch this might have been interpreted as a strap loop).
662
Incomplete (bar missing): (?)15 x 12mm; slightly trapezoidal; notch for missing pin.
663
Distorted fragment: three plain, straight edges – (?)one short side and parts of two longer edges, i.e. 21 x 25+mm.

[B] *Simple but with lip for pin*
(No datable parallel traced.)
664 Pl. 16
13.5 x 15mm; prominently projecting, notched rectangular rest for sheet pin.

[C] *Multiple grooves in outside edges; some have slightly curving sides*
N.B. Despite their lack of decorative grooves (which may simply have been accidentally omitted during batch work) **685** and **686** are included here rather than with group **[A]**, because of their curving sides. Cf. Egan and Pritchard (1991, 96–7, nos 437–9 (with plates)), assigned to the late-14th century.
665
14 x 12mm; three grooves.
666 Pl. 16
16 x 13mm; slightly convex sides; three grooves; offset bar slightly recessed.
667
Bar incomplete: 14 x 14mm; three grooves; slightly convex edges with ridge near each corner.
668
Bar incomplete: 15 x 14mm; three transverse grooves; slight ridge near each corner.
669
15 x 15mm; grooves asymmetrically, three near centre and one near a corner; markedly thin bar.
670 Pl. 16
15 x 15mm; slightly convex sides with vestigial flanges near corners; notch for missing pin is flanked by pair of grooves with two more near corners.
671
16 x 15mm; slightly convex sides with vestigial ridges near corners; notch for distorted wire pin flanked by a pair of grooves.
672
16 x 15mm; slightly convex edges with ridges near corners; five grooves; bar narrowed and offset; sheet pin.
673
17 x 16.5mm; slightly convex sides; two pairs of grooves flanking larger pin notch, bar offset.
674 Pl. 16
18 x 22mm; sides slightly convex and with ridges near corners; thick outside edge has pentagonal section, and three central grooves on one face, the outer pair continuing and converging on the opposite face – these are flanked on both faces by grooves apparently continuing the sides.
A neatly finished accessory, the tooling on which makes it look as if more than one component is involved (i.e. it suggests a separate roller).
See **682** and on **705A** for grooves continuing onto the back.
675
8 x 19mm; bar incomplete and distorted: grooves near corners and pair centrally; vestigial ridges on one side.
676 Pl. 16
Partly corroded: 17 x 20mm; notch for the cast pin with flanged, transverse ridge, is flanked by grooves and pair of slightly engrailed recesses; paired vestigial ridges near corners on sides.
677 Pl. 16
21 x 31mm; slightly convex sides with ridge near each corner; five grooves include notch for sheet pin.
678
Incomplete: bar missing; 16 x (?)12mm; notch for missing pin and a further groove to one side.
679
Fragment: 9+ x 13mm; bar and parts of sides missing; five transverse ridges include notch for missing pin.
680
Fragment: bar missing: 13 x (?)13mm; (?)eight grooves, including notch for missing pin.
681
Fragment: 12+ x 17mm; thick outside edge, with five transverse grooves, and part of one slightly convex side, with ridge near corner, survive.
682 Pl. 16
Fragment: thick outside edge has notch for pin flanked on each side by a transverse groove (both of which appear to have been continued on the back at about 45 degrees), and parts of sides; 11+ x 18mm.
The deeply cut, oblique grooves on the back (which might have weakened the frame significantly , though the breaks are elsewhere) have not been paralleled; they suggest the use of a tool more like a saw than a file for adding grooves.
See **705A** for grooves on back.
683
Fragment: outside edge and one side (with ridge) survive; 13+ x 20mm.
684
Fragment: bar missing; 15 x 23mm; slightly trapezoidal; thick outside edge has transverse grooves flanking notch for pin.

Lacking grooves:
685 Pl. 16
14 x 11mm; slightly convex sides; incomplete bar offset, narrowed and recessed.
686 Pl. 16
14 x 13mm; slightly convex sides; bar slightly recessed.

[D] *With sheet roller in recessed outside edge*
(Egan and Pritchard 1991, 95, no. 426, assigned to the late-14th century, would have a similar description although it is visually different; pp. 76–7, no. 315, one with slightly convex sides, assigned to the late-13th/early-14th century, is also similar but catalogued as oval).
687 Pl. 16
12 x 10mm.
688
16 x 11mm.

689 Pl. 16
11 x 13mm; slightly trapezoidal; frame sides and bar are flat in section; transverse ridge at each side near outside edge; wrought (?)sheet pin.
690 Pl. 16
14 x 13mm; sides slightly convex.
691
15 x 14mm; slightly trapezoidal; wire pin.
692
17 x 20mm; slightly trapezoidal: recessed bar is (?)worn centrally from missing pin.
693 Pl. 16
17 x 21mm; slightly trapezoidal; wire pin survives.
694
17 x 23mm; slightly convex sides; bar recessed (similar to **556**, which is listed under Oval frames).
The following two have the roller or a pivoting clasp end missing from the recessed outside edge; cf. the preceding buckles or clasps as Egan and Pritchard (1991, nos 552, etc.) (assigned to the mid-14th century):
695 Pl. 16
19 x 15mm.
696
Fragment (?bar and roller missing): (?)15 x 12mm; slightly convex sides with vestigial ridges near corners.

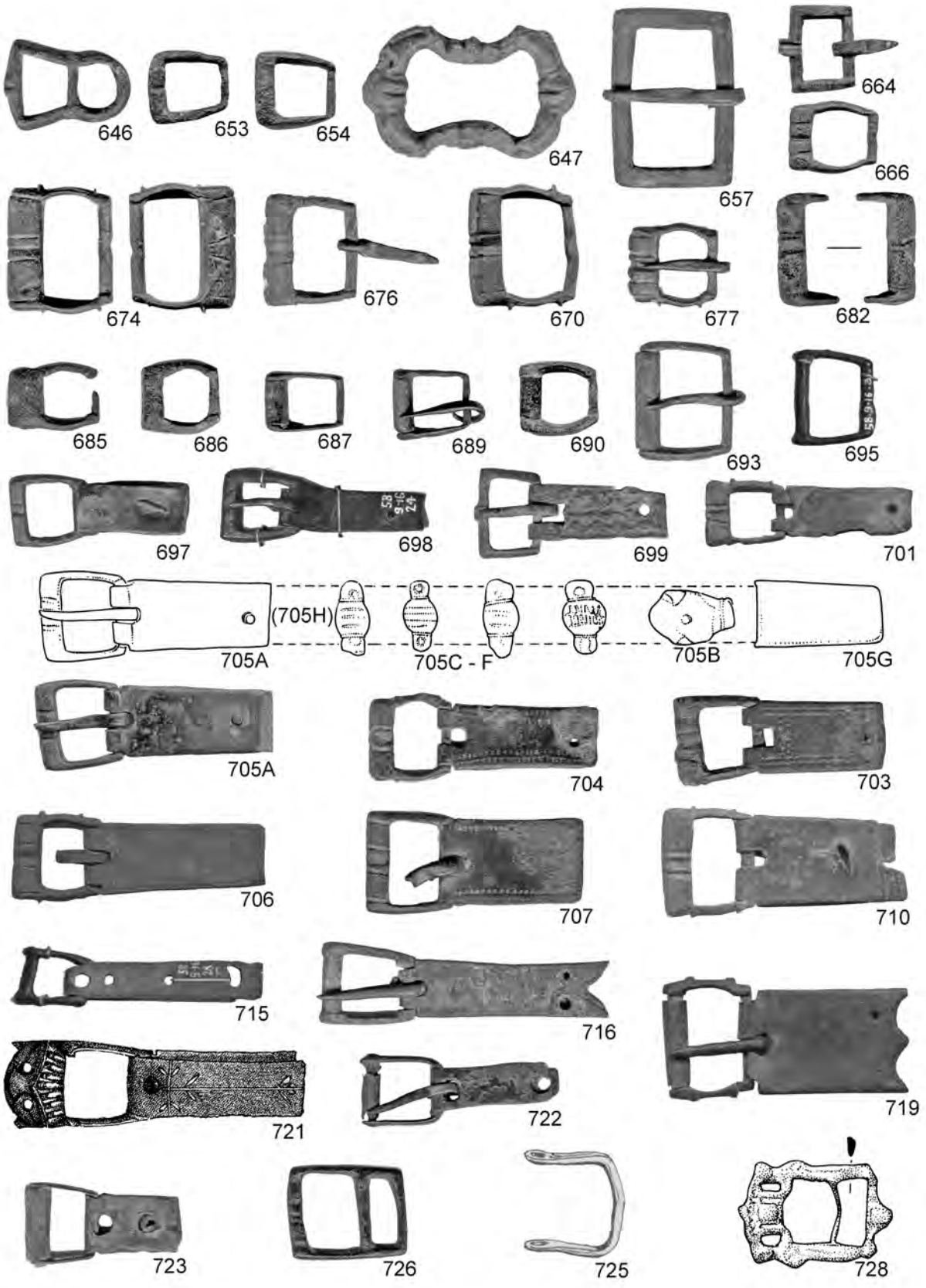
With plates

[A] *Plain simple forms*
697 Pl. 16
14 x 13mm (20 x 8mm); slightly trapezoidal frame' s thick outside edge has groove for missing pin; plate has holes (rusted) for pin and single rivet made from strip of sheeting. The rivet is presumably a replacement.
698 Pl. 16
13 x 12mm (25 x 8mm); thick outside edge has notch for U-shaped wire pin; incomplete plate has concave inside edge and holes for pin and single, missing rivet.

[B] *Simple, but with lip for pin*
699 Pl. 16
12 x 15mm (23 x 8mm); notched lip for sheet pin; plate has very large slot and hole for single missing rivet.

[C] *Multiple grooves in outside edges; some have slightly curving sides*
700 (Newman 2006, 139, fig. 5.22).
13 x 11mm (26 x 8mm); two grooves; narrowed bar; tapered plate has holes for single rivet (missing).
Cf. Egan and Pritchard 1991, 96, no. 434, assigned to the late-14th century.
701 Pl. 16 (Newman 2006, 139, fig. 5.22).
14 x 11mm (24 x 8mm); slightly convex sides with ridge near each corner; thick outside edge has three filed grooves; corroded plate has illegible tooled decoration in transverse band between raised lines around hole for single rivet (missing).
702
Corroded (this has eaten through both frame and plate at various points): 13 x 13mm (24 x 11mm); multiple grooves flanking notch for pin; plate has two holes for attachment, one probably replacing the other.
703 Pl. 16
15 x 14mm (24 x 12mm); slightly trapezoidal; four transverse grooves (asymmetrically placed); plate has slot for missing pin, perimeter paired lines of punched, opposed triangles along sides and edges, and single rivet; leather from strap survives.
704 Pl. 16
13 x 15mm (28 x 11mm); slightly curved sides; plate has slot for pin, hole for single missing rivet and lines of opposed punched triangles along sides.
[Items grouped under **705:**
705 Pl. 16 (a recent combination) modern leather strap **H** (very thin, probably introduced as a museum display item in recent times, hence not catalogued under leather objects in its own right); this is mounted with later medieval **A** buckle with plate, **B** animal-head mount (follows **1130**), **C-F** four bar mounts (which follow **1227**), and **G** a strapend (follows **1540**). All the accessories except **B** are paralleled in London, where they are assignable to the late-14th century. There is no documentation detailing whether or not these items were all found together. They are described separately under the appropriate categories below.
705A 14 x 15mm (27 x 12mm); buckle, slightly trapezoidal; three grooves include notch for sheet pin), the outer ones converging as a V motif on the back; plate has holes for single rivet; sheet pin.
(See **674** and **682** without plates), for other frames with the grooves continued in this way onto the back.
706 Pl. 16 (Newman 2006, 139, fig. 5.22).
15 x 15mm (31 x 12mm); slightly curved sides; five grooves include pin notch (moulding continues on back); plate has perimeter double lines of opposed, punched triangles (concave around incomplete, sheet pin) with hints of possible engraved motif in central field that has been abraded; single rivet retains leather from strap.
Cf. **709**, etc. for frame profile.
707 Pl. 16
15 x 17mm (24 x 14mm); five grooves; plate has lines of opposed punched triangles along sides; sheet pin is incomplete.
708 Pl. 16
17 x 18mm (22 x 13mm); slightly trapezoidal; four asymmetrically placed grooves include pin notch; recessed plate has slot for missing pin, outline along sides and edges of punched, opposed triangles (concave around pin slot), and single rivet.
709 (Newman 2006, 139, fig. 5.22).
18 x 21mm (28 x 14mm); frame similar to that of **706**, but pair of outer grooves in outside edge near corners; distorted plate has holes: (round) for incomplete sheet pin and (rough, square) for single missing rivet.
710 Pl. 16
17 x 29mm (18.5 x 16mm); sides are slightly convex, with ridge near each corner; thick outside edge has three transverse grooves, including one for missing pin; plate is damaged at holes for single missing rivet near inside edge (where there are two paired, transverse lines of punched, opposed triangles) and has slot for pin; (there is a gouged, triangular hole through both sides of the plate – probably damage rather than a rough attempt to attach a makeshift replacement rivet, as in **697**).
711 (Hume 1863, pl. VII, 3) plate and pin were intact, Hume's drawing seems to show that the plate was decorated with incised roundels or scrolls

[D] *With sheet roller in recessed outside edge*
712
Incomplete frame as **713**; plate, 20 x 8mm, has slot for missing pin and retains the single rivet.
713
13 x 11mm (22 x 10mm); frame has slightly convex sides with a ridge near each corner; plate has holes for missing pin and retains the single, rough (?over-long) rivet.
The rivet may be a replacement.



Pl. 16. Later medieval buckles

714
15 x 11mm (13+ x 8mm); recessed outside edge lacks roller; incomplete plate has hole(s) for distorted sheet pin.
715 Pl. 16
13 x 12mm (40 x 8mm); recessed outside edge lacks roller; folded plate has holes for missing pin and two rivets, with further large, rough one near inside edge.
716 Pl. 16
18 x 13mm (34 x 9mm); recessed outside edge lacks roller; plate has inward-angled inside edge (on both parts) emphasised by converging pair of engraved lines on visible face; holes for two missing rivets; wrought pin.
717
16 x 14mm (18 x 12mm); slightly trapezoidal; incomplete plate narrows from bar.
718
15 x 15mm (22 x 12mm); slot for missing pin; single rivet survives; longer back plate has concave inside edge.
719 Pl. 16 (Newman 2006, 139, fig. 5.22).
15 x 20mm (29 x 18mm); frame is slightly convex-sided with a ridge near each corner; wire pin is bent from use; the plate (slightly distorted) is doubly engrailed at the inside edge on the front and retains one of an original two rivets. The engrailing may have been cut out with a tool for making circles (sheet mounts, etc.).
720
22 x 15mm (24 x 15mm); recessed outside edge lacks roller; bar narrowed and recessed; plate retains one of original two rivets.
721 Pl. 16 (Anon 1878, pl. 8, no. 8); this, falling outside the preceding suggested categories, was presumably a buckle from the hole in the plate at the appropriate point, a (?)lost sub-rectangular frame, 25 x 14mm (30 x 10mm), with an ornate outside edge apparently with an openwork representation of a monstrous face two eyes and teeth and two projections at the corners like ears (the hole for the pin confirming this was not a clasp), and a plate with an (?)engraved line down the centre.

Subrectangular frames made of a bent sheet strip with a rod for outside edge
The unusual method of manufacture of the frame is a low-technology one, which would have avoided the need for fixed plant as used in casting. No buckles of this form with close dating have been traced, and clasps as ***910*** and cf. Egan and Pritchard (1991, nos 565–6) (assigned respectively to the late-14th and early-15th centuries) sensibly have the bars and outside edges in reversed positions compared with these buckles (**722** and **723** both have plates, and the former retains its pin).

Copper alloy
722 Pl. 16
Corroded: 14 x 12mm (22 x 7mm); sheet roller on outside edge; plate (unrecessed) has holes for the sheet pin and single rivet (missing).
723 Pl. 16
12 x 14mm (16 x 10mm); sheet roller on outside edge; plate appears broken off and has holes for missing pin and for (?)one missing rivet (these are rough holes), but it retains a tubular rivet made from bent sheeting.
The two following items appear to be the sheet parts of frames as in the preceding buckles, or they could be for clasps of this type, cf. ***910***.
724
Outside edge missing; 13 x 17mm.
725 Pl. 16 (Hume 1863, pl. X, 3).
Outside edge missing; 16 x 17mm.

Square/rectangular with central bar

Copper alloy
726 Pl. 16
20 x 16mm; bar offcentred; five slight transverse grooves in outside edge.
727
21 x 16mm; thick outside edge; offcentred bar.
728 Pl. 16
Ornate form: abraded/corroded; 27 x 18mm; ornate, openwork frame is moulded in the form of two human figures (the sides) holding up a crown over an unclear motif – possibly a head (the outside edge), as they stand on a base (the inside edge) moulded with a central (?)face – possibly this part makes up a supporting angel with wings outspread; (the offcentred bar's current very slender state is presumably the result of corrosion).
One of relatively few figurative frames of copper alloy from the medieval period; these are usually high-class accessories. The orientation (at right angles to the norm) is paralleled only in a very small number of buckles (e.g. Fingerlin 1971, 344–5, no. 384, in the Bargello, Florence).
729 Pl. 16
35 x 37mm; slightly arched profile; edges moulded, including constrictions centrally for missing pin.
Cf. fragment **737** (LMMC 1940, pl. 79, no. 5), and Astill (1993, 193–4, fig. 88, no. CA121), from Bordesley Abbey, Worcester, assigned to the late-14th/early-15th century) for complete examples, and Harvey 1975, 265–6, no. 1857 for a fragment excavated at Southampton in a deposit assigned to *c.*1550–1650.
730
40 x 39mm; sheet pin.
731
Poorly finished – some edges left rough; 44 x 41mm.
732 Pl. 17
45 x 44mm; slightly concave sides; prominent file finishing on one face; sheet pin.
Cf. Egan and Pritchard 1991, 97–9, nos 447 and 450, respectively assigned to the late-14th and early-15th centuries.
733
51 x 50mm; one corner damaged (wear suggests this was before loss).
734
Fragment: 20+ x 23mm; one edge and parts of both sides and bar broken off.

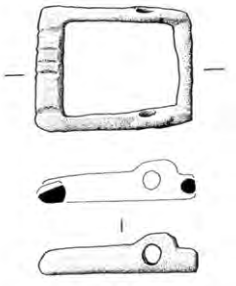


Fig. 2.5.2: Buckle from Bull Wharf, London (after Egan and Pritchard 1991, no. 445)

735
Fragment of similar frame: 17+ x 23+mm; inside edge and part of one side (including hole for the missing, separate bar).
736
Fragment: inside edge broken off; 35mm+ x 43mm; bent sheet pin.
737
Fragment: 29+ x 46mm; surviving moulded edge and bar as **729**.
738 Pl. 17 (Hume 1863, pl. IX, 8), 16 x 19mm, incomplete.

Fragments of frames with separate bars – (?)locking buckles
(cf. Egan and Pritchard (1991, 97–8, no. 445), assigned to the late-14th century) (Fig 2.5.2).
739 Pl. 17
Strip fragment, expanding to holed roundel at one surviving end; L 7mm.
740
Fragment (similar to following item but smaller): 16+ x 22mm; outer edge has notch for missing pin flanked by pair of grooves.
741
Fragment: 21+ x 22mm; recessed outside edge (with series of grooves) and parts of flat-section sides (including flange at hole for missing, separate bar) survive.
Cf. **740**.
742
Fragment: 18+ x 26mm; one edge with series of transverse grooves, and parts of sides up to break at holes for missing, separate bar survive.
743 Pl. 17 (Hume 1863, pl. IX, 7); slightly trapezoidal; 20 x 22mm.

Lead/tin
Most of these are damaged through corrosion and/or distortion.
744 Pl. 17
Distorted; *c.* 15 x 13mm.
745 Pl. 17
23 x 19mm; corrosion has consumed part of one side: faint lines define pin notch; (crisp casting).
746
Corroded: 25 x 23mm; frame only – bar missing, possibly cut off.
747 Pl. 17
19 x 24mm; arched profile in centre: iron-wire bar is displaced, having split one side of the frame: corners are rebated; notch for missing pin (which has worn the outside edge).
Similar to Egan and Pritchard (1991, 102–3, no. 473), assigned to the early-15th century.
748 Pl. 17
40 x 39mm; as **747**.
[**749–750**: numbers not used.]

Trapezoidal

Copper alloy
751 Pl. 17
Corroded; 11 x 16mm; central narrowing in outside edge; narrowed bar; pin missing.
The frame is unusually thick for such a small accessory – possibly some kind of hasp rather than a buckle (cf. **961**).

Lead/tin
752 Pl. 17
42 x 18mm; elongated, narrow frame has lozenge section and somewhat concave sides; bar has recess for missing pin, which has worn the outside edge.
Presumably later medieval. The form may be seen as a simple version of **764**, etc.

With separate plates

Copper alloy
753 Pl. 17
17 x 10mm (15 x 7mm); plate (unrecessed) has holes for missing pin and retains the single rivet.
754 Pl. 17
12 x 12mm (31 x 10mm); frame has irregular rebate down from outside edge; plate has roughly paired lines of punched, opposed triangles along sides and inside edge, and holes for pin (with additional V-nick hole at fold) and for two rivets, of which one survives (apparently very thin and not fully bent over). The frame seems to have been cast in a mould that became cracked (hence the rebate); the plate has been inexpertly replaced at least once.
Cf. Egan and Pritchard 1991, 95, no. 425 (lacks plate), assigned to the late-14th century.
755 Pl. 17 (Newman 2006, 139, fig. 5.22).
15 x 20mm (25 x 13mm); frame has knops at each corner and narrowed bar; sheet pin is bent from use; narrowing plate is gilded, with a barely discernible (?stylised animal) motif, and has three holes for rivets, of which only the one to be reached by the smaller back half (in its present, possibly original, state at least) survives.
This ornate form, with its gilding, probably dates to the Norman period – cf. the shape of the plate of Egan and Pritchard 1991, 74, no. 303, fig. 45, assigned to the late-12th century, and for the frame see Lindsay and W ebber 1993, 135–6 and Hinton 1990c, 514–15, fig. 130, no. 1122, assigned to the mid-13th century.

With integral plate
756 Pl. 17 (Hume 1863, pl. IX, 21), 21 x 56mm, 'brass', plate has indeterminate engraving.

Pentagonal frame with integral plate

Lead/tin
757 Pl. 17
28 x 12mm; sub-pentagonal frame with angled, bifacially bevelled outside edge, and sub-square aperture; integral, open-sided sleeve has holes for missing pin (which has apparently left marks from use on the frame) and rivet (which has broken through upper sleeve sheet); this rather rough item has no recess in the frame to cater for the underlying strap, in the manner similar clasps did.
Although closely comparable to clasps **934**ff, this accessory appears from wear marks to have been used as a buckle. It is perhaps possible that this was an eccentric adaptation, contrary to the maker's intention, though the absence of a recess on the back for the strap suggests that it was indeed intended as a buckle from the start. The bevelled outside edge is arguably a trait as incompatible as it is possible to devise with lodging a pin securely (the opposite of the notch often provided for this purpose).

Ornate frames with oval apertures
These relatively ornate frames seem to be characteristic of the late-Norman period (see first reference under **758**). The apertures include variants on simple ovals. All of those listed here are damaged, all but **760** to the point where they are unusable.

Copper alloy
758 Pl. 17
Incomplete: survives as 25 x 19mm; aperture is slightly concave at thick outside edge, with doubly engrailed profile and notch for missing pin; engraved border lines along sides; most of offset bar is broken off.
Similar to Allen (2003, 257–8, fig. 92, no. 15) from Eynsham Abbey, Oxford, assigned to *c.* 1066–1109, and Geddes and Carter (1977, 228–9, fig. 130, no. 14) from Kings Lynn, assigned to the late-13th/early-14th century and an example with a plate from New Romney (Kent) (Pre-Construct Archaeology NFR01 acc. no. 37, Fig. 2.5.3).

Fig. 2.5.3: Buckle and plate from New Romney, Kent © Pre-Construct Archaeology Ltd

759 Pl. 17 (Hume 1863, pl. XXIX, 9).
Incomplete: 23 x 30mm; angled (sub-pentagonal) outline; narrowed bar missing; two separate, dome-headed rivets on sides, and hint of a missing, central one from part of a hole in the outside edge – a complete example from London (Fig. 2.5.4) shows that this was for a further rivet (despite the difficulty this presented for centring the pin). Cf. also buckles from Winchester, New Romney (Kent), and Pocklington, East Yorkshire. (respectively Hinton 1990b, 515–16, fig. 130, no. 1129, from a deposit assigned to the mid/late-13th century; J Halliday Artefact Record Sheet 17/2/03 – the latter retains a plate of similar form to **847**).

Fig.2.5.4: Buckle from Staines, by permission of Museum of London

760 Pl. 17
22 x 32mm; frame is slightly asymmetrical (perhaps through over-zealous file-finishing); outside edge thickens to angle and has adjacent triangular outlines from lines of opposed, paired punched triangles; narrowed bar broken, with vestigial spurs on outer sides here (aperture is slightly angled).
761 Pl. 17 (Hume 1863, pl. IX,15)
Fragment: exaggerated, plate-like outside edge only: 25+ x 39mm; rounded aperture; outside edge has engraved perimeter lines defining opposed fields divided by narrowing, bifurcate notch for missing pin; prominent file-finishing marks.

762 Pl. 17
Fragment: outside edge (projecting as a blunt-ended tab) and one side; 23 x 27mm; hints of tooled decoration under corrosion.

Ornate frame – uncertain form

Copper alloy
763 Pl. 17
Corner fragment of ornate outside edge and side of frame; surviving 9 x 19mm; notched pin rest and concave knop. Probably from a Norman-period form.
Despite other potential similarities, the complex shape of the surviving part of the aperture contrasts with those of **759** and **755.**

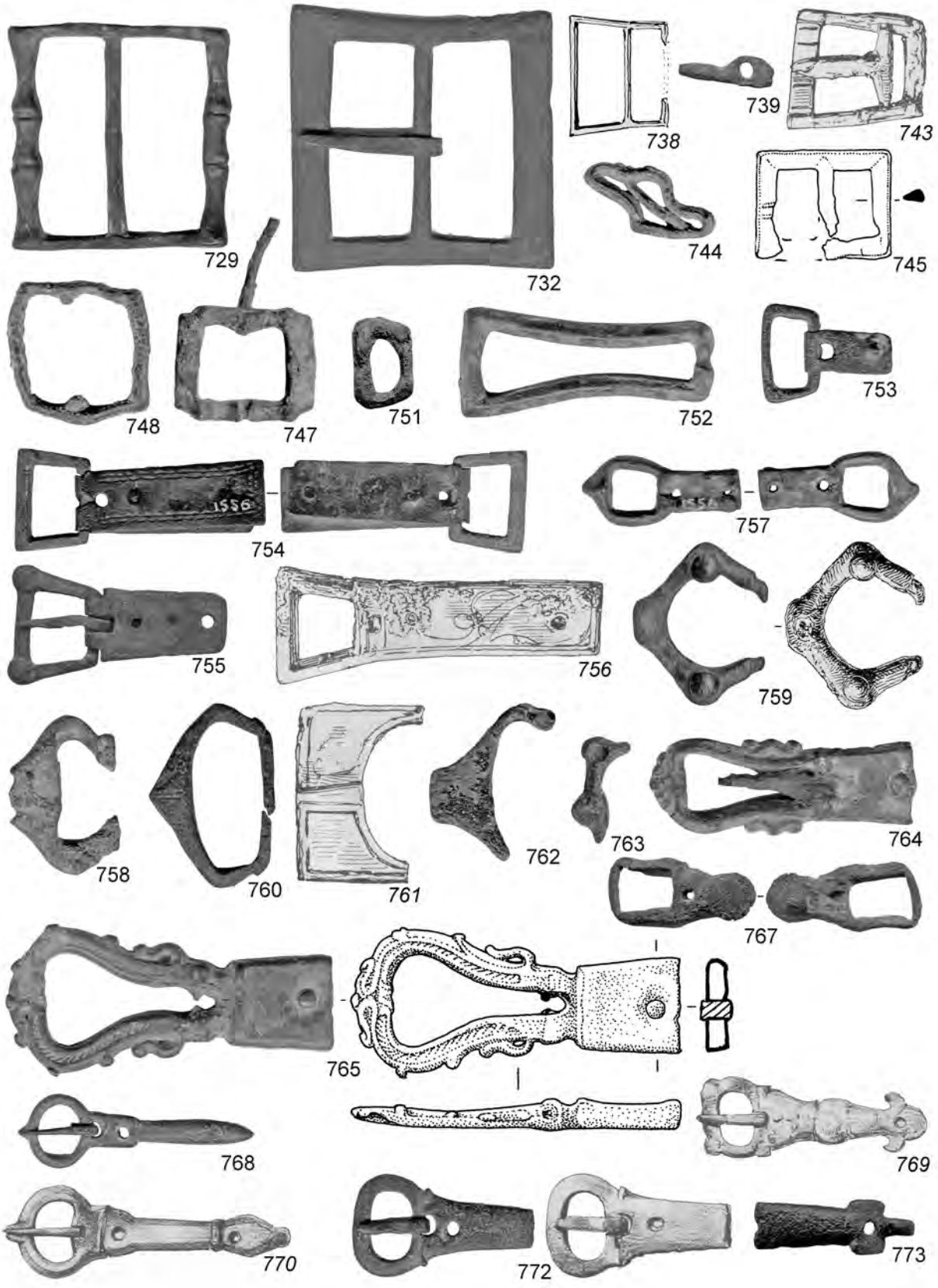
Ornate frames with integral strap sleeves

Lead/tin
This so-called 'lyre-shaped' form marks the apogee of elaboration of late-medieval mass-produced buckles; cf. LMMC 1940, 269–70, fig. 85, no. 1, also fig. 84, no. 16 – a representation on a tomb dated to 1391; Fingerlin 1971, nos 62 (copper-alloy, in the National Museum of W ales), 282 (Museum of London), 555 (copper -alloy, from Toddington) and 385 (copper-alloy, in a collection in Paris) figs 274–6 and 286. A series of similar , correspondingly elaborate, strapends sometimes have figures of saints, etc. in the centre. It is remarkable that none of the following items, all of which are slightly different, has been published before. The first two of which are arguably the high points of decoration amongst the later medieval buckles from Meols.
764 Pl. 17
46 x 16mm; simpler version of preceding item: plain frame has delicate (less elaborate) opposed scrolling, but retains part of rusted iron pin; full sleeve retains lead/tin rivet (despite strain indicated by distortion at this point) along with remains of leather strap.
765 Pl. 17
56 x 26mm; some wear; oblique hatching in recessed groove along frame, which has scrolling around the perimeter; the iron bar that retained the iron pin (only rust from which survives) is broken off; full sleeve retains lead/tin rivet; post-retrieval scratches – 'FEB 16'.
A similar item in Maidstone Museum retains more of the delicate detailing of the outside edge (found in London, no accession number; thanks to Giles Guthrie for this information).
766
Incomplete and corroded: 64 x 17+mm; plain, rebated frame having beading along perimeter (no scrolling survives); rusted bar for missing pin survives in originally (?)full sleeve.

Frames with integral plates

Copper alloy

Robust plates
The function of these items, if indeed there was just one, has yet to be determined. The shorter ones may well have been for spurs (see **767**) but this seems improbable for the longer ones.
767 Pl. 17
Corroded: 26 x 11mm; sub-rectangular frame has slightly rounded outside edge and slightly concave sides; bilobed, bevelled plate has holes for missing pin and integral rivet; engraved saltire cross on inside lobe.



Pl. 17. Later medieval buckles

Cf. Egan and Pritchard 1991, 106–9, nos 482–7, which are assigned to the early-13th century onwards) These were probably for spurs (cf. the buckle on spur **2807** with its integral terminal hook).
768 Pl. 17
41 x 12mm; oval frame with notched lip for (?)wrought (very pointed) pin through rectangular plate, from which a tongue-like tab with a single rivet extends.
769 Pl. 17 (Hume 1863, pl. VII, 5), ornate form; oval frame 37 x 13mm, moulded outside edge and plate.
770 Pl. 17 (Hume 1863, pl. VII, 6; Chitty and Warhurst 1977, 29, no. 35) oval frame, 48 x 16mm; lip for (?) wire pin, narrow plate expands at each end.

Long, relatively flimsy plates (oval frames)
The function for these has not been determined (spurs seem most unlikely in view of their relative flimsiness).
Cf. Egan and Pritchard 1991, 78–9, nos 320–1, the first of which is assigned to the mid-13th century).
771
34+ x 16mm; incomplete plate, retaining one hole for attachment and pin, is partly obscured by corrosion.
772 Pl. 17 (Hume 1863, pl. VII, 8, although end of plate is shown as if not broken).
55 x 18mm; curved profile; rebated moulding defines plate, which has holes for sheet pin and two missing rivets; expands at second rebates to spiral-strip terminal.

Plate fragments
773 Pl. 17
28+ x 8mm; narrows towards expanded tab around hole for attachment that also defines spiral-strip terminal (no obvious curvature).
774
20+ x 8mm; fragment of (?)rounded frame and flat plate; the latter has a hole for the missing pin and two for attachment.

Two loops with integral plate between
See Egan and Pritchard 1991, 108–10 for this distinctive form, the function of which has not been defined (they may perhaps be components of horse equipment). The only copper-alloy example published from London is assigned to the late-13th/early-14th century (Egan and Pritchard 1991, no. 488).

Copper alloy
775 Pl. 18
41 x 17mm; oval loops, both angled upwards; plate has two holes for missing pin and rivet; traces of gilding.
[**776–779**: numbers not used.]

Buckle fragments

Incomplete frames (original forms uncertain)

Copper alloy

Curved outside edges
(These could be from single or double frames of various overall shapes.)
780
Most of outside edge and part of one side survive; 15 x 2+mm; notch in angled pin rest.
781
Part of (?)outside edge (at angle); 17 x 6+mm.
782 Pl. 18
Distorted side fragment of frame at an angle: surviving 17 x 7mm; hint of offset, narrowed bar; crisp decoration (integrally cast) of triangle(s), etc. within double-line border.
From a high-quality accessory; (?)late-11th/early-13th-century; cf. oval **520** for the angled frame.
783
Semicircular fragment: surviving 18+ x 9mm; perhaps from a frame less than a circle.
784
Very corroded: curved (?)outside edge; 24 x 10mm; probably from oval or double frame.
785
Part of (?)outside edge; W 11mm+.
786
Rounded, outside edge and part of side: 18+ x 11mm; lipped pin notch.
787
Bar and part of sides broken off: 20 x 11mm+; thick outside edge of (?)oval frame protrudes slightly at sides.
788
Offset bar and parts of sides only; W 21mm.
789 Pl. 18
Distorted: ?33 x 17mm; thick outside edge has notch for missing pin flanked by pairs of smaller grooves; oblique filed hatching along sides; bar broken off.
The side hatching is an unusual addition, further raising the quality of this elegant buckle.
790
Corroded: bar and part of one side missing; 24 x 17+mm; outside edge is at an angle.
791
Possibly distorted: curved part of frame originally with offset bar; 22 x 21mm.
792 Pl. 18
Thick outside edge of rounded frame; 11 x 23mm; irregular, asymmetrical, trilobed profile: filed cross grooving over surface.
This form of tooling is unusual on later medieval buckles.
793
Corroded: curved outside edge only; W 25mm.
794
Inside edge only (offset and narrowed); surviving W 30mm; part of (?)wrought pin survives.
Presumably from an oval frame.
795
Part of thick outside edge and one side only; W 34mm; notch for missing pin.
796 Pl. 18 (Hume 1863, pl. VIII, 14).
Outside edge only: 19 x 60mm; lipped pin rest with central notch and flanked by pair of flanges.
Cf. Egan and Pritchard 1991, 74–5, no. 311 for a complete buckle probably of similar basic form (with an offset outside edge), assigned to the late-14th century , and Goodall, in Harvey 1975, 279 and 281, fig. 252, no. 2021 (found with a sword in a pit in Southampton and assigned to the late-13th century).
The width suggests this was for a sword belt (Hume 1863, 98 cited a parallel on a shoulder belt delineated in the tomb brass of John Corpe dated to 1361).
Straight outside edges
(Most likely to be from square/rectangular frames.)
797
21 x 10mm; pentagonal-section outside edge and parts of sides.
798
Fragment: 18+ x 44mm, with prominent file-finishing marks, and parts of sides.
799
Fragment: 20+ x 16+mm.

800
Fragment: surviving L 18mm; (?)recessed outside edge with series of transverse, filed grooves and hint of raised, right-angled return at surviving corner.
801
Outside edge: 9+ x 29mm; this is narrowed; incomplete sides protrude at corners
802
Fragment: 13+ x 35mm; recessed, straight edge with multiple transverse grooves, and parts of plain edges.
Bars (frame forms uncertain as outside edges, etc. do not survive)
803
Bar from frame (?)18 x 12mm; set at angle to missing sides; sheet pin has ridge near loop.
804
Bar and parts of sides survive, with plate; 31+ x 19mm, L (pin) 16mm; folded plate with slot for distorted sheet pin, and two holes for attachment, one retaining a crude, tubular sheet rivet.
The surviving rivet is presumably a replacement.

Lead/tin
805
Possibly distorted: 22 x 22mm; lip is notched for pin but has secondary, offcentral notch worn beside it.
(?)From a double-loop frame or one with an integral plate, as **605**ff.
806
Fragment of (?)outside edge; surviving L 6mm.
807
Corroded and distorted: part of frame with trace of notch for pin; surviving L 21mm.

Plates
Unless indicated otherwise, provision for the pin is a slot.

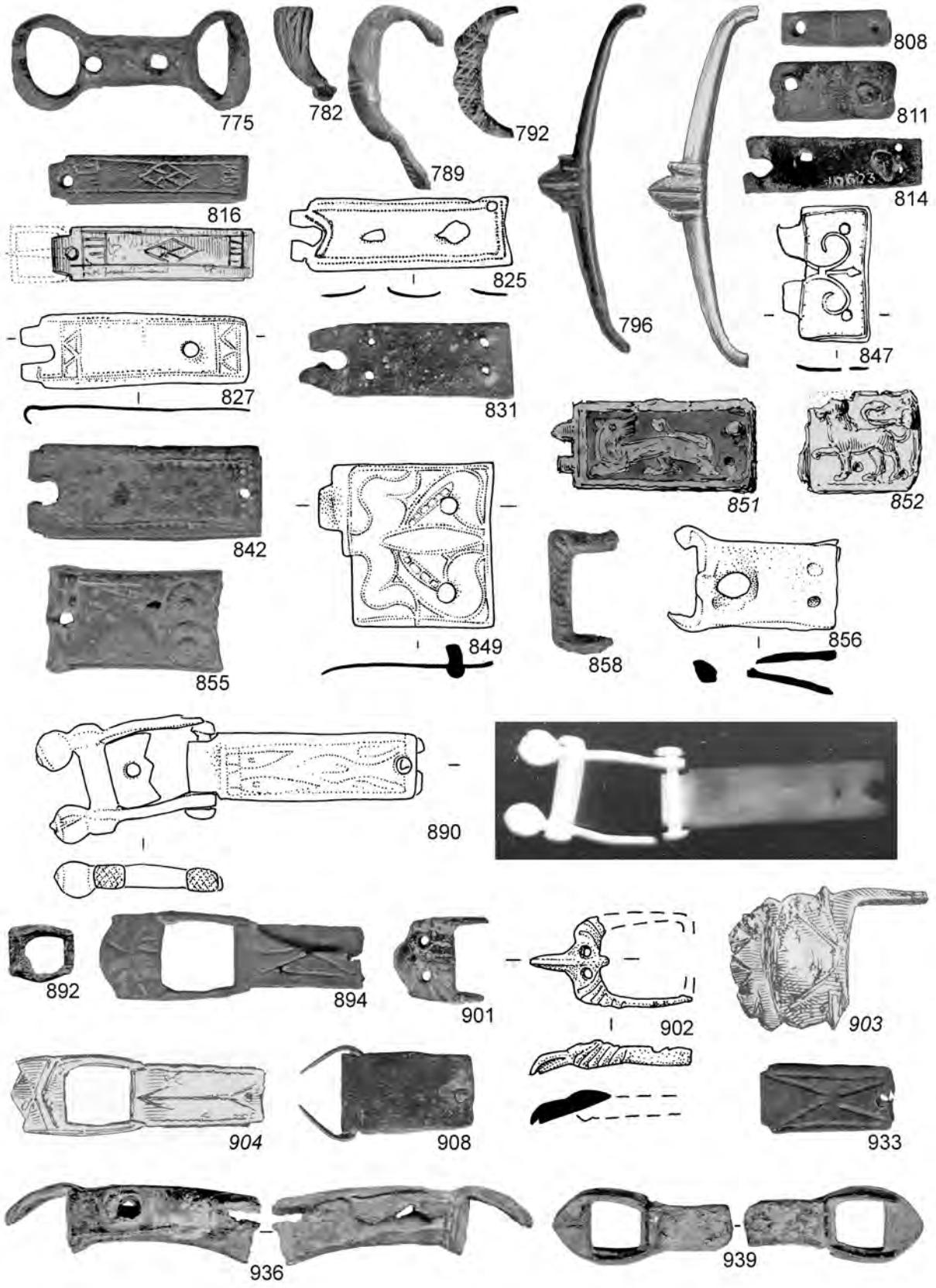
Copper alloy
All are folded sheeting where the full form is extrapolable and all have slots for pins, unless indicated otherwise, where this part survives. Some of the less diagnostic fragments with the outside edge missing or damaged could perhaps be from clasps (e.g. **821**).
808 Pl. 18
19 x 6mm; holes for pin and single rivet (missing); three groups of three transverse engraved lines on front.
809
22 x 7mm; holes for missing pin and single missing rivet.
810
36 x 9mm; front wider than back; large holes for (missing) pin, and others for single (missing) rivet; small fragment of frame survives.
811 Pl. 18
Incomplete (neither end is certainly original): 22+ x 10mm; presumably a buckle or strapend plate; holes for two rivets, the rough survivor of which is of spiralled sheeting.
812
One face only survives: 25 x 10mm; small hole for single missing rivet.
813
Fragment: 27+ x 10mm; slightly tapering; part of (?)slot; three holes for rivets (missing).
If the slot is correctly interpreted, this is indeed part of a folded buckle plate
814 Pl. 18
31 x 10mm; holes for missing pin and two for missing rivets – these have been supplemented by two rough holes, one of which retains a clumsy, bent-sheet rivet.
815
18 x 11mm; one face only survives; unrecessed for frame; holes for two missing rivets.
816 Pl. 18
35x3mm, both faces survive, front has an incised rectangle with four lozenges at centre and hole for missing pin.
(Hume 1863, pl. XII, 20, shown with a square frame dotted in – presumably a suggested restoration rather than an actual combination; Chitty and Warhurst 1977, no. 44).
817
Front only: 23+ x 11mm; inside edge roughly broken off; ?hole for pin and recesses for frame; double lines of punched, opposed triangles along sides; two holes for attachment roughly punched from back.
Presumably adapted following damage.
818
One face only survives: 25 x 11mm; three holes for attachment; ragged engraved lines around outside edge, and (paired and in triplicate) along centres of folded loops.
Unusual in having tooling confined to such a small area.
819
One incomplete face only survives: 27+ x 11mm; holes for pin and pair for attachment (one rivet survives); broken off at fold and inside edge.
820
14 x 12mm; holes for two rivets (set very close to corners).
821
Inside-edge fragment: 15+ x 12mm; border double lines of punched, opposed triangles; holes for two rivets are pierced from the back.
822
20 x 12mm; slightly tapering: (?)three holes – one centrally the smaller pair for missing rivets.
The larger (?)hole may have been for a pin.
823
Front fragment only (broken off at (?)hole for pin): 26 x 12mm; borders of paired lines of opposed, punched triangles; single rivet survives.
824
One face only survives: 28 x 12mm; slightly concave sides taper towards inside edge; two holes for attachment, one of which is worn through to slot for (missing) pin.
825 Pl. 18
Front only: 37 x 12mm; slot for pin; border double lines (including V-shape around slot) of opposed, punched triangles; drilled rivet-sized hole very close to one corner of inside edge, and two heavily pierced (?)rounded/triangular holes down the middle (bending the sheeting), suggest there was more than one attempt at repairing this accessory by unskilled hands.
Cf. **588** for the slots holding crude sheet rivets.
826
17 x 12+mm; slot for pin; bar and part of lozenge-section (?)wire pin survive.
827 Pl. 18
38.5 x 12.5mm; side and inside edges with borders of paired lines of punched, opposed triangles, similar lines making five triangles and inner border at inside edge, and similar single lines making four triangles and frame at outside edge; slot for pin; holes for missing, single rivet.
828
Corroded (thin at inside edge): 20 x 13mm; one sheet only, surviving as D-shape; tapered towards roughly cut, rounded inside edge; pair of holes for missing rivets.
829
Incomplete: 20+ x 13mm; part of (?)slot survives; holes for two rivets (missing); traces of gilding (possibly foliate motif).

If the slot is correctly interpreted, this is part of a folded buckle plate.
830
31 x 13mm; single rivet survives.
831 Pl. 18
One face only: 37 x 13mm; (?) hole for pin has worn into slot; holes for four rivets are pierced from the back. Presumably a replacement.
832
Incomplete: 20+ x 14mm; hole for pin; single rivet.
833
Fragment: inside edge and parts of each side survive, rest broken off; 22mm x surviving 14mm; pair of attachment holes; line of paired, opposed punched marks along each original edge.
834
26 x 14mm; worn hole for pin and four others for rivets; ragged engraved line around sides and inside edge.
835
26 x 14mm; one face only survives; hole for single missing rivet; worn.
836
One face only: 22 x 15mm; holes for two rivets.
837
Corroded and incomplete: 26+ x 15mm; part of one face retaining (?)slot for pin and two holes for attachment.
838
Front only: 28 x 15mm; rough holes for pin and two rivets; double line of opposed, punched triangles along sides and inside edge.
839
Part of front: 28+ x 15mm; double lines of punched, opposed triangles along sides; hole for single rivet.
840
Abraded: 34 x 15mm; front only (slightly arched in section); tapers towards angled inside edge; holes for three missing rivets.
841
27 x 16mm; slot for pin; lines of opposed punched triangles along sides.
842 Pl. 18
40 x 16mm; slot for pin is worn (possibly from an original hole); borders of double lines of opposed, punched triangles along both sides and inside edge; holes for single missing rivet.
843
Part of front: 32+ x 17mm; holes for pin and four rivets.
844
Incomplete at one end (only bar survives of frame): 27+ x 19mm; holes for single spiralled-sheet replacement rivet (original missing).
845
30 x 20mm; holes for missing pin have worn almost to slot; holes for two missing rivets; concave angle at inside edge; bar and parts of sides of frame survive.
846
32 x 22mm; half of fold missing; bar of (?)iron frame survives; holes for two rivets, one of which survives (crude); (?)leather survives from strap.
The breaks at the fold are worn smooth, so this accessory may have perhaps functioned in this state.
847 Pl. 18
Front only: 14 x 23mm; engraved with fleur -de-lis within border of double lines of punched, opposed triangles; holes for two rivets.
The shortness suggests a (?)12th/early–13th-century date.
848
Incomplete: 23+ x 23mm.
849 Pl. 18
Incomplete: 30 x 28mm; one loop and back missing; neatly engraved within linear border with ornate floral motif – two horizontal, curving sepals, and three erect petals around what may be two rows of seeds in split pods, all against a field engraved with zigzags; two dome-headed rivets survive. (Thanks to Leander W olstenholme for botanical advice on this item). If any specific plant is intended, an iris seems the most likely; an accomplished accessory.
850 (Hume 1863, pl. VII, 10; 34 x 12mm); (?) herringbone engraving at one end, hole for one rivet shown: (could be a strapend).
851 and ***852*** Pl. 18 and IV (Hume 1863, pl. XII, 22 and 25), both with lions rampant; the first is painted yellow on a blue field in the National Museums Liverpool's copy and was presumably gilded and enamelled (?12th/early–13th-century), while the second is from a widespread series with lions stamped in a variety of heraldic stances, e.g. Egan and Pritchard 1991, 111–12, no. 500 and Hinton 1990c, 515–7, no. 1145; respectively assigned to the early-13th century and late-13th/early-14th centuries.
853 (Hume 1863, pl. VII, 11); 45 x 16mm(?) cruciform mount set saltire-wise shown centrally; four holes for missing rivets.

Lead/tin

Fragment surviving as integral strap sleeve
(Definitive parts of frame missing.)
854
(?)Full sleeve (incomplete – most of back missing): 29 x 15mm; with curving profile and holes for missing pin (wear and rust from this) and single, missing rivet.
Cf. clasp **958** for the curving profile.
The following incomplete items may be from single or double frames:
855 Pl. 18
Fragment: full sleeve only: 30 x 17mm, with moulding falsely suggesting a separate frame (all but inside edge is broken off); two rivets with overlapping, beaded roves; worn hole for missing pin; torn at back, gas-bubble void in front; leather from strap survives.
856 Pl. 18
Incomplete – frame fragmentary (it is twisted off apart from stubs of the sides): 29 x 18mm; full sleeve is slightly split towards base, has irregular holes for two missing rivets and a very large piercing for the pin (missing), which has abraded the frame.
The size of the largest hole presumably relates to a replacement pin.
857
Distorted and incomplete; 12+ x 20mm; as following item (possibly from the same original accessory – both items are likely originally to have been in the Potter Collection).
858 Pl. 18
Incomplete: 13+ x 21mm; (?) outside edge with oblique hatching and parts of the sides only.
Presumably from a rectangular frame.
See **857**.

Buckle or brooch frames
Circular items not complete enough to assign definitively to either category. There is (to the latter -day commentator at least) very occasionally some overlap even among fully preserved items (Egan and Pritchard 1991, 64–5) – see **759** in the present assemblage.



Pl. 18. Later medieval buckles and clasps

Copper alloy
859
Fragment of rounded frame, surviving L 18mm (the flattish, slightly varying section suggests a buckle rather than a brooch).
860
Fragment, surviving L 23mm.
861
Corroded and incomplete: D 39mm (a possible constriction would make this a brooch if it has not caused by the corrosion).

Lead/tin
862
Corroded: D *c.* 20mm; incomplete biconvex-section frame with varying profile.
The damage makes it difficult to assign this item (possibly from a double-loop buckle frame with a separate bar of iron – a late-medieval variety – cf. **747**).

Buckle pins
Some of the these could alternatively be from brooches (very sharp points are specified). Relatively blunt points are more likely to have catered for leather straps. The ones listed here are generally more robust, and relatively shorter and thicker than those listed as brooch pins (**1738**ff). There will have been some overlap.

Copper alloy

Cast
Those over 40mm in length are probably from plain, circular buckles, as **430** etc.
863
L 16mm; transverse, flanged ridge near loop.
864
Corroded; L 24mm; vestigial transverse ridge near (?)worn-through loop.
865
L 42mm; transverse ridge near loop.
866
L 45mm; grip near loop; tip worn by frame.
867
L 46mm; transverse ridge near loop.
868
L 47mm; transverse ridge near loop; tip worn by frame, and distorted.

Sheeting
869
L 12mm; point broken off.
870
L 14mm; twisted shaft.
871
L 17mm; U-loop.
872
Distorted; L 17mm; U-loop.
873
L 19mm.
874
L 21mm.
875
L 22mm.
876
L 23mm; U-shape.
877
L 26mm.
878
L 29mm.
879
L 30mm.
880
L 38mm; wide loop (could be from a brooch).
881
L 39mm; loop missing.

Wire
882
L 15mm; D-section; black coating could be corrosion.
883
L 16mm; U-loop.
884
L 17mm; sharp point but large loop implies this was from a buckle rather than a brooch.
885
L 21mm; blunt point.
886
L 23mm; D-section.

Wrought
887
Distorted; L 16mm; uneven shaft.
Presumably a pin, possibly unfinished.
All separated pins of lead/tin are listed under Brooches (**1800**ff).
[**888–889**: numbers not used.]

CLASPS

These originally all had plates for attachment to the strap. Besides lacking provision for a pin, the undersides of the frames' outside edges are usually recessed to cater for the straps (though see the eccentric **757**, listed under Buckles). There was a separate, pivoting end plate on the outside of the frame on most of those of copper alloy, but the lead/tin ones seem all to have had rigid, integral frames. These accessories appear to begin by the late-13th/early-14th century and to continue probably into the early-16th century. Clasp **890**, with ten components is the most elaborate of these. It may also be the oldest of the series. Among the more ornate ones, **901** suggests a human head, a design repeated more clearly on **903**, where it is specifically a king's, and **902** combines elements of a bird's head.

Copper alloy
These would all have been attached by plates to straps.

Frame with pivoting sheet end plate

Composite frame
890 Pl. 18
29 x 18mm (39 x 11mm); heavy, composite rectangular frame (one terminal loop of one side piece worn/broken through) with forward-protruding terminal knops (formed by D-section pieces folded onto frame extension rods with separate, domed roves), and the separate rods forming each end of the frame have cross-hatched filing on each of their protruding terminal knops and roves; a folded sheet end plate is doubly engrailed and has a central hole; the folded strap plate (illogically mounted the opposite way up to the end plate) has a single hole for attachment (broken through on lower face), replacing (?or replaced by) a smaller single, broken rivet, and is (almost) symmetrically engraved with ragged lines, including eye-like motifs within a rectangular

border (a rough area of the surface suggests a mount may have broken off here, or this could simply be differential corrosion); brass (Appx 2).
This remarkably elaborate accessory , with 12 components surviving (not counting the two rivets for the strap), may comprise alloys originally of differing colours that would have made it even more striking; the amateurish repair contrasts with the accomplished original workmanship.

Simple cast frames
891
Only bar and stubs of (?)slightly convex sides survive of frame, 21 x 8mm; strap sleeve is held by single rivet.
892 Pl. 18
Slightly convex-sided: 11 x 10mm; sides slightly convex; both edges offset and recessed.
Cf. Egan and Pritchard 1991, 117–8, no. 556, assigned to the late-14th century.
893
Slightly trapezoidal frame, 14 x 10mm, has recessed bar and outside edge; plain, rectangular pivoting end plate.
894 Pl. 18
14 x 24mm (23 x 11mm)outside edge has transverse grooves with radiating lines on outer arched side, incomplete plate has engraved (?) triangles.
895
Subrectangular frame, 24 x 11mm, has slightly convex sides and recessed bar and outside edge; trapezoidal pivoting end has D-section bar mount held by single rivet.
896
Subrectangular frame, 30 x 11mm, has recessed outside edge and bar; pivoting end plate has pair of corner prongs and oval mount held by single rivet; tapered plate is slightly corroded and has single rivet.
Cf. Egan and Pritchard 1991, 117–8, no. 553, assigned to the mid-14th century.
897
Incomplete frame only: 12.5 x 12mm; outside edge (?offset and recessed) missing; slightly convex sides; bar offset and recessed.
Cf. Egan and Pritchard 1991, 117, no. 556 (with folding end and plate), assigned to the late-14th century.
898
Sub-square frame, 34 x 14mm, with slightly convex sides having ridges near the corners; outside edge and bar recessed, the former for the missing, pivoting end plate; strap plate has holes for single missing rivet, the place of which has been taken by doubled, roughly bent wire (the date at which this was added is unclear – it would have been an unconventional, but probably effective, repair, if it was not a 19th-century addition).
For the frame cf. Egan and Pritchard 1991, 117–8, nos 551 and 554, assigned to the late-13th to late-14th centuries.
899
Subrectangular frame, 31 x 16mm, has slightly convex sides with vestigial ridges near the corners, and recessed bar and outside edge; pivoting end plate has D-section bar mount held by single rivet; strap plate has single rivet.
Cf. Egan and Pritchard 1991, 117–8, nos 551 and 555, assigned to the late-13th to late-14th centuries.

Cast ornate frames
900
21 x 14mm; corroded frame fragment (presumably from a clasp): one slightly convex side and thick outside edge with two grooves lengthways and (?)moulded perimeter survive.
901 Pl. 18 (Hume 1847c, no. 41; 1863, pl. IX,17).
Incomplete frame – outside edge and most of sides: 17 x 15mm; slightly radiating raised lines, a pair of holes and a pellet in the middle of a central, rounded projection may combine anthropomorphically – respectively as hair , the eyes, nose, and chin of a human face (this possibility seems to have escaped the 19th-century commentators).
902 Pl. 18
Frame fragment: 27 x 16mm; outside edge and one side survive – a series of curving ridges flank a pair of holes for eyes and a protruding beak (which continues as a tab within the frame).
The design makes an overall predatory-bird's head motif.
903 Pl. 18 (Hume 1863, pl. IX,16, where the regal anthropomorphism is unrecognised).
Frame fragment: 35 x 23mm; side and outside edge, the latter with a worn representation of a crowned king with stylised hair curled at the sides as on contemporary coins.
Cf. Egan and Pritchard 1991, 119–20, no. 568, assigned to the late-14th century, and Re:source 2003, 22 and 32, no. 42 from Barton Stacy , Hampshire; the present item is a larger version, accommodating long side hair that is absent on the London find.
904 Pl. 18 (Hume 1863, pl. IX, 12); 42 x 14mm, shown with plate (23 x 9mm).

Bent sheet frames
905
10 x 14mm (19 x 10mm); slightly trapezoidal frame with separate wire bar, on which is a rectangular folding sheet end; strap plate has single rivet.
Cf. Egan and Pritchard 1991, 117 and 119, nos 564–6, assigned to the late-14th/early-15th centuries.
906
Square frame, 13 x 14mm, with separate rod for outside edge; pivoting end plate is engraved with opposed, oblique zigzags.
Cf. following item and Egan and Pritchard 1991, 119, no. 566 (assigned to the early-15th century) for the form.
907
Distorted frame as in **906**, 31 x 14mm (outside edge, etc. missing); strap plate has single rivet.
908 Pl. 18
Corroded; perhaps from a clasp (?the equivalent of lead/tin **944**ff): fragment (?)of angled outside edge of a sheet frame, 22 x 17mm; radiating double lines of punched, opposed triangles.
In the absence of any recognised parallel, the complete form and how it was attached are unknown.
909
Slightly trapezoid frame, 24 x 18mm, has bent, separate rod for outside edge; plain, trapezoidal pivoting end plate; strap plate has holes for single missing rivet.
910 14 x 35mm. (Hume 1847c, fig. 27) 16 x 15mm (20 x 10mm); folded sheet plate had two transverse engraved zigzags.
911 (Hume 1863, pl. IX, 10) 29 x 16mm, shown complete.

Pivoting sheet end plates
912
Broken-off fragment, 11 x 7mm, of plate with slightly trapezoidal bar mount attached by single rivet

End plate with frame fragment
913
39 x 13mm; one straight side and bar of cast frame survive; plate has perimeter double lines of punched, opposed triangles around three chevrons, and single rivet.

Terminal mounts for securing clasps

Copper alloy
These are thought to be the corresponding parts for some clasps used to attach the opposite end of the strap (Egan and Pritchard 1991, 116, fig. 76B). This arrangement would have meant the length of the strap was not adjustable (multiples could not be used). The majority of the following accessories have a cast, D-section bar mount held by a single rivet (cf. Egan and Pritchard 1991, 156–8, nos 732–42, all assigned to the late-14th century); some of those have a recess in the bar mount, presumably to facilitate attachment to the main part of the clasp – the following items do not seem to include such provision, but second and, in some instances, third rivets may have served a similar purpose.

Shield-shaped plate
914
13 x 11mm; rivet has square rove.

Rounded plates
(Defined from part with mount by narrowed neck.)
915
13 x 8mm; two rivets with round roves.
916
11 x 9mm; two holes, one with rivet surviving.
917
17 x 9mm; two rivets.
918
12 x 10mm; three (?rivet) holes of diverse size; surviving rivet has rectangular rove.
919
13 x 10mm; flat-ended plate; two rivets – that for mount has rounded rove.
920
13 x 10mm; two rivets with round roves.
921
15 x 10mm; pointed plate; two rivets with rectangular roves.
922
17 x 10mm; square-section bar mount with rounded rove; another hole for (?)second rivet.
923
15 x 11mm; another hole for (?)second rivet.
924
14 x 12mm; pair of projections at neck; two holes, surviving rivet has rectangular rove.
925
17 x 13mm; two holes, one with pointed plate with further (?rivet) hole; surviving rivet has square rove.
926
12 x 16mm; two further (?rivet) holes of diverse size; surviving rivet has rectangular rove.
927
15+ x 13mm; incomplete rivet holding sheet, arch-section bar mount (at an angle) has sub-square rove.
The skewed bar mount reflects the orientation of the outside edge, perhaps indicating that this was a second-quality item rather than it became distorted.

Ornate plates
(Defined from part with mount by narrowed neck.)
928
Trefoil/cross-like plate, 16 x 10mm; two further holes of varied size, one with rivet; both rivets have subrectangular roves.
929
Corroded: oval plate, 17 x 10mm (?lacks hole for rivet) has pair of notches to each side, and extends to a spade-shaped outside edge that is reinforced with a (?sheet) mount of similar form, held by (?)two rivets.
It is unclear how this item would have been attached to a strap; the bar mount that is common in other finds of this accessory is here replaced by a spade-shaped one (the mechanism of closure to hold the clasp in place should have taken account of this differing form of terminal).
930
Irregular trefoil plate, 13 x 11mm, with further rivet – both have rectangular roves.
931
Bifid plate, 13 x 13mm (possibly incomplete); rivet has subrectangular rove.

Folded strap plates
932 Pl. 18
Incomplete: 28 x 8mm; recessed for frame; hole survives for one missing rivet (broken off at possible second).
933 Pl. 18
Recessed for frame; 23 x 11mm; holes for single rivet are worn through; ragged engraved peripheral lines along sides and outside edge, and forming central saltire cross.

Clasps with integral plates

Lead/tin
These distinctive accessories have pentagonal frames, with angled outside edges that are bifacially bevelled on top, and the undersides are recessed or have other moulding (see **944**) to cater for the strap (there is no provision for a pin, and the angled outside edge precludes anything like a pivoting end plate similar to those on some of the copper-alloy clasps above).
Thirteen are listed (plus twelve in which the frame is incomplete), comprising at least seven variations. **945** and **944** have simple decoration on the outer edges. Closely similar buckles apparently existed – see the enigmatic **757** (with open sides and underside not recessed).
A few parallels are known: one from Merton Priory in Surrey, one from London (MPY88 acc. no. 4613 TEX88 acc. no. 8088) and another from Shrewsbury Abbey (Cane 2002, described as a buckle and from a deposit assigned to the early-15th century; now in Shrewsbury Museum). The present group is by far the largest known concentration of these particular later medieval accessories.
934
34 x 10mm; frame incomplete: full sleeve (with a couple of bubble holes formed in the casting).
935
Corroded: sleeve only (?open-sided; frame broken off): 16 x 11mm; holes for two missing rivets.
936 Pl. 18
45 x 11mm; similar to preceding items, except that only one side of frame survives, and full sleeve is much longer; the latter has been roughly pierced for two rivets (both perhaps replacements); partially surviving from the mould is a squared rebate in the middle of one face only , that might originally have accommodated a pin (i.e. as if for a buckle), though the rough piercings actually effected from the other face at that end seem too far from the frame for this to have been practicable.
937
38 x 14mm; frame, with incomplete, open-sided plate; outside edge is more pointed than in the others listed here; holes for (?)single rivet are torn through to the inside edge; traces of (?)textile from strap survive.

938
28 x 14mm; similar to **940**, but trace of iron rivet survives and sleeve may have been shortened through lack of metal in the casting; casting seams and finishing marks show little sign of wear.
939 Pl. 18 (Hume 1863, pl. IX, 13).
32 x 14mm; similar to **938**, but with moulded ridge around three sides of aperture, and only back tab survives from sleeve.
940
32 x 15mm; frame has triangle of outside edge recessed against the sides (as if separate components); open-sided sleeve has holes for single missing rivet.
941
Corroded: 33 x 15.5mm; similar to **940**, but holes for two rivets, and back tab of plate is incomplete.
942
31 x 16mm; probably similar to preceding items, but most of outside edge and base of open-sided sleeve is broken off.
943
Corroded: 37 x 16mm; (?)open-sided sleeve is incomplete, with holes for two rivets.
944 Pl. 19 (Hume 1863, pl. IX,14 – the trefoils are not precisely represented)
Frame has slightly convex sides; trefoil in triangular field on each bevel of outside edge; sleeve is open-sided and has broken off at holes for (missing) rivet; 20 x 18mm+.
945 Pl. 19 (Hume 1863, pl. IX, 19).
Surviving 23 x 19mm; incomplete sleeve appears originally to have been full; triangular outside edge has pair of trefoils divided by central line, in ladder-like border.
946 Pl. 19 35 x 14mm (Hume 1863, pl. IX, 23).

Frame fragments

Lead/tin
947
25 x 9mm; similar to **950**; tin-rich pewter (Appx 2).
948
Outside edge; surviving W 10mm.
949
16 x 14mm; outside edge and plate missing.
950
Outside edge and sides: 23 x 22mm.
951
Distorted: corroded and incomplete; 49 x 23mm (most of sleeve is missing); sides and part of outside edge survive; a larger version of preceding items.
952
Fragment of outside edge; surviving 12 x 21mm; (similar to **943**).
953
Corroded fragment; distorted side, and outside edge with central hole (probably intentional but could be corrosion); 23 x 9mm+.
The following lack definitive frames:
954
Incomplete; frame missing; open-sided plate, 17 x 10mm, with holes for single missing rivet.
955
Corroded fragment, 17 x 11mm, of (?open-sided) sleeve with pair of holes for attachment near concave inside edge.
956
Corroded fragment: 22 x 12mm; frame broken off; sleeve is open-sided and has holes for two rivets.
957
Incomplete, with some corrosion: 29 x 12mm; integral frame is broken off; full sleeve is split on both sides; holes for two missing rivets are roughly gouged on one face. The rivets were presumably replaced at least once.
958
Incomplete and corroded: overall survival 34 x 13+mm; part of frame (now bent) and of full sleeve with moulding and hole for single, missing (?iron) rivet; (?)cf. **936.**

(?) Buckle or clasp plates
959
Corroded fragment of one face and sides (lacks both ends), surviving 15+ x 15mm; three holes for attachment.
960
End fragment, 14 x 10.5mm: one of paired attachment holes survives; engraved fleur-de-lis-like motif (apparently orientated at right angle to the usual way up).

Strap hasp

Copper alloy
961 Pl. 19
Rectangular frame with shorter sides rebated centrally on one face, 14 x 8mm.
Cf. Ottaway and Rogers 2002, 2899–900 and 3063, fig. 1475, for a similar item from Y ork, assigned to the late-12th century and described as a 'belt hasp', which is held in place lengthways on the end of a narrow leather strap by a riveted sheet loop. Hume published an analogous item and one with curved sides as 'peculiar fastenings' (Hume 1863, 112, top) one of which was found at the side of a possible pagan burial (not at Meols), suggesting these were 'for the suspension of objects from the belt' (cf. also **751**).

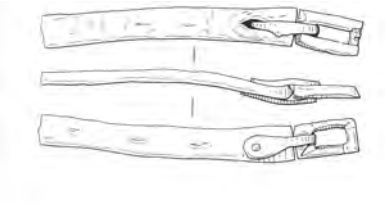


Fig 2.5.5: Belt hasp from 16-22 Coppergate, York, after Ottaway and Rogers 2002, fig. 1475, by permission of York Archaeological Trust

MOUNTS

These were found in some numbers (e.g. Ecroyd Smith 1868, 119 '137 studs'), which is not in itself remarkable when it is remembered that a single strap might have over 150 separate mounts (Egan and Pritchard 1991, 23, and pl. 5E and F). The variety is, nevertheless, notable, as at a detailed level are the differences between this and assemblages elsewhere.
Copper-alloy items listed here are made of sheeting, unless indicated otherwise. All lead/tin items have single, integral rivets, and were cast in three-part moulds, unless otherwise indicated.
Lead/tin mounts are known from London in the Norman period (although of those listed below nine is recognised as being this early.)
The reintroduction of a much wider range is tightly datable, mainly from parallels in London assigned to the mid-14th century, and these probably lasted up to the late-15th/?early-16th centuries (see Egan and Pritchard 1991, nos 801–1113, and Egan 2001, 93–5, nos 5–51 for compa-

rable variety from the capital and Salisbury). The Meols finds of lead/tin mounts includes several previously unpublished and otherwise unknown forms, underlining the inventiveness of their makers (an earlier series in these metals now known in London, apparently from the 12th century, is not demonstrably represented at Meols). The complete absence of iron mounts from the present assemblage is notable. It is probable that the extreme vulnerability of sheet accessories of this metal has meant at Meols they simply did not survive the saline conditions once exposed on the sea shore (cf. Egan and Pritchard 1991, 162).
The mounts listed below are often highly elaborate, though compared with those in the two urban assemblages relatively few feature naturalistic designs. This contrast is evident, for example, in the small numbers of copper-alloy floral mounts (sexfoils, etc.) from Meols, compared with the large numbers from London. The extensive series of strap loops and purse suspenders recovered is, in contrast, relatively large; which is surprising at such a small settlement. Both categories are present in copper alloys, but the former include the only examples so far known anywhere of lead/tin.

Pellets

Lead/tin
3269B Mounts on leather strap **3269A** (Potter 1889, fig. 9) (illustration of whole item Pl. 54)
Series of hundreds of rods set as pellets (i.e. in the manner of rivets, visible part just over D 1mm for each) in two joined lengths of leather strap, in lines making up accomplished, complex pattern of scrolling with 'flowers' and part of blackletter legend ***Be M(?e)***… (the broken leather is repaired halfway through the 'M' by being sewn over another part of the legend (? = Be Meri – i.e 'be merry'), all between linear borders.
Later-medieval; a similar technique is known with lead/tin inserts in holes drilled into contemporary knife handles of bone (Moore 1999, 74 second from top, assigned to *c.* 1450, and with the same legend as that suggested for the present item). See Mitchiner 1986, 214, nos 769–70, respectively found in London and Salisbury, and of similar date, are lead/tin bird brooches with a motto that seems to read ' be happy, jolly, merry'. Objects with these mottoes may have been worn on festive occasions, including marriages (thanks to Malcolm Jones for discussion of the significance of the phrase on the strap). A more obviously amatory motto is tooled in blackletter on the leather on a strap excavated in London (LMMC 1940, 195, and pl. 46).

Circular
(?)Cf. Ecroyd Smith 1868, 119 – 'thirty-seven strap studs recovered'.

Copper alloy
962 Pl. 19 (Hume 1863, pl. XIII, 4); D16mm, was decorated with a fleur-de-lis motif.

Lead/tin
(?)flat disc:
963
Corroded: D 12mm; single, integral rivet.
964 (Hume 1863, pl. XIII, 14), D 13mm.

Copper alloy

Plain domed
(Cf. **3008**, which is assigned to the post-medieval period in view of its overall regularity.)
965
D 9mm; lead/tin filler in back.
Cf. **968**; the filler can be compared with Egan and Pritchard 1991, 174–5, nos 877 and 886, both assigned to the late-14th century.
966
D 10mm; separate rivet missing.
967
Slightly asymmetrical; D 10mm; separate rivet missing.
968
D 11mm; as **965**, but filler corroded.
969
Incomplete: D 11mm; slightly domed; separate rivet missing.
970
D 16mm; separate rivet missing.
971
D 21mm; single, integral rivet has octagonal sheet rove (damaged).
972 Pl. 19
Neat profile but roughly cut out in a series of straight lines; D 22mm; two separate rivets, one of which retains a square rove.
973 Pl. 19
D 28mm; irregularly crimped flange along most of perimeter; the three rivets survive, along with a rove on one of them; possibly made from a strip 25mm wide.
Possibly part of a strapend.
974
Distorted and corroded: crudely cut out; D 28mm; central hole for single, separate rivet (missing) was flanked by two opposed, circular cut-outs which break the edge.
Possibly manufacturing waste.
975
D 31mm; robust; single, integral rivet is broken off.
976
D 10mm; separate rivet is missing.

Ornate domed
977 Pl. 19
D 14mm; conical with ornate edge; six engraved obliquely hatched rays with white metal coating between (an accomplished product).
978 (Hume 1863, pl. XIII, 15, shown in a less damaged state than at present)
Corroded and fragmentary: D 19mm; repoussé copper-alloy sheet with lead/tin backing; octofoil in (?)beaded border.
Presumably a mount (see on **965** above for the backing).
979 Pl. 19 (Hume 1863, pl. XIII, 3).
D 20mm; central, concentric dome on larger, main one; four slightly angular tabs at cardinal points, three retaining separate rivets, the other partly broken off.
980 (Hume 1863, pl. XIII, 9).
Similar to preceding item, but D 20mm, with central hole, and three tabs are partly broken off (no surviving rivets).

Composite
981 Pl. 19
D 16mm; stamped disc with repoussé beaded border, separate stamped quatrefoil attached by separate rivet, which also holds an incomplete strip on the back.
The strip may indicate this was not a dress mount (cf. Egan and Pritchard 1991, 242, nos 1297–8 assigned to the mid/late-14th-century, and Read 2001, 13 and 15, no. 108, thought to be late-14th century).

Lead/tin

Flat discs
982 Pl. 19
Incomplete (about two-thirds survives): D 19mm; with beaded border; single integral rivet is broken off.
983 Pl. 19
Crude: D 19mm; central knop, surrounded by two concentric rings of pellets; a lateral tab with saltires may be a sprue (though the motif could be decorative); tin-rich pewter (Appx 2).
Dating uncertain, possibly early medieval; presumably a mount despite the lack of a rivet and the striking crudeness; similar items are known in London (Egan and Pritchard 1991, 169–70, no. 817, which is unstratified but from a site that produced largely high and late medieval items).
984 Pl. 19 (Hume 1863, pl. XIII.19); D 13mm, described as lead in Hume's notes for the unpublished second edition of *Ancient Meols*, seems to be similar to Egan and Pritchard 1991, 169–70, no. 816 (which is unstratified).

Plain domed
3273B Mounts on leather strap **3273A** (Potter 1889, fig. 1) (illustration of whole item Pl. 54).
Twelve: D 5mm, in line (with three more missing) along centre of leather-strap fragment.
985
D 7mm.
986
D 7mm; cross (?)incised on front; rivet incomplete.
987
Corroded: D 8mm; rivet incomplete.
988 Pl. 19
D 8mm; offcentral rivet.
989
D 10mm.
990
D 10mm; rivet incomplete.
991
Corroded; D 11mm.
992
Corroded and incomplete: D 11mm; rivet missing.
993
Abraded and corroded: D 12mm; (?)rivet broken off.
994
Corroded; D 12mm.

Domed with beaded border
995 Pl. 19
D 7mm; central knop.
Cf. Egan and Pritchard 1991, 169–70, no. 813 (assigned to the early-15th century), and Egan 2001, 93, nos 15–22 from Salisbury (the latter include probable workshop discards).
996 Pl. 19
D 15mm.
997
D 16mm; roughly pierced from back, possibly for secondary use.
998
Distorted: D 16mm; roughly pierced offcentrally.
999
D 17mm.
1000
Corroded and incomplete: D 24mm.
(See also ***1860*** Pl. 28; Hume 1863, pl. VI, 8) a missing lead/tin brooch similar to present category , with six perimeter lobes (alternating with human heads).

Domed with beaded border and central recess
Compare the following with Egan and Pritchard 1991, 172, nos 851–4 from London (all assigned to the early-15th century), Egan 2001, 94, and 110, no. 30 for one from Salisbury, and also Egan and Pritchard 1991, button no. 1379 (assigned to the mid-13th century). The present finds could have been mounted with glass gems, but this seems unlikely for the majority, in view of their lack of any clear indication of fixture. Only **1004** retains traces of a possible fixative. This series of mounts/buttons appears to have continued in production (?i.e. the moulds remained in use) for at least one and a half centuries, but the addition of glass gems was seemingly restricted to the early part of this period.
1001
Distorted: D 15mm; (?)rivet broken off.
This may have been a button if the missing element at the back was looped (see reference above).
1002
Incomplete and distorted; D 15mm.
1003 Pl. 19
Corroded and partly obscured by applied substance (?from conservation): D 16mm; details of edge obscured by having been bent over four times, giving a sub-square outline (Egan and Pritchard 1991, no. 849 from London, assigned to the early-15th century , has been treated in the same way).
1004
Broad dome; D 20mm.
Traces of possible binding medium suggest the recess may have held a gem.
1005 Pl. 19
Broad dome; D 21mm.

Ornate
1006 Pl. 19
D 17mm; raised border; radiating design (cf. foliate) of four voided lozenges alternating with narrower, solid ones; both rivets cut off; hole from casting bubble.
1007 Pl. 19
D 22mm; central knop is surrounded by six sub-triangular, arch-profiled fields angled upwards to perimeter flange (overall effect is of a stylised flower); tin (Appx 2).
1008
As preceding item (not analysed).

Oval
1009 Pl. 19 (Hume 1863, pl. XIII, 23); central dome, with radiating lines dividing main part into eight segments (metal uncertain).

Rings

Lead/tin
Each is flat, with two integral rivets:
These might have acted as surrounds for buckle-pin holes, as on a strap found at Southampton (Y Harvey in Platt and Coleman Smith 1975, 296 and 299, fig. 262, no. 2156, which is assigned to the late-13th century – this seems a very early date for lead/tin mounts of this kind). Cf. Egan and Pritchard 1991, 170–1, no. 818, assigned to the early-15th century for more conventional dating.
1010
D 19mm.
1011 Pl. 19
As **1010**.
1012
Corroded; D 21mm; rivets flattened.

Triangular

Copper alloy
1013 Pl. 19
Isosceles with blunt lower edge; 12 x 11mm; central hole; series of parallel engraved lines and opposed oblique pair at one end.
This might have given the impression of a shield shape, though the tooling does not respect heraldic conventions.
1014 Pl. 19 (probably Hume 1863, fig. on p. 130.)
18 x 12mm; holes for three rivets, two of which survive.
This accessory could perhaps have acted as a strapend.

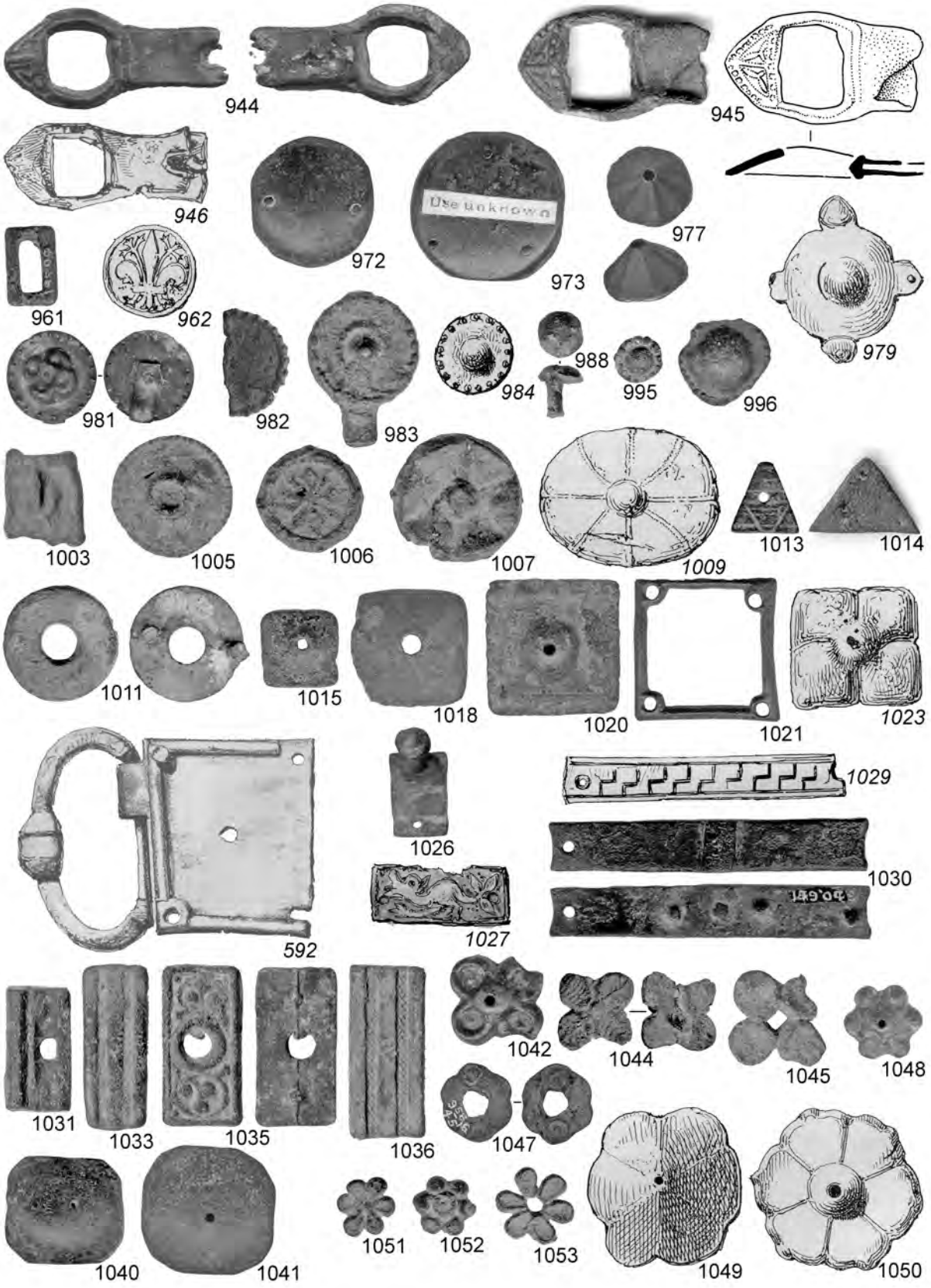
Square (or nearly so)

Copper alloy
Cf. Egan and Pritchard 1991, 197 and 199, no. 1061, assigned to the early-15th century.
Apart from **1021**, several of the following, notably **1020**, could be for book covers (cf. Egan 1998, 280).
1015 Pl. 19
Abraded: 13 x 13mm; domed centre, hole for single missing rivet.
1016
14 x 14mm; slightly domed and with large central hole; two lines obliquely of opposed, paired punched triangles in each corner area; hole for single missing rivet.
Presumably a surround from a composite mount.
1017
16 x 15mm; bevelled edges; holes for four rivets, of which one survives (set halfway in the hole).
1018 Pl. 19
Robust: 19 x 20mm; domed pyramidal form; hole for single missing rivet; traces of shiny, black coating on back.
1019
22 x 22mm; raised, central roundel with pellet in middle and concentric circle of pellets, and on the lower part a further, similar circle and pellets along the perimeter; trefoil at each corner; a bubble during casting has caused a deficiency in the metal.
1020 Pl. 19
22 x 22; squarer corners than the others listed here; flat field with bevelled perimeter around domed centre with hole for single missing rivet; engraved cable-motif inner border, around which is an outer border of engraved transverse lines; shiny black coating on back.
1021 Pl. 19 (Hume 1863, VII.4)
Cast: 24 x 24mm; outline with holes for four missing rivets in the corners; neatly moulded, slightly convex profile.
An unusual form, presumably intended to frame a separate item.
1022
14 x 8mm; bevelled sides; two holes for attachment.
1023 Pl. 19 (Hume 1863, pl. XIII,22 central dome and four domed sub-squares (overall foliate appearance).
Cf. ***592*** (mount on buckle plate) Pl. 19 (Hume 1863, pl. VII, 4; Chitty and W arhurst 1977, 32–3, fig. 3, no. 49 ('13th/14th-century'); a similar but incomplete outline mount to **1021**, set on a buckle plate with a central rivet hole; a trapezoidal version is set on the plate of a Winchester find (Hinton 1990c, 515–6, fig. 130, no. 1132, from a deposit assigned to the mid/late-13th century).
[**1024**: number not used.]

Lead/tin
[**3742B** Mounts on leather strap **3274A** (Potter 1889, fig. p. 203) (illustration of whole item, Pl. 54).
38 pyramidal mounts, original 8 x 8–9 x 9mm, with beaded borders, surviving in row (and one loose, presumably corresponding with empty hole – see **1025**) mounted lozenge-wise along leather strap **3274A** (there are additionally two separated rivets in place); several are extremely worn, generally increasingly so along the strap, to the point where they appear rounded and the original form in some is unrecognisable (a few of these would in isolation probably have been described as domed oval/circular).
This is presumably also referred to by Ecroyd Smith, who misidentified the metal of the mounts (1868, 122) 'leather strap … probably 15th or 16th century … made of double pieces throughout, riveted together by studs of silver … lozenge-shaped above.. a little ornamentation around the edge, the centre being slightly raised in a cruciform manner; the lower heads are quite plain. This object was 'now in three pieces' totalling 31 inches in length (speculated originally perhaps to have been double that) and three eighths of an inch wide'.
This is an extreme instance of prolonged, differential wear from use producing apparently unconnected forms, now relatable to each other only because of the survival of this composite piece (cf. Egan and Pritchard 1991, 198–9, nos 1067–71, assigned to the late-13th to mid-14th centuries – those that have been analysed are tin).]
1025
Single mount, 9 x 9mm, as per preceding item – perhaps the one missing from that.

Rectangles
Some items that might appear under this heading are listed as Bar Mounts to avoid dividing up related series of accessories, when the majority are clearly of the latter category (see definition, below).

Copper alloy
1026 Pl. 19
18 x 9mm; one dome-headed rivet with square rove survives of original two.
Perhaps too robust and the rivet too prominent for dress.
1027 Pl. 19 and IV (Hume 1863, pl. XII, 21).
Some corrosion; 23 x 9mm; grotesque, biped animal advancing, the tail having a trefoil terminal (all this motif is gilded), within raised, linear border; holes for two missing rivets; the gilding is reflected in the figure in National Museums Liverpool's copy of Hume, which has the animal coloured yellow against a brown background.
Perhaps originally enamelled; this small, accomplished mount could be from a dress accessory , or some other object such as a knife handle or casket, etc.
1028
24 x 10mm; worn central hole; retains four rivets.
Probably a surrounded for a hole in a strap for a buckle pin.
1029 Pl. 19 (Hume 1863, pl. XII, 19).
Incomplete: 48+ x 19mm; broken off at one of two attachment holes; engraved S-form step pattern. Possibly for a casket (unlikely to have been a buckle plate).
1030 Pl. 19
Corroded: 55 x 8mm; cast and cut to size; plain, bifacially bevelled bar mount, 8 x 6mm, attached transversely by single rivet near centre of a concave-ended, sheet strip with four holes for attachment along the middle (three rivets survive here); a small hints from restricted areas of survival of the original surface of the strip suggests that engraved ornament would have been the focus of interest on this unparalleled mount. Possibly a strapend, though this could have been set at any point along a strap.



Pl. 19. Later medieval clasps and mounts

Lead/tin
Cf. bar mounts. Each of the complete items following has two integral rivets:
1031 Pl. 19
21 x 11mm; asymmetrical ridges along sides, flanking bevel with square hole and adjacent groove.
1032
Crumpled: 28 x 11mm; three parallel ridges lengthways.
1033 Pl. 19
28 x 11mm; three parallel ridges lengthways, and stippled fields between; worn.
1034
Two fragments, 11 x 12mm and 12 x 12mm (the second corroded) similar to following item but a slightly different version (the present pieces may be from the same object).
1035 Pl. 19
27 x 13mm; rectangle with raised border and central hole also with raised border; spiralling-trefoil motifs in fields.
1036 Pl. 19
29 x 13mm; three parallel ridges lengthways with obliquely cross-hatched fields between.
1037
32 x 14mm; plain with central hole.
1038
Incomplete: subrectangular, 11 x 7mm (?slightly flaring) part with single rivet survives.
Possibly half of a variant of bar mount.
1039 (Hume 1863, pl. XIII, 5),15 x 14mm.

Sub-octagonal

Copper alloy
Both are domed, with a hole for a single missing rivet. Perhaps intended as round but roughly cut out.
1040 Pl. 19
D 17mm; alternate long and short sides (short ones are folded over at back).
1041 Pl. 19
As preceding item, but D 23mm; short sides are each made by a slightly angled pair of cuts.

Floral
With only 17 of these surviving and an emphasis on ones of lead/tin, the Meols finds have a different profile from that of comparable mounts in London, where this is a particularly prolific category, with the emphasis on ones of copper alloy (Egan and Pritchard 1991, nos 938–1045; a similar pattern of prominence to that in the capital is evident at York – Ottaway and Rogers 2002, 2906). **1006 –1008**, which could be seen as foliate, are listed above as circular mounts because of their border outlines.

Quatrefoils
1042 Pl. 19
D 18mm; central dome with four recessed foils around.
1043 (Hume 1863, pl. XIII, 11) D 22mm with central dome and ogival foils; 'brass'.

Lead/tin
The motif is perhaps a four -leaf clover, which was, as today, a symbol of good fortune in the medieval period (the four leaves standing for the Holy T rinity and the Virgin). Some of the larger , more competently executed brooches have a central letter T , which is interpreted by Spencer as standing for Thomas, connecting the device with the cult of Becket. A recent alternative suggestion is that the letter stands instead for the four -leafed plant 'truelove' (*paris quadrifolia* – see Jones 2002, 17–18, cf. 219–20) making this a secular , amatory brooch. The motif is also known on some ampullae presumed to be of 15th-century date (Spencer 1998, 122–3, no. 125; cf. Mitchiner 1986, 162, nos 476–83; of these nos 476–-9 have a letter T).
1044 Pl. 19 (Hume 1863, pl. XIII, 16 – presumably a pin-like excrescence shown at the left is misleading) D 16mm; central pellet and crude opposed, oblique hatching for veins; single, integral rivet.
1045 Pl. 19
D 20mm; plain foils, one incomplete; two integral rivets; square central hole; tin (Appx 2).
A similar mount, but with a single rivet and lacking a hole, has been found in Salisbury (Egan 2001, 94 and 110, fig. 31, no. 41).

Sexfoils

Copper alloy
1046
Crude; D 10mm; domed; central hole; (the edge of one foil is straight).
1047 Pl. 19
D 14mm; domed; central hole; two separate rivets with roves.
1048 Pl. 19
D 14mm; domed centre and foils; hole for missing separate rivet.
1049 Pl. 19 (Hume 1863, pl. XIII, 24), D 29mm; with one rivet.
1050 Pl. 19 (Hume 1863, pl. XIII.1) D 29mm; this is a variant of **1058** of lead/tin, Hume's notes for the unpublished second edition of *Ancient Meols* confirm that this was copper alloy.
See also **2263** under Manufacturing.

Lead/tin
1051 Pl. 19
D 11mm; elongated, concave foils.
1052 Pl. 19
D 11mm; domed foils and centre.
1053 Pl. 19
D 13mm; elongated, concave foils; central hole for missing separate rivet.
Could be an appliqué, as Egan and Pritchard 1991, 238–9, nos 1284ff.
1054 Pl. 20
D 16mm; flat, with central hole and concave-edged foils; two integral rivets.
1055 Pl. 20
D 18mm; domed foils and centre; alternate foils are stippled; beaded perimeter.
1056 Pl. 20
Incomplete: D 20mm; realistically flower -like, with concave foils and domed centre, enhanced by multiply ridged ring (cf. stamens) and radiating vein-like lines.
1057 Pl. 20
D 22mm; concave foils around central hoe; two rivets; tin (Appx 2).
1058 Pl. 20
D 23mm; central dome with flat, ogival foils.

Octofoils

(?)Copper alloy
1059 Pl. 20 (Hume 1863, pl. XIII,2)D 23mm, with two separate rivets; small central hole may have been damage).

Lead/tin
1060 Pl. 20
D 9mm; elongated foils around central knop.
1061 Pl. 20
Incomplete and corroded: D 22mm; elongated, dished foils; traces of possible red colouring. Cf. also a similar mount of copper alloy with a lead/tin filler in the back, found in topsoil at Westbury by Shenley, Buckinghamshire (Mills 1995, 343 cat. 45 and 347, fig. 153, no. 61).
1062 (Hume 1863, pl. XIII, 20) 17 x 16mm, appears to have been a variant.

(?)Multifoils

Lead/tin
[***3277B*** two mounts on leather strap ***3277A*** (illustration of whole item at Pl. 24, Pl. 54. Potter 1889, fig. 3), presumably lead/tin. (also strapend ***3277C***, following **1621**.)]

Paired circles

Lead/tin
[**3272B** Mount on leather strap **3272A** (Potter 1889, fig. 2). (illustration of whole item Pl.. 54)
Single survivor with contiguous domed roundels (single rivet) The strap may originally have had others like this one – also three lunate mounts **3272C** (follow **1168**). Cf. Egan and Pritchard 1991, 204–5, nos 1108 and 1111, assigned respectively to the late-14th and early-15th centuries].

Fleur-de-lis

Copper alloy
1063 Pl. 20
Cast openwork: 17 x 11mm; retains one of original two separate rivets.
Cf. Egan and Pritchard 1991, 200–1, no. 1084 (of brass, unphased) and Read 2001, 17–18, nos 134–5 from SW Wiltshire (thought to be *c.* 14th-century).

Crosses
The following are ornate items (see **1879**ff for simple lead/tin pendant crosses and related items)

Copper alloy
1064
Two fragments, 20 x 21mm, as **1068** (fragment, 18 x 15mm, may have been part of the same item).
1065 Pl. 20
Cast: ornate cross, 26 x 26mm, with (?engraved) cross-hatching in central field that is defined by transverse collars, and trilobate terminals (cf. curtailed fleurs-de-lis); holes for two missing rivets.
1066
Fragments, 27 x 25mm, as **1068** but smaller and thinner saltire, and tooling not as evident.
1067 Pl. 20
Corroded (right through at some points): 15 x 18mm; ornate cross with transversely hatched ridges along the terminally lobed arms; central, wheel-like motif with four holes; two separate rivets are missing.
Cf. Mitchiner 1986, 129, no. 328 from London.
1068 Pl. 20
Openwork; incomplete: 34 x 26mm; ornate cross with stubby, domed arms having engraved perimeter lines, along with saltire cross having rows of stamped circles along the arms; originally holes for four separate rivets (all missing).
1069 Pl. 20 (Hume 1863, 267; pl. XXVI, 13), an elaborate equal-armed version in 'brass/bronze' with a central (?)collet (itself tooled with a cross) from which a sizeable stone may have been lost (assigned to the Saxon period by Franks); this may have been from the cover of a bible, or , less likely, on its own, a pendant.

Stars

Copper alloy
1070 Pl. 20
Cast: D 21mm; four points; single integral rivet; unalloyed copper (Appx 2).
Crisp casting – possibly unused.

Lead/tin
1071 Pl. 20
D 12mm; six points and central knop; single, integral rivet broken off.

Letters

Copper alloy
1072 Pl. 20
Incomplete (part of one corner broken off): 19 x 10mm; reversed letter '**R**'; holes for two separate rivets (one of which survives).
1073 Pl. 20
(?)Cast, corroded fragment: 19 x 30mm; blackletter style: two ornate, parallel strokes (one bifurcate) joined by broad, (?tooled) band at right angle, with perimeter lines and central hole for missing rivet; traces of gilding. Presumably a ligature; if (as seems likely) this is another version of **S/Y** (**?Y/S**) like **1074**, etc., the outer strokes of the **S** would have extended beyond a relatively small **Y**. Cf. Museum of London, acc. no. 81.65/42.

Lead/tin
1074 Pl. 20 x 2 (Ecroyd Smith 1873a, pl. opposite p. 115 A8, shown inverted but complete); now incomplete: 18 x 14mm; blackletter **S** (reversed) and **Y** ligatured, the former obliquely hatched between raised lines; the two integral rivets are bent over or cut off.
Cf. following item: mount **1073**, and eyelet **1500**; see also Fingerlin 1971, 185 and 429, fig. 311, no. 374 (a copper - alloy strapend in the Cluny Museum, Paris) and Lightbown 1992, 367 and pl. 117 (a late-14th-century silver mount from Bohemia) both with this motif.
1075 Pl. 20
Fragment: lower half of larger version of preceding item (no indication of means of attachment), surviving 19 x 26mm.
1076 (Ecroyd Smith 1866, 218 and pl. 3.6) Blackletter (?)**m**; metal uncertain, but discussion speculates on a possible connection with 'cast leaden plates with raised letters … the precursors of the horn books, the primers of the 16th and 17th centuries.'
1077 (THSLC 1876, fig. opposite p. 182, no. 7) Pl. 20; D 24mm, presumably lead/tin openwork letter **S** in double torse ('ornament') – *S*ouveniez moi motto or others (?Lancastrian factional motif, continuing in use by the Tudors into early-16th century).

Bell motifs

Lead/tin
Domed, with single, integral rivets; a pair of holes form the terminals of a shallow groove; the perimeters are beaded; at least five basic sizes seem to be represented in the nine listed below.

Similar mounts are known in London and Salisbury – cf. Egan and Pritchard 1991, 274–5, no. 1382, fig. 178, assigned to the early-15th century (published as a possible button because of damage to the rivet), and Egan 2001, 93–4, no. 27.
1078 Pl. 20
D 13mm.
1079
Corroded: D 14mm.
1080 Pl. 20
D 16mm.
1081
Abraded; D 16mm.
1082
D 33mm.
1083
D 33mm.
1084 Pl. 20
D 34mm.
1085 Pl. 20
D 56mm.
1086
Flattened and corroded; D 56mm; corded border.

Shield-shaped
See also copper alloy **1013**.

Lead/tin
With a total in this alloy of 32 plain and two decorated, this is a prolific category (see Hume 1863, 135 and 138, where he refers to eight, all of lead, in the Mayer collection). All of the plain ones below could arguably all be from a single strap, though this seems most unlikely in view of the diversity at a detailed level. There is no obvious reason for differing orientations of the casting seam, but these may indicate different makers or just judicious use of restricted space on the moulds. The ridge vertically on the front would give potential scope for arms with differentiation *per pale* (two basic tinctures or devices, etc. – though no surviving trace of paint, etc. has been noticed).
Cf. Egan and Pritchard 1991, 200–1, no. 1087, fig. 126 – two similar, of tin, on a leather strap (orientated for this running vertically) assigned to the mid-14th century . The form might be comparable within the present assemblage with that of the angled, bifacially bevelled outside edges of some of the lead/tin clasps – **936-7**ff above (Hume 1863, pl. IX,.13 and IX, 23) – their orientation on the strap (if as set the London mounts already noted) would correspond, but these mounts are unlikely to have been ensuite with the clasps, which are tentatively assigned dating a century or more later.
Cf. LMMC 1940, fig. 63.6 from London (also Fingerlin 1971, 87 and 395, fig. 12 cat. no. 273).

Plain (bifacially bevelled)

Vertical casting seams
1087
9 x 9mm.
1088
10 x 11mm.
1089 Pl. 20
13 x 12mm.
1090
13 x 12mm.
1091
17 x 15mm; abraded at high points.
1092
17 x 14mm.
1093
16 x 15mm.
1094
16 x 16mm.
1095
Corroded: 16 x 15mm.
1096
15 x 16mm.
1097
17 x 16mm.
1098
17 x 16mm.
1099
Base broken off; 14 x 17mm.
1100
17 x 17mm.
1101
17 x 17mm; crudely pierced twice for re-attachment.

Horizontal casting seams
1102
8 x 8mm.
1103
9 x 8mm.
1104 Pl. 20
9 x 8mm.
1105
10 x 9mm.
1106
10 x 9mm.
1107
10 x 11mm.
1108 Pl. 20
12 x 11mm.
1109
13 x 11mm.
1110
12 x 12mm.
1111
12 x 12mm.
1112
14 x 13mm; roughly pierced twice from back for re-attachment. The piercing would have needed considerable, well directed force.
1113
Very corroded (most of original outline lost): *c.* 14 x 15mm; rivet broken off.
1114
15 x 15mm.
1115 Pl. 20
16 x 12mm.
1116
16 x 16mm.
1117
17 x 16mm.
1118 Pl. 20
17 x 17mm.
1119
17 x 17mm.

Decorated
1120 Pl. 20
Incomplete: 12 x 12mm (third quarter broken off): quarterly first and fourth cross hatching, in second (?)a bend.
This item must predate the post-medieval system of indicating the heraldic *noir* (black) by cross hatching. It

seems unlikely that the heraldry was intended to be specific, though *quarterly, a baston* [staff] *in the second* is given as a variant of the arms of the W aleys family (Papworth 1961, 195).
1121 Pl. 20
16 x 13mm: ten bands horizontally, variously with oblique and cross hatching; horizontal seam and single integral rivet.
(Despite the similarity to the triangular side panels of some late-medieval pilgrim souvenirs of the 'Holy House' from Walsingham – Spencer 1998, 137–9, no. 138d – the present item lacks the definitive right angle at one corner , but instead retains the stub of its attachment rivet.)
This mount lacks the robust three-dimensionality of the preceding series.

Castle towers

Copper alloy
Sheeting, with quintuple crenellation, concave base and sides and pair of engraved lines horizontally; rivets are separate:
1122
12 x 9mm; single rivet.
1123
13 x 9mm; pair of rivets missing.
1124 Pl. 20
13 x 10mm; single rivet.
1125 Pl. 20
13 x 11mm; one rivet survives of original pair.
1126
14 x 10mm; one rivet survives of original pair.

(?)Human heads
1127 Pl. 20 (Hume 1863, pl. XIII, 18) 21 x 14mm 'lead', had what looks like an exotic headdress.
1128 Pl. 20 (Ecroyd Smith 1866, pl. 3 centre, lower) 33 x 14mm may have been a highly stylised version or an animal mask – its dating is uncertain. It was in Liverpool Museum [18.11.74.70 and Gatty slip] but is now lost.

Animals

Copper alloy
1129 Pl. 20
Cast: 13 x 8mm; domed; stylised animal head (?cf. canine) – perfunctory filing supplies details of the eyes and nose; retains single, separate rivet with round rove.
1130 Pl. 20
13 x 10mm; tab at base; rivet missing.
705B Pl. 16 mounts on leather strap **705A**
Cast; 14 x 10mm; similar to **1130**; hole for single rivet.
1131 Pl. 20 (Hume 1847c, no. 56). Crude animal head (somewhat similar to shells **1135**ff.) with rove on rivet and (??)leather surviving.
1132 Pl. 20 lion rampant (?sheeting) 29 x 26mm (Hume 1863, pl. XII,.24; also Chitty and W arhurst 1977, 29–30, fig. 2, no.39 – '12th/13th-century'); probably 14th/15th-century.

Birds

Lead/tin
1133 Pl. 20
Incomplete: D 14mm; (?)swan-like bird standing (one wing perhaps slightly raised).
Cf. pinned brooches like Spencer 1998, 286–9, nos 281, etc. The swan was a badge of several English families in the late-medieval period, perhaps most notably the Bohuns, who brought it through marriage to the Lancastrian royal family in the 15th century (Wagner 1959).
1134 Pl. 20
Openwork: D 29mm; (?)bird advancing to left (incomplete at head and neck because of bubble in the casting) on a ground, all in circular border , with four trefoil-like radiating terminals; two rivets.

'Shells' and similar forms

Copper alloy
All are (?)cast and with separate rivets.
See Hume (1863), pp. 136 and 138 (refers to 17 in three collections, all of copper alloy except one of lead).
Some of these irregular , domed polygons/roundels with details added by opposed oblique filing look very much like scallop shells (like the London parallels cited below) but others are not as readily recognisable; the similarities may be coincidental, despite the popularity of the motif in the later Middle Ages for pilgrims.
Cf. Egan and Pritchard 1991, 200–1, nos 1082–3, both assigned to the early-15th century, and Astill 1993, 193–4, fig. 88, no. CA 257, excavated at Bordesley Abbey , Worcestershire, and assigned to the mid/late-14th to early-15th century.
1135 Pl. 20
11 x 8mm; tab at base.
1136
Incomplete: 13 x 9mm; tab at base; part of centre and side broken off; rivet missing.
1137
13 x 11mm; tab at both ends and notched on one side; rivet missing.
1138 Pl. 20 (Hume 1863, pl. XII, 14).
13 x 13mm; tab at one end, notch in one side; rivet missing.
1139 Pl. 20 (Hume 1847c, figs 55, and 1863, pl. XII,15) 8 x 8mm; more scallop shell-like than preceding items, tab at one end, rivet appears to have rove retaining (??) leather.
1140 Pl. 20 (Hume 1847c, figs 57, and 1863, pl. XII, 16); this apparently had two roves (perhaps explained by ones holding pendent mounts – see on **1308–1311**).
The following two, almost leaf-like mounts are broadly comparable but the basic shape is further removed from a scallop shell than in those preceding, and the filing (in one direction only) is more perfunctory:
1141 Pl. 20
16 x 12mm; slightly domed; rivet survives.
1142
15 x 13mm; rivet missing (not domed).
See also mount ***1131*** and strapend **1551**.

Elaborate forms (non-figurative)

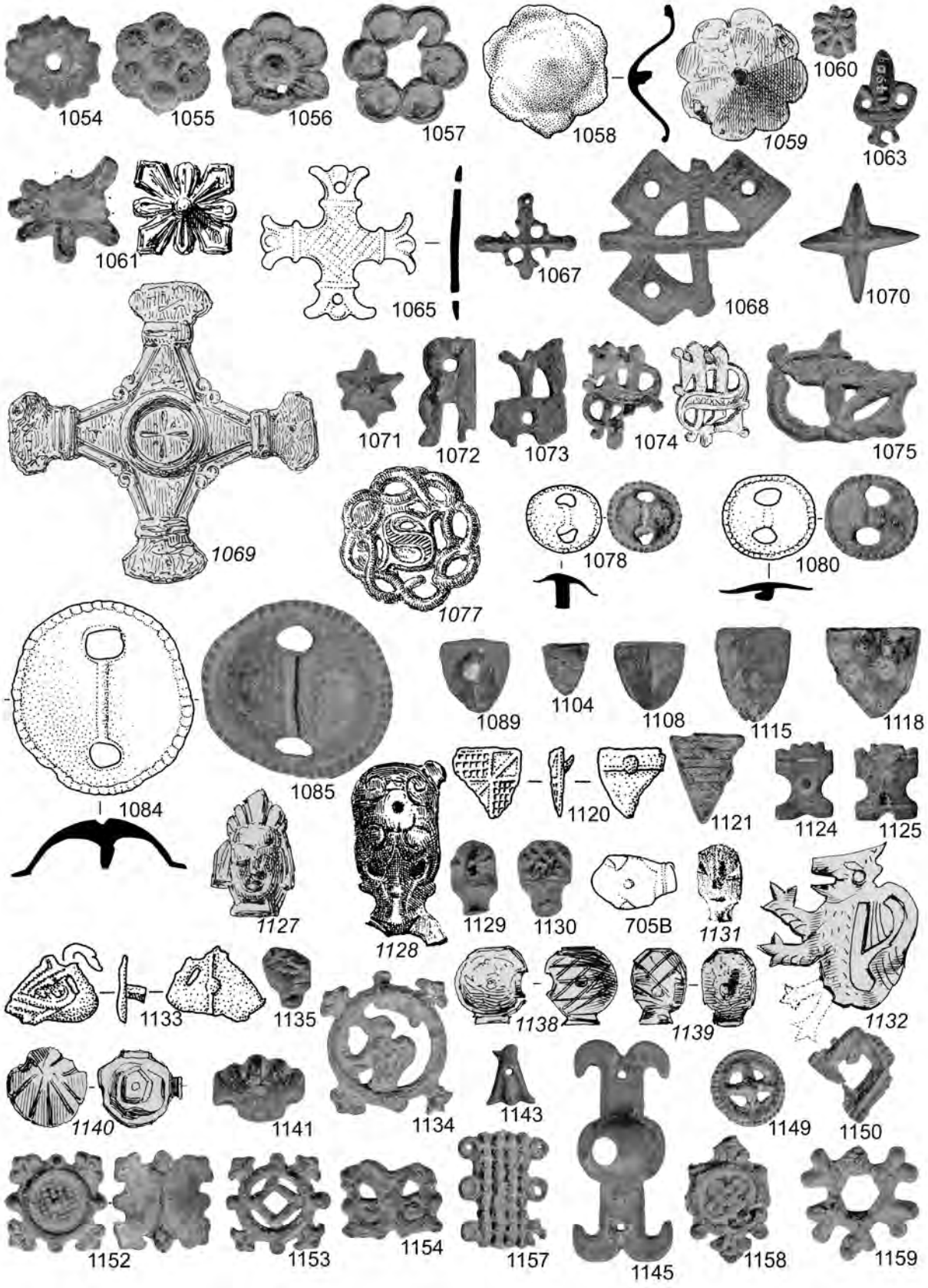
Copper alloy
1143 Pl. 20
Fragment: 10 x 9mm; main surviving, triply ridged part expands towards engrailed terminal; hole for attachment; (?)broken off expansion at second hole.
Cf. following item and **1172** for possible indication form.
1144
16 x 11mm; triple-ridged central element, with slightly expanding, tripartite terminals; hole for single rivet.
Comparable to Egan and Pritchard 1991, 203–4, no. 1100 and its parallel from London, assigned to the late-13th/early-14th century. The design may be loosely based on a bundle of sticks or a sheaf of corn (see also **1172** of lead/tin).

1145 / 1146 Pl. 20
Two identical mounts: both 39 x 17mm; central boss (with off-centred hole) on strip with bifurcated, back-turned points; holes for two rivets (missing) – one on the latter item has broken through to the perimeter.
1147 (Hume 1863, pl. XIII, 6), 16 x 16mm, triply rebated form.

Lead/tin
The following are very diverse. The majority have no published parallel traced, and several appear to be the first of their form noted.
1148
D 13mm; central lozenge with raised edge, from which four near-circles with raised, central rings and perimeter beading protrude; single rivet.
1149 Pl. 20
Openwork: 13 x 13mm; cross with central knop; beaded border.
1150 Pl. 20
Corroded: 15 x 13mm; openwork, bifacially bevelled lozenge with beaded outer border; two rivets.
1151
Roundel, D 16mm, with cross-hatched field and central knop all in raised linear frame, from which four fleur -de-lis-like trefoils radiate (one is damaged) alternating with four knops.
1152 Pl. 20
Similar to preceding item, but D 17mm and central knop less prominent and two rivets.
1153 Pl. 20
Similar to preceding item (two rivets), D 17mm, but openwork centre with outline-lozenge motif.
1154 Pl. 20
17 x 13mm; openwork motif, comparable in outline to a letter B; knops along straight edges; spiralled (?)plant tendril blocks half of each of the non-matching loops; single rivet may have been cut off.
Cf. Egan and Pritchard 1991, nos 1103 and 1110 for somewhat similar motifs – the former of sheet iron and assigned to the late-14th century and the latter of lead/tin and assigned to the early-15th century.
Presumably not intended for the letter, as the larger loop is at the top when appropriately orientated.
1155
Similar to **1152**, but D 18mm.
1156
Similar to preceding item.
1157 Pl. 20
Rectangle, 20 x 15mm; with field of 4 x 9 pellets, and three loops (two have come out blocked from the casting and one is broken) along each longer side; two rivets.
See Egan and Pritchard 1991, 246, fig. 157A for a range of mounts from London with similar fields of dots, assigned to the early-15th century.
1158 Pl. 20
22 x 12mm; roundel with central quatrefoil motif in raised, linear border; four pellets on perimeter in two pairs each flanking opposed, emerging fleurs-de-lis – the position of the two rivets and the casting seam on the back suggest an original symmetry with two further fleurs-de-lis, now broken off.
1159 Pl. 20
Incomplete openwork: 22 x 21mm; frame around central, hexagonal hole has bilobed extensions (one missing); two rivets.
Although this could have functioned as an eyelet, the rivets show it is a mount.
1160 Pl. 21
Openwork: D 23mm; linear quatrefoil outline in circular frame with raised ring; two rivets.
1161 Pl. 21
Openwork: D 24mm; ornate, six-pointed star in circular , corded border; central hole; the two rivets have been cut off with a blade.
1162
Incomplete: as following item, except D 24mm and with central blocking.
Cf. central motif of 1161.
1163 Pl. 21
Openwork: D 25mm; six-pointed, pierced star (recessed, triangular field in arms) in torse-like double frame; two rivets.
1164 Pl. 21
Cross-hatched ring, D 25mm, with six radiating bands that each continue into fleur -de-lis like terminals, which are conjoined to form the perimeter; two rivets.
1165 Pl. 21
Incomplete (presumably originally symmetrical): 26 x 17mm; central, transversely hatched, openwork lozenge with perimeter ridges and triple pellets on external edges, the ridges extending (one survivor) into ornate (crozier -like) foliate spirals with trefoil terminals; one of a presumed original pair of integral rivets survives.
1166 Pl. 21
Openwork: D 35mm; ring surrounded by six stemmed trefoils with a curtailed stem and a berry between each pair; two rivets.
1167 Pl. 21
36 x 16mm; central bevelled, concave-ended panel with openwork to each side – pair of opposed scroll motifs with spiral terminals, and loop on one side (corresponding part presumably broken off on other side if originally symmetrical); pair of rivets.
1168 Pl. 21
Possibly incomplete: 36 x 23mm; crescentic form with recessed beading along concave edge and lobes along convex one; central hole may possibly have been to accommodate a buckle pin (no wear consistent with such usage); two rivets.
The lack of a back suggests this was not a strapend (unless it was a very cheap version).
3272C (Potter 1889, fig. 2) Mounts on leather strap**3272A** (illustration of whole item Pl. 54).
Three identical, corroded, sub-lunate mounts, *c.* 20 x 15mm: recurved, scrolled ends each have terminal bead; inner trefoils flank central, square hole and are joined by a ridge that forms part of the side (two rivets for each mount); see also Mount **3272B**, (following **1062**).

Corroded fragments – uncertain forms

Lead/tin
The following two have single, integral rivets:
1169 Pl. 21
Corroded: 12 x 7mm; (??)three vertical strokes, probably the minims of lettering (blackletter) – the most likely restoration is ‘ **ihc**’; original outline uncertain, though limited, surviving portion suggests a straight edge.
Probably (despite the hint of the edge shape) somewhat similar to Egan 2001, 93 and 110, no. 13, which is circular
1170 Pl. 21
Corroded (the original form and decoration are difficult to elucidate): 16 x 15mm; (?)rectangular , with edge knops, recessed circle and central open slot; one of original (?)two integral rivets survives.



Pl. 20. Later medieval mounts

1171 Pl. 21
Corroded: completeness uncertain; 16 x 16mm; (?)central bar with hole in middle, with trilobed (?)terminal (possibly one of original two) pierced centrally.
1172 Pl. 21
Distorted and corroded (?incomplete): 24 x 13mm; four lobes survive at one end of the portion that has survived. Possibly a roundel, or a (?)garb-like design comparable with those of **1143–4** of copper alloy.
1173 (possibly Hume 1863, pl. XIII, 20)
Corroded: original outline uncertain; 15 x 9mm; single rivet.

Bar mounts
(Including looped versions with pendent items.)
Cf. Egan and Pritchard 1991, 209–19, where this category is defined for present classification purposes as long, rectangular or lobed mounts, in which the width is 10mm or less, and this usually equals no more than half the length (some squarer items essentially similar to others in the series but not respecting these traits are included here for the sake of simplicity, e.g. **1226**, which is virtually square). All those from Meols are copper alloy . Cast, sheet and 'wire' versions are all known (the last were cast or shaped in swages, in lengths of perhaps 500mm to judge from survivals in London); they were then cut into the short pieces actually used. **2266** (under Metalworking) may be a piece that was discarded without having been cut down to size. Lengths in the following listed items vary between 6mm and 31mm. They were in fashion for a period of almost two centuries, spanning the late-13th to early-15th centuries.
This is one of apparently very few categories of mounts known to have been referred to by a separate name in the medieval period. Their proliferation is explained by their being set in great numbers on straps which served a variety of purposes; it is appropriate to think in terms of tens, perhaps even hundreds of these simple, individually insignificant mounts on a single strap (cf. Egan and Pritchard 1991, pl. 5E and F).
They were usually set transversely (the openwork leather (?)belt from Beaksbourne illustrated by Hume (p.133) with one set obliquely remains a puzzling, isolated instance). Some of the cast ones are drilled with counter-sunk holes for the rivets; an unusual trait in the medieval period when simple, parallel-sided holes were the norm. Hume discussed this category with reference to contemporary sources at some length, calling the smaller ones 'small sections' or 'bars' (Hume 1863, 131–8, and pl. XII,1–13).
All are copper alloy and have provision for two rivets, unless indicated otherwise.

Plain (rectangular, etc.)

Sheeting

Flat (plain):
Cf. Egan and Pritchard 1991, 211–12, no. 1136, assigned to the late-13th/early-14th century.
1174
3 x 12mm; rivets missing.
1175
3 x 17mm; rivets missing.
1176
4 x 18mm; rivets missing.
1177 Pl. 21 (Hume 1863, pl. XII, 3)
Broken off at one end: 5 x 10+mm; large, central hole; both rivets missing.
1178 Pl. 21
8 x 17mm; rivets missing.

Arched section:
1179 Pl. 21
3 x 15mm; rivets survive; large central hole.
1180
3 x 17mm; rivets survive.
1181
4 x 14mm; rivets survive.
1182
5 x 14mm; rivets survive.
1183
4 x 16mm; rivets missing; large central hole.
1184
5 x 12mm; the single rivet has a round rove.
1185
5 x 13mm; one rivet survives.
1186
5 x 13mm; rivets missing.
1187
5 x 13mm; rivets have domed, round roves; leather survives.
1188 Pl. 21
5 x 15mm; groove lengthways along apex; the single rivet is missing.
1189
5 x 16mm; rivets missing.
1190
5 x 16mm; rivets missing.
1191 Pl. 21
5 x 16mm; rebated lengthways on both sides with transverse hatching (one side broken off); both rivets are incomplete.
1192
5 x 18mm; rivets survive.

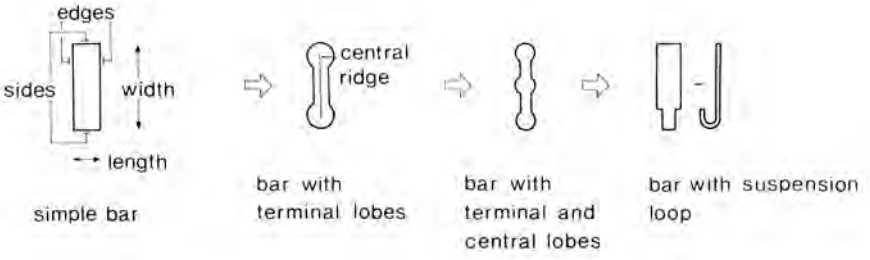


Fig. 2.5.6: Bar mounts, dimensions and types, after Egan and Pritchard 1991, fig. 131

1193
5 x 24mm; rebated with transverse hatching along each side; central hole; one rivet (of original two) survives.
1194
6 x 13mm; one rivet survives.
1195
6 x 14mm; rivets missing.
1196
6 x 14mm; rivets missing.
1197
6 x 14mm, rivets missing.
Cf. Egan and Pritchard 1991, 212–13, no. 1144, a late form assigned to the early-15th century.
1198
7 x 13mm; slightly offcentred holes for missing rivets.
1199 Pl. 21
7 x 13mm; rivets missing.

Cast
1200 Pl. 21
Corroded: 13 x 4mm; round-ended; one rivet survives.

D-section (cut 'wire')
Cf. Egan and Pritchard 1991, 211–12, no. 1138, assigned to the late-13th/early-14th century.
1201 Pl. 21
2 x 16mm; rivets survive.
1202
3 x 6mm; rivets missing.
1203
3 x 15mm; rivets survive.
1204
3 x 16mm; rivets missing
1205
3 x 17mm; one rivet survives.
1206 Pl. 21
3 x 18mm; rivets survive; slightly tapered.
1207
3 x 18mm; rivets missing.
1208
4 x 9mm; rivets survive.
1209
4 x 10mm; one rivet survives.
1210
4 x 11mm; single rivet with square rove survives.
1211
4 x 11mm; one rivet survives.
1212
4 x 13mm; rivets missing.
1213
5 x 14mm; rivets survive.
1214
5 x 14mm; rivets missing.
1215
4 x 15mm; rivets missing.
1216
4 x 15mm; one rivet survives.
1217
4 x 17mm; one rivet survives.
1218
6 x 12mm, rivets missing.
1219 Pl. 21 (cf. Hume 1863, pl. XII, 7).
7 x 17mm; slight D-section; rivets missing

D section with rebates (grooves along sides – cut 'wire')
Cf. Egan and Pritchard 1991, 211, no. 1132 and 219, no. 1190, respectively assigned to the late-13th/early-14th and late-14th centuries.
1220 Pl. 21
4 x 16mm; rebated with transverse hatching along each side; rivets survive.
1221
5 x 13mm; groove with transverse hatching along each side; rivets missing.
1222
Corroded: 5 x 13mm; groove with transverse hatching along each side; rivets missing.
1223
Corroded: 5 x 21mm; groove with transverse hatching along each side; one rivet survives with a round rove; (?)leather survives; (irregular central hole may be from corrosion).
1224 Pl. 21 (Hume 1863, pl. XII, 6).
6 x 15mm; groove with transverse hatching along each edge; rivets survive.
1225
7 x 10mm; groove with transverse hatching along each side; rivets missing.
1226 Pl. 21
8 x 10mm; doubly rebated along each side with transverse hatching along each pair; hole for single missing rivet.

With central and terminal lobes (trilobed)

Sheeting
1227 Pl. 21
7 x 24mm; trilobed sheet strip; coated with black material; (?)tack-like fastener through hole at one end (possible corresponding hole at other end obscured).

Cast
(The terminals may be more or less defined; grooves are filed.)
Cf. Egan and Pritchard 1991, 213–14, nos 1160–1, assigned to the late-14th century.
705C-F mounts on strap **705** Pl. 21
Four: three of them 5/6 x 12/13mm, with grooves only transversely, the other 8 x 13mm with them lengthways too; all have holes for two rivets (mounted with other accessories on a modern strap).
1228 (Hume 1863, pl. XII, 8) if subsequent damage has occurred to the surviving end
Incomplete at both ends: 6 x 14mm; transverse ridges on narrow parts (integrally cast); large central hole.
1229 Pl. 21 (Hume 1863, pl. XII, 9).
7 x 16mm.
1230
8 x 13mm; cross-hatched grooves on central lobe; one rivet survives.
1231
9 x 19mm; transverse grooves on central lobe; rivets missing.
1232
11 x 19mm transverse grooves on central lobe; large central hole; hollow-backed; retains two separate rivets.
1233
11 x 21mm; transverse grooves on central lobe; both rivets survive.
1234
12 x 15mm; transverse grooves on central lobe; one rivet survives; traces of black coating.
1235
3 x 17mm; large hole in central lobe; rivets missing.

Ornate forms
1236 Pl. 21
3 x 43mm; uneven rod; vestigial animal head near each end; rivets with square roves survive.

1237 Pl. 21
Sheeting: 6 x 16mm; irregular terminals and triply engrailed sides; two rivets with sub-square roves, one holding another arched-section, sheet bar mount set at a right angle. It is difficult to see the point of adding such tiny, fussy components apparently on the back of what was already among the smallest categories of accessories.
1238 43 x 12mm (Hume 1863, pl. XII, 1) this had foliate terminals each with one rivet hole.

With U-shaped hooked ends for pendent loops
Those listed here with single rivets provided for pendent items being repeatedly put on and taken off; some others have a single rivet that went through the hook to ensure any such item was not lost (e.g. Egan and Pritchard 1991, 221, fig. 38, bottom).
[**1256** may have similar function for purse suspender – see **1303**]

Mounts only

With simple loops:
1239 Pl. 21
3 x 11mm; riveted square terminal holds loop D 13mm.
1240 Pl. 21
3 x 14mm; simple strip mount with square terminal for single rivet; retains irregular, flat-section loop, D 11mm.
1241 Pl. 21
10 x 17mm; riveted (?sheet) U-shaped bar mount, with rebate to hold uneven, sub-circular loop, D 11mm.
1242
Fragment of mount broken off at lower rivet hole, but U-shaped end retains loop, D 11mm (similar to **1241**).

Sheet:
1243 Pl. 21
4 x 20mm; single missing rivet.
A simple form; in contrast with the preceding items in which the hook is not rebated – possibly a replacement or unfinished (cf. Read 2001, 20 and 25, fig. 14, no. 184 from Somerset; here two sheet strips, apparently replacements, are used to hold a simple arched purse suspender).

Cast:
1244 Pl. 21
3 x 11mm; D-section mount ends in expanded terminal; the single rivet survives.
1245
3 x 14mm; the single rivet survives.
1246
Both ends have holes for missing rivets, but 3 x 15mm.
1247
As preceding item, but 3 x 17mm.
1248
5 x 17mm; bar rebated along sides; hook terminal is incomplete; the single rivet survives.
Cf. Egan and Pritchard 1991, 219, nos 1192–3, assigned to the late-13th to late-14th centuries.

Pendent items – loops only
Cf. Egan and Pritchard 1991, 221, fig. 138 bottom (a strap with a pair of similar mounts) and nos 1189–91, assigned to the late-14th century.
1249 Pl. 21
Loop, D 11mm, with knop tooled to resemble a human head (pair of drilled blind holes and groove on one side for eyes and mouth, and two grooves on the other for hair) set on riveted, U-shaped bar mount.
The minute anthropomorphic detail must have been lost on almost everyone who saw this accessory except the maker – it may even have escaped the notice of the wearer.
1250
Flat-section loop, D 11mm (cf. **1240**).
1251
Loop, D 13mm, with plain, collared knop.
While this and the following four items could have functioned as buckle frames (cf. **426**, etc.) their small size almost certainly means they were pendent items, as in **1249**, etc; cf. Egan and Pritchard 1991, 221, no. 1192, assigned to the late-14th century , and fig. 138 bottom.
1252
As preceding item, 18 x 12mm.
1253
As preceding item, 15 x 11mm.
1254
D 11mm, L 17mm; loop has projecting terminal.

Trefoil loop
1255 Pl. 21 (Hume 1847c, no. 59)
Corroded: 3 x 12mm, with riveted oval tab holding pendent trefoil loop, D 15mm.

Related fragment
1256 Pl. 21
Tapered, triangular sheeting, 7 x 13mm, with rusted iron rivet surviving near wider end; broken off at bend at narrow end.
Perhaps part of a folded retainer (analogous to the U-shaped bar mounts in the preceding category) for an accessory like a purse suspender – cf. Egan and Pritchard 1991, 223, no. 1194, assigned to the late-13th/early-14th century.

Narrow mounts with central slots

Copper alloy
This category of cast mounts may perhaps (with the possible exception of the larger **1261**) be seen as elaborate variations of the bar mounts above. If they served a particular function, that is now unclear (Hume 1863, 190, regarded them as lock escutcheons for keyholes, despite their being smaller than any key he illustrated from the site). See also 'peculiar fastenings' (fig. on p. 112 – one similar to **961**, suggested to have had a small part of a linen garment pulled through the slot and secured by a pin set along the groove – a highly unlikely means of fastening).
Compare a series of enigmatic, asymmetrical sheet mounts with a ridge and aperture, found in London (Egan and Pritchard 1991, 224–6, nos 1199–201, assigned to (?) the late-13th/early-15th centuries).
1257 Pl. 21 (Hume 1863, pl. IX, 8)
6.5 x 15mm; rectangular; bevelled frame around slot; terminal motifs with radiating spikes; two separate rivets.
1258
Incomplete: 7 x 17mm; rectangular, bevelled frame around slot; one foliate terminal survives, with its separate rivet.
1259
7 x 19mm; rectangular; frame around slot is broken at one point; terminal roundels, one partly obscured by an additional, narrowing tab; both separate rivets survive.
1260 Pl. 21
8 x 24mm; rectangular frame has bevelled sides along slot, and five-lobed and lanceolate terminals.

1261
Fragment, 12 x 37mm; consisting of two sides at a right angle of (?) narrow, rectangular frame (shorter edge externally concave), with series of raised areas with filed cross hatching; one hole for attachment is intact, broken off at two others.
Cf. Read 2001, 12 and 14, fig. 8, no. 91, from SW Wiltshire (thought to be 14th-century).
1262 Pl. 21 (Hume 1863, pl. XIX, 9); Chitty and Warhurst 1977, 29–30, fig. 2, no. 40 ('peacock?; 13th/14th-century')
Asymmetrical: 13 x 38mm; bevelled, cross-hatched panels flanking the central slot; a bird-like head at an angle (using one of the two surviving rivets as its eye) is matched by a fan-like tail at the other end; a slight rebate at the top and base of the aperture surround may have had a function; still sharp from the file-finishing.

Purse suspenders

All are cast copper alloy, except **1263**, which is of wire. The cast ones were consistently regarded by the 19th-century antiquarians as 'coffer handles' (e.g. Hume 1863, 197 and pl. XX), noting the recovery of 47 of these 'handles' in all, and Ecroyd Smith 1868, 118 'twelve handles from small cofferets … all of tripartite form.' ***1304*** is depicted with a pair of bar mounts attached in Hume 1847c, no. 57 and Hume 1863, pl. XX, 2, (cf. **1303**) showing this interpretation is wrong (see **3120** for an actual post-medieval drawer handle).
The relatively large number listed here attests to the popularity, at Meols at least, of this fashion, which presumably implied a certain status for the wearer on the presumption that there was something of value in the purse. Cf. Egan and Pritchard 1991, 219–24, where a range of six similar items from London are assigned to the later 13th – early-15th centuries (with references to early-13th-century representations in France).

Wire
1263 Pl. 21
Length 47mm, with opposed terminal loops, D 7mm.
(cf. **2077**, listed under Possible lamp suspenders).
This simple component is probably from a low-technologically produced version made from wire and sheeting by bending – see Egan and Pritchard 1991, 223, no. 1194, assigned to the late-13th/early-14th century (see also **2080**).

Cast
The following (with the exception of **1281**) have downward-facing tabs on the attachment bars where the ends survive:

Two arcs
1264 Pl. 21 33 x 26mm (Hume 1863, pl. XX, 15, wrongly restored there) is a fragment similar to Egan and Pritchard 1991, 223–4, fig. 140, no. 1197, assigned to the late-14th century.

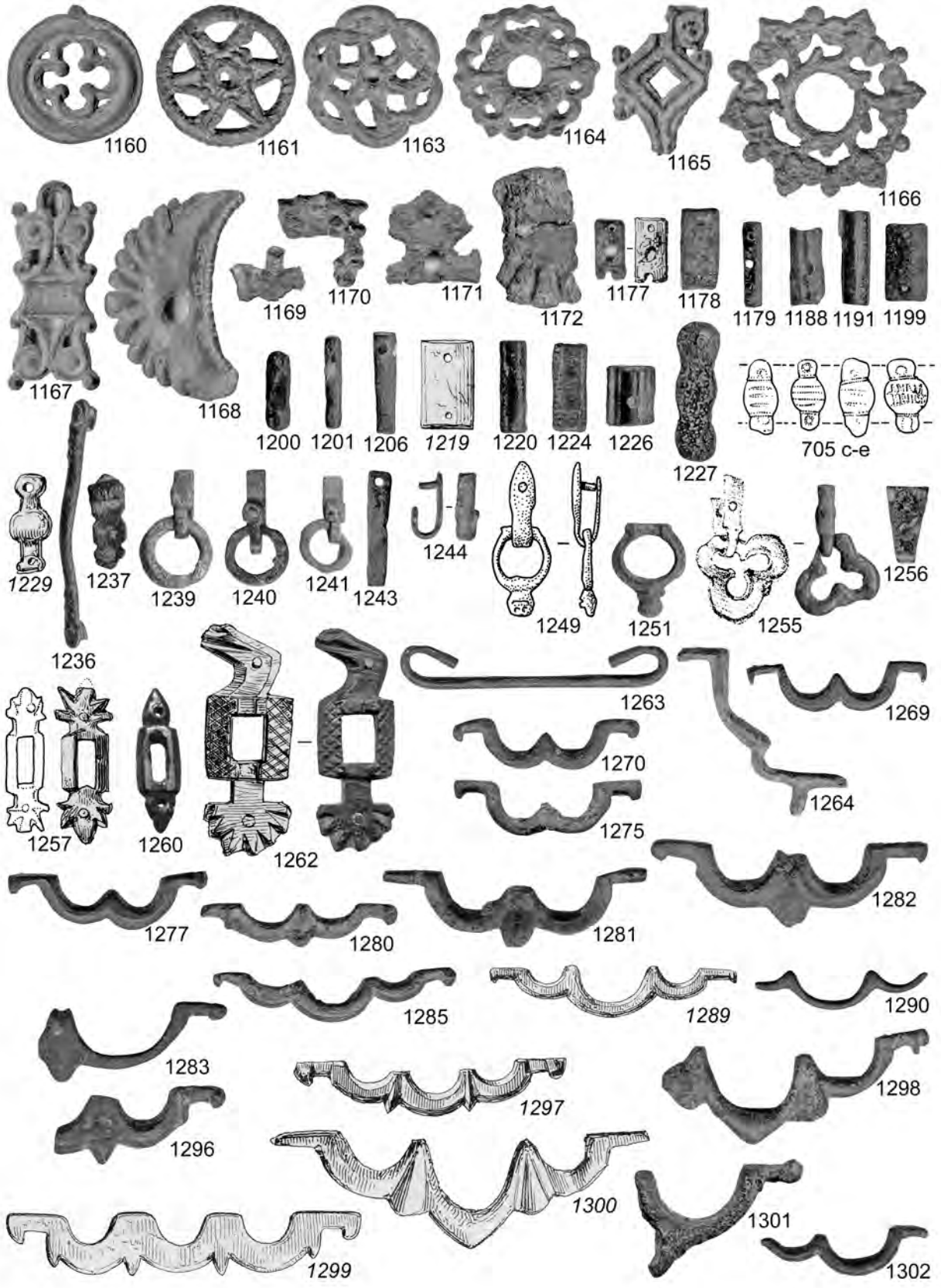
No cusp:
1265
30 x 7mm.
1266
30 x 8mm.
1267
31 x 8mm.
1268
31 x 8mm.
1269 Pl. 21
31 x 8mm; filed flat.
1270 Pl. 21
31 x 9mm; left rounded.
1271
Slightly distorted; 31 x 9mm.
1272
32 x 8mm.
1273
32 x 8mm
1274
32 x 8mm
1275 Pl. 21 (Hume 1863, pl. XX,10).
32 x 9mm.
1276
33 x 8mm
1277 Pl. 21
34 x 10mm, incomplete.
1278
Corroded: one end broken off; surviving 25mm x 9mm.
1279
Incomplete: surviving 29mm x 9mm.

With cusp between arcs
1280 Pl. 21
37 x 8mm; file-finished to a pronounced ridge.
1281 Pl. 21
46 x 12mm; (lacks terminal tabs).
1282 Pl. 21
47 x 14mm.
1283 Pl. 21
Incomplete: surviving 32mm x 12mm; (broader arc than others here).
1284 (Hume 1863, pl. XX, 6); 59 x 16mm.

Three arcs (the central one is larger than the others)

No cusp:
1285 Pl. 21
42 x 8mm.
1286
42 x 10mm.
1287
43 x 9mm.
1288
43 x 9mm
1289 Pl. 21 (Hume 1863, pl. XX, 9)
43 x 10mm.
1290 Pl. 21
Relatively delicate fragment: surviving 30 x 7mm; both attachment ends lost.
1291
Incomplete: surviving 31 x 9mm.
1292
Incomplete: surviving 32 x 9mm.
1293
Incomplete: surviving 34 x 8mm.
1294
Incomplete: surviving 36 x 7mm.
1295
Incomplete: surviving 37 x 7mm.

With cusps (all the surviving ones are incomplete):
1296 Pl. 21
Surviving 30 x 12mm.
1297 Pl. 21 (Hume 1863, pl. XX,.8), shown complete.
Surviving 38 x 8mm.



Pl. 21. Later medieval mounts and purse suspenders

1298 Pl. 21
Surviving 45 x 15mm; angled outside edge on central arc; obliquely file-grooved, swag-like cusps; animal-head terminal.
1299 Pl. 21 (Hume 1863, pl. XX,4), shown complete; 60 x 10mm.
1300 Pl. 21 (Hume 1863, pl. XX, 3); 65 x 20mm.

Three arcs (including enclosed central opening)
1301 Pl. 21 (Hume 1863, pl. XX, 13).
Incomplete: 28+ x 18mm.
Cf. Egan and Pritchard 1991, 223–4, no. 1197, assigned to the late-14th century.

Number of arcs uncertain
1302 Pl. 21
Incomplete: surviving 29 x 8mm; the larger of two surviving cusps is closest to the surviving attachment bar.
1303 Pl. 22
Two associated end fragments including part of one arc and animal-head terminal, attached by looped and riveted sheet strip to arched-sheeting bar mount, from which the second rivet is missing (though the second, holed sheet strip/rove survives in two pieces); 18 x 5mm/13 x 3mm; (?could perhaps go with **1298**, above).
1304 Pl. 22 (Hume 1847c, no. 57;1863, pl. XX, 2) shown complete. 50 x 10mm; looped and rivet sheet strips attached at each end; 18 x 17mm (max).

Flat base
1305 Pl. 22
48.5 x 11.5mm; flat base with three concavities (cf. arcs); terminal tabs are in the form of dragon' s heads; all angles are right angles.
1306 Pl. 22
48 x 12mm; three concavities; terminal dragon-head tabs.
1307 (Hume 1847c, no. 50; 1863, pl. XX, 7); similar to the following but lacks one terminal.

Pendent loops with paired lateral knops

Copper alloy
Trapezoidal loops with prominent lateral knops (the paired lateral elements together are wider than the tiny central apertures)
1308
11 x 21mm.
1309
12 x 21mm.
1310
12 x 21mm.
1311 Pl. 22
19 x 22mm.
Similar items are known in London, though the only one traced that indicates their function is held by a sheet loop from a 'shell'-form, riveted mount (like **1139**, etc.) and was excavated in Buckinghamshire (Ivens *et al.* 1995, 336 and 351, fig. 351.64 Tattenhoe no. 40). They seem be another form decorative pendant. Possibly they were purse suspenders, and perhaps used singly rather than in pairs.

Strap loops
The dimensions are given as **a** first, then **b**: order within the listing is primarily by **a**; the maximum strap width catered for is **c** (Fig. 2.5.7).
These are notable for the very large numbers recovered (185); examples of lead/tin seem so far to be completely unknown outside Meols.
Copper alloy rectangular/square ones apparently unused from the mould (**1366, 1373, 1378, 1392, 1393**), and lead/tin possible waster **1490** are possible indicators of local production. Hume and his correspondents had recognised the use of the two basic metals for what they termed 'hasps', but had apparently not worked out how they were used (Hume 1863, 113–4 and pl. X, where figs 15–16 show their suggestion).

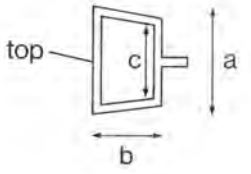


Fig. 2.5.7: Strap loops, order of dimensions, after Egan and Pritchard 1991, fig. 146

Copper alloy
These are all cast except for **1478**ff, which are made of bent sheeting.

With paired internal prongs

Curved tops
(These appear to cater for straps with Ws between 11 and 19mm.)
Cf. Egan and Pritchard 1991, 233–4, no. 1262, assigned to the late-14th century.
1312
18 x 16mm
1313 Pl. 22 (Hume 1863, pl. X, 24).
19 x 16mm.
1314
19 x 16mm; has been mounted on an equine harness-mount suspender – whether before discarding or after retrieval is unknown.
1315
19 x 23mm.
1316
Curved strip with corner at one end, L 24mm; probably an outside edge from a frame of this form (though only this edge survives, the fragment seems distinctive enough for at least a provisional identification (the angled corner brings this fragment closer to Egan and Pritchard 1991, 233–4, no. 1265, which is unphased).

Ornate oval:
1317 Pl. 22 (Hume 1863, pl. X, 21)
14 x 19mm; outside edge has three central knops; the projections define the lower offset through which the strap (W up to 10mm) would have slid.
Similar to (perhaps ensuite with) some of the ornate oval buckle frames listed above (form **[8]**, e.g. **528**, etc.), though these have four knops.

Rectangular/trapezoidal:
These appear to cater for straps with widths between 11 and 23mm. For the plain, straight–topped form, cf. Egan and Pritchard 1991, 233–4, nos 1254–5 and 1258, assigned to the late-12th – mid-13th centuries.
1318
Incomplete; 12 x 18mm.
1319
15 x 20mm.

1320
Incomplete: 15 x 23mm.
1321
16 x 22mm.
1322
16 x 23mm.
1323
16 x 25mm.
1324
17 x 11mm.
1325
17 x 22mm.
1326 Pl. 22
Incomplete: 18 x 23mm; D-section top; gunmetal (Appx 2); the round stub suggests this was probably a waster deficient in metal.
1327 Pl. 22
19 x 13mm; heavy pentagonal-section outside edge.
1328
20 x 15mm.
1329
21 x 15mm.
1330
23 x 16mm; slightly curving top.
1331 Pl. 22
27 x 15mm.
1332
Incomplete (base and one side missing): 29 x 16mm.
1333 Pl. 22
(Hume 1863, pl. X, 18), 21 x 14mm.
1334
(Hume 1863, pl. X, 20), 23 x 15mm.

Rectangular/trapezoidal with moulded tops:
(These appear to cater for straps with Ws between 9 and 35mm.)
1335 Pl. 22
16 x 22mm; rectangles at centre and (raised) at corners.
1336 Pl. 22
17 x 15mm; central knop.
1337
Incomplete: 18 x 16mm; knops centrally (flanked by ridges) and at corners.
1338
20 x 19mm; central knop.
1339 Pl. 22
20 x 28mm; knops centrally (flanked by ridges) and at corners.
Similar to Egan and Pritchard 1991, 233–4, no. 1263, fig. 149, assigned to the late-14th century.
1340 Pl. 22
21 x 16mm; central knop with cross-hatched tooling, flanked by ridges at corners.
1341 Pl. 22 (Hume 1863, pl. X, 22)
21 x 26mm; bar incomplete: ridges flanking central knop and at corners.
1342 Pl. 22
22 x 35mm; bipartite moulding with angled groove centrally on pentagonal-section outside edge; corner knops.
1343
23 x 9mm; distorted fragment: outside edge (with central knop) and part of one side survive.
1344
36 x 23mm; prominent file-finishing marks.
1345
31 x 22mm.
1346
(Hume 1863, pl. X, 19), 29 x 21mm.

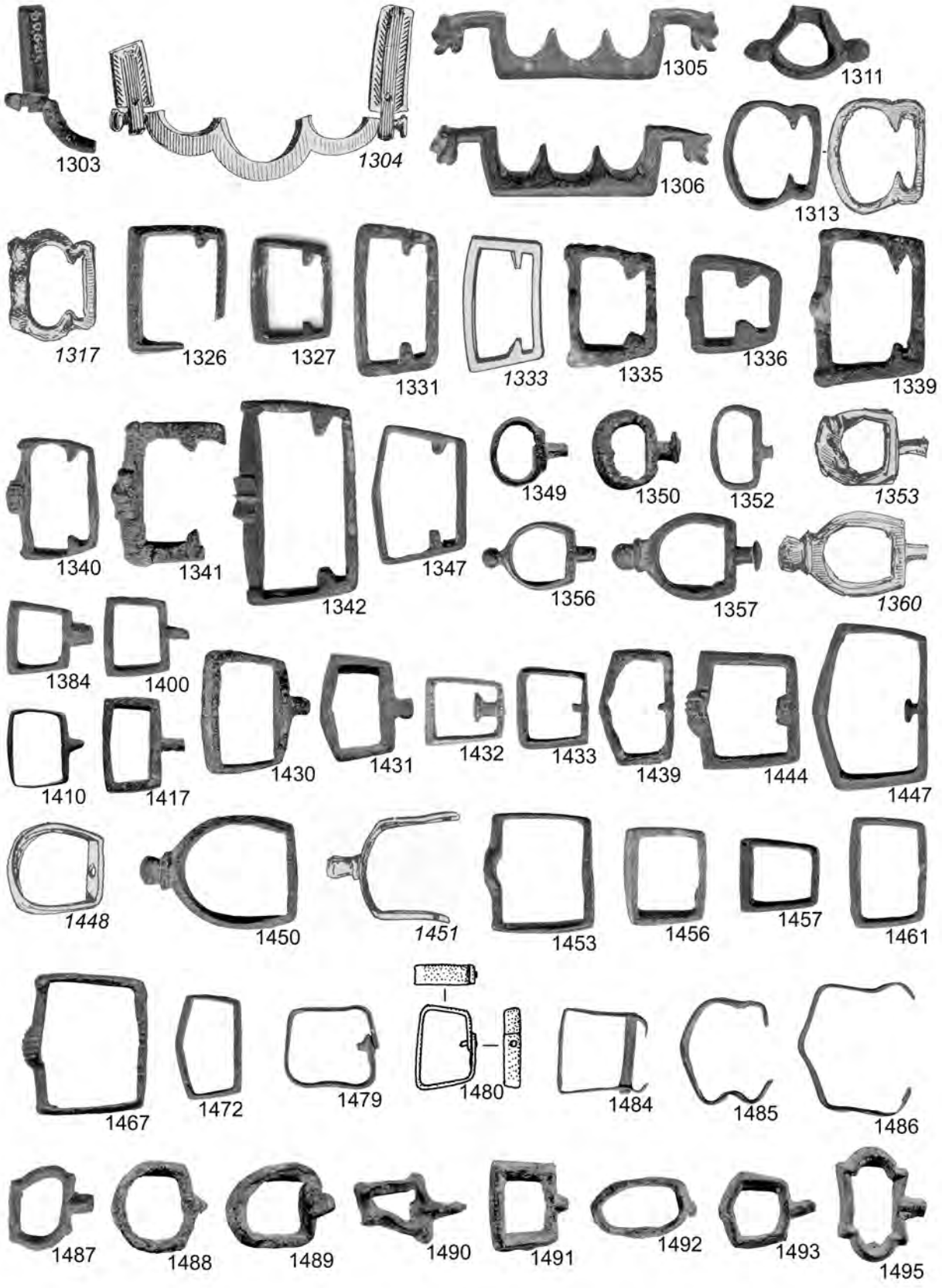
Pentagonal:
1347 Pl. 22
19 x 16mm; pronounced angle to outside edge; caters for strap up to W 12mm.

With integral, external rivets

Oval/ovoid:
(These appear to cater for straps with Ws between 12 and 17mm.)
Cf. Egan and Pritchard 1991, no. 1230, assigned to the late-13th/early-14th century.
1348
9 x 12mm.
1349 Pl. 22
14 x 17mm; rebated at base.
1350 Pl. 22
17 x 14mm; rectangular rove.

D-shaped (pronounced angles at base):
(These appear to cater for straps with widths between 8 and 11mm.)
Cf. Egan and Pritchard 1991, nos 1231–2, assigned to the late-13th/early-14th centuries.
1351
9 x 11mm.
1352 Pl. 22
15 x 8mm.
1353 Pl. 22 (Hume 1863, pl. X, 12); apparently with an animal head moulded on the outside edge is analogous (cf. **637** etc., listed as buckles).
The following versions with knops are more robust (the knops are all collared apart from **1356**, and these frames lack the small lateral ridges that characterise most of the otherwise similar buckle frames – see **622** and **625–6**, etc.)
(These appear to cater for straps with widths between 15 and 22mm.)
1354
11 x 16mm.
1355
15 x 22mm.
1356 Pl. 22
20 x 12mm.
1357 Pl. 22
20 x 21mm; filing nick in base; circular rove on rivet.
1358
22 x 17mm.
1359
26 x 15mm.
1360 Pl. 22 (Hume 1863, pl. X,14).
28 x 17mm.
1361
Fragment: 23 x 16mm; the definitive base and part of one side are missing.

Rectangular/square (some are slightly trapezoidal):
The extensive series of these totals 69. They appear to cater for straps with widths between 8 and 23mm. Eight are broken (i.e. about one in eight – a very high proportion). The corner breakages of **1379**, **1401** and **1429** are an unusual phenomenon, while **1366**, **1367**, **1373**, **1378**, **1392** and **1393** are notably crisply file-finished – these could possibly be an unused group straight from the mould.
Cf. Egan and Pritchard 1991, nos 1236–47, assigned to the late-13th/early-14th to late-14th centuries.
1362
9 x 12mm.



Pl. 22. Later medieval purse suspenders and strap loops

1363
9 x 12mm.
1364
10 x 9mm.
1365
10 x 9mm; slightly trapezoidal.
1366
10 x 9mm; slightly trapezoidal.
1367
11 x 9mm.
1368
11 x 9mm.
1369
11 x 9mm; slightly trapezoidal.
1370
11 x 10mm.
1371
11 x 10mm; slightly trapezoidal.
1372
11 x 10mm; slightly trapezoidal.
1373
11 x 10mm; slightly trapezoidal.
1374
11 x 11mm.
1375
11 x 11mm.
1376
11 x 11mm; trapezoidal.
1377
11 x 11mm.
1378
12 x 9mm; slightly trapezoidal.
1379
12 x 10mm; slightly trapezoidal; one corner broken off.
1380
12 x 10mm.
1381
12 x 10mm; slightly trapezoidal.
1382
12 x 10mm; slightly trapezoidal; vestigial rivet.
1383
12 x 10mm; slightly trapezoidal.
1384 Pl. 22
12 x 10mm; slightly trapezoidal.
1385
12 x 10mm; slightly trapezoidal.
1386
12 x 10mm; slightly trapezoidal.
1387
12 x 11mm; trapezoidal.
1388
12 x 11mm; trapezoidal.
1389
12 x 11mm; trapezoidal; prominent mould seam along top.
1390
12 x 14mm; trapezoidal.
1391 (probably Hume 1863, pl. X, 13)
12 x 16mm.
1392
13 x 9mm.
1393
13 x 9mm; slightly trapezoidal.
1394
13 x 9mm.
1395
13 x 9mm; slightly trapezoidal.
1396
13 x 10mm; base distorted; bronze (Appx 2).
1397
13 x 10mm; slightly trapezoidal.
1398
13 x 11mm.
1399
13 x 11mm; slightly trapezoidal.
1400 Pl. 22
13 x 11mm; slightly trapezoidal.
1401
13 x 12mm; one corner broken off.
1402
13 x 13mm; trapezoidal.
1403
14 x 8mm.
1404
14 x 9mm.
1405
14 x 10mm; slightly trapezoidal.
1406
14 x 10mm; thin frame.
1407
14 x 11mm.
1408
14 x 11mm; slightly trapezoidal.
1409
14 x 12mm.
1410 Pl. 22
14 x 14mm; thin sides.
1411
14 x 23mm; trapezoidal.
1412
15 x 10mm.
1413
15 x 11mm; slightly trapezoidal.
1414
15 x 11mm; slightly trapezoidal; one corner broken off; gunmetal (Appx 2).
1415
15 x 12mm; part of one side broken off.
1416
15 x 13mm; slightly trapezoidal.
1417 Pl. 22
15 x 17mm.
1418
16 x 9mm; slightly trapezoidal.
1419
16 x 10mm.
1420
16 x 11mm.
1421
16 x 12mm, slightly trapezoidal.
1422
16 x 15mm.
1423
16 x 15mm; trapezoidal; one lower corner broken off.
1424
16 x 17mm.
1425
17 x 12mm.
1426
17 x 13mm; slightly trapezoidal.
1427
18 x 15mm; trapezoidal.
1428
18 x 17mm.
1429
20 x 10mm; slightly trapezoidal; one corner broken off.

1430 Pl. 22
21 x 14mm; top has central ridge; base expands to oval.

Pentagonal:
No parallel traced.
1431 Pl. 22
17 x 19mm; crisp from filing.

With separate internal rivets

Rectangular/trapezoidal:
?One is presumably Chitty and Warhurst 1977, 31 and 33, fig. 3, no. 46c ('13th/14th century'). These appear to cater for straps with widths between 12 and 15mm. Cf. Egan and Pritchard 1991, nos 1248–9, assigned to the late-14th century.
1432 Pl. 22 (Hume 1863, pl. X, 8).
12 x 12mm; central ridge across top; rivet has circular rove.
1433 Pl. 22
15 x 13mm.
1434
15 x 15mm.
1435
15 x 15mm; rivet has circular rove.
1436
16 x 16mm.
1437
19 x 14mm.

Pentagonal:
Chitty and Warhurst 1977, 31 and 33, fig. 3, no. 46b ('13th/14th-century') illustrated one of these. These appear to cater for straps with widths between 11 and 26mm,cf. Egan and Pritchard 1991, nos 1250–3, assigned to the late-13th/early-14th to late-14th centuries.
1438
12 x 20mm.
1439 Pl. 22
(Hume 1863, pl. X, 22), 13 x 21mm.
1440
17 x 11mm; rivet retains circular rove.
1441
18 x 26mm; rivet retains circular rove.
1442
19 x 11mm.
1443
19 x 11mm; frame incomplete; rivet retains circular rove.
1444 Pl. 22
19 x 20mm; central knop on outside edge has cross-hatched grooves on one half only; prominent file-finishing marks; rivet retains rove.
1445
20 x 17mm; split in frame base at rivet.
1446
21 x 14mm.
1447 Pl. 22
28 x 20mm; rivet retains circular rove.

Rivets missing
(Otherwise similar to preceding categories.)
Those in which drilling the rivet hole has resulted in damage (**1461-2**, **1468**, **1470**, **1474-6**) may never have been used.

D-shaped:
1448 Pl. 22 (Hume 1863, pl. X, 7).
14 x 18mm; for strap up to W 10mm.

With collared knops:
These lack the lateral ridges on buckles of comparable form (**622**, etc.); see on **1351** for similar items, but with integral, external rivets. For straps of W 15 – 20mm.
1449
22 x 15mm.
1450 Pl. 22 (Hume 1863, pl. X,11).
26 x 20mm.
1451 Pl. 22
(Hume 1863, pl. X, 4) 7 x 22mm, central knop, bar missing.

Rectangular:
(These appear to cater for straps with Ws between 11 and 23mm.)
1452
13 x 16mm.
1453 Pl. 22
13 x 19mm; top has transversely grooved central knop flanked by vestigial ridges at corners.
Cf. **1467**.
1454
14 x 13mm.
1455
14 x 15mm; distorted.
1456 Pl. 22
14 x 17mm; moulded ridge along top.
1457 Pl. 22
15 x 14mm.
1458
16 x 14mm.
1459
16 x 16mm; rivet incomplete.
1460
18 x 11mm.
1461 Pl. 22
19 x 13mm; drilling of hole for rivet has gone through one side.
1462
19 x 15mm; one corner and area where rivet would be broken off.
1463
20 x 14mm.
1464
20 x 15mm.
1465
21 x 14mm; drilling of hole for rivet has severed base (on both sides).
1466
21 x 15mm; bifacially bevelled top; holes for two rivets have gone through the edge.
1467 Pl. 22 (Hume 1863, pl. X,10).
22 x 23mm; D-section top has terminal knops and larger central knop has neat, cross-hatched grooves.
Cf. **1453**.
1468
Incomplete: 12+ x 20mm; one corner broken off at hole for rivet.

Incomplete fragment (form of rivet uncertain):
1469
9 x 14mm; one corner and area where rivet might be broken off; prominent file finishing; for strap W *c.* 10mm.

Pentagonal:
These appear to cater for straps with widths between 11 and 27mm.
1470
11 x 11mm; thin frame, which drilling of the rivet hole has severed (on both sides).

1471
13 x 15mm.
1472 Pl. 22
18 x 11mm.
1473
18 x 15mm; unevenly filed.
1474
18 x 27mm; corroded: top slightly asymmetrical from filing; broken at hole for rivet.
1475
19 x 13mm; prominent file marks; part of base where rivet would be is broken off.
1476
24 x 16mm; one side and part of base (?to point where hole for rivet was drilled) broken off; thin frame.

Fragment (form of rivet uncertain)
1477
12 x 8mm; outside edge and parts of sides of square/rectangular frame.

Bent sheet frames
These are presumably low-technology, cheaper versions of some of the above accessories.

Sheet strip makes up all of closed frame:
Rivets are separate, internal where they survive. No parallel has been traced elsewhere for these four items. The straps catered for were up to W 12mm.
1478
13 x 14mm; square; rivet missing (replaced by tied thread, presumably post-retrieval).
1479 Pl. 22 (Hume 1863, pl. X, 5)
13 x 16mm; sub-rectangular; rivet survives.
1480 Pl. 22
14 x 10mm; slightly trapezoidal; rivet survives.
1481
17 x 16mm; slightly curving top; rivet missing.
The following enigmatic, bent-sheet items may be further varieties of sheet strap loops:
They comprise a sheet strip frame with open base (which they overlap from the sides) and separate rod for bar.
Cf. Egan and Pritchard 1991, 233 and 235, no. 1266, which retains a basal rod, and is assigned to the late-14th century.
1482
12 x 13mm; bar missing.
1483
14 x 10mm; bar missing.
1484 Pl. 22 (Hume 1863, pl. X, 2)
15 x 18mm; square-section rod.
1485 Pl. 22
Pentagonal frame;18 x 15mm; pentagonal; holes towards base for missing bar; strap catered for strap up to W *c.* 13mm.
1486 Pl. 22
Pentagonal frame; 20 x 21mm; bar missing.

Lead/tin
The following 11 or 12 finds, comprising at least five different forms, appear to be the only ones so far known in lead/tin alloys. All have integral, external rivets (the relevant parts are missing in fragments **1496** and **1497**). Several are distorted and/or show no definite evidence of use; **1490** could be a waster from local production. Analysis of some of these reveals a range of alloys from fairly pure tin to lead-rich pewter, suggesting they were from more than one casting batch. Dating in the absence of parallels is uncertain, but the late-medieval period, perhaps the 15th century, is tentatively suggested.

Oval
1487 Pl. 22
15 x 12mm; straight top and base offset from sides; slightly distorted; tin-rich pewter (Appx 2); caters for strap up to W 8.5mm.

D-shaped
1488 Pl. 22
Corroded: 17 x 17mm.
1489 Pl. 22
20 x 15mm; tin (Appx 2); distorted; (?)possibly unused.

Trapezoidal
1490 Pl. 22
Distorted: 20 x 12.5mm; (?)untrimmed corners; lead-rich pewter (Appx 2).
Possible waster (?mis-shaped during casting).
1491 Pl. 22
17 x 12mm; tin (Appx 2); possibly unused.

Pentagonal
1492 Pl. 22
Distorted: 16 x 10mm; probably originally pentagonal.
1493 Pl. 22
17 x 15mm; tin-rich pewter (Appx 2); possibly unused.
1494
12 x 12mm; lead-rich pewter (Appx 2).

Rectangular with rebated-convex sides
1495 Pl. 22
15 x 20mm; lead-rich pewter (Appx 2); (?)possibly unused.

Incomplete
1496A & B
Although stored together as a single item it is possible the following two fragments are from different accessories (corrosion has removed any direct joins, but the appropriate profiles do not seem to match). **A**: Corroded fragment: base and parts of straight sides survive; 17mm x 13mm+; (?)possibly unused. **B**: Corroded fragment: 11mm+ x 12mm; one straight side and parts of base and top survive. Analysis shows it is tin (Appx 2).
1497
Very corroded fragment with straight (?)top or side, surviving 15mm x 9mm+.
This could possibly be part of a buckle frame.

Possible applied mounts/pendants
(no obvious means of attachment survives)
The following are presumably later medieval.

Lead/tin
(Cf. Egan and Pritchard 1991, 238–9, nos 1284ff, for different forms.)
1498 Pl. 23
Distorted: corded frame was probably originally circular, original D 34mm; in the centre a naturalistically daisy-like sexfoil.
1499
32 x 24mm; as preceding item.

Eyelet
For a range of mostly late-medieval (late-14th-century) accessories of this category from London see Egan and Pritchard 1991, 227–8.

Lead/tin
1500 Pl. 23 (Ecroyd Smith 1873a, 133 and pl. A8; erroneously described as 'IHS')
Incomplete and corroded: 18 x 21mm; **S** and **Y** ligatured (blackletter), the former with raised perimeter and the latter (?)partly stippled.
Probably late-14th/15th-century. Cf. mounts **1729** and **2006** above, and Egan 2001, 95, fig. 32, no. 55 and Museum of London VR Y89 acc. no. 4796, respectively from Salisbury and London.

STRAPENDS

Hume (1863, 116–28, and pl. 11) illustrated a wide range of strapends of the early and later medieval periods; the precise construction of some of the items since lost is obscure and in some cases even the metal is uncertain. Those that have survived exhibit great variety , in the various methods of manufacture of the copper alloy and of decoration – particularly among the ornate ones of lead/tin. Hume referred to 121 of these having been found at Meols; 108 of copper alloys and 13 of 'lead' (Hume 1863, 124). Perhaps he included buckles with plates (which were sometimes known as 'strapend buckles'). See also **1014**, listed under Mounts.
1501 Pl. 23 (Hume 1863, pl. XI.14).
30 x 8mm; beaded borders and terminal loop; **Iōn·Bōn** along middle; possibly lead/tin; the significance of the legend (??) 'John the Good', etc. is unclear (it is possible this refers to a saint, in which case it should be regarded as another pilgrim souvenir).
1502 Pl. 23 (Potter 1889, fig. 5).
40 x 16mm; front and back sheets, respectively with a shield engraved with: quarterly , first and fourth a bend, second and third a diagonal grid, above which (possibly a separate plate) are a pair of openwork acorns on stems in ogival voids, and (only part shown) a tapering plate with two holes for attachment and (?)engraved with an arc. Metal unspecified.
1503 Pl. 23 (Hume 1863, pl. XI.4).
45 x 15mm; round-ended with pair of rivet holes (almost certainly copper alloy); widely spaced, engraved lettering along outer two of three bands lengthways; several comparable items of copper alloy allow the legend to be interpreted as **AVE MARIA** or versions of that – e.g. Mitchiner 1986, 135, no. 385 from London; Mills 1995, 336 cat. no. 7 and 353, fig. 154, no. 90 from Tattenhoe in Buckingham (undated); J. Halliday reports another from Y orkshire (pers. comm.).

Copper alloy

Single sheet (?)riveted to front of strap
This form, which has not been recognised before, may be the simplest type.
1504 Pl. 23
7 x 31mm; slightly tapering strip; rivets have neat, domed roves.

Single sheets folded widthways at end
Some of these (like **1514**) might be from clasps, but the absence of rebates at the corners of the fold to cater for a frame is more suited for the present purpose. Cf. Egan and Pritchard 1991, 126–9, assigned to the late-13th/early14th – early-15th centuries.
1505
Fragments broken off (lower corners possibly cut off): 18 x 7mm; single rivet.
1506
21 x 7mm; plain rectangle; pinched fold; single rivet.
1507 Pl. 23
Lower corners cut off at angles; 19 x 8mm; single rivet.
1508
21 x 8mm; single rivet.
1509
Incomplete: 23 x 8mm; gap at fold; holes for single missing rivet.
1510 Pl. 23
20 x 9mm; single, clumsy sheet rivet.
1511
20 x 9mm; single rivet.
1512
Two separated items from original single object; 10 x 7mm; trapezoidal – taper continues onto back (broken in two at fold); hole for missing single rivet.
1513
(?)Worn at end: 16 x 10mm; holes for single rivet (missing).
1514
Corroded at top: 22 x 10mm; plain rectangle with looped fold; holes for missing single rivet.
Cf. Egan and Pritchard 1991, 158–61, nos 743–56, assigned to the 13th/early-14th century.
1515 Pl. 23
12 x 11mm; single, offcentral rivet.
1516
18 x 12mm; traces of gilding; single rivet.
1517
Perhaps a strapend: both sides are recessed at fold; 11 x 13mm; holes for missing single rivet.
1518
14 x 13mm; single rivet.
1519
32 x 13mm; relatively heavy sheeting: gap at fold; single rivet.
1520 Pl. 23
33 x 13mm; single missing rivet.
1521 Pl. 23
17 x 36; tapers to fold (the two faces do not match); inward-angled top edges; two rivets.
1522
24 x 10mm; tapers from outside edge (continuing on back); single rivet.
[**1523**: number not used.]

Pairs of sheets riveted together (some may additionally have been soldered)
1524 Pl. 23
22 x 5mm; two rivets.
1525
Corroded: 20 x 7mm; plain rectangle; single rivet (missing)
1526
33 x 8mm; simple rectangles; single rivet; hints of solder along sides.
1527
19 x 9mm; appears to be two sheets; single rivet.
1528
35 x 9mm; perimeter line of opposed, paired punched triangles.
1529
39 x 9mm; tapers towards straight end with offcentral, angled projection; both rivets survive.
1530
Corroded; 18 x 10mm; rectangular; soldered at end; single rivet.
1531 Pl. 23 (Hume 1863, pl. XI,12)
31 x 10mm; soldered at angular , ogival end; two rivets; leather survives from strap.

1532
18 x 11mm; shield-shaped, soldered at angled end; single rivet.
1533
26 x 11mm; straight inside edge; soldered at ogival end; single rivet.
1534 Pl. 23 (Hume 1863, pl. XI,6).
40 x 11mm; tapers to ornate terminal; straight inside edge is at an angle; single rivet; the engraved saltire zigzags in the 1863 figure are now very difficult to make out.
1535
Corroded and incomplete at top: 32 x 13mm; flat end with angled spike as terminal; two rivets survive.
1536 Pl. 23
Similar to the following, but 43 x 13mm, and taper is rounded; both rivets survive.
1537 (Chitty and Warhurst 1977, 31 and 33, fig. 3, no. 43: '13th/14th-century')
Incomplete (neither plate has the inside edge intact): surviving 46 x 13mm; the more complete sheet tapers to trefoil terminal on doubly engrailed neck; one of two rivets survives.
1538
44 x 14mm; tapers at angle to angular trefoil terminal on both sheets; top damaged in both; one of original two rivets survives.

Paired sheets differently folded
1539
13 x 14mm; squarish sheets, one folded at base and one side, the other at the corresponding side; the single rivet survives.

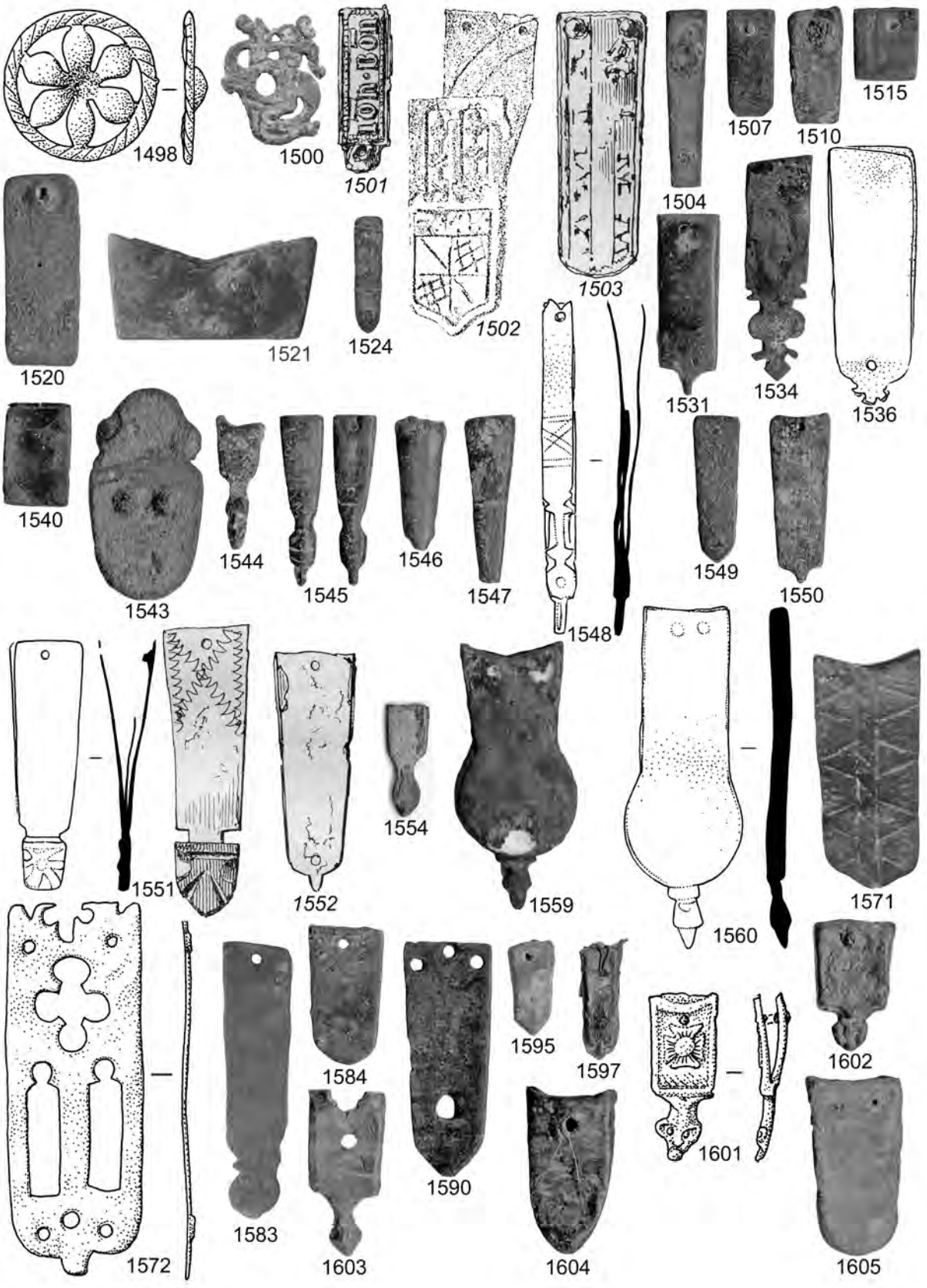
Pair of sheets, with elongated sheet triangles at sides, soldered at base
1540 Pl. 23
18 x 12mm; only one side piece survives, as does the single rivet.
705G Pl. 16 strapend on strap **705A**
21 x 11mm; slightly tapered; holes for single rivet; (mounted with other accessories on modern strap).
Cf. Egan and Pritchard 1991, 130–1, nos 598–602, fig. 85, assigned to the late-13th to late-14th centuries.
[**1541**: number not used.]

Pair of sheets with perimeter sheet strip
Cf. Egan and Pritchard 1991, 136–8, nos 630–9, assigned to the mid-13th – late-14th centuries.
1542
24 x 7mm; rounded end; strip incomplete; single rivet survives.
1543 Pl. 23
37 x 20mm; front plate has round end and ornate, trifoliate top with two domed roundels protruding at the sides; two dome-headed rivets; shield-shaped back has scratched grid with random scratching over the entire field (possibly from an attempt at cleaning after retrieval?). The overall beetle-like appearance is presumably coincidental.

Cast front combined with sides and end/terminal, with sheet back
Cf. Egan and Pritchard 1991, 132–3, no. 614, assigned to the late-14th century.
1544 Pl. 23
Incomplete – upper part broken off: 23 x 7mm; terminal is in form of stylised animal head; single rivet retains surviving part of sheet.
(?)Norman period.
1545 Pl. 23 (Hume 1863, pl. XI,13).
30 x 7mm; tapers to terminal with stylised animal head; both rivets and leather from strap survive.
1546 Pl. 23
Corroded at top: 23 x 8mm; convex front tapers to sub-ogival end; two rivets; leather from strap survives.
1547 Pl. 23 (Hume 1863, pl. XI,17)
(?)Incomplete (inside edge is at slight angle; ?terminal broken off): 28 x 8mm; tapers towards end; sheet with two rivets occupies top part down to (?)solid end.
(?)Norman period.

Paired sheets with a sheet spacer in lower part
(Cf. Egan and Pritchard 1991, 146–8, assigned to the late-13th/early-14th – late-14th centuries).
1548 Pl. 23 (Chitty and Warhurst 1977, 29–30, fig. 2, no. 41: '13th/14th-century').
57 x 5mm; front strip is engrailed at top, roughly engraved in centre with saltire cross flanked by upper and lower delimiters (all double-lined) and lower mouldings; central strip emerges at base as rod-like terminal; plain back strip.
1549 Pl. 23
25 x 7mm; angled end; two rivets.
1550 Pl. 23 (Hume 1863, pl. XI,16)
29 x 10mm; tapers to biconcave, pointed terminal; one of two rivets missing.
1551 Pl. 23 (Hume 1863, pl. XI, 7)
42 x 11mm; tapers to terminal, defined by narrowed neck, with filed radiating grooves (?cf. scallop motif); engraved saltire between lines along inner part of sides and inside edge (zigzags, now clearer from Hume than on object because of subsequent corrosion); two rivets.
1552 Pl. 23 (Hume 1863, pl. XI, 9)
41 x 12.5mm; tapers to rounded end with terminal point; both rivets and leather (cut off neatly at inside edge) survive.
Cf. Egan and Pritchard 1991, 146–8, nos 692–703, assigned to the late-13th – late-14th centuries.
1553
19 x 6mm; angled end; two rivets.
1554 Pl. 23
Spacer only: 19 x 7mm; oval terminal on narrowed neck; two rivets.

Composite with (cast) forked spacers
(Cf. Egan and Pritchard 1991, 140–6, assigned to the late-13th/early-14th – early-15th centuries).
(?)One is: Chitty and Warhurst 1977, 31 and 33, fig. 3, no. 42 ('acorn terminal; 13th-century'.
Compare these with the buckles of similar construction, **597**ff.
See also **1571**.
1555
Corroded at top: 25 x 10mm; ogival end; hole(s) for single, missing rivet.
1556
30 x 10mm; tapers to angled end with rough central knop; doubly engrailed top edge; two rivets.
1557
21 x 14mm; shield-shaped: single rivet.
1558
Corroded and one sheet missing: 63 x 18mm; sub-ogival end may have terminal broken off.
1559 Pl. 23
48 x 21mm; roundel with expanding top to angled, concave inside edge; collared acorn-like terminal; two rivets; leather survives.



Pl. 23. Later medieval mounts and strapends

1560 Pl. 23
60 x 21mm; expanded, round terminal; collared, acorn-type knop; concave inside edge; two rivets retain leather from strap, cf. **1565** and **1563**.

Spacers only
1561
Incomplete, broken off at top: surviving 18 x 8mm; collared knop.
1562
39 x 8mm; collared knop.
1563
Incomplete: 30 x 10mm; collared, acorn-type knop.
Cf. **1560, 1565** and Egan and Pritchard 1991, 143–4, nos 672–3, assigned to the late-13th – late-14th centuries.
1564
52 x 11mm; collared knop.
Cf. Egan and Pritchard 1991, 142–4, nos 676–84, fig. 94, assigned to the mid-14th – mid-15th centuries.
1565
Incomplete: surviving 56 x 11mm; acorn-type knop.
Cf. **1563** and **1560**.
1566
30 x 12mm; collared knop.
Cf. Egan and Pritchard 1991, 143–-4, no. 680, assigned to the late-14th century.
1567
37 x 13mm; collared, elongated terminal knop; sprue remains on one prong (where it would not have been visible).
1568
Fragment, 11+ x 9mm; blunt terminal knop.

Disassociated sheet plates

Front plates:
1569
25 x 8mm; tapers to angled end; broken off at top, leaving inside edge at an angle; hole for attachment.
1570
Crumpled: 21 x 12mm; slight (uneven) taper to angled end; holes for two missing rivets.
1571 Pl. 23
41 x 18.5mm; concave top and angled end (possibly damaged); engraved with obliquely hatched band defined by pair of central lines vertically dividing fields with opposed, outward-pointing triangles (spaced slightly apart and with irregular tooling on fields between); (no provision for rivets).
Perhaps forked-spacer variety.
1572 Pl. 23
Openwork: 65 x 23mm; inside edge has trefoil cut-out flanked on each side by a V-shaped nick; quatrefoil cut-out over pair of rectangular openings narrowing to round heads; rounded base has protruding central tab; five holes for rivets – two pairs and a rounder central one at the base, presumably a replacement.
A similar openwork motif appears on a more elaborate, hinged strapend from York (Ottaway and Rogers 2002, 2901–2, no. 14367, assigned to the mid-14th/early-15th century).

(?)Front or back plates:
1573
32 x 6mm; doubly engrailed inside edge and corners cut off at angles at outside edge; hole for single (missing) rivet.
1574
24 x 7mm; rounded base with central projection; holes for two missing rivets.
1575
28 x 8mm; plain rectangular; single rivet; black coating.
1576
Corroded: 30 x 8mm; outside edge tapers and then expands to incomplete terminal lobe (?holed for missing rivet); hole for rivet (missing) near inside edge is definite; black coating.
1577
31 x 8mm; angled end; holes for two missing rivets; probably part of same original object as **5080**.
1578
Abraded top (?broken off): 25 x 9mm; angled end with rounded tip; hole for single missing rivet.
1579
27 x 9mm; straight inside edge; tapers to rounded end; one of two rivets survives.
1580
As **1577**, but 31 x 9mm (probably part of same original object).
1581
Fragment (broken off at angle): 16 x 10mm; angled end; remains of one rivet.
1582
25 x 12mm; rounded end; hole for single missing rivet.
1583 Pl. 23
48 x 12mm; oblique inside edge; tapers slightly to moulded end with roundel terminal; hole for single rivet.
Possibly from the form that has two sheets soldered together at the end (cf. Egan and Pritchard 1991, 132–3, nos 609–11, assigned to the late-13th to late-14th centuries).
1584 Pl. 23 (Hume 1863 pl. XI, 19).
24 x 13mm; rough, straight inside edge; rounded end; hole for single missing rivet; arc of opposed, paired punched triangles at top.
1585
Presumably from a strapend rather than a buckle, etc.: corroded, with fragments missing; 30 x 13mm; tapers towards damaged end; holes for two missing rivets.
1586
Incomplete at top: 40 x 13mm; tapers to rounded base; traces of solder for spacer.
1587
43 x 13mm; tapers towards end; two opposed, concavities form a neck to the spade-shaped terminal; oblique inside edge may represent loss of an upper portion; one of two rivets survives.
1588
27 x 14mm; tapering to rounded base (tip broken off); holes for two missing rivets.
1589
20 x 15mm; rectangular fragment with hole for single missing rivet near one edge; (?) broken off at fold.
1590 Pl. 23
41 x 15mm; tapers to angled end (?possible terminal broken off); four holes for attachment, three and one – the latter larger and rougher than the others.
1591
Separated fragmentary front and back plates: corroded and ends broken off; 22 x 16mm; doubly engrailed tops; holes for single rivet; wear suggests there may have been a forked spacer (could be from a buckle but this seems unlikely).
Cf. Egan in prep. (Bordesley Abbey, Worcestershire), where a similar item is thought to be for a book cover.
1592
41 x 16mm; tapers to irregular, almost angled end; hole for single rivet (missing).
[**1593**: number not used.]

Fragmentary plate, either from a buckle or a strapend
1594
26 x 17mm; grooved aperture at inside edge is echoed by a corresponding, slightly smaller hole in the back sheet; the two rivets survive.
Egan and Pritchard 1991, 143–4 strapend no. 675 (assigned to the early-15th century) also has a pair of holes.

Lead/tin
All surviving backs are solid sheets.
For attachment voids 'holed' = integrally cast, but 'pierced' is an extra subsequent action [applies also to buckles, clasps and mounts]. These are likely all to be late-14th-/15th-century, possibly lasting into the early-16th century. Several of the plainer ones and a few of the more ornate ones have scratches, usually taken to be graffiti (certainly the case in **1604** and **1606**), though on the majority of those listed below this is likely to represent rough wear.

Plain
1595 Pl. 23
Incomplete: crude; 16 x 7mm; joined at angled end (lacks sides); pierced for single (missing) rivet.
1596
Incomplete: 20 x 7mm; joined at rounded end (lacks sides); pierced for single (missing) rivet.
1597 Pl. 23
Incomplete: crude; (?)open-sided sleeve (one side strip broken off), 20 x 7mm; ogival end; hole for single (missing) rivet; (piece of modern leather tied on).
1598
17 x 8mm; angled to biconvex terminal knop; rough holes for missing single rivet.
1599
Corroded, tip missing, 23mm+ x 9mm; full sleeve; hole for single rivet.
Presumably a strap end.
1600
Corroded: 31 x 11mm; full sleeve with angled end; roughly and slightly offcentrally pierced for single (missing) rivet.

Decorated
1601 Pl. 23
Crude: terminal bent to one side; 29 x 12mm; concave inside edge; rounded cross pattée, with central pellet making it a floral motif, in subrectangular field defined by raised lines; lacks sides; joined at base and terminal with animal head (having prominent ears and tongue out – cf. ape); pierced holes for single (missing) rivet.
1602 Pl. 23
Crude: 23 x 13mm; full sleeve tapers to biconcave base; poorly registered main device – (??) possibly a single black-letter (??**b**) on its side, in linear border with obliquely hatched band at base; pelleted-rosette terminal; single, lead/tin rivet survives.
1603 Pl. 23
Incomplete – only front sheet survives at top: 30 x 14mm; trefoil aperture in inside edge; roughly pierced for single rivet; facetted lozenge-knop terminal; upper part of back sheet broken off at point of join near base; tin (Appx 2).
1604 Pl. 23
Full sleeve (slightly split): 30 x 16mm; tapers, curving on both sides to angled end; concave inside edges appear to be blade-trimmed; holes for single, missing rivet; three irregular scratched lines radiate from hole on one face, pair of transverse lines and (?)random scratches on the other.
The attachment holes and thin profile differentiate this item from blade chapes.
1605 Pl. 23
31 x 18mm; corroded on one side and inside edge: originally a full sleeve; slightly tapering with round end and (?)straight inside edge; holes for two missing rivets; trace of (?)leather from strap.
1606 Pl. 24
Rectangular, 40 x 28mm, full sleeve with damaged top that perhaps originally had holes for single (missing) rivet; lower, unclosed end is possibly curtailed; crude, scratched grid on one face and more-complex motifs on other.
1607 Pl. 24
(Hume 1863, pl. XI, 21); 22 x 7mm.
1608 Pl. 24
(Hume 1863, pl. XI, 23); 26 x 20mm.

Ornate forms
1609 Pl. 24
Distorted: 20 x 18mm; holed trefoil at top of openwork ring at front; roundel at back has tab (now folded over) with a hole that originally corresponded with the one at the front; rounded end having (?pierced) terminal loop.
1610 Pl. 24
19 x 20mm; three-quarter circle back with crescentic front (damaged); probable basal suspension loop is broken off; the single, separate lead/tin rivet survives.
1611 Pl. 24
Corroded arc fragment: 39 x 20; bifacially bevelled front with beading along both edges; plain back (the latter was perhaps a complete disc originally); stubs from (?)loop at (?)base.
1612 Pl. 24
Incomplete and corroded: survives as an almost complete, two-sided roundel, D 22mm (openwork front and ?plain sheet back apart from central hole for attachment), D 20mm; corded edge around (?)sexfoil motif of alternate domed and concave pellets (the one at the top retaining the single lead/tin rivet – two of the pellets have been glued in place subsequent to retrieval); leather from strap survives.
It is to some extent analogous to the strapend shown in Egan and Pritchard 1991, 246, fig. 157B (assigned, by comparison with the other accessories with which it is shown, to the early-15th century), though some details of the design appear to differ.
1613
As **1615**, but 16 x 26mm, and back sheet has torn rivet hole.
1614 Pl. 24
Rectangular, full sleeve, with openwork (moulded on both faces – one less detailed than the other): bird of prey (wings rising) perched in the hoop of a cylindrical padlock; 43 x 29mm; two (?)pierced pairs of holes (one set rougher than the other) for missing rivets; (?random) scratches on plainer face; leather from strap survives.
The moulding on both faces is most unusual. Presumably the Yorkist falcon-in-fetterlock badge, used, among others, by Richard Duke of York (son of Edward IV and one of the princes murdered in the Tower of London in 1483) from the time of the Wars of the Roses, and subsequently by Henry VII and VIII, when it was less contentious (Stanford 1953, 26–8). The presence at Meols, so close to the original Lancastrian heartland, of a possible Yorkist badge is intriguing, but not too much should be read into a single object. Cf. Spencer 1998, 294 and 296, nos 290c–e for comparable Yorkist rose-in-padlock badges found in London, and Ottaway and Rogers 2002, 2908–9, no. 13378, fig. 1480 for a copper-alloy (?)strapend plate with a similar bird from York, all assigned to the 15th century.

1615 Pl. 24
Corroded: 38 x 30mm; slightly more than a semicircle – back sheet pierced for attachment (there is a larger area of damage); arc-profile perimeter at front tapers upwards to points. Cf. **1613**.
1616 Pl. 24
Corroded: incomplete, rectangular sleeve, 27 x 30mm, with openwork at front – possibly the latter part of a heavily stylised blackletter '**ave**'; damaged cresting of trefoils on points of a row of inverted arcs along top, and stubs possibly from a similar motif at base (only arcs survive here); (?) pierced for attachment in middle of back. Thiscould be what Ecroyd Smith referred to (1869, 214) as a 'pendant of a girdle inscribed 'IHS', but did not illustrate there.
1617 Pl. 24
Worn fragment – possibly from a strapend or a buckle with an integral strap sleeve: remains of now-subrectangular front of sleeve only , 30 x 30mm – blackletter **mari** on obliquely cross-hatched field, between horizontal bands with oblique hatching, and at the top a horizontal row of saltire crosses; one (?of original two) pierced holes for attachment (possibly highly ornate originally).
1618 Pl. 24
Circular, D 30mm, with plain back and openwork front: high points are worn; central cross-hatched knop with four surrounding blind arcs (cross/cinquefoil motif), all within (?)an obliquely hatched ring, from which four trefoil (ivy-like) leaves sprout alternating with cross-hatched knops, again all in a ring with a beaded outer edge; incomplete terminal loop at base; the back has a triangular hole, and a piercing for attachment that corresponds with a hole in the uppermost knop.
1619 Pl. 24
Corroded and incomplete: part of rectangular , full sleeve survives, 31 x 31mm; lower part of V irgin enthroned, flanked by two taller , narrower arches (sides of throne), each surmounted by a cross; all on cross-hatched field; (?ornate) inside edge appears concave with (?)two pierced holes to one side; single-layer openwork (?top of loop) is broken off below; traces of textile adhering.
1620 Pl. 24
Small fragment of arc, surviving L 11mm, D*c.* 20mm, with cable hatching: may survive from an openwork strapend with a swan in a comparable cable-pattern frame published by Ecroyd Smith (1868, 121, and fig. 1.9; cf. a complete example from London (Fig. 2.5.8) and Mitchiner 1986, 220, no. 810 of copper alloy, 27 x 21mm).

Fig. 2.5.8: Belt end from Billingsgate, London, by permission of Museum of London

1621 Pl. 24 (Hume 1863, pl. XI, 22) 49 x 28mm, ornate strapend with openwork S and plate engraved **IHC**.
3277C Pl. 24 and 54 (Potter 1889, fig. 3) strapend on leather strap ***3277A*** Shield-shaped with biconcave inside edge and openwork crown in circle with pellets together with mounts ***3277B***, following **1062**.

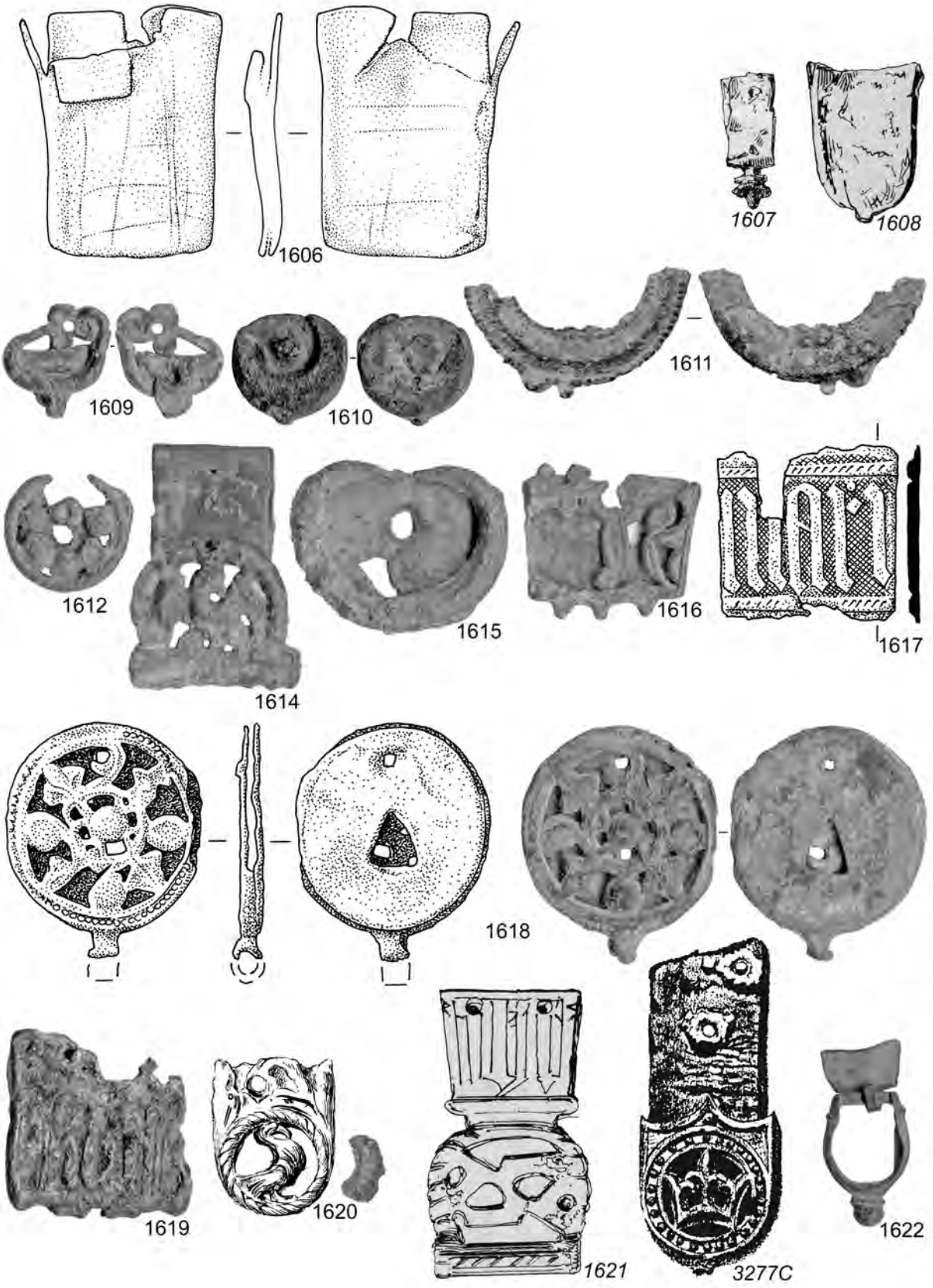
Probable strapend
1622 Pl. 24
31 x 14mm; D-shaped frame with collared knop on outside edge, and vestigial ridges near basal corners; hook on trapezoidal sheet plate attached to bar of former.
Compare buckles **622**ff and strap loops **1449**ff with frames of similar form (including lateral ridges), though the absence from the present item of a pin or hole of appropriate form in the plate precludes this identification. In the absence of any obvious means of attaching this combination to a further item it may be suggested that it may have been used as a strapend, with the fixture part of the attachment plate now cut off, or it is the result of an *ad hoc* joining together of incompatible parts – whether this might have happened in the medieval period or more recently is open to question.
Whatever the actual usage was, this item illustrates the extensive variety of ways of wearing basically similar looking accessories.

Buckle or strapend sheet plates
(Items, some fragmentary , that are not distinctive or complete enough to assign definitively to either category.)

Copper alloy
1623
29 x 6mm; tapers towards (?)broken off end; paired lines of roughly punched, opposed triangles along sides; two holes for attachment, that at damaged end is rougher than the other.
1624
20 x 12mm; slightly tapering; holes for two missing rivets.
1625
30 x 13mm; tapers towards roughly cut, angled end; roughly scored lines (one doubled) parallel to sides on both faces; four holes for attachment centrally – lowest one is smooth and could have acted as a hole for a buckle pin, but the others have bent back the surrounding metal.
1626
Very corroded: 30 x 18mm; part of hole and one rivet survives.
The hole may be for a buckle pin or a grooved aperture as in Egan and Pritchard (1991), buckle no. 325 or strapend no. 671, assigned to the early-15th century.
1627
36 x 18mm; rectangular (broken off at one end); corroded: two holes for attachment; (?split) aperture flanked by holes for two missing rivets; solder from attachment of missing forked spacer on back; hints of engraving on original surface.
[**1628–1639**: numbers not used.]

BROOCHES

At almost 170, the large number of surviving brooches is one of the high points of the medieval assemblage from Meols, indeed it is the one major category in which the surviving Meols finds outnumber the individual totals published for each of the other sites considered at the beginning of the section on Dress Accessories (2.5. p. 81), including London (see Table 2.5.6 for the different metals used and for comparison with these other assemblages). There is a constriction or hole in the frame for the separate pin unless otherwise indicated. Pins are described or missing. There are 120 surviving brooches of copper alloy, 42 of lead/tin (four of these with integral pins – this does not include items listed as pilgrim badges) and five of silver



Pl. 24. Later medieval strapends

a total of 167. As is usual, circular frames predominate, and there is a cluster of very small ones (Ds < 20mm). Hume noted 56 brooches and 28 fermails (= book clasp or hook in general); a total of 84, comprising 49 of copper alloys, 30 of 'lead' (some of which are specified as 'pewter') and five of 'silver' (Hume 1863, 84 and 87) – some specifically described as the latter are actually lead/tin (cf. T able 2.5.5). The brooches at Chester Museum attracted the attention of Claude Blair (sometime Keeper of the Department of Metalwork at the V ictoria and Albert Museum), who worked on a classification while a student in the late-1940s (the results appear to survive only as a single unpublished page from a listing).
'Parti' indicates that half the frame is decorated with one pattern, while the other half is plain or differently decorated (**1694**, **1716**, **1752**, and **1824**).
Several impressive brooches were recorded in the 19th century but have not survived
1640 Pl. 25 and Pl. IV
(Hume 1863, 81 and pl. V, 9) – painted in some copies of *Ancient Meols* with a yellow background, silver filigree, and red details) was a delicate circular brooch, D 25mm, apparently the most striking of those recorded from Meols: 'On a basis of copper or bronze is a thin plate of gold, covered in silver filigree, of fine work, and ornamented with enamel.'
1641 Pl. 25 (Ecroyd Smith 1873a, pl. B4) D 16mm; possibly of flat sheeting, metal uncertain.
Some possible brooches among the Meols finds illustrated in the antiquarians' works that have not been traced are difficult to assign to specific categories:
1642 Pl. 25 (Hume 1863, pl. VI, 5); illustrated with the brooches; it could indeed have been one or it might alternatively have been a mount; D 29mm;.
1643 Pl. 25 (Ecroyd Smith 1873a, pl. B3), 15 x 12mm, was an open, sub-annular form (with the ends of the frame bent back from each other), which cannot readily be paralleled at any date.
Less certainly a brooch is:
1644 Pl. 25 (Hume 1863, pl. XXIX, 6) 'brass', a fragment comprising a rayed roundel with a central pellet on part of a transversely grooved (?)rod frame, L 30mm, D (roundel) 12mm.

Open frames

Copper alloy
As indicated above, about two-thirds of the surviving medieval brooches from Meols are of copper alloys. The range of form and detail among these accessories is impressive – as with most of the other dress accessories, the emphasis is on variety , with duplicates appearing only exceptionally.

Evidence suggesting local manufacture:
Several of the simplest circular brooches of this metal seem to form a tight group, now characterised by a rich brown colouring (e.g. **1651**, **1665**, **1669**). These include a few items that appear to be manufacturing discards. They may all be from a single workshop. Other recurrent features are a discontinuity (rather than breakage) at the constriction for the pin (also a trait of septfoil **1736**) and, in some, traces of an uneven seam longitudinally where an original bar was folded lengthways and hammered together to form the rod that would be bent to make the frames (e.g. **1650**, **1657**, **1682**, and cable-decorated **1712**; this is also evident on the pin of **1687**, the frame of which is cast). Bent-rod frames of this type are described below as 'discontinuous.' Round- and square-section frames of this rich-brown appearance are both present, some of the latter having been twisted to decorative effect (**1708**ff). This group of cold-worked material is likely to represent local production. Dating is difficult with such simple accessories, but that is probably itself a clue to a relatively early part of the later Middle Ages. This is perhaps given a specific fixed point by a comparable item (said to be 'broken' at the constriction, as the present ones were at first thought to be) excavated in Dublin from a deposit assigned to the first quarter of the 13th century (Deevy 1998, no. 7; cf. no. 13, also from Dublin, assigned to the mid-12th to early-14th centuries, and no. 93, which has twisted frame, from W aterford, assigned to the 13th century). The present group (including the pieces thought to be manufacturing waste, which is listed under Metalworking, copper alloy – see **2245ff**) may date to the late-12th to early-13th centuries. The items comprising this suggested locally made assemblage are plain frames **1651**, **1654-5**, **1660**, **1663**, **1665-6**, **1672**, **1675** and **1684**, tooled frames **1697**, **1699**, **1702** and **1705**, and cable-decorated frames **1709**, **1712** and **1714**. These total 17, and ten further items, apparently discarded before they reached a stage of manufacture that would allow them to be worn, are listed as wasters for brooches (a further five items are not definitive of brooches, though some or all of them may be associated with their manufacture; see **2245**ff). Among the other brooches with plain frames (i.e. those with different surface appearances) the majority are not joined at the constriction. The gap (or alternatively one in the pin loop) would have been necessary to get the pin in place on the frame, but despite this being a weak point during wear if it was joined together only by bending (any more effective process, such as soldering, would have been more difficult on the frame than all the rest of the manufacture put together), this detail has rarely been noted in other assemblages (if the pin has remained in place it inevitably obscures this point of the frame). The discontinuity may be a much more widespread trait than is currently appreciated.

Plain circular
Most of these are definitively brooches. Small, relatively plain versions may be characteristic of the Norman period. Longitudinal seams occur where strips making the frames are thought to have been hammered over into rod forms.
1645 Pl. 25
D 8mm; lozenge-section frame is discontinuous.
1646 Pl. 25
D 9mm; lozenge-section frame is discontinuous.
1647
D 11mm; circular-section frame is discontinuous.
1648
As preceding but lozenge-section.
1649
As **1648**.
1650
D 11.5mm; circular-section frame is discontinuous; seam along perimeter.
1651 Pl. 25
D 12mm; circular-section frame is discontinuous; pin has bent-wire collar; seam along parts of outer perimeter; gunmetal (Appx 2).
1652 Pl. 25
D 12mm; circular-section; thin frame is discontinuous.
1653
D 13mm; circular-section frame; D-section wire pin.
1654 Pl. 25 (possibly Hume 1863, pl. V, 1).

D 13mm; circular-section frame is discontinuous; wire pin has bent-wire collar.
1655
D 13mm; circular-section frame is discontinuous.
1656
D 13mm; lozenge-section; frame is discontinuous.
1657
D 13mm; circular -section frame is discontinuous; seam along inside perimeter.
1658
Slightly distorted: D *c.* 13mm; square-section frame is discontinuous.
1659
Corroded and distorted: thin, (?)round-section wire frame (uneven through corrosion) is discontinuous; original D estimated *c.* 13mm.
1660
D 14mm; circular-section frame is discontinuous; cast pin (?different alloy from frame) has collar and lacks tip.
1661
D 14mm; circular frame is discontinuous.
1662
Corroded: D 15mm; circular-section; discontinuous frame.
1663
D 16mm; circular-section frame is discontinuous; D-section wire pin.
1664
D 16mm; circular -section frame; wire pin has bent-wire collar (could be very degraded iron, though does not respond to magnet).
1665
D 16mm; round-section frame is discontinuous; rich brown patina.
1666
Distorted: original D estimated 16mm; circular -section frame is discontinuous.
1667
D 17mm; circular-section frame; cast pin with collar has tip broken off.
1668
D 17mm; circular-section frame is discontinuous.
1669 Pl. 25
D 18mm; square-section frame is discontinuous, rich brown patina.
1670
D 18mm; lozenge-section frame; wire pin has bent-wire collar.
1671
Corroded: D 19mm; circular -section frame is discontinuous.
1672
D 20mm; circular-section frame is discontinuous.
1673
Slightly distorted; D *c.* 20mm; circular-section frame is discontinuous; trace of gilding.
1674
Distorted: original D estimated *c.* 20mm; circular-section frame is discontinuous.
Possibly never used.
1675
D 21mm; circular-section frame is discontinuous.
1676
D 22mm; circular-section frame; D-section wire pin.
1677
D 22mm; oval-section frame; D-section wire pin.
1678
D 22mm; circular-section frame; pin with collar is obscured by corrosion.
1679 Pl. 25
Reversible: D 23mm; discontinuous, circular-section frame; cast pin has three punched dots between transverse flanges on each face.
1680
D 23mm; pin missing.
1681
D 23.5mm; discontinuous, circular-section frame.
1682 Pl. 25
D 25mm; discontinuous, circular -section frame (the two ends do not match); seam along much of perimeter; wrought pin with wide loop is incomplete.
1683
D 26mm; lozenge-section frame.
1684
D 26mm; square-section frame is discontinuous; series of bevels (?)alternating with nicks; seam along inside face. Possibly unfinished.
1685
Fragment (less than half) of triangular -section frame: D estimated *c.* 34mm; presumably discontinuous at constriction for pin.
1686
Pl. 25 (Hume 1863, pl. V.16) D 18mm; 'brass'.

Circular with integrally cast decoration (including one with a legend)
1687 Pl. 25
Reversible: D 20mm; cast frame has opposed, triangular rebates along each side giving raised, running zig-zag on one face, and four groups of from three to five transverse grooves on the other; wrought pin has prominent seam lengthways from hammering the metal over.
1688 Pl. 25
Distorted; terminals have constrictions for pin (missing); original D estimated *c.* 23mm; D-section with rebate along outside edge.
1689
D 28mm; triangular -section frame; zig-zag of paired, oblique grooves along outer face; 12 blind holes along inner face for stones, with some decayed glass or fixative surviving; constriction for missing pin.
(cf. Egan and Pritchard 1991, no. 1317, assigned to the late-13th/early-14th century).
1690 Pl. 25
D 29mm; frame at oblique angle, with trace of worn/corroded series of saltire-angled quatrefoils on outside and running wavy foliate motif along inner bevel; constriction for sheet pin, the tip of which is worn by the frame.
(cf. Egan and Pritchard 1991, no. 1308, assigned to the late-12th century).
1691 Pl. 25 (Hume 1863, pl. VI, 12; Anon 1851, pl. 1)
D 34mm; central depression along frame with integrally cast cross-hatching; eight projecting roundels with central rings along perimeter.
1692
D *c.* 41mm; frame fragment (about one-third) with series of rebates along upper face, dividing it into a row of cushion-like forms.
(cf. Egan and Pritchard 1991, 249–50, no. 1311, assigned to the late-13th/early-14th century, and Hattat 2000, 382).
1693 Pl. 25 (Hume 1863, pl. VI, 6); D 14mm; copper alloy; dense transverse grooves around the whole frame.
1694 Pl. 25 (Hume 1863, pl. VI, 4); D 20mm; copper alloy; parti-decorated with dense transverse grooves.
1695 (Hume 1863, pl. XXIV, 13); similar circular frame, D 21mm, with dense, slightly uneven transverse grooves,

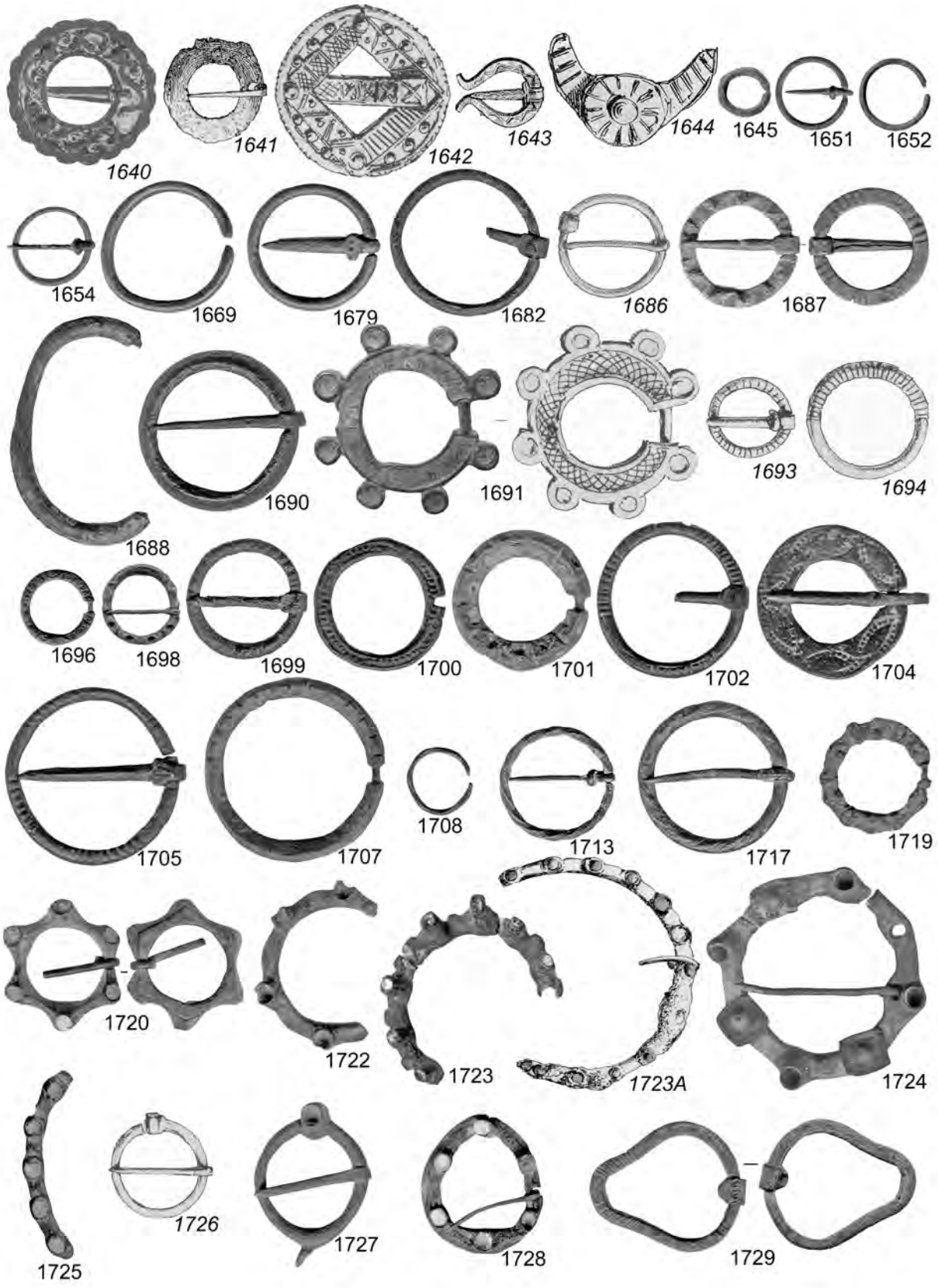
but lacks a pin. By analogy with ***1693*** and London finds (e.g. GYE92 acc. no. 6411 with wear from a missing a pin, this could well be a Norman period brooch.

Ecroyd Smith (1874, 96–7, not illustrated) referred to a (now lost) brooch in the possession of Potter as' copper - alloy ('latten') barely half an inch in diameter with incuse +AMOR.VINCIT.OM[NIA] – i.e. 'love conquers all'. This motto is noted on a brooch worn by the Prioress in Chaucer's *Canterbury Tales*.

Circular with tooling
1696 Pl. 25
Abraded: D 12mm; frame flattish in section; tooling on one face may be false lettering.
1697
Abraded/corroded: D 13mm; circular-section frame is discontinuous; faint transverse grooves survive in two discrete areas.
1698 Pl. 25
D 13mm; parti-decorated, sub-triangular -section frame; blind holes alternating with transverse grooves, and row of single (outer front face) and paired, punched dots, with stylised animal head at each end; uneven seam runs along inside; D-section wire pin.
The tiny animal design (almost too small to notice) invites comparison with other brooches that feature two beasts, which together comprise the entire frame (Margeson 1993, 14–15, fig. 7 and pl. 4, no. 57, from a deposit assigned to *c.* 1275–1400; Deevy 1998, 115, no. 99 may be a degenerate version).
1699 Pl. 25
D 20mm; three areas around frame have series of transverse grooves; discontinuous at constriction for (?)wrought pin, which has transverse ridge defining thick loop.
1700 Pl. 25 (Chitty and Warhurst 1977, 25–6, fig. 1, no. 15, 'late Saxon').
Crude: uneven, flat frame, D 23mm, with central recess having uneven series of pellets (these are probably tooled though they could be integrally cast from a poorly set out mould); (?)constriction for missing pin is nick in outer perimeter. Some of the edge here is sharp from filing, perhaps subsequent to retrieval (cf. Hattat 2000, 383; fig. 242; no. 1713).
1701 Pl. 25
D 24mm; slightly irregular, sub-triangular-section; paired blind holes (one on each of two front faces) alternate with grooves filed through apex.
For the decoration cf. Egan and Pritchard 1991, 251–2, no. 1317, assigned to the late-13th/early-14th century, and Read 2001, 102 and 109, fig. 69, no. 798 (found in Wiltshire); both are smaller than the present item.
1702 Pl. 25
D 26mm; circular-section frame has three areas of crisply filed, transverse grooves and seam from hammering the rod form is evident at several points; white-metal coating; wrought pin has wide loop (obscuring constriction in frame) and tip is broken off.
1703
Reversible: D 26mm; oval-section frame: plain on one face, transverse grooving on the other; incomplete, cast pin has ridges lengthways on both faces.
1704 Pl. 25
Crude: D 27mm; flat frame with running motif of lentoid shapes made up of two strands of punched annulets, and constricted for (?)cast pin with collar and relatively large loop.
1705 Pl. 25
D 29mm; circular -section, discontinuous frame (no constriction) has three areas of irregular, filed transverse grooves; wrought lozenge-section pin has flanges near loop and engraved zig-zag along both upper faces; white-metal coating on both parts.
Cf. pin **1744**; (?)13th-century or earlier.
1706
Fragment (about half): D estimated 30mm; triangular - section frame; front has blind holes along inside face and transverse grooves in apex, both along one part only. Perhaps parti-decorated.
1707 Pl. 25
D 32mm; triangular-section frame; front (with two sides) is parti decorated – plain, and transversely grooved along apex.

Circular with cable decorated (twisted) frames
The first nine of these, with square-section frames that are discontinuous at the constrictions for the pins, are presumed to be the earliest ones. They seem to have been made by twisting square-section wire (one 'rotation' = turned 360 degrees – i.e. three faces appear once and the first appears again at the other end of the ring), and then simply aligning the ends without joining them together by solder. The number of rotations in the frames below appears to vary between one and three and three-quarters (respectively in **1711** and **1713; 1716** has a three-quarter rotation evident in the square-section half). There is some evidence for local manufacture of these, see **2249** listed under Waste. The last one, **1717**, presumed to be the latest, was cast as a ring moulded to look as if it was twisted.
1708 Pl. 25
D 11mm; one and a quarter rotations.
1709
D 14mm; two and a half rotations.
1710
D 14mm; frame is possibly coated; one rotation; sheet pin is bent from use.
1711
D 15mm; one rotation.
1712
D 18mm; frame has seam lengthways; one and a half rotations.
1713 Pl. 25
D 19mm; three and three-quarter rotations; wire pin has bent-wire collar (heavier-gauge).
1714 (Bu'Lock 1960, 16, fig. 5h) D 19mm; frame is discontinuous; one and a quarter rotations. This seems to be a high-medieval brooch frame put on Viking-period baluster-headed ringed pin shank **375** as a replacement ring. That is unlikely to have happened prior to the recovery of both elements from the field; it is only possible to speculate at which subsequent stage the marriage took place.
1715
D 22mm; one and a half rotations.
1716
Corroded: D 22mm; parti plain round and twisted square-section frame is discontinuous; three-quarters of a rotation in latter part.
1717 Pl. 25
Cast: reversible: D 26mm; oval-section frame; cable decoration on one face, plain on the other; cast pin has transverse ridges on both faces near discontinuous loop. See also **2249** listed under Manufacturing.

Circular with collets
1718
Incomplete; frame is hexagonal from back but appears rounded from front: D 19mm; five surviving outwardly



Pl. 25. Later medieval brooches

angled collets of original six – one retains possible traces of gem or its setting. This coronet-like form is widespread – cf. **1720**, and Margeson 1993, 14–16, fig. 7, and pl. 5, no. 58, with blue-glass gems and from a deposit assigned to *c.* 1275–1400 from Norwich; Biddle and Hinton 1990, 641–2, fig. 172, no. 2027, and assigned to the 14th century, from Winchester; I.H. Goodall 1984, 339–40, fig. 190, no. 51, assigned to the mid-13th century from Exeter (with further parallels cited, including a larger version) and Read 2001, 103 and 110, fig. 70, no. 813, from Wiltshire.
1719 Pl. 25
Corroded: D 20mm; constricted for missing pin; paired circular collets alternate with larger, single oval ones set transversely – one of the latter acts as a notch for the missing pin (the frame expands slightly at each pair or single collet) – one circular collet retains a blue-glass gem (an oval one has what may be a different material).
1720 Pl. 25
D 22mm; six outwardly-angled collets retain paste from gems or their settings (five reddish-brown, one white); wire pin's tip is missing. Cf. **1718**, with parallels cited.
1721
Fragment of frame, D estimated *c.* 29mm, which expands at two surviving collets (?originally six); constriction (presumably originally discontinuous) at one end for pin.
1722 Pl. 25
Incomplete (just over half): D 29mm; four surviving, outward-angled collets (? of original six, gems missing) alternating with slight swellings in the frame.
1723 Pl. 25
Incomplete (three surviving fragments): original D estimated *c.* 35mm; seven collets survive (most retaining whitish/reddish-brown material from gems or their settings) alternating with slight projections from the frame; part of hole for missing pin also survives.
1723A Pl. 25
(Ecroyd Smith 1867, 185 and pl. 1.7) D 40mm; illustration shows fragment comprising some two-thirds of the original circle, with 12 collets then surviving (this may equate to the pieces still extant along with two corroded areas and the loop of a wire pin – all the latter (?)now being lost; the frame's diameter is marginally larger and the slight projections are not shown quite as prominently as on the surviving fragments). This illustration suggests an original total of (?)14 collets in the part depicted (the commentary says there were glass gems, alternately green and yellow, and these would have totalled 16, which does not allow for the pin and its notch). The missing portion was apparently found a year later (Ecroyd Smith 1868, 118). Apart from the pin hole it is uncertain precisely how the parts that survive would have related to the original two pieces; nevertheless, and despite their suffering, some of the original finds have come down to the present.
1724 Pl. 25
Frame broken at one point: D 41mm; flattish frame, swelling out at four integral collets (empty except for reddish traces in one), which alternate with four holes (also at swellings), three of which retain knop-headed rivets that secure sub-square sheets, each stamped with two concentric squares of beading; D-section wire pin.
A complete example is illustrated in *Sotheby's Sale Catalogue* 1981, 12, no. 6 left, where it is assigned a 14th-century date.
1725 Pl. 25
Frame fragment, D estimated *c.* 50mm, with five surviving collets, some retaining possible paste from gems or their binding medium.
This brooch may originally have had 16 gems; it is one of the most extensively single-row gem-decorated of all known medieval annular brooches (Deevy 1998, 122, no. 119 of copper alloy from County Wexford in Ireland, retains its complement of 16 gems).
1726 Pl. 25 (Hume 1863, pl. VI, 7) with a circular frame had a single lateral collet; its resemblance to a finger ring was probably deliberate, a few similar items being interpreted as tokens of love/engagement, e.g. Egan 1996b, 88, fig. 3c, top right, for one from a probable foundry site in London).

Oval/sub-circular
1727 Pl. 25
28 x 19mm; D-section frame; deficient collet lacking gem at one end, different projection (?)broken off at the other; sheet pin at lateral constriction.
Cf. Egan and Pritchard 1991, 254–5, no. 1335, assigned to the late-13th/early-14th century; Cherry (1988) listed the then known brooches of this relatively common form (see also under Lead/tin, oval).
1728 Pl. 25
24 x 21mm (probably Hume 1863, pl. VI, 3 'brass'); corroded. Cast; irregular, flattish frame with flange all around and six collets, one retaining a green-glass cabochon, the others having traces of whitish fixative/foil; hole for D-section wire pin goes through the outer edge. Unusually crude for a brooch with separate stones; the bending of the pin shows it was used, despite the misplacement of the (?drilled) hole. Parallels, e.g. Read (2001, 102 and 109, fig. 9, no. 788), from south-east Dorset, and Hattatt (2000, 383, fig. 242, no. 1427); these are better preserved than the surviving present item and retain clearer drop-shaped outlines, which (despite differences in other traits) suggest a tradition of using this specific shape.

Pyroid
1729 Pl. 25
Pear-shaped outline: 27 x 22mm; rectangular-section frame is discontinuous; several uneven groups of transverse/oblique filed grooves along frame; a prominent seam on back suggests the frame is probably a single piece hammered over to make a U-section bar; loop of (?sheet) pin (also with oblique grooves) survives.
Presumably a brooch rather than a buckle (no parallel traced); (?)Norman-period from the method of manufacture of the frame, and the grouped hatching.

Square (and related quadrangular forms)
1730 Pl. 26 (Hume 1863, pl. XXVIII, 3).
17 x 16mm; angled projection at each corner apart from one with constriction for missing pin; collet flanked by ridges on each side. There is no indication that the collets ever held gems.
1731 Pl. 26
34 x 33mm; (the actual frame is octagonal as seen from the back, but excrescences give an overall squared outline from the front): paired, conjoined collets on each side (three retain whitish material from the gems or their settings); tab (in form of three arms of cross pattée) with four blind holes and opposed grooves at three of the corners, single hole for D-section wire pin in the other.
Cf. Read 2001, 102 and 109, fig. 69, no. 787, with groups of six blind holes, found in south-west Devon; Read 2001, no. 786, found in Wiltshire is another variant.
1732 Pl. 26
(Potter 1876b, pl. opposite p. 182, no. 8).
Some corrosion: 35 x 35mm; reversible; slightly concave-sided; on one face corners each have reserved, stippled

knops, on the other they are engraved AA (flanking pin).... I in lombardic letters; cast pin with square collar.
The letters may perhaps have stood for **MARIA**, taking the AA as both the M and the final A.

Lozenge
1733 Pl. 26
Thin (almost wire-like), non-joining lozenge outline, 24 x 20mm.
1734 Pl. 26 (Ecroyd Smith 1868, 118 and fig. 17).
Rounded corners, 34 x 24mm; dense transverse grooves along entire thin frame; discontinuous at constriction.
(cf. Baker *et al.* 1979, 279–80, fig. 174, no. 1366, frame (L 31mm) described as iron with twisted gold wire, and a copper-alloy pin, and assigned possibly to the 15th–16th centuries – while both the description and dating proposed present difficulties, this find would seem to furnish a medieval parallel for the form. The simple decoration is more consistent with a Norman-period accessory.

Quatrefoil
1735 Pl. 26 (Hume 1863, 82 and pl. V , 10; Chitty and Warhurst 1977, 26–7, fig. 1, no. 19).
D 35mm; constriction for missing pin; worn from use.
(cf. LMMC 1940, pl. 78, no. 6, assigned to the 13th/14th century).

Septfoil
1736 Pl. 26
D 33mm; bifacially bevelled frame with cusps between arcs, discontinuous at constriction for missing pin; although file-finished, at some points the perimeter remains sharp enough to suggest this was lost soon after casting (no obvious wear from use); gunmetal (Appx 2).
Possibly never worn. An elegant frame design, more familiar in lead/tin than copper alloy (cf. versions among lead/tin pilgrim souvenirs from Canterbury with central representations of Thomas Becket' s head – see frame fragment **1878** and the parallels cited there; also Hattatt 2000, 383, fig. 242, no. 1428, which is a plainer version than the present item).

Frame fragment of indeterminate form
1737
Curved fragment (D estimated 21mm if circular) with oblique, tooled grooves (tooling like this is more common on brooch frames than those of buckles).

Separated pins

Copper alloy
These are generally relatively narrower and longer and sometimes more sharply pointed than those for buckles, but there was probably a considerable overlap. Any with ornament and those that appear reversible are more likely to have been for brooches.
1738
Cast; L 17mm; with collar; reversible.
1739
Cast: loop incomplete; point broken off; surviving L 18mm; with collar; reversible.
1740
Cast: white-metal coating; L 22mm; D-section shaft with flanged ridge; wear from use.
1741
L 23mm; D-section wire.
1742
Cast: L 27mm; transverse ridge next to incomplete loop; responds to magnet, so presumably has iron (?) centre or inclusion; gunmetal (Appx 2); probably reversible.
1743
Cast: corroded; L 31mm; incomplete loop; vestigial collar; probably reversible.
1744 Pl. 26 (Hume 1863, pl. V, 19).
Cast: L 35mm; flanges next to loop; engraved zig-zag along both upper sides of lozenge-section shaft (included with brooch pins because the engraving is paralleled on that of brooch **1705**).
Described by Hume as silver.
1745
(?)Cast: corroded; L 41mm; lozenge-section bevelled shaft.

Open frames

Lead/tin

Circular (annular)
The first two listed have no specific provision for pins (usually taken to differentiate circular buckles from circular brooches) but against the broad picture their level of decoration is more appropriate for frames for the latter than the former. Although **2292** (the only completely plain one of these alloys) is perfectly usable, it stands out among the brooches, which would have been prominently visible as worn, for its irregularities – it is therefore listed as a possible waster under Metalworking.

Round/rounded-section frames:
1746 Pl. 26
D 20mm; with four sets of six integrally cast, transverse bands (not all clearly registered) evenly spaced around frame on one face only; no specific provision for pin (a slight swelling at one point may be a trace of a sprue).
(?)11th/12th-century.
1747 Pl. 26
The surviving part is presumably the upper of the two halves illustrated as Hume 1863, pl. VI, 10, despite its being described as 'brass' (the lower part is untraced).
Incomplete: estimated D *c.* 20mm; delicate ornament of transverse hatching with external pellet-in-circle motifs (false gems), between which are series of radiating, cusp-like motifs (possibly incomplete).
The 1863 plate suggests there were originally six collets.
1748 Pl. 26
Corroded: D 24mm; relatively thick frame with three groups of irregular, tooled transverse grooves around front and applied copper-alloy sheeting also on front between these (no distinct restriction for missing pin, though it could have fitted in any of the grooves).
Presumed to be a brooch by comparison with the basic decoration on **1746**, etc. – (?)Norman period.
1749
Presumably a brooch frame: about half; D 23mm.
1750
Fragment (about half) with some corrosion: original D estimated *c.* 24mm; (?)parti plain and with transverse grooves.
1751 Pl. 26
D 29mm; four sets each of three oblique, roughly tooled grooves around frame in two differently orientated pairs; constriction for missing pin.
The tooling of lead /tin medieval dress accessories is unusual – possibly an improvement on the part of the owner?
1752
Incomplete and corroded: D 29mm; parti plain and dense

cable twisting (minute transverse tooling between spirals); pin missing.
Cf. Egan and Pritchard 1991, 253–4, no. 1331, for a similar, pewter frame, spiralling the whole length, and assigned to the late-14th century.
1753 Pl. 26
Crude, probably distorted to oval: original D estimated *c.* 30mm; both biconvex faces have a series of transverse ridges; prominent mould seams on inner and outer perimeters; wear at two, opposed points on the frame suggest a pin was present.
Despite no specific provision to limit pin movement, this rough item is classified as a brooch, since it seems too frail to have acted as a buckle (though cf. D-shaped buckle **633**).
1754 Pl. 26 (Hume pl. XXV , 10) 'lead'; (?)two-ply wire circular frame (discontinuous but lacking a constriction), D 18mm. By analogy with London finds having pins, this could well be a Norman-period brooch.

Square-section frame:
1755
Fragment (less than half): distorted – estimated D *c.* 13mm; cast, square-section as if with one and a quarter surviving turns, narrowed for pin at one surviving end.

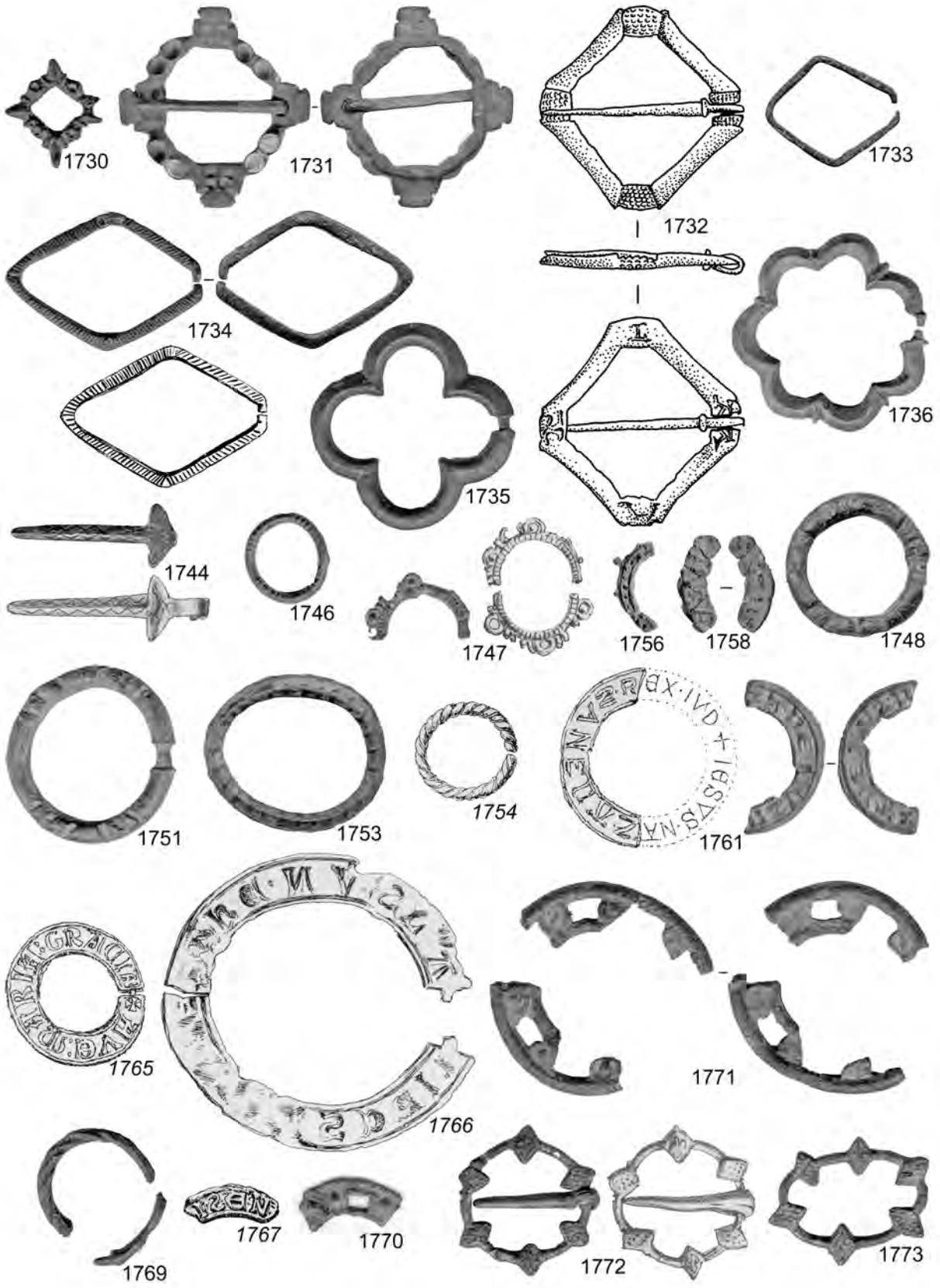
Flat frames (and variants):
1756 Pl. 26
Corroded frame fragment: original D estimated *c.* 14mm; with central beading between two lines; remains of three perimeter pellets; other side has vestigial area of hatching; possibly reversible.
1757
Frame fragment: original D estimated 20mm; crude; obliquely hatched, with pellets around outer edge.
1758 Pl. 26
Corroded frame fragment: D estimated 30mm;...(**A**)**ZAR**(**E**)… in lombardic lettering on one face, zig-zag on other.
1759
Corroded frame fragment: original D *c.* 23mm; series of radiating bands, each with row of five pellets.
Neat workmanship.
1760
Corroded (perhaps much-damaged) frame fragment, original D estimated *c.* 25mm, with raised edges, and pellets along outside.
Cf. Ottaway and Rogers 2002, 2912–3, fig. 1486, no. 12949 of pewter (D 22mm), found in York and assigned to the late-13th century.
1761 Pl. 26 (Hume 1847c, no. 60; 1863, pl. XXVII, 8).
D 26mm; about half survives (cutting with a blade at one end is probably a post-retrieval neatening of a ragged end); legend between lines along edges **…ZARENVS R…** (lombardic lettering; Rs are of open form, S is retrograde) – i.e. *Jesus Nazarenus Rex Iudaeorum* (only room for abbreviated version, as suggested by Hume).
1762
Frame fragment: D estimated 27mm; series of transverse bands, each with row of four beads centrally.
1763
Half of frame: D 33mm; crude; irregular zig-zag on one face, similar but multiply stranded (giving triangular fields) on other; reversible.
1764
Frame fragment: original D estimated *c.* 40mm; constriction for missing pin: incuse … **ARIAGRAI** around
Part of a variant of AVE MARIA GRACIA PLENA legend.
1765 Pl. 26
D 25mm (Hume 1863, pl. 27.9) 'lead' +A VE: MARIA:GRACIA (lombardic lettering – cf. **1764**.)
1766 Pl. 26
D 51mm (Ecroyd Smith 1867, 186–7 and pl. 1.15), metal not stated: corroded, diameter two inches, with incuse letters: [IH]ES[VS.NAZA]RENVS.[L]A (lombardic script, letter N and Ss reversed, letters in square brackets given by Ecroyd Smith).
1767 Pl. 26
(Ecroyd Smith 1873a, 127, pl. B7) frame fragment with …REN… (lombardic lettering).

Sub-triangular-section:
1768
Corroded: (?)frame fragment; original D estimated *c.* 45mm; sub-triangular-section with one concave face; raised perimeter band.

Lozenge-section:
1769 Pl. 26
In two pieces: D *c.* 18mm; parti-decorated: parti plain and twisted with transverse raised lines between spiral ridges; constriction for missing pin.

Openwork frames:
1770 Pl. 26
Frame fragment: D estimated *c.* 26mm; simple pellets on cross-hatched field with beaded perimeter; (the surviving, neatly rectangular hole could perhaps be provision for the pin rather than decorative openwork as in following item).
1771 Pl. 26
Two fragments of frame: D *c.* 34mm; robust outer band with transverse hatching, connected to smaller, inner band by a web with circle-and-pellet motifs (cf. sexfoils) alternating with a series of subrectangular holes.

With integral, lozenge-shaped bezels:
Of the complete ones, **1772** and **1773** have six bezels (?cf. **1779**), while **1774** has four and **1779** had eight. They all presumably originally had circular frames – as **1772** (the most pristine) suggests (though it has been adapted after it was found); **1773** and **1774** are oval, but they may , like others found elsewhere, have become distorted. Accurate estimation of original dimensions is particularly difficult with fragments in this group.
1772 Pl. 26 (Hume 1847c, pl. 44; 1863, pl. V, 6) 'silver'.
D 22mm; six bezels – two each with a fleur -de-lis, the others cross-hatched; the frame has been repaired by being soldered together from three fragments, presumably after retrieval; pin survives – though in present state (presuming it is the original) it falls short of the frame on the far side; post-retrieval solder repair to section of frame.
1773 Pl. 26
As preceding item, but (?)distorted to oval; frame is otherwise undamaged, and pin is lost; original D of frame estimated *c.* 22mm; tin-rich pewter (Appx 2).
1774 Pl. 27
Distorted: original D estimated *c.* 30mm; four bezels (one large and three slightly smaller – two of the latter damaged), each with a four-square grid motif.
1775 Pl. 27
(possibly Hume 1863, pl. V, 7; shown complete, with eight bezels and pin).
Two slightly distorted fragments (non-joining), each with oblique hatching and two surviving, elongated bezels having engrailed perimeters; original D estimated *c.* 35mm.



Pl. 26. Later medieval brooches

The engrailing was presumably intended to suggest a series of claws retaining a central gem.
1776 Pl. 27
Two frame fragments: original D estimated *c.* 37mm; (?) frame lengths alternately plain and obliquely hatched (B has only a stump surviving where the plain part would have been), each with one surviving, cross-hatched bezel.
1777 Pl. 27
(three distorted fragments), crude, presumably all from the same brooch (from which other pieces are missing – original D estimated *c.* 50mm): round-section frame with (?)banded collars alternating with bezels – two with cross-hatching, one with multiply stranded saltire cross, the other with four panels of right-angle rotated hatching.
1778 (two fragments)
Frame fragment: too distorted for accurate estimate of original D (which was probably similar to that of **1777**; surviving length of frame is plain, with single surviving bezel having a cross having opposed, oblique hatching between the arms.
1779
Two fragments: one with two, the other with three cross-hatched bezels (too distorted to tell original diameter).
1780 Pl. 27 (Hume 1863, pl. XXVIII, 1); L34mm+, fragment from an ornate form with foliate bezels and a hatched/cross-hatched frame

With collets:
1781 Pl. 27
Presumably part of a brooch: fragment of round-section frame, original D estimated *c.* 25mm (presuming an original circular form) with two sub-spherical, cupped collets surviving – one with a central pellet on a stalk.
No parallel is known for the curious stalked pellet (it seems unlikely to be some kind of sprue – could it possibly represent a flower stamen or , in the manner of a rivet, have served the perilous function of securing a bead of a different material?).
1782
Corroded fragment: original D estimated *c.* 30mm; round-section frame with two surviving collets, each with a green-glass gem.
1783
Corroded and distorted fragment of round-section frame: original D estimated *c.* 30mm; one false collet and one (?)roundel (?false gem) surviving on rod-like frame with part of constriction surviving.
1784 Pl. 27 (Hume 1863, pl. VI, 13); D 24mm 'lead'; five collets/false collets.

Complex moulding:
1785 Pl. 27 (Hume 1863, pl. V, 5); D 31mm ; 'lead;' the frame had a (?)tooled ridge along it and five (?pentagonal/shield-shaped) bezels, each with a trefoil motif and a wire pin.

Oval:
1786 Pl. 27 (Hume 1863, pl. VI, 11); 26 x 15mm; frame with row of annulets, gem at one end and (?)animal head at other, (?)wire pin (frame painted silver and end gem green in some copies of *Ancient Meols*, although Hume described the frame as 'brass' in his notes for the unpublished second edition); this is in several ways comparable to **1727** of copper alloy.

(?)Square, etc. (fragments):
Presumably lost are: two lozenge-shaped: one 1 x inches long with trifoliate motifs at corners, the other slightly different (Ecroyd Smith 1866, 218, not illustrated).

Fig. 2.5.9 Brooch from Billingsgate, London, after Egan and Pritchard 1991, fig. 167 (reduced)

1787 Pl. 27
Right-angled frame fragment: surviving 17 x 10mm; on one face three solid, false collets survive with hatched fleur-de-lis in corner and obliquely hatched outer edge; the other face is transversely hatched, and has a plain band at the end (could be a symptom of misalignment of the mould parts – though its presence is not conclusive evidence that this piece was a waster); tin-rich pewter (Appx 2). Reversible.
1788 Pl. 27
Right-angled fragment, surviving 17 x 14mm, presumably from asymmetrical brooch: corner of ladder-like openwork frame with hatching/beading along all parts and pellet at corner; on one side this openwork design apparently changes after two squares with a longer strut on the inside (perhaps a side of a hole for the missing pin), the other continues beyond the fourth.

Hexagonal:
1789 Pl. 27 (Hume 1863, pl. V , 8); 'lead/tin' D 30mm; frame (?)broken, with swelling at each angle, having parallel lines of opposed triangular marks (if these were punched they would be characteristic of copper-alloy accessories, not lead/tin ones).

Cruciform:
1790 Pl. 27 (Presumably Hume 1863, 87–8 and pl. VI,1); 'silver,' shown complete and with pin having cross-hatched loop), though there is no sign of the false collet on the centre of the curve in the surviving portion.
Frame fragment with straight-ended arms joined by concave curves, respectively with fine beading and single, coarse beads along perimeter between false collets along centre of frame; 23 x 21mm; neatly made.
1791
Fragments of frame similar in outline to preceding item, comprising straight and curved parts: transverse hatching with knop (false gem) at each corner; estimated originally *c.* 22 x 22mm.

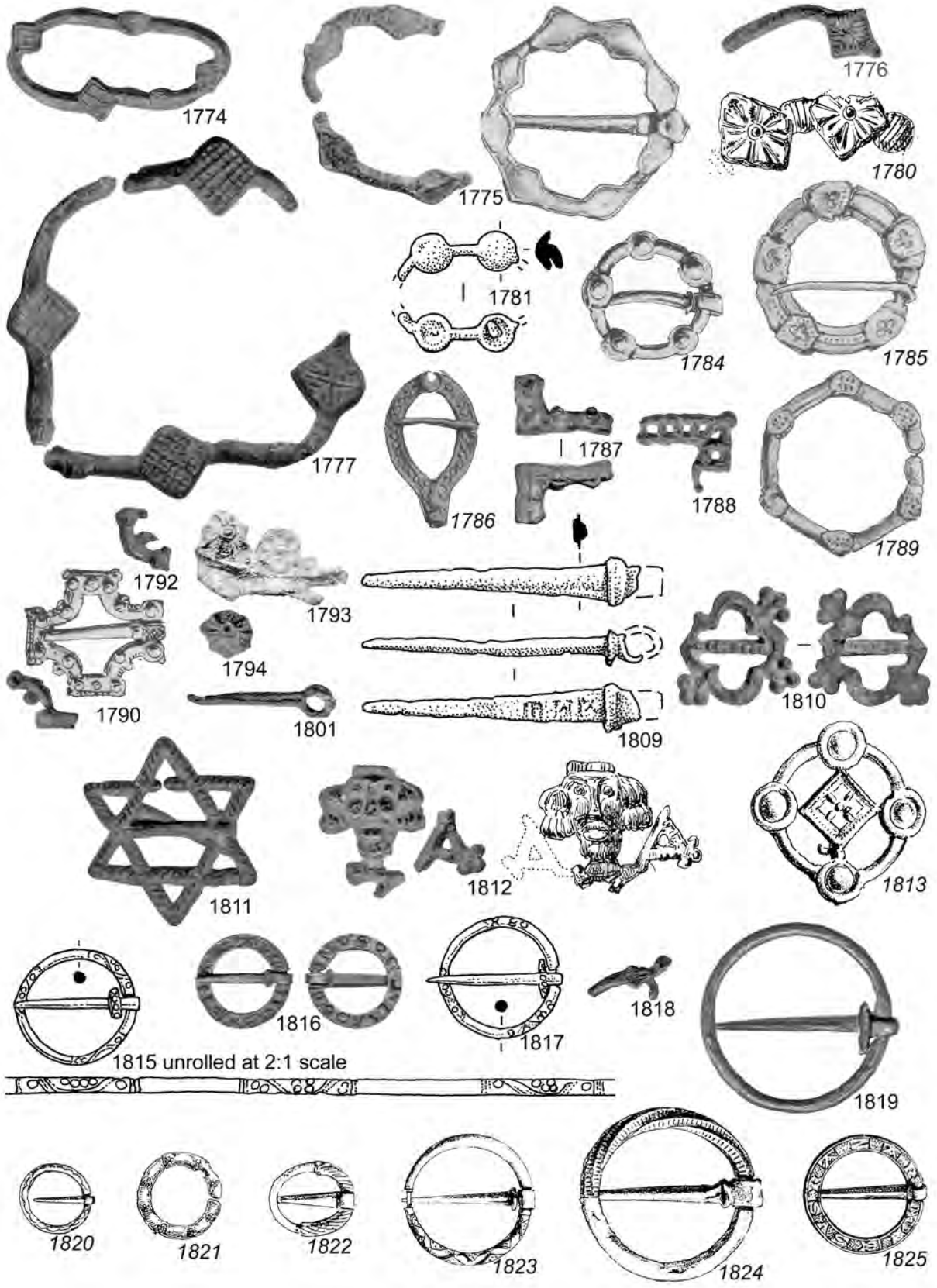
1792 Pl. 27
Curved fragment, again probably of frame (bifacially bevelled) of similar outline to those of preceding items, estimated *c.* 22 x 22mm, with a false collet at each corner, each with a pellet (false gem) externally; between these (also externally) is another pellet on the end of a lobe (the casting seam at the back suggests this could have been part of provision for a possible integral pin).

Ornate frame(s):
1793, 1794 Pl. 27
Fragments: 27 x 14mm and D 9mm; sexfoil (concave lobes) adjoining rayed boss (with central pelleted roundel), with pelleted roundels between, both attached to a rebated arc, outside, which is a sinuous cord line, and rayed boss alone. These come from the second ring in of a very large (D 85mm) and highly decorated circular brooch consisting of four concentric rings of varied motifs, as Egan and Pritchard 1991, 258–9 fragment no. 1350 (Fig. 2.5.9), a small portion of which was itself elucidated by a complete parallel – both found in London (the stratified fragment is assigned to the late-13th/early-14th century; the present fragment was recognised by Julie Edwards). It is presumed that the two parts are from the same original brooch.

Separated pins:
There is potential confusion with some buckle pins. Those of copper alloy are presumed for listing purposes to be from buckles unless they are unusually long and slender, and those of lead/tin are presumed to be for brooches unless they are very robust (none of those listed qualify for this – see Egan and Pritchard 1991, 66, no. 480).
The following items have open loops to allow attachment (unless indicated otherwise).
1798 and **1808** show little or no sign of wear.
All are potentially reversible on the frame apart from **1798** and **1809**
1795
L 18mm; lozenge-section shaft with collar.
1796
L 21mm; convex/bifacially bevelled shaft with transverse ridge; little sign of wear.
1797
L 24mm; biconvex shaft with collar.
1798
L 24mm; plano-triply bevelled shaft; no sign of wear.
1799
Loop incomplete and point broken off; surviving L 24mm; square-section shaft with flanged ridge.
1800
L 25mm; round-section; ridge at loop.
1801 Pl. 27
L 26mm; series of crude transverse and oblique ridges along upper face of pentagonal shaft; worn from use; reversible.
1802
Corroded: L 26mm.
1803
Corroded: L 27mm; lozenge-section and vestigial transverse ridge.
1804
Corroded: L 28mm; narrow, lozenge-section shaft with flanged ridge.
1805
L 30mm; lozenge-section shaft; closed loop.
1806
Loop (?)cut off; lozenge-section shaft; surviving L 32mm.
1807
L 35mm; round-section; disc-like collar; discontinuous loop.
1808
L 40mm; similar to preceding item; little sign of wear; tin (Appx 2).
1809 Pl. 27
Corroded and loop incomplete: L 47mm; D-section; legend: **II..E** following asterisk-like motif in rectangle (lombardic lettering, direction for reading uncertain) disc-like collar; little sign of wear; tin-rich pewter (Appx 2). The use of such a weak alloy for a brooch/buckle pin of this size suggests that the accessory was not subject to much tension – perhaps some kind of religious trinket rather than a practical fastener for clothes (cf. Egan and Pritchard 1991, 122–3, no. 573, assigned probably to the late-14th century).

Frames with integral pins
1810 Pl. 27
Quatrefoil with trefoils at the angles (one missing); 21 x 19mm; central, beaded bar (which hides the pin).
1811 Pl. 27 (Ecroyd Smith 1870); 'pewter brooch … triangle within triangle'
Transversely hatched, hexagonal frame with false pin diametrically (in the same position as the real one on the back).
See Spencer 1998, 320–1, no. 320 on the protective 'Solomon's seal' motif, which was popular in the late-14th century.
1812 Pl. 27
(Hume 1863, pl. XXVIII, 2); joining fragments of openwork, 23 x 18mm and 12 x 11mm, (perhaps originally with hexagonal frame): bearded male head (?central motif) and openwork triangle with trefoil on straight length survive (the missing pin was presumably integral). Probably Hume (1863, 296) 'probably…a pilgrim sign…[with] the features of Peter and Paul'?; Hume's drawing shows this combination prior to breakage (it is remarkable that, if correctly identified, the two pieces ended up in different collections in different museums). Cf. van Beuningen and Koldeweij 1993, 277, nos 753–5 – 'Christ-like busts', assigned to the late-14th /early-15th centuries; possibly a religious trinket (i.e. analogous to pilgrim souvenirs – see e.g. Rome souvenir featuring St Peter and St Paul ***1867***).
1813 Pl. 27 (Hume 1863, pl. V, 12); D 30mm.
[**1814**: number not used.]

Silver
The five surviving silver brooches comprise just over 30% of the total in all metals. The combined weights of these surviving items is 25.4g. The weight of a (?)contemporary penny coin was supposed to be 1.46g, making **1815** about equivalent to a penny-halfpenny, **1817** to about twopence, and **1819** about fourpence (cf. Egan and Pritchard 1991, 254–5, no. 1337, assigned to the late-14th century – a London brooch equivalent to twopence). Although **1815** and **1817** at a glance look about the same size, the former, with its marginally smaller diameter is actually the heavier in precious metal but by far the less competently decorated.
1815 Pl. 27
Frame, D 19mm, is discontinuous (lacking specific provision for pin); three areas of decoration of groups of punched annulets (some incompletely registered) between two outer transverse and paired inner oblique grooves possibly with niello; pin has sheet collar with punched annulets around the perimeter, and wear which shows that the tooled face was that displayed when worn; total Wt



Pl. 27. Later medieval brooches

2.2g; 91.8% fine (Appx 2).
A more competently decorated version of **1817**.
1816 Pl. 27
D 20mm; flat frame; engraved legend runs onto both sides: IESVS NAZARE // NVS REX IVDEO (lombardic lettering); sheet pin, slightly bent from use, with lateral flanges; total Wt 1.1g; 90.5% fine (Appx 2).
1817 Pl. 27
D 20mm; (?)slightly corroded: the bent-wire frame (join at constriction, normally hidden by the pin) has three areas with partly offstruck, punched motifs – (?) trefoil flanked by annulets or paired annulets (some of the latter have registered as arcs), defined by transverse bands (?of niello) – some missing; the cast pin has a separate collar bent round with punched annulets along its perimeter; total Wt 2.9g.
The curiously ham-fisted decoration on the frame (which is far too small to take the design satisfactorily), incompletely registered and partly obscured by the pin, is at odds with the precious material and the specialist punch(es) used. Presumably mid/late-13th-century in view of the following, which have a northern/midland distribution. Another example from the north-west, D 40mm, in the Tullie House Museum, Carlisle (CALMG no. 1992.110, assigned to the 14th century) has similar decoration, competently tooled (Richardson 1998, 32–3, fig. 9, no. 82 – thanks to Tim Padley for this information); also one from Stanthorne, Cheshire (PAS no. 330386) and DCMS 2002, 69–70 silver-gilt no. 118 from Wolverton, Warwickshire, there assigned to 1280–1300 on the basis of another find in a coin hoard from Coventry (Thompson 1956, no. 103, pl. 10; Smith 1937). There is also a large one from Great Chesters (Museum of Antiquities, Newcastle upon Tyne, 1985.37.A). Closely comparable, too, is the asymmetrical decoration also of punched annulets accompanied by niello on a gold finger ring excavated at York and assigned to the mid-13th century (Ottaway and Rogers 2002, 2924–5, fig. 1494, no. 12937). There is either a tradition uniting these accessories, or perhaps a single workshop produced all of them.
1818 Pl. 27
Fragment comprising curved strip with terminal bifurcation and overlying trefoil; Wt 0.3g; D of frame estimated approx. 25mm; 91.5% fine, with traces of gilding (Appx 2).
Part of foliate decoration applied to the frame of composite, circular brooch: two or more pieces like this one would have been soldered, so as to rise like tendrils from the frame to the rim of a collet, the stone in which would thus become a terminal 'flower' (cf. Egan and Pritchard 1991, 251–2, fragment no. 1319 of copper alloy, assigned to the late-14th century – with references to examples in gold).
1819 Pl. 27
D 33mm; frame has dense, irregular grooving longitudinally, alone on one face, but on the other (which abrasion on the pin shows was that on display when worn) broken by transverse and oblique areas of irregularities (perhaps where further decoration was attached); slight constriction for tooled pin with separate, sheeting open collar (secured by rather prominent solder of uncertain date); Wt 5.8g; 90.1% fine (Appx 2).
The grooving is unlikely to be an accidental effect of corrosion, but tooling intended to suggest the natural bark surface of some trees (cf. one half of the parti-decorated brooch in *Sotheby's Sale Catalogue* 1981, 21, no. 24, also on front cover – there assigned to *c.* 1400 and described as being for hunting dress). The form of the missing elements may perhaps be indicated by **1818**.
Perhaps not surprisingly, several brooches of this metal have been lost over the years. all described by Hume in his notes for the second edition of *Ancient Meols* as 'silver.' The division on the penultimate one between the plain and ornamented parts of the parti-decorated frame is shifted a quarter of a revolution relative to the position of the pin, when compared with the layout on the other parti-decorated brooches from Meols.
1820 Pl. 27 (Hume 1863, pl. V, 15); D 12mm.
1821 Pl. 27 (Hume 1863, pl. XXV, 8); D 15mm, described as an earring, but probably a brooch.
1822 Pl. 27 (Hume 1863, pl. VI, 9); oval, D 15mm.
1823 Pl. 27 (Hume 1863, pl. V, 3); D 22mm.
1824 Pl. 27 (Hume 1863, pl. V, 2); D 30mm.
1825 Pl. 27 (Ecroyd Smith 1873a, pl. B, 6); the apparent high quality of this neat accessory suggests it may have been of silver: with IESVS NAZAR in lombardic lettering; D 20mm. Ecroyd Smith 1874, 96 notes another, now (?)lost, with IESUS NAZARENUS REX RUM and a plain pin 'of silver', assigned to the 13th/14th century.
(For Hume 1863, pls V, 6, VI,1, and VI, 14, all described as 'silver'; see **1772, 1790,** and pendant **1973**, all in fact of lead/tin.)

Separated pins
1826
Some corrosion: L 27mm; disc-like collar has fringe of beading along part of the perimeter; Wt 0.7g.
1827
Pin similar to that of ***1817***, but L 35mm, and punched decoration less accomplished in placing and execution; tip worn against frame; Wt 2.4g; 92.3% fine (Appx 2).

BUTTONS

Buttons, which were to come to take over the function of brooches in closing garments together almost completely around the 15th century, are occasionally known in copper alloy and lead/tin from medieval contexts in London and elsewhere from the early-13th century onwards (Egan and Pritchard 1991, 272–80; Read 2005, 11–29). The 15 listed below as potentially later medieval is a large group, second only to London finds.

Copper alloy
1828 Pl. 28 (Hume 1863, pl. XIII, 7)
(?)Front only: domed sheet, D 13mm, with drilled holes in pattern of four around a central one.
A few late medieval sub-spherical buttons made of two pieces of copper-alloy sheeting that have decoration in the form of patterns of drilled holes, have been found in London; these are probably assignable to the 14th century (Egan and Pritchard 1991, 277, fig. 149 bottom, is the most elaborate version known, others resemble the present item).

Lead/tin (or lead/tin coating on copper-alloy core)

Solid, biconvex heads
Cf. Egan and Pritchard 1991, 274–6, nos 1384–95, from London and assigned to the mid-14th to early-15th centuries (with parallels elsewhere cited – see also Biddle and Cook 1990, 571–5, nos 1712–15, and Ottaway and Rogers 2002, 2918–19, nos 14451–2 for further examples from Winchester and York, respectively

Pl. 28. Later medieval buttons, pilgrimage objects, crosses, etc.

assigned to the mid-13th–15th and 13th centuries, and Read 2005, 22–3, nos 63–72). The following, with very rounded perimeters to the heads, are characteristic of what seems to be the most common and widespread form of medieval button.
1829
D 8mm; holes for missing loop.
1830
D 8mm; holes for missing loop.
1831
D 9mm; with stubs of (?)iron loop.
1832
D 9mm; with stubs of (?)iron loop.
1833
D 9mm; with stubs of (?)iron loop.
1834
Corroded: D 9mm (no trace of loop).
1835
Corroded: D 9mm (no trace of loop).
1836
D 10mm; with flat-section, copper-alloy wire loop.
1837
D 10mm; with stubs of copper-alloy wire loop.
1838
D 10mm; with stubs of (?)iron loop.
1839
D 10mm; with stubs of integral loop.
1840
D 11mm; with stubs of copper-alloy wire loop.
1841
D 11mm; holes for missing loop.
Compare **3028**, listed as post-medieval.
Ornate
1842 Pl. 28
Incomplete: D 20mm; concave roundel with beaded border and central (?)pellet; back has slight concentric (?)rebate (rather than mould seam); stub of (?)loop remains. Presumably a button rather than a mount.

LACE CHAPES

All nine lace chapes from the assemblages are assigned to the medieval period. Later medieval chapes have either edge-to-edge seams, or , occasionally, overlapping (i.e. spirally wound) ones (see Egan and Pritchard 1991, 281–90, fig. 182 for terminology and parallels). Chapes of this general form appear to begin in the mid-13th century. The ends are occasionally bent inwards to provide a firmer grip on the organic lace as well as for neatness. Finishing abrasion often left facets at the ends. All are copper alloy.
The last one listed below cannot be characterised, and hence assigned a date, by reference to its seam, but in view of the later medieval forms of all the others this one too is listed here (ones assigned to the post-medieval period are normally characterised by edges bent inwards; none of this form has been noted from Meols).

Edge-to-edge seams
1843
Incomplete (free end broken off); surviving L 22mm x 2mm; edge-to-edge seam apart from overlap in damaged area.
1844
L 26 x 2mm; (?)edge-to-edge seam; inside end incomplete.
1845
L 29 x 2mm; both ends faceted from finishing.
1846
L30 x 2.5mm; holes for missing rivet; free end faceted from finishing.
1847 Pl. 28
L 33 x 3mm; holes for missing rivet; free end faceted from finishing.
1848
L 33 x 3mm.
1849
L 34 x 3mm; both ends faceted from finishing.
1850
L 34 x 3mm; hole for missing rivet; both ends faceted from finishing.
1851 Pl. 28
L 58 x 9mm; tapers nearly to point.
1852
L 63 x 8mm; broken off at both ends.
1853
L 66 x 7mm.

Overlapping seam (spiralled tube)
1854
28 x 1.5mm; free end (?)finished.

Edges pulled apart
1855
Incomplete (free end broken off); surviving 27 x 3mm; hole for missing rivet.

PILGRIMS' AND SECULAR BADGES, AND RELATED ITEMS

The number of these recovered at Meols is in itself impressive – at least 16 pilgrim badges and at least 11 secular badges (together three times the total known to have been recovered at Bristol, in fact outside London only Canterbury, Kings L ynn, and Salisbury have produced more). The present tally is the largest in northern England by a considerable margin. Finds from Y ork and the Hull area tend to emphasise cults based in the north of England – respectively W illiam of Y ork and Thomas of Lancaster (Ottaway and Rogers 2002, 2944–47; thanks to Martin Foreman for making information from Hull Museums collections and records available). The Meols finds listed below, however, have completely different emphases, reflecting a much wider, international pilgrim ambit.

A deeper significance than the relatively large numbers recovered at Meols lies in the diverse international connections that the Continental ones cumulatively and directly attest for this humble, rural settlement. Hilbre Island had a pilgrim shrine, (4.6). No local souvenir production is known, and none of the unassigned items considered in this present section has anything that suggests it was made here (though see lead crosses **1879**ff for probable simple religious trinkets, which might have been made anywhere, with parallels from a medieval fishing settlement in present-day Belgium). The badges recovered appear to be a reflection of the journeyings, not necessarily all primarily as pilgrims, of a series of inhabitants of Meols (it would be remarkable if these treasured items were lost in such concentration by visitors). These individuals must have gone to the south of France (Rocamadour, ***1856***), (?)Germany (?Aachen or Cologne, **1858**), Spain (?Compostela, ***1865*** – this item may have been jet) and Rome itself, ***1867***. The overall profile of the English shrines represented appears, not unexpectedly , to place the greatest emphasis on the most celebrated and popular of all the cult centres in the country, Canterbury, with one certain Becket souvenir and up to five others in fragmentary state.

Table 2.5.7: Surviving items and records of pilgrims' and secular badges, and related items found at Meols

Item (origin)	*Number*
Religious	10+ ?>19
Our Lady of Rocamadour (France)	1
Christ's birth	1
(??Crucifixion), (?)Aachen or Cologne, etc. (Germany)	1
Becket (Canterbury)	?Up to 6
St Catherine	1
(?)St James, Compostela (Spain)	3
St Peter and St Paul, Rome (Italy)	1
Unidentified Continental fragment (noted by Ecroyd Smith – ?now lost)	1
Ampulla (possibly Walsingham?)	1
Scallop-shell mount	1
Rattles	2
Secular	5
(?)Richard II, etc. hart	1
Talbot dog	1
Axes	2

Among all the finds recovered, this particular category gives the most impressive, specific testimony to the far connections of medieval Meols, whether incidental to other business or entirely through religious motivation. The apparent loss over the years since their publication in the 19th century of a high proportion of these attractive objects is not particularly surprising in view of the constant attention they are likely to have received in preference to less specifically identifiable and prepossessing finds in the assemblages. The notable exception to this is **1864**, which has remained intact in its museum collection, but overall, of this particular category it is mainly fragments and items only identified during the preparation of this volume that have survived.

Fig. 2.5.10 Rocamadour Seal from Thames Exchange, Upper Thames Street, London (Spencer 1998, fig 245b), by permission of the Museum of London

The overall picture from surviving items and ones recorded but now lost is as shown in Table 2.5.7.

Hume (1863, 283–5) recognised four 'lead' items as pilgrim souvenirs. Those from Rocamadour and Rome, below, and two brooches with religious inscriptions (for present purposes the last two are counted among Dress Accessories, above).

Religious

Lead/tin

Our Lady of Rocamadour (southern France)
1856 Pl. 28 (Hume 1863, pl. XXVII,6).
Incomplete: upper part of vesica shape; Virgin and Child, the former holding a fleur-de-lis-terminal sceptre; +SIGILL[VM BEATE MARIE DE ROCAMA]DOR around.
(pre-1941 Liverpool Museum acc. no. 18.11.74.84); 13th/14th-century, and the first of its type to be recognised in this country according to Hume, who attributed its presence at Meols to 'the widely extended popularity of the old Hermitage chapel' [i.e. on Hilbre island] (Hume 1863, 283–4 and Ecroyd Smith 1871b, 43–6; both referred to the shrine in France as 'Roc St Amadour', and Ecroyd Smith at the same time goes as far as claiming the fragmentary souvenir found as 'a relique of "Y e Pilgrymage of Our Ladye of Hilbyri" '). Several of these pointed-oval seal-form souvenirs of this shrine, which were current for some three centuries from at least the early-1200s, are now known in England (Spencer 1998, 234–7, nos 245 and a–d). Rocamadour was a little way off the main pilgrim land route from Italy to Compostela, but the detour was clearly a popular one.

Christ's birth
1857 Pl. 28 (illustrated as Spencer 1968, 138 and 150, pl. 4, no. 3; 1998, 173, fig. 195a); this is thought to be a recent loss or misplacement; it was presumably seen by Spencer in the 1960s, but it has not been traced in the Grosvenor Museum collection.
Star with five wavy rays and straight rays for tail; beaded border around central void with clips for missing mirror , etc. The star is that which signalled the birth of Christ (cf. Spencer 1998, 173–5, nos 195 and 195a, respectively from London and the present item again, assigned to the late-14th/early-15th centuries, and Spencer 1990, 39–40, nos 79–80, figs 104–5, for similar finds from Salisbury); these common souvenirs are likely to be from an English nativity shrine.

Frame for Religious Image – (possibly a Crucifixion Scene) (?)Aachen, Cologne, etc. (Germany/Low Countries)
1858 Pl. 28
(?)Fragment, 28 x 21mm, of pendant frame with right-angled rebate at corner: parts of top and one side, and with loop for suspension; this was probably (from parallels) to hold a religious motif of lead/tin mounted between sheets of glass.
A range of trinkets with this distinct composite rectangular frame are known: Virgin and Child, Crucifixion and (most commonly) the Virgin's nightshirt – which was a relic kept at Aachen; one with St Cornelius is assigned to Korneliemünster, between Aachen and Maastricht (van Beuningen, Koldeweij, and Kicken 2001, 254, fig. 1083). The use of glass (including mirrors) in religious souvenirs was characteristic of Aachen and nearby shrines, and the elaborate arrangement for the present fragment in its original state is likely to have been typical of a range of

products from that area (it seems unlikely that exactly this same fashion would have developed independently elsewhere). See van Beuningen and Koldeweij 1993, 138, fig. 100 (Fig. 2.5.10), for a crucifixion between glass, assigned to the late-15th century – this is the closest in form and scale to the present fragment (232, fig. 498 is a V irgin and Child of this category , while 213–4, figs 429–32 are larger nightgown souvenirs with different suspension arrangements at the tops – cf. Spencer 1998, 256 and 258–60, no. 255 for finds in London probably of the latter); another crucifixion is assigned to Gottsbüren in Hesse, Germany (van Beuningen *et al.* 2001, 357, fig. 1497).

Fig. 2.5.11: Pendant Frame from Dordrecht, Netherlands, after van Beuningen et al. 1993, fig 100, by permission

Thomas Becket (Canterbury)
1859 Pl. 28 (Hume 1863, pl. VI, 2).;incomplete: openwork round buckler with central boss surrounded by zig-zags, then three surviving from original six fleurs-de-lis, and circular frame with beading along inner and outer edges. This is a supposed representation of the shield of one of Becket's assailants, but such a variety of decoration is known on different souvenirs of this form that the appearance of the original object is far from certain.
A variation on Spencer 1998, 94–5, no. 65, assigned to the late-14th century.

Possible Becket Souvenirs
1860 Pl. 28 (Hume 1863, pl. VI, 8); a round brooch with alternate heads and knops along the perimeter: two female heads survive of a presumed original six (these were usually alternately female and male); see **1877**.
Cf. Spencer 1998, 124–8; no. 131b has a Latin inscription 'St Thomas pray for us; pity us', but the present, uninscribed version is closest to no. 132a (Fig. 2.5.11) – see also Mitchiner (1986, 189, nos 642–3). The design, popular in several versions in the late-14th and early-15th centuries, appears on inscribed Becket souvenirs, which may in their iconography allude to the universal popularity of the cult of the Archbishop among pilgrims of both sexes, and it also features on uninscribed souvenirs that may have included secular brooches. It is uncertain whether or not the present souvenir, of the second category , was specifically from Canterbury.

Fig 2.5.12 Brooch from Bull Wharf, London (Spencer 1998, fig. 132a), by permission of the Museum of London

1861 Pl. 28
Incomplete roundel, D 21mm: bifacially bevelled, with beaded border and centre missing (irregular hole, from which central portion has broken away).
Perhaps a larger version of one of the perimeter roundels of a Becket's-head badge like those noted in the previous entry (cf. Spencer 1998, 124 and 126–7, nos 131–132a, assigned to the late-14th/early-15th centuries); this fragment is too flimsy to be a mount in its own right, as Egan and Pritchard 1991, 172–3, nos 854. Cf. **2377**.
1862 Pl. 28 (Spencer 1998, 85a).
Fragment, 17 x 21mm: tripartite, stylised leaf – each part itself being trifoliate with veining and a central pellet; loop broken off.
Compare 14th-century Becket head-reliquary souvenir brooches, which have similar leaves among the decorative elements of their highly ornate canopies (Spencer 1998, 106–7, nos 85a [Fig. 2.5.12] and 86–86a).

Fig. 2.5.13 Becket Head badge (Spencer 1998, 85a), by permission of University Museum of Archaeology and Anthropology, Cambridge

This fragment is larger and more elaborate than the looped-leaf pendants of collar **1974**.
1863 Pl. 28
Fragment, 13 x 27mm, of hollow , standing human figure with relatively simply delineated archiepiscopal pallium, chasuble and two ends of the maniple over long, plain robe (head, arms and base all broken off, though there are hits of a broadening out at the lower point of breakage).
Somewhat larger, freestanding hollow-cast lead/tin figures identified as Becket (Spencer 1998, 72–3, nos 26a–e, assigned to the late-14th century; Mitchiner 1986, 22–4, nos 10–13) and similarly crude, staff finials in which, for example, a two-dimensional bishop/archbishop stands on the back of a peacock (Spencer 1998, 72 and 75–6, nos 27–30a, assigned to the late-14th/early-15th century) are known from London. The present, unparalleled fragment seems to combine a simplified, smaller -scale three-dimensional ecclesiastic with some form of broader (?)staff base, perhaps in a similar object to Spencer's 30a.
See also fragment **1877** and quatrefoil mount **1044**.

St Catherine
1864 Pl. 28 (Ecroyd Smith 1866, 217).
Openwork, eight-spoked wheel, D 41mm, retaining most of original 13 curved blades around perimeter; circle-and-knop motifs around rim, beading along all edges of wheel; pin missing.
Cf. Spencer 1998, 179–80; the present wheel is a relatively large and elaborate version that is paralleled by one found in London (Spencer 1968, 143 and 150, pl. 3, no. 6). The shrine represented has not been identified.

(?) St James (Compostela)
A resident of the Wirral, William de Tranmull (Tranmere), is recorded as departing on December 7th 1370 on pilgrimage to Compostela in testimony recorded for a legal case (4.6). There is no reason to identify this specific instance with any of the items in this catalogue.
1865 Pl. 28 (Ecroyd Smith 1867, unnumbered among Meols finds in plate opposite p. 175 (there is no textual reference) 11 x 11mm.
(?)Relatively small, scallop-shell like item (material uncertain – this could have been jet)
See also 'shells' **1138**ff under Mounts.
1866 Pl. 28 (Potter 1876b, pl. 6) ('ornament probably designed from a fossil nautilus').
Incomplete: (?)shell with serrated edge; it is not clear from Potter's account whether this untraced fragment was a single-sided accessory or a hollow ampulla. Possibly a Compostela souvenir or a terminal for a pilgrim' s staff (burdon). This device came, by the high Middle Ages, to be a symbol for pilgrimage in general. It is possible the design was used simply for the aesthetic merits of its design at the end of the Middle Ages. Several unprovenanced, late medieval ampullae have very similar backs accompanying a range of sub-heraldic arms on the other side (cf. **1868**, and e.g. Mitchiner 1986, 150–1, nos 421 and 423–4), and a number of versions of the scallop-shell motif originally of Compostela (scallops were said to have adhered to a knight and his mount miraculously saved from the sea in the area at the saint' s intervention) are known among lead/tin souvenir badges, e.g. Spencer 1998, 244–8 (no. 250c, though smaller, is closest in form to the present item; cf. also Mitchiner 1986, 271, no. 1052).

St Peter and St Paul (Rome)
1867 Pl. 28 (Hume 1863, pl. XXVII, 5).
Rectangular souvenir shown with one survivor of the original four corner sewing rings: patriarchal cross between standing figures of the two patriarchs, **ASPESPA** (retrograde) on label above – i.e. 'The Apostles Peter and Paul' (*apostoli sanctus Petrus et sanctus Paulus* – this usually appears on souvenirs in the form **+SIGNA APOSTOLORVM PETRI ET PAVLI**).
12th-century according to Hume (284–5), who explicitly rejected an origin at Rome on the grounds of the crudity of the representations and the basic, careless error in representing the legend retrograde (he considered **1812** more likely to represent these saints). Large numbers of similar souvenirs, with this degenerate version of a conservative design that lasted for a considerable time, little changed from the early-14th century , have been found in England and on the Continent, and their identification with Rome is now beyond reasonable doubt (Spencer 1998, 248–51; nos 252–3; d'Onofrio 1999, 338–40, nos 97–9 and 101–2 – no precise parallel).

Ampulla
1868 Pl. 28 and V
Complete ampulla, H 55mm, max. W 35mm, max. Th 9mm: stylised scallop-shell type radiating design on one face, linear cross moline in circular border on the other; neck is in similar state to that as cast (i.e. never crimped to retain liquid contents, or has been very carefully unfolded).
Spencer discusses broadly comparable ampullae with a Greek cross and scallop-shell motif, which are widespread in England, especially East Anglia; these are part of the great variety of anonymous ampullae, some very crude, that are assigned to the latest period of popular religious souvenirs in England – the (?end of the) 15th/early-16th century (Spencer 1998, 204–5, nos 214 and 214a, and cf. 203–6; for a close parallel see Spencer 1980, 16, no. 38, in Norfolk Museums). It is possible that as the attention of reformers turned primarily to shrines that were the focus of major saints' cults, sacred wells, and springs with mainly local followings came further to the fore in terms of base metal trinkets like this one (see also ceramic St Menas ampulla **300**).

Rattles

Copper alloy

These would originally have contained a cockleshell or a crotal bell to contribute to the noise, with which many pilgrims celebrated their journeys (today' s football-match rattles might be thought of as continuing the tradition).
Cf. Spencer 1998, 209–13, nos 217–32, assigned to the 14th/early-15th century (the first of the parallels cited is comparably crude with the present item); (see also Mitchiner 1986, 152–3).
1869 Pl. 28
Complete, oblate sphere of plain, right-angled openwork (on each side, two concentric rings of subrectangular openings around central round one) from crude pilgrim' s rattle; D 51mm, H 25mm; slight damage at a couple of points, including where metal may have failed to flow properly in the casting.
1870
Two fragments of openwork similar to preceding item, 28 x 3mm, etc.
(cf. Spencer 1998, 212–13, fig. 232, assigned to the early-15th century).

Secular badges

(?)Richard II, etc.
1871 Pl. 28
Incomplete, surviving 19 x 13mm: lower part of quadruped [hart] squatting on grass [beneath a tree]. Lead.
A widespread political badge, not at this stage definitively attributable – (Richard's half-brother, Thomas Holand, Earl of Kent, and William, Lord Ferrers both used similar devices and so they too are candidates alongside the king) – among several parallels found at London, one is assigned to the early-15th century; a mould for producing at least three larger hart badges together was discovered at Walsingham in Norfolk.
(cf. Spencer 1990, 99 and 123, figs 206–7, nos 156–7, found at Salisbury; Spencer 1998, 285–7, nos 278–278b, where Holand seems to be the favoured candidate for these badges (also Mitchiner 1986, 120–1).

Talbot dog
1872 Pl. 28
Rear fragment of a squatting [dog]: 22 x 14mm; this is a talbot, a very common political badge, that presumably refers to the earls of Shrewsbury in the 15th and 16th centuries. The likeliest candidate is the first Earl, John Talbot, who was a successful military leader against France in the Hundred Years' war until he was captured in 1449 (died 1453). (Cf. Spencer 1998, 290–1 and 293, nos 285 (Fig. 2.5.13) –286c, 285 assigned to the early-15th century; Mitchiner 1986, 203–4, nos 706–16), (see also 4.6).

Fig. 2.5.14: Talbot badge from Swan Lane, Upper Thames Street, London (after Spencer 1998, no. 285) by permission of the Museum of London

Axes
The function of these relatively common and very widespread objects, which were not obviously intended to be worn on clothing, is unknown. Perhaps they were carried as symbols on special occasions.
Cf. Spencer 1998, 301–7, nos 299–302c for a variety, dating perhaps from the late-13th to the 16th centuries, including one retaining a wooden handle; a mould (for a version with the English arms) has been excavated at Gamla Lödöse in Sweden (Göteborg Museum).
1873 Pl. 28 (Hume 1863, 297 and pl. XXVIII,16, conjectured by Hume to be part of a pilgrim's sign).
Almost complete axehead: 54 x 40mm; decorated with octofoil alternately of opposed-hatched and dimidiated foils, with triple beading in the outside angles, all in a beaded ring, and with a cross-hatched band where the shaft loop has broken off, and a band with a foliate motif along the blade; the other side has similar decoration, save the octofoil has plain foils and is in a plain linear circle, and the blade band has alternately opposed-hatched triangles.
1874 Pl. 28 (Hume 1863, pl. XXVIII,14).
Battered and incomplete axehead: decorated with two roundels with radiating perimeter hatching on triangular fields of simple- and cross-hatching.

Cross (with pin)
1875 Pl. 28
Openwork: D 34mm; circular frame with beaded border around cross fleurdelisée, the arms each having herring-bone hatching along a central groove; stubs remain from cut-off integral pin and loop; apparently subsequently pierced twice for attachment/suspension at one of the terminals (where tiny holes may have been left at the casting).
It is unknown whether this was from a specific shrine, etc., or was a more general religious symbol.

Frame fragments, etc.
1876 Pl. 28
Rebated (?)sexfoil frame fragment with beading along perimeter; D estimated approx. 28mm; (?)part of horizontal strut at left and possible neck at base from central motif (? facing bust).
There are many potential near parallels, but none is close enough to provide a definitive identification of this saint or other figure (if indeed the central device was a head).
1877 Pl. 28
Beaded roundel, D 12 x 8mm, with boss having false gem, adjoining a (?strip-like) fragment with beading.
(cf. Spencer 1998, 112–3, no. 106, a badge featuring Becket's head in a frame comprising roundels and lozenges is reminiscent of the present fragment). It would be rash to claim this is a definitive identification of such a small scrap, which may not even be a dress accessory). Could be a surviving part of ***1860***.
1878 Pl. 28 (Ecroyd Smith 1868, 120 and pl. opposite p. 103, no. 13, where this fragment is inexplicably described as 'tripartite').
Fragment of delicate, rebated (?)sexfoil frame (external knop at apex of each arch) with beading along perimeter; D estimated 30mm; this might have had a representation of Becket's head reliquary in the centre. Cf. Spencer 1998, 112 and 114, fig. 111a (though this appears to lack the knops); also, from the Low Countries, van Beuningen and Koldeweij 1993, 136, fig. 8 and 233, fig. 502 for further, comparable frames, respectively for a crucifixion and for a Virgin and Child (both assigned to the 15th century), and van Beuningen *et al.* 2001, 349, figs 1464–5 for further ones holding Virgin-and-Child figures.
Two further examples are recorded but not illustrated: Ecroyd Smith (1872, 147) notes an edge fragment of a badge with '**B III P**' and '**LAVE**' (order and meaning unclear) and one surviving suspensory loop (suggesting a Continental origin), from the Cheshire Beach.
Also presumed lost: Liverpool Museum 5814 – lead badge, 'a rose surrounded by a garter and wreath' (Gatty record card, not illustrated). This was presumably a 15th/early-16th-century political favour; Lancastrian, Yorkist or Tudor?

CROSSES

Hume (1863, 264–7) described 14 crosses, 'all lead bar one of copper alloy'. Ecroyd Smith (1868, 120) mentioned 'six, one with pellet terminals'. Hume felt that the plainness of the majority meant they were not religious trinkets but thread winders (cf. Ecroyd Smith 1868, 121 two lead

'thread winders, four limbed'), though the survivors lack any trace of the wear marks that characterise such usage on animal bones (e.g. Egan 1998, 270, no. 891; the form anyway seems as inappropriate for this purpose as the material, which would be readily abraded and smudge colour onto the thread).
These very basic, makeshift religious symbols seem to be almost unknown among urban assemblages (Egan 2001, 98 and 113, no. 75, from Salisbury, though of poor quality, is not nearly as crude as those listed below , cf. Spencer 1998, 170 for examples in brooch form; Egan forthcoming a, fig. 181, no. S21 from the site of Bermondsey Abbey in Southwark could perhaps be analogous, though it lacks a hole). More closely comparable are an example from North Yorkshire and there are several from the medieval fishing village of W alraversijde near Ostend in Belgium. Contrasted with delicate cross brooch **1875**, for example, these emphasise the range of the Meols material. The interpretation of some of the plainer items here may have been confused – (e.g. Ecroyd Smith 1872, 147 'A winder for thread, originally four-spiked').
1879 Pl. 28
Crude sheet cutout, 18 x 14mm, with hole in the longer arm for suspension.
1880 Pl. (probably Hume 1863, pl. XXVI, 14, despite slight differences and the loss of a fragment at the top). Crude sheet cutout, 21 x 15mm, with bifurcated ends of arms and bent back as if for attachment.
1881 Pl. 28 (Hume 1847c, no. 54).
As **1879** but 24 x 18mm.
These two religious pendants were presumably to be worn around the neck, so that when lifted by the wearer they would be the right way round.
1882 Pl. 28
Possible crucifix fragment: 28 x 20mm, may have been partly rolled to obtain the flattening; stubby , rounded (?)lateral arms and top, the latter is pierced, presumably for suspension; lower part broken off.
In view of the crudity of the other items listed here, which were undoubtedly intended as religious symbols the same identification can be suggested for this one too.
1883
Rough equal-armed cross, 34 x 31mm; see on following item.
1884 Pl. 28
Abraded and corroded: rough equal-armed cross form – probably a single casting (though rough grooves along the edges make it look like lengths of rather heavy window came soldered together); 44 x 39mm; hole pierced centrally.
Possibly adapted as a religious symbol, as **1884**, but very crude if so, and the position of the hole would not be ideal for suspension; (cf. **2372**). This item is the least likely among those listed together here to have been a dress accessory. It could alternately have been an ingot (cf. Egan forthcoming a, no. 521, with references to examples in London from the Later Anglo-Saxon and Norman periods.
1885 Pl. 28 (Hume 1863, pl. XXVI, 12); 'lead; 'crucifix, 30 x 22+mm, with a representation of Christ.

PINS

Copper alloy shafts
The ready visibility of these objects (when uncorroded) against most soils means the large numbers recovered are not surprising. In the medieval period they were used from at least the 13th century (and probably before) primarily to secure women's textile headdresses in place (Egan and Pritchard 1991, 297ff). Beginning in the 13th century , on evidence from London and elsewhere, spiral-wire heads may at first have been left deliberately uneven the better to grip the sheet coverings evident in several of those listed below (see e.g. **1965** and **1969**). The covers, which exhibit a range of bulbous shapes, appear in some instances to have white-metal coatings, while some are probably lead/tin foil. The relatively uneven wound-wire ones listed as **1963**ff may in some instances have lost original covers. The commonest pins from the post-medieval period have tightly crimped, neat spherical heads of wound wire without any covering (see **3099**, etc.). The first eight listed are probably the earliest of the later medieval pins.

With heads of glass (see also 2.15, Glass Objects)
Both of the heads surviving on complete pins are pale yellow and most of the separated ones are green. They are probably all lead-rich glass. (Cf. Ecroyd Smith 1868, 123: glass head of a pin of latten, of pale yellow colour'; Ecroyd Smith 1871a, 128; Ecroyd Smith 1868, 211 and 213 notes a separated 'transparent emerald green' glass pinhead, which he assigned to the Roman period, and a 'dull green …opaque' one he thought to be Saxon. Some of the medieval ones from London are green, e.g. Egan and Pritchard 1991, 299, 304, and pl. 7C, nos 1468–9 (with heads of various colours), assigned to the late-12th century. Cf. Ottaway and Rogers 2002, 2914–5, nos 13579–80 for two separated blue heads found in York.

Complete pins:
1886 Pl. 29
L 39mm; gunmetal (Appx 2); yellow head, D 4.5mm.
1887 Pl. 29 (Hume 1863, pl. XXIII.3); Chitty and Warhurst 1977, 24 and 26, fig. 1, no. 3 ('Roman').
L 44mm; gunmetal (Appx 2); yellow head, D 5mm.
There are, in addition to these, four detached glass pin heads, which are listed under 2.15 Glass objects: three are of emerald green glass **3386, 3387**, and **3388**, and one of black glass **3389.**

Head of lead/tin
1888 Pl. 29
Lead/tin head only: circular , D 15mm, with central boss, surrounded by circular band with eight alternately large and small pellets (false stones), with a transversely hatched border; on the back is lightly registered radiating hatching and an offcentred, radial bar with bossed terminals, with a small channel diametrically (alongside the bar).
The channel would have held the missing shaft, presumably of copper alloy, for which the bar was intended to provide a strengthening spine, but misalignment of the two mould parts meant that they failed to correspond.
Cf. Egan and Pritchard 1991, 300, 304, and pl. 7E, no. 1470, with a different design, assigned to the late-12th century.

Heads of (?)copper alloy
With sheet covers for heads (the sheeting may contain lead/tin to soften the alloy – not analysed). See **1969** for a cover like these over a wound-wire head – perhaps all those with such covers conceal wound-wire heads.

Spherical/spheroid heads:
1889
L 21mm, head D 3mm.
1890
L 41mm, head D 4mm.

1891
L 45mm, head D 3mm; two opposed, hemispherical sheets.
1892
L 47mm, head D 3mm; slightly hexagonal head.
1893
L 68mm, head D 4.5mm.
1894
L 70mm, head D 5mm; (?)circular sheet top; sides neatly (if slightly unevenly) faceted from crimping lead/tin, possibly foil (uncertain whether medieval or post-medieval).
1895
L 75mm, head D 5mm.
1896
Point broken off; surviving L 13mm, head D 3mm.

Subspherical heads:
1897
L 36mm, head D 2.5mm.
1898
L 36mm, head D3mm.
1899
L 37mm, head D 3mm.
1900
L 37mm, head D 3mm.
1901
L 39mm, head D 3mm.
1902
L 40mm, head D 3.5mm.
1903
L 53mm, head D 2.5mm.
1904
L 55mm, head D 2.5mm.
1905
L 55mm, head D 3mm.
1906
L 57mm, head D 3mm.
1907
L 61mm, head D 3mm.
1908 Pl. 29
L 64mm, head D 3mm.
1909
Point broken off; surviving L 14mm, head D 3mm.
1910
Point broken off: surviving L 15mm, head D 3mm.

Hemispherical heads:
1911
L 31mm, head D 3mm.
1912
L 35mm, head D 4mm.
1913
L 40mm, head D 3mm.
1914
L 40mm, head D 4mm.
1915
L 41mm, head D 3mm.
1916
L 43mm, head D 3mm.
1917
L 46mm, head D 2mm.
1918
L 46mm, head D 3mm.
1919
L 52mm, head D 2.5mm.
1920
L 53mm, head D 2mm.
1921
L 53mm, head D 2.5mm.
1922
L 57mm, head D 3mm.
1923
L 57mm, distorted head D 3mm.
1924
L 58mm, head D 3mm.
1925
L 61mm, head D 3mm.
1926
L 61mm, head D 3mm.
1927
L 66mm, head D 2mm.
1928
L 66mm, head D 5mm.
1929
L 68mm, head D 5mm.
1930
L 69mm, head D 2.5mm.
1931
L 90mm, head D 3mm.
1932
Point broken off; surviving L 15mm, head D 4.5mm.
1933
Point broken off; surviving L 23mm, head D 3.5mm.
1934
Point broken off; surviving L 35mm, head D 4mm.
1935
Point broken off; surviving L 37mm, head D 2mm.
1936
Point broken off; surviving L 37mm; (?)hemispherical head obscured by corrosion, D 4mm.

Disc heads:
1937
L 66mm, head D 5mm.
1938
L 68mm, head D 2.5mm.
1939
L 68mm, head D 4mm.

Discoid heads:
1940
L 33mm, head D 3mm.
1941
L 47mm, head D 2.5mm.
1942
L 45mm, head D 2mm.
1943
L 52mm, head D 2.5mm.
1944
L 53mm, head D 2.5mm.
1945
L 53mm, head D 3.5mm.
1946
L 58mm, head D 3mm.
1947
L 61mm, head D 3mm.
1948
L 63mm, head D 5mm.
1949
L 63mm, head D 3mm.
1950
L 68mm, head D 5mm.
1951
L 67mm, head D 5mm.
1952
L 68mm, head D 5mm.
1953

L 68mm, head D 3.5mm.
1954
L 69mm, head D 5mm.
1955
L 70mm, head D 5mm.
1956
L 75mm, head D 3mm.
1957
Surviving L 63mm, head D 5mm; present end of shank is bifurcated.

Spiral wire heads:
(These have relatively uneven heads – see **3096**ff, listed as post-medieval, for ones with neatly crimped, spherical heads.) The incomplete cap on **1969** would presumably not originally have been present on each of these, but it may have been a feature of some of them.
1958
L 31mm, head D 2mm.
1959
L 38mm; trace of wire head, surviving D 1.5mm.
1960
L 41mm, head D 3mm.
1961
L 41mm, head D 3mm.
1962
L 42mm, head D 1.5mm.
1963
L 43mm, head D 2.5mm.
1964
L 49mm, head D 2mm.
1965
L 51mm, head D 2.5mm.
1966
L 52mm, head D 2.5mm.
1967
L 55mm, head D 2.5mm.
1968
L 57mm; trace of wire head D 1.5mm.
1969
L 57mm; trace of sheet cap over spiral-wire head, D 2mm.
1970
L 77mm; trace of wire head, surviving D 1mm.

Other head form
1971 Pl. 29 (Hume 1863, pl. XIII, 11).
L 45mm; separate, tesseradecahedral head, D 4mm, with drilled blind hole in each of the nine upper faces.
Perhaps based on a Roman design (see **360**) the thin, drawn wire suggests a date comparable with or slightly later than that assigned to **1886-7**.

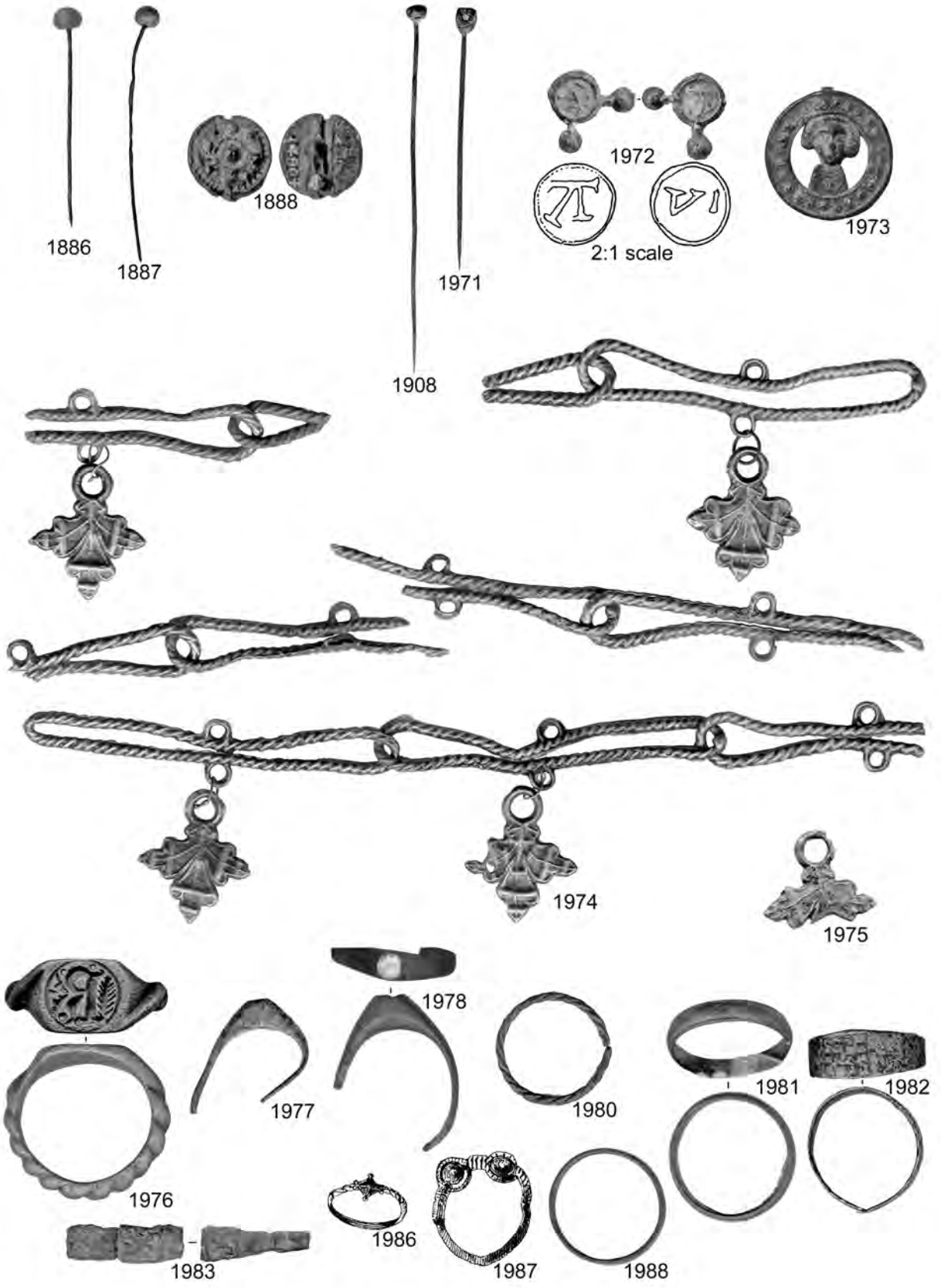
BEADS
(See also 2.15 Glass objects). Ecroyd Smith (1868, 119) referred to, but did not illustrate, a bead: 'pewter or lead of small size' – this may have been a late medieval rosary bead (cf. Egan and Pritchard 1991, 315–6, nos 1584–5 of tin, assigned to the early-15th century).

PENDANTS
These are relatively unusual items in medieval human dress. Some were worn by horses, dogs, and even farm animals. The first may be part of a completely different category of accessory, perhaps an elaborate item of many components. The second, with its suggested parallel tending to confirm the identification, must have been a very cheap piece.

Lead/tin
1972 Pl. 29
Incomplete: crude; central roundel, 15 x 14mm, with ornate letter **A** on one face, that on the other has (?)**VI**; two of original (?)four arms survive, each with a terminal knop; the lettering may represent *Amor VIncit [omnia]*.
A parallel found on the Continent (van Beuningen and Koldeweij 1993, 321, figs 1027a and b, is assigned to the late-14th/early-15th century; see also van Beuningen *et al.* 2001, 372, figs 1568–9, nos 3644 and 3658 for others with the magical legend **AG//LA**).
1973 Pl. 29 (presumably Hume 1863, pl. VI, 14, despite minor differences, also Anon 1851, pl. 1 (both claim 'silver').
Ovoid, 24 x 22mm; woman's head facing, with hair in net and high collar with brooch represented by beading; all in frame with series of pellets alternating with paired beads; (?)loop broken off at top.
(cf. Spencer 1990, no. 118 and 135, no. 225, fig. 317, found in Salisbury, and Spencer 1982, 315, no. 12 from London).
See also crosses **1879**ff.

COLLAR / NECKLACE CHAIN

Lead/tin
1974 Pl. 29
Parts of at least nine surviving narrow , elongated, cabled chain links with a lateral loop on each side at the middle, four of which retain (via thinner, roughly twisted or plain circular wire links that are probably all modern additions) a pendent, stylised tripartite leaf with central veining and two transverse ridges on each main part (opposed, oblique hatching on the backs); overall surviving L*c.* 437mm, W of leaves 20mm; at least six of the main links have been broken, emphasising the inherent fragility of this object. There are a further three detached fragments of **1974**, respectively: a further link, 44 x 2mm, and two other incomplete leaves, 17 x 8mm and 20 x 5mm, of comparable forms, perhaps parts that originally went with constituents of the restored main piece.
According to Ecroyd Smith (1875, 99) **1974** is a 'necklet or coronal' of four main links, together over nine inches long, and retaining one of the leaf pendants (two of which had been found separately, on a previous occasion); Ecroyd Smith 1875 (98 and pl. facing show the fragments combined) notes the discovery in the previous year of two further links and another pendant; he dated this accessory to the late-14th/early-15th century. None of the side loops retains its original linking. In view , too, of the uniting of discoveries from what must have been at least four different occasions and the remaining obvious discrepancies, the original arrangements – including the association of all the links together and all the leaves with the same chain – are open to question.
Support for the basic authenticity of the present state is furnished by two broadly comparable necklaces (with lead/tin rumbler bells, such as **2005** as well) from London (Egan and Pritchard 1991, 322, fig. 211, dated to the early-15th century from a parallel found in the capital for the leaves – which differ slightly from item to item; the subsidiary baubles are mainly retained on contemporary lead/tin-wire figure-of-eight loops); and fragments from Salisbury and Canterbury (Spencer 1990, 113 and 132–3, figs 297–8 – the former includes both bells and leaves, but lacks defined chain links, while the latter has leaves surviving only on links. A further example from the shore



Pl. 29. Later medieval pins, pendants, necklace and finger rings

at Newgale, Pembrokeshire, comprises 11 links alternately with bells and leaves, and retains a central, elaborate openwork quatrefoil, from which a pendent lead/tin horn is suspended (Redknap forthcoming). This, the most complete example so far, is the only one to retain such an element, though similar components may originally have been integral, main features of all of the others, making them much more closely comparable to the aristocratic collars of which they were clearly cheaper versions (see Lightbown 1992, 235–329 for upper -class accessories of this category).
The flimsiness of the components probably meant that adaptations occasionally had to be made before these trinkets finally came to be discarded. The Meols example in its present state is a modern accumulation of genuine fragments, the making good of which probably quite closely parallels contemporary practice.
1975 Pl. 29
Incomplete tripartite leaf of comparable design, but 14 x 13mm: the suspension loop is broken off, but this may have been compensated for by the piercing of a neat hole in the middle of the central leaf (presumably from a different object from **1974**).
Cf. leaf fragment **1862**, listed under pilgrim-badges.

FINGER RINGS

(Hume 1863, 239–44 and pl. XXIV,1–14, notes two gold, one silver, 15 'bronze' and two 'lead'). The plainness of some of the following accessories means they are very difficult to assign to a broad period, let alone to date more accurately. Split rings, as **3733** etc. (?all post-medieval), are listed under Miscellaneous, while rings with unjoined, constricted ends are thought to be brooches. This was, not unsurprisingly when seen against the much wider pattern of medieval finds in England, the only category of object from Meols in which gold figured at all, other than as a coating.

Copper alloy

Cast
1976 Pl. 29
Robust signet ring: D of hoop 29mm, T 3mm; sub-oval bezel has 'R' device with three pellets around, flanked to respective sides by fern and trefoil motifs; hoop decorated as if two-ply spirally twisted; a fashion of the 15th century.
1977 Pl. 29
Incomplete and distorted stirrup form; original D estimated *c.* 20mm; stone missing.
Cf. Egan and Pritchard (1991, 326–7) – the fashion dates from the mid-12th to the mid-15th centuries.
1978 Pl. 29
As preceding item, D 22mm; decayed round gem made of paste (decayed – or this may be the setting medium).
(cf. Egan and Pritchard 1991, 326, nos 1608–9, the first assigned to the mid-13th century).

Bent strips/wire
1979
Some corrosion: D 19mm; central groove gives appearance of paired wires; gunmetal (Appx 2).
1980 Pl. 29
D 19mm; three-ply twist; single break where all three wires begin and end.
1981 Pl. 29
D 22mm; D-section with rebate along each edge.

Sheeting
1982 Pl. 29
D 24mm; D-section, Th 5mm.
1983 Pl. 29 (cf. Ecroyd Smith 1872, 146 'finger ring … engraved with a variety of rudely formed crosses').
D 19mm; unjoined ends expand towards centre; three crude motifs, each within a square border – squares with plain and saltire crosses, flanking square with dense field of plain crosses. (?)11th–12th-century

Lead/tin

Only part of a (?)Norman-period ring and a possible plain fragment survive in these alloys.
1984
(?)Joining parts of same original item: fragment: part of narrow hoop, Ls 19 x Th 6mm (survival too restricted to estimate original D), and three squares with varied quatrefoil motifs in raised borders.
The design presumably imitates that of rings in silver and niello; probably late-11th/12th-century.
1985
Fragment (?)of hoop: original D estimated 12mm; D-section, expanding to flatter section; dating uncertain.
Three apparently in the 'highly decorated' tradition (Egan 2000, 108, fig. 5) are illustrated by Hume, but all these appear to be lost
1986 Pl. 29 (Hume 1863, pl. XXIV , 10), D 13mm; had a transversely grooved hoop with a cruciform integral bezel (?) pyramidal with paired knops at angles, probably for a child.
1987 Pl. 29 (Hume 1863, pl. XXIV , 14) D 19mm; had a transversely grooved hoop with two false stones separated by a length of transverse grooving and represented as held by hatched collets.

1988 Pl. 29 (Hume 1863, pl. XXV , 7) D 14mm, hoop evenly divided with transverse grooving in two grades, probably for a child.
This is described as a 'brass' earring, the metal possibly a misinterpretation of the surface gold-coloured tin sulphide occasionally present on items of lead/tin; the two in pl. XXIV are differently coloured – respectively a plausible silver for white metal, and coloured erroneously brown/gold in the copies of *Ancient Meols* belonging to NML and to the Society of Antiquaries of London. On the 'highly decorated' tradition see Egan 2000, 108–9. For finger rings specifically , cf. Egan and Pritchard 1991, 332–5, nos 1630–43 (assigned to the early-13th to early-15th centuries); Lindsay and Webber 1993, 137–9; there is a stone mould for the production of finger rings of this category in Bristol City Museum, excavated at Dundas Wharf, Redcliffe.
1989 (Hume 1863, pl. XXIV, 3) D 22mm, was a 'brass' ring, with a collet for a missing stone.
1990 was a stirrup ring published by Ecroyd Smith 1867, 186 and pl. 1, no. 9 ('latten, with uncut but polished ruby'), D 22mm, and also by Chitty and W arhurst 1977, fig. 2, no. 26 ('bronze with garnet').

Silver and gold

1991
Plain strip; D 19.5mm, Wt 1.5g; 92% fine silver (Appx 2).
Other later medieval rings of precious metals are now lost – one elaborate signet each of gold and silver and gold:
1992 (Hume 1863, pl. XXIV, 2); a fluted hoop of silver; bezel with eight concave sides, with blackletter 'U' on cross-hatched field.

1993 was a lighter one of gold with a round/oval stone (Hume 1863, pl. XXIV, 6).
[**1994–96**: numbers not used.]

BELLS
(Hume 1863, 255–64).

Copper alloy
Both the following are sheet crotals:
1997 Pl. 30
20 x 17mm; bent-strip suspension loop; retains iron pea.
1998
Lower half only; 13 x 19mm.

Lead/tin
Cf. Egan and Pritchard 1991, 338–41; all these rumbler - form varieties originally had integral suspension loops.

Single-casting, four-petalled type
(cf. Egan and Pritchard 1991, 339–40, nos 1668–71; London finds of this form are assigned to the 13th/early-14th centuries).
1999
26 x 18mm; undecorated; retains pea.
2000 Pl. 30
29 x 15mm; paired bands of opposed hatching on each petal; (pea lost).
2001
Distorted: original D estimated *c.* 14mm; as preceding, but bands of hatching are between linear stalks with annulet terminals.
Cf. Egan and Pritchard 1991, no. 1670.
2002
Fragment comprising one angled petal, 16 x 13mm; similar to preceding, but stalks have round (?foliate) terminals.
Cf. Egan and Pritchard 1991, no. 1668, fig. 221 for a complete example of the type made of tin.
2003 Pl. 30 (Hume 1847c, fig. 52; 1863, pl. XXVI, 11) 'lead.'.

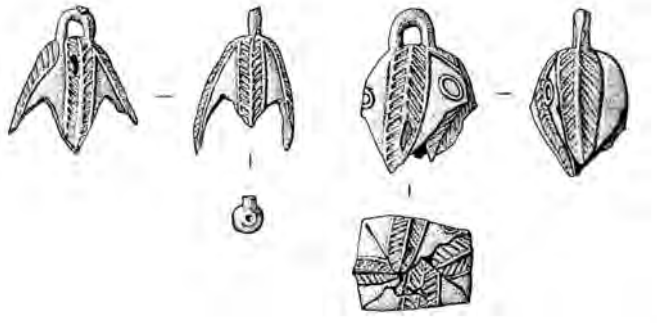


Fig. 2.5.15 Bells from Billingsgate, London, after Egan and Pritchard 1991, fig. 221

Single-casting, two-petalled type
Cf. Egan and Pritchard 1991, no. 1689, assigned to the early-15th century (though the loop there is on a stem; see on **1974** for those on a late medieval necklace found in London.
2004 Pl. 30
17 x 11mm; retains pea.
2005
19 x 12mm

Composite type comprising two hemispheres, one with a loop and the other a dumbbell-shaped aperture
2006
13 x 19mm; loop missing; (?)lead/tin pea survives.
2007 Pl. 30
14 x 23mm; loop incomplete; lead/tin pea survives.
2008
26 x 25mm; small part of case missing; lead/tin pea separated.

Silver
2009 Pl. 30
(?)Clapper: rod, L 23mm, with terminal ball, D 4mm, at one end and unjoined wire loop at the other, the latter next to a wound collar of two different gauges of wire, and with a further collar of three pieces of wire (again two gauges); Wt 0.9g.
(?)From a hand bell; presumably later medieval – probably of similar date to brooches **1815** ff etc. in view of the same method of making the pin collars.
[**2010**: number not used.]

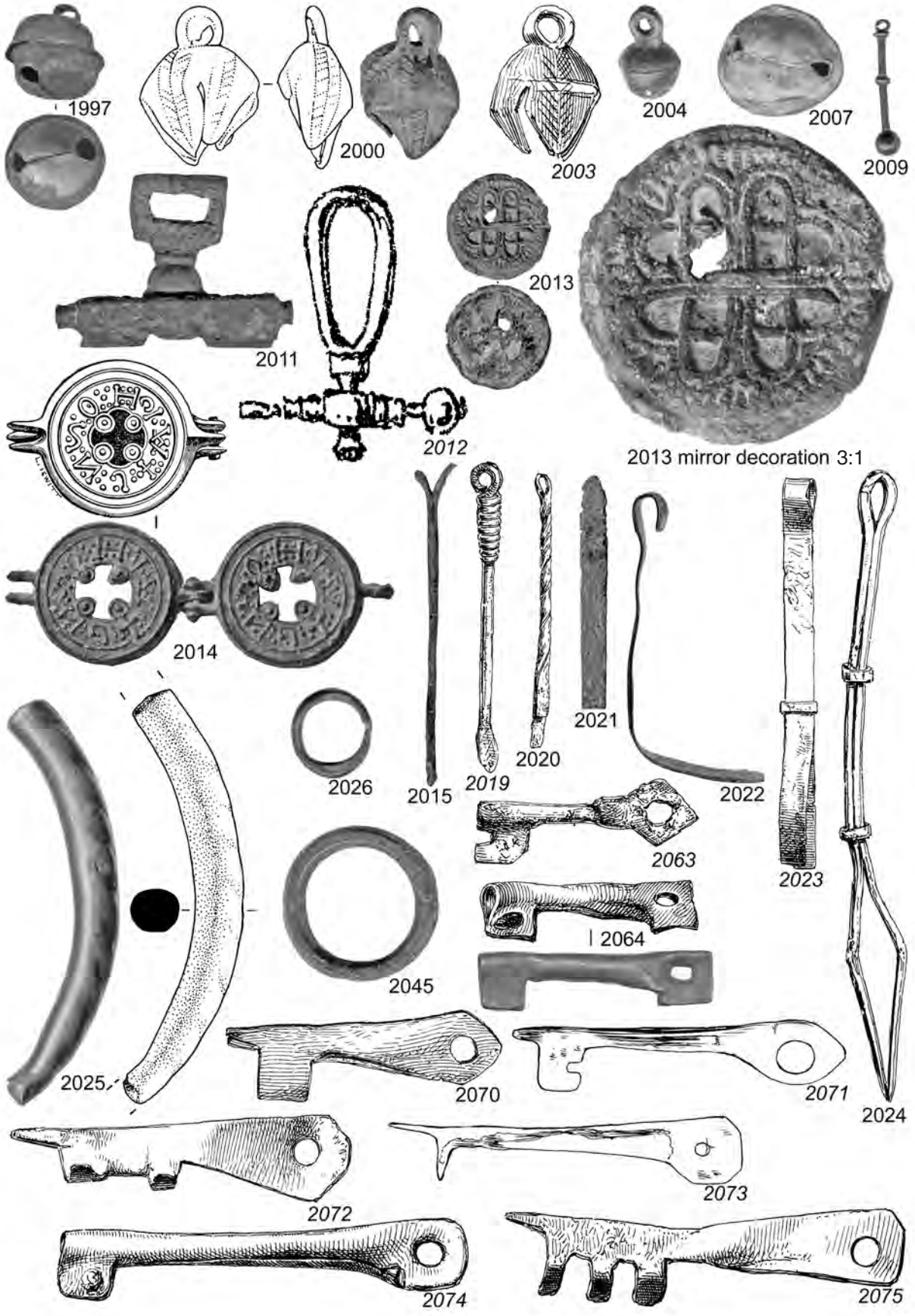
PURSES

Medieval purses seem to have been almost entirely made of leather or textile (Egan and Pritchard 1991, 342–57) until metal frames came in at the very end of the period, probably in the mid/late-15th century. Apart from a single (?)lost item noted below from the brief fashion for looped suspenders, which accompanied the late metal frames, lasting perhaps to the mid-16th century , the only Meols finds relating to practical purses are the extensive series of high-medieval suspension mounts (**1263**ff). While it is not particularly surprising in view of the overall lessening of all categories of finds at Meols with the waning of the Middle Ages that the late metal components are not plentiful, the very large number of suspenders is striking. Hume hints at perhaps approaching 50 having been recovered by 1863, far outnumbering London' s paltry half dozen from the major published waterfront assemblages. That there should be such a clear discrepancy in a category of object that might be taken as an indication of wealth carried about on the person between finds from the capital (and other major towns) compared with Meols is an unresolved conundrum.

Copper alloy
2011 Pl. 30
41 x 30mm; rectangular suspension loop, opposed knops below, pivoting on square-section bar with two tabs, each having a pair of holes for attachment.
2012 Pl. 30 (Hume 1863, pl. XXVI,19a); a suspension loop and bar, 10 x 10mm, presumably of copper alloy and assignable to the late-15th/early16th-century (19b, a bi-lobed object shown at the base of a reconstruction drawing of a purse frame, is not recognised on purses of this date).

GROOMING EQUIPMENT

Mirror cases
Although only two items are described under this heading, both are of particular interest. The first is, if correctly identified, the smallest (no others approaching this size have been recognised) and potentially the earliest of the lead/tin series. The second, which is virtually complete apart from the glass (which occasionally survives in



Pl. 30. Later medieval bells, grooming equipment and keys

examples elsewhere) and it carries an enigmatic legend or series of letters that may be a magical formula.

Lead/tin
2013 Pl. 30 (Bu'Lock 1960, 11, fig. 4h and 13, pl. 4) – described as perhaps a Norse ('white metal') brooch mount. Possible mirror frame: tin (Appx 2); partly corroded disc, D 18mm, with remains of edge flange, crisply decorated with knot in form of double-bordered octofoil containing grid, surrounded by radiating lines with very fine series of transverse ridges; trace of cementing medium to hold original glass survives.
A very delicately decorated object; (??)12th/early-13th-century. If correctly identified this seems to be the smallest lead/tin mirror holder so far recorded (not in Krueger 1990 or 1995, which list those then recognised).
2014 Pl. 30
Complete except for glass: two identical leaves, D 25mm, with openwork central cross, (?) +:A ·IoH:·:o·:S:N:J·: in crude, inconsistent lettering [S on side, J inverted] around four circle-and-pellet motifs; traces of whitish fixative for glass. Described as 'evidently … used as a scent casket' by Ecroyd Smith, who published it in the *Gentleman's Magazine and Historical Review* (Ecroyd Smith 1862) and by Hume (1863, 361) as a 'scent box or cofferet, 12th or 13th century' (the letters being optimistically interpreted as ***A*** **J**esus **CH**ristus **O**mnium **S**alvator **N**azarenus **J**udaeorum. More recently, Krueger regarded the inscription as 'magic' – i.e. uninterpretable (Krueger 1995, 225–6, fig. 25). See Egan and Pritchard 1991, 358–61, nos 1708–13 for a range of London finds of mirror cases, and Krueger (1990; 1995). for a wider survey. Given to the British Museum by J. Romilly Allen in 1883, apparently the most notable of the Meols finds held there.

Toothpick

Copper alloy
2015 Pl. 30
Corroded: L 56mm; wire shaft with scoop at one end and bifurcated into flat, round- and straight-ended scrapers at other.
Similar to Egan and Pritchard 1991, 378, fig. 251 lower right, though this one lacks the wound wire by which the others are fixed to an attachment loop.

Earpicks

Copper alloy
All S-twist sheeting; **2016–2017** are neater than the ones found in London.
Cf. Egan and Pritchard 1991, 378 and 380, nos 1764–9, assigned to the mid-14th to early-15th centuries.
2016
L 28mm.
2017
L 29mm.
2018
L 30mm.
2019 Pl. 30 (Hume 1863, 271–2 and pl. XXVI, 21; also 229 'small pin of silver gilt') 55 x 4mm (cf. Egan and Pritchard 1991, no. 1768).

Earscoop/tweezers
2020 Pl. 30 (Hume 1863, pl. XXII,4).
Incomplete: surviving L 47mm; twisted copper -alloy sheet-strip shaft; the two end pieces, presumably widened, tweezer-like terminals as in the parallel cited, are broken off. Cf. Egan and Pritchard 1991, no. 1774, assigned to the early-13th century.

Tweezers
Hume 1863, 237 notes 'six pairs,' (said to be Roman by others, though he doubted that attribution was clear-cut). This is a difficult category to date closely within the medieval period, especially in the case of the simple, folded-sheet ones like the first item following. These implements would presumably have been used for cosmetic purposes and to remove splinters and thorns.

Copper alloy
2021 Pl. 30
Corroded and incomplete: surviving L 41mm; simple bent sheet strip; one arm incomplete and working end damaged.
2022 Pl. 30
Incomplete and distorted: surviving L 48mm; sheet strip, expanding from bend, through area with sides having series of tiny nicks and engraved saltires between, to plain ends. The central area is presumably tooled to give added purchase.
2023 Pl. 30 (Hume 1863, pl. XXIII, 2); L 67mm.
2024 Pl. 30 (Hume 1863, pl. XXIII, 1); L 111mm.

FIXTURES AND FITTINGS

Settings
These are substantial, irregular plugs made of lead, poured while the metal was molten around structural iron bars, etc. to keep them held fast, usually in masonry. These items are inherently undatable, as a limited number of masonry structures (including docking provision for boats) may have existed in the area of the site in both the medieval and post-medieval periods. See **3971–3972**, listed under Miscellaneous.

(?) Door handle or chest ring

Copper alloy
2025 Pl. 30 (Hume 1863, 308 and pl. XXIX.7) ('…may have been part of such a collar [i.e. a Celtic arm or neck ornament] …but not unlikely it is a fragment of a much more modern implement').
Very worn: tapered fragment with spiralled (cable) moulding; estimated D approx. 100mm if originally circular; brass – Appx 2 (this alloy is irreconcilable with a prehistoric date).
If this is part of a door handle, it would have been a very prepossessing, ornate one, of the kind usually associated in the medieval period with higher churches – cf. Mende 1981, figs 140 (Hørby , catalogue no. 76). 168 (W altrop, cat. no. 90) and 213 (drawing – cat. no. 126); the absence of any known church building, let alone a major one, at Meols presents an immediate conundrum (?cf. post-medieval iron weather vane **3157**). Alternatively, it may be a handle for a large chest – (cf. Hinton 1990f, 778–9, fig. 224, no. 2389) for an excavated example from Winchester (a similar anomaly over the level of wealth implied arises on this interpretation).

Drape/curtain rings

Copper alloy
These circular frames are characterised by the unevenness of the loop, which often has a hexagonal-section and prominent file finishing. They were in use over a long period –

from at least the late-14th century (Egan 1998, 62, nos 91ff) into the 18th century (they were eventually superseded by the hollow-looped type like **3853**). There is at present no reliable way of differentiating medieval examples from later ones. Since the overall statistical profile of medieval vs. post-medieval finds recovered at Meols strongly suggests that the majority of the 16 provisionally recognised are probably medieval, they are listed in this present section. Some, particularly among the smaller items, may alternatively have been used as buckle frames (see**420**, **424** and **426** with pins, listed under that heading), as loops presumably for suspension of purses etc. from girdles, to which they were apparently attached by pairs of sheet strips or other forms (Bailey 2000, 54–5, figs 5 and 7 – this could be a secondary use) or perhaps in horse harnesses. There is another possibility for confusion with very small loops of this form – D less than 15mm – with the pendent loops on some bar mounts (see **1241**, etc. with loops D 11–13mm). In the absence of a pin there is no certain way of distinguishing between items that may have been used for a different purpose from that the producer intended – or perhaps they were made in the first place as multi-purpose items.
Cf. Hume 1863, 245–6, comparing 32 'brass', seven iron and four lead items with curtain rings.
2026 Pl. 30
D 15mm (about as small as is feasible for a drape ring, this one has the characteristic uneven frame).
2027
As **2026**.
2028
D 17mm.
2029
D 17mm; very irregular and prominent filing marks.
2030
D 18mm.
2031
D 19mm.
2032
D 20mm.
2033
Corrosion at one point (presumably where the object was exposed to seawater); D 20mm.
2034
D 22mm.
2035
D 22mm.
2036
D 22mm.
2037
D 22mm.
2038
D 23mm.
2039
D 24mm.
2040
Half: D 25mm.
2041
Corroded: D 26mm; very irregular aperture.
2042
Slightly distorted: D 26mm.
2043
D 27mm.
2044
D 27mm.
2045 Pl. 30
D 27mm.
2046
D 28mm.
2047
D 28mm.
2048
Advanced corrosion exaggerates uneven profile: D 33mm.
2049
Frame split and distorted; D *c.* 35mm.
2050
(?)Distorted to oval: 31 x 25mm.
2051
Fragment (about half): D 16mm; irregular , pentagonal-section.

Keys
(Hume 1863, 183ff).

Copper alloy
All are rotary. Terminology follows Egan 1998, 111, fig. 85:
These are all very crude, as in the instance of the cast ones of this size are most finds elsewhere (e.g. Egan 1998, 111–12, nos 294–8, assigned to the late-12th to late-14th centuries). The sheet ones are much less widely known, though Ecroyd Smith referred to 'two keys, formed, as usual, of thin sheathing,' confirming a different pattern from the norm at Meols (Ecroyd Smith 1868, 119).
Presumably these were produced locally to make good losses of cast originals. The perfunctory crudeness (amounting in some cases almost to non-existence) of defined warding, evident in both categories, supports the view that the caskets these small keys were intended for had very simple locks that would probably have been extremely easy to pick.

Cast

Circular bows
2052
L 31mm, bow incomplete; asymmetrical warding; shank partly hollow; (bow incomplete).
2053
L 31mm, D of bow 11mm; asymmetrical warding; shank partly hollow.
2054
L 32mm, D of bow 13mm; symmetrical warding.
2055
L34mm, D of bow 12mm; symmetrical warding; shank partly hollow.
2056
L 35mm, D of bow 11mm; moulded collar flanks swelling on shank; symmetrical warding; narrowed pin.
2057
L 35mm, D of bow 12mm; vestigial warding; shank partly hollow.
2058
L 36mm, bow incomplete asymmetrical warding; shank partly hollow; (bow incomplete).
2059 L 41mm, D of bow 13mm (Hume 1863, pl. XIX, 6; Ecroyd Smith 1867, pl. 1.4).

Lozenge bows
2060
L 38mm, bow 19 x 18mm; ornate, triple-knopped bow; vestigial warding; collar on shank.
2061
L 39mm, bow 12 x 9mm; collar on shank, which is partly hollow; asymmetrical warding.
is partly hollow.

2062
L 40mm, bow 10 x 11mm; crude, asymmetrical warding; solid shank; gunmetal (Appx 2).
2063 Pl. 30 (Hume 1863, pl. XIX, 5).

Sheeting
These crude versions with the shanks folded to give them strength (**2069** is further strengthened with an iron rod), were presumably makeshift local replacements for lost or broken originals of the preceding category , made in the absence of local expertise in iron locksmithing or precision copper-alloy casting. Most of these seem unlikely to have been satisfactory long-term substitutes for cast keys. Only the neatest, **2064** and **2065**, have the bit doubled for extra rigidity. Four out of five analysed are of a similar alloy , perhaps supporting the notion that a need over a limited period locally may have been catered for by one person in the settlement who had some skill in metalworking.
2064 Pl. 30 (Hume 1863, pl. XIX, 7).
L 41mm, W 10mm; unalloyed copper (Appx 2), rectangular, pierced bow 10 x 9mm, and rectangular bit, the latter strengthened with a crude but effective rivet.
2065
L 43mm, tapered, spatulate bow, 9 x 8mm, has round hole; sides of shank bent inwards, giving rounded profile; simple, doubled bit has slight lip (possibly worn from use); gunmetal (Appx 2); the bit is twisted slightly out of the plane of the bow, suggesting this one saw sustained use.
2066
L 51mm, spatulate bow, 10 x 7mm, with round hole; sides of shank bent inwards, giving rounded profile; plain (slightly asymmetrical) bit; elongated 'pin' end; gunmetal (Appx 2).
2067
L 58mm, rectangular bow 12 x 12mm with round hole; symmetrical pair of pronged wards and elongated 'pin' tip; sides of shank bent inwards, giving rounded profile; gunmetal (Appx 2).
2068
L 81mm, elongated-lozenge bow 17 x 12mm broken through to squarish hole; one of two (?originally symmetrical) pronged wards broken off; sides of shank folded inwards, giving irregular, flattish-section; sharply pointed, elongated 'pin' tip; gunmetal (Appx 2); this is the largest of the copper-alloy keys.
2069 Pl. 30
Bow broken off: surviving L 34mm, W 12mm; iron rod for strength in centre of stem.
Six are apparently lost:
2070 Pl. 30 (Hume 1847c, fig. opposite 28, no. 1; 1863, pl. XIX, 4); also reproduced in Egan 2005c, 202, fig. 10.1b. L 46mm.
2071 Pl. 30 (Ecroyd Smith 1867, pl. 1.12); L 58mm.
2072 Pl. 30 (Hume 1847c, fig. opposite 28, no. 1; 1863, pl. XIX, 3); also reproduced in Egan 2005c, 202, fig. 10.1b. L 59mm.
2073 Pl. 30 (Ecroyd Smith 1867, pl. 1.13); L 62mm.
2074 Pl. 30 (Hume 1847c, fig. opposite 28, no. 1; 1863, pl. XIX, 1); L 70mm.
2075 Pl. 30 (Hume 1847c, fig. opposite 28, no. 1; 1863, pl. XIX, 2); also reproduced in Egan 2005c, 202, fig. 10.1b.L 70mm.

FURNISHINGS

Candlestick
2076 Pl. 31
Small fragment of cast copper-alloy stem: part of bifacially bevelled knop, H 19mm, D 42mm, with collar at each end, the damaged tubular stem continuing from one of them; surviving H *c.* 23mm.
Part of a prestigious, imported holder , perhaps a very elaborate one, almost certainly a pricket. These have most recently been discussed, mainly with reference to above-ground survivors in churches and collections on the Continent, by von Falke and Meyer (1983). The base, whether relatively plain if late medieval (cf. von Falke and Meyer 1983, e.g. figs 127–30), or decorated with ornate Romanesque animal art if from the 12th/early-13th centuries (von Falke and Meyer , 1983, e.g. figs 92–3 and 105–10), would have been of tripod form. The closest parallels seem to have been used in north-west Germany . Such a holder would be appropriate for a major church, making its presence at Meols (which did not even have a parish church) something of an enigma. T wo ornate versions have been unearthed in England, one broken into two pieces found in London and a complete one from Exeter (Museum of London acc. nos 93.80 and 93.159; Royal Albert Memorial Museum Exeter , J. Allan pers. comm). This exceptional stick is supplemented by five iron holders of routine forms from Meols, three prickets **2433–2435** and two cupped versions **2436–2437**.

Possible lamp suspension wires
These individually rather anonymous-looking items may be components of copper -alloy wire frames for holding up ceramic or glass oil lamps. None of the cast 'roses' from which the wire frames hung has turned up, though wire versions were a less expensive alternative (Egan 1998, 130–3). Cf. 1263
2077 Pl. 31
L 24mm, with terminal loops on same side; gauge > 1mm.
2078
As preceding item; L 28mm, gauge < 1mm.
2079
As preceding item, but one loop is slightly unwound; L 28mm, gauge 1mm.
2080
As preceding item, L 44mm, gauge < 1mm.
Cf. listed as part of a purse suspender, but the gauge of the wire of the present item is much more flimsy, which would bring such an identification into question.
2081 Pl. 31
L 91mm, gauge 1mm; ends looped in alternate directions. Cf. Egan 1998, 131–3, no. 358, assigned to the late-14th century.

Casket mounts
Hume (1863, 196–7 and pl. XX) included casket mounts and several purse suspenders – see **1263**ff listed under dress-accessory mounts, and **2114**, a foot that may be from a vessel).

Copper alloy
2082 Pl. 31
Ring, D 12mm, conjoined with ovoid having hole for attachment; overall L 17mm.
2083
Distorted and broken off at both ends: surviving 18 x 9mm; D-section strapping with slight transverse ridging; four knops, alternately with holes (broken off at one of these); traces of gilding.
(cf. Brenan in Egan 1998, 70, no. 141, fig. 48, assigned to the late-12th century).
2084 Pl. 31
Slightly corroded: fragment of cast, D-section (?)strapping;

surviving 23 x 9mm; curved arm ending in prong at right-angle downwards, continuing at other end as (?)incomplete loop for attachment.
Possibly part of a casket mount.
2085
Surviving L 31mm, W 9mm; D-section strip; broken off at both ends; domed, holed roundel near middle.
2086 Pl. 31 (Hume 1863, pl. XII, 11; Chitty and Warhurst 1977, 31 and 33, fig. 3, no. 45, 'early medieval').
34 x 3mm; cast, with (?)wrought, recessed terminal lobes, with holes for attachment; L 35mm; neat, D-section.
Too neat for a bar mount for dress.
2087
Surviving L 36mm, W 8.5mm; broken off at single loop for hinge: decorated terminal at other end with two uneven pairs of rebates and ogival outline; four holes (three and one) for attachment.
2088 Pl. 31
36 x 9mm; strip interrupted by two open circles; curved profile; holes for two rivets, one of which survives.
If an original feature, the curve would make this suitable only for a relatively small container or lid with a matching profile; if it is damage, this could be a variety of bar mount for a strap.
2089 Pl. 31
36 x 31mm; cast: central, domed oval with engraved saltire cross, and four tabs, rebated from collars to rounded, flat terminals, each holed for attachment; retains casting seam along middle of the back.
The terminals are reminiscent of those on late-Saxon metalwork; the prominent casting seam is an unusual feature on copper-alloy items.
Too robust for dress; perhaps for a book cover.
2090
37 x 12mm; hinged fragment, broken off at both ends: arc-section strap with two bosses, each pierced for attachment, continuing from one as bifurcated hinge loop (broken); hints of gilding.
2091
Similar to **2092**, but 44 x 9mm and holed for attachment.
2092 Pl. 31 (Hume 1863, pl. XX, 5 – presumably this one rather than **3727**).
Fragment, 50 x 9mm comprising a single domed roundel on D-section strapping.
2093 Pl. 31 (Hume 1863, pl. XX, 11).
69 x 9mm; D-section strapping, with at one end a pointed terminal adjoining a domed roundel that has a pair of transverse ridges to the other side, and at the other end a raised, subrectangular area; hole at each end (one in the roundel) for attachment.
(Cf. Brenan in Egan 1998, 71–3, nos 145 and 147, with gilding and assigned to the mid-13th century.)
2094
Surviving L 73mm, W 6mm; D-section strip; broken of at holed roundel at each end; two (non-matching) upwards arcs may be where this strip passed over others at a right-angle.
2095 Pl. 31 (Hume 1863, pl. XX,1).
82 x 9mm; two domed roundels (hollow-backed, one holed for attachment) on D-section bar fragment with slight transverse ridging; the metal is (?)doubled or split along much of the surviving portion.
(Cf. Brenan in Egan 1998, 70, especially no. 141, assigned to the late-12th century.)
2096 Pl. 31 (Hume 1863, pl. XX, 12).
Fragment 83 x 12mm; domed roundel and quadruply rebated, subtriangular terminal (holed for attachment) on D-section bar strapping with slight transverse ridging.
2097 Pl. 31
Strip 89 x 15mm, with rebates at one end to bent hinge terminal; three holes for attachment.
2098
Distorted: U-bent strip, total L 95mm, with three domed roundels, W 8mm.
2099 Pl. 31
110 x 13mm; two roundels, each with a hole for attachment; open rectangular terminal at one end, angled one at the other.

Frieze mounts / cresting
Possibly for caskets, etc, or even parts of a composite circlets worn on the head – cf. Egan 2001, 107, no. 195, and Spencer 1998, 264–5, nos 259 and 259a. **2100** appears to be the only one so far noted with detailing on both faces.

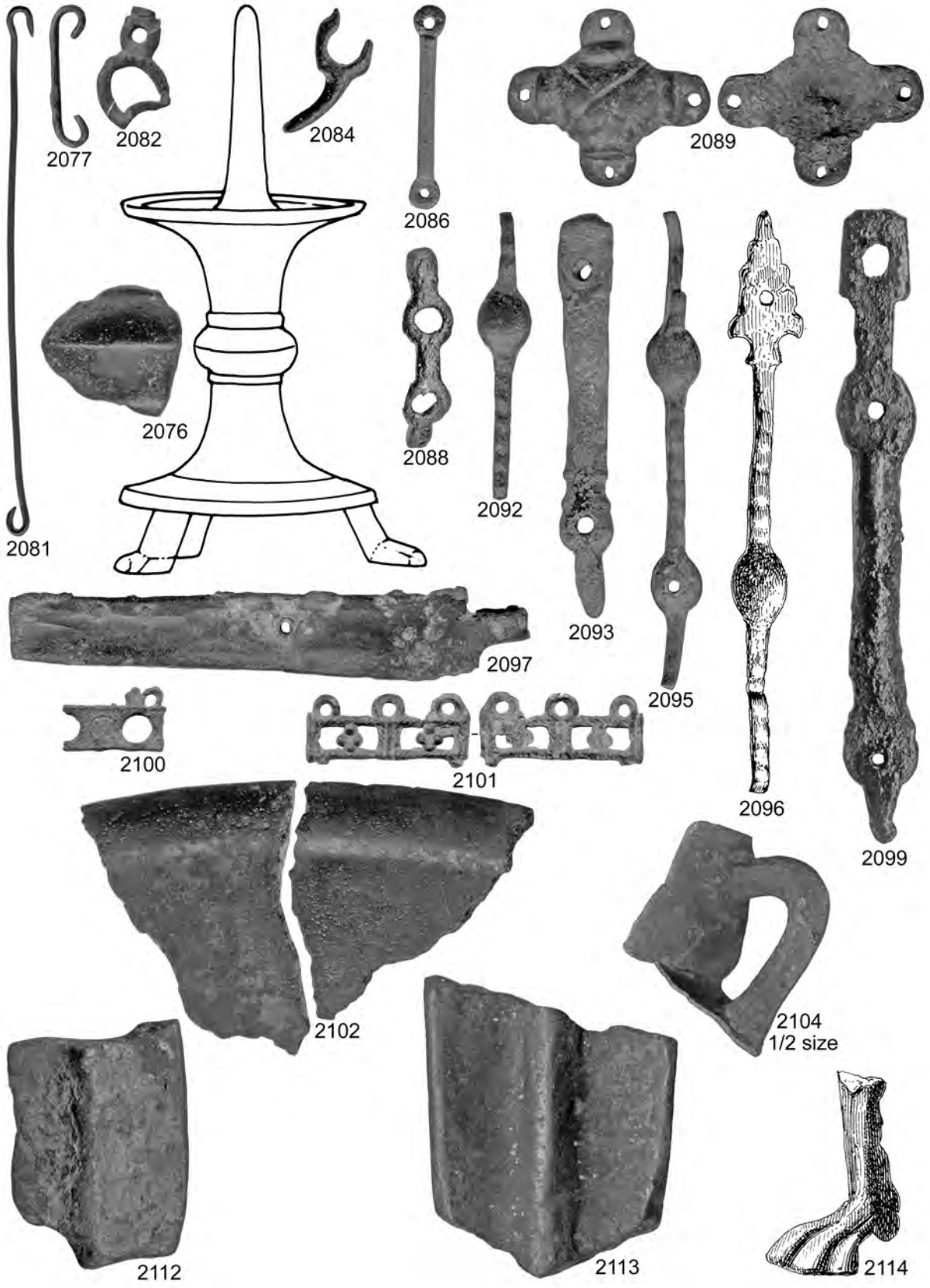
Lead/tin
2100 Pl. 31 17 x 11mm; end fragment of cross-hatched strip having plain roundels alternating with round holes; remains of one stylised fleur-de-lis from original row along top.
2101 Pl. 31
27 x 11mm; (?)complete length of openwork: two corded rectangles with three loops above and each with a central quatrefoil (three-dimensional detailing of cording on both sides, but quatrefoils only on one); two breaks at (?)base at each end.

VESSELS

Relatively few fragments of metal vessels were recovered (some undiagnostic walling fragments should have been discarded pro rata, but these are far more difficult to identify with certainty – see **2107–9** and **2357**). Arguably at least four vessels are represented by the following rim fragments, and there are four feet, along with a few walling fragments. The most probable forms for all these are the ubiquitous tripod-cauldron cooking vessel (with flaring rim) and tripod serving ewer.

Copper alloy

Cast
2102 Pl. 31
Flaring rim section in two matching and associated fragments, D *c.* 220mm (accompanying card notes March and July 1890, presumably the respective months of discovery). See next item.
2103
Fragment similar to **2102**, D *c.* 220mm, possibly from same original vessel (accompanying card reads 'March 189..', presumably the date of discovery).
2104 Pl. 31
Fragment of flaring rim, D approx. 200–300mm, and body with roughly hexagonal-section U-shaped handle; the body wall is notably thin at < 2mm, apart from where the handle is attached.
2105
D-section, thickened rim fragment of flaring vessel; D *c.* 300mm.
Probably from a tripod cooking cauldron.
2106
Fragment of flaring rim, 42 x 35mm (too restricted for accurate estimate of diameter).
2107
Walling fragment, 22 x 19mm.



Pl. 31. Later medieval furnishings and vessels

2108
Irregular fragment, 26 x 24mm, of (?)vessel walling (too restricted for accurate estimate of diameter).
2109
(?)Walling fragment, 30 x 19mm (too restricted for accurate estimate of diameter); one part of edge filed flat (possibly but not certainly after retrieval).
2110
Fragment of foot, surviving L 25mm, section 25 x 5mm, with central rib vertically and angled end.
2111
Fragment of foot, surviving L 27mm, section 29 x 8mm, with central rib vertically and thick, almost right-angled (vertically flat) end having slight excrescence from casting.
2112 Pl. 31
Fragment of sub-triangular-section foot, L 44mm, section 30 x 13mm.
2113 Pl. 31
Middle section of robust, tapering handle or foot (Wt 119g): L 44mm, section 40 x 10mm; worn; flat on one side and moulded with central rib longitudinally on the other.
2114 Pl. 31 (Hume 1863, pl. XX, 14); a copper-alloy foot, 35 x 23mm; fairly naturalistic, of animal form and (?)relatively small, probably from a vessel or possibly a casket, although it could alternatively be from a candle-holder or a stand for a religious image (see Ottaway and Rogers 2002, 2812 and 3123, fig. 1394, no. 14515 for a comparable item excavated in York in a deposit assigned to the mid-15th–early-17th centuries).

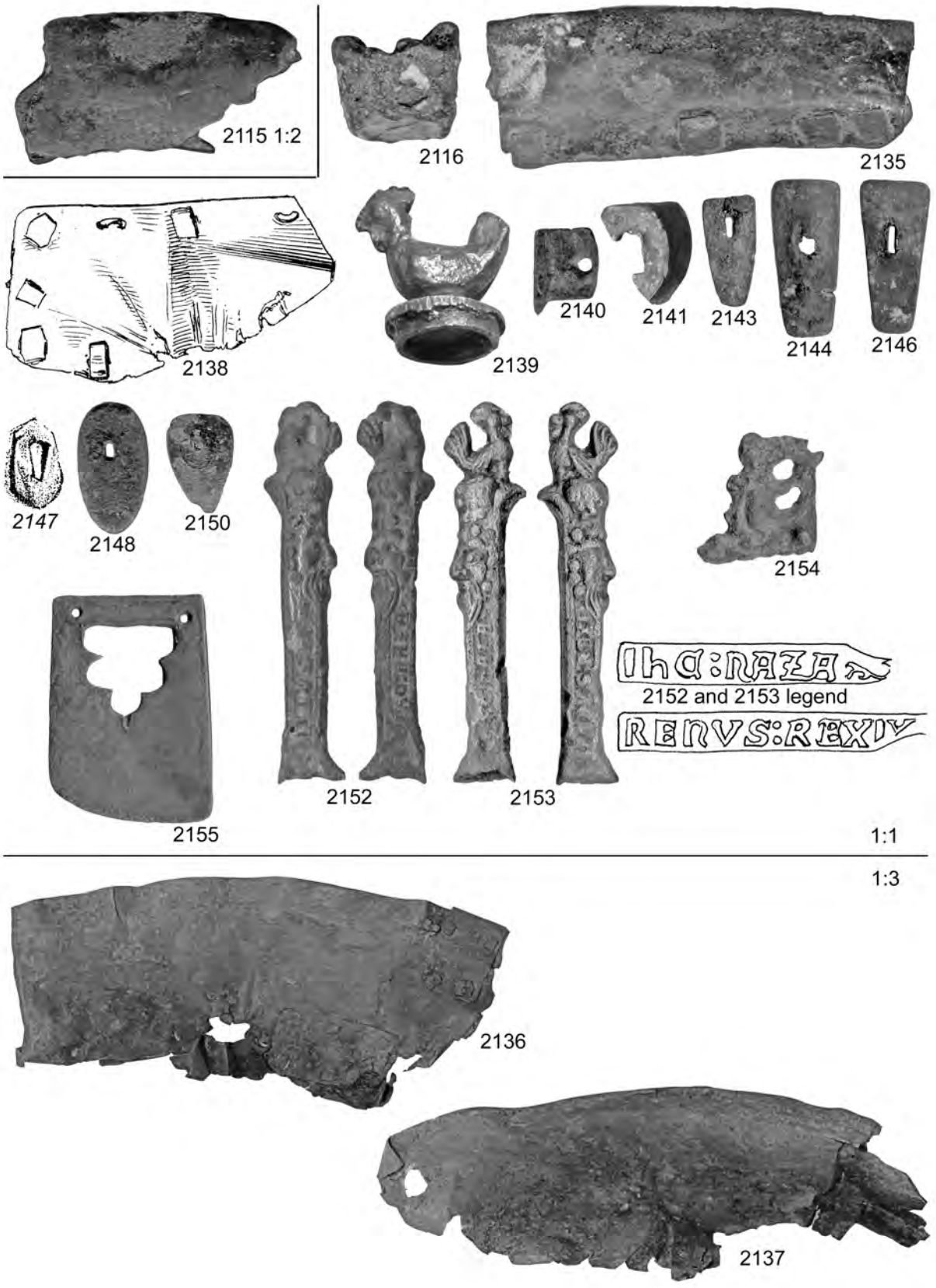
Cast repairs
2115 Pl. 32
Repair piece from flaring rim, D *c.* 270mm, with small part of angle to body; the uneven edges (other than the rim itself) reflect the fragment lost from the break, with slight overlaps to effect sound joining; the inner surface is worn smooth from use.
Cf. Egan 1998, 166, nos 465–6, both assigned to the late-14th century.
2116 Pl. 32
Repair piece with uneven mortise for chipped, trapezoidal-section foot, L 19mm, section 22 x 10mm (poor quality, vesicular metal).

Sheeting rim fragments
As these were the thickest (and most readily identified) part of the vessels they tend to survive more and receive more attention in print than anonymous pieces of walling.
2117
D approx. 250mm, L 120mm.
2118
D approx. 260mm, L 76mm.
2119
D approx. 300mm, L 39mm; cuts for re-use of sheeting.
2120
Cut off at one end: D approx. 350mm, L 51mm.
2121
D approx. 350mm, L 87mm.
2122
D approx. 350mm, L 108mm.
2123
D approx. 400mm, L 115mm.
2124
D approx. 400mm, L 165mm.
2125
Corroded through at several points: D approx. 450mm, L 59mm.
2126
Surviving L 33mm (limited survival means the original diameter cannot be accurately estimated).
2127
Folded twice; surviving L 40mm (too distorted to estimate diameter).
2128
Distorted: surviving L 47mm (too distorted to estimate diameter).

Possible walling fragment
2129
Very irregular, sub-rectangular piece of sheeting, 62 x 17mm; (?)cut on three sides.

Sheeting with sheet-patch repairs
Fragments presumably from vessels apart from rims are difficult to identify with certainty unless they have been repaired with rivets. See under Metalworking for the method of fixture of the sheet rivets.
2130
Scrap of sheeting 21 x 13mm, with two rivets (one from each side).
2131
Roughly folded sheet strip, 32 x 20mm with two rivets, and possibly another obscured by a folded end.
2132
Trapezoidal (one corner broken off) 56 x 30mm; five rivets survive of at least eight.
2133
Trapezoidal patch, 59 x 37mm: two surviving of (?)four rivets, hole for missing (?)tack, and small, irregular fragment of original vessel.
2134
Corroded, irregular fragment, 67 x 40mm, of original vessel, with (?incomplete) rectangular patch held by six of seven surviving rivets (one located beyond ?surviving area of patch); a fold alongside the patch suggests the surviving part of the vessel may mainly be from the wall with a small part of the well base.
2135 Pl. 32
Subrectangular patch, 74 x 27mm, folded over rim (a small fragment of which survives) the longer edge, inside the vessel, held by four rivets.
2136
Subrectangular rim fragment; 247 x 115mm, (too distorted to estimate diameter); with two patches, one folded over plain rim, the latter held by four and the other by six rivets.
2137
Fragment of side (retains hint of original bends for rim and base); 280 x 106mm, D of rim 440mm, W of rim 16mm, D at base 370mm; scrap of a patch, still held by a single rivet, survives.
2138 Pl. 32 (Hume 1863, pl. XXIX, 10); this was a similar patched fragment (?lost), shown with five of at least seven original rivets surviving.
See **2268**ff under Metalworking for single sheet rivets.

Lead/tin
The virtual absence even of candidates for medieval vessel fragments in pewter from the assemblages is curious, since the late medieval period saw a marked rise in consumption, in towns at least (Egan 1998, 5, table 1). Walling fragments are usually distinguishable by their neat finishing (even if turning is not evident) from pieces of sheeting. Only one, uncertain, (?)recent fragment is listed **4030** under Miscellaneous (probably a handle).



Pl. 32. Later medieval vessels and cutlery

Tap

Copper alloy
2139 Pl. 32
Cast: 30 x 25mm, D 19mm; naturalistically modelled body of a cock (file-finished along curve and back of the body) soldered onto separate disc with irregularly offset flange below; the perimeter of the disc is roughly filed vertically, giving an uneven surface with good purchase; a cylindrical base with openings to allow the liquid to flow when turned to the appropriate position is presumably missing. No precise parallel has been traced to help date this item (Drack 1997, fig. 54 includes some broadly comparable items all assigned to the 15th/16th centuries).

CUTLERY

Knife components

Handle components

Copper alloy

Shoulder bolsters:
2140 Pl. 32
Sheeting subrectangle, 14 x 11mm; one convex side, the other slightly oblique and folded over, extending into a prong; hole for attachment.
2141 Pl. 32
Incomplete: cast, robust fragment, 18 x 15mm.
Cf. another on the whittle-tang blade along with sheet roves in two different copper alloys on a robust, high-quality knife, excavated at the north of the City of London (Pre Construct Archaeology site MRL98 site, acc. no. 25, in a deposit sealed by one with ceramics of 1270–1350).
2142 (Hume 1863, pl. XV, 6); 13 x 4mm, apparently arched.

Sheet plates for mounting on whittle tangs of handles: Thick versions of these served singly at the end of the later medieval period as the end plates of knife handles, while, mainly in earlier centuries, thinner ones were used multiply sometimes in tens of identical ones together on a single handle, to make up distinctively decorated lengths (see **2700** and **2702** for circular versions). The following all have rough, subrectangular piercings near their centres in preparation for mounting, but these holes have neither been smoothed nor enlarged for the tang shafts. They were, perhaps, from a hafter's stock, intended for up to half a dozen different handles (**2144**, **2145**, and **2146** look as if they could have been for the same implement, but analysis shows they are of three different alloys).
The following are all of tapering trapezoidal form:
2143 Pl. 32
19 x 9mm; gunmetal (Appx 2).
2144 Pl. 32
27 x 11mm; bronze (Appx 2).
2145
27 x 14mm; gunmetal (Appx 2).
2146 Pl. 32
26 x 12mm; brass.
2147 Pl. 32 (Hume 1847c, fig. opposite p. 28, no. 3); 15 x 8mm.

Oval
2148 Pl. 32
23 x 12mm; gunmetal (Appx 2).

Sub-oval:
2149
21 x 11mm; gunmetal (Appx 2).
Shield-shaped

2150 Pl. 32
17 x 12mm; gunmetal (Appx 2).

Polygonal:
2151
A copper alloy bolster of this type is present on an iron knife **2721**.
16 x 9mm; one end angled, the other with three facets.

Lead/tin
2152 and **2153** Pl. 32
(Ecroyd Smith 1873a, 133 and pl. A14 mentions only one, described as a 'handle of a christening spoon'), so these were presumably separate finds, perhaps diminishing the possibility that they were originally a pair.
Identical to each other; highly decorated scale tang forms, L 65mm W 8mm, and L 66, W 14mm – blades missing: the opposed scales are similar to each other apart from the continuing legend: IHC: NAZA // (RE)NVS:REX IV (ie *Jesus Nazarenus Rex Judaeorum*); the terminal is a cockerel, standing on a fledgling bird's massively over-proportioned head, in turn above a highly stylised, bearded head (facing the other way); after the legend the handle expands into a narrow, integral shoulder.
(?)Early-16th-century or slightly earlier, probably of Continental manufacture; the curious combination of devices could perhaps be some kind of reference to St Peter and the crowing of the cock following his third denial of Christ, alternatively the cock itself is a symbol of the resurrection – the man's head appears to be based on that of the patriarch with his curly hair represented by pellets on papal bullae (cf. Spencer 1998, 251).
Overall, the obscure religious symbolism may amount to references to Christ rather than St Peter at his lowest hour. These are possibly marriage knives for a devout couple. No other knife handle of pewter this early is known to Ron Homer, Archivist of the London Pewterers' Guild. (pers. comm.).

Scabbard mounts

Copper alloy
2154 Pl. 32 (Ecroyd Smith 1868, 119 and pl. opposite p. 103, no. 12 ('fragment bearing the figure of an elephant leaning against a tree')
Crude and incomplete: cast, openwork right-angled mount; surviving 21 x 21mm; quadruped (?)with rider (upper parts and front of animal missing); one rivet probably of an original three survives in reserved corner triangle (one or two attachment loops broken off).
These asymmetrical, oblique-angled mounts are thought to have gone as protectors on the ends of knife scabbards; they appear to be characteristic of the early Norman period (cf. I. H. Goodall 1984, 344–5, fig. 193, no. 192 from Exeter and the most ornate example is Spencer 1961, 215–7. from London).
2155 Pl. 32
39 x 28mm; curved base; elaborate cinque-foliate openwork; holes for two rivets (missing); solder on back from sides and base components.
The abruptly terminated blade implied by the form is difficult to parallel among surviving late medieval arms, so a carving or hunting knife seems more likely.

Spoons

Pewter (lead/tin)
A total of 19 spoons are assigned to the later medieval period. Only four are complete, all with fig-shaped or oval bowls. All surviving bowls have a 'rat tail' continuing onto the back from the stem. Surviving knops are acorns, bar **2162** 'diamond', **2159** stylised floral bud, and **2168** 'rosehip' (of copper alloy). Most knops are crude, especially **2165-7**, and **2169-70** among the acorns. There are no makers' stamps, a chronological indicator of probable dating before the mid-16th century (cf. Egan 2005a for evidence for this from London). Overall, the assemblage appears from all these indications to be of late medieval date (two in poor condition, with oval bowls, are assigned to the post-medieval period (**3127-8**).
There are slight mould mismatches in **2157** and **2159**, though both are filed down to reduce the overlaps. Possible manufacturers' rolling marks (from giving the well its concavity for a flat casting) are left on the bowls of **2159** and **2174** (the latter is slightly asymmetrical in outline). The relatively rough finishing of these surfaces and the mould mismatches, as well as the relatively crude moulding of the knops evident in most of these utensils mean they are not of the best quality. Stem **2162**, if it is from a spoon, is extremely well made, but overall the group is comparable with assemblages from Salisbury and Coventry (Egan 2001, 104–5, figs 36–7, nos 145–72; Muldoon and Brownsword n.d.). Together, these groups suggest that in the late medieval period provincial standards in pewterware were somewhat inferior to those prevalent in the capital (Egan 1998, 245–52). None of the implements from Meols has a round bowl or iron rod in the handle (these are Dutch traits known very occasionally in 16th-century spoons found in London).
These are listed in order of increasing length in the first two categories, and of increasing bowl width in the last.

Complete or nearly complete implements
2156 Pl. 33
L 117mm, D (bowl) 44mm, Th 5mm; fig-shaped bowl broken in two (fragment missing); lozenge-section stem is very worn (?and bitten) towards surviving top with knop broken off.
2157 Pl. 33
Broken in two (slight mismatch at fracture though mostly does correspond): L 121mm, D (bowl) 42mm, Th 4mm; fig-shaped bowl; lozenge-section stem is uneven through slight mismatch of mould parts, and has acorn knop. ?Attempted repair post-retrieval.
2158 Pl. 33
Broken in two: L 131mm, W 3mm, D 41mm; drilled hole (?recent) near edge of oval bowl; stem narrows from hexagonal to lozenge-section, with acorn knop.
2159
Broken in two: surviving L 138mm, D (bowl) 84mm, Th 7mm; fig-shaped/oval bowl; hexagonal-section stem with stylised flower-bud knop; slight overlap from mould parts; bowl tool-marked from its shaping.
2160 (Hume 1863, pl. XXVI, 15); L 108mm, W (bowl) 35mm; acorn knop and (?) fig-shaped bowl.
2161 (Hume 1863, pl. XXVI, 18); L 90mm, stem only . (with only a scrap of the bowl surviving); it had a finial described as 'a figure … squatted, apparently that of a monkey' (Liverpool Museum 5656 – Gatty card, cf. Mayer 1851, 104) – a form that is not readily paralleled.
Ecroyd Smith's mention of a spoon handle 'with ornamented head and ringle' (Ecroyd Smith 1868, 119) cannot readily be applied to any of the items that have come down from Meols.

Lengths of stem
2162 Pl. 33 (Hume 1863, 235 and pl. XXIII, 12, apparently regarded as a medieval 'bronze nail'); surviving L 22mm, D 3mm; neatly finished, slender , round-section; collared 'diamond' knop. Tin (Appx 2).
An elegantly slender implement compared with the others. Such refinement does not appear to have been common, even among medieval spoons of silver (cf. Gask 1926); it stands out among the Meols assemblage.
2163
Surviving L 25mm, W 3mm, Th 7mm; lozenge-section; acorn knop.
2164
Surviving L 49mm, W 3mm, Th 7mm; lozenge-section; crude acorn knop.
2165
Bent: surviving L 51mm, W 3mm, Th 6mm; round-section; acorn knop.
2166
Bent: surviving L 55mm, W 3mm, Th 6mm; round-section; acorn knop; broken end appears faceted from trimming with a blade.
2167 Pl. 33
L 72mm; W 3mm, Th 3mm; lozenge-section; crude acorn knop.
2168
L 75mm; W 7mm, Th 5mm; lozenge-section; 'rosehip' knop of copper-alloy.
2169
In two bent pieces: L 83mm, W 3mm, Th 6mm; round-section; acorn knop.
2170 Pl. 33
L 85mm, Th 4mm; lozenge-section; crude acorn knop.
2171
L 88mm, W 5mm, Th 6mm; round/lozenge-section; acorn knop.
2172
Incomplete, L 57mm; sub-lozenge-section.
2173
Bent: L 18mm; round-section.

Bowl
2174 Pl. 33
Oval bowl broken off at join with handle; 51 x 45mm; marks from shaping.

TEXTILE WORKING

Lead spindle whorls
There are a further nine stone and ceramic examples **3305–3313.**
Hume (1863, 151–7) listed '44, comprising 34 of lead, seven of ceramic ('terra cotta') and three of stone'
Spindles made of wood were also apparently recovered at Meols **3288–3290**; dating for these is problematic, not least because, apart from the first of them, which has **3307** of stone (of uncertain date) set on it, of their lack of recognised association with any of the whorls.
Dating for many of these simple objects is difficult, particularly for undecorated versions. Parallels from London suggest **2197** with its distinctive openwork could be of 11th–12th-century date. The lead whorls have been described by past curators as 'Romano-British' but there seems to be no definitive typological way of differenti-

ating all of the ones which may be that early from Saxon or later medieval versions. The following items are listed here because they are relatively regularly circular with even profiles. Similar, but less-regular, objects (of which there are many , but which arguably could not have functioned effectively) are listed under Miscellaneous at the end, but the distinction is in some instances very subjective.

Listing of the following items is by weight.

2175 Pl. 33
Plano-convex; D 20mm, D of hole 7.5mm, Wt 9.9g.
Very small at about half the weight of the next heaviest ones.

2176
Biconical: single pellets alternating with transverse lines on both faces; D 22mm, D of hole 7mm; Wt 19.1g.

2177
Plano-convex; D 26mm, D of hole 7mm, Wt 21.5g.

2178
Biconical, with zig-zag lines giving five-pointed-star decoration on both sides; D 28mm, D of hole 12mm, Wt 23.2g.

2179
Plano-convex; D 22mm, D of hole 9.5mm, Wt 24.6g.

2180
Plano-convex; D 28mm, D of hole 7mm, Wt 25.3g.

2181
Biconical, with dense but light transverse hatching on both sides; D 28mm, D of hole 8mm, Wt 28.4g.

2182
Plano-convex, D 28mm, Th 7mm, D of hole 9mm; Wt 31.6g.

2183
Plano-convex; D 33mm, D of hole 9.5mm, Wt 32.0g.

2184
Crude, slightly uneven disc with five irregular blind holes; D 28mm, Th varies, e.g. 8mm, D of hole 10mm; Wt 32.5g.

2185
Plano-convex; D 28mm, Th 6mm, D of hole 7mm, Wt 34.0g.

2186
Plano-convex; slightly asymmetrical; D 31mm, D of hole 8.5mm, Wt 35.2g.

2187
Biconical, with row of pellets along middle on both sides; D 23mm, D of hole 10mm, Wt 37.5g; little wear from use.

2188 Pl. 33
Flattish biconvex: crude nine adjacent arcs give a regular , star-like linear pattern, with a variety of simple devices of strokes, dots and arcs between the outer points; D 35mm, D of hole 9mm, Wt 37.5g; some of the motifs might be mistaken by the illiterate for letters.

2189 Pl. 33
Plano-convex; D 30mm, D of hole 8mm, Wt 40.1g.

2190
Crude disc, D 27mm, Th varies – e.g. 9mm; D of hole 11mm; Wt 49.1g.

2191
Plano-convex; slightly asymmetrical; D 35mm, D of hole 8mm, Wt 49.1g.

2192
Plano-convex; D 34mm, D of hole 11mm, Wt 49.9g.

2193
Plano-convex; D 30mm, D of hole 7mm, partly blocked as a result of repeated blows on one side at narrower end; Wt 50.2 g.

2194
Plano-convex; D 32mm, D of hole 9mm, Wt 51.5g.

2195
Crude disc, D 28mm, Th varies – e.g. 11mm; D of hole 10mm; Wt 53.2g.

2196
Plano-convex; D 34m, D of hole 8mm, Wt 55.9g.

Decorated

2197 Pl. 34
Crude: flattish, with thickened centre and rim, each with transverse hatching; only three (?of intended six) decorative voids were incorporated at the casting; D 35mm; central hole, D 10mm, is worn; Wt 16.1g.

Hume illustrated four decorated lead spindle whorls which have not survived:

2198 Pl. 34 (Hume 1863, pl. XV , 1); D 22mm, D of hole 7mm; decorated with ?five cast foliate or lobed motifs on radiating from hole on the upper face, and zig-zags in the form of a five-pointed star interspersed with pellets on the lower face. See 2293.

2199 Pl. 34 (Hume 1863, pl. XV , 8); D 23mm, D of hole 6mm; the face illustrated had lobed or foliate decoration not unlike the upper face of ***2198***.

2200 Pl. 34 (Hume 1863, pl. XIV, 6); D 25mm, D of hole 7mm; (?)five cast foliate or lobed motifs on radiating from hole on the upper face.

2201 Pl. 34 (Hume 1863, pl. XIV, 7); D 25mm, D of hole 8mm; six small triangular punches evenly spaced along the rim.

See also under Metalworking – lead/tin waster **2293**.

Possible whorl

2202 Pl. 34
Slightly irregular conical; D 12mm; D of irregular , polygonal hole 10mm; Wt 23.3g.

Lead cloth seal

2203 Pl. 34 (Hume 1863, pl. XIII, 21).
Roundel, D in figure 14mm, (?struck) with device of bearded man's head facing left in beaded border.

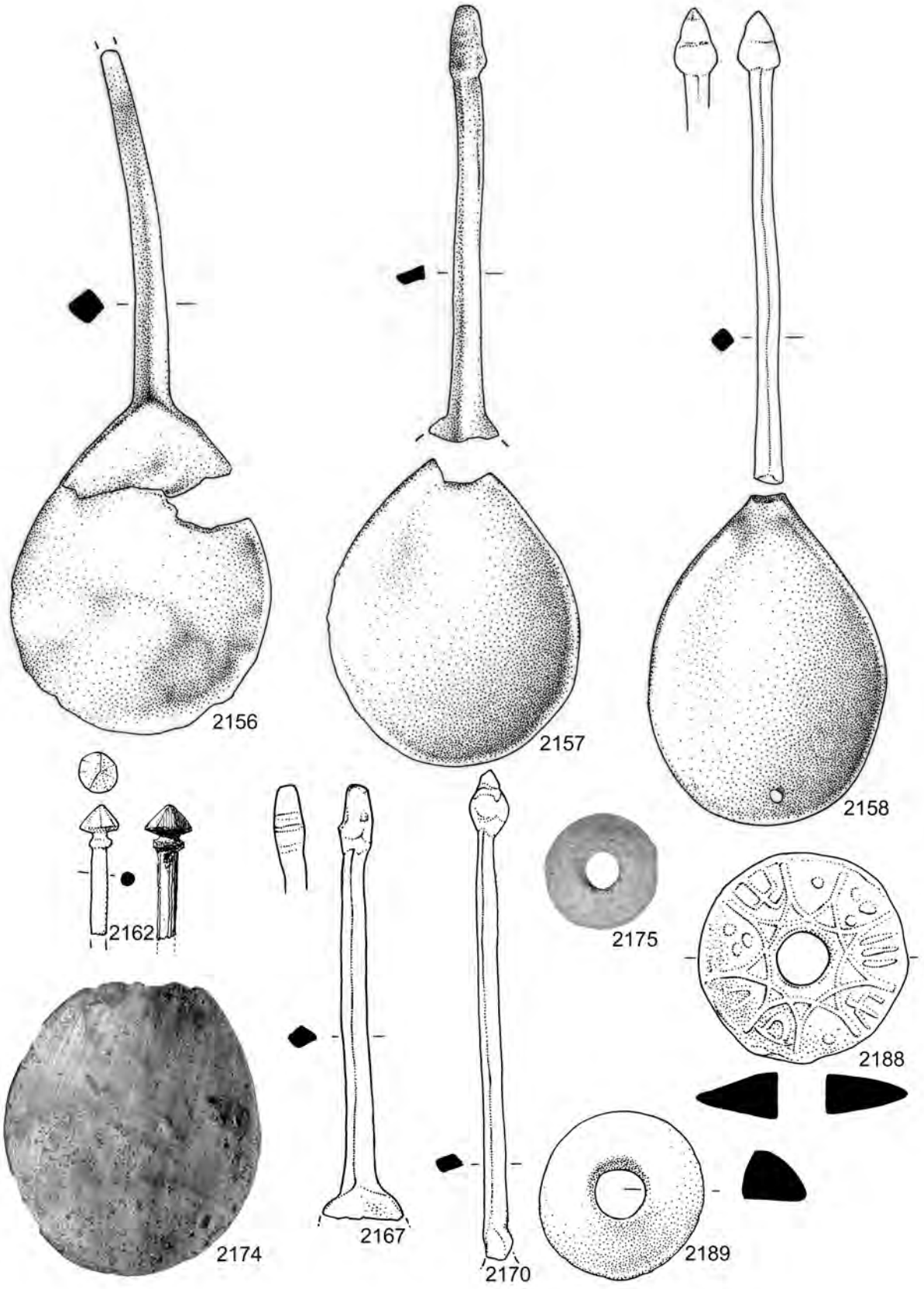
The object appears to be a relatively small, medieval cloth seal (?) 14th-century , two-rivet form, likely to be Continental. Several probable parallels in London (e.g. TEX88 acc. no. 6356 and Museum of London acc. nos [88.427/10] and (91.205/18) have a shield with two fesses on the other stamp; similar arms also appear on two cloth seals thought to be slightly later (16th-century) found in s'Hertogenbosch in the Netherlands, with the legend D(E..ST) – i.e. Diest, just north-west of Louvain in modern Belgium. This suggestion is confirmed through identification of the arms by Robert van Ven, Archivist of the city of Diest (pers. comm.).

Contemporary documents refer to the import in the 14th century of woollen cloths of Louvain, but in the continued absence of recognised seals from there, it seems likely that this refers to textiles woven in or around Diest, sealed in the town's cloth hall, and channelled through the major market of Louvain to their foreign destinations.

Hairnet needles

Copper alloy

These specialised tools, characterised by a bifurcate, open-ended oval at each terminal. They were used for making women's hairnets (Crowfoot, Pritchard, and Staniland 1992, 147). For further discussion of examples from Y ork assigned to the late-14th/early-15th century see W alton Rogers (1997, 17989-90, no. 6634) and Ottaway and Rogers (2002, 2741–2, nos 6634 and 14184).



Pl. 33. Later medieval spoons and spindlewhorls

2204 Pl. 34
L 92mm.
2205
Broken off very close to both ends; surviving L 100mm.

Sewing needles

Copper alloy
Hume (1863, 219 and pl. XX) illustrated a series of needles 'about eleven … all bronze'. At London, drilled eyes and round-section points are predominant in needles assigned to the late-12th century, while punched eyes and triangular points had taken over prime position by the late-14th century (Egan 1998, 267–9; the 13th/early-14th centuries are uncharted there for these implements).
Round-section points unless otherwise indicated, and drilled eyes (through head that has been hammered flat, unless indicated otherwise). Gauges 1.5–2mm.

Drilled eyes
2206 Pl. 34
L 38mm.
Short implement, possibly re-sharpened after loss of original point.
2207
L 52mm.
2208
L 68mm.
2209
L 71mm.
2210 Pl. 34
L 76mm; eye drilled through punched recess; triangular point.
2211
L 102mm.
2212
L 110mm.
2213
L 134mm; eye drilled through punched recess; triangular point.
2214 Pl. 34 (Hume 1863, pl. XXII, 12); L 41mm.
2215 Pl. 34 (Hume 1863, pl. XXII, 13); L 83mm.
2216 Pl. 34 (Hume 1863, pl. XXII, 3); L 91mm.

Punched eyes
2217 Pl. 34
L 39mm; small, neat implement; probably for embroidery. Cf. Egan 1998, 269, no. 876 (assigned to the late-12th century).
2218 Pl. 34
L 53mm.
Short implement, possibly resharpened after loss of original point.
2219
L 56mm.
2220
L 59mm.
2221
L 66mm.
2222
L 69mm.
2223
L 70mm.
2224
L 78mm.
2225
L 83mm; triangular point.
2226
L 88mm.
2227 Pl. 34 (Hume 1847c, no 49; 1863, pl. XXII, 1a).
L 91mm.
2228
L 98mm.
2229
Eye broken and shaft largely missing; surviving L 19mm.
2230
Head incomplete; point broken off; surviving L 25mm.
2231
Head incomplete; point broken off; surviving L 35mm.
2232
Head incomplete; surviving L 31mm.
2233
Point broken off; surviving L 50mm.
2234
Head incomplete; surviving L 63mm.
2235
Head incomplete; surviving L 64mm.
2236
Head incomplete; surviving L 91mm; triangular point.
2237 (Hume 1863, pl. XXII, 14); L 59mm.
2238 (Hume 1863, pl. XXII, 2); L 91mm.
2239 Pl. 34 (Hume 1863, pl. XXII, 5); two pieces; incomplete, L 91mm.

Needle cases
Hume mentioned five needle cases (1863, 221–2) all apparently of sheet copper alloy, and illustrated two.
2240 Pl. 34 (Hume 1863, pl. XXII, 1b); 102 x 8mm.
2241 Pl. 34 (Hume 1863, pl. XXII, 15); 69 x 6mm.
2242 Pl. 34 (Ecroyd Smith 1868, 121 and fig. 23); lead/tin, 43 x 5mm; (cf. Museum of London, BUF90 site acc. no. 1014 and VR Y89, no.1558 – both probably 12th/13th-century)
(See **3712**, which is a relatively large copper-alloy container of uncertain date).

Thimbles
Hume (1863, 221) described 'only two'.

Copper alloy
2243 Pl. 34
Cast: H 19mm, D at base 20mm; three grooves in base; drilled pits spiral somewhat unevenly from the crown with several fillers to cover the ground, particularly towards the base. The unevenness of the pitting would not have diminished this thimble's effectiveness. In London cast thimbles date from the late-14th or early-15th century (Egan 1998, 266).
2244 Pl. 34 (Hume 1863, pl, XXII, 11); D19mm; stamped-sheeting; later medieval.

METALWORKING

Metalworking at Meols was briefly considered by Potter , who referred to some intriguing items now apparently lost, or at least unidentifiable (Potter 1890, 151–2). Lead-working was, he suggested attested by finds of this metal 'in the rough state as left after being melted' (cf. Runnels **3960**ff, listed under Miscellaneous). This went along with the wider observation that 'the most numerous objects found on the shore are of lead'. There was also 'bronze or latten, in the same rough state' (cf. Miscellaneous **3790-1**). A recent find at the time of writing was 'a core in bronze from the port or orifice of a mould for metal casting …

proof that castings in mixed metals were made in the neighbourhood'. He went on to note the smith's and the plumber's tools among the recovered objects. Iron tongs **2741-2** for the former seem to be the sole survivors. In the absence of the other items or more detailed descriptions and against a background of a lack of recorded conventional stratification, all this can only raise tantalising possibilities. It is, nevertheless, clear enough from these words that one of the principal eye-witness commentators on the retrieval of the Meols assemblage was inclined to regard these finds as later medieval – 'it may be argued that five centuries have passed away since these industries had an existence in the neighbourhood of Great Meols'.

Copper alloy

Cold-worked rods
The following items seem to relate to cold working – folding a flat piece, hammering to a round- or square-section rod form (the hammering regularly left a longitudinal seam evident along one side), and in the cases of the square-section lengths twisting, to make plain or spiral-frame circular brooches. A range of stages of manufacture appears to be represented. Brooches are the only products identified (from the discards listed following). The technique, which seems to fit the visible markings, has not previously been suggested for the medieval period, but it is known for making wire in the Eastern Mediterranean in the Bronze Age (Oddy 2004, 265).
This material has all the difficulties involved in trying to define original contemporary groupings within a non-stratified assemblage, and the full range of manufacturing items may go beyond the relatively easily defined pieces brought together in this section. It is difficult to judge with certainty whether some comparable accessories that appear finished and are of visually similar alloy(s) (here termed 'rich brown') are related products (see Brooches **1665**, etc.) that were presumably once worn by inhabitants of the settlement.
No closely comparable contemporary material for what may have been a widespread, cheap, but labour-intensive technique of manufacture, which depended entirely on manual dexterity, has been traced. A workshop, with a fuel-consuming furnace, would not have been needed. This kind of work could be carried out virtually anywhere, given the basic ingots, along with a hammer and some kind of pliers-like tool (tongs **2741–2** are probably too robust).
The total weight of metal that appears to have been discarded from this local industry, which seems from limited analysis to comprise mainly gunmetal, with some bronze, amounts to less than 0.1 kg.

(?)Intended to be brooches
A variety of discards, all probably unfinished circular frames or waste from making them:
2245 Pl. 34
Discontinuous, circular-section ring; D 9mm; seam internally from hammering the metal.
2246
D 15mm; circular-section ring with one end splayed.
The splayed end was presumably mis-struck.
2247
Corroded: discontinuous, circular-section ring, D 18mm, with tapered ends.
2248 Pl. 34
D-section rod in three-quarter circle; D 19mm; tapering the entire length from broken (split) wide end to near point at other end.
2249 Pl. 34
Circular-section, semi-circular fragment, D 19mm, with one end twisted unevenly; the inside edge of the rest of the curve has the profile of a regularly twisted, square-section length, while the outside (about three-quarters of the surface) is smooth, up to a rebated, terminal prong; gunmetal (Appx 2). This looks like an uncompleted frame for a twisted circular brooch; it is difficult to explain how twisting could be evident only along one side on most of the object without subsequent filing flat. That is a possibility, as the surface here is covered with file marks at different angles, but the effort involved in such an undertaking scarcely seems worth the trouble for such a trivial piece of wire. Whatever the explanation of the present item (? a demonstration piece, or a doodle) it seems to have preserved a unique piece of evidence for the cold-working techniques involved in making twisted-frame brooches like **1708**ff. Although it might, prima facie, have been much easier to cast from a clay mould taken from already twisted wire, the cold-working method would have obviated the need for a furnace.
2250 Pl. 34
Ring, D 23mm; discontinuous, circular-section; one end tapered at discontinuity; (?)surface abraded.
Usable as a brooch frame.
2251 Pl. 34
Ring, D 24mm; discontinuous, lozenge-section; one end transversely cut, the other slightly tapered.
(?)Brooch frame awaiting twisting.
2252 Pl. 34
Corroded: (?) part round-section, part square-section rod with tapered ends bent into arc, L 38mm.
2253
Corroded and abraded rod with circumferential grooving and filed, rebated ends, L 46mm, D 6mm. The rebates may indicate that this was intended to be a brooch frame.
2254 Pl. 34
Bent strip, 57 x 4.5mm; possibly partly hammered into rod at one end.

Casting
2255 Pl. 34
16 x 15mm, circular plaque with two broken sprues, dating uncertain – later or possibly even early medieval.
Irregular pieces of copper-alloy casting waste such as **3790** and **3791** are impossible to date; these, the only two in the assemblage, are listed under Miscellaneous. Compare a 'lump of fused latten' waste (Anon 1861, 329).

Buckles and brooches
The strange lack of decoration on buckle **686** when set alongside comparanda could mean it is unfinished. Buckle **540**'s unusual arched profile may mean it was a waster; and the distortion of pin **868** may mean it was a second-rate product, if still usable. **731** is poorly finished, but ?not a waster (see also **974**, listed as a Mount). Brooch **1736** appears fresh from the finishing processes but would have been readily wearable.

Strap loops
A number of these appear crisp from the mould and may never have been used. There are also what seems to be an unusually large number of broken frames, though no reason for this is apparent.

Products indeterminate
Some or all could have been intended for brooches.

The first represents the earliest stage of cold working a flattish length by folding over with the intention of then hammering this into a rod.
2256 Pl. 34
Sheeting rolled into neat, curved (?part-circle of D 35mm) rod, D *c.* 2.25mm, at one end, (?)unfinished/unravelled at other end (spiralling or hints of it along the length); gunmetal (Appx 2).
2257 Pl. 34
Irregular, roughly U-shaped length, 12 x 8mm, of sheeting rolled (in part spirally) into rod, D *c.* 2mm; gunmetal (Appx 2).
2258 Pl. 34
Asymmetrically wrought, U-shaped rod, L 17mm, W 8mm; ends taper to two points.
2259 Pl. 34
Sheeting rolled spirally into tapering rod that is flattened towards wider end and terminates in a hooked point at the other; 32 x 18mm; D varies between *c.* 1.25 and 3mm; gunmetal.
2260 Pl. 34
Tapering, bent rod (series of transverse tool marks (?)from the bending); L 42mm; varies from D 3.5 to 4mm; ?broken off at one end and (?)cut at angle at the other; gunmetal (Appx 2).
2261
Tapering, curved rod; 25 x 3mm; broken off at wider end.
2262 Pl. 34
(?)Originally D-section arc; broken off at both ends; irregularly hammered along outside; the metal appears vesicular (i.e. of poor quality); bronze.
Presumably discarded when the length being worked broke.

Sheeting
Only items with distinctive tooling marks are included here (less definitive or uncertain pieces are listed under Miscellaneous). A couple of fragments of sheet vessels seem to have been left over from cutting up for re-use – see **2119** and **2129** listed under Vessels.
2263 Pl. 34
Incomplete sexfoil: D 19mm; hole for missing separate rivet; cut-outs in two foils are perhaps analogous to those in the following item.
2264 Pl. 34
Strip, 19 x 11mm, decoratively cut at one end as for buckle-plate or strapend – biconcave with central round aperture and holes for two rivets; gunmetal (Appx 2); the cutting has been abandoned, probably as it went too close to the rivet holes (making them liable to tearing through), leaving a scrap that would have been removed still in place; this useless part has then been cut off the strip and presumably a fresh start was made cutting the same outline; gunmetal (Appx 2).
(?)Late-14th/possibly early-15th-century, cf. Egan and Pritchard 1991, 78–81 buckles nos 324 and 326 and 140–4 strapends nos 653–4, 665 and 671–4, etc., assigned to the period suggested (except no. 653, which is down as being earlier but could be intrusive) – these parallels all have an obliquely filed groove at the end of the aperture, the lack of which in the present item may be attributable to its uncompleted state, or because the sheeting is thinner than that of most of the parallels it may not have been intended. Be that as it may, the present waster offcut was probably a repair attempted locally by someone with limited experience at this level of expertise.
2265 Pl. 34
Fragment: 27 x 11mm, survives as hooked form, with one blunted, angled end and neat outer edge but irregular along inside – probably part of badly cut-out spacer intended for a strapend; gunmetal (Appx 2).
2266 Pl. 34
Distorted, sub-rectangular fragment: 25 x 19mm; irregularly cut on long sides and more roughly broken off on two shorter ones; engraved guidelines along one long and (other face) one short side; one roughly pierced hole; brass (Appx 2).
Evidence of sheet metalworking, but isolated and unrelatable to a specific category of product.
2267
Corroded: irregular fragment, 34 x 22mm (with at least one (?)original edge); two cuts into the fabric at right-angles to each other.
Dating uncertain.
The following are folded sheet rivets, used in repairs to sheet vessels (e.g. vessel fragments **2130ff**).
2268 Pl. 34
7 x 6mm; apparently unused.
2269
7 x 6mm.
2270
8 x 6mm.
2271
8 x 8mm.
2272
8 x 8mm.
2273
9 x 10mm.
2274
Possibly incomplete; 10 x 9mm.
2275
11 x 8mm.

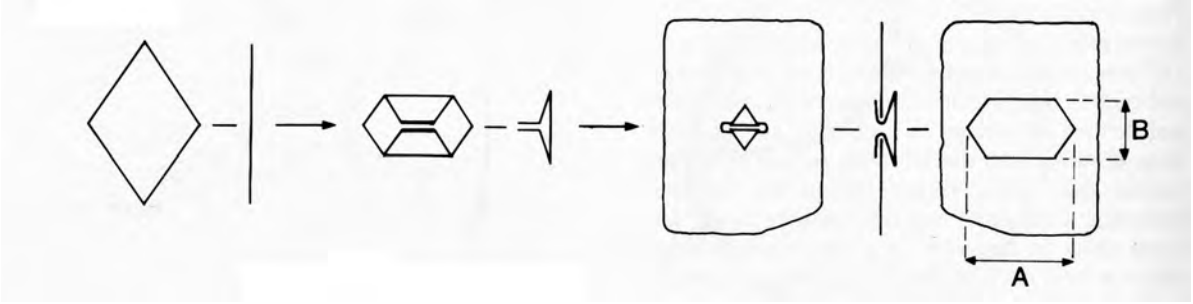
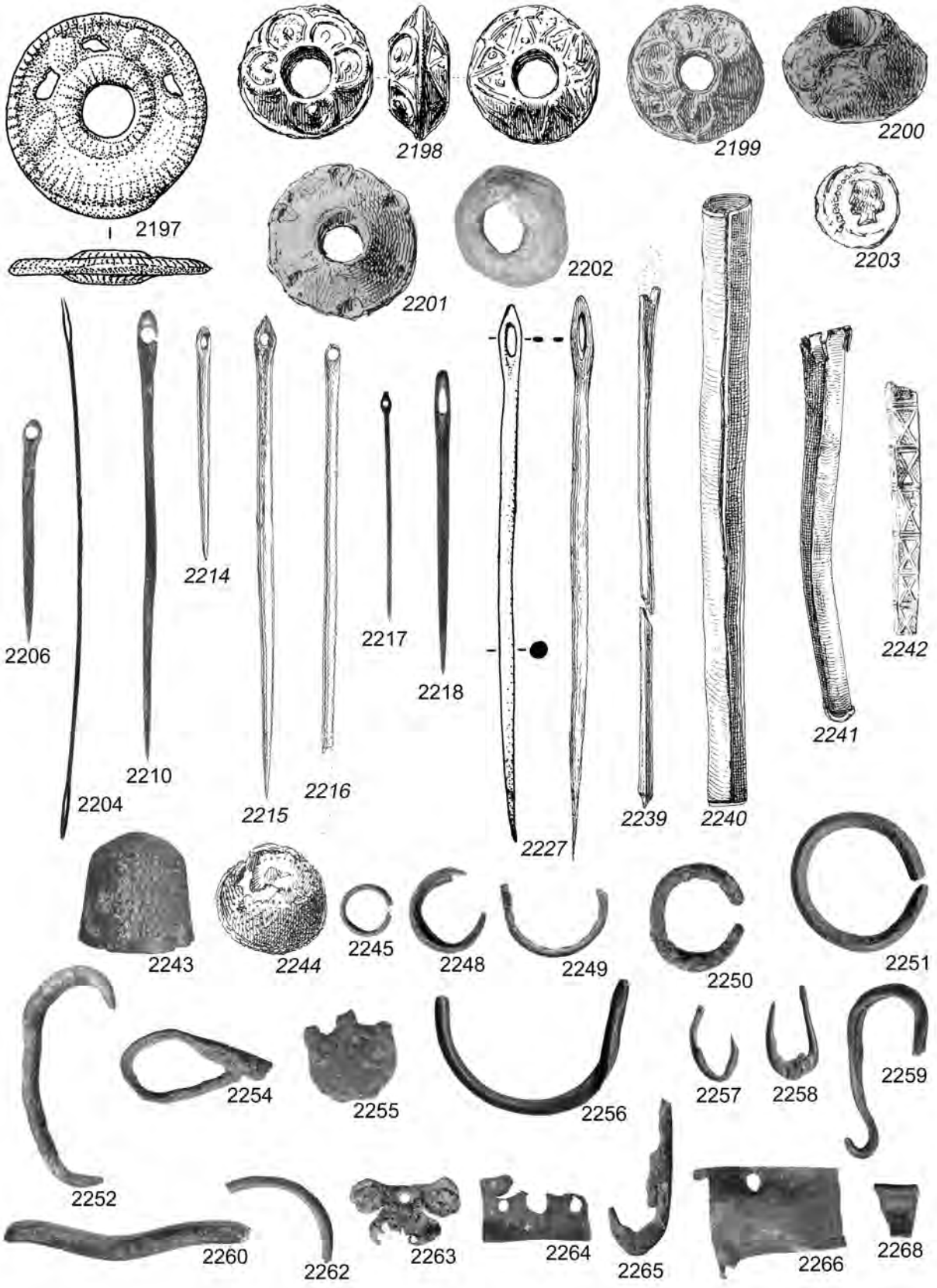


Fig. 2.5.16: Sheet rivets, method of folding (after Egan 1998, Fig. 144



Pl. 34. Later medieval textile and metalworking items

2276
11 x 8mm.
2277
12 x 14mm.
2278
13 x 15mm.
2279
14 x 11mm.
2280
14 x 11mm.
2281
Possibly incomplete; 15 x 4mm.
2282
17 x 13mm.
2283
17 x 8mm.
2284
17 x 14mm.
2285
18 x 17mm; scrap of sheeting still attached.
2286
Possibly incomplete; 20 x 11mm.
2287
21 x 9mm.
2288
22 x 9mm; scrap of sheeting still attached.
2289
23 x 13mm.
2290
31 x 15mm; scrap of sheeting still attached.

Lead/tin

Wasters
(Dress accessories and spindle whorl.)
Gross deficiency of metal in the casting (as with spindle whorl **2293**), and prominent sprues left in place (as in buckle **2291**) are unequivocal indications of wasters/unfinished discards. These are also sometimes definable from the crispness (and, where appropriate, pristine rivets) of unused objects that otherwise appear routine – items in old, much-handled collections are unlikely to retain this fleeting evidence. Major misalignments and prominent sprues, especially when awkwardly located, were almost certainly not acceptable to most customers, whereas slight mismatches between mould parts were likely to cause small ridges and occasional minor voids through bubbles in the casting that probably would have been. Spoons **2157** and **2159** have slight mould mismatches, but they have been filed to minimise the effect of this (the latter , perhaps, an indication that what might not be acceptable in the capital could be acceptable to some consumers in Meols).

Lead/tin buckle **609** has several eccentricities that may mean it was a patron – a master form from which others might be cast of copper alloy in clay moulds, but this needs further more definitive evidence before it can be regarded as anything more than a beguiling possibility.
See also **611** listed under Buckles, **1787** under Brooches and round (?)mount **983** with its possible lateral sprue. Saxo-Norman pin head **1888** had the mould parts seriously misaligned during casting, but there is no indication it was considered a waster.

2291 Pl. 35
Buckle: oval frame, 31 x 16mm, with integral, open-sided sleeve having untrimmed sprues along each side (not included in measurements) and at inside edge; holes for pin remain to be made; tin-rich pewter (Appx 2).
This specific form is so far unknown elsewhere, though some flimsy pewter strapends found in the capital are perhaps related (Egan and Pritchard 1991, 152–4, fig. 99, nos 718–9 and parallels, assigned to the late-14th century). Comparable lead/tin buckles with fully four -sided sleeves (more difficult to make moulds for , but more securely attachable once produced) are known in London and Salisbury – Egan and Pritchard 1991, 102 and 104–6, figs 66–7; Spencer 1990, 9 and 136, fig. 324; Egan 2001, 92–3, fig. 31, no. 3. **606** is similar, but finished, with its iron bar and pin (listed under Buckles).
2292 Pl. 35
Brooch: worn and with patches of corrosion: circular frame, D 18mm, with parti-decoration – plain and series of transverse grooves (very faint); sprue around perimeter; lead-rich pewter (Appx 2). ?W aster or usable second (perhaps used, unless all the wear now evident has occurred subsequent to retrieval).
2293 Pl. 35
Spindle-whorl fragment, D estimated 18mm, Th 13mm, D of hole estimated 9mm; cut with a blade from defectively cast, biconical whorl (the other end appears to have been defined by a large gas bubble or a complete absence of metal): crude foliate-and-dot and indeterminate motifs on respective sides; lead (Appx 2).
The decoration is the same as that on Hume (1863, pl. XV, 1 and 8) (both ?lost) – ***2198*** and ***2199***, which may well have been local products, despite the apparent slight difference in diameters.
2294 Pl. 35
Incomplete, abraded frame of (?)plain circular buckle, D29mm; with two sprues/overflows untrimmed; lead-rich pewter (Appx 2).

Runnels etc.
These are inherently undatable, though it would be remarkable if some were not of medieval date. Potter (1890, 151) notes a large quantity of lead 'in the rough state as left being melted'. Items in this present category may have been retained highly selectively or not at all on the part of some collectors, but several very scrappy pieces have come down. See **3960**ff listed under Miscellaneous (a small number of these, like **3962**, might have been mistaken for artefacts at the time of discovery). Cross **1884** and unidentified **2372** could possibly be forms of ingot (listed under Miscellaneous).

Moulds
No mould appears to survive in the Meols collections (though Ecroyd Smith 1868, 212 'part of a mould with circular hollows' and 1869a, 217 'portion of a mould'; (Ecroyd Smith 1868, 126 'four moulds for casting rifle bullets' from around the village of Great Meols, assigned to the 18th century, see under Post-medieval metalworking). Medieval moulds are known from large towns – London, Bristol, Coventry, Norwich, and Salisbury, for dress accessories, as well as Canterbury , Walsingham (Norfolk), and North Marston (rural Buckinghamshire) for pilgrim souvenirs, and Hereford for toy jugs (e.g. Spencer 1998, 9, fig. 6A, and 48, fig. 6B; Forsyth and Egan 2006, 28, fig. 9).

Silver
No definitive evidence for silver working has been recovered from Meols. Archaeological evidence for this craft from the later medieval period is usually oblique. Appropriate moulds, master casting forms in base metals

like lead and waste traces in crucibles are all missing (though two of the distinctive cupels used for refining silver, which are thought to be post-medieval, were found). Precious-metal goods were everywhere so prized that if they were lost great efforts were made to recover them. Typically they survived above ground long enough to be recycled in the melting pot by specialists.
It has been suggested on the basis of the variety and distribution of some Hibero-Norse coins in north-west England and north Wales that an untraced mint active in the early-11th century may have been located at Meols (Blackburn 1996; 2.24). Nothing in the metal assemblages recovered adds support to this idea, though it remains a possibility on the numismatic evidence from elsewhere.
A series of haematite polishers found at Meols, inevitably not closely datable, but with parallels elsewhere from this period, backed up by references in medieval and later craft manuals, imply the finishing by surface polishing of very fine metalwork. These traditional tools cannot be claimed as indisputable evidence for the craft, but for all the improbability of the notion against the history of the site, their readiest interpretation is as tools for silver working.

Haematite polishers
Ecroyd Smith (1866, 212–3) commented: 'Roman amulet' of haematite, 'rubbed smoothly down,' [these] 'invariably exhibit one or more sides artificially abraded; (Ecroyd Smith 1868, 106–7): 'one (?)chisel of haematite, after breakage…probably…worn…as an amulet or touchstone, and two amulets – one obliquely perforated' assigned to Romano-British period, while p. 123 lists two others as medieval amulets; (Ecroyd Smith 1872, 123, 150) 'two amulets' identified as 'medieval' and 'five segments of haematite … rubbed down to a smooth surface … as charms.'
These are natural, sub-conical splinter fragments of this distinctive mineral, with one or more ends and sides artificially abraded, probably from use for the fine of polishing newly cast items (a suggestion confirmed by Bayley 1992, 791 and 841 and pl. 58c, nos 4372–5) or , as Cennini suggested, in the 15th century, as a burnisher to apply gold leaf to wooden panels (Cennini 1960, chapter 42, 25). See Egan 1997, 39, fig. 29 and 201–2, no. S4 assigned to the period 1234–80, for a comparable London find from the site of the medieval hospital of St Mary de Fonte). Despite the difficulties of dating, these makeshift tools imply at least the finishing of fine metalwork – almost certainly of a higher quality than the mass-produced copper -alloy dress accessories (which have clearly been finished routinely with files). This does not certainly point to local production of precious-metal goods, but that is one of several possibilities. Analysis (Appx 2) confirmed the geological identification, but did not detect any metal traces, precious or otherwise.
2295 Pl. 35
Roughly D-section; L 16mm; (?)working face 7 x 13mm.
2296 Pl. 35
Roughly triangular-section; L 17mm, larger face 5 x 7mm.
2297 Pl. 35
Sub-oval-section; L 17mm; (?)working face 6 x 7mm.
2298 Pl. 35
Roughly D-section; L 19mm; (?)working face 9 x 12mm

.
WEIGHTS (?COMMERCIAL)

2299 Pl. 35 (Hume 1863, 281 and pl. XXVII, 10); 'lead die or stamp', rectangular with crown over fleur de lis; 15 x 11mm (assigned by Hume to the 17th century).
Apart possibly from this item, there are no identified copper-alloy weights in the assemblages. Coin-weights, for checking gold issues, would usually be of copper alloys. This might have implications for the economy of the settlement in the 14th century onwards, but such weights are not commonly recovered, and while their absence among so many other finds of late medieval date is notable, it should not be taken as a definite indicator of a general absence locally of high-value currency (cf. the two quarter noble gold coins of Edward III recovered at Meols (**5648-5649**).

Lead/tin
Without stamps or cast designs in a particular style, these items are not closely datable. While a trading place might be expected to produce a number of commercial weights, to err on the side of caution in this commentary only those items that appear to correspond closely with a plausible medieval standard are included here; unattributable items of this category being listed as miscellaneous (**3695** ff). Aside from items for commercial weighing, a few rough items listed below may be fishing weights.

Discs, etc.
2300
D 6mm, Th 2mm, Wt 4.3g.
2301
Slightly uneven D 37mm, Th 6mm, Wt 62.3g; series of engraved zig-zags in overall V -shaped configuration on both faces.
2302
D 37mm, Th 4mm, Wt 47.1g; radial blade cut into fabric at one point on perimeter; row of tangential, parallel lines to one side of central, round recess on one face (made by twisting sharp implement); a corresponding pinhole on the other face suggests a hole may go right through; also random scratches on both faces.

Lentoid
2303 Pl. 35
Plano-convex (triple-faceted); L 55mm, section 15 x 13mm, Wt 32.1g; both ends smoothed by wear or handling. Resembles an ingot, but this is probably one of a distinctive form of medieval pendent weight, thought to be for nets or possibly depth sounding; in this instance it has lost the terminal suspension loop (cf. Egan 1998, 311–12, fig. 231, assigned to the late-14th century).

Subrectangular weights or tokens
Hume (1863, 295): 'dies in lead … possibly …8th to 13th century; … the writer conceives they served in lieu of legal coin when silver was scarce'. Hume illustrates two stamped with saltire crosses in beaded borders, one of which survives (cf. Egan 2001, 102–4, figs 35–6, nos 116–44).
2304 Pl. 35 (Hume 1863, pl. XXVIII, 11); 13 x 14mm, Wt 1.1g.
2305 Pl. 35 (Hume 1863, pl. XXVIII, 10); 15 x 12mm.
See also fishing equipment **3676–3695** and miscellaneous pierced lead roundels **3975**ff.

LEISURE

Plaything
Ecroyd Smith (1873, 135) noted, but did not illustrate, a 'boy's marble of granite, ground into a fairly globular form

… an inch in diameter ,' interpreting this as 'a genuine medieval taw' (i.e. play marble). The intervening century and a quarter has produced only a very small number of items assignable to the medieval period that stand up to scrutiny as possible contemporary marbles in the tradition of those of glass today (natural stone, excavated at Alsted in Surrey – (Opie 1976); two of glazed ceramic, found at Old Sarum in Wiltshire – Algar 2002; there are also a few on the Continent, e.g. Gläser 1995, from Lübeck). Overall, in the absence of the object referred to, it is prudent to be highly sceptical of the suggested identification.

Jew's harps

Copper alloy
This post Norman Conquest musical instrument rarely has the iron tongue surviving in excavated examples of medieval date. The prongs are held in the teeth and the mouth acts as a resonator, modified by the lips, cheeks, etc. when the end of the metal tongue is plucked (cf. Wardle in Egan 1998, 284–5 illustrating examples from the late-13th to late-14th centuries).
(Ecroyd Smith 1872, 147 recorded but did not illustrate a 'portion of a jew's harp').
All are fragmentary, with oval heads (none of the tongues survives).
2306 Pl. 35 (Hume 1863, pl. XXII, 8, the missing prong is restored as a spiral as this was then thought to be a Bronze Age hair pin); head and (?)all of one prong; 52 x 23mm (cf. Kolltveit 2006, 150, no. 190, with further references)
2307
58 x 22mm: as preceding item.
2308
One side: L 31 x 21mm.
2309
Head and parts of prongs; 51 x 12mm.

WRITTEN COMMUNICATIONS

Seal matrices
The majority of the 15 of these inherently attractive items appear to be missing, including the two with local place-names. The one with 'W illiam of Meols' is unanswerable evidence that the assemblage derives from the site.
All legends are in lombardic lettering unless indicated otherwise.

Copper alloy
2310 Pl. 35
(Hume 1863, 280–1 and pl. XXVII, 4), misrepresenting the figure on the right as bearded; Chitty and W arhurst 1977 ('Christ presented at the T emple'); D 23mm, H 23mm; handle hexagonally facetted with tripartite collar and trefoil loop: (very crude) two figures facing each other (the one on the right a woman having long hair), (?)lily in pot between, (?)dove above, AVE MARIA around.
Although the right-hand figure is presumably the V irgin, there is no indication that the other is an angel, and so Hume's suggestion that the scene represents the meeting of Mary and Elizabeth is probably correct.
2311 Pl. 35
(Ecroyd Smith 1870) oval: 27 x 19mm, H 23mm; with tapered, hexagonal-section, triple-collared handle: V irgin and Child, foliage to left, *A VE MARIA GRACIA VV around
2312 Pl. 35
(Ecroyd Smith 1873a, 131 and pl. A9) corroded: round; D 18mm, H 17mm; with tapered, hexagonal-section, pierced handle: (crude) fleur-de-lis, (surrounding a legend that is now illegible, read AVE MARIA by Ecroyd Smith).
2313 Pl. 35
(Ecroyd Smith 1874, pl. A9).
Shield-shaped: 26 x 19mm, H 10mm; pierced tab on back: cross patée, fitched at foot, +S ESTEV AN PEK~ around – 'seal of Estevan/Steven Pe(c)k'.
2314 Pl. 35
(Ecroyd Smith 1868, 117 and fig. 7); found March 1867; Potter Collection.
Corroded: oval: 26 x 20mm, H 28mm; with hexagonal, tapering, triple-collared handle: St Margaret standing on supine dragon and holding cross, foliage (?palm branch) to left, *SAVNCTA MERGARETA around – 'Saint Margaret'
2315 Pl. 35
(Ecroyd Smith 1874, pl. A10) polished after retrieval: round; D 27mm, H 10mm; ridge diametrically with pierced tab at one end on back: stylised tree/foliage, opposed birds near top, hare crouching below, +S'NICHI D'PL'CROELL GERIO CL'I around – 'seal of Nicholas of …. the cleric'[?].
2316 Pl. 35
(Hume 1863, 280 and pl. XXVII, 3) central device described in text as 'Stafford knot' but illustration seems to show a fleur-de-lis, S'IOHN DE OSECOT ('seal of John of Osecott'), 'brass'. The place referred to may be Oscott just outside Birmingham.
2317 Pl. 35
(Ecroyd Smith 1868, 117 and pl. 6) bird, TIMETE DOMIN(V?) ('fear the Lord') metal not noted; found April 1867.
2318 Pl. 35 (Ecroyd Smith 1871, 128 and pl. opposite p1. 19, no. 5) round; 'latton': Lamb of God with banner; (?) IN IVESV around (? 'In [?the name of] Jesus').
2319 Pl. 35
(Ecroyd Smith 1873a, 145–6; pl. B, nos 1 and 2) 'copper alloy': hands or gauntlets clasped, bird above, A VZ LEL AMV[R] around ('you have/take loyal love') and dated to the late-14th century according to Ecroyd Smith.

Lead/tin
2320 Pl. 35
(Ecroyd Smith 1873a, 132 and pl. opposite p. 115, no. A10 – 'model of a seal of the 14th century').
Corroded: cast, circular, D 20mm, H 12mm; tapering to missing end of handle; crude: incuse, long-tailed animal squatting ('squirrel' according to Ecroyd Smith); most unusually, the surrounding lettering, of which only a reversed N, an O and (?)an R are legible, appear to stand proud on the matrix, which would in theory give an incuse legend on sealing (interpreted with an excess of ingenuity , if hesitantly, by Ecroyd Smith as the ironical 'SUM LEO FORTI[S]' – 'I am a lion bold'). This item looks as if it was not strictly usable – at least it would not have given an impression of the normal standard, but perhaps some kind of cheap substitute acceptable locally among the non-literate.
2321 Pl. 35
(Hume 1863, 278–80 and pl. XXVI.1); lead/tin ('pewter ,' assigned to the 13th century by Ecroyd Smith (1871a, 133 and 1873, 118); round: cross with saltire lobes, S'WILL.DE MELES around. The reference to Meols on W illiam's seal is a very rare instance of precise correspondence between archaeological documentation and findspot in the medieval ambit.
2322 Pl. 35
(Hume 1863, 277–8 and pl. XXVI, 2; Ecroyd Smith 1873a, 117); 'lead', irregular , ornate cross, S'AMABELIE

Pl. 35. Later medieval wasters, polishers, seals, etc.

D'LATHVN around; fleur on back; i.e. Amabel of Lathun – now Lathom, Lancashire.
Metal uncertain
2323 Pl. 35 (Ecroyd Smith 1873a, 120 and pl. A11, metal not indicated): pointed oval, ironical fox with goose in mouth and over shoulder running off with its prize, +CREDE (MIHI) around ('believe in me').
See also signet ring **1976**.

HORSE EQUIPMENT

Swivels for straps
These could have had any number of different uses, e.g. to restrain pets/farm animals, for suspending cooking vessels in the kitchen, in horse harness, etc.

Copper alloy
2324 Pl. 35 (Hume 1863, 296 and pl. XXVIII, 8); 'brass.' 23 x 22mm;one subcircular part from a pair: traces of rust at pivoting expansion.
2325 Pl. 35 (Ecroyd Smith 1876, opposite p. 182, fig. 5) Complete: 91 x 23mm; ornate version of two identical parts: loops each have two perfunctory animal heads biting the bossed, obliquely opposed-hatched roundels of the swivel; held together by copper -alloy rivet fixed in one part.
Probably Norman period. (Cf. Read 2001, 59 and 62, fig. 38, no. 484), found in Buckinghamshire (described as Romanesque).

Harness pendants

Copper alloy
These include common forms, some with gilding, which is not unusual, but a couple, **2328** and **2329**, are notably elaborate and of very high quality . None of the later medieval armorial versions has been recognised in the assemblage.
2326 Pl. 36
Convex disc, D 12mm [20 x 13]mm, with integral rivet centrally on back and lateral strip having central slot bent over to form pair of loops for attachment of a further element.
Compare a mount with a pendent bell, found at Old Sarum (Cherry 1991, 23 and 27, fig. 4, no. 25).
2327 Pl. 36
Corroded: ornately outlined attachment panel, 49 x 32mm, with slotted tab for suspension folded behind; engraved with abraded motif (??mythical beast, etc.); traces of gilding; three attachment holes.
2328 Pl. 36 (Ecroyd Smith 1868, pl. facing p. 103, no. 20, shown on its side)
Incomplete: 22 x 21mm; well-made, double-looped pendent holder, with one complete lateral element like an ornately stylised letter 'M' on its side, the other broken off (perhaps matching to make a symmetrical design – the similarity to the letter is probably coincidental); central rivet on the back.
2329 Pl. 36 (Potter 1876b, plate facing p. 182, no. 4; 'probably … Roman or Saxon').
Central stem with rivet-base and bifurcate top, from one branch of which hangs a pivoted crouching dog, pendent from a rod (item on other branch is missing), 40 x 18 x 5mm; that this orientation is correct is shown by the flat side of the pendant being turned away from view towards the central stem. This curious, small-scale, but well-made object, seemingly suitable to amuse a child (the dog may have chased a cat or hare, etc. on the other branch) is at odds with most known medieval naturalistic toys, in being of copper alloy rather than a cheaper and more easily worked material. It is included under Horse equipment as a few elaborate harness mounts that worked on similar basic principles are known. If it is part, for example, of a child's rattle, it is much more difficult to parallel, and would have belonged to someone of such high status they were unlikely to be encountered at Meols.
2330 Pl. 36
(Hume 1863, pl. XXIX, 12) bifacially bevelled central bar is flanked by pair (pierced for attachment) of sub-round terminals with end pellets, 32 x 19mm; a pair of pierced tabs centrally set at a right-angle would have held the pendant item.
A common suspension element in horse ornamentation, e.g. Griffiths 1995, 69, nos 73–4, the former dated to the late-14th century.
2331
(Hume 1863, pl. XXVI, 9); 25 x 12mm.
2332
(Hume 1863, pl. XXVI, 16); 30 x 12mm.
2333
(Hume 1863, pl. XXVIII, 4); 70 x 68mm; elaborate, bifurcating with fleur-de-lis pendent mounts.
2334
(Hume 1863, pl. XXVIII, 5); 42 x 19mm.
2335
(Hume 1863, pl. XXVIII, 6); 61 x 40mm.
2336
(Hume 1863, pl. XXIX, 15); 28 x 19mm, suspension loop with seven knops around edge.

Spur rowel

Copper alloy
2337 Pl. 36 (Hume 1863, pl. XVI, 5).
Copper-alloy; D 36mm; six points (one shorter than the others); central hole worn on one side.
This kind of wear has not been noted on other examples.
See also Ironwork, section 2.6

WEAPONRY AND ARMOUR

Dagger handle components
Ecroyd Smith 1868, 118 'portion of guard from a dagger' (which could have been of iron) does not obviously refer to any of the items listed.

Copper alloy
2338 Pl. 36
Crude, sheet hexagon, D 30mm, with rough, triangular hole for blade and two small, round ones for missing rivets; worn from handling.

Chapes for bladed weapons

Copper alloy
2339 Pl. 36
Folded sheeting: 39 x 16mm; trefoil aperture with filed groove down from base in front from rim; overlapping seam on back; the tip comprises four tabs crimped closely together.
Presumably late-14th-century if the filed groove is in the same tradition as those on buckle plates (Egan and Pritchard 1991, 80).

Pl. 36. Later medieval horse equipment and dagger accessories

Lead/tin
2340 Pl. 36
Part missing at top; 24 x 9mm; surviving part is plain; partly cut through by a bladed tool.
2341
50 x 18mm; incomplete at top, which has band with beading and remains of (?trefoil) aperture; wood survives within.
2342 Pl. 36
Incomplete at top: rounded, tapering sleeve, 62 x 24mm, with same decoration on both faces – openwork trifoliate aperture flanked along sides by cresting like a series of commas, with a fleur -de-lis motif at basal join; surviving only on one side are the remains of a corded, horizontal band, with rectangular fields alternately plain and obliquely opposed-hatched above this; worn through at base; fibres within may include leather and/or wood (for this decorative form, cf. LMMC 1940, 287–8, fig. 88, nos 2–4, and Egan 2002, 38 and 40, fig. 55 is assigned to the late-14th/early-15th century (an accompanying pot sherd of *c.* 1430+ is regarded as intrusive).
The following three items were probably all copper alloy:
2343 Pl. 36 (Hume 1863, 306–7 and pl. XXIX, 3); 38 x 44mm, (?) folded sheeting with angled terminal; holes for two missing rivets, double ogival inside edge.
2344 Pl. 36 (Hume 1863, 306–7 and pl. XXIX, 5); (?) bent sheeting, rounded terminal cut and bent to blunt end, (?) pattern of four holes near top which is shown as torn away 38 x 21mm.
2345 Pl. 36 (Hume 1863, pl. XI, 3); (?)a scabbard collar - mount, ornate sheeting 26 x 23mm, with engrailed top and triple zig-zag lower end with ring and dot motif on each prong; and a transverse band near the centre; holes for two missing rivets.

Dagger holder

Lead/tin
2346 Pl. 36
(Identification suggested by Nick Griffiths) Cast: battered and split right through, worn: round collar , D *c.* 42mm (original profile uncertain, presumably round or D-shaped), H 24mm, with very roughly tooled (?) blackletter legend (the 'legend' is executed so incompetently that it is tempting to see this as false lettering) in reserve against a crudely cross-hatched field, which is defined by two circumferential ridges (one closer to its edge than the other), each having a row of beading along a central groove; rectangular suspension tab; the sides are slightly bent inwards, presumably to grip a leather scabbard. Late-15th/early-16th-century . No parallel has been traced for this remarkable weapon accessory.

Chain mail

Copper alloy
2347 Pl. 36 (?)Cf. Ecroyd Smith 1874, 98: 'fragment of a shirt of chain mail armour , comprising sixteen links' of latten strips folded flat, riveted together, some singly, some doubly.
Ten conjoined wire links, each D *c.* 10mm, group overall 50 x 10mm, held by a single punched piercing through each pair of superimposed end tabs (each ring set through from one to four others) and one loose link. Perhaps a single dag from a pendent fringe.

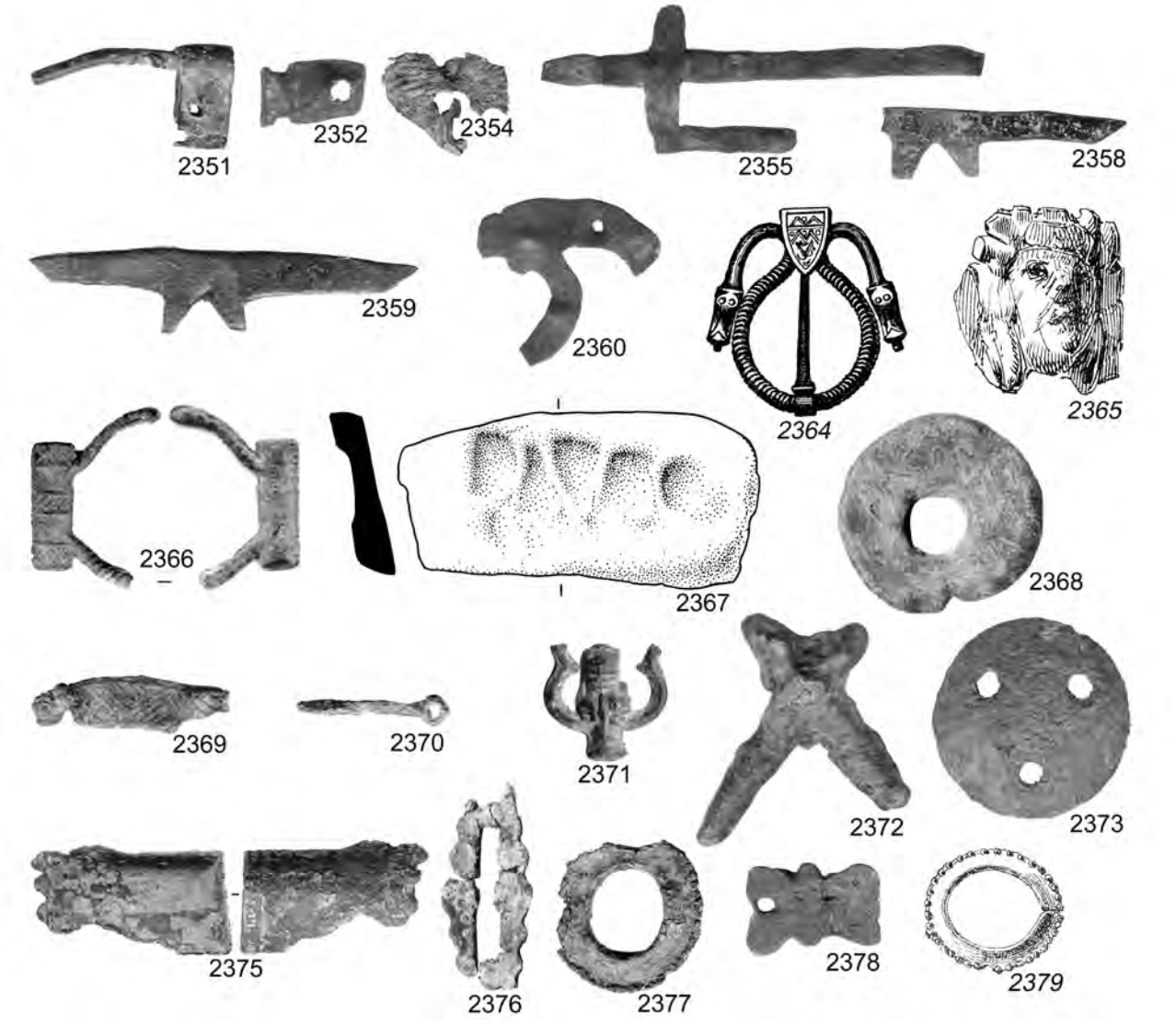
UNIDENTIFIED COPPER ALLOY ITEMS PROBABLY OF MEDIEVAL DATE

2348 42 x 10mm; small 'sword' like object of square cross-section, which is probably a whittle tang from a tool handle.
2349 L 9mm; buckle pin, distorted.
2350
Ring, D 14mm; gilded.
2351 Pl. 37
Bent fragment of rod-like bar and doubly pierced sheet tab bent around it and flaring out towards ends, which have tiny rebates for fixture; 29 x 14mm overall.
Perhaps a sheeting version of a padlock such as Egan 1998, no. 245; (?)13th-century or earlier; medieval padlocks of this date were operated by a slide-key mechanism.
2352 Pl. 37
Crude sheet item, 15 x 9mm: at one end pyramidal with central hole, divided by narrowed neck from irregular , transverse strip at other.
Perhaps a form of mount.
2353
Fragment of wrought, D-section strip with transverse ridging, 17 x 2.5mm – possibly part of casket strapping.
2354 Pl. 37
Incomplete sheet fragment, 19 x 16mm: domed, perhaps originally square, with moulded, narrow spirally radiating lines on both faces; (?) roughly pierced centrally.
The lines are too close for this to be intended as a scallop shell.
2355 Pl. 37
Sheeting fragment, 64 x 21mm, of elongated-grid like openwork.
2356
Irregular, distorted fragment, 1 x 20mm, of cast plate, Th 2mm.
2357
Cast, thick sheet fragment, 36 x 22mm, possibly retaining two original edges; very smooth on one face.
Possibly from a vessel or a Roman mirror.
2358 Pl. 37
Rough, with angled ends and pair of prongs separated by V-shaped nick; one end broken off; surviving L 36mm, W 10mm.
This and **2359** may possibly be lock bars replacing iron originals (cf. copper -alloy keys (e.g. **2064**) made from sheeting; unlike for those, however, the production of lock bars would have required a much more detailed awareness of how a lock mechanism functioned).
2359 Pl. 37
Similar to preceding item (see on this); L 57mm, W12mm.
2360 Pl. 37
Fragment of ornately cut sheeting, 26 x 23mm: possibly an openwork roundel, surviving as part of perimeter with internal tendril etc.; hole for missing rivet. Cf. 3145.
2361
Corroded: curved, uneven strip, possibly a tightly folded bent sheet chape; (possible traces of gilding).
2362
Sheet bent into a tube, 16 x 6mm; one end straight end, the other bent; hole for attachment. Possibly from a brush to hold hair.
2363
Two associated fragments of D-section strips 29 x 5mm and 46 x 9mm; both broken off at each end at flatter expansion. Possibly from casket mounts, e.g. **2087**ff for caskets (nothing definitive survives).

(?)Lost items
2364 Pl. 37
D 29mm, (Ecroyd Smith 1863, 32; Hume 1863, illus, p. 360), an object described as a 'serpent headed brooch', a ribbed circular frame with recurving zoomorphic terminals, bearing a shield with false arms. Ecroyd Smith compared it to Irish or Celtic penannular brooches, but if an original feature, the shield suggests a later medieval date. The drawing (same in both publications cited above) is signed 'L. Jewitt'. Dating and parallels are uncertain.
2365 Pl. 37
(Hume 1863, pl. XXVIII, 9) a fragment bearing a human face, illustration 26 x 24mm, but described in the text as: 'a massive human head of brass with projections at either side and something like embryo horns' (Hume 1863, 296).

UNIDENTIFIED LEAD/TIN ITEMS PROBABLY OF MEDIEVAL DATE

2366 Pl. 37
Flimsy fragment, 27 x 20mm, decorated on both faces: rectangular panel with three transverse, cross-hatched bands on one face, and moulded-arc profile with beaded long edge on the other, attached near each end to incomplete, curved rods with transverse hatching on both faces. Possibly 15th–16th century.
2367 Pl. 37
Irregular sheet rectangle, 51 x 26mm, stamped with row of substantial triangles and rectangles.
The stamps are comparable, perhaps, with those used for keying on some medieval iron pintles from York (Ottaway and Rogers 2002, 2834–5, fig. 1413, nos 12304 and 13947, respectively assigned to the 12th and the early/mid-13th centuries), in which case the present item could be some kind of setting.
2368 Pl. 37
Worn: asymmetrical, flattish roundel, D 29mm, with round hole (D 9mm); Wt 26.4g; apparently cast on one face is a roughly scratched lettering, possibly **AMOVR**.
It seems strange that this, the only recognised graffito form Meols, should be on an item that is (by the usual criterion of regularity of shape) not classifiable as a spindle whorl, or any other readily recognisable category of object. The wear, however, implies sustained handling, whether for spinning or some other purpose. The manner in which the



Pl. 37. Later medieval unidentified items

poorly written letters seem to have been registered is a further puzzle, using the technically laborious method of casting (the letters should in theory have been tooled in mirror-image, but the symmetry of those suggested for the reading, along with apparent eccentricities of form and orientation have combined to mean that this actually makes little difference, if the reading is indeed correct. Possibly a whorl with an amatory message, if the difficulties with this interpretation can be countered.

2369 Pl. 37
(?)Straight, strip-like fragment (one break from twisting): surviving L 28mm, W 8mm; opposed triangles with opposed hatching on one face, (?)foliate motif on the other (with possible traces of red pigment).
With decoration apparently on both faces, this fragment is presumably from a reversible item or one to be seen three dimensionally, which rules out most pilgrim souvenirs and brooches.

2370 Pl. 37
Fragment: L 22mm; loop on end of round-section strut.
It is difficult to see how this could have been attached to a brooch frame, so it was presumably not an attachment pin: possibly one of two supports for a 'wheel' similar in form to those of modern paddleboats, but held by the struts over an airhole in a late medieval bird-form whistle so that when it was blown the escaping air turned the wheel.
(cf. Haedeke 1976, 77–8, nos 71–5 (?15th–16th century, rather than 14th as suggested there); alternatively see Willemsen 1998, handles of 94, fig. 59 (a peel) and 388, no. B110 (a dripping pan).

2371 Pl. 37
Fragment, 18 x 17mm: central stem with transverse ridges (similar decoration along back), terminating in stylised animal head; two arcs (?cf. tusks) curve back from the mouth and recurve outwards to point of breakage; apparently made to be seen in the round.
A relatively unusual instance of the conventional medieval animal head in lead/tin.

2372 Pl. 37
Very rough, unevenly armed saltire cross, 39 x 36mm, each arm with an approximately D-section profile; pinhole (not right through?) at intersection (cf. **1884**).

2373 Pl. 37
White metal: some corrosion: dished roundel, D 29mm, with three equidistant holes.
Too small for a balance pan (these anyway are not known in lead/tin).

2374
Cross-hatched fragment, 15 x 11mm.

2375 Pl. 37
Incomplete, half-cylinder (?)casing, 26 x 15mm; cast in three-part mould: (?originally closed at both ends); band with cross-hatching at each end, one with additional toothing.

2376 Pl. 37
Corroded, presumably incomplete, thin fragment, 30 x 11mm: with slot, surrounded by sub-oval, multiply lobed edge.

2377 Pl. 37
Incomplete roundel, D 24mm, bevelled down to beaded border; neat central hole is an original feature.

2378 Pl. 37
Flat, nearly symmetrical motif, 20 x 12mm; pierced near one end and damaged on one face.
The outline (?cf. corn sheaf) is similar to those of some medieval mounts (cf. **1144** of copper alloy and Egan and Pritchard 1991, 203–4, no. 1100, assigned to the late-13th/early-14th century).

2379 Pl. 37 Hume 1863, pl. XXV, 9 appears to be a somewhat similar item to **2377**, D 20mm, apparently lacking more of the centre (i.e. a narrower band – around a neat hole). While these two items may not be fragments of Becket badges like **1861**, their overall similarity could mean they are fragments of some similarly ornate accessory.

UNIDENTIFIED LOST ITEMS (MATERIAL UNKNOWN)

2380 D 10mm, small annular object with central bar and decorated with groups of four two or three dots, possibly a small buckle.

2381 (Hume 1863, pl. XXIX, 14); a mount composed of six roundels with a pendant on a loop at the centre.

[**2382–99**: numbers not used.]

2.6 Later medieval iron objects: 1050–1100 to 1500–50

Patrick Ottaway, with contributions by David Griffiths

There are 532 later medieval iron objects surviving, or otherwise illustrated from Meols (excluding fishing equipment, which is dealt with in 2.18). The most prominent groups are: commonplace domestic and agricultural items, such as knives, keys, nails, and rivets; and tools, such as spade irons and shears; although there is an interesting group of weaponry in the form of arrowheads and crossbow bolts. Most of the iron objects are in the Potter Collection, indicating that retrieval of iron objects grew as a proportion of the total objects found and collected from the Meols shore during the later decades of the 19th century. Rudimentary conservation, in the form of varnishing, and storage in a dry environment, has created some stability for most of the ironwork, but many pieces are very fragile, and corrosion is present on almost all pieces. Only 17 iron pieces (surviving and non-extant but recorded) have been assigned with greater or lesser certainty to the early medieval period (2.4), and 31 to the post-medieval period (2.8), whereas a further 47 fragments and undiagnostic pieces have been catalogued as miscellaneous (2.20). Even considering that some objects have been entered as later medieval on the grounds of probability, rather than certainty, the relative totals for these four sections clearly echo those of the non-ferrous metalwork, in showing the preponderance of material of the later medieval period in the Meols collections.

The assemblage of later medieval iron objects from Meols contains many of type and form that are familiar from elsewhere. However, this is not an assemblage that could be considered typical of those usually recovered from the archaeological excavation of occupation sites. There are, for example, very few nails, staples, undecorated fittings, and amorphous plates and strips, which usually form a high proportion of the assemblages from such sites. Selective retrieval must account for some of the apparent imbalances seen here (for a more detailed analysis of this factor, see 1.3). This would explain the unusually high proportion both of complete or near-complete examples of objects such as knives, keys, and arrowheads, and of objects bearing decoration, such as the scale-tang knives and the plated keys, spurs, etc. However, it may be suggested that certain types of object would surely have been collected and added to the assemblage had they originally been available for retrieval. There are, for example,

relatively few tools for working metal, leather , or wood, although textile manufacture is rather better represented by the shears and needles. In addition, there are objects that are rare in excavated material from elsewhere, such as the projectiles and daggers.

DRESS ACCESSORIES

Buckles

There are 31 iron buckles of different forms, usually surviving only as frames without the pins. For the most part they are difficult to date closely, although the majority probably belong to the 13th–15th centuries. It is often difficult to distinguish human dress buckles from equine harness buckles on the grounds of form and style, as the two types were fulfilling the same basic function in conjunction with leather straps. Hence the distinction is made here purely on the grounds of size, where >50mm in length is treated as equine (see below).

Small circular buckle frames

2400
D 4mm; a very small buckle or ring.
2401
D 12mm.
2402
D 12mm.
2403 Pl. 38
D 14mm.
2404
D 14mm; small buckle with fragment of plate.
2405
D 19mm; incomplete.
2406
D 29mm.
2407 Pl. 38
D 30mm; plated with non-ferrous metal.
2408
D 31mm.
2409
D 38mm; pin intact.
2410
D 38mm; plated with non-ferrous metal.

The smaller circular buckles probably come from shoes (Egan and Pritchard 1991, 57). Similar buckles of lead/tin are common on sites occupied in the medieval period, especially in the 14th–15th century . The larger ones may have served a range of purposes.

D-shaped frames

2411
15 x 20mm.
2412 Pl. 38
16 x 20mm.
2413
21 x 34mm; corroded but complete; pin bent back and corroded onto a shield-shaped plate.
2414
26 x 33mm.
2415
28 x 35mm.

Oval frames

2416
26 x 36mm; pin intact.
2417 Pl. 38
29 x 41mm.
2418
31 x 39mm.
2419
34 x 43mm (now misshapen); plated with non-ferrous metal.
2420
40 x 30mm; plated with non-ferrous metal.

Double oval frames

2421
28 x 17mm; corroded, has a particularly sub-rectilinear outline.
2422 Pl. 38
43 x 41mm; plated with non-ferrous metal.
2423
47 x 40mm.

In well-dated assemblages of buckles from London, examples of double oval frames, sometimes made of iron, but largely of copper alloy, are usually from mid-14th–mid-15th century contexts (Egan and Pritchard 1991, 82–7). Copper alloy examples from Norwich suggest the form remained current until the 17th century (Margeson 1993, 28).

Rectangular buckle frames

2424
27 x 20 x 2mm (incomplete); short incised grooves cut into one face.
2425
27 x 24mm.
2426
30 x 22mm.
2427 Pl. 38
46 x 29mm; plated with three incised grooves on one face around the pin rest.

More ornate buckle frames

2428 Pl.38
48 x 28mm; sides slightly concave and ends slightly convex; central bar on the long axis.

Buckle pins

2429
40 x 7mm.
2430
L 54mm; looped head and plated with non-ferrous metal.

Buckle-plate

2431
30 x 15mm; small, incomplete buckle-plate, pierced once for attachment to a strap.

Strapend

2432
23 x 12mm; corroded, no surface decoration discernible.

An iron possible strapend **409** is included as a probable early medieval object on the basis that it is an openwork piece and therefore superficially similar to some of the early medieval copper-alloy strap ends (e.g. *335*). It could, however, be argued to be a later medieval or even post-medieval piece.

Pin

An iron dress pin **391** is included as early medieval on the basis of its spatulate head, expanded shank with baluster mouldings, and previous identification (Bu'Lock 1960, 8, fig. 3f) as an Anglo-Saxon piece. However , it lacks close early medieval parallels, so could possibly be an unusual later medieval object.

FIXTURES AND FURNISHINGS

Candleholders

Prickets

2433 61 x 32 x 10mm; an object that resembles a pricket, but lacks a central spike, although it has two arms with looped terminals. The shank was originally L-shaped. There are six similar objects from contexts dated 12th–14th century at 16–22 Coppergate, York (Ottaway and Rogers 2002, 2856).

2434 70 x 6 x 5mm; a battered pricket with an L-shaped tang.

2435 Pl. 38
L 180mm, W (scrolls) 24mm; a sturdy pricket. The shank is stepped on opposing sides to allow it to be hammered into wood without damaging the spike at the head on which the candle was impaled. On either side of the spike there was a projecting strip added for decorative purposes, of which one, with a curved-over tip, survives. Although basically similar to many other prickets of medieval date, the steps are an unusual feature.

Socketed

2436 Pl. 38
L 54mm, W (stem) 5mm, D (cup) 16mm.

2437 Pl. 38
L 96mm, W (stem) 12mm, D (cup) 16mm.

Item **2436** has a crank-shaped tang, which may be compared with two others, both from 14th-century contexts, at Oxford (Goodall 1977a, 146, fig. 27, *43*) and Winchester (Goodall 1990a, 982–3, fig. 306, *3532*). The cup of **2437** is welded onto the side of the shank, which is L-shaped and terminates in a point above the cup. It is similar to an example from mid-14th–early-15th century context at York (Ottaway and Rogers 2002, 2855–6, fig. 1432, *14044*).

STRUCTURAL IRONWORK

There are significant uncertainties surrounding the precise date of most of the material presented in this section. Structural ironwork changed little in form and manufacture, between the early medieval and post-medieval periods, only changing substantially with the advent of modern mechanised production methods. The balance of probability for the largest element of this material favours the later medieval period, not least because most of the material is part of the Potter Collection and was therefore almost certainly recovered at the high-point of retrieval of material of this date in the 1870s–90s. The possibility that some of the nails, studs, roves, and clench-plates listed below may be post-medieval, early medieval, or even Roman cannot be denied; they are catalogued together here under the later medieval section (2.6), primarily to facilitate comparison within the type group.

Nails and studs

Nails

(square heads given as W, round as D)

2438
L 29mm, D (head) 9mm.

2439
L 34mm, D (head) 21mm.

2440
L 36mm, W (head) 30mm.

2441
L 39mm; square-section shaft.

2442
L 41mm; D (head) 18mm.

2443
L 48mm; square-section shaft.

2444
L 49mm; square-section shaft.

2445
L 50mm; square-section shaft.

2446
L 51mm; fragment, its corrosion products have absorbed seashell fragments.

2447
L 52mm; square-section shaft.

2448
L 53mm, W (head) 7mm.

2449
L 55mm, W (head) 29mm.

2450
L 56mm, W (head) 12 x 6mm; ridged head, square-section shank.

2451
L 59mm; square-section shaft.

2452
L 60mm, W (head) 22mm.

2453 Pl. 38
L 66mm D (head) 30mm, Th (shaft) 6mm.

2454
L 67mm, W (head) 15 x 8.5mm; ridged head, square-section shank.

2455
L 92mm, D (head) 9mm.

2456 Pl. 38
L 110mm, D (head) 35mm, Th (shaft) 9mm.

Heads only

2457
D 25mm, head only.

2458
D 37mm, head only.

Stud or large nail

2459
L 44mm, W (head) 40mm, very large head.

There are, perhaps surprisingly, relatively few nails amongst the ironwork from Meols, possibly indicating that these simple and utilitarian objects were not of great interest to the various collectors. **2456** and **2459** are robust specimens with domed heads. **2453** has a large and robust head and may be best described as a stud, as used, for example, in substantial timber doors.

Clench bolts (with head and rove present)

There are 36 clench bolts with head and rove complete, and 20 additional roves. These may have come from wooden ships or boats, although clench bolts are also known to have had other uses in doors, carts, and chests (Ottaway 1992, 615–8).

2460
L 27mm, Th (shaft) 7mm.

2461
L 33mm, Th (shaft) 5mm.

2462
L 33mm Th (shaft) 8mm.

2463
L 35mm, Th (shaft) 7mm.

2464
L 35mm, Th (shaft) 12mm.
2465
L 38mm, Th (shaft) 4mm.
2466
L 38mm, Th (shaft) 4mm.
2467
L 39mm, Th (shaft) 6mm.
2468
L 41mm, Th (shaft) 24mm.
2469
L 41mm, Th (shaft) 7mm.
2470
L 42mm, Th (shaft) 4mm.
2471
L 42mm, Th (shaft) 6mm.
2472
L 45mm, Th (shaft) 4mm.
2473
L 45mm, Th (shaft) 4mm.
2474
L 45mm, Th (shaft) 5mm.
2475
L 46mm, Th (shaft) 5mm.
2476
L 46mm, Th (shaft) 5mm.
2477
L 46mm, Th (shaft) 11mm.
2478
L 48mm, Th (shaft) 5mm.
2479
L 48mm, Th (shaft) 8mm.
2480
L 49mm, Th (shaft) 4mm.
2481
L 50mm, Th (shaft) 6mm.
2482
L 50mm, Th (shaft) 10mm.
2483
L 52mm, Th (shaft) 4mm.
2484
L 52mm, Th (shaft) 6mm.
2485 Pl.38
L 54mm, Th (shaft) 5mm.
2486
L 55mm, Th (shaft) 7mm.
2487
L 55mm, Th (shaft) 18mm.
2488
L 57mm, Th (shaft) 4mm.
2489 Pl. 38
L 61mm, Th (shaft) 4mm.
2490
L 62mm, Th (shaft) 5mm.
2491 Pl. 38
L 63mm, Th (shaft) 6mm.
2492
L 64mm, Th (shaft) 5mm.
2493 Pl. 38
L 66mm, Th (shaft) 9mm.
2494
L 70mm, Th (shaft) 11mm.
2495 Pl. 38
L 110mm, Th (shaft) 9mm.

In 1867, which was an unusually productive year, no fewer than 28 clench bolts were found on the shore. Ecroyd Smith noted that these were probably 'rivets of the planking of boats and other small craft'. He concluded that, whilst some resemble Anglo-Saxon finds in the south-east of England, the Meols finds probably included later examples (Ecroyd Smith 1868, 121–2). A year later, Ecroyd Smith noted the discovery of four iron clench bolts 'from old boats' (Ecroyd Smith 1869a, 215).

Rove plates
2496
17 x 17 x 2mm; sub-circular.
2497
22 x 22 x 8mm; stump of shaft attached.
2498
25 x 18 x 4mm.
2499
25 x 24 x 5mm.
2500
25 x 25 x 3mm.
2501
25 x 5 x 6mm; stump of shaft attached.
2502
26 x 30 x 2mm.
2503
28 x 22 x 5mm.
2504
30 x 25 x 2mm.
2505
30 x 25 x 7mm.
2506
31 x 26 x 4mm.
2507
32 x 27 x 2mm.
2508
32 x 28 x 3mm.
2509
34 x 33 x 3mm.
2510
36 x 30 x 4mm.
2511
36 x 31 x 8mm.
2512
40 x 40 x 3mm.
2513
41 x 39 x 4mm.
2514
43 x 30 x 4mm.
2515 Pl. 38
48 x 28mm, double rove strip.
2516
55 x 27mm, double rove strip.

Staples
2517
77 x 27 x 4mm.
2518
106 x 58 x 8mm.

FITTINGS
Under this heading are a number of iron straps and strips pierced for attachment to wooden items, either parts of structures, such as doors, or furniture.

Hinge straps
2519
76 x 25 x 3mm.
2520
324 x 40 x 6mm.

These are likely to be incomplete hinge straps from doors. **2519** appears to bifurcate at one end, and bifurcated and scrolled terminals are common on medieval doors and chest lids. **2521** is a large strap, which is pierced once, but otherwise has no distinguishing features.
2521
58 x 16 x 2mm; an incomplete, pierced strap, which narrows into a strip at one end; it is possibly from a chest hinge, the strip having formed part of a link at its head.

Hinge pivot or pintle
2522
62 x 14 x 5mm; a hinge pivot originally used to suspend a door or similar opening item.

Curved straps from vessels
2523
127 x 15 x 2mm.
2524
151 x 15 x 2mm.
2525
172 x 15 x 2mm.
2526
187 x 19 x 2mm.
2527
227 x 17 x 2mm.
These are five pieces of pierced curved strap with nails *in situ*. All presumably fitted together to make a circular binding, perhaps for the rim of a vessel, such as bucket.

Bucket fitting
2528 85 x 28 x 10mm; probably a suspension loop fitting from a bucket or similar vessel. It has an eye at the top to accommodate the handle and then widens to the base, where it is pierced twice for attachment.

Pierced strips
2529 53 x 18 x 3mm; has one rounded end, pierced by four large holes, the fourth, at the rounded end, being slightly larger than the others.
2530 Pl. 38
66 x 18 x 3mm; broken off at one end, which is pierced four times; around each hole the object widens and the sides become convex. On one face there is a simple moulding of the edges between each hole. It is plated with non-ferrous metal.
2531 118 x 15 x 3mm; a curved, pierced strip, broken off at each end.
2532 229 x 13 x 2mm; curved. It has nicks at *c.* 5mm intervals incised into its outer edge on one face and is plated with non-ferrous metal. It is incomplete, but pierced three times for attachment, perhaps to a box or chest with a round lid.
Pierced strips of the sort described above, whether plated or not, are common finds on sites occupied in the medieval period, but rarely distinctive enough in form to allow dating (see, for example, a range from Y ork in Ottaway and Rogers 2002, 2845–8). They probably come from furniture rather than structures.

Handles
2533 116 x 27 x 4mm; a D-shaped drop handle that widens in the centre and has a looped eye at each end.

Hooks
2534 99 x 100 x 28mm; a large triple-armed hook that was probably used for suspending items such as sacks.
2535 L 120, W 13mm; fragment of possible meat-hook.

Swivel hooks
2536
L 32mm, W (hook) 17mm, Th (swivel) 12mm; biconical head.
2537
L 84mm, D (ring) 55mm, Th (ring) 7mm; domed head set in a robust ring.
2538
L 24 x 8 x 5mm; fragment.
These objects probably formed part of the suspension equipment for vessels used in the hearth, or for some other domestic purpose, as in the case of an elaborate tinned item incorporating two swivel hooks from a late 15th–16th-century context at W inchester (Goodall 1990a, 826, fig. 246, *2590*). Swivel hooks are also found used for suspension as part of medieval purse frames, as seen on an example from a mid-14th–15th-century context from King's Lynn (Goodall and Carter 1977, 295–6, fig. 134, *48*). In addition to the two quoted items, other swivel hooks usually come from contexts dated 14th–15th century.

Chain links
2539
L 132mm; a length of small rounded chain links of variable dimensions.
2540
L 395mm, L (links) 74mm; a six-link chain with figure-eight-shaped links.
2541 L49mm (overall), 10mm (links); 'iron', a simple seven-link chain.

Link and fitting
2542 Pl. 38
81 x 18 x 6mm; an elliptical link, 80mm long, which has a small non-ferrous U-shaped fitting looped around it. This latter object widens away from the head and is pierced for attachment. No obvious function suggests itself.

Rings
2543
D 18mm.
2544
D 20mm.
2545
D 24mm; plated with non-ferrous metal.
2546
D 24mm (only half survives); plated with non-ferrous metal.
2547
D 25mm.
2548
D 27mm.
2549
D 28mm.
2550
D 32mm.
2551
D 36mm.
2552
D 39mm.
2553
D 42mm; plated with non-ferrous metal.
2554
D 46mm.
2555
D 75mm (incomplete).

2556
fragment.
2557
fragment.
This is a heterogeneous group, which may have had a number of functions as, for example, chain links, ring handles, or buckle frames.

LOCKS AND KEYS

A number of locks and keys have been found at Meols, perhaps showing the need for security in what was very probably a settlement with regular influxes of outsiders and situated in a relatively lawless area. Hume (1863 pl. XIX, A and B) illustrated a number of 'Ancient Locks' and 'Ancient Bolts and Keys', but it is clear from his text and also from the A and B annotation on the plates that these were composed of examples from elsewhere, intended helpfully to illustrate the *genre*, rather than to display items from Meols itself.

Door bolt
2558 Pl. 38
85 x 26 x 8mm; a sliding door bolt with a projecting finger grip. It is unusual in being plated with non-ferrous metal, but similar objects were in use in the later medieval period (Goodall 1980, 120)

Locks

Sliding bolts
2559
44 x 17 x 3mm.
2560 Pl. 38
87 x 13 x 3mm.
These sliding bolts come from fixed locks in which motion was governed by a tumbler (Ottaway and Rogers 2002, 2861). The locks from which such bolts come had a long life, originating in the 8th century if not before (Ottaway 1992, 657–60) and remaining current until the post-medieval period.

Padlocks and padlock components
2561 Pl. 38
19 x 13 x 11mm; a complete cylindrical padlock.

Components
2562 Pl. 38
57 x 11 x 11mm; the case of a small padlock to which a U-shaped shackle, now missing, was linked at one end. At the other end of the case the tip of the shackle would have fitted into a slot, where it was secured by the bolt, which consisted of a spine to which the springs are attached, and a closing plate at the head. It is plated, probably with brass. Locks of this type are usually found in 12th–13th-century contexts (Ottaway and Rogers 2002, 2866).
2563
48 x 43 x 6mm; bolt only.
2564
54 x 26 x 21mm; bolt only.
These two items are parts of composite barrel padlocks (Ottaway and Rogers 2002, 2866–7). The spine of padlock bolt **2564** is missing, but the closing plate survives, and above it are two small loops welded to the base of the hoop. These loops are a common feature on medieval padlock bolts, and can also be seen on **2563**, on which one loop is S-shaped. Both bolts are plated with a non-ferrous metal, probably brass.

2565 Pl. 38
117 x 59 x 25mm; a stapled hasp from an embossed padlock. It is U-shaped and one arm is crank-shaped so as to fit over the face of the case and the staple attached to this arm passed through a slot in the case, within which it was held by a sliding bolt. The other arm of the hasp tapers and would have passed vertically through the case, thereby acting as a pivot. This type of padlock was current in the 13th–15th centuries (Goodall 1980, 133–4, type 1).
2566
32 x 7mm; padlock bar, round-section.
2567
D 51mm; padlock bar, semicircular with pronged terminal.

Keys
There are 25 iron keys for fixed locks of various forms, five of which are non-extant. All are later medieval, probably 13th–15th century, except for **3161** and **3162**, which are post-medieval cast-iron specimens. All of the medieval keys have solid stems, except for fragments **2574** and **2587**.
2568
L 30mm, bow 30 x 14mm; hollow stem, asymmetrical bit, rounded bow on collar.
2569
L 40mm, bow 19 x 16mm, bit 11 x 12mm; narrowed pin, solid shank, oval bow, complex asymmetrical clefts.
2570 Pl. 38
L 42mm, bow 18 x 15mm, bit 10 x 9mm; narrowed pin, solid shank, oval bow , simple asymmetrical clefts with channel by shank.
2571
L 52mm, bow missing, bit 5 x 10mm (broken); solid shank of square section, flat solid bow but incomplete, only one projecting ward.,
2572 Pl. 38
L 52mm, bow 22 x 20mm, bit 9 x 14mm; narrowed pin, solid shank and bit, oval bow , collar at shoulder, bit has two channels symmetrical from end.
2573
L 56mm; incomplete, bow and bit missing, part of hollow shank and curvilinear bow only.
2574 Pl. 38
L 60mm, bow 26 x 17mm, bit 15 x 20mm; narrowed pin, solid shank and bit, asymmetrical clefts, kidney-shaped bow, flattened oval shank.
2575
L 65mm; incomplete, bow missing, bit 6 x 14mm, narrowing pin and solid shank, simple bit with two clefts; beginnings of curvilinear bow; incomplete.
2576
L 68mm, W (bit) 10mm; right-angled bit, pin extends, very corroded.
2577
L 70mm; incomplete, bow missing, bit incomplete, solid shank, upper part of bit and small part of bow only remain.
2578
L 83mm, L (bow) 13+mm; round bow; bow and bit incomplete, very corroded.
2579
L 108mm, bow 36 x 26mm, bit 20 x 28mm; narrowed pin, solid shank, asymmetrical clefts in bit, D-shaped bow.
2580
L 108mm, bow 37 x 31mm, bit 19 x 26mm; flattened oval solid shank, oval elaborate bit with asymmetrical clefts.
2581 Pl. 38
L 132mm, bow 36 x 28mm, bit 24 x 33mm; narrowed pin, solid shank and bit, kidney-shaped bow . Shank flattened oval. Asymmetrical clefts. Trace of collar at shoulder.

2582 Pl. 38
L 142mm, bow 38 x 26mm, bit 25 x 36mm; narrowed pin, solid shank and bit, oval bow . Shank flattened oval. One cleft missing.
2583
L 145mm, bow 40 x 29mm, bit 27 x 36mm; narrowed pin, solid shank and bit, oval bow . Shank flattened oval. One cleft missing.
2584
L l63mm, oval bow, asymmetrical bit.
2585 Pl. 38
L l 77mm, angled kidney bow, asymmetrical bit.
2586
fragments, unidentifiable.
2587
L 43mm, bow 19 x 19mm, bit 13 x 13mm; narrowed pin, hollow shank and bit, bit with two clefts, circular bow (Hume 1863, pl. XVIII, 4).
2588
L 47mm, bow 23 x 20mm; bit 11 x 12mm; simple bit, hollow shank, bow is square with two surviving knops at angles and circular hole (Hume 1863, pl. XVIII, 5).
2589
137mm, bow 21 x 48mm; bit 30 x 33mm; narrowed pin, solid shank and bit, symmetrical bit with three clefts, D-shaped bow, possible grooving on shank. (Hume 1863, pl. XVIII, 1).
2590
L 159mm, L (bow) 41 x 36mm; bit 25 x 34mm; narrowed pin, solid shank and bit, symmetrical bit with cruciform cleft, kidney-shaped bow (Hume 1863, pl. XVIII, 3)

In 12 cases the key stems project beyond the bit **2570, 2572, 2575, 2576, 2577, 2578, 2579, 2582, 2583, 2584,** ***2589, 2590***, which implies a lock with a socket in which the tip of the stem was engaged when in use. On **2583** there is a slight step in the stem before the tip; this is a common feature of medieval keys. The surviving bits of the six door keys are of two principal forms: with and without a central channel. Those with the channel (e.g. **2582, 2583,** ***2589, 2590***) indicate a lock with an internal plate around which the key would have had to pass when turned.
The stems of another eight keys **2568, 2569, 2574, 2580, 2584, 2585,** ***2587, 2588*** do not project beyond the bit. **2574, 2584 and 2585** are of a form that has an elongated horizontal channel below the end of the stem and the top of a bit, which is relatively wide in relation to its depth. **2574** has four teeth cut into the base of the bit and above them a narrow horizontal slot cut into the bit; the key is similar to another (with two slots in line) from a mid-14th-century context at York (Ottaway and Rogers 2002, 2872, fig. 1452, *14080*). The form of the bits of ***2587*** and ***2588*** are not clear from Hume's drawings, but **2568** has a simple S-shaped bit. This last key also has a small collar at the head of the stem. On the basis of their size, keys over *c.* 40–50mm in length are probably door keys, whereas (complete) keys that were smaller than this are more likely to be keys for caskets.
Taking all the keys in the two groups together, the surviving bows exhibit the usual range of late medieval forms: D-shaped **2574, 2579, 2581, 2585,** ***2589***, oval **2580, 2583, 2582, 2584,** ***2590***, and circular, formed from a rod in the case of **2569, 2570, 2574,** ***2587***, and by piercing a circular plate in the case of **2578**. Item ***2589*** is a single example of a bit with the lozenge shape, which was current, although not to the same extent as other forms, throughout the medieval period; in this case there are small knops at the corners, as can be seen on a key held by St Peter in an early 15th-century manuscript illustration in the *Bolton Hours* at York Minster (Ottaway and Rogers 2002, fig. 1450). Many of the keys were protected with non-ferrous plating and incised circumferential grooves, usually at intervals around the stem **2569, 2572, 2573, 2575, 2579, 2580, 2581, 2582, 2583,** ***2589***, and in four cases there are grooves on the bit too **2569, 2570, 2579, 2581**. Decoration with plating and grooves is commonly found on medieval keys and has no significance for dating.

Padlock (slide) keys
2591
139 x 8 x 3mm; angled bit, arrow-shaped handle. Finial has large loop and small bent tip. Expands towards broken-off bit.
2592
148 x 11 x 3mm; angled bit, arrow-shaped handle. Finial has large loop and small bent tip. Bit missing. Barrel padlock key.
2593
174 x 7 x 8mm; angled bit, oval handle. Finial has a large loop and a small bent tip. Expands towards broken bit, which may be an aperture with a cleft.
2594
L 70mm, bow 18 x 15mm, bit 2 x 5 (broken); thin flattened shank, circular bow with small hole, small portion of bit survives. It may be a padlock key stem, which has a rounded eye as a terminal. Barrel padlocks and their keys were in use throughout the medieval period and the four items described here have no features to allow closer dating.
2595
L, 165mm, D (bit) 26mm; padlock slide key , circular bit, angled, form of shank and handle uncertain from illustration (Hume 1863, pl. XVIII, 2).
2592 is probably a barrel padlock key of which the bit is missing. The stem widens slightly near the head where there is a looped terminal. **2595** was a complete barrel padlock key of a very common medieval form with a circular bit probably set at about 90° to the stem that widens out at the head, of which the exact form is not clear from the drawing. **2591** is probably another barrel padlock key; the head has a looped terminal with re-curved tip. **2593** is a padlock key of similar form, of which the bit is incomplete; at the head the stem widens into an oval-shaped area and it has a looped terminal.

PERSONAL OR DOMESTIC IMPLEMENTS

Fire steels
2596 70 x 16 x 2mm; small narrow object rather like a chain link with convex sides, which is pierced at one end, possibly for suspension.
2597 Pl. 39 86 x 21 x 6mm; originally pierced at both ends and the inner edges of the 'link' appear toothed.
These objects, also known as strike-a-lights, are comparable to an example of 12th–13th-century date from Loughor Castle, Glamorgan, recorded by Goodall (1980, 164–5, *J134*).

Tie or measuring spoon
2598 Pl. 39
L 153mm, W (scoop) 14mm, T (bar) 6mm; a crank-shaped object with a pierced terminal at one end and a scooped spatulate terminal at the other. It is probably some form of tie or bracket, though another possibility is a measuring spoon.

Peel
2599 127 x 143mm; a simple flat flanged object, which was the blade of a baker' s shovel used to move loaves in and out of an oven, handle missing.

Bells
2600 Pl. 39
H 105mm, W (base) 60.3mm; made in the usual long-lived method employed in the early medieval, later medieval and post-medieval periods, as described by Bourke (1980, 52–4). The case was made from a single sheet of iron folded over in the centre to give a characteristic triangular fold on each shoulder and a seam on each side, in some cases soldered with copper-alloy brazing metal, which also covered the entire outer surface of the object. Before folding, two holes were punched in the head of the case and after folding a ring was usually set into them, both to serve as a handle and to suspend the clapper. Its function is difficult to define, despite its slight morphological similarity to early Christian liturgical bells; its humble size and material mean it could as easily have been used as a sheep or goat bell.
2601 97 x 43 x 10mm; probably a bell clapper. At one end it is thickened with a rounded cross-section, while the other is now curved over with a loop at the tip.

Knives
(see also copper-alloy knife components **2140-2153**).
The largest group of later medieval iron objects from Meols is made up of 105 knives. They may be divided up into two groups based on the type of tang: 65 examples have a whittle tang, and 40 a scale-tang. The remainder are fragments such as bolsters, handles, tangs with no blade, or blades with no surviving tang.

Whittle-tang knives
Whittle-tang knives have a tapering tang, which was driven into the handle. In scale-tang knives the handle is formed from scale plates, which were usually riveted to a broad, flat tang. The whittle-tang knife has a long history and it can be difficult to date individual specimens in the absence of any distinctive metallographic or decorative feature. Four examples **395–398** have features that can most easily be attributed to a later Anglo-Saxon period to 12th century date, so are dealt with in 2.4
The following items are listed in order of overall length = L (tang) plus L (blade); the handle is missing unless referred to.
2602
L 60mm (20mm (tang), 42mm (blade)), W 14mm (blade); tang top missing. Blade tip missing.
2603
L 66mm (5mm (tang), 61mm (blade)), W 8mm (blade); tip of blade tapers. Tang broken.
2604
L 74mm (18mm (tang), 56mm (blade)), W 12mm (blade); tip of blade missing. Tang broken. Very corroded.
2605
L 76mm (22mm (tang), 54mm (blade)), W 12mm (blade); tip of blade missing. Tang broken.
2606
L 80mm (60mm (tang), 20mm (blade)), W 20mm (blade); tip/middle section of blade missing.
2607
L 81mm (20mm (tang), 61mm (blade)), W 15mm (blade); tip of blade missing. Tang broken.
2608
L 82mm (18mm (tang), 64mm (blade)), W 16mm (blade); tang top missing. Blade tapers to point.
2609
L 84mm (16mm (tang), 68mm (blade)), W 13mm (blade); short tang, broken. Blade tapers to a point, Cutler' s mark of an 'S'.
2610
L 85mm (48mm (tang), 37mm (blade)), W 22mm (blade); rounded back. Tip of blade missing.
2611
L 88mm (33mm (tang), 55mm (blade)), W 17mm (blade); tip of blade missing. Blade grooved and was possibly inlaid. Tang broken. Very corroded.
2612 Pl. 39
L 90mm (29mm (tang), 61mm (blade)), W 17mm (blade); blade tapers to a point.
2613
L 91mm (23mm (tang), 68mm (blade)), W 16mm (blade); tip of blade tapers.
2614
L 92mm (56mm (tang), 36mm (blade)), W 29mm (blade); blade middle and point missing.
2615
L 95mm (20mm (tang), 75mm (blade)), W 15mm (blade).
2616
L 99mm (8mm (tang), 91mm (blade)), W 14mm (blade); tang top missing. Blade tapers to point.
2617
L 100mm (22mm (tang) 78mm (blade)), W 16mm (blade); tip of blade missing. Tang broken. Very corroded.
2618
L 100mm (28mm (tang), 72mm (blade)), W 11mm (blade), tip of blade tapers. Tang broken.
2619
L 102mm (6mm (tang), 96mm (blade)), W 14mm (blade); tang largely missing. Blade tapers to point.
2620
L 104mm (5mm (tang), 99mm (blade)), W 18mm (blade); tang largely missing. Blade tapers to point.
2621
L 107mm (35mm (tang), 72mm (blade)), 15mm (blade); short tang. Blade tapers to point.
2622 Pl. 39
L 111mm (32mm (tang), 79mm (blade)), W 18mm (blade); tip of blade missing. Tang broken. Very corroded.
2623
L 114mm (5mm (tang), 109mm (blade)), W 17mm (blade); tang largely missing.
2624
L 115mm (50mm (tang), 65mm (blade)), W 13mm (blade); blade tip missing.
2625
L 117mm (37mm (tang), 80mm (blade)), W 18mm (blade); rounded back. Tip of blade missing.
2626
L 119mm (57mm (tang), 62mm (blade)), W 13mm (blade); tip of blade missing.
2627
L 119mm (1mm (tang), 118mm (blade)) W 12mm (blade); tang missing. Blade tapers to a point.
2628 Pl. 39
L 120mm (35mm (tang), 85mm (blade)), W 14mm (blade); fragment of wooden handle survives.
2629
L 120mm (60mm (tang) 60mm (blade)), 20mm (blade); blade tip missing. Cutler's mark of a five-pointed star.
2630
L 125mm (53mm (tang), 72mm (blade)), W 18mm (blade); tip of blade missing. Fragment of wood handle.

2631
L 125mm (12mm (tang), 113mm (blade)), W 15mm (blade); tip of blade tapers. Tang broken.
2632
L 129mm (17mm (tang), 112mm (blade)), W 20mm (blade).
2633
L 129mm (79mm (tang), 50mm (blade)), W 18mm (blade); tip of blade missing.
2634
L 129mm (58mm (tang) 71mm (blade)), W 22mm (blade); tip of blade missing.
2635
L 131mm (81mm (handle), 50mm (blade)), W 14mm (blade); blade tip missing. Circular -section waisted bone handle with tang end unseen.
2636
L 135mm (61mm (tang), 74mm (blade)), W 20mm (blade); tip of blade missing. Fragment of wooden handle.
2637
L 135mm (43mm (tang), 92mm (blade)), W 19mm (blade); blade tip missing.
2638
L 138mm (49mm (handle), 89mm (blade)), W 19mm (blade); blade tapers to a point. Circular -section wood handle with tang reaching end.
2639
L 143mm (45mm (tang), 98mm (blade)), W 16mm (blade); tang top missing. Blade tapers to point.
2640
L 145mm (38mm (tang), 107mm (blade)), W 15mm (blade); tip of blade tapers.
2641
L 147mm (43mm (tang), 104mm (blade)), W 20mm (blade); heavy whittle tang. T ip of blade missing. Cutler' s mark of a bezant cross.
2642
L 147mm (40mm (tang), 107mm (blade)), W 22mm (blade); tip of blade tapers. Tang top corroded.
2643
L 152mm (62mm (tang), 90mm (blade)), 17mm (blade); tip of blade missing or rounded end. Small fragment of wooden handle. Cutler's mark of a saltire cross and crown.
2644 (2544)
L 155mm (78mm (handle), 77mm (blade)), W 15mm (blade); unseen shoulders. Blade tip missing. Circular -section wooden handle.
2645
L 157mm (62mm (tang), 95mm (blade)), W 17mm (blade), blade tapers to rounded point.
2646
L 157mm (10mm (tang), 147mm (blade)), W 20mm (blade); tip of blade missing. T ang is broken close to shoulder.
2647
L 158mm (64mm (tang), 94mm (blade)), W 23mm (blade); tip of blade missing. Tang is off centre.
2648
L 160mm (51mm (tang), 109mm (blade)), W 16mm (blade); tang top missing. Blade tapers to a point.
2649
L 162mm (51mm (tang), 111mm (blade)), W 16mm (blade); blade tapers to a point, good condition.
2650
L 164mm (80mm (tang), 84mm (blade)), very corroded, all surfaces gone.
2651
L 166mm (58mm (tang), 108mm (blade)), 16mm (blade); blade tapers to point.
2652
L 167mm (45mm (handle), 122mm (blade)), W 17mm.
2653
L 170mm (45mm (tang), 125mm (blade)), W 22mm (blade); serrated blade, tapering to a point.
2654
L 171mm (45mm (tang), 126mm (blade)), W 16mm (blade); blade tapers to a point.
2655
L 173mm (29mm (tang), 144mm (blade)), W 23mm (blade); blade tapers to a point. Tang top missing.
2656
L 177mm (57mm (tang), 120mm (blade)), W 22mm (blade); tip of blade tapers. Fragment of wooden handle.
2657
L 179mm (55mm (tang), 124mm (blade)), Very corroded.
2658 Pl. 39
L 188mm (54mm (tang), 134mm (blade)), W 26mm (blade); tip of blade tapers. Oval-section handle of wood. Cutler's mark of a bezant cross.
2659
L 206mm (90mm (tang), 116mm (blade)), W 18mm (blade); tang central on blade with straight shoulder. Blade tapers to a point. Wood handle with tang protruding at the end. Tang and handle broken.
2660 Pl. 39
L 215mm (77mm (tang),138mm (blade)), W 13mm (blade); cutler's mark of a fleur-de-lys.
2661
L 233mm (75mm (tang), 158mm (blade)), 25mm (blade); blade tapers to a point. Cutler's mark of a five-pointed star.

Non-extant
2662
L 49mm (19mm (tang), 30mm (blade)) W 14mm (blade), (Hume 1863, pl. XVII, 6).
2663
L 115mm (30mm (tang), 85mm (blade)), W 12mm (blade) (Hume 1863, pl. XVII, 2).
2664
L 122mm (10mm (tang) 112mm (blade)), W 16mm (blade) (Potter 1876, no. 2).
2665
L 145mm (35mm (tang), 110mmm (blade)), W 22mm (blade) (Hume 1863, pl. XVII, 3).
2666 (Ecroyd Smith 1867, not numbered) 'reduced' a whittle-tang knife which had two sides of the blade sharpened, possibly modified for use as a razor.

Items **2622** and ***2662*** are/were near complete knives in which the blade back slopes down from the shoulder before beginning to curve down near the tip and its cutting edge also has a reverse S-shape. Knives of this form are again very common in the medieval period (Ottaway 1992, 570; back form C3). **2618** is similar to **2622**, but the cutting edge is slightly convex.

The back of the blade of knife **2628** has a small notch near the shoulder, at the junction of its blade and tang. Similar notches, frequently near the shoulder, have been observed on a number of Anglian and Anglo-Scandinavian (8th–11th-century) knife blades from York (Ottaway 1992, 581–2) and elsewhere. However, the feature also occurs on knives from later medieval contexts in York (Ottaway and Rogers 2002, 2757–9).

Where it can be determined, the blade backs of the whittle-tang knives from Meols are usually either straight, before curving down near their tips, or slightly convex from shoulder to tip. This is as one would expect in an assemblage of medieval knives. The cutting edges are usually

either more or less straight or convex, but in a few cases have the reverse S-shape more characteristic of the Anglo-Scandinavian period, hence have been included in the early medieval section.
2658 is relatively large and distinctive in having a markedly convex cutting edge that sweeps up to the blade tip. A similar knife from a 13th-century context comes from York (Ottaway and Rogers 2002, 2753, *11867*) and another from a 15th–16th-century context comes from Somerby, Lincolnshire (Mynard 1969, 83, fig. 12, *IW60*).

Scale-tang knives
The following items are listed in order of overall length = L (tang) plus L (blade); scale plates are missing unless referred to.
2667
L 70mm (58mm (tang), 12mm (blade)); blade incomplete. Wood scale with two rivets and at least three false ones. Copper-alloy end cap.
2668
L 72mm (30mm (tang), 42mm (blade)), W13mm (blade); blade tip missing. Tang top missing. Scales missing. Single copper-alloy rivet holds copper-alloy shoulder plate.
2669
L 77mm (23mm (tang), 54mm (blade)), W 20mm (blade); fragment of blade with tip missing. Tang is broken, but shows one rivet hole. Handle missing.
2670
L 80mm (30mm (tang), 50mm (blade)), W 13mm (blade); blade tapers to point. Tang top missing. Scales missing. One rivet hole.
2671
L 87mm (34mm (tang), 53mm (blade)), W 13mm (blade); blade tip missing. Narrow tang, top missing. Scales fragmentary. Wooden scales with two copper-alloy rivets. Non-ferrous shoulder plate.
2672
L 88mm (75mm (tang), 13mm (blade)), W 3mm (back); middle and tip missing, copper-alloy scale plates decorated with punched triangles.
2673
L 99mm (9mm (tang), 90mm (blade)), W 13mm (blade); blade of a scale-tang knife, in line with back of blade. Fragment of tang. Blade tapers to a point.
2674
L 104mm (78mm (tang), 26mm (blade)), W 17mm (blade); blade tip missing. Wood scales (fragmentary) with four rivets. End cap of copper alloy.
2675 Pl. 39
L 105mm (75mm (tang), 30mm (blade)), W 15mm (blade); handle with wood scales. Widens at the top. End cap of copper alloy. Side strips for length of the tang decorated with a recurving line of incised crescents. Short section of blade.
2676
L 106mm (74mm (tang), 32mm (blade)), W 12mm (blade); fragment of blade. Tang widens at the top. Three rivet holes. End cap of sheet copper alloy. Scales missing.
2677
L 107mm (31mm (tang), 76mm (blade)), W 27mm (blade); blade tip missing. Tang top missing. Wood scale fragment with one rivet, plus two false ones. Imprint of copper-alloy shoulder. Blade has a serrated edge. Cutler's mark of a 'V' Pl. 39. Heavily corroded.
2678
L 110mm (55mm (tang), 55mm (blade)), W 11mm (blade); tang with tapering tip. Single rivet hole for shoulder plate. Single rivet on scales missing.
2679
L 110mm (66mm (tang), 44mm (blade)), W 11mm (blade); blade parallel to broken tip. Wood scales. Tang widens at the top. Four rivets with *c.* five false ones in between. Trapezoidal end cap and shoulder plate of sheet copper alloy.
2680
L 111mm (45mm (tang) 66mm (blade)), W 11mm (blade); blade tapers to a point. Wood scales (fragmentary). Tang top missing. One rivet and a single copper-alloy shoulder plate.
2681
L 113mm (55mm (tang) 58mm (blade)), W 14mm (blade); tang missing tip. Two rivet holes. Top damaged. Scales and shoulder plate missing.
2682
L 123mm (83mm (tang), 40mm (blade)), W 14mm (blade); blade tip missing. Narrow tang, widening at the top. Polished horn scales with four copper-alloy rivets. Rivet hole for shoulder plate.
2683
L 128mm (58mm (tang) 70mm (blade)), W 15mm (blade); tang and blade only. Tang in line with back of blade. Parallel sides. Blade tip missing. One rivet visible in corrosion.
2684 Pl. 39
L 132mm (70mm (tang), 62mm (blade)), W12mm (blade); blade tip missing. Narrow tang, widening at the top. Scales wooden, hooked. Four solid copper-alloy rivets. End cap of copper alloy.
2685
L 132mm (11mm (tang), 121mm (blade)), W 15mm (blade); tang with tapering tip. Blade only with short section of tang.
2686 Pl. 39
L 136mm (75mm (tang) 61mm (blade), W 11mm (blade)); blade tip missing. Narrow tang, widening at the top. Wood scales with four copper-alloy or silver rivets with a further three false ones placed between and three above top rivet.
2687
L 139mm (125mm (handle) W 14mm (blade)); copper-alloy shoulder strips, 1 of 3 rivets survives with rove; at handle terminal are two horses' heads.
2688 L139mm (84mm (tang), 55mm (blade)), W 15mm (blade); blade parallel to a broken tip. Wood scales. Tang widens at the top. Three rivets with *c.* 16 false ones in between. Three further false rivets form a trefoil above top rivet. Shoulder plate of copper alloy.
2689
L 142mm (88mm (tang), 54mm (blade)), W 14mm (blade); blade tapers to a point. Narrow tang, widening at the top. Wood scales with four copper-alloy rivets. Cutler's mark of a key.
2690
L 146mm (81mm (tang), 65mm (blade)), W 14mm (blade); blade parallel to broken tip. Wood scales. Tang widens at the top. Three? rivets. Trapezoidal-section end cap of sheet copper alloy.
2691
L 147mm (131mm (tang), 16mm (blade)); blade tapers to a point. Rivet hole for shoulder plate. Scales missing.
2692
L 148mm (69mm (tang), 79mm (blade)), W15mm (blade); rounded blade tapers to broken tip. Wood scales. Tang widens at the top. Three rivets.
2693 Pl. 39
L 152mm (60mm (tang), 92mm (blade)), W 14mm (blade); blade tip missing. Narrow tang, top missing. Wood scales

(fragmentary) with one copper -alloy rivet. Single rivet copper-alloy/brass shoulder plate.
2694 Pl. 39
L 164mm (96mm (tang), 68mm (blade)), W 23mm (blade); fine scale tang knife, blade tip missing. Wood scales held by four rivets with two false ones in between. Three further false rivets form a triangle at the top. Shoulder plate of copper alloy.
2695
L 167mm (75mm (handle), 92mm (blade)), W 15mm (blade); corroded: scale tang, scales missing, straight-sided blade, tapers to point. Tang rounded end flanked by right-angled shoulders, and holes for four rivets.
2696
L 171mm (20mm (tang), 151mm (blade)), W 18mm (blade); top of tang and scales missing. Blade tapers to a point.
2697
L 185mm (70mm (tang), 115mm (blade)), W 15mm (blade); tang with tapering tip. Top damaged. One rivet in scale and one in shoulder plate (part missing). Scales missing.
2698 Pl. 39
L 196mm (94mm (tang), 102mm (blade)), W 19mm (blade); blade tapers to point. T ang widens at the top. Wood scales fragmentary. Three rivets. Fragment of end cap.
2699 Pl. 39
L 196mm (88mm (tang) 108mm (blade), W 16mm (blade)); very fine knife, in line with back of blade. Blade tapers to a point. Tang widens at the top. Four rivets with *c.* 11 false ones in between. Wood scales. End cap of sheet copper alloy with a boss and loop.
2700 Pl. 39
L 207mm (97mm (tang), 110mm (blade)), W 17mm (blade); blade tapers to a point. T ang widens at the top. Wood scales with four copper -alloy rivets within a line of 20 further false rivets. End cap of sheet copper alloy . Fragment of copper-alloy shoulder plate.
2701 Pl. 39
L 212mm (94mm (tang), 118mm (blade)), W 19mm (blade); blade tapers to a point. Narrow tang widening at the top. Bone scales with five copper -alloy rivets. End cap of sheet copper alloy/brass. Fragment of copper-alloy/brass shoulder plate.
2702 Pl. 39
L 221mm (111mm (tang), 110mm (blade)), W 22mm (blade); blade tapers to a point. T ang widens at the top. Bone scales with four copper -alloy rivets. End cap of sheet copper alloy/brass. Fragment of copper-alloy shoulder plate.
2703 Pl. 39
L 233mm (97mm (tang), 136mm (blade)), W 19mm (blade); blade tapers to a point. T ang widens at the top. Wood scales (fragmentary) with three rivets. End cap of sheet copper alloy. Fragment of copper-alloy/brass shoulder plate with single rivet.
2704 Pl. 39
L 258mm (98mm (tang), 160mm (blade)), W 17mm (blade); blade tapers to a point. T ang widens at the top. Wood scales (fragmentary) with three rivets within a line of false rivets. Four false rivets surround the top rivet.

Non-extant
2705
L (tang) 60mm, 72mm (blade), handles with single rivet visible (Hume 1863, pl. XVII, 5).
2706
L (tang) 55mm, 82mm (blade); tang missing tip (Hume 1863, pl. XVII, 4).
2707
drawing: L (blade) 98mm, L (handle) 60mm; annotated as 'reduced', so true dimensions unknown (Ecroyd Smith 1866, 1).

Scale/handle only
2708
L 61mm, W 21mm; fragment of a scale-tang handle. Widens at the top. T wo copper-alloy rivets. Heavy corrosion. Scales missing.
2709
L 63mm W 19mm; tang of a scale tang. Widens at the top. Two rivet holes, with partial one at break point. End cap of copper alloy with boss.
2710
L 66mm, W 13mm; single scale from a knife. One rivet, with probable evidence of a further one. Poor condition.
2711
L 71mm (tang), W 13mm (top); scales and tang only, blade missing. Narrow tang, widening at the top. Bone scales (fragmentary) with three copper -alloy rivets. Single rivet hole for shoulder plate.
2712
L 76mm (tang), W 23mm (top); tang and scales only. Blade missing. Narrow tang, widening at the top. W ooden scales topped by copper -alloy end plate decorated with zig-zag line. Copper-alloy strip continues from end plate down side of tang.
2713 Pl. 39
L 83mm (tang), W 16mm (top); Scales and tang only . Narrow tang, widening at the top. Polished facetted horn scales with four copper-alloy rivets.
2714
L 89mm, W 22mm; scale tang only. Three rivet holes. Top damaged.
2715
L 98mm (tang) W 25mm; handle, widens at the top. Wood scales have four rivets. Shoulder plate of copper alloy.
[2716 number not used]

The blades of the scale-tang knives are usually incomplete, and so their original form is difficult to determine, although the back was usually straight before curving down to the tip.

Non-ferrous (usually copper -alloy) shoulder plates are more common on scale-tang than whittle-tang knives at Meols. There are two forms, of which the first exists as thin strips soldered onto the knife at the junction of blade and tang (there are 14 examples, e.g. **2674, 2676, 2694** and **2676**). Shoulder plates of the second form, of which there are 12 examples (e.g. **2699, 2704, 2688**) were riveted onto the scale plates at the junction of blade and tang. The slight majority of soldered shoulder plates over riveted ones has also been observed by Goodall (1993, 128) in discussion of later medieval knives from Norwich. The scale tangs themselves tend to widen slightly towards the tip and, most commonly, have an upper edge that is straight and a lower edge that is concave to varying degrees, although on **2695** the tang simply widens from the junction of blade and tang to the end. **2673** has a shoulder plate of copper alloy between blade and tang. It exists as a narrow band that was brazed onto the iron. This sort of shoulder plate appears to be an innovation of the late-14th century to judge by the well-dated sequence of knives from London (Cowgill *et al.* 1987, 92). Similar to the shoulder plates are what may be described as collars, which take the form of a sheet of copper alloy set between blade and tang, as seen on whittle-tang knives **2626** and **2659**.

The scale-plates were usually fixed to the tangs by rivets, usually 3–5 in number. Without analysis it is difficult to determine in many cases what metal the rivets are made of, but most appear to be non-ferrous. In discussing scale-tang knives from Norwich, Goodall (1993, 128) noted that non-ferrous metal was more commonly used than iron. In a few cases the rivets take the form of small hollow tubes, some of which were originally closed off at the ends (e.g. **2674**, **2690**). Many of the scale-plates have additional rivets, which are purely for decorative effect. These often take the form of a row running between the rivets, which may have been intended to disguise them (e.g. **2700**). On post-medieval knife **3164** there are four groups of rivets forming triangles; the rivets in the group nearest the tip of the tang are larger.

There are four examples **2686, 2694, 2698, 2704** of tangs where three additional rivets combined with the end rivet holding the scale plates make a simple lozenge pattern. This was, perhaps a conceit of a local cutler; although it can also be seen on a late-14th century knife from London (Cowgill *et al.* 1987 126).

The edges of the tang of **2690** are either plated or have thin non-ferrous strips attached to them. This feature appears to be rare, but can also be seen on four later medieval knives from Winchester (Ottaway in Crummy *et al.* in prep.)

A common feature of scale tangs is an end-cap, which was usually made of copper alloy and riveted on. Some are simple, others (e.g. **2690, 2699**) are raised into a prominent knop around the rivet head. On **2701** the end-cap projects below the tang, suggesting that the scale plates did also, although this would be unusual. On **2699** the end-cap projects below the tang and is drawn out into a loop, probably to allow suspension of the knife from a belt.

There are five knives that appear to have had handles formed with scale plates, but no rivets appear on X-radiographs. The knives in question are **2672**, of which the blade is largely missing, **2712**, which exists as a tang only, **2676**, **2692**, and **2505**.

All except **2712**, an interesting gothic-styled piece, where the junction of blade and tang is missing, have shoulder plates as described above, which would have held the scale plates at the blade end. In addition, on **2672**, a non-ferrous strip, which possibly served as a binding, ran along the edges and around the end of the handle. It is thickened at the end and formed into a short socket to assist in holding the scale plates in place. On **2675** there is a similar strip, which at the end is formed into a slight projection, to which an end-cap may have been attached, but although the shoulder plate would have held the scale plates at the junction of blade and tang, it is not clear how they were held at the other end. The strip has decorative punched marks on it. At the end of **2712** the strip that runs along the edges is expanded to form a curious three-sided projection, each side being concave.

On **2676** and **2692** X-radiographs suggest that the edges of the tang were plated (see knife **2690**, above). **2676** has an end-cap folded over slightly, perhaps to assist in holding the scale plates. However, how the scale plates were held securely in place is not clear, although speckles of non-ferrous metal shown on the X-radiographs of both the handles may indicate that they were brazed onto the tang. Comparable knives to these are difficult to find, although Goodall (1993, 128) referred to two knives from Norwich that have 'flat tangs without perforations but with outer copper-alloy edging.' Unfortunately, the knives are not illustrated and they are not securely dated.

Handles and handle attachments

2717 18 x 14mm; hilt band with fragments of blade. At least six transverse grooves decorate the band, which is D-sectioned.

2718 108 x 20mm; handle from a scale-tang knife, widening at the top. Three rivets, plus one hole and nine false rivets. Three further false rivets form a trefoil at the top of the wooden scales. Distorted.

Complete wooden handles survive on three whittle-tang knives **2644, 2638, 2658** and a dagger **2929**. There are fragments on other knives. This does not mean, however, that all, or even the majority of handles, were made of wood. In the medieval and early post-medieval periods horn was probably the principal material used, surviving on two scale-tang knives from Meols **2714** and **2682** and as a separate handle **3190**. This is unusual, as horn does not usually survive in the ground, although traces may be detected in conservation.

Folding knife or razor

2719 Pl. 39

83 x 20mm; curved knife blade from a folding knife, tapering to a point. With a small fragment of wood attached by a single rivet at broken point of blade. It has an incomplete thumb piece, which rotated on the rivet passing through it near the rear and held it in its case. Folding knives are rare in medieval contexts, but two others, one in a boxwood case, have been found in late-13th- and late-14th-century contexts in London (Cowgill *et al.* 1987, 106, *309–10*) and another comes from a mid-14th–early-15th-century context in York (Ottaway and Rogers 2002, 2793, fig. 1380, *13816*).

Bolsters

2720
15 x 9mm; fragment of tang surviving.

2721
16 x 9mm; hexagonal shape with rectangular void for tang.

Blades only

2722
40 x 13mm; fragment of knife blade tip.

2723
44 x 9mm; fragment.

2724
52 x 10mm; tip of a blade.

2725
54 x 15mm; tip of a pointed knife blade.

2726 Pl. 39
57 x 12mm; tip of blade.

2727
66 x 12mm; tip missing.

2728
66 x 14mm; mid-section and tip of blade.

2729
79 x 11mm; tapering whittle-tang blade, broken at the top.

2730
85 x 14mm; fragment with shoulder and tip missing.

2731
85 x 20mm; corrosion product with thin section of blade. Probably plated. Tip and top missing.

2732
86 x 15mm; bent with tip missing.

2733
93 x 18mm; fragment, tapers to a broken point.

2734
101 x 21mm; fragment of blade tip and middle section.

2735
114 x 11mm; tapers both ends.
2736
114 x 13mm; tapering blade from a scale tang. Broken at rivet point on shoulder.
2737
117 x 19mm; fragment of knife blade and middle section.
2738 Pl. 39
118 x 16mm; tip of a whittle-tang knife blade, cutler's mark of a cross and circle.
2739
182 x 13mm; mid-section of a long whittle-tang blade.

Cutler's marks
Cutler's marks formed by a punch are to be found on the blades of 11 whittle-tang and 12 scale-tang knives. Single marks are the rule, except in **2643** and **2649**, which have two marks. In 1365 Edward III ordered that every maker of swords, knives, and other weapons in the City of London should put his mark on his work (quoted in Goodall 1975, 79 and Cowgill *et al.* 1987, 33). In archaeological material, the earliest cutler's marks appear on knives in the late-13th–early-14th century (Goodall 1993, 128), and the earliest in the closely dated material from London published by Cowgill *et al.* (1987, 20, fig. 35, *31*) is from a late-13th-century context. The marks were usually inlaid, brass being the preferred metal, until the early-16th century, after which they were not (Hayward 1957, 5). Lack of inlay does not necessarily mean a post-medieval date, however, as the inlay was simply hammered in and could easily fall out.
The cutler's marks on Meols knives represent a number of different motifs, not all of which are easily definable. However, recognisable motifs include a simple cross and a circle on **2649**, a bezant cross on **2641** and **2658**, a saltire cross and a crown on **2643**, a 'V' on **2677**, an 'S' on **2609**, a five-pointed star on **2629** and **2661**, a fleur-de-lys on **2660**, and a key on **2689**.

Knife size
Most of the knives are, to a greater or lesser extent, incomplete, and so their original dimensions cannot now be determined with certainty. Knives, or objects which might otherwise have been identified as knives, over 250mm in length should probably be defined as daggers (see p. 212, below). Scale-tang knife blades do not often survive unbroken, which probably reflects the facts that later medieval knives have thin blades compared with those of earlier date and that there is a point of weakness at the junction of blade and tang.

Metallographic structure
Without more detailed analysis it is impossible to say much about the metallographic structure of the Meols knives, except that on X-radiograph some knife blades (e.g. **2634**, **2641**, **2658**, **2630**, **2638**, **2647**, **2703**, **2734** **2737** **2654**, **2655**, **2661**) exhibit weld lines suggesting a high-carbon cutting edge has been butt or scarf welded to a softer iron back. **2669** is a rather corroded blade fragment, but has a simple pattern-welded core. Pattern-welding of knives, which used the differing visual qualities of iron of high and low carbon content for decorative purposes remained current from as early as the 8th century until the 13th century or later (Ottaway and Rogers 2002, 2791)

Conclusions
The majority of knives from Meols form an assemblage for the most part of *c.* 1350–1450. There are a small number that are probably earlier and may even be pre-Norman. Others may be later, but it is notable that there are no examples of knives with a bolster between blade and tang or with a pistol-grip handle. Both features are innovations of the 16th century.

DOMESTIC AND INDUSTRIAL TOOLS AND IMPLEMENTS

Surgical implement

Fleam
2740 Pl. 39
L 127mm, W (loop) 13mm, T (bar) 6mm; an implement with a small blade used for slitting veins to allow blood letting. It is impossible to date this item with certainty, but a few medieval examples are known, e.g. an example from a mid-12th-century context at Coppergate and a mid-14th-century context from Bedern, York (Ottaway and Rogers 2002, 2932), although the type does continue into the post-medieval period.

Metalworking tools

Tongs
2741 Pl. 40, L 368mm.
2742 L 388mm.
These two pairs of iron smith's tongs are very similar in form, and are the sole items from Meols indicating ironworking. Their length allowed a smith to work with metal at great heat (I. H. Goodall 1980, 9–10). In both cases the arms have, at the head, an oval expansion around the pivot, but the mouths appear to be broken off. At the opposite end the arms are flattened out into plates *c.* 60mm long. Tongs are rare finds in archaeological contexts and difficult to date accurately, but note may be made of a pair from Criccieth Castle, Gwynedd, occupied *c.* 1230–1404, which are 269mm long, and appear similar to the Meols pair at the head and in having the plates at the ends of the arms (O'Neil 1945, 42).
2743 L 490mm; appears from the drawing (Potter 1893, pl. B, 14) to be one arm of a similar pair of tongs. The end of the arm appears to have the short projections that would allow a chain to be held between this and the second arm, thereby keeping the arms in tension while the smith carried out sustained or repetitive actions.

Pincers
2744 Pl. 40
L 236mm; robust pair of pincers, with a round mouth that was probably used for drawing nails, either by a carpenter or by a farrier working on horses' hooves. Although pincers of this form have remained in use up to the present day, a comparable pair of medieval date comes from London (Hinton 1988, fig. 183, *177*). Another of late 16th–17th century date comes from Norwich (I. H. Goodall 1993, 176, fig. 125, *1350*).

Woodworking tools

Awl
2745 L 128mm; thickened slightly off centre, of a simple form that cannot be dated easily and could be early or later medieval. Square-section, widening to diamond cross-section in the centre.

Axes
2746 240 x 90mm; (Hume 1863, pl. XXIX, 2), is an elongated axe. It apparently has near symmetrical rounded

lugs either side of the socket, which spring directly from the top of the poll, rather than after a short step as on **399**. A slightly smaller axe (212 x 68mm) of similar form and proportions comes from Baile Hill, York (Addyman and Priestley 1977, 138–9, fig. 10, *5*). This is from a context of the late 11th–12th centuries, and it is quite likely that ***2746*** is of this period also.

Spoon bits
2747 L 230mm.
2748 L 258mm.
These are tools with a blade of U-shaped cross-section, and a tang originally set into a wooden cross-handle. Spoon bits were used for making or enlarging holes in wood, and are difficult to date as the form changed little between the Anglo-Saxon and the post-medieval periods; however, the overall dating of the assemblage suggests a later medieval date.

Textile-working tools

Scissors
2749 Pl. 40
L 186mm, W (handle loops) 76mm; a pair of scissors, with oval finger loops set centrally on the stems, which bear a simple moulding. In Britain, scissors make their first appearance in archaeological contexts of the 12th century, as at Beverley, East Yorkshire (I. H. Goodall 1991, 136), but are rare in medieval contexts. Scissors become more common in contexts of the 16th–17th century; there are, for example, eight pairs of this date from Norwich (I. H. Goodall 1993). However, at present there is insufficient data for close dating on stylistic grounds.

Needles
2750
L 32mm.
2751
L 73mm.
2752
L 83mm.
2753
L 110mm.
These are sewing needles, the longest of which, **2753**, is considerably longer than the usual maximum 60mm for medieval iron needles from York (Ottaway and Rogers 2002, 2739). These may have been used for stitching sack cloth.

Agricultural and horticultural tools

Shears
There are 21 shears, or parts of shears, in various states of fragmentation. All are probably later medieval, although the form of the bows and of the shoulders between blade and stem varies somewhat.
2754 L 96mm; missing one of its blades, the survivor has a sloping shoulder.
2755 Pl. 40
L 99mm; one blade remaining, round bow (Hume 1863, pl. XXVI, no. 6).
These are half pairs of shears with cusped shoulders between stem and blade. The stem of **2755** has small indentations in both the outer and inner edges (see comment below, on **2757**).
2756 Pl. 40
L 104mm; also complete, and similar in form and size to **2757** (without indentations), but one shoulder is stepped.
2757 Pl. 40
L 108mm; a complete pair of shears with a round, looped bow; the shoulders between stem and blade are straight. There are small indentations in the outside edges of the stems. This is an unusual feature, although they also occur on **2755**, and similar indentations can be seen on a pair of shears from London, dated to the early- to mid-15th century (Cowgill *et al.* 1987, 111–2, fig. 73, *359*).
2758 Pl. 40
L 148mm; double arched moulding at the top of the blade.
2759 L 152mm; blade with a concave shoulder joining it to an incomplete stem.
2760 Pl. 40
L 154mm; one arm is missing, but the surviving shoulder has two steps and the bow has a ridge running across the top between the stems. A low ridge across the top of the bow appears on shears in London in contexts dated to the 14th century and became a prominent rib in the late-14th to early-15th century.
2761 Pl. 40
L 167mm; a pair of shears broken into two halves, on which there are two small cusps on the shoulders between blade and stem, and the bow has a rib standing proud across the top. The cusped shoulder is a feature that probably first appears in the 14th century (Cowgill *et al.* 1987, 107) and remained current in the 15th century.
2762 Pl. 40
L 308mm; a large pair of shears with wide blades and a wide oval bow. Probably late medieval. A very similar pair comes from a 15th-century context at Cambokeels, Co. Durham (Hildyard 1949, 199, fig. 6.4).
2763 L 80mm, had a single blade with a straight shoulder and an incomplete stem.
2764 L 90mm, a complete pair of shears, with cusped shoulders between blade and stem.

Blades with cusped shoulders and stubs of stem
2765
L 105mm.
2766
L 117mm.
2767
L 130mm.

Incomplete bows/stems
2768
L 28mm.
2769
L 43mm.
2770
L 89mm; an incomplete bow attached by the stem to an incomplete blade
2771
L 275mm.

Blade fragment
2772
L 83mm.

Spade irons
There are five later medieval spade irons.
2773 L (shoe and blade) 460mm, W 246mm; (also Wooden objects, 2.12, Pl. 55) complete and, unusually, the wooden blade (with slightly sloping shoulders), and a stub of handle survive *in situ*. The blade has curved sides and narrows towards the tip; each arm of the iron shoe terminates in a lug, which grips the shoulder of the blade. Iron shod spades of this form were in common use in the

medieval period and are shown in many illustrations including, for example, the Florence and John of Worcester Chronicle (dated 1130–40), where a spade is wielded by a peasant in the vision of Henry I (Oxford Corpus Christi Coll. MS 157), and in a stained glass window at Canterbury Cathedral dated *c.* 1180 showing Adam digging (Potter 1893, 234–-5, pl. A, 1; Morris 1984, fig. 9, A56).
2774 L 167mm; incomplete, existing as one curving side of a sheath, which tapers upwards and has a projecting rounded lug just below the top.
2775 Pl. 40
210 x 145mm, simple shoe with two single holes for attachment. Very late medieval or early post-medieval: a similar object comes from a context dated 1540–60 at Tattershall College, Lincolnshire (Goodall 1980, 66, *F15*).
2776 190 x 125mm; a simple shoe with a tapering flange, which still encloses fragments of wood.
2777 L 330mm (Potter 1893, 234–-5, pl. A, 3).

Hoe blades
There are three hoe blades.
2778 Pl. 40
L 92mm; probably a socketed hoe, with a blade which widens out from the socket towards the edge.
2779 Pl. 40
L 130mm, W 75mm at the blade edge; a hoe blade that was held on to its handle by two lugs at the head. A very similar medieval example, *c.* 150mm long, comes from Hampton Wafer, Herefordshire, and was thought to have been used for 'thistle bodging' (Stanford 1967, 86–7, fig. 7; I. H. Goodall 1980, 69, *F25*).
2780 L 125mm; another probable hoe blade, which appears to have been similar to **2778** and **2779**. Its handle was held in place by two flaps and the blade is slightly waisted before reaching the edge.

Sickles
There are six sickles or sickle blades, five are incomplete.
2781
L 120mm.
2782
L 196mm.
2783
L 197mm.
2784
L 242mm.
2785
L 252mm.
2786 Pl. 40
L 278mm; complete. The blade has a fine-toothed edge and is unusual in having a cutler's mark in the form of a Greek cross punched into it. As in the case of knives, an un-inlaid cutler's mark may indicate a post-medieval date (see below), although such a mark can also be seen on a 13th–14th century sickle, also with a toothed edge, from Stonar, Kent (I. H. Goodall 1980, 74, *F71*).
The X-radiograph shows **2783** to have a butt weld running its length, presumably joining a high-carbon steel cutting edge and lower carbon back. X-radiographs also show **2785** to have an unusual metallographic structure, in that the blade is made from three strips welded together longitudinally. What this implies about manufacture cannot be determined without metallographic analysis, although the strip forming the cutting edge probably had a higher carbon content than the other two.

Ferrule
2787 Pl. 40
230 x 38 x 31mm; a large ferrule or ploughshare, which tapers to a point. The seam is largely open and at the head is a rounded terminal, pierced for attachment. This was probably fitted onto the end of a staff to prevent damage and wear to the wood.

Collar
2788 48 x 37 x 10mm; may be described as a collar , an object like staple but with overlapping arms, it was perhaps used to secure a tool to its wooden handle.

Clip
2789 76 x 49 x 9mm; probably a clip, a strip curved over into an oval shape with one tip looped around the other. It was probably used either for holding other objects in place, e.g. tools to their handles, or for repairing broken objects.

LEISURE

Jew's harps
2790
L 70mm W (loop) 32mm; corroded and missing its ends.
2791
24 x 21mm; a loop that appears to be a corroded and incomplete example.
2792
L 50mm, W (loop) 22mm; the reed was missing, but it had arms of the characteristic diamond-shaped cross-section of medieval examples, as seen, for example, on an example of early-15th century date from Wharram Percy (I. H. Goodall 1979, 121, fig. 63, *83*). There are also four copper-alloy jew's harps from Meols **2306-2309**.

RIDING EQUIPMENT
(For a range of relevant studies of riding equipment, see Clark 1995).

Spurs

Prick spurs
There are seven complete or semi-complete prick spurs in total from Meols, two of which ***400–401*** are of a recognisable early medieval form, hence are included in that section, leaving five examples of the later medieval period.
2793 Pl. 41
55 x 60mm, L (prick) 18mm.
2794 Pl. 41
65 x 52mm, L (arm) 6mm.
2795
38 x 54mm (Hume 1863, pl. XVI, 3).
2796
41 x 39mm (Hume 1863, pl. XVI, 2).
2797
45 x 57mm (Hume 1863, pl. XVI, 1).
2793 and ***2795–2797*** are fragments of the backs of spurs, which have goads with a short stem before expanding into a tip that is, or was, of a roughly conical form. There was probably a collar around the base of the conical element on pl. XVI, 3. In the case of **2794**, which is rather corroded, there is a thin collar around the base of the expansion that was probably octahedral. Its arms, now largely missing, bear incised grooves in a 'V' below the goad, and a pattern of grooves and nicks in the outer edge of what survives of the rest of the arms. The goad form suggests it is late-11th–12th

century and it may be compared, for example, with two spurs from contexts of this date at 16–22 Coppergate, York (Ottaway and Rogers 2002, 2956, *12734–5*).

Goads from prick spurs
2798
20 x 10mm.
2799
28 x 14mm.
2800
29 x 20mm.
2801
30 x 11mm.
2802
34 x 15mm
2803 Pl. 41
89 x 90mm.
2798 is similar to LMMC fig. 28, no. 8, **2799** and **2800** are goads with more rounded profile. Spurs with similar goads can be dated to the 12th–13th century , e.g. from Waltham Abbey (Huggins and Huggins 1973, fig. 23,27) and Wharram Percy (I. H. Goodall 1979, 121, fig. 63, *71*). **2803** survives as the goad only of octahedral form with a collar at the head of the stem. **2801** may also be a spur goad, but appears to be of cast-iron and therefore may be of more recent origin.
All of the prick spurs and goads that were X-rayed (**2793, 2794, 2799, 2800, 2803**) were clearly plated with a non-ferrous metal, probably tin.

Rowel spurs
Rowel spurs were composite items with a separately-made spiked wheel instead of an integral spike forming the goad.
2804 Pl. 41
L 92mm, W 83mm, Th (arm) 8mm; the arms are almost L-shaped to accommodate the wearer's ankle, and they have simple pierced, rounded terminals. Their outer surfaces bear three groups of incised diagonal grooves. The goad is missing, but above it is a pointed crest. The form of the arms suggests an early- to mid-15th century date.
2805
Pl. 41 L 118mm, W 93mm, Th (arm) 8mm; complete, plated with non-ferrous metal, probably tin. The arms curve slightly and at the tips are simple pierced, rounded terminals. At the heel there is a crest above the goad, at the end of which the rowel has eight points. Associated with this spur is an attachment fitting for the leathers, but it is D-shaped in the centre, rather than oval as in **2807**.
2806
L 130mm, W 35mm, Th (arm) 10mm; another spur , now badly crushed and heavily corroded, but it was similar to **2805**. The slightly curving arms (and other features) suggest a late-15th century date for the last three spurs described above (Clark 1995, 130).
2807 Pl. 41
L 150mm, W 84mm, Th (arms) 3mm; the arms curve very slightly so as to fit under the wearer's ankle and have simple pierced terminals. There is a short curved crest above the heel. Linked to one of the terminals are two attachment fittings for the leathers. They are oval in the centre with opposing hooked arms. The other arm of the spur has one attachment fitting and a buckle-like fitting linked to it. The latter has a rectangular frame, which narrows, is pierced, and then develops into a hooked tip. All the components are plated with non-ferrous metal.

Rowel wheels (detached)
There are five iron rowel wheels which have, or had, six points (cf. copper-alloy rowel **2337**).
2808
26 x 32mm.
2809
33 x 32mm.
2810
39 x 41mm.
2811
44 x 46mm.
2812
49 x 48mm.
The points are usually triangular, but in the cases of **2811** more of a petal shape, and of **2812** triangular with nicks in the sides near the base. All are plated except **2809**.
2813
33 x 31mm (Hume 1863, pl. XVI, 8); seven points (one missing).
2814
47 x 46mm; eight points.
2815
29 x 16 x 11mm; a spur attachment fitting with a circular central element between opposing hooks.

Stirrups
2816 Pl. 41
133 x 88 x 10mm; a stirrup which has a slot for the leathers at the top contained within the frame; on the cross-piece below the slot there is vertical groove. The object is plated, probably with tin. Well-dated stirrups from archaeological contexts are very few , but this piece is probably 13th–14th century and is similar to an example from London (LMMC, fig. 25, 2).
2817 Pl. 41
133 x 123 x 6mm; this has a slot for the leathers in a triangular area at the top of a frame, which widens to the base. Both sides are decorated by means of pinching out short D-shaped projections along the outer edge. This stirrup is likely to be similar in date to **2816**, but no closely comparable item suggests itself.

HORSE EQUIPMENT

(Non-ferrous items listed **2324-2337**; for a range of relevant studies of horse equipment, see Clark 1995).

Harness buckles
It is often difficult to distinguish equine harness buckles from human dress accessories on the grounds of form as the two categories were fulfilling the same basic function in conjunction with leather straps. Hence the distinction is made here purely on the grounds of size, where >50mm in length is treated as equine.

Circular frame
2818 Pl. 41
D 56mm; circular buckle frame with a central bar for the pin.

D-shaped frames
2819
34 x 53mm; plated with non-ferrous metal.
2820
42 x 65mm; plated with non-ferrous metal.
2821
52 x 52mm (Hume 1863, pl. VIII, 16).
2822
54 x 102mm (Hume 1863, pl. VIII, 15).

Oval frames
2823
56 x 56mm; plated with non-ferrous metal.
2824 Pl. 41
73 x 61mm; large oval frame with a central bar across the longer axis on which the pin survives. The buckle is plated with non-ferrous metal.

Double oval frames
2825
53 x 41mm.
2826 Pl. 42
56 x 51mm.
2827
55 x 54mm; plated with non-ferrous metal

Rectangular frames
2828
47 x 68 x 10mm; plated with non-ferrous metal.
2829
64 x 45mm; larger rectangular frame.
2830
95 x 65mm; probably a buckle frame.

Rectangular frames with rotating bar
2831
51 x 68 x 12mm.
2832
53 x 69 x 13mm; plated with non-ferrous metal.
2833
46 x 69 x 15mm; plated with non-ferrous metal.
2834 Pl. 42
58 x 74 x 17mm; plated with non-ferrous metal.
2835 Pl. 42
61 x 78 x 3mm; plated with non-ferrous metal.
These are five buckles with rectangular frames, one side of which is a rotating bar . The rotating bars are held in pierced terminals at the ends of the adjacent sides and they usually expand in the centre, although not in the case of **2832, 2833, 2834,** and **2835** which are plated, probably with tin. These buckles were part of horse harness, the rotating arms serving to reduce chafing of straps against one another (Goodall 1990a, 526; Ottaway and Rogers 2002, 2894). They appear to be an innovation of the 11th century, remaining current until at least the late 13th century.

Sub-rectangular buckle frame
2836 Pl. 42
35 x 57mm; rounded corners and slightly concave ends.

Bits
2837 Pl. 42
105 x 112 x 15mm; cheek pieces.
2838 Pl. 42
114 x 112 x 15mm; snaffle links.
This is a complete bit in two parts with, firstly , a pair of cheek pieces, each surviving as a D-shaped eye between two projecting arms that expand towards their ends, and, secondly, two snaffle links, which are curved and spirally-twisted. Bits of this basic form occur in contexts of 15th–17th century date, including, for example, at Sandal Castle (Goodall 1983, fig. 10, *235*), and Sewer Lane, Hull (Goodall 1977b, 64–5, fig. 27, *88*).
2839 85 x 40 x 3mm; a cheek-piece which survives as a D-shaped eye, above which is a short arm ending in a rounded eye to which a T-shaped link is attached; below the eye a second arm is broken off. Similar cheek-pieces come from Sandal Castle, West Yorkshire (I. H. Goodall 1983, fig. 10, *237–9*) of which one (*237*) comes from a context dated 1485–*c.* 1600; the others are less securely dated.
2840 Pl. 42
145 x 138 x 2mm; a cheek-piece with a D-shaped eye in the centre, above and below which are arms that widen outwards and curve slightly before being folded over along their ends. Attached to the eye is a snaffle link and a T-shaped link for the bridle strap. This corresponds to LMMC Type D (fig. 20) which is probably 14th–15th century (Clark 1995, 47–8, fig. 33). A similar object comes from an early-15th-century context at Weoley Castle, Warwickshire (Taylor 1974; I. H. Goodall 1980, 187, *L49*).
2841 Pl. 42
173 x 40 x 8mm; a cheek-piece from a curb bit. It has a round eye at the top above a D-shaped eye to which a fragment of the snaffle is attached. Below this the object curves to a terminal in the form of a D-shaped eye, just above which it is pierced for the attachment of the curb chain. The object is plated with non-ferrous metal.

Incomplete
2842 51 x 36 x 12mm; a fragment of ring with a small triangular fitting looped around it, which is pierced at its wider end. Both components are plated with non-ferrous metal. This may be part of the cheek-piece from a horse's bit.
2843 Pl. 42
65 x 66 x 8.5mm; a T-shaped link. It is not entirely clear how these objects operated, but the base of the 'T' often has a roller around it, which would have eased the passage of a strap without chafing. They appear to be largely 15th century, as in the case of an example from Winchester (Goodall 1990a, *1315*).
2844 L 68mm, W (knop) 13mm, T (arm) 8mm; an incomplete strip with conical knop at one end, which suggests it may have come from a bit or bridle fitting.

Horseshoes
There are ten medieval horseshoes. These are grouped according to the typology constructed by Clark (1995, 94–101).

Type 2 (wavy edge, 11th–13th centuries)
2845 93 x 94 x 6mm; wavy edge with six countersunk nail holes, one fiddle-key nail *in situ*.

Type 3 (branches with calkins, countersunk rectangular holes, 13th–14th centuries)
2846
104 x 98 x 6mm; six countersunk nail holes.
2847
105 x 86 x 7mm; slightly wavy edge, six countersunk nail holes.
2848
125 x 104 x 5mm; six countersunk nail holes.
2849
118 x 97 x 7mm; seven countersunk nail holes, small calkins, corroded.

Type 4 (wide branches, no separate countersunk slots, square headed nails, 14th–15th centuries)
2850
98 x 95 x 25mm; one turn-over calkin, six rectangular holes.
2851
100 x 99 x 5mm; six nail holes, not countersunk, one terminal missing.

2852
120 x 113 x 10mm; slightly wavy edge, six nail holes, corroded.
2853
129 x 108 x 6.5mm; 10 nail holes, not countersunk.
2854
133 x 115 x 14mm; turn-over calkins, eight nail holes, two square-section nail fragments.

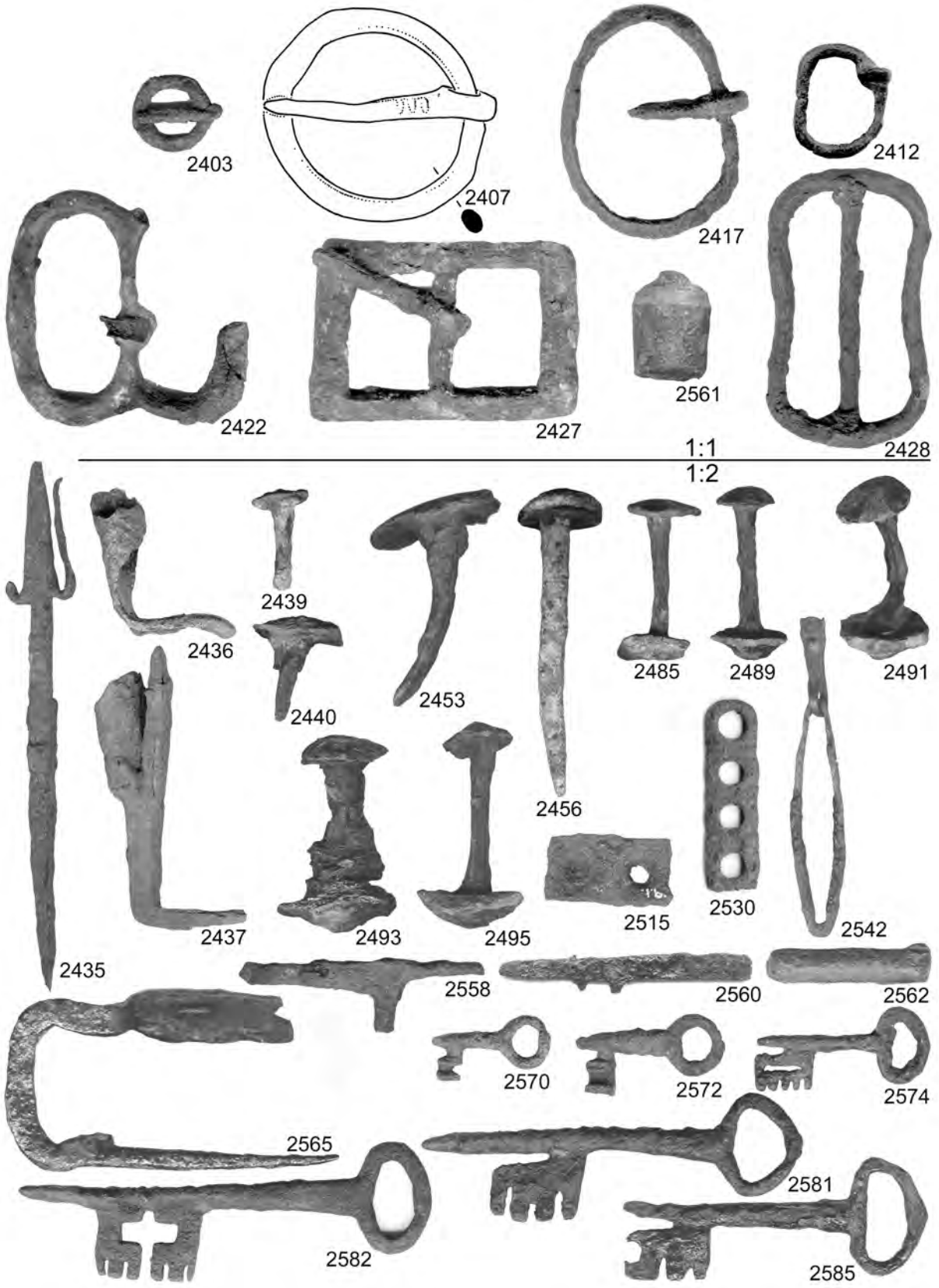
Horseshoe nails
2855
15 x 15mm.
2856
17 x 14mm.
2857
21 x 16mm.
2858
22 x 13mm.
2859
22 x 18mm.
2860
27 x 12mm.
2861
27 x 17mm.
2862
31 x 15mm.
2863
33 x 12mm.
These horseshoe nails are examples of the 'fiddle key' type with D-shaped heads used in horseshoes such as **2845**.

WEAPONS AND ARMOUR

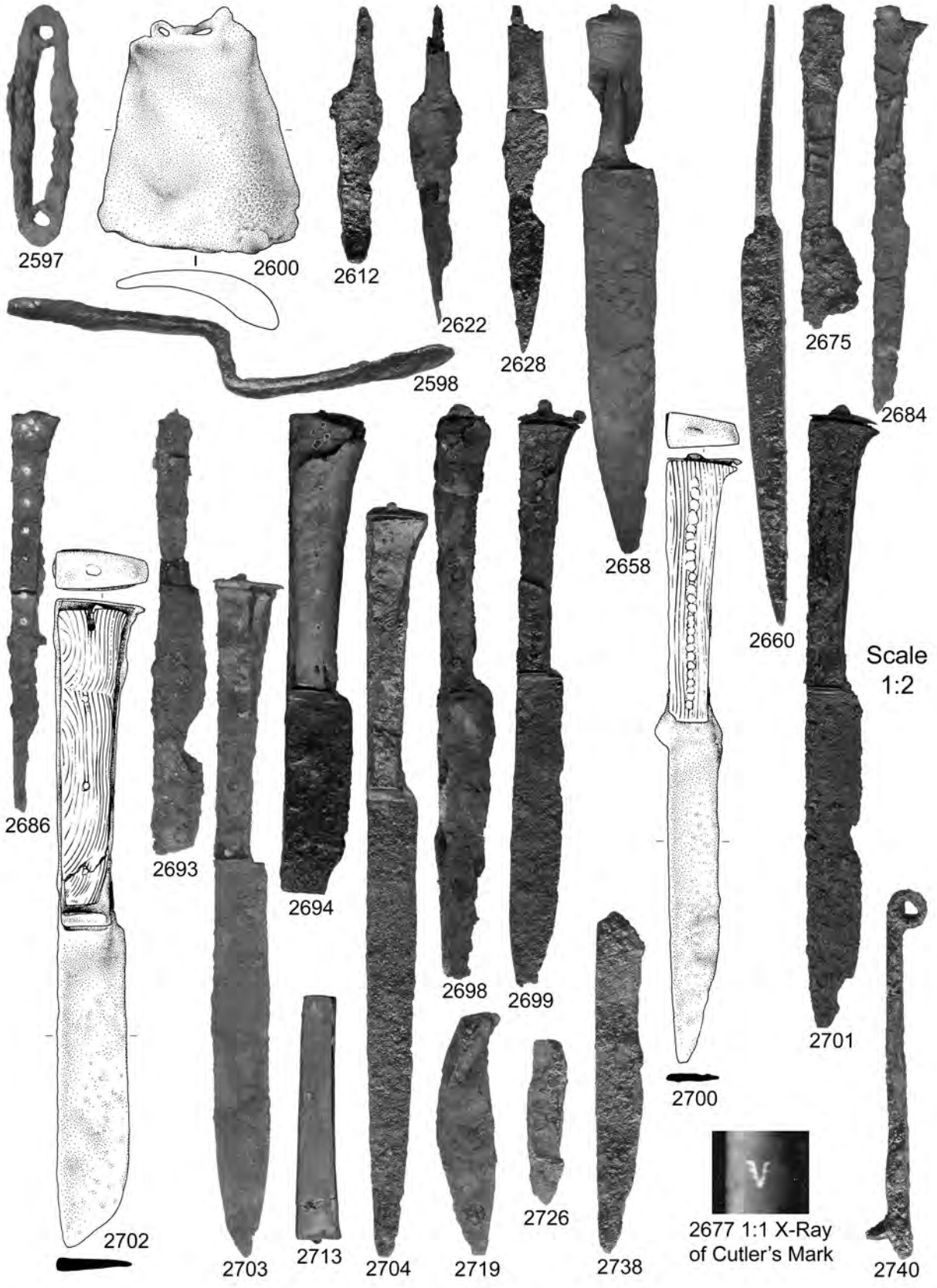
Projectiles
Arrowheads and cross-bow bolts have been found at a large number of medieval sites in Britain and Europe, and tend to be consistent in type across these areas. One of the more famous and closely-dated collections is from the mass-graves of soldiers who died at the Battle of V isby, Gotland, Sweden, in 1361. A general typology of arrowheads, partly based on the Visby finds, was published in the *London Museum Medieval Catalogue* (LMMC 1940, 65–73). A more recent study was I. H. Goodall's catalogue of the arrowheads from Winchester (I. H. Goodall 1990b). O. Jessop contributed two recent studies of medieval arrowheads (1996; 1997). The majority of the Meols finds date to the 13th–14th centuries, and their presence may be associated with increased military activity in Cheshire connected to the W elsh campaigns of Edward I in the 1270s and 1280s (4.6)

Arrowheads
2864 Pl. 42
60 x 30 x 11mm, small medieval socketed arrowhead that has a simple triangular blade (LMMC Type 2) and Jessop's early multi-purpose forms (11th–14th century); probably 12th–13th century.
2865 65 x 22 x 8mm; this has a triangular blade with short rounded barbs and is similar, for example, to two arrowheads from 13th–14th-century contexts at Y ork (Ottaway and Rogers 2002, 2967, *12839 / 12841*).
2866 Pl. 42
33 x 9 x 6mm.
2867
37 x 11 x 8mm.
2868
49 x 15 x 7mm.
2869 Pl. 42
53 x 13 x 9mm.
2870
54 x 20 x 5mm.
2871
60 x 16 x 8mm.
2872
35 x 13mm (Hume 1863, pl. XXI, 1).
2873
55 x 11mm (Hume 1863, pl. XXI, 4).
2874
61 x 18mm (Hume 1863, pl. XXI, 7).
2875
L 86mm W approx. 56mm (Hume 1863, pl. XXI, 6); this was a relatively large arrowhead with long barbs reaching to the base of the socket which corresponds to LMMC Type 14 dated to the 13th – 14th centuries.
The group above are arrowheads with short pointed barbs that end just below the top of the socket, as exemplified by LMMC Type 13 and Jessop' s Early Multi-purpose form (11th–14th century).
2876
32 x 22 x 5mm.
2877
37 x 18 x 8mm.
2878
37 x 26 x 4mm.
2879 Pl. 42
34 x 18mm (Hume 1863, pl. XXI, 3).
The four above are incomplete barbed arrowheads, the precise form of which cannot now be determined.
2879
75 x 9 x 9mm.
2880
80 x 14 x 9mm.
The two above are arrowheads with simple tapering blades of rectangular cross-section; this is a type current in the 11th–14th centuries (Ottaway and Rogers 2002, 2969):
2881
26 x 10 x 9mm.
2882
28 x 8 x 7mm.
2883
32 x 10 x 8mm.
2884
32 x 11 x 9mm.
2885
35 x 11 x 8mm.
2886
41 x 13 x 5mm.
2887
L 28mm; a tip of an arrowhead of a form which is too incomplete be determined.
There are six bullet-shaped arrowheads or arrow tips which were used on longbow shafts. All are of the form which has a thin fin on opposing sides as also seen, for example, on two from 15th–16th century contexts at 46–54 Fishergate, Y ork (Ottaway and Rogers 2002, 2969).

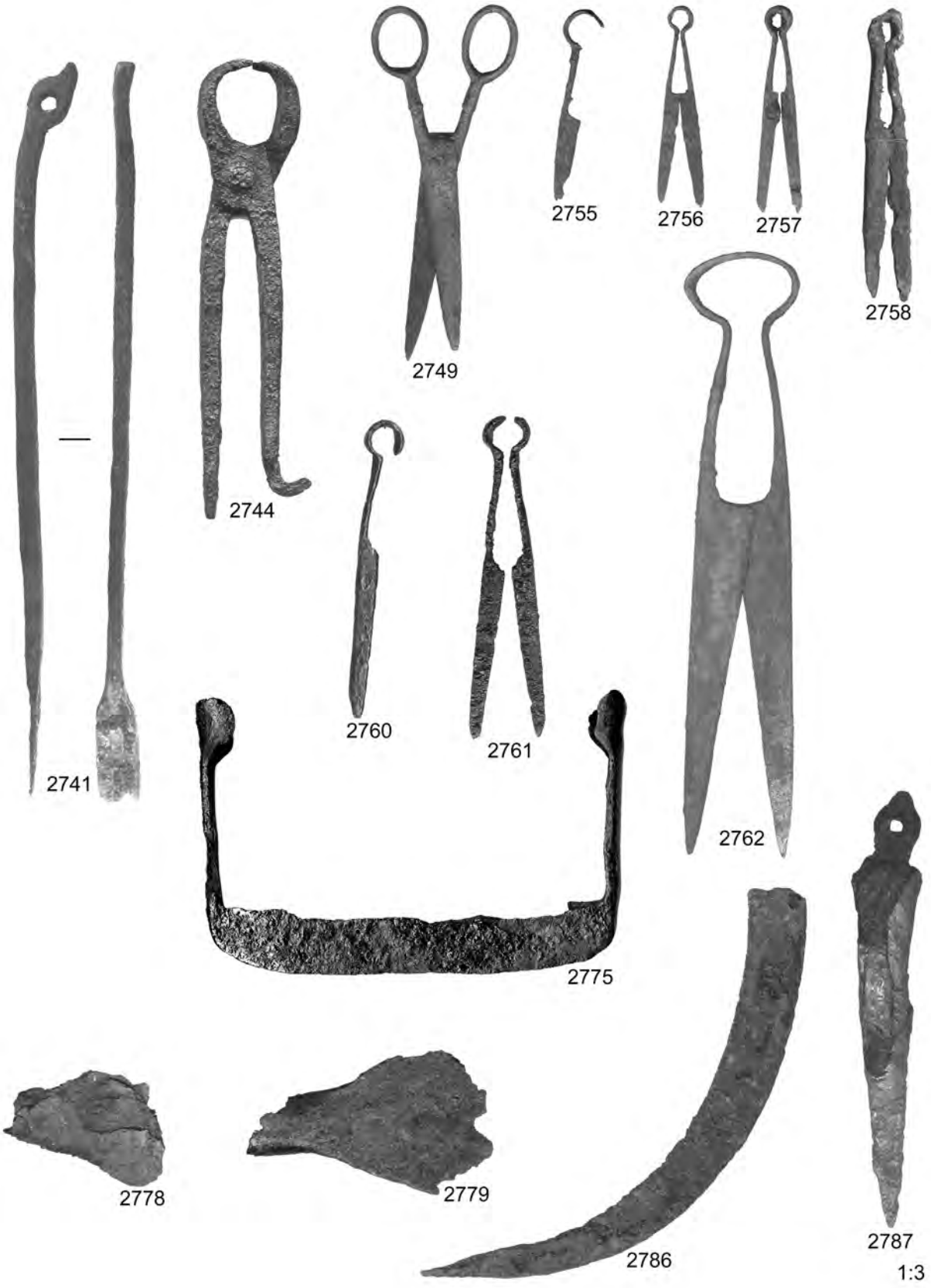
Crossbow bolts and quarrels
There are 36 socketed crossbow bolts, one of the largest British groups, which fall into two broad types. The first of these (cf. LMMC 1940, Type 9) has a waisted profile with a leaf-shaped blade of lozenge-shaped cross-section, varying in length and shape from a long narrow point to a much shorter and more pronounced elliptical leaf. These vary from relatively long and aerodynamic



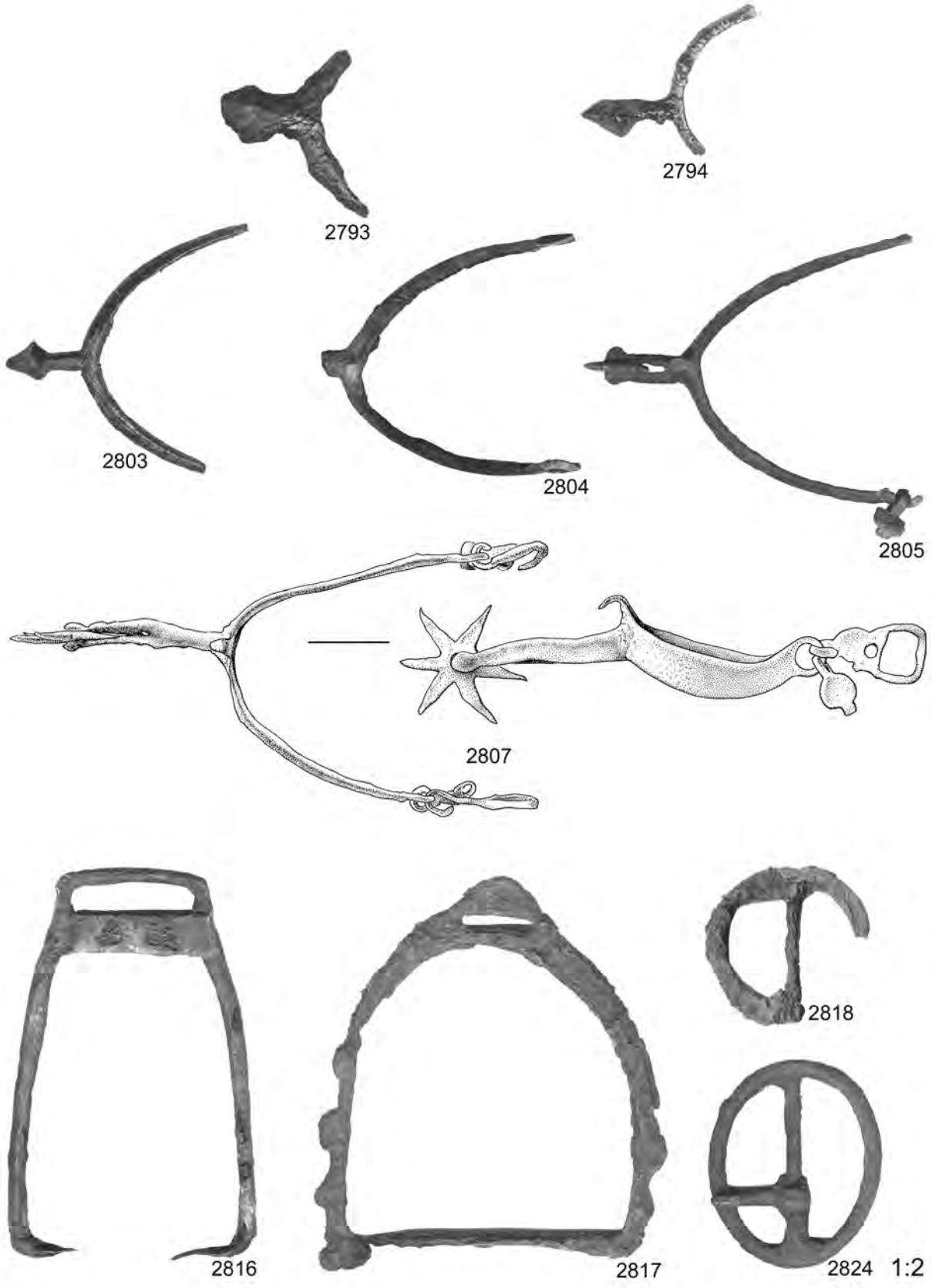
Pl. 38. Later medieval ironwork



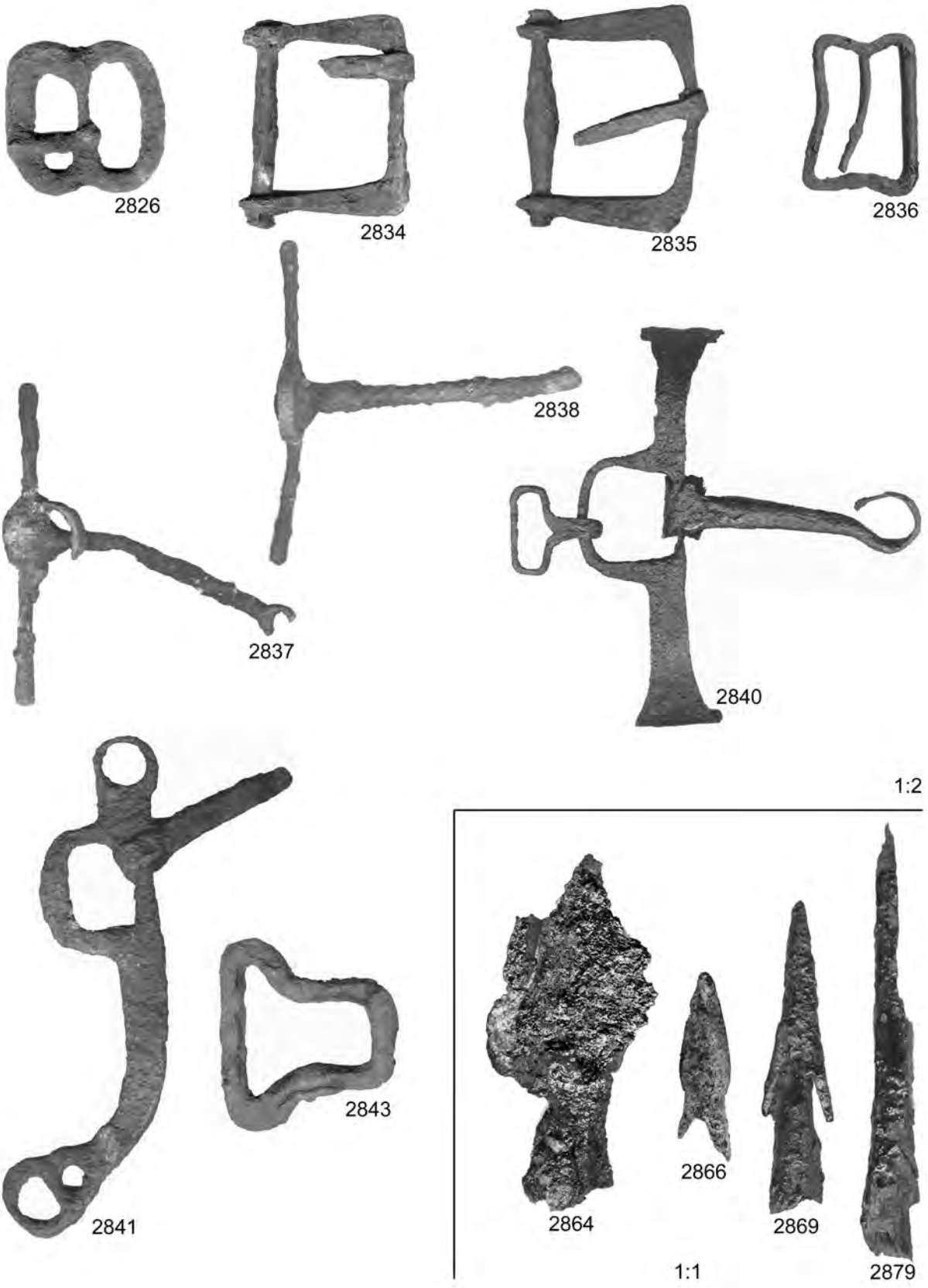
Pl. 39. Later medieval ironwork



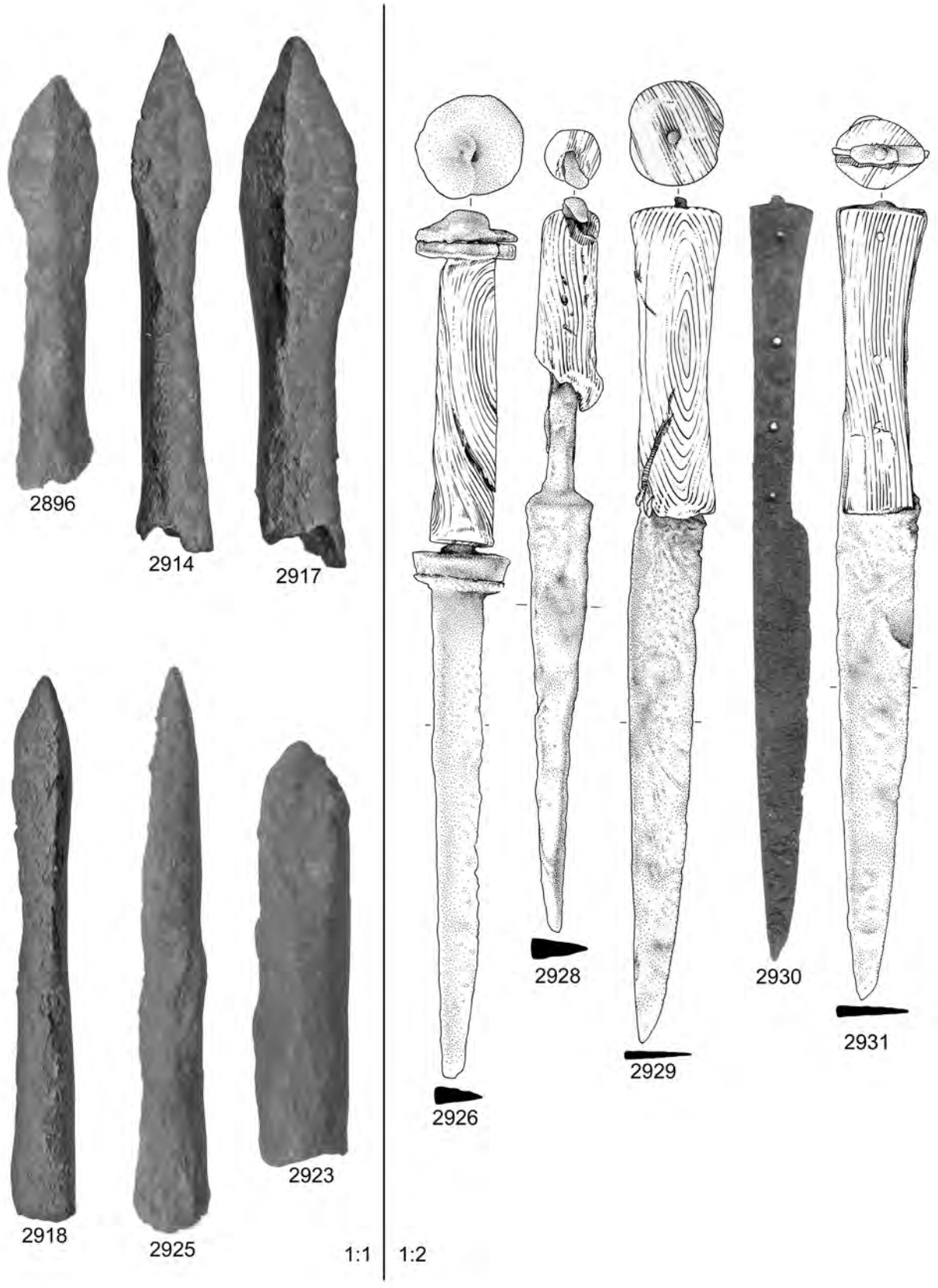
Pl. 40. Later medieval ironwork



Pl. 41. Later medieval ironwork



Pl. 42. Later medieval ironwork



Pl. 43. Later medieval ironwork

forms to shorter, squatter, bullet-like ones. The second type is a quarrel proper , in that it has a square cross-section at the point, which is pyramidal and very short. It is also generally heavier than the first group. All of these are in the Liverpool Museum Collection and are accessioned as 18.11.74.64, indicating that it was Ecroyd Smith who took a particular interest in collecting them in the period before 1874. M. Biddle (1990d) contributed an illuminating discussion based on six finds from Winchester.

Waisted bolts with long narrow points
2888
L 60+mm, L (head) 45mm, W (head) 13mm.
2889
L 80mm, L (head) 55mm, W (head) 13mm.
2890
L 99mm, L (head) 51mm, W (head) 10mm.
2891
L 104mm, L (head) 61mm, W (head) 12mm.

Waisted bolts with leaf-shaped points
2892
L 61mm, L (head) 28mm, W (head) 16mm.
2893
L 61mm, L (head) 30mm, W (head) 15mm.
2894
L 70mm, L (head) 29mm, W (head) 9mm.
2895
L 71mm, L (head) 22mm, W (head) 8mm.
2896 Pl. 43
L 72mm, L (head) 28mm, W (head) 15mm.
2897
L 74mm, L (head) 30mm, W (head) 12mm.
2898
L 77mm, L (head) 35mm, W (head) 11+mm.
2899
L 81mm, L (head) 30mm, W (head) 14mm.
2900
L 81mm, L (head) 34mm, W (head) 13mm.
2901
L 82mm, L (head) 34mm, W (head) 20mm.
2902
L 82mm, L (head) 45mm, W (head) 21mm.
2903
L 83mm, L (head) 35mm, W (head) 13mm.
2904
L 83mm, L (head) 35mm, W (head) 14mm
2905
L 84mm, L (head) 30mm, W (head) 18mm.
2906
L 84mm, L (head) 36mm, W (head) 12mm.
2907
L 84mm, L (head) 42mm, W (head) 18mm.
2908
L 85mm, L (head) 32mm, W (head) 12mm.
2909
L 85mm, L (head) 38mm, W (head) 12mm.
2910
L 85mm, L (head) 38mm, W (head) 19mm.
2911
L 86mm, L (head) 34mm, W (head) 14mm.
2912
L 87mm, L (head) 41mm, W (head) 15mm.
2913
L 90mm, L (head) 21mm, W (head) 12mm.
2914 Pl. 43
L 90mm, L (head) 35mm, W (head) 16mm.
2915
L 90mm, L (head) 35mm, W (head) 16mm.
2916
L 91mm, L (head) 46mm, W (head) 20mm.
2917 Pl. 43
L 94mm, L (head) 55mm, W (head) 19mm.
2918 Pl. 43
L 95mm, L (head) 36mm, W (head) 12mm.
2919
L 101mm, L (head) 64mm, W (head) 11mm.
2920
L 106mm, L (head) 35mm, W (head) 10mm.

Quarrels
2921
L 61mm, L (head) 40mm, W (head) 10mm.
2922
L 70mm, L (head) 34mm, W (head) 11mm.
2923 Pl. 43
L 73mm, L (head) 15mm, W (head) 14mm.

Projectiles of uncertain types
2924
L 94mm, W 11mm.
2925
L 98mm, W 10mm.
Narrow forms, slender cross-section at point, circular at base.

Daggers
Two weapon daggers are recorded from Meols, and four other items identified here as knife-daggers.
2926 Pl. 43
L 120mm (tang/handle) L 20mm (blade), W 6mm; a rondel-dagger, a type defined by LMMC (42–7) as including: 'all forms of dagger with a circular or roughly circular guard.' The Meols example has a tubular wooden grip, or handle, and a circular wooden guard and pommel, the latter backed with an iron disc. Originally , both the guard and pommel may have been sandwiched by metal discs. The rondel-dagger was introduced in the mid-14th century and remained current until the early-16th century (LMMC 42–7).
2927 L 580mm, W (collar) 40mm; (Ecroyd Smith 1873, pl. B,9), a much larger dagger than **2926**. The form of this object is unfortunately not entirely clear from the drawing, but it appears to have had a pommel in the form of a flat plate and a slightly upward curved hilt *c.* 100mm wide. Around the head of the blade there was a collar.
The following four objects are what the LMMC (1940, 53–5) defines as 'knife-daggers'; these tend to be larger than true table knives and can be single-edged, and could perform both as weapons and table knives.
2928 Pl. 43
L 98mm (tang/handle), 149mm (blade), W 21mm (blade); tip of blade tapers. Hexagonal wooden handle.
2929 Pl. 43
L 101mm (tang/handle), 181mm (blade), W 24mm (blade); tip of blade tapers. Plain wooden handle with tang protruding.
2930 Pl. 43
L 108mm (tang) 151mm (blade), 19mm (blade); blade tapers to point. T ang widens at the top. Scales missing. Four rivet holes.
2931 Pl. 43
L 104mm (tang) 167mm (blade), W26mm (blade); blade tapers to a point. Tang widens at the top. Wood scales with

five copper-alloy rivets. End cap of facetted copper alloy/brass.
Two of the 'knife daggers' **2929** and **2928** have whittle tangs: these two have wooden handles, but the cutting edge of **2928** is sharp for only approximately the first 70mm from the rear, after which it appears to have been damaged or incompletely forged. The other two daggers **2930** and **2931** have scale tangs; the tang of the former has concave edges and a projection for an end-cap; that of the latter has wooden scale plates, which are concave on both edges and a non-ferrous end-cap. The blade of **2930** has an un-inlaid cutler's mark in the form of a crown. Unfortunately none of these objects has any distinctive stylistic features, but a date in the 14th–15th centuries is likely.

Shield boss
408 listed under iron objects probably of early medieval date (2.4) possibly Viking-period, or alternatively could be from a 14th–15th-century buckler.
[**2932-2989** numbers not used]

2.7 Post-medieval non-ferrous metalwork and evidence for metal working: AD 1500–50 to 1800–50

Geoff Egan

The dramatic decline in numbers of items in virtually every category also represented among the later medieval finds is primarily an eloquent testimony to the swift decline of the settlement, apparently in the early-16th century. The relatively large number of recovered shoe buckles from the late-17th/18th centuries (perhaps 40) runs contrary to this broad trend and requires some explanation (the 38 post-medieval buttons, though a similar total, seem to have a more even chronological distribution across the 16th–19th centuries, consistent with what might be expected for occasional losses over the period by visitors to the area and its few inhabitants. The wider picture makes it clear that many categories of dress accessories and other goods significantly changed around the time of this medieval/post-medieval transition, allowing relatively easy demarcation from comparanda (see e.g. Egan 2005a). Most difficult of all to account for in the latest period is the presence in the area of the two silver-refining vessels **3130- 3131** (of a category otherwise found archaeologically only in London) and an extremely tentatively identified touchstone (see under haematite polishers), even less certain in date, that could perhaps be associated. These anomalies aside, a few military and naval aspects of the assemblage may be explained by the presence at Hoylake of William III's expeditionary army in the Irish campaign of 1689–90 (although the complete absence of lead shot is surprising) and by the continuing shipping connections, including fishing, and coastal defensive needs up to the 20th century.

(Some inconsistencies may be noticed between the dating of different categories of objects assigned to the end of the 'medieval' period or the start of the 'post-medieval' period. The time-frame is broad and reflects the differing times at which the characteristics associated with the later medieval to post-medieval transition occurred for each category of material).

DRESS ACCESSORIES

Buckles

Copper alloy

Circular
2990 Pl. 44
Plain round, D 22mm; very regular section
Probably post-medieval.

Oval with central bar
2991 Pl. 44 (Hume 1863, pl. IX, 6); 24 x 19mm.

Double oval
2992 Pl. 44
Corroded: 47 x 29mm; slightly uneven outline; opposed fleurs-de-lis flank the bar to just protrude at the sides; scrolling on sides, continuing up to three-quarter roses at almost angled edges.
(?)16th-century.

D-shaped
2993 Pl. 44
21 x 25mm; sprue survives on bar; pin missing.
Dating uncertain.
2994 Pl. 44
25 x 36.5mm; rounded outside edge is internally biconcave (with notch for missing pin at thickened centre) and rebated along perimeter; pair of transverse grooves define bar, which is recessed.
An elegantly moulded accessory – (?)18th-century or later.
2995 Pl. 44
39 x 30mm; moulded frame has rebate along both edges – outside edge (which, like the narrowed bar, is distorted) has notch for the missing pin.
The distortion (from use) would have taken considerable force to effect.

Rectangular with central bar
2996 Pl. 44
One half survives: 18 x 33mm; (?)flat profile; flattish edge is lower than the sides, presumably to accommodate a strap
(?)18th-century.
2997 Pl. 44
41 x 38mm; slightly curved profile; narrowed bar; edges are thickened on outsides with raised band of cording decoration. (?)16th-century.

Hexagonal
2998 Pl. 44
26 x 31mm; somewhat asymmetrical, widened frame has thick outside edge with obliquely grooved ridge (cording) along perimeter.
No parallel has been traced for this unusual form, the date of which is uncertain – cf. cording on **2997**.

Hexagonal with central bar
2999 Pl. 44
46 x 22mm; elongated sides are slightly angled inwards to where bar projects; prominent angled edges have groups of punched circle-and-dot motifs.
(?)16th/17th-century; cf. **3075**.
3000 Pl. 44
21 x 26mm; double-oval apertures; with integral suspension loop; prominent file-finishing.
To suspend a sword belt from, this is a smallish version of a widely known form, e.g. at Norwich and Amsterdam

(Margeson 1993, 28 and fig. 17, no. 178, assigned to *c.* 1600–75; Baart *et al.* 1977, 167, no. 209, assigned to *c.* 1575–1650).
3001 Pl. 44
43 x 28mm; elongated sides; rebated along perimeter.
(?)17th-century or later.

Ornate forms
3002 Pl. 44
24 x 17mm; octagonal frame with mouldings, triangular plate intact.
3003 Pl. 44
(Hume 1863, pl. IX, 18); worn: 32 x 29mm; outside edge has central, bi-lobed openwork motif above a transverse bar; concave inside edge.
Dating uncertain – (?) 16th-century (the openwork might be interpreted as a crown or letter M, but this seems unlikely to have been the maker's intention); no parallel traced.
3004 Pl. 44
(?)A buckle, or possibly a brooch: relatively crude: 37 x 41mm; made from sheeting: six four-spiked terminals radiating from frame with squat, keyhole-form aperture; 'bar' is triply engrailed on inside edge; prominent filing marks on back.
(?)Similar to 'horse-brass' tradition – (?)18th/19th-century.

Separated pin
3005
Apparently cast; L 19mm; transverse ridge by continuous loop; traces of black coating.
Probably post-medieval.

Sheet plates
3006 Pl. 44
Very accreted: one face only visible, 33 x 13mm – probable slot for pin; a spiralled-sheet rivet survives at one corner. The rivet suggests a 16th-century date, by which time such a plate would have been almost out of fashion to judge from London finds (see following item).
3007 Pl. 44
Worn and incomplete: 37 x 23mm; subrectangular, taper slightly to narrower end (other end is broken off at surviving hole of presumed original pair); four holes survive (?of original five), three with spiralled-sheet rivets – the pair (inserted from different faces) retains a rough sheet bar mount on the back; probably an adaptation of a buckle plate – the early post-medieval period saw the disappearance of these from everyday dress fashions, and the few people still wishing to have them seem (from similar evidence in London, e.g. Egan 2005, no. 126) to have used adaptations because there were no manufacturers of new ones left to replace those that became broken.

Mounts

With single rivet
3008 Pl. 44
Neat: circular, D 22mm; hole for missing, separate rivet.
Possibly for furniture; assigned to this period because of its overall regularity (cf. **966** listed as medieval).

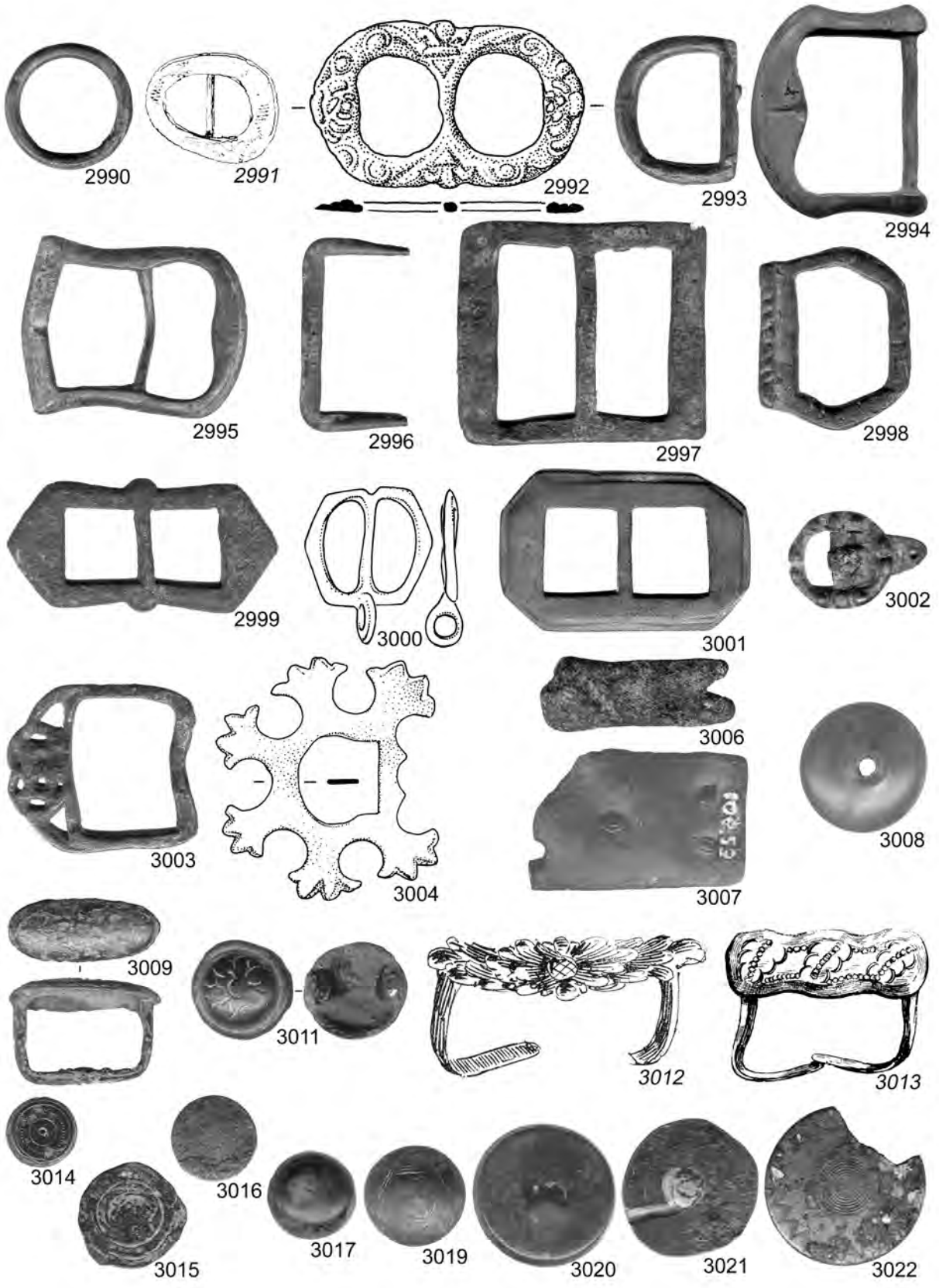
With paired prongs

Copper alloy
These may well include horse-harness decorations, but it is unsure whether that would have been their sole use.
Probably late-16th-17th/early-18th-centuries. Cf. Egan and Forsyth 1997, 219–20, fig. 15.3.
3009 Pl. 44
Oval; 11 x 26mm; (? two prongs bent together in neat rectangle on back) merged in corrosion; now-black coating.
3010
Similar to preceding item, but 9 x 25mm, engraved outline with central constriction on front, and prongs incomplete.
3011 Pl. 44
Domed roundel, D 17mm, with raised border; series of C-shaped stamps (which retain traces of gilding) make up radiating motifs; pair of broken off (?)prongs.
3012 Pl. 44
(Hume 1863, pl. XVIII, 15); W 49mm, showing tooled decoration in the form of three leaves.
3013 Pl. 44
(Ecroyd Smith 1868, no. 21); W 35mm.

Buttons
There are 13 copper alloy and 10 of lead/tin.
Most are from 1600 or later: **3026** may have the head of George II, two from naval uniforms **3015, 3034**, and **3035** with a rose motif, **3036** with foliate decoration, **3022, 3023** are tooled, **3021** has been adapted probably to imitate a farthing, and **3015** has been similarly treated but is less unconvincing).

Copper alloy
3014, 3019, 3025 may be cufflinks, originally in pairs, joined by short lengths of chain.

Circular
3014 Pl. 44
Flat head, D 12mm, with rebated perimeter: tiny central, circular groove and larger, concentric one, surrounded by circle of oblique hatching, with further concentric circle near perimeter; loop missing (the rusted break suggests this was square in section and relatively large, i.e. not typical for a button).
3015 Pl. 44
Completely flattened to uneven diameter of 13mm: anchor motif on horizontally hatched field; lettering on back.
Naval-uniform issue (cf. **3034** of lead/tin).
3016 Pl. 44
Corroded: plain disc, D 14mm, with wire loop.
18th-/19th-century.
3017 Pl. 44
Domed sheet cap, D 15mm; perhaps for a button; white-metal coating.
3018
Slightly flattened: two biconvex sheets; D 16mm, Th 8mm, L of wire loop 5mm; double row of scale motifs around perimeter; pair of holes at back.
Late-18th/19th-century.
3019 Pl. 44
Domed front only: D 18mm; roughly engraved with triangle containing multiply outlined hexagons. (Hume 1863, pl. XIII, 8; Bu'Lock 1960, 21 'silver stud'). Late-17th/18th-century, perhaps from cufflinks.
3020 Pl. 44
Cast: flat head, D 24mm, with bevelled edge; integral, strip-like loop has been bent to shape.
Similar buttons are known in 17th-century contexts from Norwich and Landguard Fort in Suffolk (Margeson 1993, 21–2, fig. 11, no. 104; Egan forthcoming c).
3021 Pl. 44
Completely flattened to uneven diameter of 25mm: button with hints of incuse characters on back – **...EB... ...29...**



Pl. 44. Post-medieval buckles, mounts and buttons

(traces of gilding); no hint of corrosion.
Probably intended to pass as a farthing in the 18th century (thanks to Tony Pilson for putting forward this suggestion for London finds of similarly adapted buttons).
3022 Pl. 44
Incomplete, domed flan, D 27mm; machined decoration – dense concentric circles around faint central device (? tooled three feathers) and machine-engraved perimeter five-line, rounded zig-zag; wire loop. 18th-century.
3023 Pl. 45
D 36mm; elaborately tooled central grid (straight lines in one direction, wavy ones in the other – all dot-hatched) with three lines of foliate motifs across middle and to sides, consisting of crescents, dots and a central rose; traces of gilding; wire loop is missing.
18th-century; the largest button in the collection.
3024 Pl. 45
(Ecroyd Smith 1867, pl. 1,18); front sheet with basket-weave motif from composite accessory (?late-18th/19th-century – cf. Margeson 1993, 21–2, fig. 11, no. 108).

Octagonal
3025 Pl. 45
Slightly domed, 13 x 13mm.
3026 Pl. 45
Corroded; domed octagon, 14 x 14mm; head facing left (?of George II – cf. young or old head with long hair, as on coins of 1727–60), in concave-octagon border (presumably stamped); right-angled tab with drilled hole for attachment. Probably from cuff-links.

Lead/tin

Solid, plain biconical (separate stems are missing unless otherwise indicated)
3027
D 9mm; head corroded and damaged: flat-section copper -alloy wire loop.
(?)Could be medieval.
3028
D 10mm; shank broken off.
This one is listed as post-medieval because of its angled perimeter mould seam (cf. **1829**ff listed as later medieval).
3029 Pl. 45
D 10mm; central pellet; rebated perimeter; integral loop on stem?16th-century.
3030
Corroded: D 14mm; loop or stem missing.

Solid, plain plano-convex
3031
D 12mm; loop broken off.
3032 Pl. 45
D 14mm; corroded iron loop; (modern thread tied on).

Solid disc with integral loop
3033 Pl. 45
Crude: flat disc, D 12mm, with rebated edge (relief spots are corrosion); integral loop is broken off.

Decorated
3034 Pl. 45
Corroded: D 17mm; convex; (in incuse) fouled anchor; rebated border; loop missing.
Cf. **3015** in copper alloy.
3035 Pl. 45
Disc, D14mm; stylised (heraldic) five-petalled rose in raised border; integral loop.
3036 Pl. 45
Cast in three-part mould: eight-petalled foliate design around central annulet; D 14mm, Th 3mm, D of integral loop 8mm.
(?)Late-16th/17th-century.

Single hooked clasp

Copper alloy
3037 Pl. 45 (Hume 1863, pl. IX, 22); cast in one in copper alloy; main part has rose motif.
This form seems to have been used in pairs at each end of a chain etc. in female dress, perhaps across the chest.
Late-15th/early-16th-century; cf. Egan and Forsyth 1997, 231–2, fig. 15.13, Egan 2005a, 42–4, nos 151–5, etc.

Double hooked clasp

Copper alloy
3038 Pl. 45
Sheet strip, L 21 and 50mm, W 20mm, with opposed hook terminals, and centrally set with part-corroded square sheet roughly engraved with saltire cross between border lines on three sides (the engraving seems to have been achieved by multiple scoring, not always on precisely the same trajectories). Broadly similar items (not always as crude as the present object), presumably dress accessories despite the viciously sharp hooks, are known from late medieval and 16th-century London; the precise function is uncertain (?cloak fastener).

Twisted wire loops
A restricted range of diameters is known. The twisted ends are hammered to hold them fast together by slightly flattening them. These very common copper -alloy finds from the (?)late-15th/early-16th century may occasionally have been used singly with a hook as the other part of a clasp, but their main purpose, sewn all over the surface of a textile, seems to have been as a kind of armour against cut-purses in the street (Egan 2005a, 62 and 64, fig. 52).
3397 (listed under 2.15 Glass Objects, as it is threaded through a possible Roman bead) has a similar loop, but, in contrast with those in the present category , this has not been hammered at the twist.
3039
Distorted: D 8mm, L 16mm.
3040
D 9mm, L 15mm.
3041
D 10mm, L 10mm.
3042
Corroded; ends broken off; D 10mm.
3043 Pl. 45
D 11mm, L 14mm.
3044
Incomplete and corroded; twist with only stubs from frame, surviving 10 x 10mm.

(?)Wound wire accessory
The preceding items are arguably one manifestation of a fashion for sometimes very elaborate wound-wire accessories of a variety of categories (Egan and Forsyth 1997, fig. 15.10). The following object is perhaps a component of one such accessory.
3045 Pl. 45
Wire loop, L 32mm, D 26mm, with looped ends (positioned so as to be adjacent), the main circumference having smaller-gauge wire densely and evenly wound

around it. Similar to but slightly neater than Egan 2005a, 55–6, fig. 41, no. 240, assigned to the (?)late-15th/early-16th century.
See also **3783**.

Shoe buckles
The following, of post-medieval date, besides being distanced in time by a prolonged period in which buckles for footwear were completely replaced in fashion by lacing, are sufficiently distinct in form and greater complexity compared with the much smaller , simple ones of the late medieval period, that they can confidently be discussed entirely separately. Small buckles of this category with broad-profile arcs were occasionally used at the knee for britches and (lightweight ones) decoratively on hats. On shoes they span the late-17th and 18th centuries. The fashion is well documented as starting in England in 1659 and it petered out in everyday dress by 1800. Those up to *c.* 1720 are rather small, as are the latest ones when their popularity was in decline. Post-medieval shoe buckles have been studied by Noël Hume and others (Noël Hume 1970, 84–8; Hughes and Hughes 1972; Abbitt 1973; Stone 1974, 25–44). Terminology, and differentiation of some forms other than definite shoe types appear currently not to be exact arts. Ecroyd Smith (1869, 216–7) noted 'three brass, two pewter' from Meols.
3046 Pl. 45 (Hume 1863, pl. IX, 5); 23 x 18mm button type of late-17th century.
3047 Pl. 45 (Hume 1863, pl. XXIX, 4); 20 x 10mm; appears to have been another of these, too, with a post-medieval mount in the shape of a fleur-de-lis attached.

The Meols assemblage, with perhaps 40 of these buckles represented, seems to be the largest and most diverse retrieved in the field in the country. Two fashionable 18th-century examples, **3066** and **3052**, show very little sign of deterioration in the ground (cf. Ecroyd Smith 1868, 126 'buckle…three by two and a quarter inches, 18th-century , with double pin perfect'). These may possibly be explained by occasional early excursions on the part of local gentry (or at least the leisured, well-to-do) interested in the ancient remains – the presence of so many of these prepossessing accessories possibly being attributable to misjudgement of unfamiliar ground conditions, resulting in losses in the mud (against this, none survives in place on a shoe). Two of the lead/tin finds have maker's names or initials on the tabs: ALMAN, TP (**3052** and **3082**).

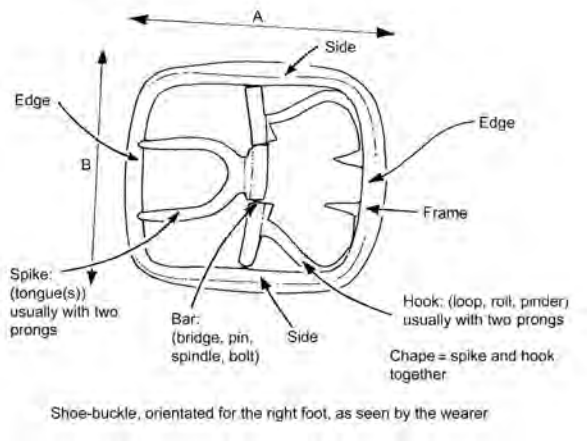


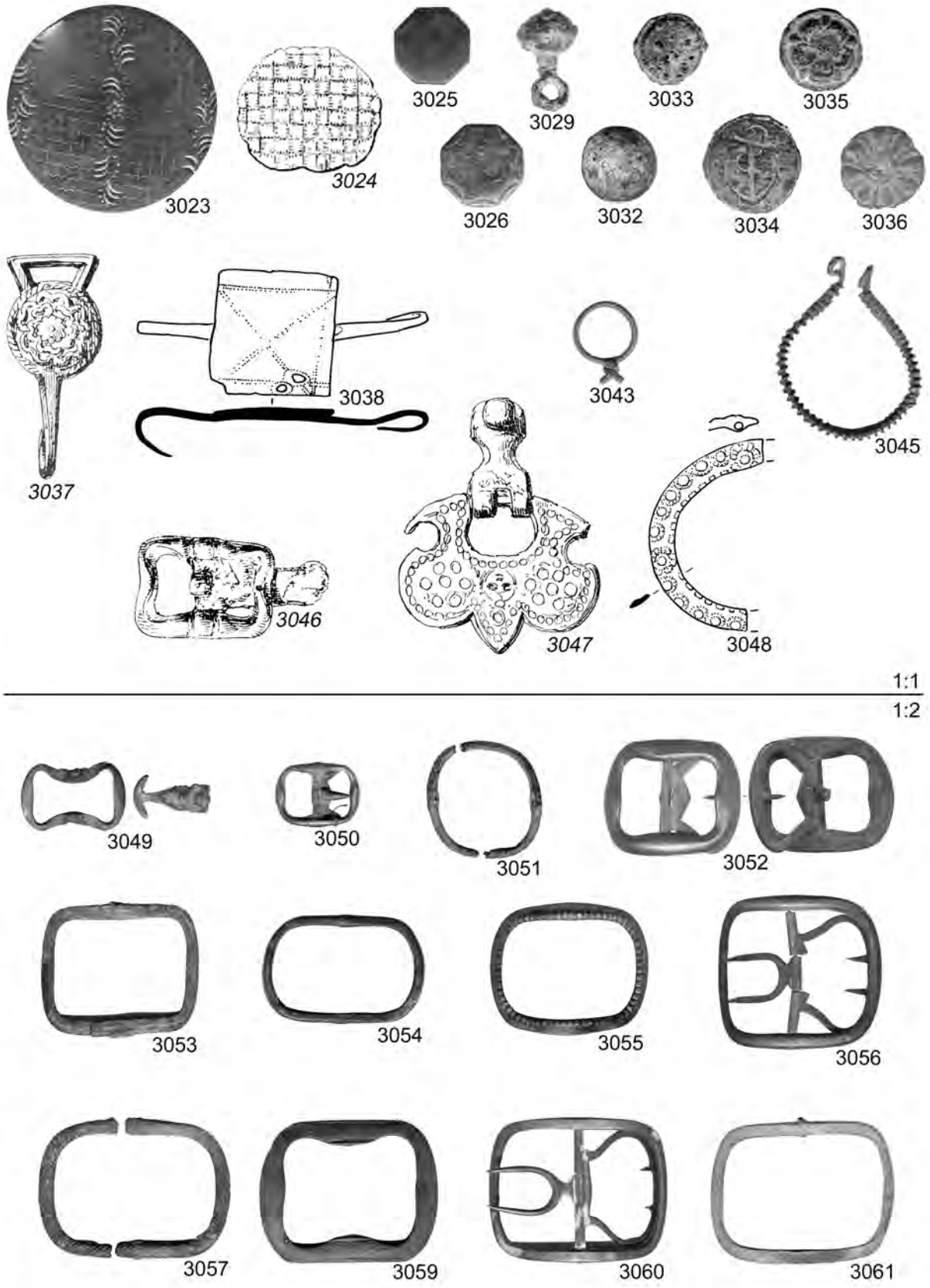
Fig. 2.7.1: Shoe Buckles – terminology (drawn by Nick Griffiths)

(The terminology employed seems to seek variation from that used for some parts of other buckles, perhaps to emphasise some significant differences in the present category.)
All frames (of various materials, sometimes highly ornate) have an arched profile (unless indicated otherwise) and a bar (invariably of iron). Early examples to (?)*c.* 1720 also comprise a strap-like tab with a hooked tab or button for attachment – see **3049, 3066, 3082**, all of copper alloy or iron. Later fashions tend to be larger , and have a tongue (those below have two inward-pointing prongs, unless indicated otherwise), and a hook (again with two prongs to give a fork-like shape, unless indicated otherwise). The tongue in these may extend beyond the frame, but it would not have been visible when worn. The later frames, at least, were manufactured by specialised buckle makers (when cut from iron/steel for the most expensive of the available range – high-class products, which are not represented among the finds – these other metal components were the products of specialised 'chape makers'). The hook secured the buckle permanently to one of the shoe' s two leather straps and the tongue was secured to the other , both together holding the shoe in place.
Only the frames survive, unless specified otherwise.

Oval/ovoid

Copper alloy
3048 Pl. 45
Fragment of (?)oval frame: surviving 34 x 19mm; rosettes at surviving cardinal points; between are a row of daisy-like flowers along the outer side and a row of raised rectangles along the inner side.
3049 Pl. 45
Concave-sided ovoid frame: 36 x 23mm; moulded around bar; transversely set crescentic attachment terminates tab.
(?)*c.* 1660–1720

Oblong (= rectangular with rounded corners)
3050 Pl. 45
Oblong frame: 29 x 21mm; single-pronged hook and part of tongue survive.
3051 Pl. 45
Oblong frame broken in two: 38 x 35mm.
3052 Pl. 45 (Anon 1876, 186).
Oblong frame, 49 x 40mm, with all sides convex on inner edge; copper-alloy tongue has single prong and integrally moulded maker's mark: **ALMAN** in rectangle; fork-like hook is broken off.
No sign of corrosion.
3053 Pl. 45
Oblong frame: 51 x 44mm.
3054 Pl. 45
Oblong frame: 56 x 37mm.
3055 Pl. 45
Oblong frame: 56 x 45mm; transverse ridges along inner perimeter.
3056 Pl. 45
Oblong frame: 58 x 53mm: hook and tongue survive, both two-pronged and of copper alloy; little sign of corrosion.
3057 Pl. 45
Oblong frame: corroded and in two pieces; 61 x 45mm; fine oblique grooves (cable decoration) around entire frame.
3058
Oblong frame: 61 x 45mm; rust from missing tongue (see **3083**).



Pl. 45. Post-medieval buttons, clasps and shoe buckles

3059 Pl. 45
Oblong frame with convex inner sides: 63 x 49mm.
3060 Pl. 45
Oblong frame: 64 x 49mm; hook and distorted tongue both with two prongs and of copper alloy; little sign of corrosion.
3061 Pl. 45
Oblong frame; 64 x 48mm: whitish, powdery coating (gunmetal – Appx 2; whitish material could be a corrosion product).
3062
Oblong frame: 68 x 48mm; corroded and in two pieces.
3063 Pl. 46
Deeply arched, oblong frame: 76 x 71mm; entire circuit is scalloped.
The deep arch may indicate a date around the late-1770s (cf. Hughes and Hughes 1972, 13, 'harness buckles').
3064 Pl. 46
Worn fragment of edge and side of oblong frame: surviving 30 x 48mm; moulded with series of paired, raised squares.

Lead/tin
Ecroyd Smith (1868, 126): 'pewter buckle…two and a half by two inches, with single pin and pivot of brass.'
3065 Pl. 46
Oblong frame: 87 x 66mm; decorative lead/tin upper face on copper-alloy armature; beading around perimeters flanks pair of lines of minute transverse hatching to each side of central plain ridge.

D-shaped

Copper alloy
3066 Pl. 46
38 x 32mm; moulded apart from plain outside edge; tongue survives; plate for double-hooked attachment tab has central scallop motif.
(?)*c.* 1660–1720; the virtual absence of visible deterioration suggests that this can only have been briefly lost in the ground.

Rectangular

Copper alloy
3067 Pl. 46
34 x 26mm; slightly concave sides have centrally raised areas with transverse grooves; prominent file finishing on edge has left central areas apparently moulded as if for pin notch, etc., though the placement means this is not usable. Compare the form for 18th-century shoe buckles, though not arched in profile.
3068 Pl. 46
Worn; distorted and incomplete: surviving 53 x 42mm; one edge and parts of both sides survive; cable motif running centrally, with Rococo foliate motifs at corners and centre of each side.
3069 Pl. 46
70 x 50mm; pair of grooves lengthways – each has a line of beading along the bottom of the trough.
3070 Pl. 46
One edge missing: surviving 57 x 46mm; hook and tongue two-pronged.
3071 Pl. 46
44 x 1mm; rebated frame with moulded edges and sides.
3072 Pl. 46
46 x 35m; paired incuse border lines with incuse foliate motif in middle of each side and edge.
3073 Pl. 46
Edge and side fragment, surviving 23 x 36mm; moulded with pellets in guilloche comprising two grades of beading.
3074 Pl. 46
Frame fragment, surviving 88 x 45mm: edge and two sides (one incomplete) of elongated-ladder-like openwork.

Hexagonal

Copper alloy
3075 Pl. 46
(Ecroyd Smith 1868, pl. no. 22, shown with tongue)
46 x 25mm; perimeter grooves along sides; stamped stylised-rosette, hatched-crescent (x 4) and pelleted-roundel (x 3) motifs at each end.
(?)Late-17th-century, cf. **2999**.

Frame fragments

Copper alloy
3076 Pl. 46
(?)Side fragment, surviving L 43mm: large, daisy-like flowers among Rococo mouldings.
(?)1730 or later.

Lead/tin
3077 Pl. 46
Fragment of ladder-like openwork with lentoid motif at each span; surviving L 43mm.
3078 Pl. 46
Fragment of openwork of elongated ladder -like frame, curving at one end; surviving L 48mm.
Cf. Swann 1981, fig. 40 top centre, assigned to the late-18th century.
3079 Pl. 46
Fragment of side, surviving L 68mm, of (?)side of (?)oblong frame of openwork with beaded perimeters and running motif of flowers on pair of intertwining cables.
3080 35 x 53mm; edge and side fragment, openwork of slots between flower motifs, flanked by lengthways ridges.

Attachment tabs

Copper alloy
3081 Pl. 46
(?)Attachment tab: 19 x 12mm; terminal circle with flower-like motif of seven pellets around central knop (actually the head of a separate rivet), adjoining expanding tab broken off at possible fold and with central slot.
Somewhat rough for a post-medieval accessory, this particular form seems not otherwise to have been noted as part of a shoe buckle in the tradition discussed here.
(?)Late-17th-century if correctly identified.

Lead/tin
3082
Button-form terminal, 36 x 20mm: integrally cast mark: crown over **TP**.
(?)*c.* 1670–1720.

Hooks [tongues]

Copper alloy
3083
Hook with single spike; 24 x 29mm (may have gone with frame **3058**).
3084
Single-pronged frame and single-prong pin, 21 x 26mm, (held on by modern tailoring pin in place of original bar).

Presumably a post-retrieval marriage of a shoe-buckle tongue and an unrelated, ordinary buckle pin.
3085
Fragment: 20 x 28mm.
3086
Fragment: surviving 30 x 44mm; pivot and part of frame sides.
3087
41 x 31mm.

Spikes [hooks]

Copper alloy

Bifurcate
The prongs curve from a single point on the bar.
3088
39 x 20mm.
3089
30 x 13mm.

Trifurcate
These are known on some knee buckles assigned to the 1780s and 1790s (used to fasten legs of breeches just below the knee), and some stock buckles of *c.* 1720–90 (the frames of which had three studs to attach to one end of the stock – Swann 1981, fig. 75 middle centre and bottom, fig. 79 top left, and fig. 82 middle and lower right, assigned to the 1760s to 1795). All the comparanda cited here appear to have had rebate ends to the pivoting bar, which in the item following is of one diameter throughout.
3090 Pl. 46
W 39mm, L 17mm; straight prongs extend directly from bar
3091
As **3090**, but incomplete: W 33mm, surviving L 17mm; the two outer prongs have their points broken off.

Pins
Ecroyd Smith (1868, 126) noted two brass pins 'of the 17th century;' (cf. Ecroyd Smith 1872, 145) six 'with semi-globular heads, probably 16th or 17th-century.' Headless pins are listed under Miscellaneous because of the difficulty of assigning reliable dating.

Decorative heads
3092 Pl. 46
Spiralled-sheet shank, with terminal of pair of opposed, outward-facing lateral spirals; L 38mm.
Cf. Woodfield 1981, 92 and 94, fig. 5, no. 40 from a 16th-century deposit at Coventry, see also on next item. This particular Tudor-period form, made from sheeting is to be distinguished from similar, cast version in which the pair of spirals face inwards towards each other, and which is assignable to the early medieval period (e.g. Woodfield 1981, 94, and fig. 5, no. 40 from Coventry, Malcolm and Bowsher 2003, 265, fig. 165, no. M35 from London).
3093 Pl. 46
Spiralled-sheet shank, with damaged terminal consisting of at least four down-bent tabs with upwards-spiralled ends; L 50mm.
(?)Early-16th-century; perhaps a hat or headdress accessory; the overall effect would have been almost flower-like. A similar item has been recovered in Hereford among an assemblage of largely late medieval/early post-medieval metalwork from the River Wye beside the main bridge (Egan forthcoming d, acc. no. 153a).
3094
Spiralled-sheet shank, surviving L 35mm, from a pin or a needle; probably analogous to **3092–3093** above.
3095
As **3094**; surviving L 42mm.

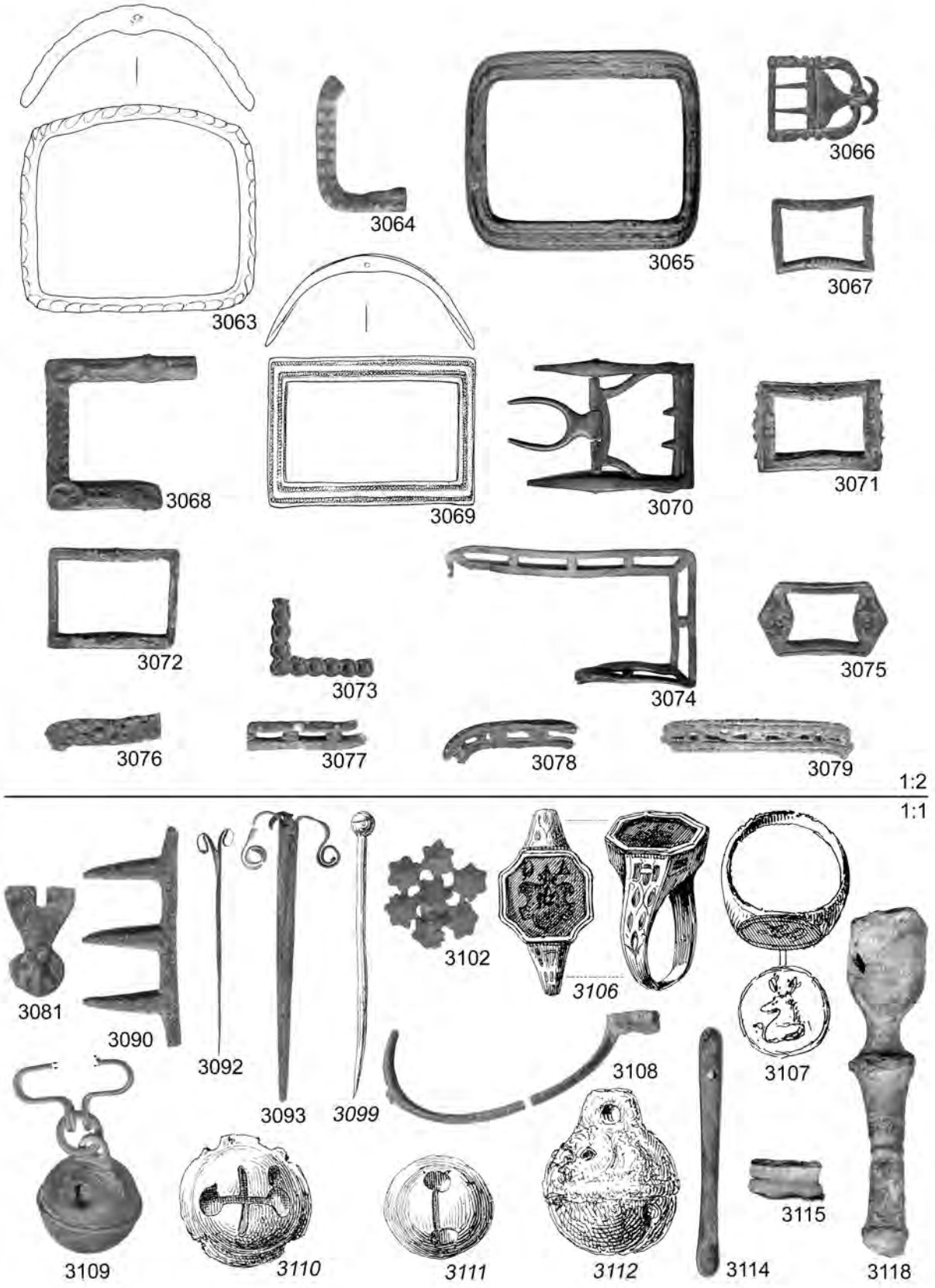
Plain, spiral-wire heads on wire shafts
These are more tightly crimped and neater than those assigned to the medieval period (see **1958**ff).
3096
L 31mm.
3097
L 42mm.
3098
L 43mm.
3099 Pl. 46
(Hume 1863, pl. XXIII, 5); L 48mm.
3100
L 57mm.
3101
Point broken off; surviving L 23mm.

Brooches
Hume noted a cruciform silver brooch he assigned to the 17th century, 'procured from a farmer's wife near Hoylake' (Hume 1863, 79) – (?)lost; it is unclear whether or not this was actually found in the area.

Copper alloy/iron
3102 Pl. 46
Ornate, circular form: D 19mm; convex openwork sheeting of six six-armed stars surrounding a central one, each with a separate star of iron sheeting riveted to the front; loop and remains of pin, both of copper-alloy wire on back.
The original appearance of this trinket would have depended largely on the surface treatment of the iron – a metal very rarely used on the visible parts of brooches in the medieval period (the writer has only ever seen one of that is made substantially of iron – a circular, open frame from London, private collection). Post medieval, probably 18th–19th century, though the complexity of manufacture may perhaps point to an earlier date; this could perhaps be the one noted as 'temp. Queen Anne' by Ecroyd Smith (1869, 217).

Finger rings

Copper alloy
All are probably post-medieval.
3103
D 18mm; thin sheeting, Th < 0.5mm; butt-joined; stamped **EVER THINE** on reeded field between raised edge lines. Probably 20th-century.
3104
Slightly distorted: D 19mm; D-section, Th 2mm.
3105
D 19mm; D-section, Th 4mm; multiply stamped from punch(es) on inside at join, lowering a subrectangular area (if these were three letter, etc. stamps they are no longer legible); hints of gilding.
The stamps may have been to aid the joining rather than to imitate a hallmark.
3106 Pl. 46
(Hume 1863, pl. XXIV, 1); engraved hoop; octagonal bezel with AG over ornate shield with ?fleur-de-lis).
See also **3783**.
3107 Pl. 46 D 23mm (Hume 1863, 281 and pl. XXVII,7); seal ring with stag's head; cf. crest of the Stanleys of Hooton and Storeton (Foresters of Wirral); (Liverpool Museum acc. no. 5718, 'brass' – Gatty card).



Pl. 46. Post-medieval shoe buckles and other items

Spectacles

Copper alloy
3108 Pl. 46
Two joining fragments of oval frame; overall surviving 45 x 18mm. (?)18th or 19th-century (cf. W oodfield 1981, 92–3, fig. 5, no. 37, assigned to the mid-16th century)

Bells

Copper alloy
3109 Pl. 46
Crotal type: (?)sheeting; D 19mm; attached by ring to oval slide/holder, L 22mm, suitable for putting on a strap; retains pea; (labelled '29/6/94' – presumably the date this item was found).
3110 Pl. 46
(Hume 1863, pl. XXVI, 7); D 22mm, sheeting; cruciform opening with two dumbbell ends and two plain.
3111 Pl. 46
(Hume 1863, pl. XXVI, 8); D 19mm, sheeting; dumbbell-shaped opening.
3112 Pl. 46
(Hume 1863, pl. XXVI,10); D 22mm, (?)cast with suspension loop at top.

HOUSEHOLD GOODS

Pewterware
3113
Fragment of hinged lid, D 52mm+: fixed, rebated and flanged edge portion with two tubular housings for missing hinge pin for missing opening portion.
Perhaps a box for tinder or tobacco. Dating uncertain – cf. Egan 1998, 190–1, nos 535–6 (flat lids from the later medieval period).

(?)Scent bottle spoon

Copper alloy
3114 Pl. 46
Sheet strip, L 43mm x 4mm; with rounded ends, one having a concavity for the scent, the other holed, perhaps for attachment. Presumably 18th-century or later.

FIXTURES

Window cames

Lead
The milled reeding, introduced some time during the 16th century, shows that at least the first two fragments listed are of post-medieval date (there is no certain medieval window lead among the Meols assemblages).
Ecroyd Smith (1866, 218) noted 'frame of window pane, of triangular form, probably from one of the last tenanted houses of ancient Meols.'
3115 Pl. 46
Reeded scrap; L 12mm.
3116
Reeded scrap; L 23mm.
3117
Solder, 20 x 13mm, from join of four lengths (in the absence of any definitively medieval window lead from Meols, this item is listed here in view of the dating of the two preceding items).

FURNISHINGS

Curtain rings
All but one of those recovered are solid copper -alloy rings with irregular profiles – a form known from the 14th century, continuing unchanged up to at least the 1700s. Since it is impossible to differentiate between medieval and, the usually more plentiful, post-medieval ones, all those of this form in the collections are listed under the later medieval period, above (**2026**ff) in view of the broader chronological emphasis of the present assemblage. The exceptions **3853** and **3860** are of a more recent, hollow form, assignable to the 19th/20th century , and are listed under Miscellaneous.

Candlestick

Lead/tin
3118 Pl. 46
Abraded and incomplete: small candlestick with base and lower end of stem broken off; surviving H 58mm; moulded stem with bladed knop; damaged cup lacking rim, internal D 10mm (a void in the side from casting fault would mean it leaked if used).
This could have been for a tiny candle (though impractical because of the casting fault); the cup would have been even less suitable for a rushlight; it is slightly large for the usual run of early (17th/18th-century) playthings (cf. Egan 1996a, fig. 32).
(?)18th/19th-century.

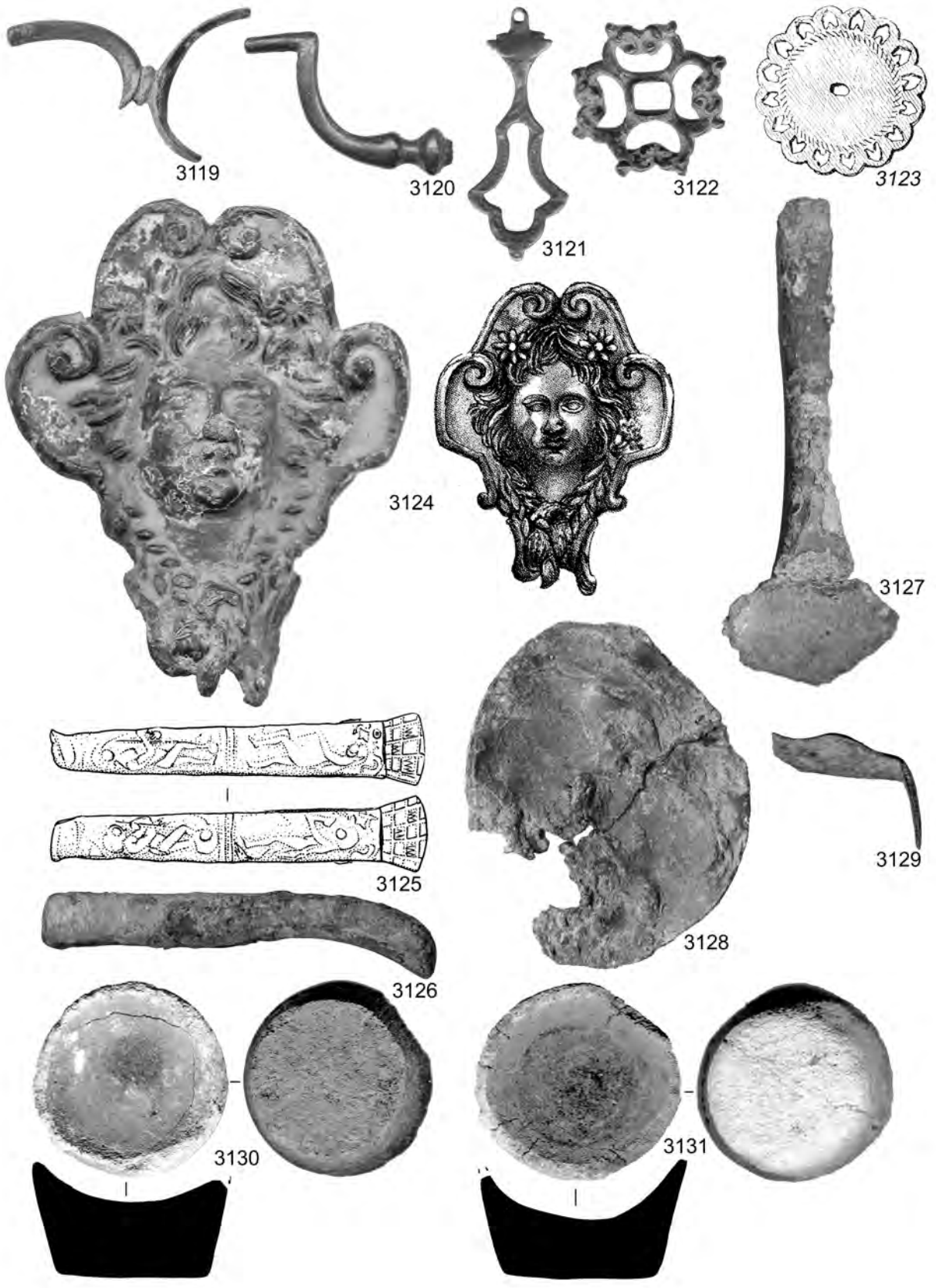
(?)Candle snuffers

Copper alloy
3119 Pl. 47
Fragment, 42 x 24mm, of delicate, ornately moulded, scissor-action implement: part of finger/thumb loop joined by collar to curving handle shank.
Probably 18th-century (this fragment could alternatively be from a pair of ornate scissors).

Drawer handles

Copper alloy
3120 Pl. 47
Incomplete drop handle: surviving L 35mm; central reel between moulded constrictions (one of which survives).
Cf. Nöel Hume 1974, 228–9, fig. 72.4, form assigned to *c.* 1720–40.
3121 Pl. 47
Elongated, pendent handle, L 43mm, W 18mm, with bell-like profile, and delicate Rococo moulding that retains traces of gilding at the low points; rebated at top to tab holed for suspension.
(?)18th-century; presumably from a jewellery casket.
3122 Pl. 47
Openwork quatrefoil escutcheon, D 26mm, with square central hole and moulded floral scrolling on perimeter.
3123 Pl. 47
(Hume 1863, pl. XIII, 10); an ornate, circular escutcheon plate, D 30mm.

Decorative mount
3124 Pl. 47 (Ecroyd Smith 1878, pl. 8.5 – the face appears more youthful in this illustration); republished as Roman by Thompson Watkin (1974, 280 – 'portion of the handle of a small vessel … [which] seems … to bear the impress of Roman workmanship').



Pl. 47. Post-medieval furnishings, cutlery and metalworking items

Cast: four-lobed cartouche with (?)three prongs at base (possibly damaged here); 90 x 72mm; facing, (?female) head with hair swept back at sides and (?)knot on top (flanked here by daisy-like flowers); wreath of lanceolate leaves around the neck terminates in (?)knot; border line in upper part with spirals; traces of green paint on front and back.
(?)18th/19th-century; possibly a horticultural fixture (?representation of Flora/Abundantia).

CUTLERY

Knife handles (copper alloy)
See also post-medieval iron knives **3163–3168**.

3125 Pl. 47
Cast end cap and scales: L 63mm, W 13mm; splayed cap with crudely engraved grid, some alternate squares having engraved zig-zags; sheet scales (over decayed ?wooden frames), each stamped with the same two complex scenes facing in different directions of (?) the Temptation of Adam and Eve (respectively nearer to and further from blade); probably 16th century . Comparable with the scene on sword handle fragment **3141**.
3126 Pl. 47
Handle: L 68mm, W 8mm; from a small folding (?)knife (blade and other iron parts are lost, presumably corroded); narrow scales, triply facetted lengthways (flat by pivot), held together by one rivet, and curving at far end from lost pivot for blade. (?)18th century – this small implement may have had some specialised function, e.g. (?pen)knife/razor.

Spoons (lead/tin)
3127 Pl. 47
Stem and bowl both incomplete and corroded: stem has flattened-oval section; rolling marks and some scratches on bowl: L 87mm+; bowl D 31mm; handle W 5mm.
The bowl of this large-sized implement may well have been oval; probably late-17th/18th century.
3128 Pl. 47
(In two pieces): much abraded and (?)part-melted bowl; the present state suggests an original oval shape; surviving fragment 46 x 56mm.

METALWORKING

Sheet copper alloy working
3129 Pl. 47
Offcut, 29 x 19mm: bent; (?) the wavy edge could be that of primary production sheet (cf. Egan 2005a, 134–5, nos 657, fig. 127, 669, 677, and 679, assigned to the late-15th/early-16th century).

Copper alloy casting
See crucible fragments **3498–3499** (apparently used for copper-alloy casting visual analysis only – assigned to the post-medieval period).

Silver refining
3130 and **3131** Pl. 47
Bone-ash cupels: both Ds 32mm, Hs 18 and 17mm; heavy with lead from silver refining – Wts respectively 34.5 and 27.7g (Appx 2).
These are so far only known otherwise from a limited number of finds in the London area assigned to*c.* 1600 and later (cf. Bayley *et al.* 2001, 19–20, fig. 32). Any connection with the hints of possible pre-1600 silverworking from Meols would mean these items were in use over a much longer period and perhaps more than two centuries earlier than is currently attested.

Moulds
(?) Lost: Ecroyd Smith (1868, 126) notes moulds for rifle bullets (presumably of lead), of two sizes, from the 18th century, found around the village of Great Meols; 1868, 121 'part of a mould with circular hollows' (??for bullets); Ecroyd Smith (1869, 217) – notes a heptagonal one made of 'pipeclay'.

SALT REFINING

Ecroyd Smith (1868, 126) noted specimens of calcareous incrustation from (?)ceramic brine pans of the salt works formerly existent on Hilbre Island under 'later English' finds.

TRADE

Lead cloth seals
The small assemblage of three post-medieval seals is diverse, both in terms of the origins of the textiles attested and in its chronological span, which probably covers the 16th to late-17th centuries. Despite its limited size and difficulties in identifying some of the items with precision, the group comprises the beginnings of a profile that is recognisable as plausible (largely determined by the presence of the local Lancashire issue) for this specific area, when seen against emerging local patterns elsewhere that are based on larger assemblages (see Egan 1995b, 324, fig. 1, which is essentially a pattern of textile consumption in London; Egan 2001, 43–8 for Salisbury , NAU 1998, 25 and 46 for Norwich, and Egan forthcoming c for Saffron Walden in Essex).
There is a post-Restoration alnage issue (an official cloth-tax receipt as well, in theory , as a guarantee of good quality, based on examination of the specific textile to which it was originally attached), which has a local stamp, an import for a fustian from Augsburg in south Germany , probably from the late-16th century or the first quarter of the 17th century, a seal stamped with the personal (privy) mark of an unidentified weaver or clothier , likely to date from about the same period (it is uncertain whether this is English or an import). See (?)lost seal for a possible medieval import.

In the following descriptions, // = next disc.
3132 Pl. 48
Incomplete, four-disc form; Ds 14mm // 14mm:
4(3) // (missing) // (missing) // [LAN]/CAS[T]/ER
Late-17th-century alnage seal (the closing stamp probably signifies the county of Lancashire rather than its county town – cf. COM LANCESTER Y on earlier , two-disc county seals of James I and Charles I found in London – see Egan forthcoming e, and Egan 1995A, 26, no. 16, fig. 10, for what is probably a similar seal closed with an 'Essex' stamp); the numeral on the present stamp is likely to be the length of the textile in yards.
Several parallels for the present, post-Restoration issue, that have been unearthed in the capital include one for a penny-halfpenny cloth tax dated (16)88 and another for twopence halfpenny (undated); various numerical specifi-

cations for the textiles are given – 34, 38, 44, and 64. The only other alnage seal certainly from the region is a fragment of a George-I issue excavated in the centre of Liverpool (Warhurst 1985, no. 1; three others from the Mayer collection, now in NML, have no recorded findspots – acc. no. M 12878 for a late-16th/early-17th-century Norfolk worsted, and acc. nos M12877 and M12879, which are both late alnage issues).
3133 Pl. 48
Corroded: weaver's/clothier's seal: 23mm // 23mm:
– // partially registered privy mark (??) C on bar of T, all on conventional W-form base
Stylistically late-16th/early-17th-century.
(?)Cf. Ecroyd Smith 1867, 187 'a merchant's cloth mark' (this seems more likely to refer to the present item than does Ecroyd Smith 1868, 120 – a 'merchant's mark, with an urn-shaped ornament or sign').
3134 Pl. 48
Augsburg import; D 19mm:
(missing) // ornate letter A with annulets
The letter is the initial standing for the city in southern Germany. Augsburg seals are the most common and widespread of all imports found in England (Egan 1995b, 319 and 324, fig. 2; cf. Egan 1995A, 106, nos 308–10, and 2001, 70–1, nos 143–54 for a dozen found at Salisbury). A complete example with a slightly different stamp has been excavated in Chester (Chester Archaeology: CHE/25 BS'01, no. 8322).
Augsburg's fustians (mixed linen and cotton fabrics) were very popular in England in the 16th and early-17th centuries, their production and trade being ended as a result of actions in and around Augsburg during the Thirty Years' War. The disc missing from the present find would probably have had a pinecone, which was the city's heraldic symbol.
A petition of 1621 shows that fustians (made of the same materials as those in the Augsburg textiles) had been woven in Lancashire since the turn of the 17th century, with production reaching 40,000 per year. By 1641 these Lancashire fabrics were being exported through London (Wood and Wilmore 1927, 38–9). The success in the 1600s of this local manufacture suggests that the present seal probably dates from the late-16th century.

Weights
The two survivors are both for testing the metal content of post-medieval gold coins (none of which survives in any of the Meols collections, though finds are recorded; see 2.24).
Ecroyd Smith 1868, 126: weight for a quarter ounce (material not specified); presumably post-medieval.

Copper alloy

Discs
3135 Pl. 48
D 16mm, Th 2mm; incuse 3 P / 10 6 in individual characters poorly stamped on both faces; Wt 4.0g.
18th-century weight for a half guinea (10 shillings and 6 pence).
Cf. Withers and Withers 1993, 189–90, nos 1823g and 1825g, though the present item lacks a maker's stamp.
3136 Pl. 48
D 18mm, Th 2mm; incuse S / 18 in rough beaded border on both faces; Wt 6.2g.
Cf. Withers and Withers 1993, 185–6, nos 1814c and 1816e, and Biggs 1995, 34–5. Very light for a Portuguese gold coin issued in the mid-18th century, the half Johannes at 7.16g and equivalent to 18 shillings (= '18S').

Stone
(?)Lost: Anon 1878, 166: evidently used as a pound weight, Y/W:E and 16 oz / IP engraved on the side; exhibited to antiquarians by John Clare of Hoylake, near which it was found on the sea shore.

HORSE EQUIPMENT

Hasp

Copper alloy
3137 Pl. 48
Oval with integral plate: 40 x 34mm; angle-ended plate with pair of notches in each side has two holes for attachment (both showing signs of having been under considerable strain). Probably too robust for a dress accessory, this may be horse equipment; probably post-medieval

Harness mounts

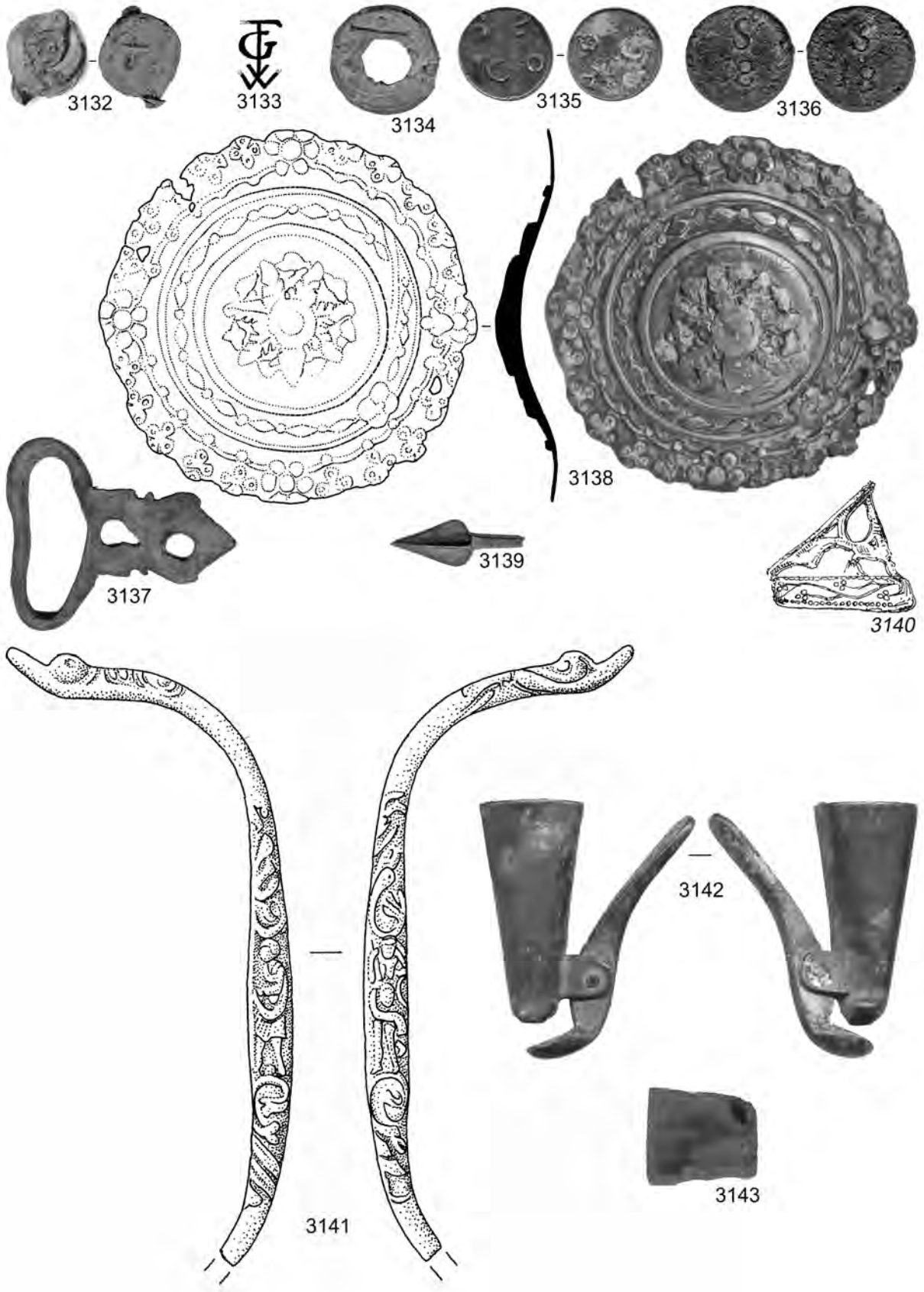
Lead/tin (etc.)
3138 Pl. 48
Partly corroded, robust roundel, D 64mm; some abraded areas; elaborately detailed in relief (some parts of the design including most of the high relief have a dull, golden colour, contrasting with the silver (lead, Appx 2) of the field: central, snowflake-like six-fold motif on dome, which has plain border line; rebated to circle with four-petalled roseate flower and running motif of alternate lozenges and pellets, with plain border line (interrupted at one point by intrusive curving ridge); again rebated to border with four daisy-like sexfoils (one apparently with an additional, tripartite motif) with series of quatrefoils over corded arcs joined by pellets between; moulded border reflecting the relief decoration; traces of possible iron fixture in hollow back; two possibly original holes near the perimeter provide an alternative means of attachment.
An elaborate, showy harness mount of the kind that became fashionable in rural areas for shows from the mid-19th century onwards (Read 1995, 180).

LEISURE

Toys
Only the item listed here can be positively identified among the surviving finds from Meols as a plaything most likely intended for children. The anchor was presumably from a seaside toy in the form of a model boat (this could perhaps have been owned by an adult). Identification of lead/tin fragments **2366** and **2370** are more speculative. See also candlestick **3118**.

Copper alloy
3139 Pl. 48
Fragment of miniature anchor: end of one arm with fluke, 24 x 8mm.
Anchors of lead or copper alloy are usually all that remains from wooden model ships.
Presumably post-medieval; cf. Egan 1996a, fig. 36 right; a comparable item was found in a 19th-century fort on the Essex coast at Harwich (Major 1994).

Lead/tin
3140 Pl. 48 (Hume 1863, pl. XXVIII, 7) an openwork fragment, presumably of lead/tin, 25 x 21mm; then surviving as a triangle with trefoil foliate motif along band.
(?) 16th–17th century.



Pl. 48. Post medieval lead cloth seals, toys, etc.

Pl. 49. Post-medieval gimbal and sundial

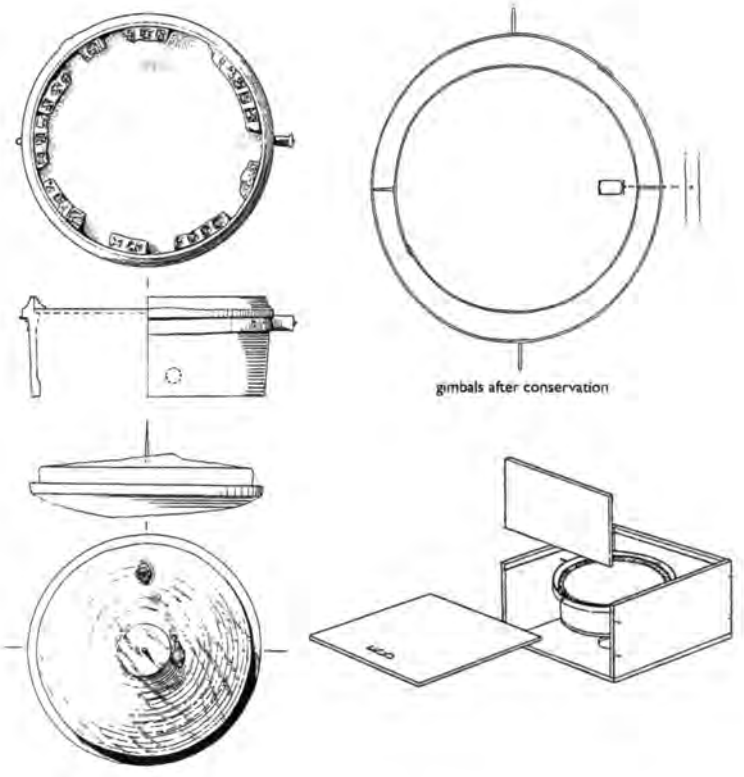


Fig. 2.7.2 Gimbal from the Mary Rose (after Stimson 2005, fig. 7.6) © Mary Rose Trust

WEAPONRY

Rapier handle

Copper alloy
3141 Pl. 48 (Ecroyd Smith 1868, pl. opposite p.103, 16). Outer, curved knuckle-guard fragment, L 111mm: cast with bird's-head foliate terminal and (?)Adam sowing seed with foliate motifs above and below , and (?)Eve holding apple with serpent in foliage above and foliate motif below (?)18th-century.

Gunpowder flask nozzle

Copper alloy
3142 Pl. 48
Slightly battered: L42mm, Th 46mm; conical sheeting, with pair of lateral tabs to hold riveted swivel with moulded thumb-piece (presumably originally on a spring) and domed cap intended to block hole at nozzle's narrow end (wear here means this is not quite achieved).

Gun flint
3143 Pl. 48
19 x 17mm; mid-brown colour: trapezoidal, a relatively small version.

Bullet moulds
(?)Lost: is Ecroyd Smith 1868, 126: 'four … for casting rifle bullets … of two sizes and found about the village of Great Meols' (assigned to the 18th century; material(s) not specified).
See also bone hand-gun handle plate **3193.** Hume (1863, 297–301) discussed firearms at some length, but apart from these, the only known post-medieval firearm accessories known from Meols are a musket rest **3179** and a more recently-found iron small shot **3180**.

NAUTICAL EQUIPMENT

Gimbal
3144 Pl. 49
Two-part frame to hold a ship's compass constantly level at sea: copper-alloy circular frame: slightly distorted; original D estimated *c.* 70mm; broken at two points (there is solder at one of these points indicating use after this damage); D-section, W 3mm; hole at each cardinal point, two of which (at opposing poles) each hold a soldered, outward-facing tube.
The tubes were presumably intended to pivot in outer housings, while the other holes would themselves have supported the side pins of the actual compass, keeping it level in the rolling sea; dating uncertain (the Mary Rose' s two compasses in which the gimbals survive from 1545, 81A0802 and 81A0071, respectively at Ds 38 and 41–2mm, with Ws 6–8mm, are the earliest known (Stimson 2005, 267–71) – (?)17th/19th-century.

(?)Sundial component
3145 Pl. 49
Corroded fragment (just under one-third) of triangular - section ring dial from hand-held instrument: D *c.* 60mm; pointed triangular and blunt curved internal tabs near surviving ends; stamped with the hours (?)incuse 11. 12 on flat face, copper alloy; cf. **2360**.
[3146-3149 numbers not used]

2.8 Post-medieval iron objects

Patrick Ottaway and David Griffiths, with a contribution by Carole A. Morris

DRESS ACCESSORIES

Buckle
3150 Pl. 50
38 x 36mm; traces of black coating, heads on each end, with stepped stylized hair (four layers) – one living, one death's head; bar narrowed for (missing) pin. 16th–17th century, a motif found on rosary beads and a spoon finial from Amsterdam – Haarlemmerplein 18-30 (brass with nickel plating), Inventory HAP-16-1, mid-17th century.

Brooch
Copper alloy/iron composite, see **3102** listed under 2.7 post-medieval non-ferrous metalwork.

FIXTURES AND FITTINGS

Lynch pin
3151 Pl. 50
L 101mm, W (bow) 21mm, Th (arm) 3mm; a lynch pin, pierced at the head, with a ring *in situ*. It was designed to be hammered into stone or brick walls as it has a feathered shank that prevented the item from shattering under impact. This feature and the robust nature of the item suggest a post-medieval date.

Mount
3152
129 x 20mm; crude rectangular plate with one rivet at either end.

Handle
3153 Pl. 50
54 x 54 x 5mm; a drop handle of post-medieval date.

Hooks
3154 Pl. 50
178 x 11 x 4mm; has a long shank, broken at the end, with a short curved arm projecting downwards from the head that could be hooked over a wall hook or rail. One use for hooks of this type was the suspension of lamps, as can be seen in the case of two with looped ends to the shank from Amsterdam dated 16th–17th century (Baart *et al.* 1977, 359, 675–6)

Eye
3155
72 x 15mm; rounded strip of iron with an eye one end and a flattened area at the other with a hole.

Towel rail fitting
3156
86 x 90 x 54mm; a relatively modern cast iron object. It has a round base plate pierced for attachment, to which a U-shaped bracket is fitted. It has terminals with round eyes that hold a strip with a moulded knop at one end. Articulated on the strip between the terminals are three arms with socketed ends into which wooden rails were originally fitted. The complete object would have been used for towels, dish cloths, etc.

Weather vane
3157 Pl. 50
279 x 145 x 26mm; a post-medieval or modern weather vane. It appears to have a socket, which presumably rotated on a vertical iron rod. The arm of the vane is set at right angles to the socket. It is supported on either side by a brace with looped ends, and has an arrowhead-shaped tip. The whole object is plated, probably with copper alloy.

Padlocks
3158
29 x 25 x 12mm; a small solid padlock with a heart-shaped case with and key-hole keeper intact; corroded, one side has been damaged, possibly prior to it being discarded.
3159 Pl. 50
37 x 33 x 28mm; a complete padlock with a case resembling, as Noël Hume (1970, 251) put it, 'a heart sliced down the middle'. In one side there is a key-hole, projecting from which is the hollow stem of a key presumably broken *in situ*. Six similar padlocks can be seen on the late 17th century 'Million Bank' chest held by the Public Record Office (Jenning 1974, 6), although chest and padlocks may not be contemporary . Noël Hume commented (1970, 251–2) that examples of these padlocks have been found in colonial American contexts dated 1730–1820.
3160 90 x 95 x 14mm; a large cast iron padlock, complete, with a case of trapezoidal form. A keeper for the key-hole pivots from the head of the case. 19th–20th century.

Modern cast iron keys
3161
L 70mm, bow 23 x 20mm, bit 9 x 10mm. hollow shank, simple, concave rectangular bit, oval bow (filled with corrosion).
3162
L 61mm, bow 27 x 14mm; heavily corroded. Oval bow with simple bit.

FOOD, DRINK, ETC.

Knives

Whittle-tang knives
3163 Pl. 50
L 160mm [80mm (handle), 80mm (blade)], W 11mm (blade); appears very well preserved. The blade has a straight back and the cutting edge curves up sharply to the tip. At the shoulder , the back has a punched indentation similar to those found on V iking period knives (2.4,), but also on knives made by craftsmen in recent times. The tang is set in a bone handle, the end of which is carved into the form of a monkey figure, and in its present form it is probably post-medieval or later. However, it seems unlikely that the knife and handle originally belonged together , and this would appear to be confirmed by the presence of a collar, which is clearly modern, around the handle, probably intended to hold it securely to the knife tang.

Scale-tang knives
3164
L 144mm [73mm (blade), 71mm (handle)], W 10mm; iron integral bolster shoulder , end knop, 13 rivet pattern, possibly some false (lead/tin), some real.
3165
L 170mm [84mm (blade); 86mm (handle)]; corroded, straight-backed blade, copper-alloy shoulder mounts and holes for 5 rivets, arched cast end-piece.
3166 Pl. 50
L 355mm [175mm (blade), point broken, 180mm (handle)]; antler scales held by two rivets.
3167 Pl. 50
L 158mm [149mm (blade) L 90mm (handle)], W 18mm (blade); integral shoulder, 6 rivet holes on handle; integral end cap.
3168 Pl. 50
L 248mm [114mm (tang) 134mm (blade)], W 21mm (blade); blade tapers to a broken tip. W ood scales. Tang widens at the top. Four rivets with *c.* 12 false ones in between. Trapezoidal end cap of sheet copper alloy.
The cutting edges of **3164** and **3168** are markedly rounded at the rear, which is a characteristically late 15th – 16th century feature (Ottaway 2002, 151–2), hence dating to the later medieval to post-medieval transition. This knife also has an un-inlaid cutler' s mark. On **3166** and **3167** there is a distinct bolster between the blade and tang, forged in one piece with them. This is a feature introduced during the 16th century and replaces the shoulder plate (Hayward 1957, 4). **3165** has the suggestion of a bolster , which would be appropriate for the late 15th – 16th century date suggested above. **3167** also has a distinct cap, with a knop at the tip, integral to the end of the tang (see non-ferrous end caps below). The scale plates on this knife were, therefore, effectively attached to recesses between the bolster and the cap in an all-iron tang.
See also knife handles **3125** and **3126** in post-medieval non-ferrous metalwork.

TOOLS AND IMPLEMENTS

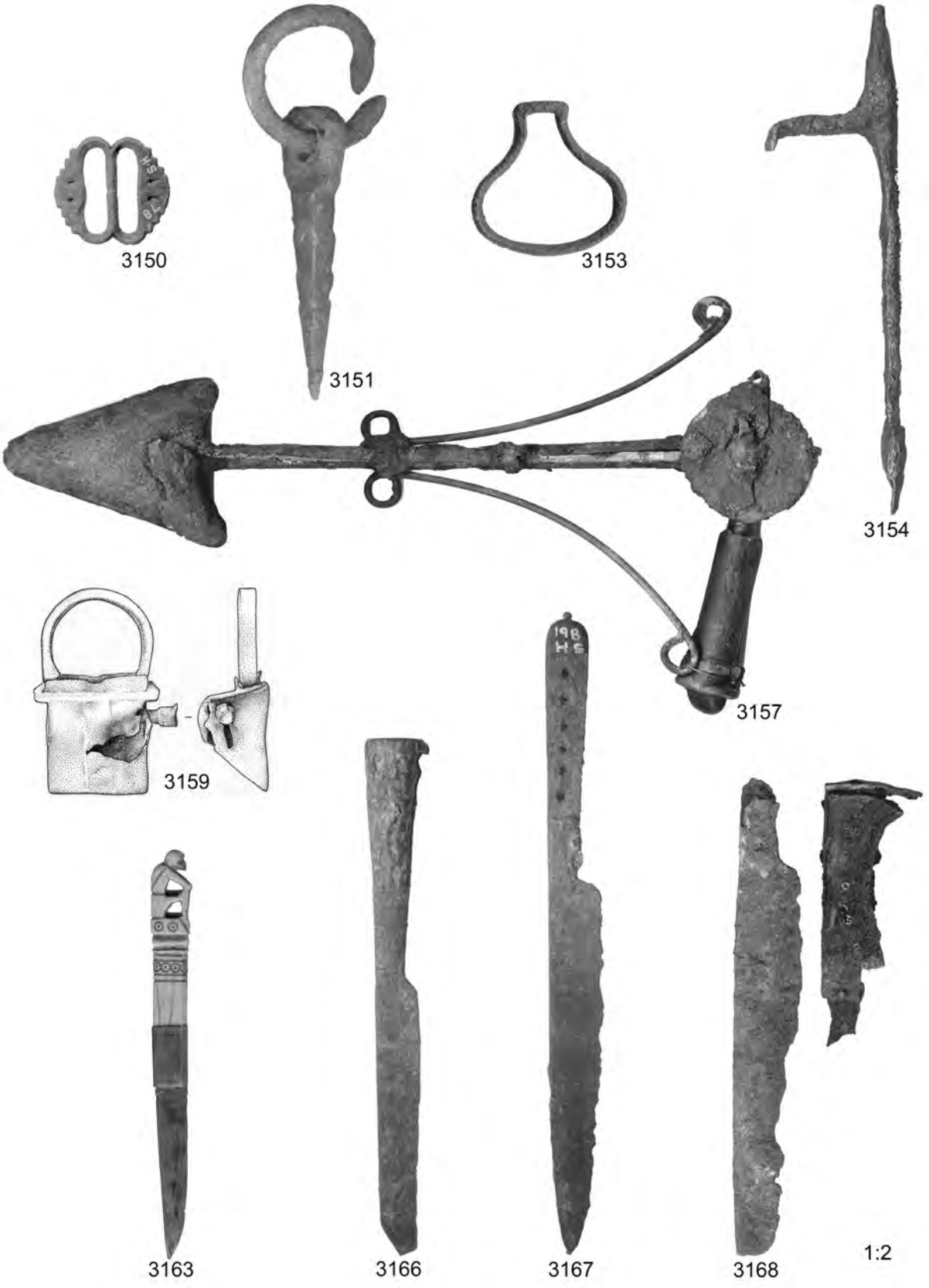
Tongs
3169 Pl. 51
L 185mm; probably an incomplete pair of tongs with sockets for wooden handles. One socket is largely missing, but beyond the pivot it has a crank-shaped tapering arm with a spatulate tip. The other arm is broken off. This object is probably post-medieval.

Woodworking tool: Cooper's croze
Carole A. Morris

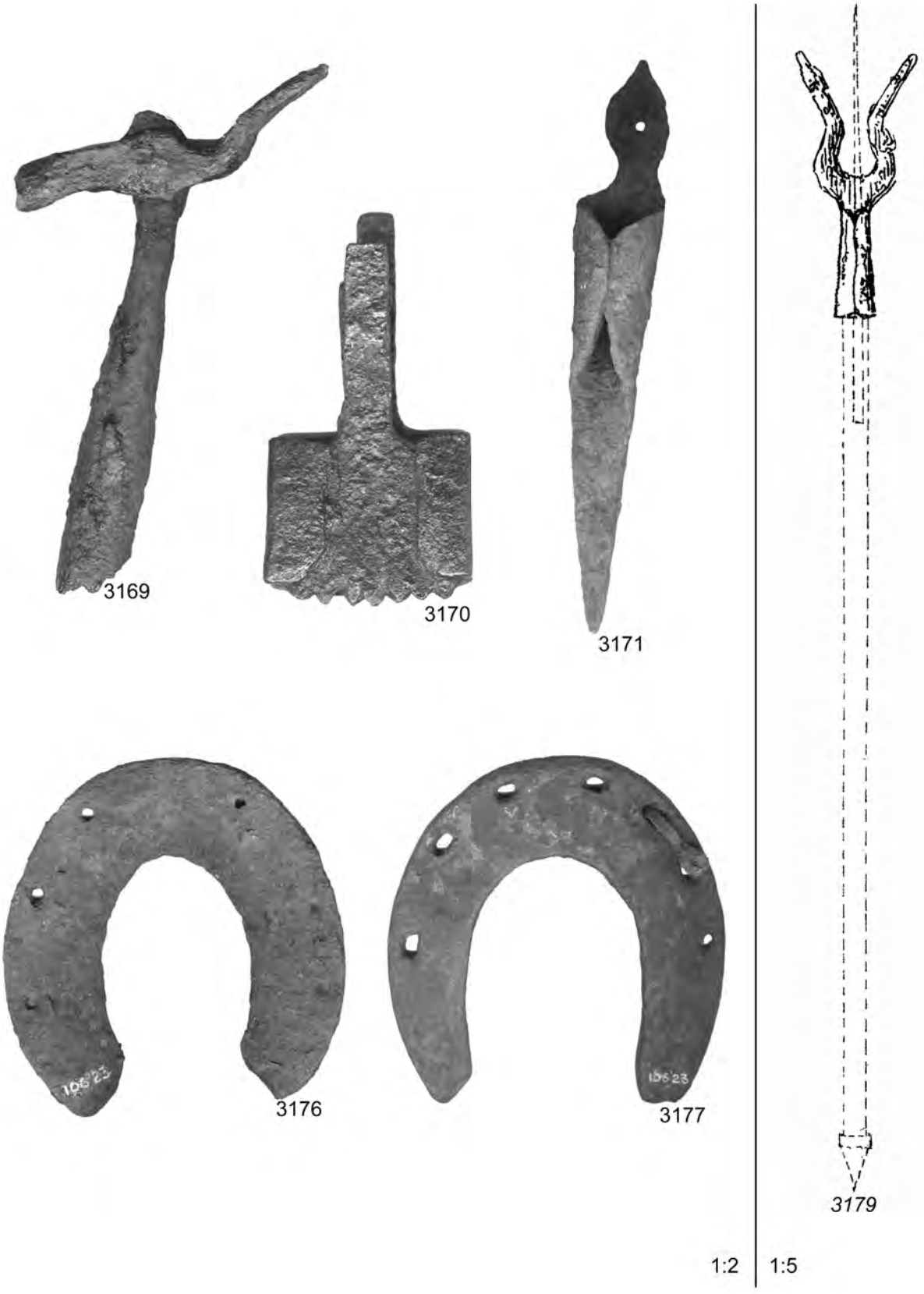
3170 Pl. 51
130 x 73mm ; a three-piece iron tool consisting of: (i) socketed iron frame with rectangular cross-sectioned handle or tang; (ii) sides bent over to form flanged socket; (iii) toothed cutting blade with seven teeth, moveable inside the frame; (iv) iron wedge to fix the blade in position (Morris 1984, fig. 166, W150). Similar examples have been noted (e.g. Kilby 1971, fig. 12).

Ploughshares
3171 Pl. 51
119 **x** 35mm; slightly flattened cone formed of curled sheet with overlapping flanges, loop for attachment.
3172 L 305mm; corroded, a possible ploughshare (Potter 1893, pl. A, 7).

Spade irons
3173 L 125mm, W 140mm; a sheath which widens towards the base and covered the whole of the rear of a wooden blade. It was held in place by two lugs at the head.
3174 L 324mm, W 248mm; large piece of sheet iron folded under to form two flanges to secure wooden head of spade, tapers slightly to rounded edge. The top has four rivet holes with three surviving rivets with circular roves.



Pl. 50. Post-medieval Iron



Pl. 51. Post-medieval Iron

Trowel blade?
3175 61 x 48mm, triangular object with handle broken off, evidently iron (Ecroyd Smith 1867, 19).

HORSE EQUIPMENT

Horseshoes
3176 Pl. 51
115 x 116mm; a horseshoe of the so-called keyhole type (Sparkes 1976) current in the 17th–18th centuries with calkins and a fullered groove set close to the outer edge through which the nail holes were punched.
3177 Pl. 51
115 x 120mm.
3178 113 x 120mm.
The latter two are slightly dished, and **3178** also has a fullered groove.

WEAPONS AND ARMOUR

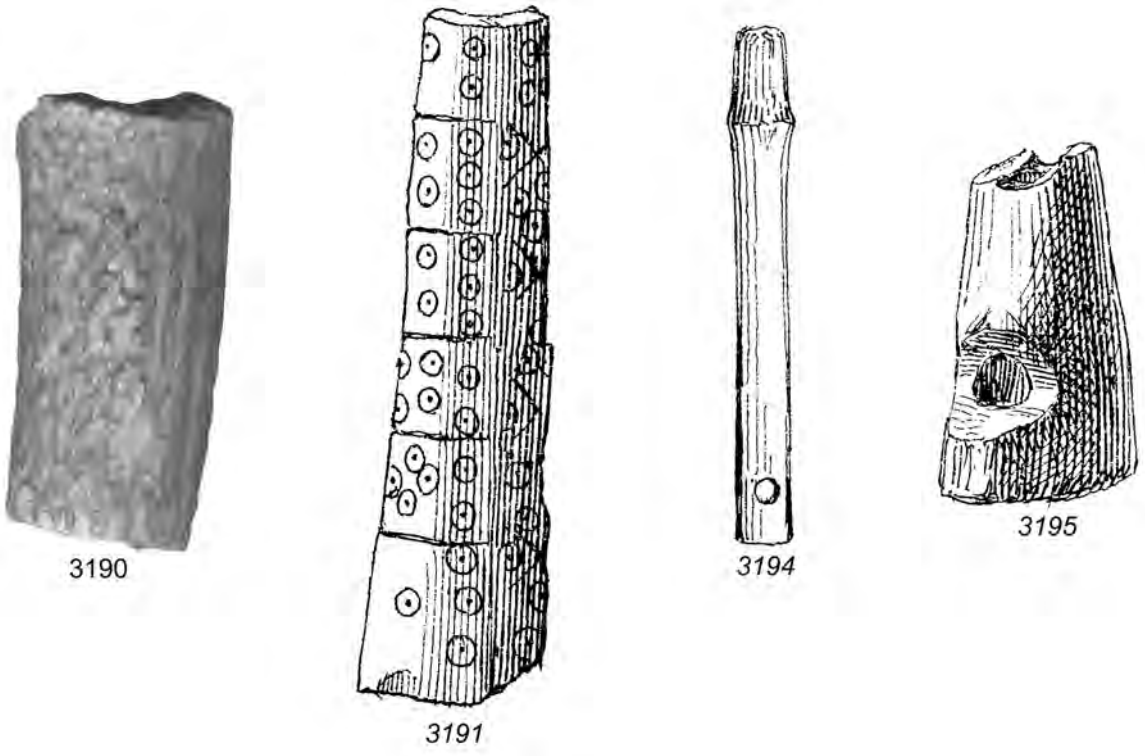
Musket rest
3179 Pl. 51
220 x 90mm (Hume 1863, pl. XXIX, 1); a socketed object intended for mounting on a wooden stake or pole, with two tapering splayed arms to guide the weapon into its seat. In 1850, C.B. Robinson exhibited a musket rest at a meeting of the Historic Society of Lancashire and Cheshire (Anon 1850) – it is not clear whether these are the same item.

Iron small-shot
3180 D 41mm, Wt 350.9g; spherical iron ball, with two small rusted holes on opposite sides. Small-shot for naval gun. Possibly from small deck swivel-gun or one item from a charge of grapeshot. The holes may indicate it was chain or bar shot, with balls connected by chains or bars to aid destroying ship's rigging. Found about 1998 (i.e. four years before its notification in March 2002) on the beach at Meols; notes accompanying its discovery state: 'on the stretch of the shore between the sunken gardens and Dovepoint Road. It was shortly after a particularly stormy period and was always felt to have been dragged up from under the surface sand'.
[3181-3189 numbers not used]

2.9. Worked bone and horn objects

Robert Philpott, Geoff Egan and David Griffiths

Handles, guards, and side plates
3190 Pl. 52
59 x 28 x 28mm, internal D 10–12mm; horn handle probably for whittle tang knife. Both ends trimmed; curved. Whittle tang knife handles in horn are found in London in the later medieval period. After the 13th century the tang often extended the whole length of the handle, as in this case (Cowgill, de Neergaard, and Griffiths 1987, 25-6).
3191 Pl. 52
Knife handle plate, L 90mm (Hume 1863 pl. XXXII, 7), a tapering half-cylinder with five transverse grooves, forming panels. There was a central row of ring and dot motifs, with others more randomly placed to either side. There is a broad parallel with a Roman knife handle from Corbridge, where the bone or antler handle is made from two plates of



Pl. 52. Bone and Horn objects

plano-convex form (Allason-Jones 1988, 207, fig. 96 no. 19). However, the form is simple and long-lived and could also be early or later medieval.
3192 79 x c20mm (Ecroyd Smith 1868, 123, no. 4), described as a 'guard of a dagger'. Ring and dot decoration, with larger ring and dot in centre, early or later medieval.
3193 83 x 27mm; musket butt plate; two holes through width, series of drilled cups for 4 (of original 8) larger (red ?coral) insets with smaller (no survivors) stones between. Post-medieval.
A number of the knives and daggers listed under later medieval ironwork (**2602-2739**; **2926-2931**) have, or had, bone or horn handles. Ecroyd Smith also noted the discovery of a 'carved bone handle, 16th century' with 'striated and herring-bone patterns' (1869, 215) as well as another ivory or bone handle.

Parts of musical instruments
3194 Pl. 52
Tuning peg, L 68mm (Hume 1863, pl. XXXII, 7; Bu'Lock 1960, 21 and 18, fig, 6c – lost by then and redrawn from Hume). Rod with one thicker , squared or faceted end; transverse hole in narrow, round end. For a stringed instrument – (?) fiddle, harp, lute or lyre. (Lawson type A, cf. Wardle in Egan 1998, 285–7; the six published from London are assigned to the late-14th to early-15th centuries).
3195 Pl. 52
48 x 28mm (Hume 1863, pl. XXXII, 6), thick tapering cylinder with one recessed hole, a possible flute or whistle component, medieval or post-medieval (comparanda e.g. Megaw 1990).

Bone points
3196
L 88mm (Hume 1863, pl. XXII, 6); bone point, made from animal long bone, tip broken.
3197
L 100mm (Hume 1863 pl. XXXII, 4); a sharply pointed bone object.
3198
L 114mm (Hume 1863, pl. XXII, 9); bone point, made from animal long bone, tip broken.
3199 (Hume 1863, pl. XV , 13) a pierced and rounded corrugated object apparently of zoological origin, possibly a ray-spine, illustrated by Hume alongside spindle whorls, but its presence is otherwise unexplained.

2.10 Leather objects

Quita Mould

There are 82 pieces of leather from Meols, all of which are in the Grosvenor Museum' s Potter Collection, and one which has not survived, a strap with strap end and decorative mounts, which was recorded by Potter in 1889. A wide range of items is represented, including shoe components, knife sheaths, girdles, straps, a sling pouch, and a leaf from a wool-card (hand carder). In addition, a single turnshoe sole is recorded as having been 'found upon the Sea Beach of Cheshire, 1866' and was part of the Ecroyd Smith Collection (1867, pl. II, 20). The leather dates principally to the late-14th and 15th century.

Present condition of the material
The leather is now dry and brittle, but relatively robust. It is dark, almost black, in colour and much of it is slightly sticky to the touch, suggesting that it has been subject to conservation treatment at some time during its more recent history. Thread used to join two pieces of broken strap**3274** also appears to be a later repair. Two pieces of leather **3265, 3270** appear to have air-dried and not undergone any treatment.

Conventions: sl = stitch length; st = stitch; e/f = edge/flesh; g/f = grain/flesh.
All sole leather is assumed to be cattle hide.

Shoes
3200 Pl. 53
Shoe (turnshoe). Vamp wing from ankleboot **3201** with area of butted e/f side seam and throat junction with central opening slit with two lace holes and divided lace present. 93 x 61 x 2mm; bovine.
3201
Shoe (turnshoe). One-piece ankleboot front lacing with divided laces through two pairs of two lace holes. Lasting margin sl 6mm, butted e/f sloping side seam. Plain cut top edge. Suggestion of st from heel stiffener visible centre back. Ht 130mm; 151 x 128 x 3mm; cattlehide.
3202
Shoe (turnshoe). Fragment of upper with lasting margin sl 6mm, probably broken from heel area of **3201,** 50 x 33 x 2mm; bovine.
3203
Shoe (turnshoe). Small area of upper lasting margin sl 6mm, curve suggests vamp area. 30 x 11 x 2mm; no grain pattern visible.
3204
Shoe (turnshoe). Small area of upper lasting margin sl 5mm. 32 x 17 x 2mm; no grain pattern visible.
3205
Shoe (turnshoe). Fragment of upper lasting margin sl 6mm. 42x21x2mm; cattlehide.
3206
Shoe (turnshoe). Fragment of lasting margin sl 6mm torn from shoe upper. 103 x 7 x 2mm; bovine.
3207
Shoe? fragment with small area of cut edge present, other edges torn. 53 x 40 x 1mm; no grain pattern visible.
3208
Shoe (turnshoe). Fragment of lasting margin sl 6mm cut from shoe upper . Cobbling waste; 68 x 11 x 2mm; bovine.
3209
Shoe. Fragment of upper with small area of butted edge/flesh seam. 31 x 21 x 2mm; bovine.
3210
Shoe. Fragment with a cut edge, others torn. Probably torn shoe upper. 47 x 21 x 2mm; no grain pattern visible.
3211
Shoe. Fragment with a cut edge, others torn. Probably torn shoe upper. 11 x 8 x 2mm; no grain pattern visible.
3212
Shoe. Fragment of leather lace; 58 x 5 x 1mm.
3213
Shoe. Fragment of upper with butted e/f seam, cut edge, other edges torn. 39 x 22 x 2mm; bovine.
3214
Shoe. Fragment of upper with butted e/f seam. 59 x 37 x 1mm; no grain pattern visible.

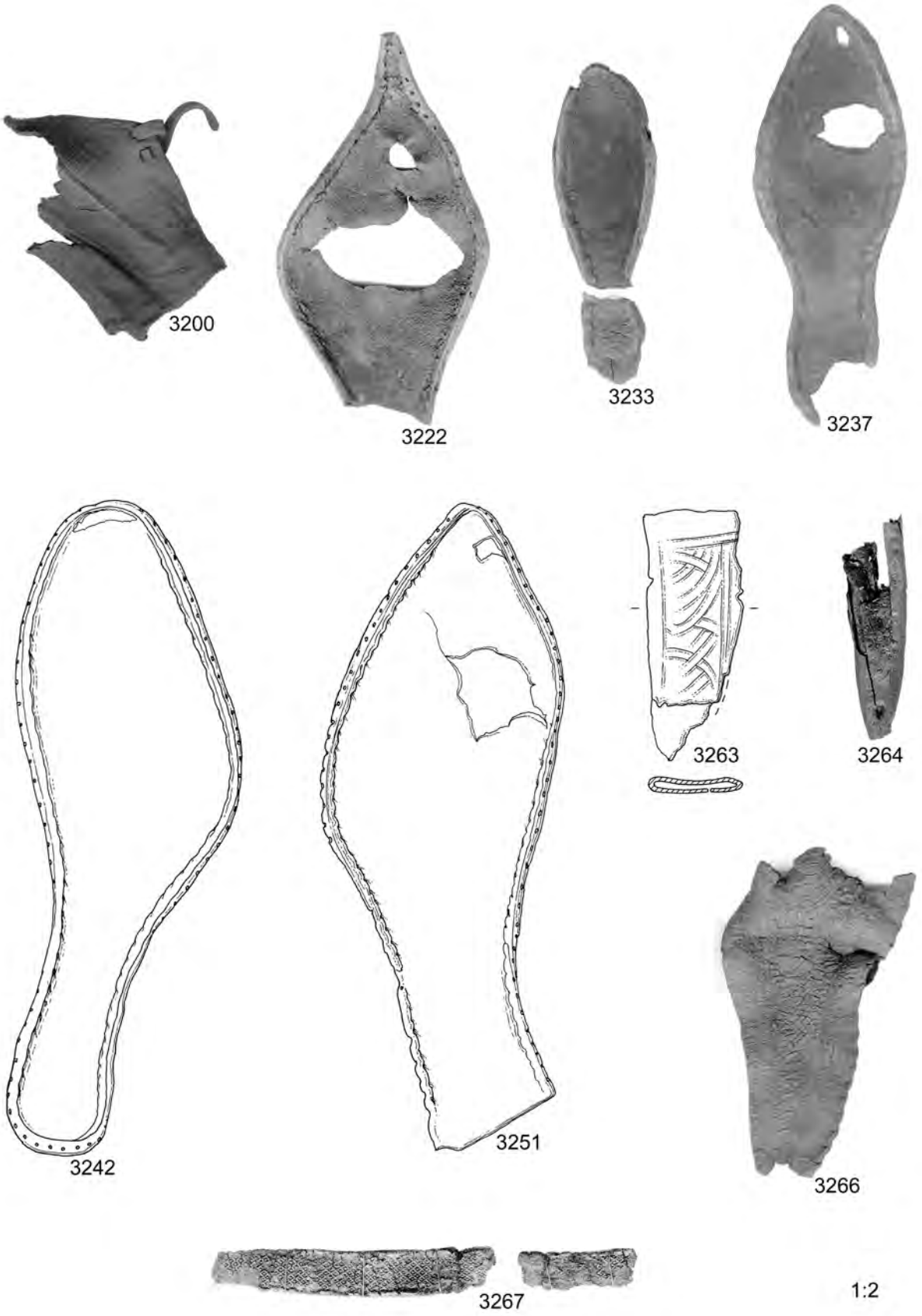
3215
Shoe (turnshoe). Fragment of upper with lasting margin sl 6mm and a butted, sloping e/f seam sl 4mm, other edges torn. 61 x 33 x 2mm; cattlehide.
3216
Shoe (turnshoe). Sole forepart joins **3218** to make a complete sole left foot. Pointed toe, medium waist and seat. Seam sl 6–7mm. W orn away at exterior seat, no other pronounced wear. No sign of repair. L 234mm W (tread) 85mm, (waist) 40mm, (seat) 48mm.
3217
Shoe (turnshoe). Fragment of vamp with oval/pointed toe and fragment of left butted e/f side seam. Throat area broken off, but suggestion of a long, low vamp wing. Probably belongs with **3216/3218**. L (toe to side seam) 165 mm; W 110mm, cattlehide.
3218
Shoe (turnshoe). Joins **3216**. Seat of turnshoe sole; 76 x 43 x 3mm.
3219
Shoe. Fragment of shoe upper with area of butted e/f seam sl 3–4mm and tunnel stitch on flesh side. Cut from shoe upper. Cobbling waste. 69 x 35 x 2mm. Possibly bovine.
3220
Shoe (turnshoe). Sole seat joins **3222** to make a complete sole for left foot. Long pointed toe with extension *c.* 25mm, medium waist and long seat. E/f seam sl 4mm. Worn through at toe, tread, and exterior seat. Possible repair stitch at toe and two at seat. L 202mm, width (tread) 72mm, (waist) 28mm, (seat) 41mm. May belong with vamp toe **3221**.
3221
Shoe (turnshoe). Toe area of vamp with pointed toe worn away at the tip. Lasting margin sl 4mm broken and possibly cut in some areas away from rest of vamp. Probably for a right foot. May belong to sole **3222**. 68 x 90 x 2mm; bovine.
3222 Pl. 53
Shoe (turnshoe). Sole joins **3220**. 134 x 74 x 3mm.
3223
Shoe (turnshoe). Left side of vamp joins to **3224** to make vamp with worn toe, low concave throat and low , butted edge/flesh side seams sl 3mm. H 36mm. Traces of stitching to hold a strengthening cord below throat on flesh side. Belongs to sole **3225**. 155 x 55 x 2mm; bovine.
3224
Shoe (turnshoe). Right side of vamp joins to **3223**. 165 x 44 x 3mm; bovine.
3225
Shoe (turnshoe). Complete sole left foot. Pointed toe, medium waist and seat. E/f seam 6–8mm. Worn through at toe, some wear to seat. Deliberate cut hole at waist. No repair. L *c.* 270mm (distorted) W (tread) 80mm, (waist) 34mm, (seat) 48mm.
3226
Shoe (turnshoe). Forepart sole joins **3227** to make complete sole for left foot. Pointed toe, medium waist and seat. E/f seam sl 7mm. Worn at exterior seat, no other areas of wear. No repair. L 215mm, W (tread) 76mm, (waist) 38mm, (seat) 41+mm.
3227
Shoe (turnshoe). Sole joins **3226**. 78 x 45 x 3mm.
3228
Shoe (turnshoe). Two fragments of upper from the right side of an ankleboot fastening at front with a buckle and lace. Butted e/f seam sl 3mm present, other edges torn. Loop to hold a buckle and remains of a tab-ended lace present. L 150+mm, cattlehide.
3229
Shoe (turnshoe). Complete sole for right foot. Pointed toe, medium waist and seat. Worn at seat, no other pronounced wear. E/f seam sl 6–7mm. L 200+mm (distorted), W (tread) 75mm, (waist) 35mm, (seat) 36mm.
3230
Shoe (turnshoe). Sole seat and waist area, cut away from rest of sole. Worn at exterior seat. E/f seam sl 6mm, much broken. No repair. Cobbling waste. L 90mm (distorted), W (waist) 36mm, (seat) 50mm.
3231
Shoe (turnshoe). Forepart of sole for left foot with pointed toe cut away across the lower tread. E/f seam sl 6mm. No pronounced wear. No repair. Cobbling waste. L 134mm (slightly distorted), W 76mm.
3232
Shoe (turnshoe). Toe area of vamp with toe broken off. Lasting margin present on right side sl 5. 6mm, other edges broken. 55 x 69 x 1.5mm; probably bovine.
3233 Pl. 53
Shoe (turnshoe). Complete sole for left foot, small child. Slight wear at toe, narrow waist. E/f seam sl 6mm. T unnel stitching from repair at tread. L 106mm, W (tread) 46mm, (waist) 20mm, (seat) 23mm;
3234
Shoe (turnshoe). Complete sole for left foot. Pointed toe, narrow waist and long seat. E/f seam sl 6mm. Slight wear at exterior tread and seat. No repair . L *c.* 238mm (distorted), W (tread) 75mm, (waist) 21mm, (seat) 44mm Surviving thread noted.
3235
Shoe (turnshoe). Complete sole for right foot. Pointed toe, medium waist and seat. E/f seam sl 6mm. Worn through at toe, exterior tread and seat. No repair L 205mm, W (tread) 77mm, (waist) 36mm, (seat) 40mm.
3236
Shoe (turnshoe). Complete sole for right foot. Pointed toe, medium waist and seat. E/f seam sl 6mm. Worn at toe and seat. No repair. L 181+mm, W (tread) 73mm, (waist) 29mm, (seat) 39mm.
3237 Pl. 53
Shoe (turnshoe). Complete sole for left foot, small child. Oval toe. E/f seam 6mm. W orn through at toe, tread and seat. No repair. Hole from stone at waist. L 142mm, W (tread) 58mm, (waist) 29mm, (seat) 35+mm.
3238
Shoe (turnshoe). Sole joins to **3239** to make complete sole for left foot. Pointed toe, medium waist and long seat. E/f seam 5-6mm. No pronounced wear. No repair. L 201mm, W (tread) 73mm, (waist) 35mm, (seat) 40mm.
3239
Shoe (turnshoe). Sole seat joins **3238**. 90 x 41 x 3mm.
3240
Shoe (turnshoe). Complete sole for left foot. Long pointed toe with extension c25mm, medium waist and seat. E/f seam sl 6mm. Worn at toe and seat. L187mm (distorted), W (tread) 69mm, (waist) 32mm, seat distorted.
3241
Shoe (turnshoe). Complete sole for left foot. Pointed toe, medium waist and seat. E/f seam sl? delaminated. Worn at exterior seat. No repair . L 211mm, W (tread) 72mm, (waist) 37mm, (seat) 45mm.
3242 Pl. 53
Shoe (turnshoe). Complete sole for right foot. Oval toe, medium waist and long seat. E/f seam sl 7mm. W orn through at toe. L 233mm, W (tread) 78mm, (waist) 31mm, (seat) 35mm.
3243

Shoe (turnshoe). Almost complete sole for right foot. Pointed toe, medium/wide waist and seat. E/f seam sl 5–6mm. Worn through at exterior toe joint and seat. No sign of repair. Delaminated. L 196+mm, W (tread) 72mm, (waist) 40mm.
3244
Shoe (turnshoe). Complete sole for right foot, small child. Pointed toe, medium waist and long seat. E/f seam sl 4–5mm. No pronounced wear . No repair. L 123mm, W (tread) 45mm, (waist) 24mm, (seat) 27mm.
3245
Shoe (turnshoe). Complete sole for right foot. Long pointed toe with extension *c.* 20mm, medium waist and seat. Edge/flesh seam sl 6mm. No pronounced wear . No repair. L 197mm (distorted), W (tread) 67mm, (waist) 34mm, (seat) 41mm.
3246
Shoe (turnshoe). Pointed toe of vamp with lasting margin sl 6mm present on right side, broken from rest of vamp. Belonging with sole **3245**. 60x44x2mm; cattlehide.
3247
Shoe (turnshoe). Sole distorted and delaminated, lower tread, medium waist and seat only. Worn at seat. E/f seam. L 114mm, W (waist) 32mm, (seat) 36mm.
3248
Shoe (turnshoe). Complete sole for right foot, small child. Pointed toe, medium waist and seat. E/f seam sl 4mm. No pronounced wear. No repair. Lc130mm, W (tread) 50mm, (waist) 22mm, (seat) 22mm.
3249
Shoe. Large heel stiffener, lasting margin sl 6mm and whip stitched top edge. Impression of back seam of 2 part quarters visible. Ht *c.* 57mm. Possibly associated with **3250**; probably 16th century. 86 x 73 x 2mm; bovine.
3250
Shoe (welted). Seat area of welt cut from shoe upper with 2 lines of g/f stitching. Max width 19mm. 46 x 87 x 1.5mm. presumed cattlehide.
3251 Pl. 53
Shoe (turnshoe). Almost complete sole for left foot, left side of seat broken off. Pointed toe, medium waist and long seat. Worn through at toe and exterior toe joint. E/f seam sl 6mm. No repair. L 217+mm, W (tread) 85mm, (waist) 46mm, (seat) 49mm.
3252
Shoe (turnshoe). Vamp for right foot, worn away at toe and right side, surviving lasting margin sl 6mm. Left butted e/f side seam sl 3mm. Cut from throat to right lasting margin. Cobbling waste. 160 x 110 x 3mm; cattlehide.
3253
Shoe, joins to **3254** to make a fragment of upper with a small area of lasting margin sl 5–6mm. 2 holes appear secondary (not fastening holes). L85+mm W70+mm; cattlehide.
3254
Shoe. Fragment of upper joins to **3253**; 70 x 44 x 2mm.
3255
Shoe. Rectangular fragment of upper with paired whip stitching from a lapped seam, 2 other cut edges, rest torn away. Possibly a tongue. 55 x 23 x 2mm; bovine.
3256
Scrap. Fragment with all edges torn, probably broken from shoe upper. 88 x 50 x 2mm; no grain pattern visible.
3257
Shoe (turnshoe). Fragment of sole seat with e/f seam. 35 x 35 x 2mm.
3258
Shoe. Internal lining for side-lacing shoe or ankleboot. Lasting margin sl 4mm and whip stitching around edge. 7 pairs of staggered lace holes. Ht 92mm; bovine.
3259
Shoe (turnshoe). Fragment of one-piece front tying ankleshoe, with butted e/f seam and a divided lace passing through a lace hole. 108 x 68 x 1.5mm; bovine.
3260
Shoe (turnshoe). Fragment of one-piece ankleboot, left heel area. Lasting margin and rest of quarters broken away . Straight butted e/f side seam sl 3mm. Plain cut top edge raised toward centre back. Area of tunnel stitching present on flesh side. Ht *c.* 94mm. no grain pattern visible.
3261
Shoe. Fragment of upper with butted e/f seam, other edges torn. 73 x 67 x 2mm; no grain pattern visible.
3262
Shoe. Fragment of shoe upper with lasting margin sl 5mm and butted e/f side seam sl 4mm with woollen thread (S spun) with a knotted end present. 35 x 38 x 1.5mm; possibly sheep/goatskin.

The shoe components come principally from shoes of turnshoe construction dating to the later medieval period. A small number of shoe parts were discarded debris from cobbling (see below, the nature of the assemblage). A total of 22 turnshoe soles were present, the majority (18) were complete and are of shapes popular in the later 14th and 15th centuries. Another complete turnshoe sole for the right foot of 15th century shape was part of the Ecroyd Smith collection (1867, 187, pl. II, fig. 20) and has been seen in illustration only. The soles had pointed toes; three **3220/3221**, **3240**, **3245** had long, extended toes (20–25mm), and a shoe vamp **3232** could also be seen to have had a long toe broken off. There are insufficient numbers of complete shoe soles for the percentage of men's, women's and children's shoes to be meaningful; however , both adult and children's sizes were present, with two peaks occurring in the distribution of sizes (reflecting adolescent boys/women and men) suggesting that the shoes reflect a 'normal population'. Estimation of original dimensions is hampered by an unknown degree of shrinkage that has taken place since recovery and by distortion that has occurred during either drying out or conservation. The shoe soles range from English child size 1 (continental 16), for a very young child probably about 1 year old, to adult size 10 (continental 44), with a 10% allowance for shrinkage.

Shoe styles
The shoe uppers were less well represented and more poorly preserved than the soles. Upper fragments could be matched with their soles in only four cases (upper **3223/3224** belongs with **3225**, **3221** with **3220/3222**, **3246** with **3245**, and **3217** with **3216/3218**). Four shoe styles could be recognised: two types of front-fastening ankle shoe, a side-lacing shoe, and a low-cut shoe likely to have fastened over the instep with a strap.

The fragmentary remains of an ankle shoe with a one-piece upper of calfskin (main piece **3201**, with fragments **3200, 3202, 3203/3204, 3212**) were found that tied at the instep with two divided laces through two pairs of lace holes. Part of a second example of calfskin was also recognised **3259**. This shoe style (Fig. 2.10.1,1) dates to the 14th and 15th centuries, with examples from the closely dated waterfront dumps in the city of London dating to the late 14th century (Grew and de Neergaard 1988, 66 fig. 100). One side of the front opening of a cattle hide upper **3228** has the remains of a loop to hold a buckle and the tab-end from a leather lace present, suggesting that the shoe



Pl. 53. Leather Objects

fastened at the instep with a buckle, a strap and a lace. Ankle-boots fastening with both buckles and laces (Fig. 2.10.1,2a) have been found in 14th and 15th century contexts (type 103 Goubitz *et al.* 2001, 237). It is possible, however, that the tab-end belonged to a second buckle strap rather than a lace, in which case one or other of the buckle straps had been replaced. Ankle boots fastening with two buckles and straps (Fig. 2.10.1,2b) were popular during the same period; examples of early 15th century date were found in the city of London (Grew and de Neergaard 1988, 72 no. 100).

The lining from a side-lacing shoe **3258** with seven lace holes represents a long-lived shoe style (Fig. 2.10.1,3) found from the 13th to mid-15th century (type 50, Goubitz *et al.* 2001, 175). A winged vamp with a concave throat **3223/3224** comes from a shoe with low sides. A fragment of quarters **3260** may come from a shoe of this style, while the remains of a second vamp of cattle hide **3217** may belong to another example. Shoes of this type are likely to have fastened over the instep with a buckle and strap (Fig 2.10.1,4a) or tied with a bifurcated strap (Fig 2.10.1,4b). This general style was popular at the end of the 14th and early 15th century: many examples from London date to the late 14th century (Grew and de Neergaard 1988, 32–3) many continental examples dating to *c.* 1400 (type 40 Goubitz *et al.* 2001, 167).

A single shoe of welted construction with characteristics suggesting a 16th century date is represented by a fragment of welt **3250** and a heel stiffener **3249** with the impression of two-part quarters with a central back seam clearly visible. The welt fragment has been deliberately cut away from around the seat of the shoe and is discarded cobbling waste.

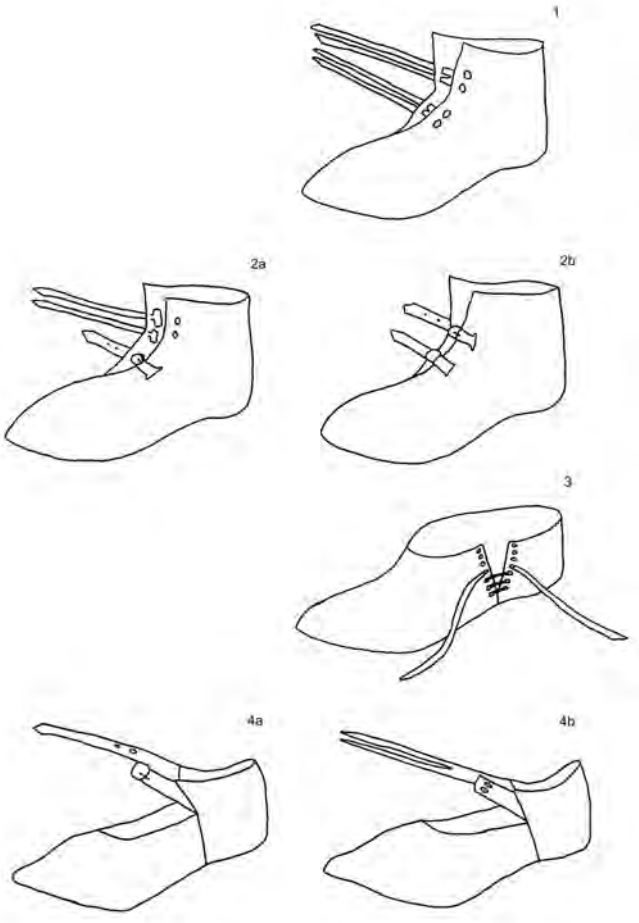


Fig. 2.10.1 Shoe styles – schematic diagram, by Quita Mould

Knife sheaths

3263 Pl. 53
Sheath. Top of knife sheath with straight top edge with suspension hole 20mm below. Central back seam g/f whip stitched. Back plain, front incised decoration with a double border. 86 x 33 x 5mm; little grain pattern visible.

3264 Pl. 53
Sheath. Joins to **3263**. Pointed tip of sheath **3236** with whip stitched seam and incised decoration within a border faintly visible on the front. 66 x 22 x 6mm; no grain pattern visible.

3265
Sheath. Fragment with all edges torn, grain side with incised decoration of parallel lines. Possibly a sheath fragment. Dry leather. 36 x 23 x 2mm; no grain pattern discernible.

3266 Pl. 53
Sheath. Flattened blade area of sheath with central butted seam with whip stitching. Top edge and tip torn. Grain side has incised decoration with a single decorative panel of false plait design with a maximum of five parallel lines to either side. 114+ x 63+ x 3mm; no grain pattern visible.

The remains of two knife sheaths **3263/3264, 3266** were found along with a small fragment with incised decoration of parallel lines **3265** that may come from a third example. The sheaths are broken and incomplete, but each taper to a pointed tip, have a central butted back seam sewn with whip stitch and incised decoration within defined panels. The more complete sheath **3263/3264** has a straight mouth with a suspension hole parallel to it some 20mm below. The back of the sheath is plain, the front has incised decoration faintly visible divided into handle and blade panels. The handle panel has cross-hatching and a lobed floral motif discernible within a double border , the blade has faint decoration within a single border . **3266** is represented by the lower part, or blade, of the sheath only, decorated with a 'false plait' motif within a multiple linear border. The forms of decoration present seem to be long-lived types occurring on sheaths of 13th and 14th century date. The method used, that of incision, appears to have been most popular in the late 14th and 15th centuries (Russell 1939, 139) though an example from a mid-14th century context in London (Cowgill, de Neergaard and Griffiths 1987, 43) shows that it was used earlier.

Straps

3267 Pl. 53
Girdle. Two strap fragments with all ends broken, grain side decorated with an overall pattern of stamped lozenges each containing a central raised dot. Delaminated in areas. 98 x 16 x 3mm; no grain pattern visible (Potter 1889, 6 and 7).

3268
Girdle. Strap fragment with rounded terminal, other end broken. Four faint holes present in a line close to the rounded terminal. Grain side decorated with overall pattern of stamped lozenges each containing a central dot. Likely to belong to **3267**. 198 x 15 x 2mm; no grain pattern visible.

3269A Pl. 54
Girdle. Wide strap broken at each end, one end skived with four lines of large crude stitch holes, other end has a second strap crudely stitched to it with leather thong. Decorated with scrolled motif and letters picked out with small metal

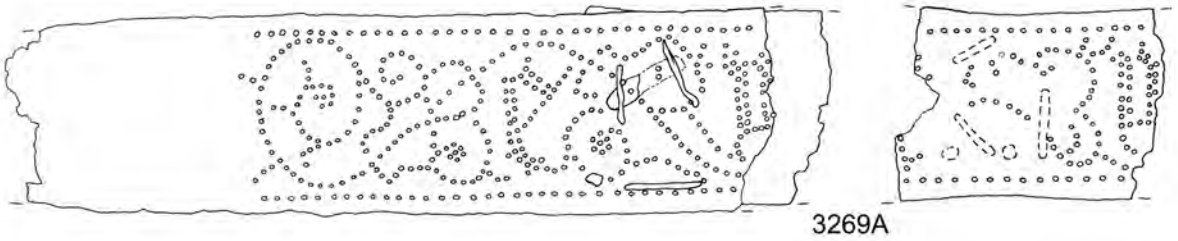
pellets **3269B** (see later medieval mounts, preceding **962**). 212 x 52 x 8mm; no grain pattern visible (Potter 1889, 9).
3270
Small strap fragment broken each end with single hole to attach a mount. Modern glue and paper on back. 20 x 14 x 1.5mm; no grain pattern visible.
3271
Strap fragment with one end cut into a pennant shape, the other torn. Two holes in centre, very faint, hardly piercing the flesh side. 219 x 22 x 2mm; no grain pattern visible.
3272A Pl. 54
Strap fragment broken at both ends with two mounts of domed roundel shape visible in Potter' s illustration (only one surviving) **3272B** (see later medieval mounts, preceding **1063**) and three sub-lunate mounts (**3272C** see later medieval mounts, following **1168**), 175 x 20 x 2mm; no grain pattern visible (Potter 1889, 2).
3273A Pl. 54
Strap obliquely cut at one end broken at the other decorated with a series of disc mounts, 12 circular, domed copper-alloy mounts with two missing from the sequence **3273B** (see later medieval mounts, following **984**). 156 x 35 x 2mm; no grain pattern visible (Potter 1889, 1).
3274A Pl. 54
Girdle, long narrow strap broken at both ends and along its length where it has been repaired with thread. Decorated with series of lozenge-shaped mounts, some very heavily worn, plus three bags of fragments, one containing a square, domed mount with four triangular raised segments and an integral rivet **3272B** (see later medieval mounts, following ***1023***). 825 x 11 x 2mm; no grain pattern visible (Potter 1889, 203)
3275
Strap fragment with rounded terminal, other end torn. Line of g/f stitching around the edge with thread impression on the grain surface. Seven buckle pin holes present, one with a slit and two joined by a slit suggest it comes from harness. 187 x 35 x 3mm; grain pattern uncertain.
3276
Girdle. Two joining fragments of strap broken at each end, distinctly curved. Decorated with three groups of seven punched oval holes. 195 x 23 x 2mm; grain pattern uncertain (Potter 1889, 8).
3277A Pl. 54 (Pl. 24 at 1:1)
Lost leather strap with mounts **3277B** (see later medieval mounts, following ***1062***) and strap end **3277C** (see later medieval strap ends, following ***1621***) (Potter 1889, 3). (There is also a modern strap **705H** which supports later medieval buckle **705A** and later medieval mounts **705C-G**; since it is a modern display item, this has not been catalogued under leather objects in its own right)

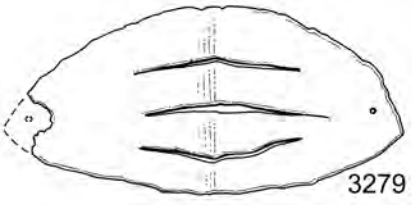
Potter (1889) described and illustrated eight leather strap fragments collected from the Cheshire shore. All except one (Potter 1889, fig. 3) can be positively identified amongst his collection today. During this present study the remains of nine straps were seen. Two **3271, 3273A** had been deliberately cut up before being discarded. The straps varied in width from 10mm to 52mm. The narrower straps **3270, 3267/3268, 3274** between 10mm and 16mm wide may come from narrow girdles, spur leathers or horse harness. The wider straps **3271, 3272A, 3273A, 3275, 3276** 20–35mm wide may come from girdles, belts, or harness, whilst the widest strap **3269A** is a highly decorative item likely to have been worn on the person. It was notable that the grain pattern on all the straps was no longer visible, although that of the remaining shoe uppers could be clearly seen. It is possible that the grain surface of the straps had a surface treatment that had been adversely affected by the salt water. Potter observed a surface finish on one of the straps in his collection (1889, 196, fig. 1) and commented that 'the leather has evidently been enamelled or lacquered with some kind of composition, parts of which still adhere to its surface in a very crackled state.' He was no doubt using the term enamelled in its widest sense, that of to adorn with colours; however, no colour is now visible on the surface of the strap **3273A**.

Three fragments of strap **3267/3268**, two joining **3267**, are decorated on the grain surface with an overall pattern of stamped lozenges each containing a central raised dot. The fragments found measure a total of 336mm in length and vary in width from 10mm to 16mm and come from a narrow girdle. Other straps with stamped decoration, though not this particular motif, have been found in deposits of later 14th and earlier 15th century date in London (Egan and Pritchard 1991, 41). T wo joining fragments of curved strap **3276** decorated by three groups of seven punched, oval-shaped holes came from a wider girdle (20–23mm in width).

Three straps **3272A, 3273A, 3274A** had decorative metal mounts of lead/tin alloy , a further two strap fragments **3270, 3271** had small holes from the attachment of mounts. The mounts **3274B** decorating a long, narrow strap **3274A**, measuring 825mm in length and 11mm in width, show a high degree of wear , perhaps suggesting it was originally part of a horse harness.

A fragment of strap **3269A**, 52mm wide, preserves a join with one piece of strap directly overlying the other . One end is skived, allowing it to lie flat where it was originally joined to a second length. The other end of the strap has been cut and sewn with leather thong to a piece similarly decorated and of the same thickness that lies beneath. This end has not been skived and has the appearance of a crude repair . The crudity of the repair is somewhat at odds with the strap itself, which is highly decorative. It appears to have had a long life before it was eventually thrown away. The strap is decorated by a series of small metal pellets **3269B** used to pick out an intricate scrolled design with lettering. The surface of the leather immediately around these appears to be preserved, while the areas between has deteriorated. The surface between the pellets may have been scraped, a known decorative technique, or may possibly have been painted and the pigment 'eaten' into the grain surface due to a reaction with the sea water , as noted above. Straps similarly decorated with small pins or pellets have been found in London and Amsterdam. A fragment of strap inlaid with small iron pins in a pattern of sexfoils within a simple border was found in an early 15th century deposit in London (Egan and Pritchard 1991, 48 and fig. 29 no. 26). A strap with more elaborate decoration of this type including an inscription in 'black letter' was found in a late-14th or early-15th century context at Amsterdam (Baart *et al.* 1977, 93 no. 24 OL60, incorrectly labelled OL-86). It was the custom for a bride to wear a decorative buckled belt or girdle as part of her wedding finery . These decorative belts with elaborate inlaid 'pin work' may have been matrimonial belts given and worn on such occasions (see 2.5, **3269B** ff). Inscribed belts and girdles were popular and some, presumably those bearing a religious rather than a secular inscription, appear to have been used as a charm or simple folk remedy on occasion. Advice given to Francesco di Marco Datini, a Tuscan merchant, in a letter of AD 1385 (Orico 1959, 160–1) stated that his childless wife should wear an inscribed belt, in an effort to increase her fertility. He was told that the inscribed belt





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Pl. 54. Leather Objects

should 'be girded on by a boy who is still a virgin, saying first three Our Fathers and Hail Marys in honour of God and the Holy T rinity and St. Catherine; and the letters written on the belt are to be placed on the belly , on the naked flesh' (Orico 1959, 161). Perhaps use as an amulet, handed on from one generation to another or passed around the village, might go some way to explaining the extent of wear and alteration seen on the Meols lettered strap.

Leaf from a wool-card
3278 Pl. 54
196 x 105 x 2mm; rectangular leather panel pierced by a series of fine hooks of bent iron wire (hook length 3mm, 4 per 10mm). The leaf has a hooked area of 175mm x 80mm surrounded by a plain border (12–15mm wide) pierced with a series of regular nail holes by which it was attached to the wooden card. T orn obliquely across one corner . Calfskin. Late 14th–-15th century.
Wool-cards, or hand carders, are used in wool processing to align the fibres prior to spinning it into yarn. The first recorded use of wool-cards appears from manuscript evidence to be in late 13th century France (Baines 1977, 35). The earliest English illustration is in the Luttrell Psalter dated *c.* 1340 (British Library MS Add. 42130, f.193). The introduction of the wool-card into England occurs at a time when two distinct branches of the wool textile trade come into being; that of the worsted and woollen weavers (Walton 1991, 339).
A small number of fragments torn from wool-card leaves have been found previously in dated archaeological contexts in this country . A fragment was found at Swan Lane in the city of London (SW A81 [2013]<4728>) in a waterfront dump dated to the first quarter of the 15th century (Egan 1998, 20–2). Two fragments were recovered from recent excavations at the Belgrade Plaza, Coventry with mid-15th century leather (Mould 2006). Others have been found in a late-14th to early-16th century context at Abbey Wharf, Reading (Mould, in Hawkes and Fasham 1997, 118, fig. 66 no. 33), a 16th-century context at Newcastle upon Tyne (Vaughan 1981, fig. 43, no. 526), and an early 18th-century context at Gloucester (Goudge 1983, fig. 106, no. 47). Fragments of leaf from wool-cards have also been recovered from archaeological excavations in France. Fragments have been found from two excavations at Saint-Denis (Seine Saint-Denis) all in deposits dating to the end of the 14th–15th centuries (Montembault 1999, 4–6). One piece being nearly complete gives a leaf measurement of 225 x 123mm, slightly larger than the Meols example. Three other fragments have been found in deposits dating to the end of 15th and early 16th century at Metz (Moselle) (Montembault 1996, 153–64).
There is little reason to doubt that the Meols wool-card leaf dates to the later 14th or 15th century , along with the majority of the leather assemblage recovered. Its recovery indicates the processing of short staple wools into a soft woollen cloth (Walton Rogers 1997, 1721). Three wooden spindles (Morris 2000, 2331) and a range of spindlewhorls were also found at Meols, suggesting a history of local textile production.

Sling pouch
3279 Pl. 54
Elliptical panel with three parallel slashes in the centre. One end has a pair of small holes with thread impression on grain side, other end torn. Slits 44m long, *c.* 12 mm apart. 96 x 50 x 2mm; bovine.
The sling pouch, an elliptical panel of bovine leather , has three horizontal slashes in the centre. Creasing present suggest it had been folded. It differs from other known examples by having a pair of small holes at the one surviving end, the other is torn. The impression of a thread between the two holes can be seen on the grain surface. This object is difficult to date. Sling pouches with internal slashing have been found in small numbers at sites dating from the 10th century onward in Britain and on the continent. The earliest examples have been found in 8th–10th century contexts at Haithabu (Hedeby) (Groenman-van Waateringe 1984, taf. 28, *5–6*), mid-10th–late-13th century contexts at Y ork (Mould, Carlisle and Cameron 2003, 3409–10) and 11th–12th century contexts in London. Slashed pouches have also been found in 13th-century deposits at W aterford, Ireland (O'Rourke 1997, 726, fig. 18: 9.13), at Schleswig, Germany , and Vergleichsfund aus Oslo, Norway (Schnack 1998, 78–80, abb. 49, 1–5). Others have been found in medieval contexts at Welsh Back, Bristol (Mould 2001), and Perth, Scotland (Thomas and Bogdan forthcoming, fig. 43, sf 803 and 2724). The latest dated sling pouch known to this writer was found in a probable 16th-century deposit in the castle ditch, Southampton (Platt and Coleman-Smith 1975, 301–2, *2171*, fig. 264). The Meols sling pouch could be of pre-Norman Conquest or later medieval date. The riverside or maritime location of the find spots suggests that the slings may have been used for wildfowling.

Nature of the late-medieval leather assemblage
A component of the later medieval assemblage represents cobbling waste. Two turnshoe shoe soles **3230, 3231** and three shoe uppers **3208, 3219, 3252** had been cut up to salvage re-usable leather, and two straps had been cut to salvage leather or metal fittings before being discarded. In addition, a 16th century welt **3250** also appears to be cobbling waste. It was notable, however, that although many of the later medieval shoe soles were extremely heavily worn very few appeared to have been repaired, while others showed little pronounced wear. One can only conclude that the owners of the shoes were sufficiently wealthy to throw away their worn out shoes rather than repair them. The proportion of decorated straps and knife sheaths within the total assemblage was notably high, the wide strap **3269A** coming from a prestigious item. This might suggest a higher degree of wealth than might be imagined for a simple fishing community. One additional source of income may well have derived from textile manufacture.

Scrap
3280
Fragment with all edges torn. 28 x 16 x 1.5mm; grain pattern uncertain.
3281
Bag containing numerous small fragments of undiagnostic scrap with all edges torn, likely to be broken from shoe parts. Various.

2.11 Textiles

Vivien Chapman and Silke M. Stenert

There are two pieces of woven woollen fabric, both in the Potter Collection. Both are now dark brown, but further analysis may reveal that their original colouring was different.

3282 75 x 53mm; fragment of plain weave woollen fabric, edges cut, wool raised on both sides of fabric, i.e. surface has been processed after weaving to raise fibres, s-twisted threads, dark brown, 10 threads/cm. Cut edges of fragment suggest that it has been cut out of a bigger piece of fabric. No other stitching. ?Later medieval.
3283 73 x 68mm; fragment of plain weave woollen fabric, edges cut, s-twisted threads, dark brown, 12 threads/cm. Cut edges of fragment suggest that it has been cut out of a bigger piece of fabric. No stitching other than to fix to backing card. Under the microscope it can be seen that threads have a layer of shiny material on their surface. SEM analysis of a loose fragment of thread gave inconclusive results. ?Later medieval.

2.12 Wooden objects: later medieval and post-medieval

Carole A. Morris

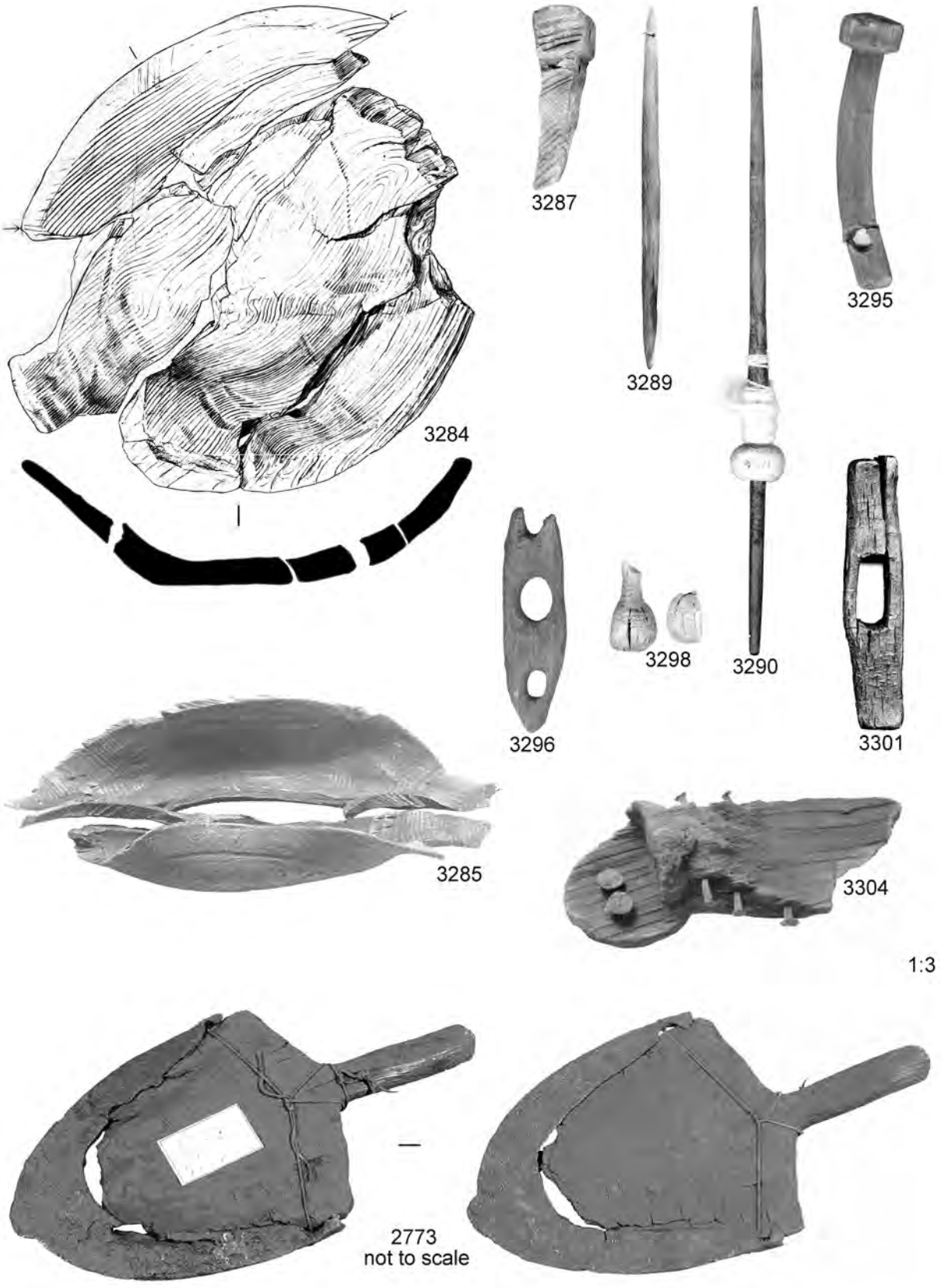
There are 18 wooden objects, all of the later medieval or post-medieval periods, surviving in the Potter Collection, and a further four illustrated non-extant pieces. In addition, Hume (1863, 357) mentioned that a stave-built bucket was found at Meols, D 127mm, unknown species. It had eight staves, narrowing towards the bottom; each had an internal ledge/step 13mm above the bottom on which a one-piece circular base is fitted; two raised staves projecting *c.* 55mm above the rim, with shoulders for a wooden lid; worn by use; organic horizontal bands attached by pegs. There is also a cooper's croze, an iron woodworking tool, listed under 2.8 post-medieval iron objects (**3170**).
The wooden objects have been identified and catalogued in terms of conversion and possible functions. Much of the information below is derived from Carole Morris's unpublished Cambridge PhD thesis (Morris 1984). Conversion refers to how the timber was converted from roundwood raw material into finished product, and uses the terminology outlined in English Heritage's guidelines for recording waterlogged wood (Morris 1990, 12–14, fig. 2). In terms of wood conversion, some of the objects were made from roundwood, whereas others had been converted radially by splitting either into radial sections and then being reworked, or tangentially, probably by being tangentially split or sawn. These are referred to as split or half sections. These forms of woodworking are discussed in detail elsewhere (Morris 2000, 2102–4 and fig. 973). Species are included in the individual entries, where known, and are represented by oak (*Quercus* sp.) and ash (*Fraxinus* sp.). All the raw materials used for the small wooden artefacts would have been available locally in the neighbouring area and need not have been imported from a great distance. Microscopy has not been carried out on this group, so some wood types remain to be identified.

Vessels and containers
3284 Pl. 55
D (reconstructed) 260mm, D (base) 175mm, H 75mm, species unknown, half section; lathe-turned bowl in fragments; face-turned; thick walled; squared rim; flat bottom; very rough; rounded profile; slight internal bottom groove 146mm diameter. Later medieval (Morris 1984, fig. 140, L181iv).
3285 Pl. 55
D 230mm, H 45mm, *Fraxinus* sp. ash, half section; lathe-turned bowl broken in two halves, now very warped; face-turned; rounded rim; rounded profile; rounded bottom; external decorative groove. Label reads: 'Neolithic Bowl, Circular, about 9″ in diameter, when found, embedded in the Scrob-Clay (upper), Oct 1893' (see also Cox 1894, 79–80). It is, however, medieval, not neolithic (Morris 1984, fig. 140, L181i).
3286 Th (rim) 17mm, Th (wall) 9mm, species unknown, half section; rim/wall fragment of lathe-turned bowl; face-turned, thick walls, rectangular rim; rounded profile, later medieval (Morris 1984, fig. 140, L181ii).
3287 Pl. 55
Th (rim) 27mm; Th (wall) 12mm, species unknown, half section; rim/wall fragment of lathe-turned bowl; face-turned; thick walls, rectangular rim; rounded profile, later medieval (Morris 1984, fig. 140, L181iii).

Textile tools

Spindle
3288 L 289mm, D (max.) 12mm, species unknown, probably split section; marked 'April 87'. Double-ended spindle; both ends rounded/pointed; max diameter is approximately 0.6 of the way down its length, from which it tapers in both directions. Upper end has series of marks round circumference; circular in cross-section (Morris 1984, fig. 21, T64).
3289 Pl. 55
L 185mm, D 9mm, species unknown, probably split section; marked 'Dec 93'. Double-ended spindle, both ends rounded/pointed; maximum diameter is approximately halfway down the length; tapers in both directions away from maximum diameter; circular in cross-section; trace of discontinuous grooves/marks approximately 85mm from the upper end, probably made by the whorl or thread; lower end also has a series of marks around the circumference; upper end has remains of a groove and a short length of copper alloy forming a hook 15mm from the tip (Morris 1984, fig. 21, T69).
3290 Pl. 55
L 331mm, D 11mm, species unknown, probably split section; large spindle; double-ended type; both ends rounded/pointed; maximum diameter is approximately two-thirds of the way down its length from which it tapers in both directions; upper end has series of marks round circumference; circular in cross-section; lower end has neat incised slit 10mm from the tip 3mm deep. Associated with spindle whorl **3307** a stone rounded biconvex example marked '18.11.78'. The spindle is possibly a recent addition to the whorl for museum display and demonstration purposes (Morris 1984, fig. 21, T59).

Spade irons (wood/ iron composite)
A composite iron and wood spade iron **2773** Pl. 55 is catalogued in 2.6 Later medieval iron objects:
L 318mm, W 246mm Th (wood) 13mm, species unknown, split section. T riangular iron blade, rounded mouth; grooved throughout; lugs at top of side bars; wooden spade blade with rounded end, straight slightly sloping shoulders and all-in-one shaft fragment; roughly circular cross-section shaft.
(Potter 1893, 234–-5, pl. A; Morris 1984, fig. 9, A56).
3291
L 190mm; wooden blade with a stump of handle apparently surrounded by a spade iron (Potter 1893, 236–7, pl. A4; Morris 1984, fig. 7, A39).



Pl. 55. Wooden Objects

Forks and rakes
3292 L 1.07m, W 192mm, D shaft 40mm (Potter 1893, 234, pl. A1), species unknown, split section; forked tool with all-in-one shaft, ending in rectangular T -shaped handle; slightly sloping shoulders basically at right angles to shaft; parallel-sided blade divided into three tines, the outer two broken and missing; inner tine L 216mm; complete with rounded point (Morris 1984, fig. 14, A101).
3293 L 104mm, W 62mm (Hume 1863, pl. XXX, 7); fragment of wooden rake with two complete teeth and two stubs, described as oak.

Tools

Thatcher's needle
3294 L 411mm, W 16mm, Th 8mm (Potter 1893, 239, pl. A9), *Quercus* sp, split section; large bodkin or needle-like implement; straight shaft; cross-section changes from rectangular to square down length; tapers to rough rounded point; non-pointed end has rectangular eyehole 10 x 5mm. Later medieval (Morris 1984, fig. 25, T121).

Swivel
3295 Pl. 55
L 142mm, W (head) 34mm, W (shaft) 18mm;
3296 Pl. 55
116 x 33 x 11mm (both species unknown; split section).
Two separate parts of a swivel mechanism or tethering device: **3295** is a carved peg with hammer-like head of oval cross-section; rounded rectangular shaft, now curved and broken across hole (D 10mm), in the blunt squared end. **3296** is a pointed oval object perforated by three holes, largest in centre; one end broken; peg would have fitted through middle hole. Later medieval or post-medieval (Morris 1984, fig. 82, M290).

Bar or harness fitting
3297 L 472mm, W (terminal) 64mm, Th 21mm, species unknown; a bar of oval cross-section with expanded rectangular loops at either end, slightly twisted. Broken in middle but complete. It was meant to divide and hold running ropes, as either a crude harness fitting or possibly a part of rope and tackle equipment for boat or farm use.

Agricultural implements
3298 Pl. 55
46mm, W (terminal) 29mm, Th (shaft) 10mm; a ball-shaped terminal in two pieces, species unknown, split longitudinally. Probably terminal and part of the grip of a tool handle.
3299 L 196mm, W 67mm, D 56mm, species unknown; a wooden hammer or mattock head (or 'mell') with central hole (handle missing) used for breaking up earth.
3300 L 294mm, W 61mm Th 50mm , species unknown; a pounding tool or possibly an unfinished handle.
3301 Pl. 55
L 139mm, W 30mm, Th 26mm, species unknown; hole tapers slightly inwards. Transverse handle for square shaft of spade or spoon bit. Later medieval or post medieval.

Miscellaneous
3302 L 135mm, W 33mm, species unknown; worked wood, length cut from sapwood with attached bark showing a healed, snapped off side branch. Possibly an unfinished object.
3303 Awl, or wooden point (Ecroyd Smith 1867, no. 3) 'reduced in size'.

Patten (wood/iron composite)
Quita Mould

3304 Pl. 55
L 150mm, W (tread) 57mm, H (max) 25mm, species unknown; a near-complete wooden patten sole for the right foot, adult size. Toe missing, broken tread, medium waist, and circular seat. Flat sole, upper face contoured with raised arch and heel socket. Flange of iron patten ring present attached by two round-headed rivets to the seat. Three nails present at each side at the waist and lower tread to attach the toe straps. The patten was an overshoe worn to prevent the heeled shoe from sinking into and sticking in the mud. The wooden sole would have been covered with leather originally. The toe is missing, being obliquely broken across the tread; the sole narrows to a distinct waist with a nearly circular seat. The wooden sole is flat-bottomed, that is it had a flat tread surface on which to walk. The upper face is carved so that it rises to follow the contour of the shoe sole, filling in the raised arch and socketed to house the heel of the shoe. Three iron nails protruding from each side of the wooden sole from the lower tread and waist originally held a pair of leather straps that were tied across the instep holding the shoe securely. One of the two flanges from the patten iron is present, still riveted to the bottom of the wooden patten seat. An iron ring or lobed hoop served to raise the wearers' shoes further from the mud. Pattens were often worn by women. The style of this patten suggests a late 17th or early 18th century date; it compares with examples of shoes and matching pattens in the Northampton Museum (e.g. Swann 1982, fig. 24a and 1b).

2.13 Stone and ceramic spindle whorls: later medieval

Robert Philpott, Geoff Egan, and David Griffiths

Hume (1863, 151–7) recorded 44 spindle whorls, comprising 34 of lead, seven of 'terra cotta' (ceramic) and three of stone. At least two more ceramic whorls were found in December 1865, as recorded in the Gatty Catalogue (Acc. no. 18.11.74.58): 'T wo spindle whorls, one in red glazed pottery, & the other in fired clay , found in excavating for the Hoylake Railway , in the clay above the old forest bed, Decr 1865; purchased of Mr H. E. Smith'. It is uncertain whether the 'red glazed pottery' was samian ware or medieval pottery , although Ecroyd Smith records a 'Terra Cotta Spindle Whorl 1 x inch in diameter, formed apparently from a piece of Samian ware' since some of the surface survived (Ecroyd Smith 1866, 210), which could refer to the same find.
Spindle whorls are pierced objects that have been defined by several key criteria (Crummy 1983, 67). Crummy stated that they should have a perforation with a minimum diameter of 5mm, to allow insertion of a spindle. The diameter and thickness should be even, the sides smooth, and the hole central to ensure that the spindle rotated evenly. Finally the overall diameter should not exceed 50mm. Lead examples, some of which are decorated, are catalogued above **2175-2202**.
There is also a series of pierced discoid fishing weights **3677-3690**, and miscellaneous pierced lead items **3975-4009**.
In *Ancient Meols* Hume illustrated ten spindle whorls (1863, pls XIV.1–9 & XV.7 & 10–11). Where possible

these illustrations have been matched to surviving examples; however, Hume's drawings of the less distinctive whorls (the material of which is not always clear from Hume's account) could potentially be matched to several surviving examples, so where any such uncertainty persists, these have not been allocated independent numbers as non-extant finds.

Stone spindle whorls

Mudstone
3305 Pl. 56
Buff-grey mudstone: biconvex; traces of black surface; D 25mm, Th 20mm, D of hole 10mm, Wt 17.1g.
3306 Pl. 56
Buff mudstone: surface worn; biconvex; D 36mm, Th 18mm, D of hole 10mm, Wt 32.7g.
Sandstone
3307
Grey sandstone, set on (?)modern wooden spindle shaft **3290**, with wool, presumably to demonstrate the practice); pale buff: biconvex, with one flattish area on perimeter; D 28mm, Th 18mm, D of hole 10mm, Wt 18.8g; worn from use; marked in ink '(1)8/[?4]/78', presumably a reference to the date on which it was found.
3308 Pl. 56
Grey sandstone: biconvex; D 31mm, Th 16mm, D of hole 9mm, Wt 19.4g.
3309 Pl. 56
Grey siltstone: biconvex; D 37mm, Th 11mm, D of hole 10mm, Wt 26.4g (possibly Hume 1863, pl. XIV, 3).
3310 Pl. 56
Grey siltstone: biconvex; D 34mm, Th 18mm, D of hole 9mm, Wt 22.0g; turning lines visible (possibly Hume 1863, pl. XIV, 9).
3311
Grey siltstone; biconvex; D 43mm, Th 13mm, D of hole 5.5mm, Wt 26.6g.

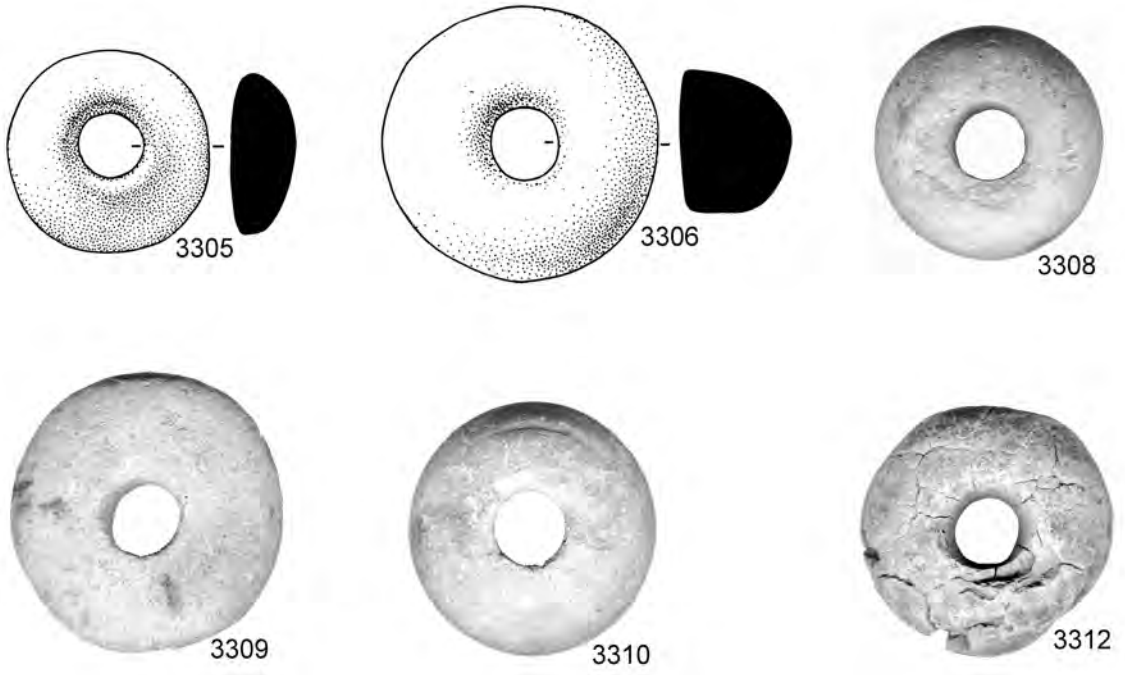
Ceramic spindle whorls
3312 Pl. 56
Greyish pink ware: plano-convex; ext. D 34mm, int. D 9mm, Wt 20.2g (possibly Hume 1863, pl. XIV, 8).
3313
Soft pinkish ware: plano-convex; ext. D 42mm, int. D 7.0mm, Wt 18.7g; five concentric rings, partly obscured by an accretion of marine barnacles.
[3134 - number not used]

2.14 Other stone objects: later medieval and undated

David Griffiths and Robert Philpott

The surviving stone objects (see also spindle whorls, 2.13, above) from Meols are, with one exception, small portable items that would have stood out in the eroding layers in contrast to natural stone and building remains. Hones and whetstones are included here. There are also a number of stone spindle whorls, some of which are sufficiently diagnostic to be included under Roman material (**211** and **216–219**), and others in a separate functional category (**3305–3313**). Larger items, including the querns, were mentioned by Hume and Ecroyd Smith (see below) but none survive. The single large item that does exist is the sandstone grave cover **3339**, which was found during reconstruction work on the Leasowe Embankment in 1920 and is now in the Williamson Museum and Art Gallery, Birkenhead.

Hones, whetstones, and querns
There are 22 stone hones and whetstones, of which 20 are extant and two have not survived, and a closely-related perforated stone object which is more likely to be a net sinker. These fall into a narrow range of material types.



Pl. 56. Spindle whorls

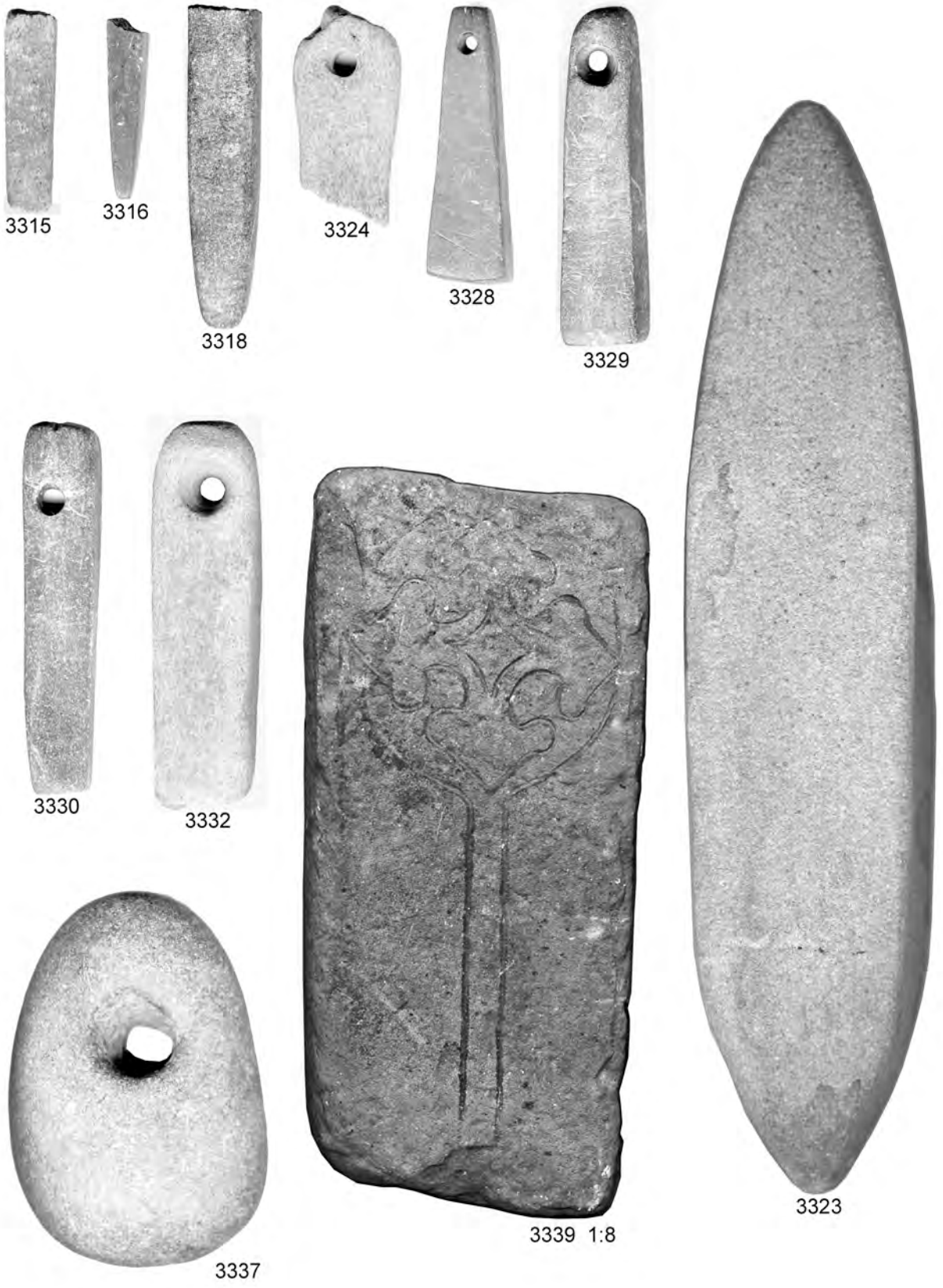
Most are in fine-grained hard stone, or laminated medium or coarser grained stone, which are characterised by being both hard-wearing and capable of giving a sharp edge to metal tools or implements. They comprise two variations in form; those perforated with a suspension hole and those without. There are finely worked examples of both types, which were clearly tools of quality and may have been used for fine grading on knives or to burnish metalwork. Others are larger and coarser items for sharpening larger iron tools. All are undecorated. A note on querns follows these entries.
The hones and whetstones are characterised by four main groups of raw material. A small group of fine-grained grey slates and siltstones and mudstones of uncertain origin. One of these **3329**, possibly of Silurian Age, may have been a north W ales siltstone. Another group comprises the opportunistic use of glacial erratics found within boulder clay, or in stream beds, exposed clay sections, or beaches, which include igneous rocks, such as rhyolite/felsite **3318**, **3327** and, thirdly, igneous rocks of as-yet uncertain provenance, which could only be identified by thin-sectioning. Fourthly, a fine-grained yellowish-grey carboniferous sandstone characterises the larger and cruder pieces, often with strong laminations and a welded structure, and is likely to be imported from Derbyshire or North W ales.
There is a narrow range of rock types. W ithout petrological analysis, examination of freshly broken surfaces, or thin-sectioning, the worn surfaces are difficult to identify (A. Bowden and G. T resise pers. comms). As thin-sectioning is a potentially destructive process, it was not felt to be merited here, but the possibility remains if future research inquiry deems it to be worthwhile.
The hones were examined under a Meiji stereomicroscope with x 7– x 45 magnification, by Alan Bowden, Curator of Earth Sciences at National Museums Liverpool (NML).

Unperforated hones
3315 Pl. 57
Medium-grained grey carboniferous siltstone, 30 x 8 x 7mm; rectilinear section, worn on all four sides, broken at tip and top.
3316 Pl. 57
Grey igneous stone, 31 x 6 x 6mm; square section, worn on all four sides, broken at top.
3317 Medium-grained grey carboniferous siltstone, 43 x 12 x 12mm; square section, worn on all four sides, complete.
3318 Pl. 57
Fine-grained grey igneous stone, rhyolite or felsite, 54 x 12 x 10mm; tapered, rectangular section, worn on all four sides, complete.
3319 Grey igneous stone, 64 x 13 x 5mm; square section, worn on all four sides and tip, complete.
3320 Purplish-grey slate, 82 x 30 x 6mm; tapering profile of rectilinear cross-section, complete.
The nine unperforated hones include these six small finely worked complete pieces, some are complete, and others are incomplete examples, which when complete may have been perforated. A further three unperforated examples of yellow carboniferous sandstone are larger fragments of shaped stone, which clearly served more utilitarian purposes for sharpening iron tools, such as shears and spade blades:
3321 Fine-grained micaceous yellow carboniferous sandstone, 52 x 51 x 28mm; fragment with two deep grooves on one side and two shallow ones on the other.
3322 Fine-grained yellow carboniferous sandstone, 85 x 33 x 27mm; fragment with deep grooves on one side and shallow ones on the other.
3323 Pl. 57
Fine-grained yellow carboniferous sandstone, 188 x 38 x 33mm; square section and pointed at both ends. Complete, post-medieval or modern.

Perforated hones
3324 Pl. 57
Medium-grained grey carboniferous siltstone, 38 x 18 x 7mm; tapered from wear.
3325 Medium-grained siltstone, 39 x 13 x 9mm; rectilinear section, worn on all four sides and tip broken.
3326 Laminated welded medium grey sandstone, 41 x 12 x 7mm; rectangular section, worn on all four sides, tip broken.
3327 Laminated welded coarse-grained sandstone, 41 x 23 x 7mm; rectangular section worn on all four sides, tip broken.
3328 Pl. 57
Fine-grained slate, 47 x 13 x 8mm; concave tapering profile, rectangular section, worn on all four sides.
3329 Pl. 57
Fine-grained Silurian siltstone, 57 x 12 x 9mm; square section worn on all four sides and tip.
3330 Pl. 57
Fine-grained grey siltstone, 59 x 13 x 6mm; rectangular section, tapered, worn on all four sides.
3331 Fine-grained siltstone, very finely made, 59 x 47 x 12mm; rectangular section, hour-glass perforation and well finished rounded end.
3332 Pl. 57
Fine-grained grey carboniferous sandstone, 64 x 18 x 4mm; worn on all four sides and broken at point.
3333 Fine-grained carboniferous sandstone, not local in origin, 85 x 33 x 27mm; rectangular section, tapering profile.
3334 Fine-grained carboniferous sandstone 148 x 23 x 13mm; oval section with ground flat sides, tapering profile.
3335 Stone unknown, trapezoidal shape 80 x 28mm (Hume 1863, pl. XXX, 2).
3336 Stone unknown, 88 x 44mm (Hume 1863, pl. XXX, 3).
There are 11 extant and two non-extant perforated hones, all finely made, of elongated profile, and with single perforations at one end.

Hones or whetstones are essential items in any economy dependent on metalworking or the use of metal tools, and also tend to survive well in the ground, which means they occur on most excavations of sites dating to the later prehistoric period onwards, and are common in Roman, early medieval, later medieval and post-medieval contexts. The nearest stratified find to Meols came from excavations at Hoylake Road, Moreton, in 1987; this, a pierced, finely made, mudstone hone, is paralleled by a find from Midland Bank, York (Tweddle 1986, 184, no. 959).

As modifications of natural materials, rather than synthesised manufactured products, they reflect their geological origin, but as artefacts they generally lack any material or fabric characteristics that could help to define their exact purpose or period of use. Most well-dated hones or whetstones come from stratified contexts in excavations. Roman sites, both civilian and military , have produced considerable numbers of hones. South Shields (Allason-Jones and Miket 1984, 349 ff), Aldborough (Bishop 1996, 90–1), and Colchester (Crummy 1983, 111–12) have all produced unperforated hones from stratified contexts. Viking-period and medieval sites, however , seem to produce more perforated hones, as demonstrated at York (Ottaway and Rogers 2002, 2793–7), where



Pl. 57. Other stone objects

imported Norwegian schists and phyllites dominated the group, Goltho, Lincolnshire (Beresford 1987, 195) and St Peter's Street, Northampton (G. E. Oakley and D. T . Moore, in W illiam, Shaw and Denham 1985, 280 ff). Hones from Lincoln have a wider range of forms, with pendant forms, which are usually the delicate and fine types, common in late Anglo-Saxon and medieval contexts (Mann 1983 29).

In terms of typological dating, we may point to the apparent preponderance of unperforated hones on Roman sites and perforated examples on medieval sites, to suggest a broad classification of the Meols finds on this basis. The most delicately-made example from Meols is **3328**, which bears some similarities in shape to early medieval examples from elsewhere. Only decorated examples, or those with metal attachments, such as the 'whetstone sceptre' from Mound 1, Sutton Hoo, Suffolk (Care Evans 1994) or a simpler version from Llanbedrgoch, Anglesey (Redknap 2000) may be identified with acute cultural or chronological affinities. In these two cases, both early medieval in date, it does seem that the possession of fine whetstones had, in some cases, gone beyond mere functionality to embody a symbolism in regalia and display that is possibly a testimony to the high status of fine metalworking in early medieval societies.

Perforated stone net sinkers
3337 Pl. 57
Smoothed igneous beach pebble with suspension hole, 65 x 47 x 19mm.
3338 124 x 78mm (Hume 1863, pl. XXX, 1); pierced stone, trapezoidal shape with round hole in centre.

Querns (date uncertain)
Several stone rotary querns were found at Meols. Hume recorded without illustration only one example, the upper stone of a circular quern with a perforation at the top (Hume 1863, 315). Several were in the Mayer Collection and Ecroyd Smith himself found fragments of others on the beach (Ecroyd Smith 1872, 150). One in the Ecroyd Smith Collection was recorded in the Gatty Catalogue with a thumbnail sketch (Acc. No 18.11.74.71), 'fragment of a stone quern?, purchased of Mr H.E. Smith' H 3½in.'. Two stone fragments of querns were recovered in 1863–5. 'One of the "mule" or flat understones has been made of the coarse rag stone or conglomerate, hard as granite and full of small pebbles of white quartz; the other is part of a "rider", and retaining one of the holes by which this was revolved in grinding' (Ecroyd Smith 1866, 219). A further lower stone, 'of coarse ragstone, or mill-stone grit' was found in December 1870 (Ecroyd Smith 1872, 150). None can now be identified in the present collections.
An archive record in NML, dated 1930, refers to a sandstone object from Meols 'It was found on the shore of the W irral at Meols in 1860 by H. Ecroyd Smith and came with his collection to this Museum in 1874. It is figured in Hume' s *Ancient Meols* but he only suggests that it might be a pivot stone for a stone quern.' The piece had disintegrated. It was 116 x 87 x 30–40mm with a regular perforation, an outside diameter of 46mm, and an internal diameter of 20mm. The find appears not to be extant, and cannot be traced in Hume or Ecroyd Smith's published drawings.

Sandstone recumbent grave cover
3339 Pl. 57
1005 x 945mm, Th 221mm; rectangular, flat top, damaged and incomplete towards foot. Red sandstone slab, very weathered. The upper surface bears a worn incised trefoil cross with an concave-sided lozenge at centre within a circle, the lower surface and sides are severely worn and undecorated (for a recent note, see W illiams 1995, 86–7). The discovery of the slab was recorded in the *Cheshire Sheaf* for March 1920 ('Holly' 1922), having previously been the subject of a letter to the *Liverpool Daily Post*. It was pulled from the foot of the embankment after storm damage, having been inserted in the masonry in at least 1895, and may have been present amongst large quantities of sandstone rubble that had lain on the shore since the erection of the original embankment in 1829. Its precise origins are unrecorded, but the stone indicates it is a local product. Williams (1995) quotes a letter from T . M. Newell, of the Dock Engineer's Office, which states that the slab had been used since 1895 in dry pitched work at the western end of the old 1829 embankment and 'has been handled many times by the Commissioner's employees'. Its location in the embankment was therefore approximately SJ 241 911 (see Fig. 3.2.3).

2.15. Glass objects

Rachel Tyson

The glass from Meols includes a significant assemblage of early to later medieval beads, a few pin heads, and a small collection of glass tableware fragments. All the pin heads and the majority of the beads and vessels are made of high-lead glass, a very distinctive compositional type that has a bright jewel-like quality and is a relatively infrequent find. The beads and pin heads are likely to have been made in England between the 10th and 13th centuries, whereas the vessels were probably imported from the Continent in the 13th or early-14th century.
In *Ancient Meols* Hume illustrated four annular beads (Hume 1863, pl. XV, 2–5), two of which were coloured yellow, with diameters of 5mm and 9mm, which may survive amongst those listed with these dimensions below; the other two were uncoloured, and are therefore more difficult to associate with surviving objects, as are the two illustrated by Ecroyd Smith (1867a, nos 5 and 6).

BEADS AND PIN HEADS

A total of 52 beads (eight being fragmentary) have been catalogued from Meols. Forty-eight of these are made of high-lead glass, with an average of 75% lead oxide (Appx 2), and date between the 10th and 13th centuries. Of these, the majority, 37, were translucent yellow, with seven black and four emerald-green beads also found. All but one of the beads is monochrome. Seven dress pin heads of green, yellow, and black glass of the same high-lead composition are also represented, some still attached to their copper - alloy pins. In addition, there were two blue and one greenish bead of soda glass, and two 18th- to 19th-century opal beads.
The beads vary in diameter from 3mm to 15mm. They all have a D-shaped section. The striations and shape of many of the high-lead glass beads show that they were manufactured by winding a molten glass thread around a central rod. Since the central hole is often wider on one side than the other, it suggests that the diameter of this central rod was graduated.
The form classifications used here follow those used for the large assemblage of beads of the same type from Y ork

(Henderson 1986, 210–13; Mainman and Rogers 2000, 2592). The different forms are used purely for descriptive purposes, rather than implying differences in manufacture or use; all forms were made in high-lead glass by the same glassmakers and are discussed together below.

Annular beads

Yellow
3340
L 3mm, W 3mm, Th 1.5mm.
3341
L 4mm, W 4mm, Th 2mm.
3342
L 4mm, W 4.5mm, Th 1.5mm.
3343 Pl. 58 and V
L 4.5mm, W 4.5mm, Th 2–2.5mm.
3344
L 5mm, W 5mm, Th 2mm.
3345
L 5.5mm, W 5.5mm, Th 1.5mm.
3346
L 6mm, W 6mm, Th 2.5mm.
3347
L 6.5mm, W 7mm, Th 2–3mm.
3348
L 7mm, W 7mm, Th 2–3mm.
3349
L 7mm, W 7mm, Th 2.5mm.
3350
L 7mm, W 7mm, Th 3mm.
3351
L 7.5mm, W 7.5mm, Th 2.5mm.
3352
L 8mm, W 7mm, Th 1.5–2mm.
3353 Pl. 58 and V
L 8mm, W 7mm, Th 2mm.
3354
L 8mm, W 8mm, Th 4mm.
3355
L 9mm, W 8.5mm, Th 3.5mm.
3356
L 9mm, W 9.5mm, Th 3mm.
3357
L 11mm, W 11mm, Th 4.5–5mm.
3358 Pl. 58 and V
L 11mm, W 12mm, Th 4–5mm.
3359
L 14mm, W 14mm, Th 6mm.
3360
L 14.5mm, W 15.5mm, Th 5.5–6mm.
3361 Pl. 58 and V
L 15mm, W 15mm, Th 5mm.

Black
3362
L 8mm, W 8mm, Th 2.5–3mm.

Annular beads are defined as having a height less than half their diameter. All of the annular beads are high-lead glass, of which (including fragments **3384**), 22 are yellow and one is black. The one polychrome bead from Meols (**3358**) is made of yellow high-lead glass, with three eyes at intervals around the circumference. The weathering layers make it difficult to discern the original colour of the eyes, which now appear reddish or yellow, and it is not clear whether there could have been any further decoration. Sixteen of the many beads recovered from Coppergate in Y ork (Mainman and Rogers 2000, 2597) were polychrome, although these were not chemically analysed, so it is not certain whether they were high-lead glass. The decoration on the York beads included 'blobs', some surrounded by a circle with lines through them, or waves, cables, and spirals; they had parallels in Scandinavia.

Globular beads

Yellow
3363
L 3.5mm, W 3mm, Th 2.5mm.
3364
L 4mm, W 4mm, Th 2.5–3mm
3365 Pl. 58 and V
L 4.5mm, W 4.5mm, Th 3.5mm.
3366
L 5mm, W 5mm, Th 3mm.
3367
L 5.5mm, W 5.5mm, Th 3mm.
3368
L 7mm, W 7mm, Th 3.5–4mm.
3369
L 7mm, W 7mm, Th 4mm.
3370
L 7.5mm, W 8mm, Th 4–4.5mm
3371
L 9.5mm, W 9.5mm, Th 5mm
3372
L 9.5mm, W 11mm, Th 2.5–6.5mm.

Emerald-green
3373
L 3.5mm, W 4mm, Th 2–2.5mm.

Black
3374 Pl. 58 and V
L 6mm, W 6.5mm, Th 4.5mm
3375
L 8.5mm, W 9mm, Th 4.5mm.
3376
L 10mm, W 10mm, Th 6mm.
3377
L 10mm, W 10mm, Th 6.5–7mm.
3378
L 10mm, W 10mm, Th 7–8mm.

Pale greenish example
3379 Pl. 58 and V
L 15mm, W 15mm, Th 8–9.5mm.

Opal examples
3380
40 fragments likely to come from a bead of this type.
3381
L 11mm, W 12mm, Th 9mm.
Globular beads have a height more than half their diameter (e.g. **3365**). Including fragments **3384**, there are 11 yellow, two emerald-green, and 6 black high-lead glass examples, as well as two opal beads of the 18th–19th century , and a pale greenish soda glass bead. The latter could either be Roman, or made from remelted soda glass in the medieval period, as it is suggested the blue soda glass melon beads found in York and Meols were (see below).

Cylindrical beads
Cylindrical beads have a diameter about equal to their height

Emerald-green high-lead glass
3382
L 3.5mm, W 3.5mm, Th 3.5mm.

3383 Pl. 58 and V
L 5mm, W 5mm, Th 5mm.

Bead fragments
3384 An accessioned group of eight very small fragments: three from globular beads (one yellow, one emerald green, and one black), a possible melon bead fragment, and a further four from yellow high-lead glass beads, the original form of which could be any of the above.

Globular pin heads
Two yellow glass pin heads are still attached to the copper-alloy shaft and are complete: these are therefore catalogued under later medieval pins **1887** D (head) 4.5mm) and **1888** D (head) 5mm.

Detached glass pin heads

Yellow
3385 Pl. 58 and V
L 4.5mm, W 5mm, Th 5mm.

Emerald-green
3386 Pl. 58 and V
L 6mm, W 6mm, Th 4mm; stub of copper alloy shaft survives.
3387
L 5mm, W 6mm, Th 2mm (half).
3388
L 6mm, W 8mm, Th 4mm (half).

Black
3389
L 7mm, W 7mm, Th 5mm.

High-lead glass parallels and manufacture
Other high-lead glass beads have been excavated from urban sites, most notably large numbers from several sites in York: 34 Shambles, thought to date to the 12th or early 13th century (Henderson 1986); 16–22 Coppergate and 22 Piccadilly, dating from the 10th century , but concentrated in the 11th century (Mainman and Rogers 2000); and Anglo-Scandinavian levels at Pavement and Clifford Street (Mainman and Rogers 2000). Smaller assemblages include three small green and yellow beads from 13th- to 15th-century contexts at The Still in Peterborough (Cessford, Morris and Spoerry 1998), one bead from 10th-century layers in Berrington Street, Hereford (Bayley 1990, 269), and approximately seven beads from Flaxengate and the Holmes Grain W arehouse in Lincoln, probably 10th century (Justine Bayley, pers. comm.; Foley 1981). These sites also included rings and gaming pieces of high-lead glass.
Pin heads of this glass composition are less commonly found, but include two from late-12th-century deposits in London (Egan and Pritchard 1991, 299, 1468-9) and a green example from Coppergate, Y ork (Ottaway and Rogers 2002, 2915).
Although 52 beads and bead fragments seems a relatively small number, in that this could constitute only one necklace, the period of time and area over which they were found makes it clear that they represent only a very tiny proportion of what must have originally existed, even more so than if they had been found on a single archaeological site. The Meols beads make up the largest assemblage of this type in England outside York, and the glass pin heads are the largest collection from one place.
Glassworking evidence for high-lead glass beads and other trinkets has been found in Gloucester and Lincoln dating to the 10th century (Bayley 1990, 269; Foley 1981), and in York dating to the 10th and 11th centuries at Coppergate and Piccadilly (Bayley and Doonan 2000) and the 12th to early 13th centuries at 34 Shambles (Henderson 1986). The 'perforated globules' described with glassworking waste by Henderson (1986, 222, 215, fig. 100) from 34 Shambles may represent pin heads, which would suggest they were made along with the beads. A similar tradition extended over eastern Europe, where beads, bracelets, finger rings, and tesserae of high-lead glass were produced between the 9th and 13th centuries (Ullrich 1989). The existence of glass workshops for these artefacts in England makes it likely that the Meols beads and pin heads were made in this country.

Melon beads
3390 Pl. 58 and V
L 14mm, W 14mm, Th 5–5.5mm.
(also fragment, **3384**)
The complete blue melon bead **3390** is composed of soda glass (Appx. 2). It has 15 distinct gadroons around its circumference, a wide central hole, and a relatively short height to diameter ratio. Another very small fragment may come from a similar bead (**3384** group, above). **3390** has some resemblance to Roman melon beads (e.g. Guido 1978, 92, fig. 37, no. 22), but it is strikingly similar to 10th–12th-century examples from 22 Piccadilly in Y ork

Pl. 58. Glass beads and vessels (reproduced in colour Pl. V)

(Bayley and Doonan 2000, 2526, fig. 1232, no. 10655), a site which produced glassworking evidence for blue soda glass along with the high-lead glass (Bayley and Doonan 2000, 2525–8). While the blue glass composition is similar to Roman glass, it was thought more likely by Bayley and Doonan that the glass was imported from the eastern Mediterranean and re-melted to make beads in Y ork. The same may apply to the greenish soda glass bead from Meols **3379**, although it may simply be Roman.

Use of beads

While it seems likely that these beads were used to make necklaces, carrying on the tradition from the Anglo-Saxon period, this should not be assumed. It is thought that most of the small number of beads found in England dating to the later medieval period are paternosters from rosaries (Margeson 1993, 5). This was not the first time that beads were used to make prayer chains, having been used for centuries by other religions, such as Islam. Rosary bead-chains pre-dated their association with the later medieval Hail Mary, and are present within a Christian context before the Conquest. For example, Lady Godiva of Coventry (d. 1041) left to a Benedictine priory a set of gems threaded on a cord, which she used as prayer beads (Winston Allen 1997, 14).

Another use has been suggested for three small high-lead glass beads from Peterborough as beading on clothing or personal accessories (Cessford *et al.* 1998). While this may be a possibility for the smaller beads from Meols, many of them are too large for this purpose.

VESSEL FRAGMENTS

Six vessel glass fragments are included in this assemblage, all but one of which are composed of yellow high-lead glass. M. Ponting's analysis (Appx 2) confirms that these fragments contain between 68% and 83% lead oxide, consistent with other such vessels of a 13th/early-14th-century date. They are found concentrated across northern Europe. All of the high-lead glass vessels excavated in Europe, including stemmed wine glasses, beakers, bowls, and jugs, are highly decorative, and the Meols fragments conform to this pattern. Although they are small fragments and it is not certain which vessel form each comes from, they undoubtedly represent decorative tablewares.

Yellow high-lead glass

3391 Pl. 58 and V
L 8mm, W 11mm.
3392 Pl. 58 and V
L 14mm, W 8mm.
3393 Pl. 58 and V
L 14mm, W 8mm.
3394 Pl. 58 and V
L 15mm, W 20mm.
3395 Pl. 58 and V
L 27mm, W 13mm (Ecroyd Smith 1871a, 128).

A yellow body fragment **3394** is decorated with an applied pincered horizontal trail and has the remains of further zig-zagging or looping trails attached to the top of it. A fine yellow rim fragment **3391** has thin applied horizontal trails just below the rim edge. Both of these fragments display decoration found on other high-lead glass stemmed wine glasses or beakers (e.g. Baumgartner and Krueger 1988, 164–74; Tyson 2000, 58–61, 78, 82–5).

A fragment of curved yellow glass **3393**, broken at both ends, may be the remains of similar trailing applied to a vessel. It is slightly scarred around the inside circumference, suggesting that it may have been applied around a stem or handle with a diameter of about 11.5mm. It has a circular section, which makes it unlikely that it is a finger-ring, since examples of high-lead glass finger -rings have a D-shaped section (Henderson 1986, 222). Applied discs are found supporting suspended decoration on the stems of high-lead wine glasses from Braunschweig in Germany and London (Baumgartner and Krueger 1988, 169–71, nos 133–5). Rings are sometimes found around the stems of other compositional types of glass of 14th-century date (Foy and Sennequier 1989, 204, no. 146) or around flask necks (Foy and Sennequier 1989, 245–6, no. 230), and it would be consistent with the general style of medieval glass decoration for them also to be found on high-lead glass vessels.

Two further yellow fragments consist of a folded section of glass, one with a green stamped berry prunt atop the fold **3395**. It is likely that the prunted example is the handle from a jug. The undecorated example **3392** could also come from a handle, but may represent suspended decoration, which is seen attached at intervals down the stem of a green high-lead wine glass from Braunschweig and a yellow high-lead wine glass from Lübeck (Baumgartner and Krueger 1988, 169–71, nos 133–4). Berry prunts have been found on a number of high-lead glass vessels, including yellow prunts on a yellow stemmed wine glass from Bedford (Tyson 2000, 58–60, no. g26), and on a yellow fragment from Swan Lane in London (Baumgartner and Krueger 1988, 174, no. 140). Green prunts are amongst the other decoration on the green stemmed wine glass already referred to from Braunschweig as well as on a yellow flask or jug from the same street (Baumgartner and Krueger 1988, 169–70, no. 133, 172–3, no. 136). **3395** is the first example of a berry prunt applied to a handle. These fragments are therefore an important addition to the known European repertoire of high-lead glass.

Fragments from only about 35 other high-lead glass vessels have been excavated to date in England. Like all other high medieval glass tablewares, these come from high-status or wealthy sites including Old Sarum, Knaresborough and Launceston Castles, Bordesley and Kirkstall Abbeys, the College of the Vicars Choral in York and Wolvesey Palace (the bishop's palace) in W inchester, and wealthy urban assemblages such as Swan Lane in London and Drury Hill in Nottingham (Tyson 2000). Perhaps on the same trading route as Meols, a number have also been found in Waterford and Dublin (Tyson 2004). Tablewares were used communally at this date, with at least two people sharing drinking vessels (Tyson 2000, 29–31).

As yet, no furnace sites have been identified, although lead isotope analyses carried out on a number of samples of high-lead glass vessels from Germany, the Netherlands, and England found the source of the lead to be the Harz Mountains, the Bavarian Forest, or northern Eifel in Germany, and production is likely to be local to the source, since lead was readily available in many regions (Wedepohl, Krueger and Hartmann 1995, 81–2; Krueger 1996, 279). However , other production areas may be identified in the future.

Green potash glass

3396 Pl. 58 and V
L 27mm, W 21mm.

The remaining vessel fragment **3396** is green potash glass, the most common medieval compositional type, with finds dating from about the 12th century onwards. It may represent either an undecorated utilitarian vessel made in England, or a decorative or table vessel from the Continent.

Utilitarian wares included uroscopy vessels (used to monitor and diagnose health from the colour and consistency of the urine), distilling equipment, flasks and bottles, and hanging lamps. Continental potash vessels included stemmed goblets, beakers, bowls, jugs and flasks, with most of the examples excavated on English sites imported from France or Germany (see Tyson 2000). Both tablewares and utilitarian glass vessels have only been found on high-status sites in England, such as those listed above, even though utilitarian glass was less expensive (Tyson 2000, 20–4).

MISCELLANEOUS GLASS OBJECTS

3397 D 10 x 3mm; pinkish yellow glass, not yet analysed, possibly a Roman bead, attached to a twisted copper-alloy wire
3398 D 25mm; cylindrical fragment of green glass, half only survived when Gatty drew a crude thumbnail sketch (NML records).
3399 An elliptical loop of ?copper alloy with what appear to be two annular beads attached, illustrated by Hume in his plate entitled 'Beads' (Hume 1863, pl. XV, 12).

Possible post-medieval bottle
Ecroyd Smith (1868, 12) referred to, but did not illustrate, an 'upper portion of a bottle, temp. Queen Elizabeth.' It is highly unlikely that anyone writing in the 19th century would have been able to identify the forms of the rare glass bottles current in the 16th century; the identification of the fragment referred to therefore remains obscure.

2.16 Pottery: later medieval and post-medieval

Janet A. Axworthy

The majority of the known finds of later medieval pottery from Meols were collected by Henry Ecroyd Smith between 1855 and 1874 and are now held in National Museums Liverpool (NML) with the accession number 18.11.74.63. The Williamson Art Gallery and Museum has four pieces, and there are 20 vessels and fragments, including two crucibles, within the Potter Collection in the Grosvenor Museum, Chester.

Two unpublished 19th-century manuscript catalogues in NML refer to pottery from the Meols. One, a 'Summary of a Collection of Antiquarian and Other Remains found upon and near the Cheshire Sea Shore and made by Henry Ecroyd Smith 1855–1874', has an entry 'Tray 19: Specimens of pottery wares – 80' and next to it in brackets '(reserve lot in tin-boxes – say 200)'. A marginal note is added in another hand: 'Thrown away – rubbish'. While the catalogue is Ecroyd Smith's own, the annotation is thought to have been made by Charles Gatty, Ecroyd Smith's successor as curator from 1873. The second document, in yet another hand, is the Stock Register, made post-1874. This has the same main entry as above, without the additional notes, but another clause has been added 'Handles of crocks 11th–13th with various indented ornamented decoration – 21'. According to these notes, Ecroyd Smith's collection once totalled more than 178 fragments, but the surviving material amounts to 83

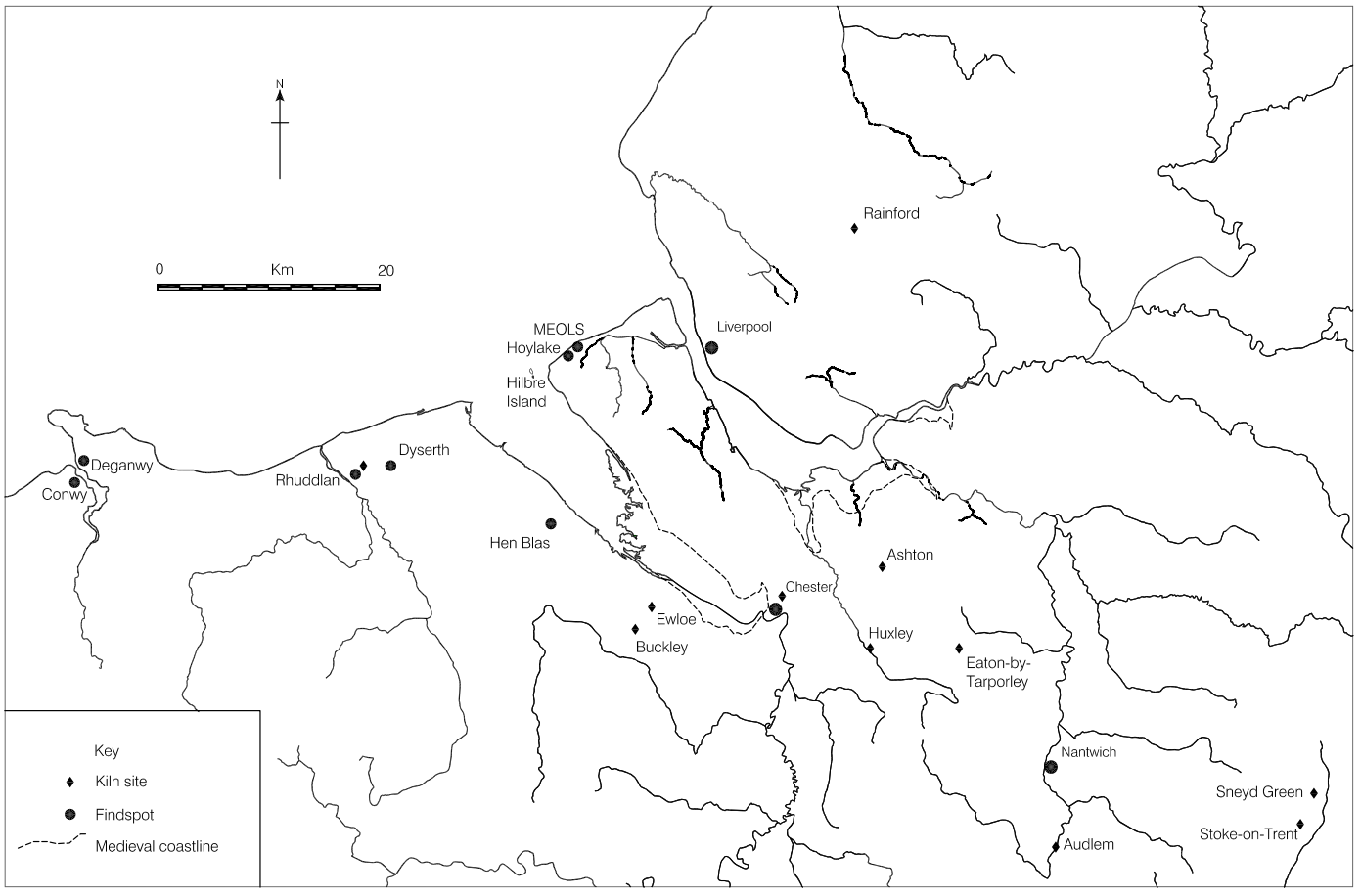


Fig. 2.16.1 Places referred to in text

fragments; comprising, 69 medieval and early post-medieval and 14 later post-medieval sherds (excluding clay tobacco pipes, see 2.17). It was thought for some time after World War II that the Liverpool collection of Meols pottery had mostly been lost in the bombing of May 1941. However, the rediscovery of some of the material prompted a study in the 1970s (Rutter, unpub. 1978), which has been updated for this publication.[1]

It appears likely from the variety within the extant group and the references to the collection of these finds that there were large quantities of pottery vessel fragments available for collection on the Meols coastline. It seems also from the character of the sample that there was a selective bias in retrieval towards decorated pieces, rather than collecting a more objective sample of what was probably available at the time. There is, of course, also a little Roman pottery from the antiquarian collections (see 1.3, 2.3). It is perhaps surprising, given the quantity coins and metalwork of the 10th–12th centuries AD from Meols, that amongst the pottery there is no contemporary Chester / North Midlands ware, which is well-represented at Chester and other Irish Sea market sites of the period, including Dublin (see also 2.4). Given the range of imports, Early Stamford ware, a small amount of which has been found in the area (Davey and Rutter 1977), might also have been expected. These wares are not brightly coloured, so their absence may also be explained by collecting bias.

Ecroyd Smith's collection of pottery was growing by 1863, and he describes his finds of 'Early English Pottery' as 'numerous' (Ecroyd Smith 1864a). He contributed the chapter on pottery to Hume's *Ancient Meols* (1863, 328–34), illustrating his text with examples of medieval fragments from his collection. Thereafter notes on later medieval and post-medieval pottery appear within his catalogues of finds from the shore in successive issues of the *THSLC* between the years 1866 and 1874. Entries are mostly fairly cryptic, and it is now practically impossible to identify the existing material with the original notes but the few carefully drawn pottery items are identifiable. A description is given, for example, of slashed handles and splayed and thumbed bases found in 1867 (Ecroyd Smith 1868, 123) and sherds decorated with incised patterns found in 1868 (Ecroyd Smith 1869a, 215). Since the collection is now incomplete and, as some slashed handles were already a part of his collection in 1863 (see Hume 1863, pl. XXXI, 8 and 10, and comments on p. 331), these fragments cannot now be isolated from the rest. It is only possible to suggest from the illustrations in *Ancient Meols* that pl. XXXI, 5 is almost certainly **3457** and **3460** below; pl. XXXI, 8 is **3449** and, pl. XXXI, 10 may be **3488**. pl. XXXI, 7 is now missing. It is, however, another bottle-like vessel such as **3426** and **3427**, below.

Saintonge wares

3400 Pl. 59 Body sherd of a jug, fine pale micaceous buff fabric, exterior decorated with an applied vertical thumbed strip and coated with a mottled copper green glaze, 13th-early 14th century.

3401 Pl. 59 **3402** Handle and rim of an unglazed jug and a body sherd in a fine pale micaceous buff fabric; French, probably from the Saintonge, 15th- 16th century. **3402** not illus.

3403 Pl. 59 Small body sherd of a jug, micaceous buff 'unglazed' ware; French, probably from the Saintonge, 15th–16th century.

3404 Pl. 59 Press-moulded bowl rim decorated with fringed masks, manganese purple, and copper green polychrome glaze, on a fine buff – white fabric. French, Saintonge Palissy-type ware 16th to early-17th century (Davey and Rutter 1977, 22–3, no.5; Hurst 1974, 230–33, type B).

Medieval English wares

3405 Pl. 59 Decorated body sherd with a 'reduced green' glaze, that is a clear glaze over a pale grey , finely granular body, decorated externally with incised lines. The body core is a darker grey. The fabric and decoration is similar to some Ham Green or Bristol wares, 13th–14th century.

3406 Pl. 59 Body sherd from a large ?jug. Brownish-green glaze with iron-rich brown slipped line decoration. Reduced dark grey fabric internally. Possibly Gloucester ware.

3407 Pl. 59 Rim and part of the handle of an open-ware vessel, possibly a skillet, gritty buff grey cored fabric with a random stabbed decoration and a patchy burnt bright copper green glaze on the upper surface; possibly from Nuneaton (information from S. Moorhouse). 14th–15th century.

3408 (not illus.) Base sherd from a hollow-ware vessel, fine pink-buff fabric with patches of slightly mottled green glaze on the exterior , unglazed interior. This is a T udor-green ware type but not of the Surrey/Hampshire industry (S. Moorhouse pers. comm.). Possibly a 'ewer' form, such as the patchily glaze types illustrated from collections of the Inns of Court (Matthews and Green 1970 fig. 1); 25% of base. 15th–16th century.

Medieval coarse pottery

3409 Pl. 59 Flat-topped square rim of a cooking pot with an impressed decoration, fairly soft orange-brown fabric with numerous gritty inclusions (up to 2mm in diameter) and small clay pellets of roughly the same dimensions; 10% of rim.

3410 Pl. 59 Rim of a large storage-type vessel decoratively thumbed at the top and with an applied thumbed strip around the base of the neck, soft fairly coarse pink-grey fabric. The surface of this fragment is flaking off in minute lens-like pieces that seem to be characteristic of the ware when soft (?underfired). V essels in this fabric have been recovered from the 13th-century fill of the Castle ditch excavated in Nantwich (1979) (V . Nailor pers. comm.); 15% of rim.

3411 Pl. 59 Base of a baluster jug, sandy orange-brown fabric with a thin patchy slightly mottled green glaze on the exterior; 45% of base.

3412 Pl. 60 Base of a baluster jug, hard sandy largely brown, but grey-cored, fabric with a splashed green glaze on the exterior and decorative thumbing all the way round the base; 50% of base.

3413, 3414 Two fragments of apparently the same baluster jug or very similar vessels; fairly soft coarse pale buff fabric with a patchy light brown-green speckled glaze trailing off towards the basal part of the jug. Not illus.

3415 (not illus.), **3416, 3417, 3418** Decorated body sherds of jugs (**3417–3418** join), one grey completely reduced fragment and three orange-brown bodied oxidised sherds; **3416** and **3418** have stabbed and rouletted designs respectively, while **3415** (not illus.) and **3417** have markedly ridged exteriors and vertical slip stripes, all five are externally green-brown glazed. **3416** is labelled 'Hoylake 1857'.

3419 (not illus.) Green-glazed reduced sandy fabric. Decorated with two parallel rows of raised triangles.

3420, 3421, 3422, 3423 (latter over-fired; not illus.) Four body sherds of jugs; one undecorated oxidised orange fragment, the other three have reduced grey fabrics and are decorated with applied vertical stabbed or rouletted strips, green-glazed.

3424 Pl. 60 Green-glazed body sherd with a vertically applied, thumbed strip, possibly from a jug. Reduced grey fabric with an orange inner surface. Paper label reads 'Ornamented Cinerary Urn'. Cheshire.
3425 Pl. 60 Green-glazed body sherd, possibly from a jug. Vertically applied strip decoration. Reduced orange fabric with grey core. Cheshire type ware.
3426 Pl. 60 Base of a small bottle-shaped jug, very sandy coarse red-brown fabric with a splash of clear glaze towards the upper part of the body (100% of base). Hume described and illustrated another almost complete vessel from Meols (Hume 1863, pl. XXXI, no. 7) in 'a brownish slate coloured ware', now missing, but which may in fact be one of the small unprovenanced bottles in the Grosvenor Museum collections. This is a widespread form from the latter part of the 13th century into the 14th century . They are a common find in Chester and can be found in a contemporary illustration of a kitchen scene, showing small bottles or cruets, perhaps metal, on a trestle table in the Luttrell Psalter, 1335–40 (British Library, Harleian MS. Additions 42130, f.207a, cooks in miniature at foot of folio). The Meols examples are paralleled by the range of bottles in a pit group excavated on the Old Market Hall site in Chester, datable to the mid-14th century , but in particular the one slightly larger vessel in that group made in a very similar fabric (see Rutter 1977a, 18–21, no. 3; Old Market Hall 1967–70; SF 74). The Upper Northgate Street white ware hoard pot is the same form; discovered in Chester, with nine groats of Edward III, pre-Treaty coinage, deposited *c.* 1361 (or later; Rutter 1976, no. 457; Rutter 1977d). Another small collection of these bottles, recovered from the moated site at Belgrave, just outside Chester, produced a base of the same type of bottle with a honey and/or beeswax residue (Rutter 1986, 73–6).
3427 Body sherd of a small bottle, coarsely gritted fabric very similar to **3426,** largely oxidised, but with a greying core, decorated on the exterior with horizontal rouletting and with spots of green glaze (not illus.).
3428 Pl. 60 Base of a small jug in a coarse orange-red brown fabric. This vessel is unglazed but it is a common contemporary form with the bottles above, and often externally partially glazed. About 50% of the body remains. The Belgrave site at Chester provides a close parallel (Rutter 1986, fig. 5, no. 1) and the rim form and, darker iron-rich body is represented in the Ewloe production site debris (Harrison and Davey 1977, 92–9). Ewloe-type ware 14th–15th century.
3429 Pl. 60 Base of a small crudely made bottle, soft pink-brown fabric with a slight patchy brown glaze on the exterior, burnt base; 75% of base remains. This fragment is very close to the body and form of no. 2 from the Belgrave site, near Chester (Rutter 1986, fig. 5, 74–5).
3430 Pl. 60 Rim and part of a zoomorphic frilled bridge spout of a jug, fairly soft dense light brown-grey fabric with a patchy glaze on the exterior , green tinged over reduced patches. The spout consists of an applied folded pad pressed on the wall of the jug beneath the rim, covering a hole pushed through the neck and attached with a characteristic 'frilled' surround. The applied strip decoration on the front is typically part of a ram-like mask with curling horns, a known body type from the production site at Huxley near Chester (Rutter 1990c). It may be compared with examples from the Amphitheatre excavations in Chester (Thompson 1976, 211–4, figs 38 and 39) and the 'fish', or in fact anthropomorphic spout from Ashton (Newstead 1934, pl. 3, nos 5 and 11; cf. Rutter 1977c, no. 11). Very close parallels of this body fabric and decorative zoomorphic spout have now been recovered from Huxley, but have not as yet been found in very many other well-dated contexts locally . However, similar frilled spouts done with anthropomorphic decoration in general seem popular in the middle of the 13th century (see, for example, the assemblages from Dyserth (Hewitt and Morgan 1977); also from Deganwy (T albot 1977, no. 10; cf. Rhuddlan; Miles 1977a and 1977b) and continue into the 14th century, as demonstrated by the Old Market Hall pit group found in Chester (Rutter 1977a, no. 15; a plain 'frilled' spout).
3431 Pl. 60 Rim and strap handle of a squat jug or storage vessel, fairly dense soft pink-brown grey cored fabric with red inclusions and a patchy pale green glaze over the exterior; 45% of rim survives.
3432 Pl. 60 Abraded rim and strap handle fragment of a jug, soft very dense orange-brown grey cored micaceous fabric. The handle is decorated with an applied regularly notched strip and there are traces of a green glaze on the exterior. The outline of the rim is warped with the application of the handle.
3433 Upper part of a similarly-decorated strap handle, soft very dense orange-brown grey cored micaceous fabric and traces of green glaze. Not illus.
3434 Pl. 60 Abraded strap handle and body fragment of a jug, soft dense medium brown grey cored fabric. The handle is decorated with an applied thumbed strip with basal attachments rather spatula in form and green tinged glaze over reduced patches.
3435 Strap handle fragment of a jug, similar to **3430**, soft light brown grey cored fabric with part of a decorative applied central strip and patchy green glaze. Not illus.
3436 Pl. 60 Rim fragment of a jug, hard-fired grey and brown fabric with a grey core decorated with applied vertical strips and patchily green glazed; approximately 7.5% of rim survives.
3437 Pl. 60 Rim and strap handle stub from a jug, fine hard red-brown grey cored fabric decorated with pointed stabbing on the junction of the handle with the rim, green-brown glaze; 35% of rim survives.
3438 Pl. 60 Rim of a jug, soft fairly sandy red-brown fabric, red skin-like effect over the exterior up to the brown glaze beneath the ridge on the neck; 35% of rim survives.
3439 Pl. 61 Base of a jug, fairly soft dense brown grey cored fabric decorated with vertical applied strips and continuous thumbing around the base, patchily brown-green glazed; 25% of base.
3440 Pl. 61 Large body sherd of either a large jug, or potentially a curfew, fairly hard coarsely tempered sandy fabric with well-defined throwing marks, dark grey core with light brown areas on the exterior beyond patches of green tinged glaze over reduced areas. This fragment may be the base of a large jug, but the convex exterior shows no sign of wear or chipping and it seems more 1ikely that this is part of the dome of a firecover or curfew (Rutter 1978, 33–78). The interior is pitted and slightly blackened and a lighter, unglazed area on the exterior may be the result of the handle shielding that particular spot during glazing and firing. Labelled 'Hoylake 5/66'.
3441 Pl. 61 Strap handle of a jug almost identical to **3442**, hard fairly fine grey and brown fabric similar to above, decorated with deep elongated stabbing, patchily green brown glazed.
3442 Pl. 61 Strap handle of a jug, hard fairly fine grey-brown fabric, almost identical to **3441**, decorated with deep elongated stabbing and a central applied thumbed strip, thin patchy brown glaze.
3443 Pl. 61 Strap handle stub of a jug, fairly hard light brown grey cored fabric (very open' light' body), the

handle section is decorated with elongated stabbing and is patchily green glazed on the upper surface. A reinforcing strip of clay has been placed behind the handle attachment.
3444 Pl. 61 Body sherd of a cooking vessel, perhaps an open bowl, thin hard pink-brown dark grey cored fabric, coated internally with a green glaze and burnt and blackened on the exterior. The fragment probably comes from close to the base, but it is difficult to identify the form.
3445 Pl. 61 Body sherd of a jug, hard fairly fine brown and grey fabric with decorative vertical slip stripes and horizontal ridging, green brown glazed.
3446 Pl. 61 Base of a jug, hard largely grey fabric with a patchy green glaze on the underside of the sagging base; D 210mm; 17.5% of base.
3447 Base of jug; quite soft coarse white fabric similar to above with a brown-green glaze extending from the wall of the vessel onto the base; D 220mm; 15% of base. Not illus.
3448 Pl. 61 Body sherd with a large built-up spigot-hole from a storage vessel; fairly soft thick sandy , white fabric, greying under green tinged brown glaze on the exterior; frilled decorative surround to spigot with a fragment of an applied strip attached.
3449 Pl. 61 Handle of a jug; very hard sandy buff fabric decorated with elongated stabbing with a partially burnt-off yellow brown glaze with brown skin-like colouring beyond the glassy areas. This fragment bears a remarkable resemblance to some jug fragments found with the second tile kiln on the Deanery Field, north of the Cathedral in Chester in 1935 (Newstead and Droop 1936; Rutter 1977b). It seems to be the handle fragment illustrated in Hume (1863, pl. XXXI, 8).
3450 Pl. 62, **3451, 3452** Body sherds of jugs, or storage vessels similar slightly sandy white wares with dark brownish green glazes. **3450** and **3452** have decoratively ridged exteriors and are abraded and water worn. (**3451** and **3452** not illus.).
3453 Pl. 62 Strap handle fragment of a jug or storage vessel, very hard coarse fabric with a brown skin-like colouring beyond a patchy brown-green tinged glaze on the upper surface. The attachments of the handle onto the body of the jug are of lobed or spatulate form.
3454 Pl. 62 Body sherd of a jug, hard coarse pale pink sandy fabric brown coloured unglazed interior , speckled brown glaze on the exterior decorated with horizontal bands of combing and decorative ridge.
3455 Pl. 62 Thick rod handle of a jug, hard sandy white fabric decorated with ridges and grooves, spatula basal attachment, patchy bright green glaze.
3456 Pl. 62 Base of a large jug or storage vessel; very hard coarse sandy white fabric, burnt brown skin-like surface on the under-side with spots of brown-green glaze. Marked 'H3/(?7)2'; 15% of base.
3457 Pl. 62 Strap handle fragment of a jug or storage vessel; hard very coarse grey-white fabric, decorated with random pointed stabbing on the upper surface, with a thick brown-green glaze. Potentially one of the sherds illustrated by Hume (1863, pl. XXXI, 5).
3458 Strap handle fragment of a jug or storage vessel, quite hard coarse white fabric, green-brown glazed and decorated along its length with pointed stabbing and incised lines. Same fabric as **3457**. Most of one side is missing. Not illus.
3459 Pl. 62 Handle of a jug; fairly soft coarse grey-white fabric, decorated with deeply cut grooves and patchily glazed a bright copper green on the upper surface. A reinforcing strip of clay is in position behind the handle at the point of attachment to the body of the jug.
3460 Pl. 62 Rim and strap handle fragment of a jug or storage vessel; hard coarse grey-white fabric, the handle is decorated on the upper surface with random pointed stabbing, thick green-brown glaze; 35% of rim.
3461, 3462 Two small body sherds, one of a bottle-like jug such as **3426**, the second from a larger jug in the same fabric, fairly soft coarse white fabric with spattered green-brown glaze on the exterior. The bottle fragment also has characteristic brown skin-like colouring beyond the glazing. Not illus.
3463 Pl. 62 Base of a jug or storage vessel, hard coarse sandy white fabric, burnt with a brown skin-like effect and green-brown glaze on the exterior , decorated with well-spaced thumbing around the base; D *c.* 180mm; 12.5% of base.
3464 Pl. 62 Base of a jug or storage vessel with strongly everted walls; coarse white fabric with brown skin-like surface on the exterior beyond a spattered light green-brown glaze. D 160mm; 15% of base.
3465 Pl. 62 Rim and ridged strap handle fragment of a jug or storage vessel; very hard sandy fabric with a red-brown core and dark grey areas towards the exterior beyond a splash of dark green-brown glaze. Elaborately pressed-on handle attachment with the indentation and ridges of the frill continued onto the upper surface of the handle resulting in a central ridge; 30% of rim.
3466, 3467 Two body sherds of jugs; fairly hard grey-white fabrics; **3466** is decorated with vertical slip stripes and horizontal ridging, **3467** appears over-fired or subsequently burnt, both have brown-green glazed exteriors. Not illus.
3468 Pl. 62 Base of a strap handle from a jug or storage vessel; fairly soft pale pink gritty fabric, decorated on the upper surface with random pointed stabbing and patchily glazed a dark olive green-tinged brown with a dark brown coloured underside.
3469, 3470 Body sherds, probably of storage vessels; similar hard white-pink fabrics with green-brown glazed exteriors. **3469** has part of an applied decoratively frilled spigot hole attached. Not illus.
3471 Pl. 63 Body sherd, possibly of a jug or storage type, fairly hard buff-pink fabric with numerous inclusions, largely quartz, up to 1mm in diameter. Decorative applied thumbed strip on the exterior and patchily brown-green glazed. This is close to Pennine or Northern Gritty ware types.
3472 Pl. 63 Body sherd of a jug, fairly hard light brown grey cored fabric with a large number of red inclusions. Very little abrasion evident on this sherd.
3473 Body sherd of a jug; fairly coarsely gritted largely grey reduced body through to the exterior giving a green tinge to the glaze on the exterior , buff-light brown colouring to the interior surface. Not illus.
3474 Sherd from the base of a jug or storage vessel coarsely gritted fabric similar to above but darker brown colouring to the margins, green-brown glaze spots on the underside. Not illus.
3475 Pl. 63 Rim sherd. Unglazed with an orange-red slip on the outside. Sandy orange fabric with gritty inclusions. Probably south-west Lancashire.
3476 Pl. 63 'Equestrian Figure' aquamanile. The only reasonably full account of any of the pottery is that of the 'light coloured clay', perhaps white-bodied, fragment of an aquamanile or roof ornament in the form of a horse's head, possibly made locally (Ecroyd Smith 1866, 219, pl. IV). Pencilled into the margin of *THSLC* vol. 18 for 1866, a copy which once belonged to Ecroyd Smith and is now in the library of Liverpool Museum, is a note in his hand referring to this particular fragment stating '10 years later

crumbled to powder' (M. Warhurst pers. comm.). Although not extant, it can be compared with similar objects found in the area. A white ware roof finial, probably made at Ewloe, near Buckley, Flintshire, was recovered from the excavation at Hen Blas, near Flint (Davey and Morgan 1977, no. 35) and in the group of wasted pottery from Ewloe itself there is the head of a zoomorphic roof finial in a white ware (Harrison and Davey 1977, no. 57). Yet another was recovered in the Hunters Walk / Hunter Street School excavations at the centre of Chester, in the 1980s, and an elaborate piece of Ewloe ware roof furniture was found on the Dominican Friary site (Rutter 1990a, 106–14, illus. 77, 6). On present evidence, therefore, if the Meols fragment were a roof finial, then it is quite likely to have been made just across the Dee Estuary at Ewloe. However, although zoomorphic spouted jugs are a popular product from at least two Cheshire potteries (Huxley: see **3430** above, and Ashton), aquamanili were not apparently common vessels in the local repertoire. At the time of its discovery, however, the fragment was compared with what is probably part of an aquamanile found at Winwick near Warrington (Warrington Museum accession reg. no. 831). From the description of the glaze 'a yellowish-green or olivaceous type' and the drawing, it would seem more likely that this fragment is of an imported aquamanile, perhaps from Scarborough or Bristol.

3477 Pl. 64 Unglazed, pale pinkish cream, sandy fabric base and body sherd of a bottle of Ewloe type ware. '7.5.94' handwritten on interior.

3478 Pl. 64 Rim sherd. Thin purplish glaze externally. Cream to pale pink fabric. Ewloe type.

3479, 3480 Pl. 64 Two joining rim sherds. Patchy dark purplish glaze, internally only. Light brownish-red fabric. Ewloe.

3481 Pl. 64 Rim sherd with patchy purplish glaze. Pale cream fabric with gritty inclusions. Ewloe type.

3482 Pl. 64 Unglazed rim sherd with a grey slip. Pinkish coloured fabric grey core and gritty inclusions. Ewloe type.

Post-medieval wares

3483 Pl. 64 Multi-handled cup of flared form with dark purplish brown glaze. Originally with two opposed single-looped handles and two opposed multi-looped handles. Fine dark-red fabric. Multi-handled cups of this type are found at Beeston Castle, Cheshire, both in Civil War deposits and later 17th-century contexts (Noake 1993, 203, fig. 133. nos 55–7, 211, fig. 140, nos 170–1). The later group is distinguished by a small pronounced foot, and the glaze is denser in colour, both present on the Meols example.

3484 Pl. 64 Multi-handled cup of flared form with glossy even black glaze, three single-loop handles, three double-loop handles; fine orange-red fabric.

3485, 3486 Two single-looped handles.

3487 Body sherd of a vessel similar to the above.

3488 Pl. 64 Handle fragment, very highly fired and almost vitrified, decorated with a central ridge and elongated stabbing. Patches of dark green-black glaze remain on protected areas to one side of the handle and on the underside. This may be another of the fragments illustrated by Hume (1863, pl. XXXI, 10).

3489 Pl. 64 A decorative terminal, possibly from a drinking vessel, coarse very hard 'mixed' body consisting of a dark red- and a white-firing clay with large gritty inclusions and dark treacly glaze over one portion of the exterior, probably from a 17th-century vessel. The mixed fabric is similar to that well known in Buckley wares of 17th–18th and even 19th-century date but it is also apparently characteristic of a coarser body used by the Rainford industry in south Lancashire at least in the middle of the 17th century (see the 'wasted' pottery excavated from the Tennis Court site at Rainford in 1980: Davey 1991, 127). The provenance of this item is therefore uncertain, particularly as neither centre has produced a parallel object. It may have come, however, from a large drinking vessel, and can be compared with the ornamentation of a few very large, probably rather special ?presentation vessels from Brookhill, Buckley (see Amery and Davey 1979, no. 60); 100% of rim.

3490 Pl. 64 Rim and strap handle stub of a jug or storage vessel, pink cored fabric paling towards the surface with a darker brown colouring to the exterior. A patch of mottled brown glaze runs down over the handle extending towards the rim as a result of the vessel having been fired upside-down; 17.5% of rim.

3491 Pl. 64 Base of a tripod-footed pipkin heavily gritted largely light brown-buff colouring, but with a greying core, internally green glazed. North Devon gravel-tempered ware; the form is rather uncertain as from the size of the fragment it could belong to either of the above vessel groups typologically (see Grant 1983, fig. 40; Evans 1979 for a vessel typology of this ware, specifically nos 44, 57, 76–7); 20% of base

3492, 3493 Pl. 64 Two body sherds, possibly from the same 'Bellarmine' German stoneware bottle, dark grey cored fabric with pale brown interior and dark brown speckled glaze on the exterior. One sherd has part of a characteristic mask decoration (illustrated); Holmes type VIII (Holmes 1951, pl. 24) mid-17th century of Frechen type.

3494, 3495 Pl. 64 Two small fragments possibly from the same vessel; a base and a body sherd; fine off-white fabric decorated with trailed and feathered slip on the exterior, yellow (clear) glazed internally and externally; turned foot. D (base) *c.* 100mm. This cup form is a globular based type with a tall funnel-shaped neck and everted rim, in common use at the end of the 17th century and the beginning of the 18th century (see Kelly and Greaves 1974, fig. 17 no. 133, for a slip-decorated cup; Mountford 1975, 26 nos 21–25).

3496 Pl. 65 Body sherd, probably of a large of a drinking vessel, pale dense buff coloured fabric, thickly glazed on both surfaces a manganese mottled brown and decorated on the exterior with a vertical ruffled strip of applied clay intended as a false 'handle'. A quite common type of decoration in use by the middle of the 17th century, possibly continuing into the early part of the 18th century found on red and buff firing wares, but only apparently used to decorate multi-handled drinking vessels rather than other hollow-ware, for example the vessel form catalogue of 17th century wares from the Brookhill site in Buckley and also Mountford (1975, 24 no. 6); this is a funnel shaped multi-handled tyg probably close in shape to the form from which the sherd above came).

3497 Pl. 65 Body sherd of a large stoneware bottle, pale pink-buff fabric with yellow tinged lustrous exterior; may originally have been 30–40cm in height.

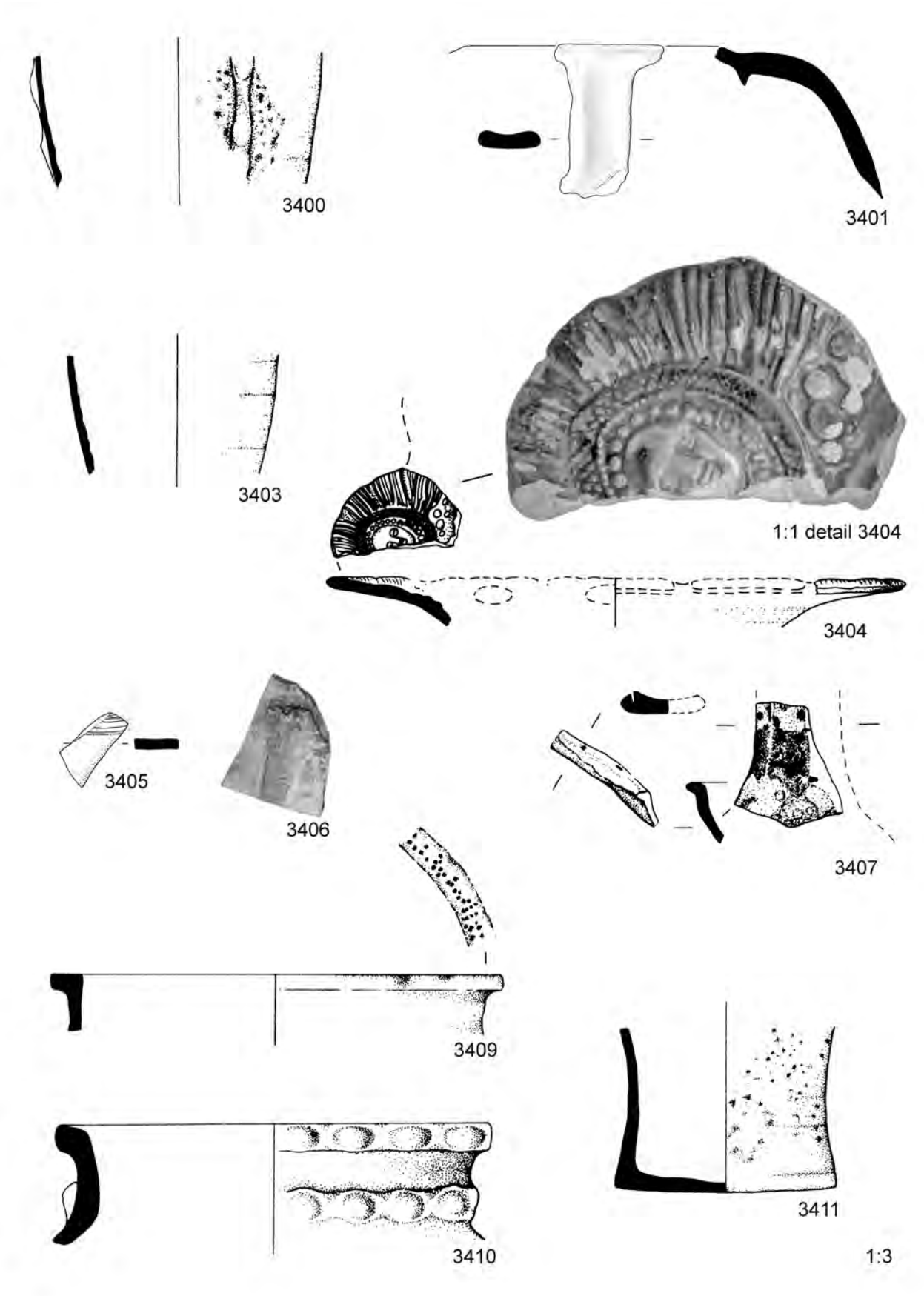
Metalworking Crucibles

(see also bone-ash crucibles **3130-3131**)

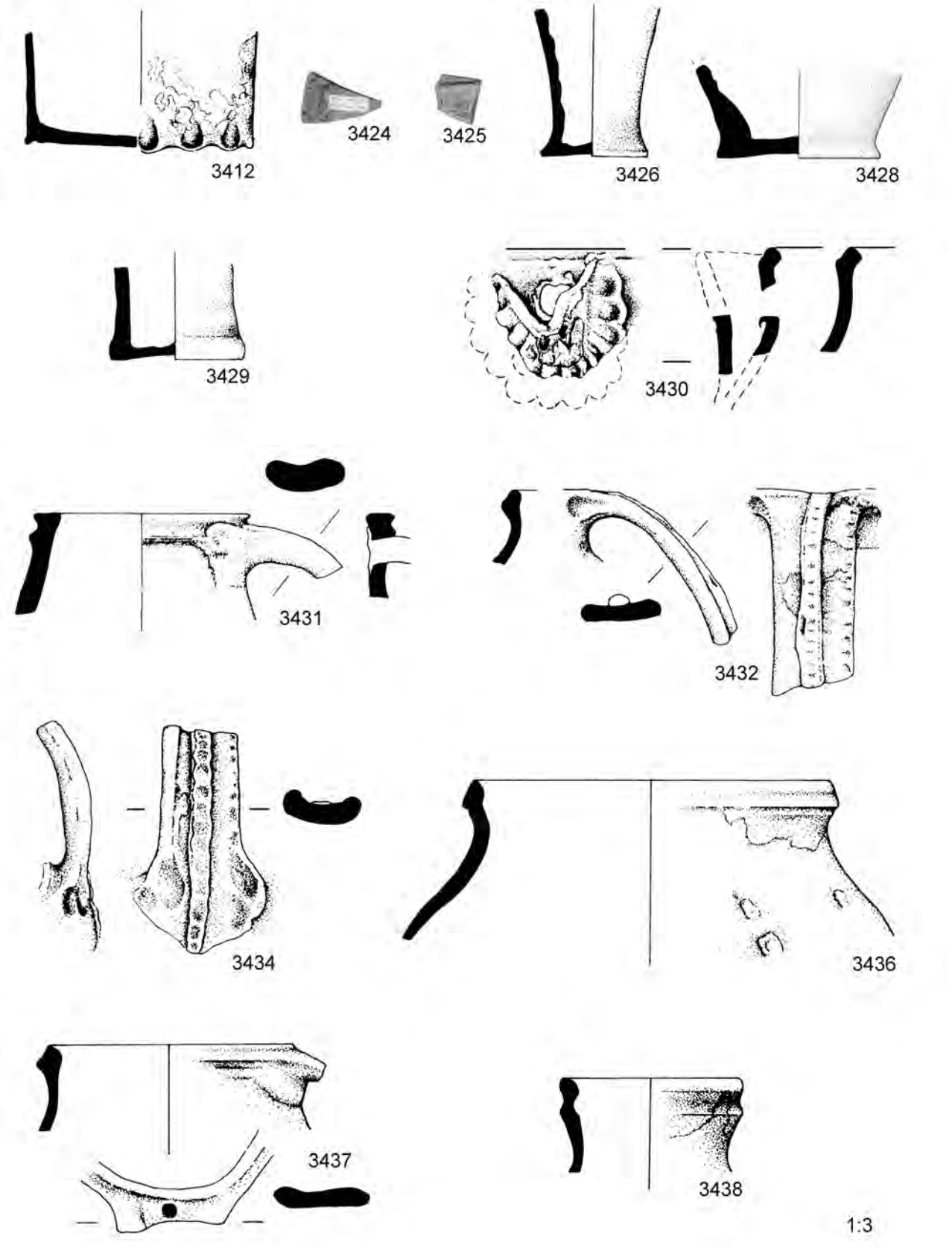
3498 Pl. 65
D 54mm.

3499 Pl. 65
D 54mm.

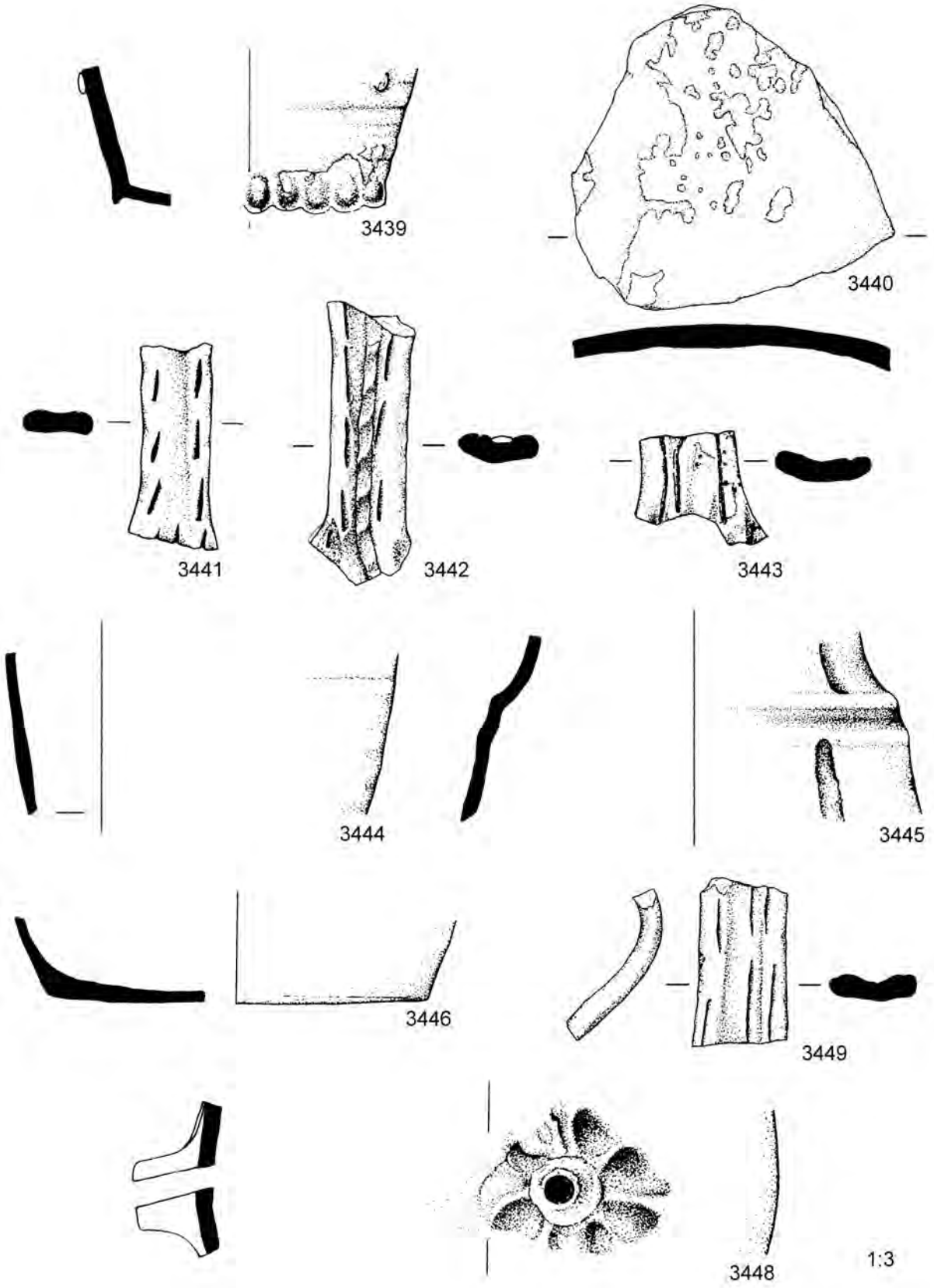
Bases of two similar crucibles, **3499** with a noticeably thicker base. Both are thrown in a pale grey sandy bodied



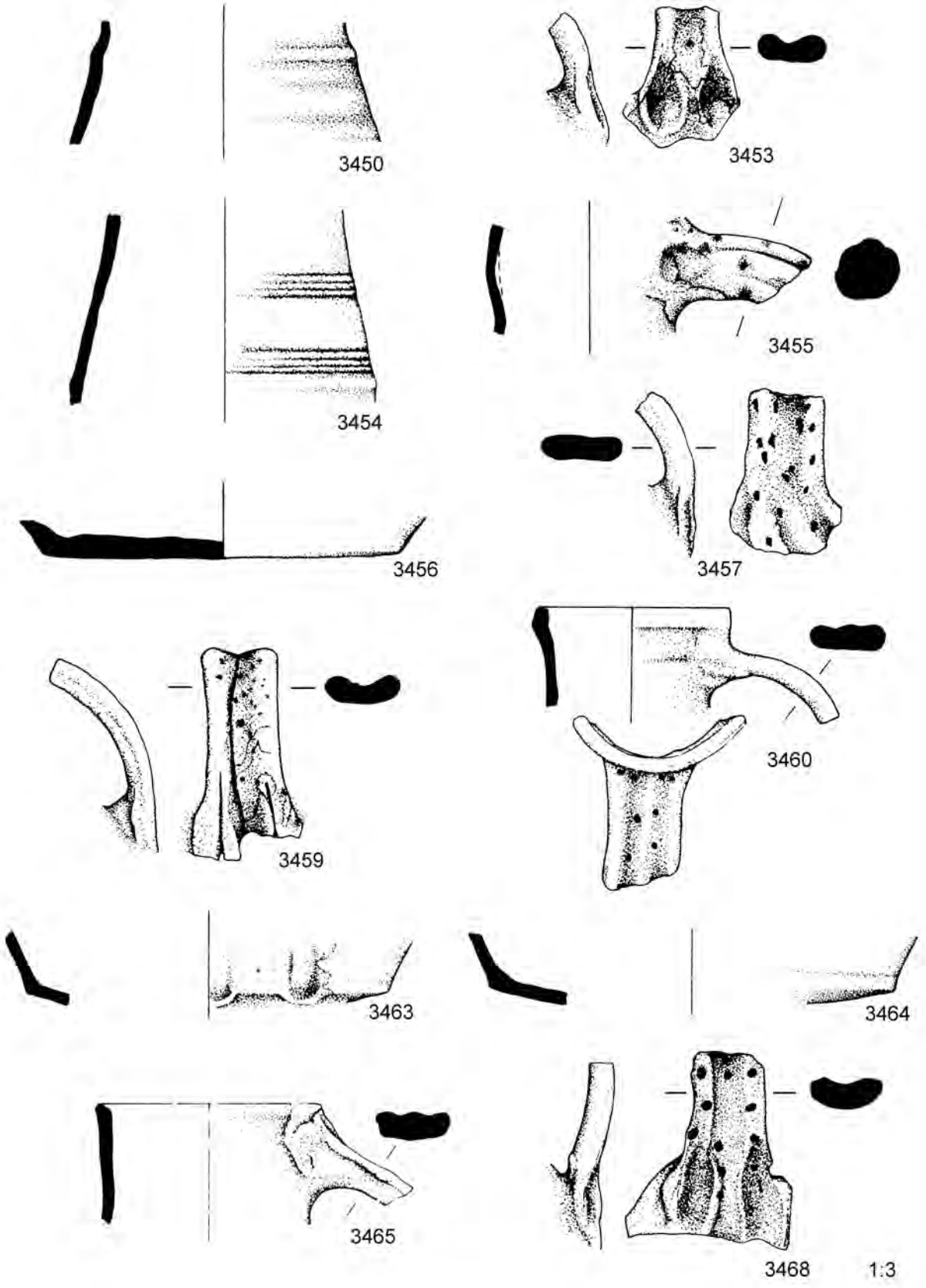
Pl. 59. Later medieval pottery



Pl. 60. Later medieval pottery



Pl. 61. Later medieval pottery

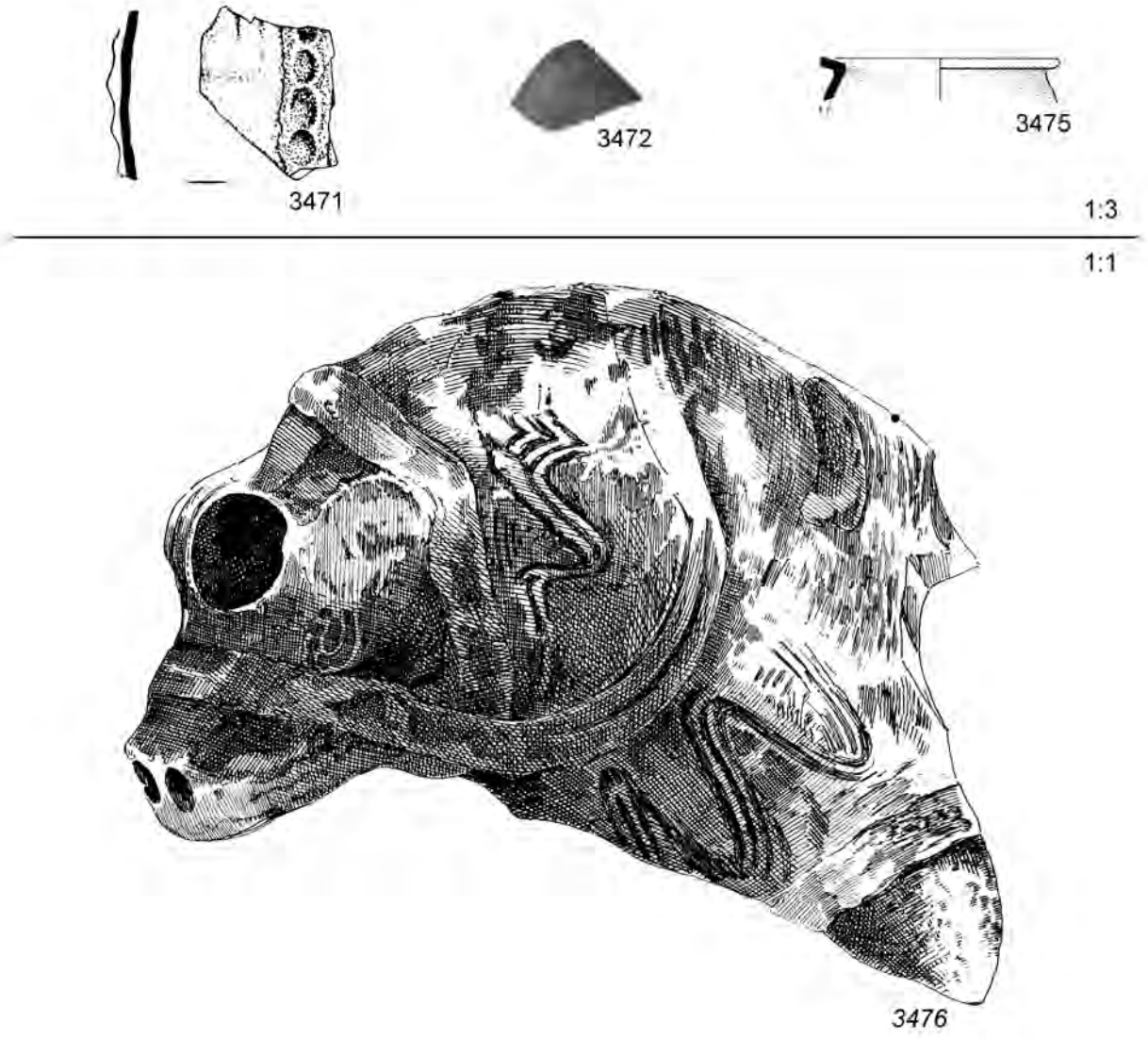


Pl. 62. Later medieval pottery

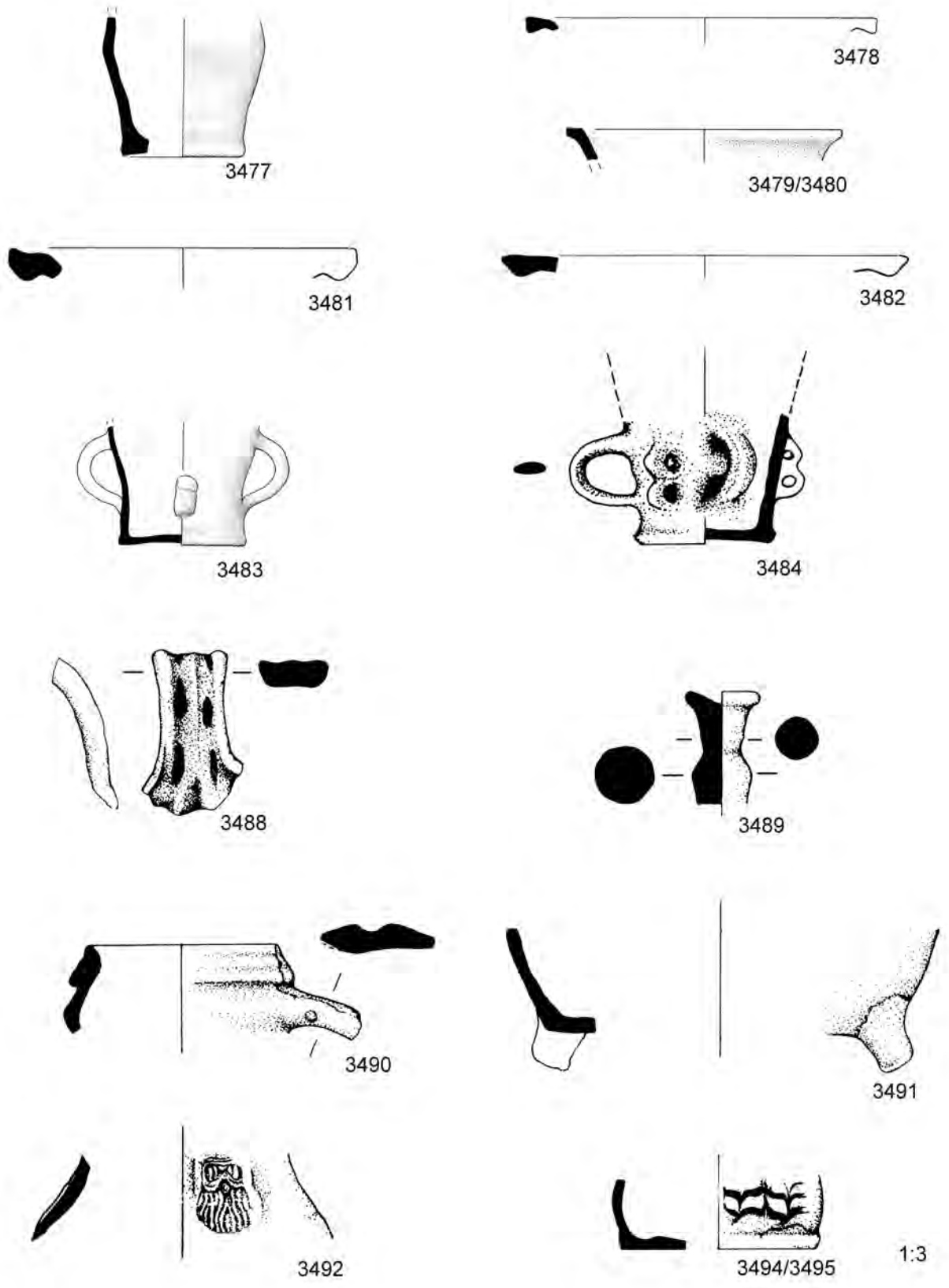
ware, interior glazed or vitrified in use. Visual examination suggests they were used for copper -alloy casting, but the precise use of these small cup-shaped pots awaits metallurgical analysis; their small size suggests fine rather than base metal. *c.* 60–75% survives of each.

DISCUSSION

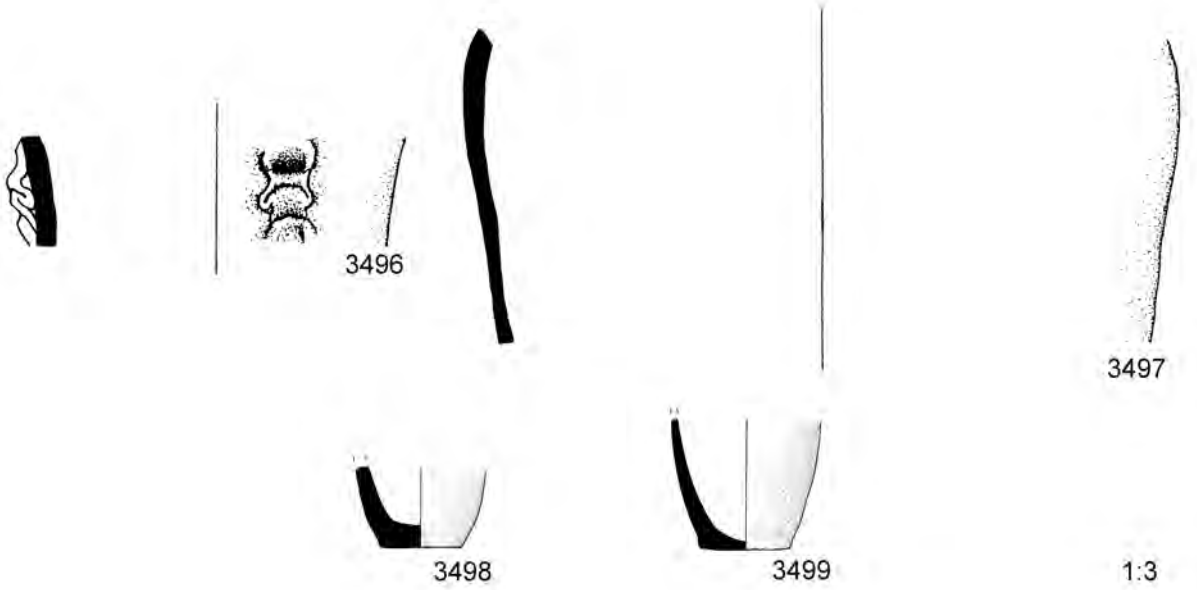
The overall appearance of the group is one of relatively large fragments, compared, for example, to rural as well as urban sites in and around Chester . Roughly half are decorated pieces and a high proportion comprises handles, bases, or rim fragments predominantly of jugs or other hollow-ware containers. Only three sherds are recognisable from cooking vessels: **3404, 3407, 3491**, in the Liverpool collection and of these the rim fragment **3407** is decorated. However, three of the W illiamson fragments appear to be of cooking pots and, this collection is generally of noticeably smaller sherds. One other sherd in Liverpool **3440** may be of a curfew. An indication of the size of some of the surviving sherds in Liverpool can be shown in the surviving percentage of rims and bases within the group. Of the 26 measurable diameters the average amount of rim present is 36% (41% with the terminal **3489** added and 34% of base; roughly a third of the circumference in both cases. The smaller sherds are particularly eye-catching, being either oddly shaped brightly coloured and/or decorated (e.g. **3400, 3404, 3491** and **3495**). Lastly, a number of the sherds are weathered, some obviously very water-worn and smoothed. The majority, however, show remarkably little abrasion and, given their large size, must have been in protected contexts, potentially uncovered by the sea from rubbish pits or middens buried by the sand, rather than existing as a scatter on the old land surface. By way of corroborative evidence, **3479–3480** are two joining sherds, a few fragments may be from the same vessel **3494–3495** and Ecroyd Smith illustrated two fragments in *Ancient Meols* as coming from a single jug (Hume 1863, pl. XXXI, 5), which would suggest that these fragments at least came from the same discrete primary deposits, although they are not from the same vessel. In addition, an alternative source



Pl. 63. Later medieval pottery; 'Equestrian Figure' aquamanile.



Pl. 64. Later medieval and post-medieval pottery



Pl. 65. Post- medieval pottery

to the Meols shore might account for the lack of wear on some of these sherds. As already noted above, a couple of sherds **3146, 3440** are labelled 'Hoylake'. Whether these were found further along the beach towards this settlement or inland in the area is uncertain, but Ecroyd Smith refers to finds being collected in this direction at Great Meols, particularly some later post-medieval material coming from 'fields and gardens' (Ecroyd Smith 1863, 31). Some original sources of this material can be suggested, particularly common imported French and German wares, and those with known production sites in Cheshire and at Ewloe, Flintshire.

The bulk of the coarseware pottery is medieval and can be divided into two basic groups. One category comprising red/grey fired wares in characteristically sandy, iron-rich clays **3410–3445**. The other white/grey fired wares in predominantly gritty iron-free clays **3446–3470**. Most of the first group can be paralleled locally; **3412** and **3426** are coarse granular redware types comparable in fabric and form to baluster and larger more globular-bodied jugs produced at the Ashton and Audlem potteries. They may also be compared with the Arrowcroft material found on the outskirts of Chester in 1979, which consists of a far smaller group of fragments but comprises the same two characteristic jug forms. All three potteries, producing very similar wares, are probably closely contemporary and in production sometime in the mid- and latter half of the 13th century and early 14th century (Arrowcroft: Rutter 1990b, 210–21; Ashton: Newstead 1934; Rutter 1977c; Audlem: Webster and Dunning 1960). Similarly, the even coarser, sandier fabric of a bottle base **3426**; and also **3427** (not illus.) can be compared with one vessel in particular in a 14th-century pit group from the Old Market Hall site in Chester (Rutter 1977a). The remainder in the first group are, in general terms, comparable to 13th- to early-14th-century wares found on sites in Chester and assemblages from some of the nearby north Wales castle sites, in fabric, form, and decoration, i.e. 'frilled' bridge spouts, thumbed bases, slashed strap handles, and rouletted vertical strips on the body (for Chester see Thompson 1976; material from Henrician castles in north Wales, Deganwy, see Talbot 1977; Dyserth: Hewitt and Morgan 1977; Rhuddlan: Miles 1977a and b.) In particular, **3429–3436** are in a distinctive, relatively fine, dense bodied ware, for which the clearest dating evidence so far comes from the two assemblages recovered from Deganwy and Dyserth (Talbot 1977; Hewitt and Morgan 1977). This ware occurs at both sites, where it was apparently in use immediately prior to their abandonment in the middle of the 13th century.

Petrological analysis of production waste from the known Cheshire potteries of Ashton, the Deanery Field, and Arrowcroft sites at Chester, Audlem, Huxley, and Eaton-by Tarporley, has been published, with a wasted jug fragment from the Rhuddlan Castle excavations for comparison (Rutter 1990c, 280–6). The result of this, rather like finger-prints, demonstrates the general uniformity of the glacial boulder clay sourced medieval pottery and tiles, with a few individual characteristic variations. The Ashton wares, for example, uniquely contain a possible conglomerate and tourmaline in their mineral make-up, sharing quartz, white mica, sparse chert, and clay pellets (common in local red sandstone), with material from the Chester Deanery Field and Arrowcroft sites, Eaton-by-Tarporley, Huxley, and Audlem. This is in contrast with the contemporary Rhuddlan Castle production waste sample, which contained mudstone, limestone, quartz, chert, and black as well as white mica, indicating, not surprisingly a clay source local to the castle site, with elements derived from the nearby country rocks.

The white wares can be similarly divided up, but there are fewer parallels for the contents of this group locally, and no source nearby (taking into account landward sites as well as the coastal region) earlier than the 14th–15th century. **3445, 3447, 3448** appear to be of 'Ewloe' type, similar to the scatter of wasters recovered from a field near Buckley in Flintshire, which by analogy could be dated from the 14th to 16th century (Harrison and Davey 1977). The Ewloe attribution is possible for a small group of sherds in a salmon-pink fabric **3477, 3478, 3479, 3481.** Whilst **3446** is also very close to some material found in

Chester the bulk of the remaining sherds are not common locally and form a largely homogeneous group of dull white/grey coarse wares, varying in hardness, but with a high proportion of soft powdery fabrics (whether solely due to weathering is unclear). These may have travelled south, like the 'Gritty ware' sherd **3468**) and are perhaps from Lancashire/Pennine area, but as yet there are no comparable groups. The dating of this latter group must therefore tenuously rest on stylistic similarities with the previous group, in that the mainly incised decoration on these sherds, stabbed and slashed handles, and line-incised body sherds, can be compared, for example, with that of the red/grey wares above, suggesting that they are contemporary.

The later medieval pottery that can be paralleled and dated seems to coincide roughly with the dating of a large number of other artefacts (2.5–2.6), with a smaller amount of material extending the range in to the 16th and later 17th to early-18th century. We know that an enormous amount of activity in the vicinity of Chester and the Dee Estuary was stimulated by the north Welsh campaigns of 13th–14th-century English kings (4.6). The production of pottery at Rhuddlan and Ashton (Newstead 1934; Rutter 1977c) can be linked to this 13th–14th-century activity. At Ashton there is an ecclesiastical association at this date too, in fact ownership by the Cistercian Abbey at Vale Royal, founded in 1277. At Rhuddlan, closely similar jug forms in particular, to the Ashton wares, are associated with activity on the castle site dated to 1277–82 (Miles 1977b).

At the latter end of the chronological scale, the Tudor Green' ware type **3491** is probably contemporary with the 16th–17th century local 'Midland Purple' ware fragment marking the beginning of the post-medieval pottery date range, which continues into the 19th century, though the majority of post-medieval vessels belong to the 17th–18th centuries. These may be compared to the post-medieval clay tobacco pipes (2.17), which have a slightly later emphasis in date.

Note

[1] I am grateful to the late Margaret Warhurst for initially drawing my attention to the finds, helpful discussion and supplying the notes from *The Reliquary*. I am grateful to S. Moorhouse and the late J. G. Hurst for commenting on individual sherds, to Vicky Nailor for supplying information on Nantwich pottery and, Rob Philpott and David Griffiths for dredging up more! I would also like to thank Annette Kennett and staff formerly at the Chester City Record Office for their assistance.

2.17 Clay tobacco pipes and related objects: post-medieval

David A. Higgins

Although various 19th-century discoveries and collections of clay tobacco pipes from Meols are documented, most of the surviving examples come from the collection of Henry Ecroyd Smith, a significant proportion of which survives in the Liverpool Museum. This particular collection is important for two reasons: first, because Ecroyd Smith published numerous notes describing his collection and, secondly, because many of the pipes have some provenance details written on them. For these reasons it is important to understand both the background and the documentation relating to this collection. An understanding of the pipe collection is also important, in that it sheds light on Ecroyd Smith's collecting area, recording system, and the integrity of his observations, which is relevant to the large number of other Meols finds that passed through his hands.

Ecroyd Smith's accession register of his own collection included 89 fragments of clay tobacco pipe (most, but not all, of which were collected from Meols) and a brass pipe stopper ***3572***. The pipes were accessioned into the museum as a group in 1874 (Acc. no. 18.11.74.31), and the pipe stopper as 18.11.74.117. Charles Gatty, Ecroyd Smith's successor as curator of the Liverpool Museum, compiled a basic catalogue of Ecroyd Smith's collection. In his list, Gatty records the collection as including 110 pipe fragments, which suggests that Ecroyd Smith may have 'found a few more' pieces when clearing his house before he finally left Liverpool in 1875. The collection was subsequently 'thinned' at some date, since the Gatty card has been changed to read 'about 95 fragments'. There are now 76 surviving pieces from Ecroyd Smith's original collection, some 60 of which are probably or certainly from Meols. In addition, there are a further seven Meols pieces from Ecroyd Smith's original collection that are no longer extant, but which are known from surviving illustrations. There are also five other pipes from the site that are known. The Williamson Museum and Art Gallery holds a single bowl **3522** that was recovered by the Hoylake Historical Society in 1956. The Manx Museum in Douglas held a single pipe bowl that was found at or near Dove Point, most likely in the 19th or early 20th century. This had never been formally accessioned into the museum's collection and has since been transferred to the Liverpool Museum **3565**. The Liverpool collection also includes two pipe bowls found at Meols in the 1970s **3521** and **3555**. Finally, there are two other pipe clay objects that were mentioned by Ecroyd Smith (but not illustrated), which will be considered in this report.

Many of the 76 surviving pipes from the Ecroyd Smith collection have contemporary labelling inked onto them. These markings can include both provenance and date of collection, but they are often abbreviated, for example, 'GM 9/67' appears to represent 'Great Meols, September 1867'. Unfortunately there is no contemporary list of the codes that were used, and the meaning of some of the original codes is now uncertain, for example, 'H' could stand for either Hilbre or Hoylake. Having said that, in two instances, there are pipes with what appears to have both 'H 58' and 'Hoylake' on them, suggesting H stands for Hoylake rather than Hilbre. Many of the ink inscriptions are now badly faded, making them difficult to read. So far as possible, any original labelling has been transcribed onto a new archive database for the pipe collection, together with any provenance recorded on the old accession cards or a 1970s list of the pipes.

This catalogue deals only with the pipes and related objects that were collected from in or around Great Meols, including pieces that are now lost, but which are known from surviving illustrations or descriptions. There are three related objects, but the main focus of this report will be on the 72 clay tobacco pipe fragments that have been included in this study. This group comprises 31 pieces provenanced as coming from Great Meols, a further 19 pieces from Hoylake and 22 unprovenanced pieces, the majority of which are likely also to be from these areas. Some of these pieces are heavily water-rolled and have certainly been collected from the seashore. In all, approximately 17 of

these pieces show signs of abrasion, just under a quarter of the total. It is not possible to be sure exactly where the remainder were collected, although at least one piece **3547** was recovered from 'The King's Gap', by workmen digging foundations for new houses between the Upper Lighthouse and the shore in 1866. Ecroyd Smith noted that the earliest bowls were found at Great Meols in particular as opposed to Hoylake in general, an assertion confirmed by an analysis of the bowl dates. The implication is that Ecroyd Smith had obtained pipes from a variety of sources in and around Great Meols to have been able to make this observation. The pipes themselves have been sorted into two main groups; heel bowls and spur bowls, with each group being further subdivided into plain and marked examples. The Ecroyd Smith collection of pipes was drawn in about 1980 for an article that was intended to be submitted to the *Journal of the Merseyside Archaeological Society*, but which was never written. These drawings have been used to provide the core of the illustrations accompanying this catalogue.[1]

Unmarked heel bowls

The plain heel bowls all range in date from *c.* 1610 to 1660, with the exception of one piece **3516**, which dates from the first half of the 18th century. This piece stands out from the rest of the group both because of its date and because it is badly burnt. This particular bowl is unprovenanced, and it may belong to a group of later bowls from Hilbre Island, several of which are also burnt, that also formed a part of the Ecroyd Smith Collection, but which are not considered here. The remainder of the pipes are of typical local forms and most are made of local fabrics, suggesting that they originate from the South Lancashire pipe producing area, centred on Rainford. A few of the pieces, however, are of better forms and fabrics and probably come from Chester.

3500 Pl. 66 *c.* 1610–40, possibly made in Chester of a gritty off-white 'local' fabric, very hard fired and slightly pinkish in colour. Stem bore 7/64", bottered rim. Original ink label reads '16 Ca…' or '16 Co…'. The surface has been only poorly burnished, but the fabric is very glossy anyway. Only half of the rim survives and this is not milled, and it seems unlikely that any of it ever was. Slightly poor form, but similar to early Chester products.

3501 Pl. 66 *c.* 1610–40, probably made in Chester. Made of a fine, 'imported' fabric. Stem bore 7/64"; rim bottered, but not milled; not burnished. Original ink label reads 'GM 9/67', probably for Great Meols. Early heel bowl in a very fine but very hard fired (or subsequently burnt) fabric. The form is rather lop-sided and almost certainly lacked any milling (the rim is slightly chipped on one side).

3502 Pl. 66 *c.* 1630–50, probably made in South Lancashire or Chester. Made of a fine, local fabric. Stem bore 6/64", some milling survives on the bottered rim; not burnished. Original ink label reads 'GM 8/66', probably for Great Meols.

3503 Pl. 66 *c.* 1620–50, made of a fine imported fabric, production centre uncertain. Stem bore 7/64", rim fully milled with a bottered rim, not burnished. Original ink label reads 'Hoy / 66', probably for Hoylake. Very lop-sided form in a squat and rather dumpy style. The pipe has been recovered from a distinctive orange / red deposit, traces of which adhere to the bowl and fill the lower part of it.

3504 Pl. 66 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem Bore 6/64". Original ink label illegible, but catalogued as Great Meols in the museum records. The rim is completely chipped away, but a half is almost complete, but without any surviving milling. Rather a lop-sided form of average to poor quality.

3505 Pl. 66 *c.* 1640–60, probably made in South Lancashire or Chester. Made of a gritty, off-white, 'local' fabric. Stem bore 8/64", some milling survives on the bottered rim, poor burnish. Original ink label reads 'GM 5.68', probably for Great Meols. Rim damaged. The bowl has soil on it, showing that it was recovered from a buried environment (as opposed to having been washed out on a beach) and it has burnt areas on its surface.

3506 Pl. 66 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64".

3507 Pl. 66 *c.* 1620–50. Origin uncertain, but perhaps most likely Chester. Made of a fine, 'imported' fabric. Stem bore 6/64", rim fully milled, bottered rim; not burnished. The bowl has some slight reddish patches on it, resembling burning, but perhaps staining from some other source.

3508 Pl. 66 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", some milling survives on the bottered rim, not burnished. Original ink label reads 'H 59'.

3509 Pl. 66 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim fully milled and bottered. South Lancashire style heel form of average quality, slightly soft fabric. Traces of provenance and collection date are now illegible.

3510 Pl. 66 *c.* 1640–60, probably made in Chester. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim fully milled and bottered; not burnished. Original ink label reads 'H 9.60'. Neat, well-finished bowl with fully milled rim. The slender and rather curved bowl form suggests a Chester origin for this piece.

3511 Pl. 66 *c.* 1640–60, probably made in Chester or South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim fully milled and bottered, not burnished. Original ink label reads 'GM 7/66', probably for Great Meols.

3512 Pl. 66 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", some milling survives on the bottered rim, not burnished. Original ink label probably reads 'H 58'. Typical South Lancashire heel bowl. The rim is milled, but the original extent cannot be clearly determined. The original accession details start with an H, but the numerals for the year are unclear, possibly 58.

3513 Pl. 66 *c.* 1650–70, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim fully milled and bottered. Original ink label reads 'GM 65.62', probably for Great Meols. Slightly abraded South Lancashire heel form with rather a parallel sided bowl when viewed end on.

3514 Pl. 66 *c.* 1650–70, probably made of a 'local' fabric. Stem bore 7/64", rim bottered, not milled; not burnished. Original ink label reads 'Hoylake 58' and 'H 58'. Unusual bowl form, not typical of north-west England, made in a distinctive salmon-pink fabric. The lack of burnishing and rather curved form might suggest an origin in the Bristol area, but this is far from certain. The bowl has been buried since it still retains soil within the bowl. This fragment is marked Hoylake 58 and, in a heavier hand, what looks like H 58. If this is correct, it might indicate that all the H codes refer to Hoylake rather than Hilbre. The centre of this second label is, however, unclear and it could be read as HES, perhaps for 'Henry Ecroyd Smith'.

3515 Pl. 67 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem

bore 7/64", rim fully milled and bottered. Original ink label reads 'H 58'. Slightly abraded surface, could possibly have been lightly water-rolled.
3516 Pl. 67 *c.* 1700–50, probably made in Chester. Made of a fine, 'imported' fabric. Stem bore 6/64", rim cut and not milled. Original ink label reads '?6/64'. Chester style bowl made of an imported fabric and with a flared heel. The bowl has been badly burnt after having been broken resulting in a discoloured and crazed surface, very similar to **3556**.

Heel bowls with base stamps
There are 14 surviving heel bowls with stamped base marks on them and a further three with stamped bowl marks, which are described in a separate section below. The bowls with base marks range in date from *c.* 1610 to 1730 and, as with the plain heel bowls, the majority of the pieces date to before *c.* 1660. Two of the later pieces **3528** and **3530** are unprovenanced and both show signs of having been burnt. As mentioned above, these might belong to a group from Hilbre Island, which are not otherwise discussed here. The earliest marked bowl **3517** is a very good quality product with a neat wheel and dot mark on the heel. The style and quality of this piece can be paralleled amongst early London products, although similar types are widely distributed across the country and at least five examples are known from Chester (Rutter and Davey 1980, fig. 31). This piece is perhaps most likely to be an early import from London, although local production in Chester cannot be ruled out entirely. Almost half of the other stamped pipes – IB, HB, and RL – appear to be Rainford area products, where there are numerous parallels for these marks. The other marks are less easy to place and are discussed in more detail below.
3517 Pl. 67 *c.* 1610–40, possibly made in London. Made of a fine, 'imported' fabric. Stem bore 7/64", rim fully milled and bottered, fine burnish. Relief stamped wheel mark on the base of the heel. Original ink label reads 'GM 10/67', probably for Great Meols. High-quality bowl with part of a spoke or wheel stamp surviving. The bowl has a good barrel-shaped form and has been finely burnished. The rim is neatly finished with the milling set close to the rim. The core of the pipe is a grey colour, from being fired in a reducing atmosphere, with only the outer 0.5–1.0mm being white. This is typical of some early pipes.
3518 Pl. 67 *c.* 1640–60, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64". Relief stamped mark on the base of the heel reading IB. Original ink label reads 'GM', probably for Great Meols. The pipe shows signs of having been weathered or water -rolled and it is now very abraded. The bowl is a greyish colour.
3519 Pl. 67 *c.* 1640–60, probably made in South Lancashire or Chester. Fabric type unknown. This item has been lost since it was drawn in about 1980. The drawing shows what is probably a local bowl form with a stamped mark on the heel, the reading of which is unclear.
3520 Pl. 67 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 8/64", rim fully milled and bottered. Surface now rather scuffed but appears to have been burnished originally. Relief stamped mark on the base of the heel reading AH, with the initials being surrounded by a double border.
3521 Pl. 67 *c.* 1640–60, probably made in Rainford. Made of a gritty, pinkish, 'local' fabric. Stem bore 8/64", rim fully milled. Relief stamped mark on the base of the heel reading HB. The pipe is very abraded and shows clear signs of having been water -rolled. Slightly lop-sided form. Card label attached to the pipe records that it was found at Meols in the 1970s.
3522 Pl. 67 *c.* 1640–60, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim fully milled and bottered; average burnish. Relief stamped mark on the base of the heel reading HB. Rather a lop-sided and lumpy bowl form made of a local fabric, but reasonably finished.
3523 Pl. 67 *c.* 1640–70, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim bottered and three-quarters milled, not burnished. Relief stamped mark on the base of the heel reading RL. Original ink label reads 'GM 9/67', probably for Great Meols. This bowl is made of a particularly distinctive local fabric with a large number of very small mica inclusions.
3524 Pl. 67 *c.* 1650–80. Fabric type unknown. Some milling survives on the rim. Mark on the base of the heel reading S-. Not sure if pipe is water -rolled or not. Pipe bowl missing since being drawn in about 1980. The drawing shows a heel bowl with a stamped heel mark. The mark has a serrated edge and the Christian name initial is S. A *c.* 1980 museum record gives the find spot for this pipe as Great Meols.
3525 Pl. 67 *c.* 1650–60, made in Bristol. Made of a fine, 'imported' fabric. Stem bore 8/64", rim fully milled and bottered; not burnished. Incuse stamped mark on the base of the heel reading IOHN HVNT. Original ink label reads ?'Hoylake 58' and ?'H 58'. The original provenance on this pipe is very faded and unclear but seems to include both 'Hoylake 58' and 'H 58', which would support the suggestion that 'H' stands for Hoylake rather than Hilbre.
3526 Pl. 67 *c.* 1660–80, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim bottered and three-quarters milled. Rainford type bowl with crescent shaped stamp reading IB on the heel. This type of mark is usually found on the bowl and only occasionally occurs as a heel mark. The bowl is very weathered making it difficult to be sure if any milling has worn away. It is also uncertain whether the bowl is abraded form burial or wave action.
3527 Pl. 67 *c.* 1690–1730, probably made in Rainford. Stem bore 7/64". Relief stamped mark on the base of the heel reading IB. Original ink label reads 'GM 6.63', probably for Great Meols. The pipe shows signs of having been weathered or water-rolled. Rather abraded bowl, but appears to be made of a fine fabric and probably with a bottered rim – too abraded to tell whether milled originally The heel is stamped IB, probably a Rainford product.
3528 Pl. 67 *c.* 1680–1730, probably made in North Wales. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim fully milled and bottered. Relief stamped mark on the base of the heel reading I?B?. Bowl made of a coarse local clay in the distinctive Broseley style. The poorly impressed circular mark, however, is not of a Broseley type; may be a Buckley area product, where Broseley style bowls are known to have been copied and where similar IB marks occur, usually placed at right-angles to the normal orientation, as in this case (Higgins 1982, fig. 3.28). The bowl itself is of a good form and with a very glossy surface, although not apparently burnished.
3529 Pl. 68 *c.* 1680–1730, probably made in Broseley area, Shropshire. Fabric type unknown. Some milling survives on the rim, but cannot tell how it was finished. Relief stamped mark on the base of the heel reading ED[...]. Missing since being drawn in about 1980. The form of this pipe clearly suggests that it was made in the Broseley area of Shropshire. It is very similar to **3530** and may well have been a product of the same maker.
3530 *c.* 1680–1730, Broseley (Shropshire) style bowl with part of a square, relief stamped maker's mark surviving on

the heel. Made of a gritty, off-white, 'local' fabric. Stem bore 5/64", rim bottered and three-quarters milled, average burnish. ED for Edward survives on the first line followed by a T as the start of the surname on the second line. This is almost certainly the mark of Edward Taylor, who probably worked at Much Wenlock in Shropshire *c.* 1700–40 (Higgins 1987a, 508). The base of the heel and broken stem end of this example are sharply flaked and fractured, as if damaged by heating when damp. The bowl is also reddened and shows signs of having been burnt.

Unmarked spur bowls

There are 26 plain spur bowls represented from the Meols area, a higher number than the unmarked heel bowls. As with the heel bowls, the spur bowls are all of typical local forms. They range in date from *c.* 1610 to 1750, but with most of the examples dating from the middle of the 17th century. The majority of these pipes are made of local fabrics, suggesting they were produced on or near the coal-measure clays of North Wales or South Lancashire. The Chester pipes were generally made of finer, imported clays, and this may have been the case in Liverpool too, although there is as yet insufficient evidence to confirm this. Only about five of this group of bowls were noted as having a fine, probably imported, fabric. As with the heel bowls, this suggests that Chester products are not particularly well represented at Meols, despite the city's proximity at the head of the Dee Estuary.

3531 Pl. 68 *c.* 1610–40. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", some milling survives on the rim; not burnished. Original ink label reads 'GM 8/61', probably for Great Meols. The pipe possibly shows signs of having been weathered or water-rolled.

3532 Pl. 68 *c.* 1640–60, probably made in Chester. Made of a fine, 'imported' fabric. Stem bore 6/64", Fully milled and bottered rim; not burnished. Original ink label reads 'GM 59', probably for Great Meols. Neat, well-finished bowl form in an imported fabric, but very unusual in that it has two bands of milling applied around the rim.

3533 Pl. 68 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", shows signs of having been weathered or water-rolled. Extremely abraded spur form.

3534 Pl. 68 Bowl fragment of *c.* 1610–50. Made of a fine, 'imported' fabric. Stem bore 9/64", rim fully milled and bottered. Original ink label reads 'GM.6.?', probably for Great Meols. The pipe shows signs of having been weathered or water-rolled. Abraded upper part of a very bulbous, but neatly formed and finished, pipe. Probably from a spur pipe. Origin uncertain, but most likely to be Chester.

3535 Pl. 68 Bowl fragment of *c.* 1640–60, probably made in Chester. Rim fully milled and bottered; original ink label reads 'GM 8.60', probably for Great Meols. The pipe shows signs of having been weathered or water-rolled. Upper part of a bowl only survives; appears to be a fine fabric, possibly imported, and originally from a neatly finished bowl of good form, although now very abraded.

3536 Pl. 68 of *c.* 1640–60, probably made in Chester. Made of a fine, 'imported' fabric. Stem bore 6/64", some milling survives on the bottered rim. Original ink label reads 'GM 59', probably for Great Meols. The pipe shows signs of having been weathered or water-rolled. Neat looking spur bowl made from an imported fabric, now highly abraded and water-rolled.

3537 Pl. 68 *c.* 1640–60, probably made in Chester. Made of a fine, 'imported' fabric. Stem bore 7/64", some milling survives on the bottered rim, not burnished. Original ink label reads 'GM 8/66', probably for Great Meols. Neat, well-finished spur form made in a fine white imported fabric, well fired.

3538 Pl. 68 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim bottered and fully milled; can't tell if burnished originally. Original ink label reads 'GM 59', probably for Great Meols. The pipe shows signs of having been weathered or water-rolled. Slightly abraded bowl in a soft local fabric. Rather poor form and finish.

3539 Pl. 68 *c.* 1640–60, probably made in South Lancashire or Chester. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", some milling survives on the bottered rim; not burnished. Original ink label reads 'H …?', probably for Hoylake, but could be Hilbre. Neat, well-finished bowl form with a flattened spur base.

3540 Pl. 68 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", some milling survives on the bottered rim, not burnished. The pipe shows signs of having been weathered or water-rolled. The bowl appears to have been burnt after having been broken.

3541 Pl. 68 *c.* 1650–70, probably made in Chester. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim three-quarters milled and bottered; not burnished. Original ink label illegible, but museum card index reads 'H', probably for Hoylake, or possibly Hilbre. Neat, well-finished form with a flattened spur base.

3542 Pl. 68 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim fully milled and bottered, not burnished. Original ink label reads 'H 58', probably for Hoylake (or Hilbre). The pipe shows signs of having been weathered or water-rolled.

3543 Pl. 69 *c.* 1650–80, probably made in Chester. Fabric type unknown. Some milling survived on the bottered rim.

3544 Pl. 69 *c.* 1660–80, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim fully milled and bottered. Original ink label reads 'H.58', but the Museum card index records this piece as from Great Meols. The pipe shows signs of having been weathered or water-rolled. Quite a neat and apparently well finished bowl but now slightly abraded. Slight pinkish patches on the surface may indicate that the bowl has been burnt after it was broken.

3545 Pl. 69 *c.* 1660–80, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim fully milled and bottered. Original ink label now illegible, but the museum card index records this piece as 'H', probably for Hoylake (or Hilbre).

3546 Pl. 69 *c.* 1670–1700, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim bottered but not milled.

3547 Pl. 69 *c.* 1660–1700, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim bottered but not milled, not burnished. Original ink label reads 'Hoy. K'gs Gap 4/66' for Hoylake, King's Gap. Very slight traces of abrasion to edges.

3548 Pl. 69 *c.* 1660–1700, South Lancashire spur bowl type. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", some milling survives on the rim, good burnish. Original ink label reads 'H 58', probably for Hoylake (or Hilbre). The rim is completely chipped and the edges are very slightly rounded, perhaps indicating brief water-rolling. The bowl has been well finished with a good burnish and is of a neat and well-designed form.

3549 Pl. 69 *c.* 1660–90, South Lancashire spur bowl type. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim fully milled and bottered; average burnish. Original ink

label reads 'Hoy 7/66', probably for Hoylake. Slight reddish patches on the bowl suggesting that it has been burnt after having been broken.
3550 Pl. 69 *c.* 1660–80, South Lancashire spur bowl type. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim bottered but not milled, average burnish. Original ink label now illegible. The pipe does not show any sign of being water-rolled. Typical South Lancashire form with rather a narrow profile when viewed end on. Quite a neatly made bowl with a flattened heel.
3551 Pl. 69 *c.* 1660–90, probably made in Chester . Stem bore 7/64", rim fully milled and bottered, not burnished. Original ink label reads 'GM 4/67', probably for Great Meols. Spur form in a fine fabric, probably imported clay and most likely a Chester product. The bowl is very slightly abraded, but not enough to suggest it has been water-rolled.
3552 Pl. 69 *c.* 1670–1700, South Lancashire form. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim bottered but cannot tell if it was milled, or if burnished originally. Original ink label reads 'H 5.65', probably for Hoylake (or Hilbre). The pipe shows signs of having been weathered or water-rolled. Very abraded bowl made of a soft and slightly pinkish local fabric with quite a high proportion of gritty inclusions.
3553 Pl. 69 *c.* 1690–1710, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim bottered but not milled, traces of burnished surface. Original ink label reads 'GM 3/67', probably for Great Meols. The pipe shows signs of having been weathered or water-rolled.
3554 Pl. 70 *c.* 1680–1710, probably made in Chester . Made of a fine, 'imported' fabric. Stem bore 4/64", rim bottered but not milled, not burnished. Original ink label reads 'H 4.60', probably for Hoylake (or Hilbre). Unusual bowl form in an imported fabric. The bowl has an unusually fine and diminutive spur and a very small stem bore for the period (4/64"). The internal base of the bowl appears to have some sort of ridge on it, but it is not clear whether this is intentional or not.
3555 Pl. 70 *c.* 1690–1720, probably made in Chester . Made of a fine, 'imported' fabric. Stem bore 6/64", can' t tell if rim milled or how it was finished, not burnished. The pipe shows signs of having been weathered or water-rolled. Slightly abraded spur form, most likely from Chester. This piece was collected at Meols during the 1970s.
3556 Pl. 70 *c.* 1690–1750, probably made in Chester . Made of a fine, 'imported' fabric. Stem bore 6/64", rim cut and not milled, not burnished. Original ink label reads 'H 64', probably for Hoylake (or Hilbre). The bowl has been badly burnt after having been broken and has a very similar burnt appearance as bowl number **3516**, suggesting that they came from the same deposit.

Spur and heel pipes with bowl stamps
There are 11 17th century bowls with stamped makers' marks facing the smoker and one 19th-century example, which is described in the following section. All the 17th-century bowls date from *c.* 1640–70 and all of these examples are of a very similar spur form (although technically some have bases that are broader than they are deep, which means that, strictly speaking, they should be classified as heel types). Where the fabric type can be determined all of these pipes are made of a coarse coal measures clay and all of the marks are of a distinctive semi-circular form with a crest at the top. This style of mark is almost exclusively found on the bowl facing the smoker, although very occasionally it was also used as a base stamp (e.g. **3526**). This particular form of mark was only used in the north-west of England, where it is characteristic of the Liverpool/Rainford area pipemaking industry and all of these pipes are likely to have been produced locally in south Lancashire.
3557 Pl. 70 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim fully milled and bottered. Relief stamped mark on the bowl facing the smoker reading ?GA. Original ink label reads 'H 58', probably for Hoylake (or Hilbre). Neat South Lancashire style bowl with a fully milled rim and a damaged stamp facing the smoker . The spur base appears to have been neatly flattened.
3558 Pl. 70 Bowl fragment of *c.* 1640–60, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Fully milled and bottered rim. Relief stamped mark on the bowl facing the smoker reading GA. The bowl has a very glossy surface and may well have been burnished. It has a mottled greyish surface and appears to have been burnt. It also has a grey core in the broken section.
3559 Pl. 70 *c.* 1640–60, probably made in Liverpool. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", some milling survives on the bottered rim, burnished surface, probably of good quality. Relief stamped mark on the bowl facing the smoker reading RA. Original ink label reads 'GM 4.6..?', probably for Great Meols. South Lancashire style spur bowl made of a local fabric and neatly finished. RA probably Richard Atherton who became a freeman of Liverpool in 1654. Last number of original marking unclear.
3560 Pl. 70 *c.* 1640–60, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim fully milled and bottered; fine burnish. Relief stamped mark on the bowl facing the smoker reading DB. Original ink label reads 'GM 6/66', probably for Great Meols. This bowl has a reduced grey core with only an outer skin of less than 1mm being oxidised white.
3561 Pl. 70 *c.* 1640–60, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Stem bore 6/64", rim fully milled and bottered rim; not burnished. Relief stamped mark on the bowl facing the smoker reading EB. Original ink label reads 'GM 58', probably for Great Meols.
3562 Pl. 70 *c.* 1640–70, probably made in Rainford. Fabric type unknown. Some milling survives on the rim, cannot tell how rim was finished, not clear if burnished originally . Relief stamped mark on the bowl facing the smoker reading IB. Missing since being drawn in about 1980. The original number of this piece is unknown, but presumed to be either 81 or 82, to complete the sequence of drawing numbers. The drawing shows a typical Rainford style bowl and mark.
3563 Pl. 70 *c.* 1640–60, probably made in Rainford. Fabric type unknown. Some milling survives on the rim. Relief stamped crescent-shaped mark on the bowl facing the smoker reading IB. Original ink label reads 'GM 1.62', probably for Great Meols. This bowl has been lost since it was drawn in about 1980.
3564 Pl. 70 *c.* 1640–60, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Rim fully milled and bottered. The pipe possibly shows signs of having been weathered or water-rolled. Crescent shaped stamp reading IB facing the smoker. The fabric is very soft and rounded at broken edges, possibly from water-rolling, but not certain. This would probably have been a spur form when complete. The *c.* 1980 drawing is annotated with 'GM.sho[re]' where the transcription of any provenance on the bowl itself is usually recorded. No such marks can now be seen on the bowl.
3565 Pl. 70 *c.* 1640–60, probably made in Rainford. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", rim

fully milled and bottered; poor burnish. Relief stamped mark on the bowl facing the smoker reading HH. Neat and very bulbous spur form with bold, deeply applied milling. This piece was mounted on a card of late-19th century or early-20th century date stating that it was "found at or near Dove Pt., Meols". The pipe had been acquired by J. R. Bruce and was given to the Manx Museum in the mid-20th century, together with a collection of 15 bowls from Much Wenlock in Shropshire. A letter with the pipes dated 28 October 1919, and apparently written by a W. Moult, engineer and manager at the Cefn Mawr and Rhosymedre Gas Company Ltd, Ruabon, gives a list of Broseley pipemakers. This suggests that the pipe collection may have formerly belonged to this individual during the early 20th century. The Meols pipe was never formally accessioned into the Manx Museum and on 10 December 2002 the pipe was given to Liverpool Museum so that it could be housed with the other Meols material.

3566 Pl. 70 *c.* 1640–60, probably made in South Lancashire. Fabric type unknown. Some milling survived on the rim. Relief stamped mark on the bowl facing the smoker reading IL. (Hume 1863, pl. XXXI, 4). These initials have not been recorded from Rainford itself and so the pipe may have come from a neighbouring centre, such as Liverpool. There is however an unprovenanced pipe marked IL, which is perhaps this in the Grosvenor Museum, Chester (Rutter and Davey 1980, fig. 49.117).

3567 Pl. 71 *c.* 1640–70, probably made in South Lancashire. Made of a gritty, off-white, 'local' fabric. Stem bore 7/64", some milling survives on the bottered rim. Relief stamped mark on the bowl facing the smoker reading N??. Original ink label reads 'GM 59', probably for Great Meols. The pipe possibly shows signs of having been weathered or water-rolled.

Reworked pipe stem

As well as the 17th- and 18th-century pipe bowls that form the bulk of the collection, there is a single piece of reworked pipe stem from Meols in the Grosvenor Museum Collection that also dates from this period. The stem fragment is 50mm in length and approximately 10mm in diameter. It is very battered and abraded, but both ends have a series of what appear to be cut facets that have been used to create a blunt point around the stem bore. There is also a flat facet approximately 4mm wide that runs all along one side of the stem. Although it is documented that broken pipe stems were sometimes used as hair curlers, this section seems a little short for this purpose and the tapered ends would not be conducive to retaining a roll of hair. Likewise, the ends do not seem neatly enough finished for this to have been intended as a bead and, in any case, it seems rather too long for this purpose. Although it is difficult to be sure from so battered an example, the facets appear to have been cut into an already fired fabric and it is perhaps most likely that this is merely the product of idle whittling of a broken piece of pipe stem.

3568 Pl. 71 *c.* 1640–1720, a broken section of pipe stem with a bore of 7/64" and both ends worked to a blunt point after the fragment was broken. The whole object is extremely weathered and abraded, although it does not look water-rolled (the surface marks look like plough damage and the angles between the cut facets are still relatively fresh). The stem is made of a fairly soft fabric with fine gritty inclusions, and faint striations are still evident on the facets, suggesting that they were probably knife cut. The fragment is too abraded to determine its original surface finish.

19th-century pipes

There are three later pieces in the Meols collection. Two of these, in particular, cannot have been made long before Ecroyd Smith collected them and they now provide useful evidence for the use of these patterns before 1874.

3569 Pl. 71 *c.* 1810–60, made of a fine, 'imported' fabric. Stem bore 4/64", rim cut and not milled; not burnished. Bowl in the form of a man's head, most likely intended to represent a Turk. Pipes of this type were widely produced in England during the early 19th century, but this is the only known example from north-west England. The stem has traces of a moulded name on, which appears to read J.B/ on the left-hand side and /B.G on the right. This cannot be reliably associated with any known maker. Around the turban, face, and, especially, the ribbed stem section, there are traces of a reddish material, perhaps pigment indicating that the pipe was decorated originally. Liverpool area pipemakers are not known to have used moulded stem lettering at this period and the origin of this piece remains uncertain.

3570 Pl. 71 *c.* 1840–70, probably made in France. Made of a fine, 'imported' fabric. Stem bore 6/64". Heavily water-rolled fragment of a French pipe depicting a naked woman lying on the stem of the pipe and holding a cornucopia. Traces of white enamel decoration survive on the bowl and stem. The pipe has been made in a three-piece mould, so as to allow a more three-dimensional representation of the figure. A group of 1880s pipes from Warrington includes decorative French examples, showing that they continued to be fashionable during the last quarter of the century (Higgins 1987b, 13–18).

3571 Pl. 71 *c.* 1840–70, possibly made in Ireland. Made of a fine, 'imported' fabric. Stem bore 5/64", rim cut and fully milled, not burnished. The pipe shows signs of having been weathered or water-rolled. 'Irish Style' bowl with a crowned L stamp on the bowl facing the smoker and crude moulded shield marks on the heel. A group of Irish style pipes dating from the early 1860s has been recovered from excavations at Big Lea Green, St Helens, and these all have hand applied milling around the rim (Higgins, forthcoming). The Meols example also has 'real' milling, which helps confirm that this method was in general use on Irish style until the third quarter of the 19th century. This may be an Irish import or a local copy in an Irish style.

Note: Six of the pipe bowls that formed a part of Ecroyd Smith's Collection were illustrated by him in his 1860 paper. This paper was a general work on pipes and did not deal with Meols in particular, although some of the illustrated pipes may have come from that site. These six bowls no longer survive at the Museum and their original provenance is uncertain. The bowl forms and marks are not generally typical of north-west England and so the probability is that most of them came from elsewhere, which is why they have been excluded from this catalogue. The six unprovenanced and now lost pieces are a spur bowl of *c.* 1660–90 marked RB, possibly for Randle Baddesley of Newcastle-under-Lyme; a heel bowl of *c.* 1640–70 marked AB; a spur bowl of *c.* 1660–90 marked IB; the Yorkshire style heel bowl of *c.* 1660–90 marked RF, probably for a member of the Fowler family from York or Hull; an unmarked heel bowl of *c.* 1620–50; and an unmarked 'transitional' bowl of *c.* 1680–1710. This last bowl is not of a typical north-western style and looks much more like a London area product. The 1860 paper also illustrates a complete hair curler of 18th-century style that has also been lost. No provenance for this piece is given and it is not necessarily

from either Meols or north-west England. The maker's mark WB is shown at one end and it was probably applied to both. WB has not been identified, but he was one of the principal manufacturers of hair-curlers, probably based in or near London. His products were exported all over England, and so this piece could have come from anywhere.

Related objects

There are a small number of related objects that are considered here because they are either smoking related or made of pipe clay. The hair curler mentioned above has been excluded because its provenance is uncertain. The remaining three objects are described below.

3572 Pl. 71 A copper-alloy tobacco stopper, approximately 55mm in height and probably dating from the mid-17th century (now lost). This piece was originally published without any provenance in Ecroyd Smith's 1860 paper (a) and subsequently by Hume (1863, fig. XXXI, 6) (b). A good parallel for the Meols example is provided by Fairholt, who illustrates a very similar example (Fairholt 1859, 235). His example stands on a plain stopper and depicts a man in a low hat with his legs slightly apart and his left hand on his hip. The right hand is extended and would, presumably, have held a pipe, which is missing. Fairholt says this 'is the earliest in point of date I have ever met with, and represents a soldier in the half armour of the time of James or Charles I., consisting of a cuirass with shoulder-pieces and tassets, as worn in the last era of plate armour' (Fairholt 1859, 233–4). Other good parallels are provided by a 17th-century example from Flowerdew Hundred in Virginia (Deetz 1993) and by an example that has recently been excavated from a disturbed deposit at Jamestown, also in Virginia, but which may well date from the 17th-century settlement there. In the Flowerdew example the stopper section itself is decoratively turned and the figure has his left hand raised and his hat has a wide brim. Otherwise the figure is identical; legs together (but modelled separately), wearing half armour with shoulder bosses and with a pipe raised in his right hand. What these examples show is that the Meols find forms part of a group of 17th-century copper-alloy stoppers depicting a half-armoured soldier smoking a pipe. A stylistically similar group appears to represent the standing figure of Harlequin, and other groups with medallions depicting Charles I or satirical heads are also known. Were more examples available for study, no doubt other groups would also emerge. The quality and stylistic similarity between the examples in each of these groups suggests specialist production of these items at a limited number of centres. The Meols example provides an instantly recognisable one that can be added to the known distribution of this particular type.

In 1870, Ecroyd Smith recorded the finding of a 'mould in pipe-clay for rifle bullets, exteriorly heptagonal' (Ecroyd Smith 1870, 267). This object does not survive and so any interpretation has to rely on this brief description. The material suggests a pipemaker could have made this object as a sideline. No other pipe clay bullet moulds are known to this author and, from the description, it seems more likely that this object belongs to a well known, but as yet unidentified class of object. These objects are generally made of highly fired pipe clay and are usually approximately 25–30mm across. They come in a variety of shapes: circular, octagonal, ribbed, etc., and in two distinct forms; those with roughly hemispherical hollows approximately 15mm across in the top and those with hemispherical protrusions of a similar size. The former would fit with Ecroyd Smith's description. It would appear that these two forms might fit together so as to form a miniature mortar and pestle, perhaps for crushing pills. They seem to be particularly common in north-west England, but they have been noted from many other parts of the country. An excavated example from Big Lea Green Farm, Sutton, St Helens (Higgins forthcoming) shows that these objects were in use during the early 1860s.

Ecroyd Smith included a clay marble in his summary of finds from the Mersey district for 1873; '*Marble*, in yellow earth, and unshapely, by make as well as by wear: half an inch in diameter' (Ecroyd Smith 1875, 102). This object has since been lost. Marbles such as this have long been made as sidelines by potters and pipemakers, and the crudeness of this example suggests that it was made on a casual basis. Sometimes well-made and finished examples are found, which are more likely to have been made commercially.

DISCUSSION OF THE MARKED PIPES

Hume (1863) included a section on tobacco pipes in his account of finds from Meols (section XXXVI; 335–47). Most of this section is a general account of pipes and smoking, but it does include engravings of four pipes (pl. XXXI, figs 1–4) and a metal pipe tamper (pl. XXXI, fig. 6) that were found at Meols ***3572***. His section concluded with a description of the Meols pipes, written by Ecroyd Smith (Hume 1863, 345–7), which included a list of the pipe marks that had been deciphered on examples in local collections, as listed below.

Within a plain circle: IOH / NHV / NT.
Within a dotted circle: AB.-H-IB-IM-R.F.-a sprig of tobacco plant between them –S.R.-TP.
Within a plain square: BEN / LEGG – T.H.
Within a dotted heart: GC
Within a dotted arch: A.C.-IB-IL-IR."

Ecroyd Smith's list of finds in 1862 appears on p. 362 and includes 14 pipes, 'Seven tobacco-pipe heads, clay, sixteenth century. The potter's marks are ER, IB, RA. Seven ditto, seventeenth century. Potter's marks, BEN LEGG, ED, IB, IL.' Several of these marks are not in Ecroyd Smith's main list, suggesting that were these additional finds, collected after his main account of the pipes had been written.

In the 19th-century accounts, the dating of the oldest pipes tends to be a little too early, with many of them being ascribed a 16th-century date. These types can now be shown to date from the early 17th century. Ecroyd Smith accurately dated later types, such as the John Hunt bowl of *c.* 1640–60. The marks were also reasonably well-described and transcribed, often with good descriptions of their form and, occasionally, their location on the pipe. Some the stamps may have been mis-read, for example the Thomas Neys mark listed in 1868 is almost certainly a Thomas Heys pipe from Buckley in Clwyd. Despite this, the majority of the transcriptions are likely to be accurate, and many can be readily identified with marks from more recent collections. The 'dotted arch', for example, can be equated with the characteristic 'crescent shaped' borders that are so typical of the south Lancashire industry. The marks recorded in various publications by Ecroyd Smith between 1863 and 1869 are as follows:

GA	
RA	
AB	in a dotted circle
DB	
IB	in a dotted circle
IB	within a dotted arch
TB	with flowers above and below the initials*
AC	within a dotted arch*
AD*	
ED*	
ID*	
CG	in a dotted heart*
RF	in a dotted circle with tobacco plant between the letters
H	in a dotted circle*
IOH/NHV/NT	three line mark of John Hunt
TH	in a square frame
BEN/LEGG*	
IL	within a dotted arch
RL	with star and crescent between the initials
IM	in a dotted circle*
THOMAS NEYS	should read THOMAS HEYS, a maker from Buckley*
CR*	
ER	
ED. R…	most likely a mis-reading of the probable Ed Taylor mark (**3530**).
IR	within a dotted arch*
SR	in a dotted circle*
RS*	
HP	within a dotted arch*
TP	in a dotted circle*

From his accounts, at least 28 distinct types of mark were recovered. Of these, just under a half (12 examples) can be matched with surviving examples or drawings. This leaves 16 examples (marked with an asterisk above) that are known only from Ecroyd Smith's descriptions. This number not only supports the suggestion that only about a half of all the material he saw now survives, but it also shows how important the contemporary accounts are in recording material that has since been lost. In particular, there are a number of marks here that may well represent interesting imported types. The full name marks of John Hunt (Bristol) and Ben Legg (Broseley) are relatively easy to identify. Other marks, such as the TB with flowers and CR marks, may be from Newcastle-under-Lyme, Staffordshire (Barker 1985) and the author has recorded TP marks from the Stafford area. Likewise the GC in a dotted heart is a very distinctive and well-known type. These GC pipes appear to have been made in both Tyneside and Beverley, perhaps the earliest example of a pipe business with more than one factory (White 2004, 124). While GC pipes are common in north-east England, they are not generally found in the north-west, although three examples have been found in Chester (Rutter and Davey 1980, figs 33–5), where they were probably brought in on ships visiting the port.

One of the stamped Rainford bowls **3526** is unusual in that it has a crescent-shaped IB mark on the heel. This distinctive type of mark is characteristic of the South Lancashire industry, where it was used on the bowls of spur pipes. It is rare to find it used on the heel in this way. The HB marks look like the product of a maker whose kiln waste was excavated next to Rainford Church in 1978 and 1979. Although the HB bowl forms and stamps from Meols are stylistically very similar to the Rainford examples (Higgins 1982, fig. 22), the interesting point about them is that they appear to be from previously unrecorded dies. This suggests that the Rainford maker had a longer working life and/or a wider range of products than was represented in the excavated kiln group.

Some of the other marks are less easy to place. There is an AH mark within a plain double border **3520**. Although of a South Lancashire style, the author has not been able to find any record of similar marks from Rainford, nor is it represented amongst the Chester finds published by Rutter and Davey (1980). There are, however, two examples from Beeston Castle, one of which has a double border like the Meols example (Davey 1993, figs 35 and 36). The presence of two examples in western Cheshire might suggest that this maker worked somewhere in the county rather than in south Lancashire. It is worth noting, however, that this mark did not occur amongst the more than 1500 marks collected from fields at Willaston, near Nantwich (Robinson Collection, National Clay Tobacco Pipe Archive).

One particularly interesting piece in the John Hunt pipe **3525**, which was made in Bristol. This can be attributed to the first John Hunt, who was born in Norton St Philip, Somerset, in 1628 (Lewcun 1985, 17). Hunt purchased his freedom in Bristol in 1651 and was a founder member of the Bristol Guild of Pipemakers in 1652 (Jackson and Price 1974, 47). He took an apprentice in 1653, but nothing is known of his later career, although he must have become a well-established maker, since his products are widely distributed, especially in south-west England. Oswald's mark index lists examples of this maker's mark from Abergavenny, Bath, Bristol, Cheddar, Dublin Castle, Edinburgh Castle, Exeter, Hindon, London, Marlborough, Taunton, and Salisbury (unpublished index; National Clay Tobacco Pipe Archive). From a distribution of Hunt's later marks (*c.* 1660–80), it has been suggested that he returned to the Norton St Philip area during this part of his career (Lewcun 1985, 18).

The occurrence of a Bristol product at Meols is particularly interesting, since there are no other known examples from that centre from anywhere in north-west England. Although Bristol was a major production centre, the pipes from there were mainly exported to the New World and, after the early 17th century, there was generally little penetration of the local markets around Bristol. Both Ecroyd Smith (1860) and Hume (1863) published the John Hunt pipe as a Meols find, and so it seems to be securely provenanced to Wirral. As such, it provides tangible evidence of coastal shipping from south-west England visiting the area. Pipe groups from ports such as London, Exeter and Plymouth have shown that 'exotic imports' are usually strictly confined to the harbour areas, where they must have been discarded directly from visiting ships or lost in waterfront areas by the sailors. This piece may, therefore, provide evidence of Bristol ships mooring directly at Meols, rather than at the neighbouring ports of Chester or Liverpool.

The three pipes with tailed heels **3528–3530** represent some other interesting influences on the Meols assemblage. This distinctive style of pipe was developed in the Broseley area of Shropshire around 1680 and became the hallmark of that important production centre for the next 50 years. The style was widely copied, with makers as far north as Buckley, in north Wales, producing this particular bowl form. The example marked IB **3528** may well be a product from the Buckley area, since at least one, and possibly two, examples of this mark have been recovered from excavations at Brookhill, in Buckley (Higgins 1982, fig. 3.28).

The Brookhill marks are also placed sideways on the heel of the pipe, suggesting that this was a characteristic of the IB maker. Ecroyd Smith recorded the finding of another Buckley pipe, now lost, with the mark of Thomas Heys on it (Ecroyd Smith 1869a, 217). This maker worked at the Brookhill site in Buckley from *c.* 1695–1720, where he used at least six different dies to stamp his pipes (Higgins 1982 51).

The other two Broseley-style pipes **3529 – 3530** both had square, three line marks, containing the maker's full name. Both of the marks are chipped, but both appear to start with the Christian name 'ED', for Edward. The more complete example appears to have a 'T' on the second line **3530**, and this mark can almost certainly be identified as belonging to Edward Taylor, who worked at Much Wenlock, near Broseley, during the early 18th century (Higgins 1987a, 508). Unfortunately, the other pipe **3529** has now been lost, so it is not possible to determine whether the two stamps are from the same die. Broseley became one of the most significant production centres in the country, with a huge market area extending down the Severn valley and into south Wales. The trade to the north was more restricted, however, and only a few examples found their way as far as Warrington and Chester. For all the thousands of pipes recovered from Chester, there are only five or six known Broseley pipes of this date, a negligible percentage. The Meols group, however, contains two examples, representing nearly 3%, of this assemblage. Furthermore, Ecroyd Smith (1863) notes a 'BEN LEGG' mark, now lost, which would have been another Broseley product. Broseley lies on the south side of the Ironbridge Gorge, which, during this period, was emerging as a powerhouse of industrial innovation. Mining, metalworking, and the clay industries were all important local industries around the Gorge. The links evidenced by the pipes not only show the trading connections of the area, but they also mark the conduits through which new ideas and techniques could flow to the similar industrial areas based on the north Wales and south Lancashire coalfields.

There are also 11 mid-17th-century spur bowls in the Meols area group with makers' marks on them. In each case this comprises a pair of initials within a crescent-shaped frame on the bowl facing the smoker. This distinctive style of mark is characteristic of the south Lancashire pipemaking industry, which was centred on Rainford. Many of these marks can be paralleled there and this is the most likely source for the majority of them. Some examples, however, have not been noted from Rainford and may have been made elsewhere in the neighbourhood. One of these is the RA mark **3559**, which can be attributed to Richard Atherton of Liverpool, who took his freedom in 1654. Very little work has been done on the early Liverpool pipes themselves, and it is not clear how large the industry there was before the rapid growth of the city during the 18th century. The IL mark ***3566*** is another that cannot be matched at Rainford. This piece was illustrated by Hume in 1863, but has since been lost. There is a very similar, but unprovenanced, piece in the Grosvenor Museum, Chester (Rutter and Davey 1980, fig. 49.117).

Establishing provenance from Meols

In 1851 A. J. Lamb published a general paper on pipes in England, which included a single specific reference to pipes from Hoylake (Lamb 1851, 30). In 1860 Ecroyd Smith published a general paper on pipes that clearly drew on and illustrated material that he had acquired from the Meols area. He also dismissed Lamb's claims that early pipe forms are found on William III's campsite. In August 1864, a further 150 clay pipes were found in the vicinity of the 'Kings Gap' at Hoylake (Ecroyd Smith 1866). Although these had already been dispersed when Ecroyd Smith found out about them, but he felt sufficiently confident to identify most of them as having been spur bowl types of the latter half of the 17th century. From 1863 to 1869 Ecroyd Smith published regular summaries of recent finds in the *THSLC*, which listed a further 85 pipes, at least 20 of which had makers' marks on them. On average, another 14 pipe bowls were being collected each year during this period. This means that, by 1869, Ecroyd Smith is likely to have been able to study some 130 examples. He remained in Liverpool for approximately another five years, during which time he might have seen or collected another 70 pipe bowls if he carried on at the same rate, i.e. 14 bowls per year; making a possible total of some 200 bowls in all. This suggests that he saw at least twice the number of pipes as eventually ended up in the museum collection.

In terms of the provenance of the collections, the contemporary accounts make it clear that the majority of the finds were being collected from the Great Meols area. Furthermore, Ecroyd Smith notes that early forms, often with makers' marks on them, were principally found around Great Meols, while larger spur forms, without marks, were found on the supposed site of King William's camp. A few of the pipes are noted as being found elsewhere, for example, near his home at Egremont (Wallasey), on the beach nearby or from Warrington via Dr Kendrick. This bias towards Great Meols as the main collection area, with small numbers coming from elsewhere, accords with the contemporary provenance written on many of the surviving pipes. It also means that any unprovenanced pieces are most likely to be from the Meols area, with a smaller probability that they were recovered elsewhere.

An important point to address in considering these pipes is the provenance and reliability of the material collected by Ecroyd Smith. In general terms, his documentation was very good, and the fact that many of the pipe labels are now faded and difficult to read is a failure of the materials, not of the original documentation system. Most of the bowls (perhaps all originally) were marked in ink with the location, month and year in which they were collected. Ecroyd Smith's publications show that he was very much aware of the importance of provenance, for example, by 1860 he was already able to state that the early pipes came from in or around Great Meols, while later types were found on the site of William III's camp. Likewise, he complains about the general use of 'Hoylake' to refer to finds that are more specifically from Great Meols. This suggests that he would have been careful to record accurately the provenance of each piece in his collection. Having said that, there may be occasional pieces where the original provenance has become lost or confused. In his 1860 paper, Ecroyd Smith illustrates a bowl stamped RF. Both the style of the bowl and that of the mark are typical of Yorkshire products. In that paper, Ecroyd Smith says 'examples are here exhibited from East Yorkshire' and he includes an RF mark, 'a wheat-sheaf between', in his list of Yorkshire marks (Ecroyd Smith 1860, 215). The logical conclusion is that the Yorkshire RF mark is the piece illustrated in the same paper, especially since he did not list any RF mark under the types found in Lancashire and Cheshire. By 1863, however, Ecroyd Smith included 'R.F. – a sprig of tobacco plant between them' in his list of 'Cheshire Shore' finds (Hume 1863, 347). This leads to the suspicion that the Yorkshire piece had become mixed with his 'Cheshire Shore' finds during the intervening years.

A Yorkshire style RF pipe would be a very unusual piece to find west of the Pennines. White has recorded 19 similar marks from Yorkshire, with a distribution centred on York, but with examples from Hull as well (White 2004, 126–7). The most likely maker of these pipes is a member of the Fowler family, who were based mainly in Hull. This distribution would accord with Ecroyd Smith' s reference to a pipe from East Y orkshire. Unfortunately, this particular piece does not survive, so we do not know what was actually written on it. Although this particular piece appears to undermine the credibility of the provenances given for this collection, it is important to recognise that mistakes do occur and to keep any such errors in proportion. The majority of the pipes do have a provenance and date of collection marked on them and they are nearly all of types that would be expected from north-west England. On balance, it is considered that the majority of these pieces are accurately provenanced, and that they can be used to examine the pipe evidence from the area.

In terms of chronological coverage, there can be little doubt that Ecroyd Smith collected a full sample of the available pipes. In particular, his collection includes some 19th-century pieces, such as the Irish style bowl **3571** or the French pipe **3570**, which cannot have been more than a few years old when collected. In fact, their accession date of 1874 now provides a very useful *terminus ante quem* for dating the introduction of these styles. The inclusion of contemporary pieces in his collection shows a broad-minded approach to sampling that is often lacking on even the most modern of excavations.

Of the 84 Ecroyd Smith pipes that were illustrated in about 1980, 21 examples either have no provenance or the markings are illegible. Most of the more securely provenanced pieces come from either Great Meols or Hoylake, although 19 of the 63 provenanced pieces (30%) have other locations marked on them. There are seven pieces from Hilbre, two from Liscard, and six that are variously marked W, War, War Market Place, or War Hale Bank (or Beach). These are presumed to be finds from in or around Warrington. Finally, there are two pieces marked E.T ., the location of which has not been determined, although this could possibly stand for Egremont, the area near Liscard in Wallasey where Ecroyd Smith lived. Assuming that an equal proportion of the unprovenanced finds come from elsewhere, then 5 or 6 of the 21 unprovenanced finds are likely to be from these places, rather than from Great Meols or Hoylake.

In order to test the consistency of the various groups and to test Ecroyd Smith's assertion that the earliest pipes came from Great Meols, an analysis of some of the provenanced pieces was carried out using the dates allocated to them during recording. There are four pieces that are clearly labelled with the full name 'Hoylake' and the mid-point of the date range allocated to each of these pieces was taken. These dates were added together and then divided by four (the number of examples) to give an 'average date' for the Hoylake pipes, which was mid-1662. There are five pipes marked Hilbre, but one of these is a stray 19th-century piece and so was discarded so as to avoid skewing the result too much. A similar exercise for the four remaining pipes gave a date of 1709, showing that the Hilbre pipes were, on average, early 18th century in date, as opposed to mid-17th century in date for the Hoylake examples. When the 12 pipes marked just 'H' were examined, an average date of mid-1666 was produced. This is very similar to the Hoylake result, but quite different from the Hilbre examples. This suggests that the 'H' pipes have correctly been attributed to Hoylake rather than Hilbre. There are 23 pipes marked GM for Great Meols. These produced an average date of 1652, again showing a clear difference from Hilbre and supporting Ecroyd Smith' s assertion that the earlier pipes were recovered from specifically in or around the old centre of Great Meols rather than Hoylake in general.

When the pipes were catalogued, an attempt was also made to assess whether the fragments showed signs of being abraded or water-rolled. This was considered significant, since many of Ecroyd Smith's finds were supposed to have come from the seashore at Meols. If evidence of abrasion could be seen, this might indicate that the pipes had in fact been in the sea, rather than having been collected directly from eroding cliffs. Evidence of abrasion would also shed light on the collecting areas where material was being sought at this time. Where it was possible to form an opinion, the results were as follows:

Table 2.17.1 Evidence of Abrasion

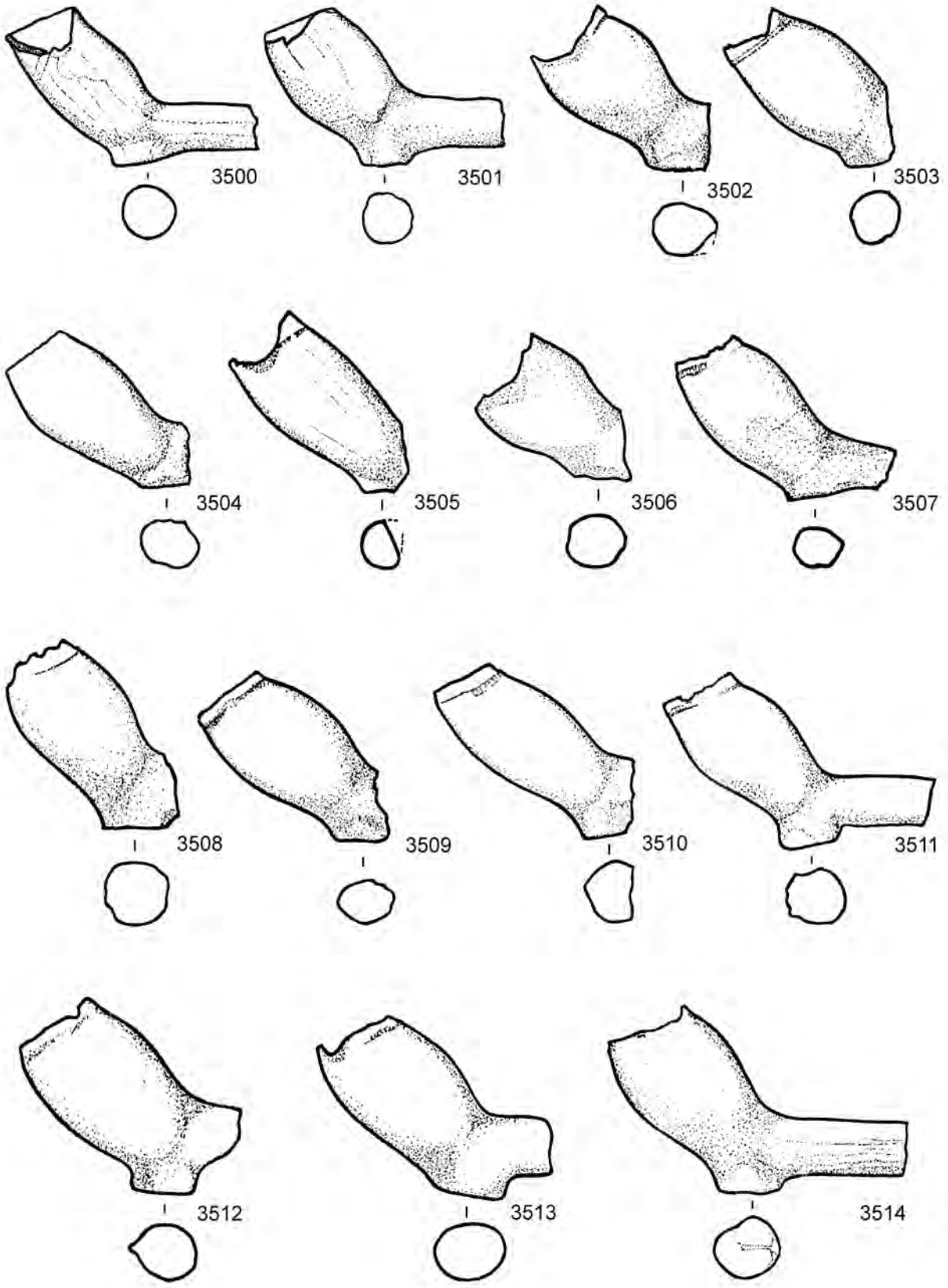
Location	*Possibly abraded*			*Total*	
	Unabraded		*Abraded*		*% Abraded*
Great Meols	15	2	10	27	44
Hoylake	12	1	3	16	25
Liscard	1	0	0	1	0
Hilbre	6	0	0	6	0
Warrington	5	0	1	6	17
E.T.	2	0	0	2	0
Total	41	3	14	58	29

The results clearly show that the majority of the abraded pipe fragments came from Great Meols. Some 10–12 of these pipes, representing at least a third and perhaps almost a half of the total, appear to have been in the sea long enough to show signs of abrasion. In contrast, only three or four of the 16 Hoylake pieces show similar signs of abrasion, around a quarter. This suggests that some of the pieces labelled Hoylake may have come from the sea, but that there was a significant difference in the origin of these pieces between these two areas. Most strikingly , none of the pieces collected from Hilbre Island is abraded. This suggests that either these were recovered directly from the eroding cliffs, or that they were disturbed elsewhere on the island itself.

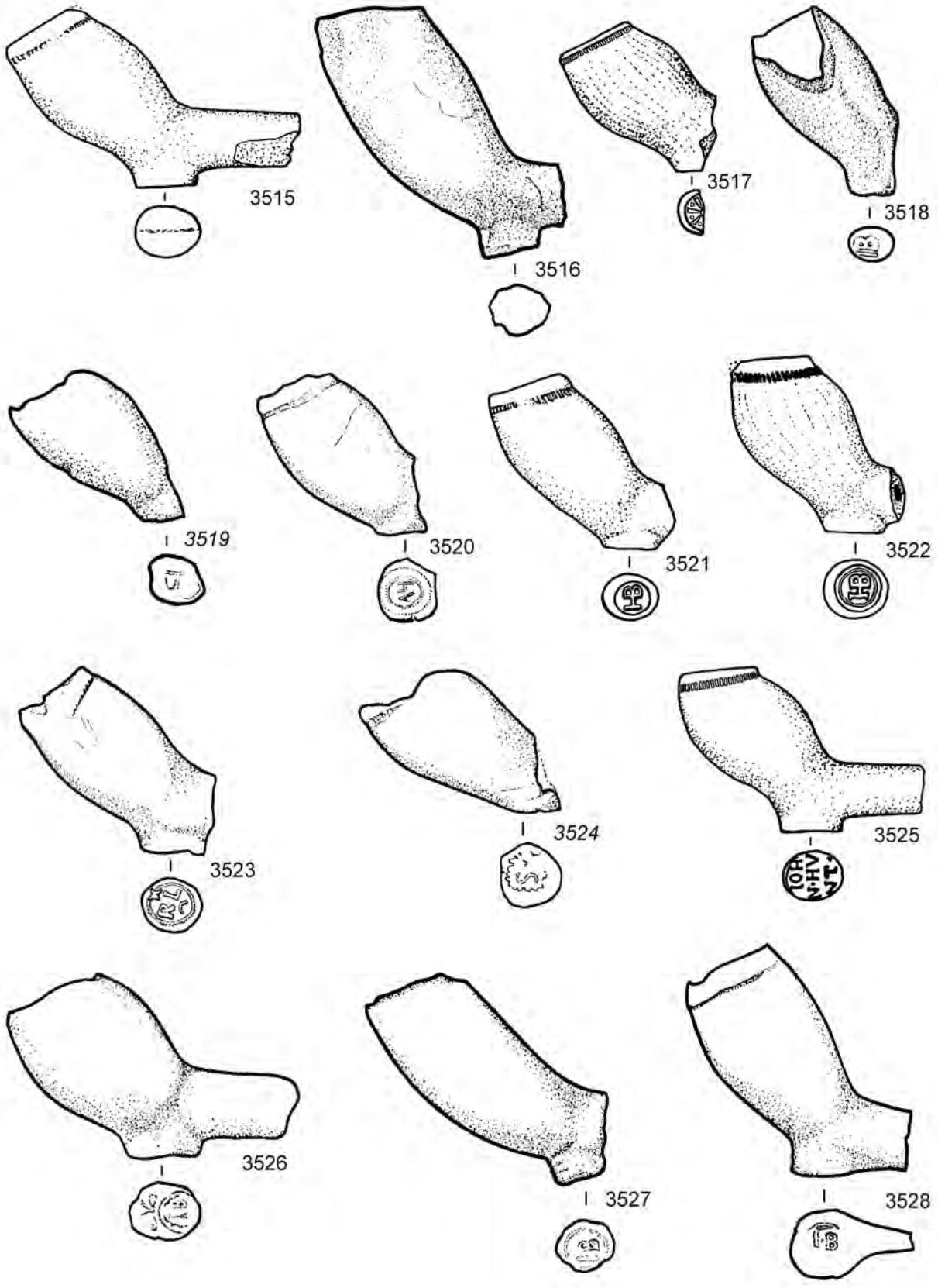
Given that there appear to be clear differences between the various groups, those pieces that are clearly provenanced as coming from areas other than Hoylake or Great Meols have been excluded from this catalogue. The Hoylake and Great Meols pipes are difficult to separate geographically, and both groups contain primarily 17th-century finds. For this reason these two groups, together with the unprovenanced material, have been put together so as to provide a reasonable body of data to discuss in this report. In doing so, however , it is acknowledged that a small number of the unprovenanced pieces, perhaps five or six of the 67 pieces in this group, may be from other sites on or near the Wirral coast.

CONCLUSION

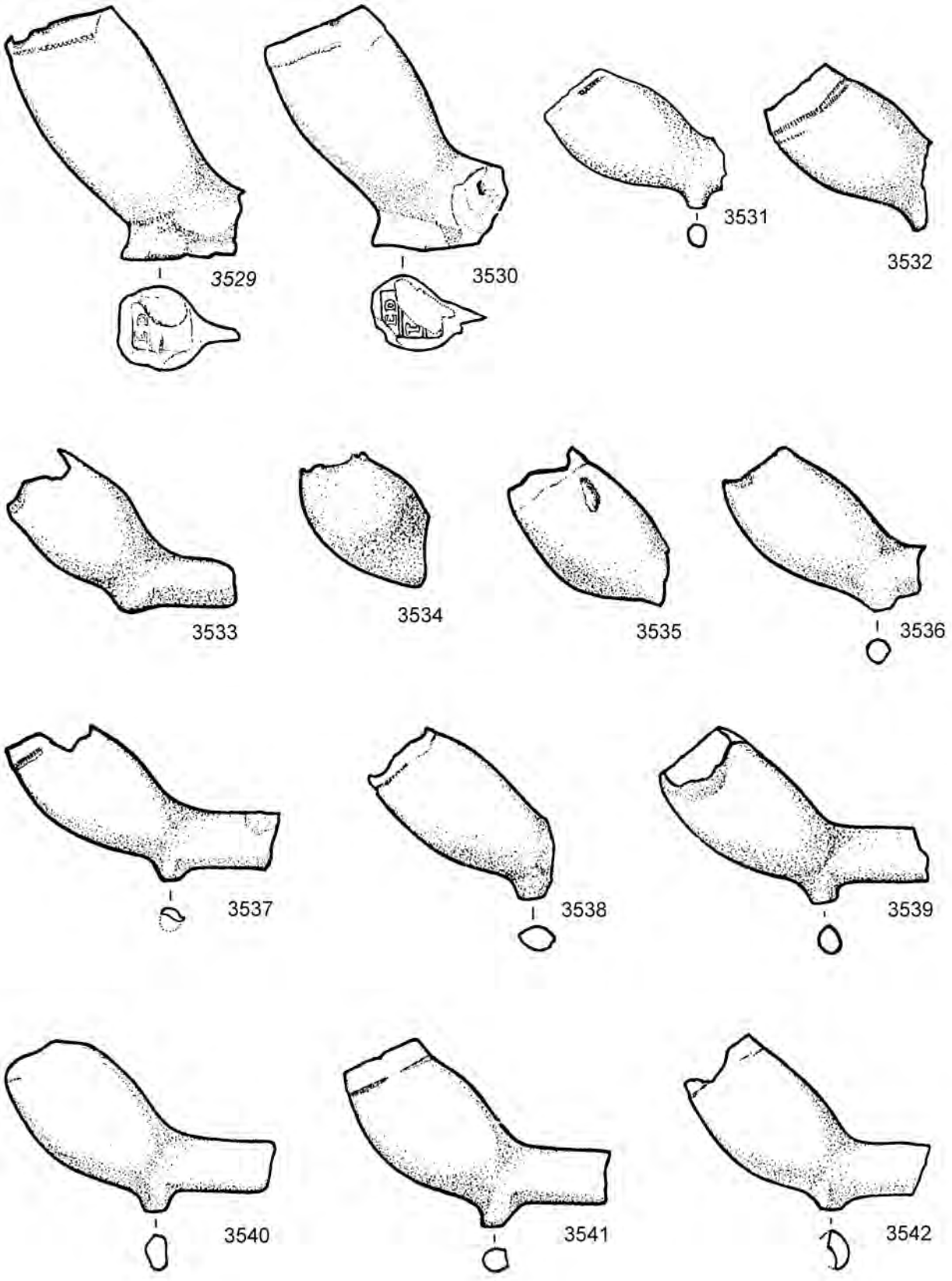
This study has shown that Ecroyd Smith' s material was well documented and provenanced when originally collected, and that the majority of the finds can still be



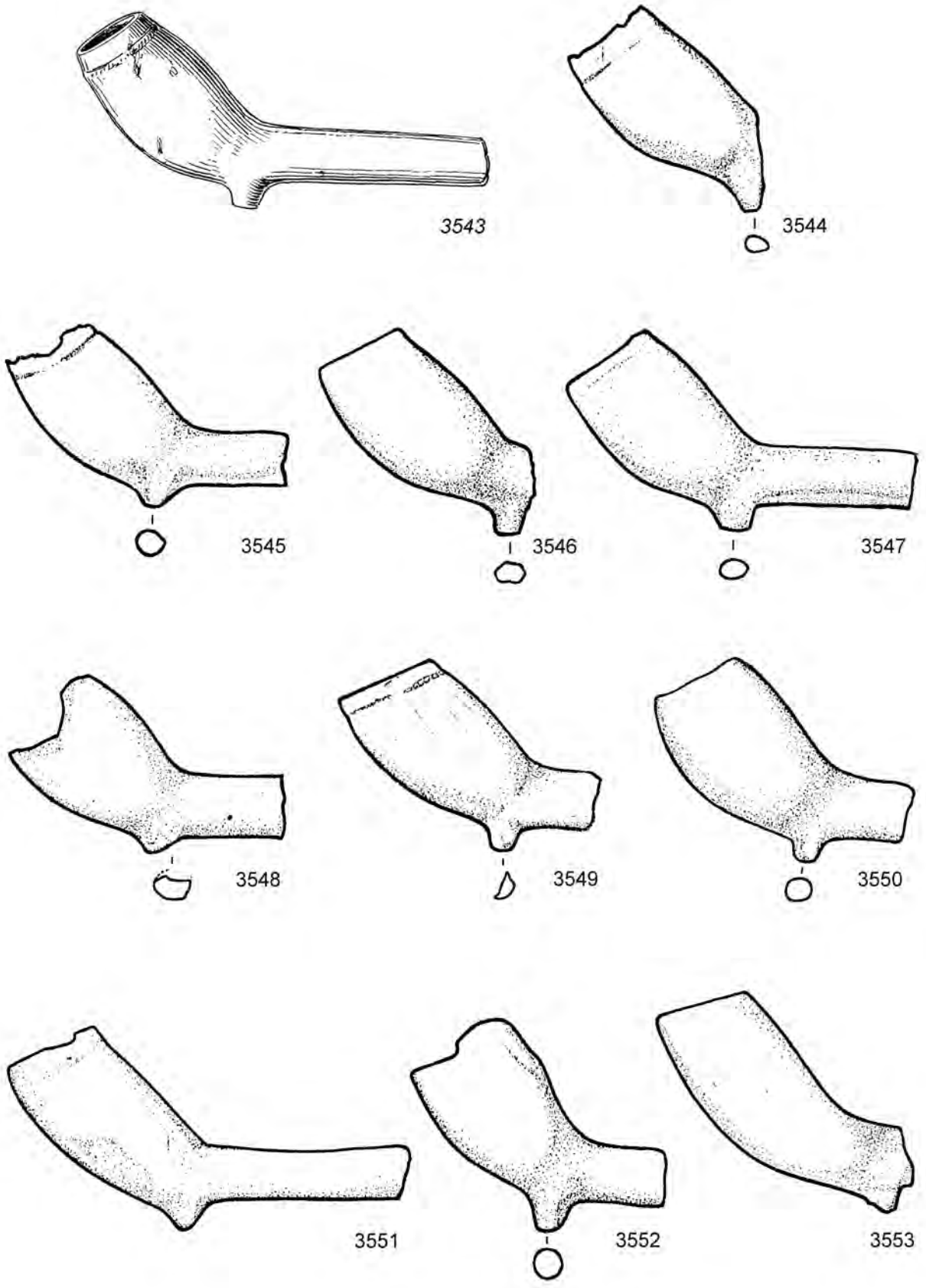
Pl. 66. Clay pipes



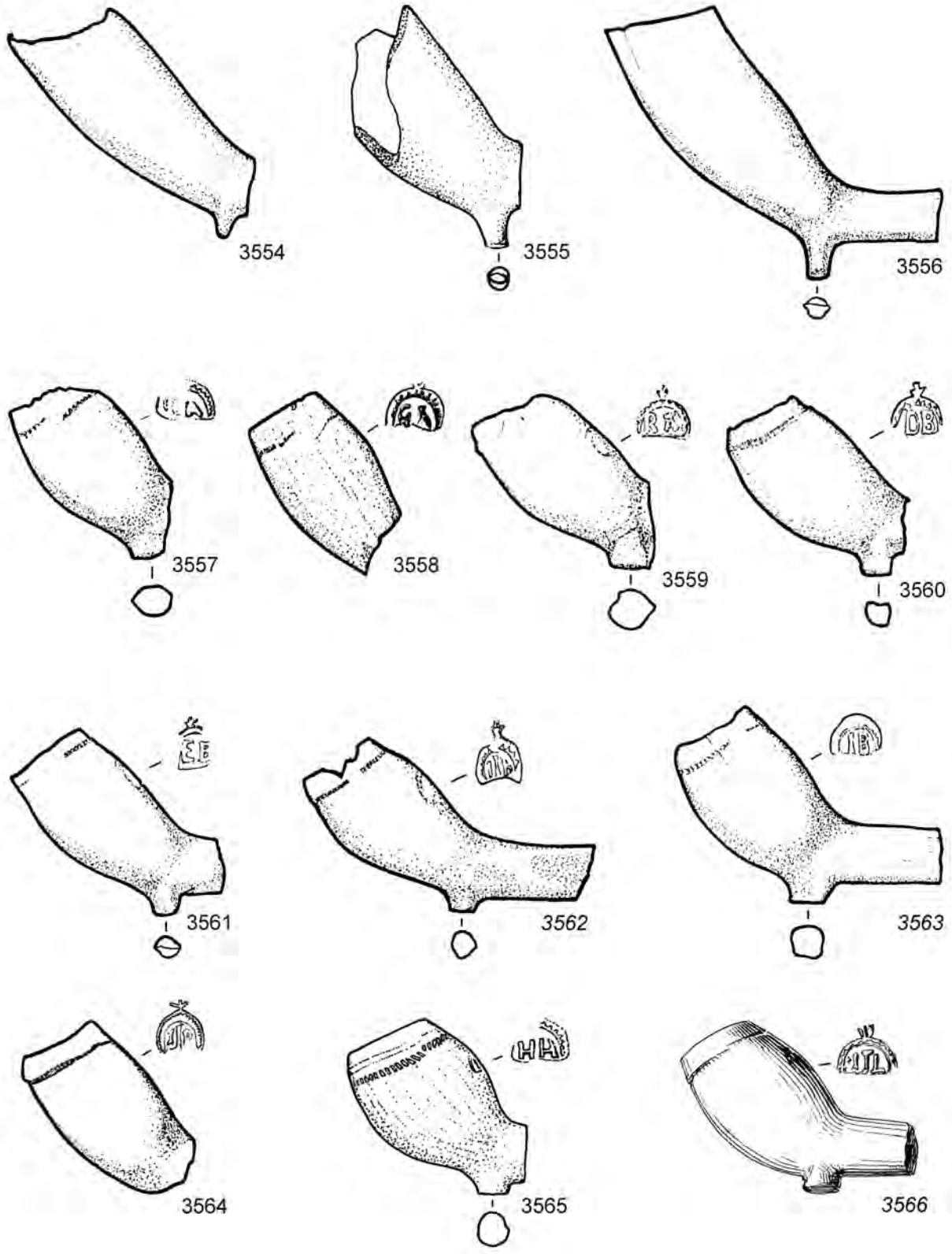
Pl. 67. Clay Pipes



Pl. 68. Clay Pipes



Pl. 69. Clay Pipes

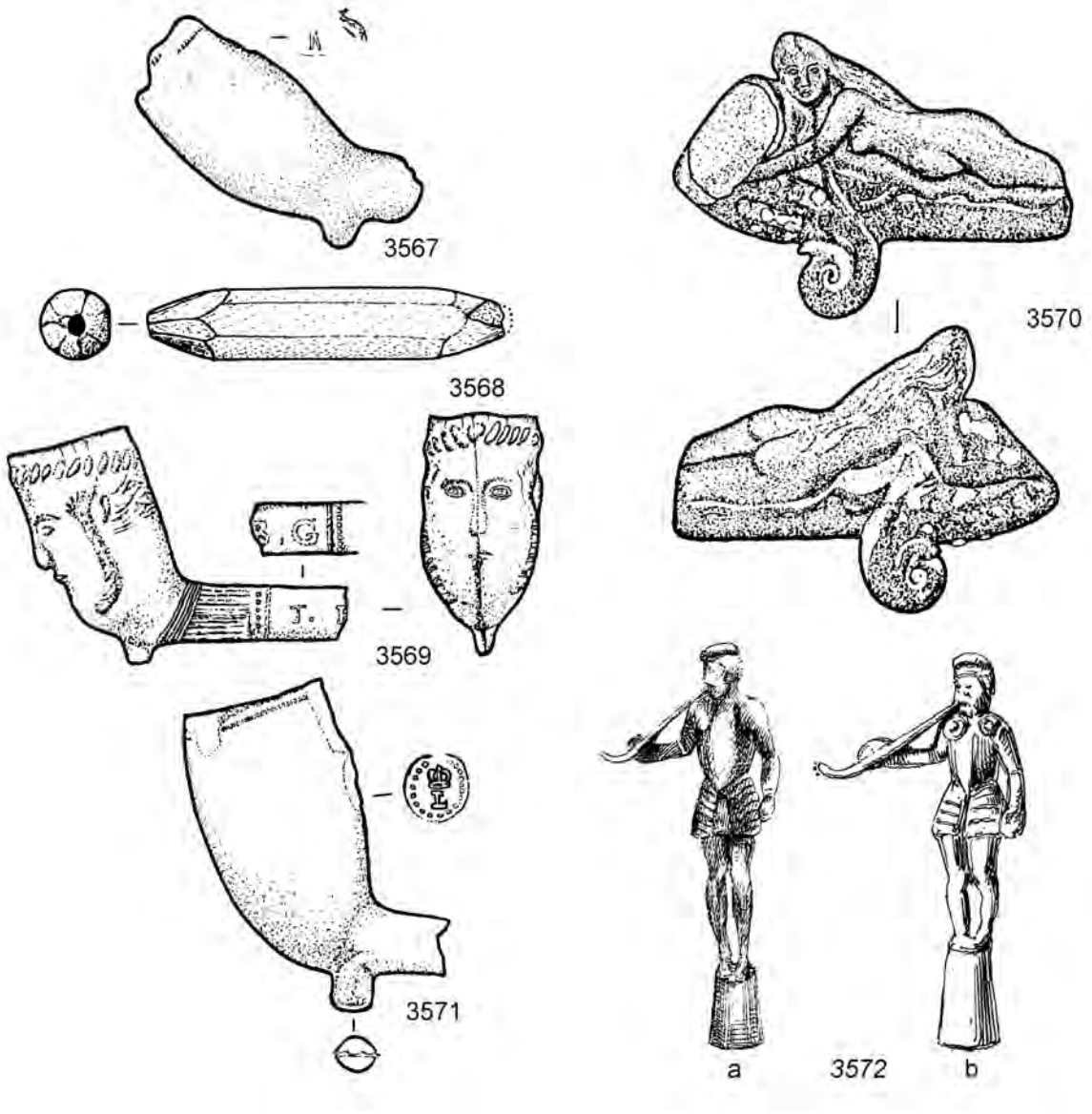


Pl. 70. Clay Pipes

divided into discrete and coherent groups. The Great Meols pipes date primarily from *c.* 1610 to 1730, and many appear to have been recovered from the seashore. These pipes are some of the earliest from the area and appear to represent a focus of settlement or activity, perhaps a continuation of that represented in the medieval period by other classes of artefact. The earliest pipes include a finely burnished example **3517**, probably from London, while mid-17th-century examples include a Bristol piece **3525** and a GC pipe that probably came from Yorkshire or the north-east of England. These types of 'imported' pipe were not traded to the region in general, and they probably represent personal items carried on ships. Such items are usually only found in harbour areas, suggesting that ships may have, in fact, been visiting Meols. They are also of good quality, suggesting that their owners were able and prepared to pay a premium for their pipes.

Other trading connections are represented by examples of pipes from Liverpool and Rainford in Lancashire, from the Buckley area of north Wales, by some probable Staffordshire pipes, and by a number of examples from Broseley and Much Wenlock in Shropshire. The Broseley area pipes are of particular interest, since they form a small, but significant, proportion of the Meols area assemblage. Broseley area pipes are much rarer in Chester, suggesting that either the Guild system there effectively excluded imports or that trade routes to the Dee Estuary and north Wirral coast by-passed the city.

A broader comparison of Ecroyd Smith's pipes, including other groups from Wirral, raises important questions about the role and nature of Chester's trading connections with its hinterland. Chester was undoubtedly an early pipe production centre, with a substantial and distinctive industry establishing itself there from at least the early 17th century. In contrast with neighbouring centres, such as Buckley and Rainford, early Chester pipes were generally made of fine clays, imported from the West Country, as opposed to the coarser and less white coal-measure clays, which could be obtained locally. Amongst the 17th and early-18th-century pipes examined, there were only 16 examples that appeared to be of imported clay (and three possible examples), as opposed to 54



Pl. 71. Clay Pipes and related objects

examples of local clays (and two possible examples). It is not known whether the Liverpool makers were using imported clays at this time, but it is clear that local clays dominate the Meols area assemblages. Furthermore, Chester was still an important port during the 17th century and yet there is not a single pipe from the Meols area collections that was certainly made in Chester . There are several in the style of Chester , but these could have been made elsewhere, and none of the stamped marks can be matched with those known to have been used by the Chester makers.

The picture that emerges is of coastal shipping crossing the Dee and Mersey estuaries with Buckley and Rainford pipes and of longer distance inland trade being represented by pipes from Staffordshire and Shropshire. Ships from London, Bristol, and north-east England may have been calling at Meols, but Chester appears to have figured little in the web of trade routes connecting the north W irral coast with the rest of the country . This seems surprising given Chester's flourishing pipemaking industry and regional importance as a port and market town. It may be that the cost and regulation of working within the city discouraged trade with the surrounding coastal areas, where goods could be obtained easily and cheaply using coastal shipping. This hypothesis, derived from the pipe evidence, provides an important model in considering the medieval finds from Meols, which are very cosmopolitan in nature, but appear strangely out of place away from an urban centre.

Note

1 The author is grateful to Dr Peter Davey of the Centre for Manx Studies for drawing his attention to the Dove Point pipe (**3565**), formerly in the Manx Museum, and to Dr Susie White for her help in scanning and editing the *c.* 1980 illustrations for publication. In the catalogue, illustrations **3543** and **3566** are from Hume (1863) and **3515**, **3517**, **3521**, **3522**, **3525**, **3531**, **3555**, **3565**, **3568** and the stamp details in **3528**, **3557** and **3571** are by the author. All of the remaining drawings in the catalogue have been edited from the work of an unknown illustrator, which were drawn in about 1980.

2.18 Fishing equipment

Robert Philpott

The fishing equipment from Meols includes a group of 96 surviving fish hooks and two probable fish spears. Other items probably associated with fishing are lead and stone weights, conventionally interpreted as 'net sinkers'. Irregular circular lead conical objects with holes may be medieval net weights or sinkers, defined as Steane and Foreman's Type II weights (Steane and Foreman 1988, 153, fig. 9, nos 6–7), and may be distinguished only from spindle whorls as the perforation is not central. Another iron object is probably a cockle rake (**3673**).

Fish hooks

A total of 96 fish hooks survive in museum collections; a further *c.* 30 from the Liverpool Museum collection were lost during World War II. Hume (1863, 253) recorded 63 fish hooks from Meols, of which all except three of brass or bronze were iron, and illustrated five (Hume 1863, pl. XXVI, nos 1–5). Later finds consisted of one 2 x inches long (70mm) in 'latten', found in 1867, and five more in iron, of which 'several appear to have been coated with pewter to avoid oxidation' (Ecroyd Smith 1868, 119, 121). Eight fish hooks of 'uncertain age' were found in 1873 (Ecroyd Smith 1874, 101), four in 1874 (Ecroyd Smith 1875, 99), two more, found 'recently', were exhibited in March 1876 by Charles Potter (Anon 1876, 186), and another of bronze by Potter in 1878 (Anon 1879, 108). Dated display cards in the Potter Collection show further finds were made in the period 1887–93.

Typology

The chief typological differences amongst the fish hooks occur in the form of the hook, barb, and the means of attachment to the line or snood.

Fish hooks from the Roman period onwards in Britain and north-western Europe show that two main methods were employed to attach the line to the upper end of the hook. In the first type, which is not found at Meols, an eye was created by looping over the end of the shank. The second type, which includes almost all the Meols hooks, has a tab created by hammering the end of the shank flat. A third type is a variant of the second where the shank tapers along more than half of the shank, widening at the end, and represented at Meols by a single example **3594**. The tab is usually bent away from the hook, although in a few examples the tab is straight. The final shape of the tab is partly dependent upon the malleability of the metal. Many of the neat copper -alloy examples have small oval- or triangular-shaped tabs, often with an irregular end where the metal has cracked under pressure.

Some iron examples **3637**, **3648** are characterised by a flattened asymmetrical tab projecting from one side of the end of the shank, and they are not usually angled at the top of the shank. One unusual iron example **3611** has a shank of variable thickness, which tapers out to end in a long triangular tab, which is then slightly twisted. This latter form, with a long tapering shank widening at the top, is found in a Viking-period fish hook from Dublin (Roskilde Ship Museum, Denmark).

Most of the Meols hooks, where the point survives, are barbed, with only six certain barbless hooks. The size, prominence, and angle of the barb are subject to some variety. At its slightest, the barb is represented by little more than a slight protuberance near the hook, but usually it is more prominent. The copper -alloy hooks are usually finer, more deeply indented, and sharper than those in iron. The sharpness of the point influences the ease of penetration of the hook into the fish' s mouth, but should not be too sharp or the hook will bend or break (Mustad catalogue). In iron examples the barb often makes a right-angled triangle with the shank.

Barbless hooks are, in some cases, unusual in other respects. One **3575** has a wrought and twisted shank, a tightly curved hook, and an out-turned point, which served instead of a barb. Another very large barbless hook **3581** is encased in mortar as a sinker.

A feature of some hooks is an oblique groove, on one side only, below the barb. The rounded profile of the groove suggests they were created by a blow with a fine round-ended tool. These are most common on copper-alloy examples, e.g. **3650**, **3643**, but also occur in iron. By creating a narrow waist behind the hook, it served to keep the fish on the hook.

Size

The Meols fish hooks range in size from fine, delicate examples to much more massive types, ranging in length from 26mm to 64mm (approximately modern hook sizes 4

to 7/0). The smallest, measuring between 26mm and 31mm, are all in copper alloy; as are most of those shorter than 40mm. Above 40mm long, iron is more common, although copper-alloy examples are present in smaller numbers throughout the range.

The length increases with the thickness of the shank and the massiveness of the hook. The Meols examples appear to be in the mid to lower end of the scale of hooks from Britain and Ireland. The size of fish hooks varied depending on the species of fish being sought. At Great Yarmouth the 45 fish hooks ranged from 54mm to 75mm, with one 122mm long, while at Pevensey three 13th-century hooks include one example about 90mm long and another at 145mm long (Dulley 1967). Several hooks at Townwall Street, Dover, exceeded 100mm, but most were rather smaller, between 47mm and 70mm (Parfitt *et al.* 2006), while hooks from Cork ranged from 39mm to 65mm, with an average of 49mm (Cleary *et al.* 1997, 175).

Other features

The shanks fall into two broad groups, based on the technology of manufacture. The first have shanks of irregular section, and are wrought from sheet metal and often distinguished by a single irregular large seam. This group contains a few of the typologically unusual examples. **3652** is a wrought example in copper alloy with a single clear, irregular seam, which is a good candidate for a technologically earlier form; the shank is flattened in section, more so at the hook end. **3624** is formed of forged copper-alloy sheet; in form and manufacture this piece is very unlike the majority of other finds and the technique of manufacture suggests an earlier date. **3601** also has a possible seam, as if made of folded sheet metal. **3575** lacks a barb, an unusual everted hook, and has a twisted shank of irregular section forged from a bar. This too may be a technologically early example. There is some evidence that barbless hooks are more common in the earlier medieval period but continue to be made into the later period.

The second group has neatly made shanks that are uniformly circular in section. Copper-alloy examples can be seen in most cases to have been made from drawn wire, the drawing process leaving fine parallel grooves on the sides (e.g. **3582**). The surfaces of most iron examples are too corroded to distinguish between forged and drawn wire.

In almost all the Meols hooks the shank is straight, though a few have a slight curve, and in one or two small examples a reversed bend in the shank is found. Two other variables are the form of the bend and the width of the 'gape', i.e. the distance between the shank and the hook. The bend takes two main forms amongst Meols examples, a smooth rounded curve and a 'square' form, where the hook appears to have been bent over a right-angled edge, e.g. **3592, 3609**. A narrow gape appears to be characteristic of some early finds elsewhere, as in Roman examples from Guernsey (Rule and Monaghan 1993), or Longthorpe (Frere and St Joseph 1974), while a very wide gape, e.g. **3650**, may have resulted from being pulled out of shape in use.

Some iron hooks retain a coating of white metal, thought by Ecroyd Smith to be pewter (1868, 119, 121), to prevent oxidation. Although not confirmed by analysis, it is probably tin or lead/tin.

Multiple hook

There is only one 'multiple' hook at Meols, **3673**. This takes the form of two single hooks fastened together by a thick flattened iron collar. Double- and triple-hooks are well represented in finds from the Thames in the Museum of London collection. Multiple hooks are referred to as 'snatches' and have been used in recent times by poachers. They consist of several hooks joined together, attached to a string and then a rod, and are 'cast among a shoal of fish and suddenly jerked'; a lead weight is fixed to the top of the base of the hooks (Jenkins 1974, 301).

Dating

Fish hooks are a type-fossil, displaying little typological development over a long period from the Roman to post-medieval periods. The main typological characteristics of fish hooks are certainly established at least as early as the Roman period in Britain. The use of barbed hooks, as well as the two principal techniques for attaching the snood or line, using both looped-eye terminals and flattened or splayed terminals, are all found in Roman examples, as is the use of both iron and copper alloy. A splayed terminal is found on a 5th-century barbed hook from Verulamium (Goodburn 1984, 58, no. 214) while a Roman example from Wroxeter, Shropshire, is described as 'bronze fish-hook with barb, the shank flattened and roughened for binding' (Bushe-Fox 1916, 33, pl. XXI, fig. 2, 5). Three fish hooks from the late-3rd century trading vessel from Guernsey have small splayed tabs and, in one case, a narrow gape (Rule and Monaghan 1993, 77, fig. 59, 7–9). A barbed iron example from Deanery Field, Chester, has a narrow gape, a tapered shank, and an eye for attaching the line (Newstead 1928b, 24, pl. XII). Longthorpe has a small barbed fish hook with a looped eye and narrow gape (Frere and St Joseph 1974, fig. 32, no. 84). A small, strongly curved, example only 16mm long with a finely curved barb was found in the Walbrook at Bucklersbury House, London (Merrifield 1965, pl. 139, 8). Roman examples often have a continuous curved shank rather than a straight shank, though it is uncertain whether this is of chronological or functional significance.

Few early medieval fish hooks have been excavated in Britain, but they become more numerous from the 9th century AD onwards, largely a reflection of the chronology of deposits encountered on urban excavations. Both barbed and barbless hooks occur in early medieval contexts, though the proportion of barbed hooks seems to increase in the later medieval period. Barbless hooks occur in a Phase I deposit (*c.* 400–850, but potentially residual) at Lower Bridge Street, Chester; this last example, in iron, has a tapering shank with a looped eye (Rutter 1985, 62, fig. 27). At Winchester, of five fish hooks, four plain hooks date from probably the early 9th to 10th–11th centuries, while the only barbed hook is mid-13th century in date (Biddle 1990e, 819, nos 2537–41), while of the 12 identified fishhooks from an early medieval site at Sandtun, Hythe, Kent (Riddler 2001, illus. 49, 94–6) all those where the head is intact have a flattened and rounded head; four of seven with the intact point are barbed, three are not. A date in the post-Norman Conquest period was suggested on the grounds of their large size and absence of pre-Conquest parallels. Barbless hooks occur in the later medieval period. Two barbless hooks are found at Kingshams, Ilchester, Somerset, in pits dated broadly to the 11th–13th century (Leach 1981, 257, fig. 126, nos 101, 102).

Both copper alloy and iron were used in the early medieval period, both for example are found at Whithorn by the 9th century, although iron appears to have been more common at most sites in medieval contexts. Iron examples are often reported as square in section, indicating the use of forged rather than drawn wire. The use of

rectangular-section wire is found as early as the mid-6th century at Whithorn, in a 97mm-long hook (Hill 1997, 379). The three Sandtun hooks on display in the British Museum have rectangular forged sections, while all the fish hooks in the large assemblages from Fuller's Hill, Great Yarmouth, and Townwall Street, Dover, had similar shanks.

Two large medieval groups from south-east England demonstrate the range of sizes and the occurrence together of barbed and barbless hooks. At Fuller's Hill, Great Yarmouth, all of the 45 hooks had a flattened or thickened end, and both barbed and plain points are found in all deposits from Phases I–IX, which dated to the 11th and 12th centuries (Rogerson 1976, 166, 221–2, fig. 53). All were probably square in section, and large in size, ranging in length from 54mm to 75mm, with one much larger example at 122mm long. One of the largest modern excavated assemblages of fish hooks is from Townwall Street, Dover, where 130 hooks were recovered from 50 contexts of Period 1 (*c.* 1175–1300) and one context each from Periods 2 (*c.* 1300–1550) and 3 (1550–1780), the latter two periods producing 10 hooks in total (Parfitt, Corke, and Cotter 2006). All were iron, which is more common in medieval hooks, and had shanks that were rectangular in section. In addition there are a possible 70 fragmentary hooks.

Finds from 16–22 Coppergate, York, provide a closely stratified, if small, group of fish hooks, from the Anglo-Scandinavian deposits of the 9th–11th centuries through to the 14th century. The Anglo-Scandinavian deposits produced seven fish hooks, of which four have looped-eye terminals and three splayed flattened terminals (Ottaway 1992, 600–1). Eight hooks occur in later, medieval deposits at Coppergate, of which three are looped, three flattened, and two uncertain; only two of the group have barbs (Ottaway and Rogers 2002, 2747). Thus, both looped and flattened terminals were current through the period. A large group of 27 iron fish hooks from Waterford, Ireland, mostly dated to the 12th century, were characterised by barbed hooks, and all but one had looped terminals for attaching the line (Scully 1997). A 17th-century example had a similar method of attachment as the earlier ones and the series showed no typological development over the period. The sizes ranged from 48mm to 140mm in length. The average size of medieval hooks from Dublin Castle was 42mm, and those at Cork were not longer than 67mm. Other medieval Irish sites, such as Dublin Castle, have hooks with flattened terminals (Scully 1997).

The widespread distribution of barbed hooks with flattened tabs in the later medieval period can be seen by the occurrence of three iron fish hooks recorded at Pevensey, East Sussex, where one (no. 5) is barbed, with a flattened end dated to *c.* 1200 (Dulley 1967, 216, 228, fig. 65, nos 4–6). By comparison, the most complete of the seven iron fish hooks from the medieval borough of Rattray, Aberdeenshire, have both flattened terminals and barbed hooks; all are from Periods II (early-13th to early-14th century) or III (early-14th to early-16th century) (Murray and Murray 1993, 182, fig. 36, nos 18, 109).

The closest parallels to the Meols examples are from London, dated to the 15th century, with barbed hooks and neatly flattened tabs (e.g. Museum of London 88.449/8, 10). Medieval examples from Trig Lane, Billingsgate and Custom House are all barbed with a spade-like tab, and range in length from 32mm to 75mm, averaging 55mm (Steane and Foreman 1991, 92, fig. 12.3).

The settlement of Ferryland, Avalon, Newfoundland, which was founded by the English has a group of late-17th-century fish hooks. The hooks had no eyes and were lashed to a line and baited to catch cod. These 17th-century hooks are considered identical in style to hooks used in medieval England.

Discussion

The dating evidence for the Meols examples comes from two main sources: stratigraphy and the technique of manufacture. Unusually for Meols, there is some stratigraphic information on the context in which some hooks were found. The majority are recorded from stratified deposits that have consistent associations of material. Ecroyd Smith recorded that, in the lowest portion of loose shifting sand (i.e. dunes), were found 'mediaeval fish-hooks and other objects, mostly of iron and badly corroded' (Ecroyd Smith 1866, pl. II, reproduced here as Fig. 1.2.4). In the two layers below this were chiefly medieval articles. This observation suggests a chronological distinction between the deposits of loose dune sand, which tended to produce fish hooks, and the lower deposits of consolidated sand and 'artificial arable soil', in which medieval objects were found. It also argues for a tendency for the fish hooks to occur in sand deposits that developed over the arable land of the medieval settlement. Hume noted 'it is difficult to assign dates to them; but those of yellow metal are probably as old as the 14th century, while those of iron, even when preserved in the peat, probably do not extend beyond the seventeenth' (Hume 1863, 253). There are some exceptions to the general run of material, which were noted at the time of discovery. Hume illustrated one early discovery of a fish hook of unusual type **3624**, described as 'formed … from a thin sheet of metal, rolled or pressed together, and the seam, or junction, is readily observable on its side' (Hume 1847c, 9, fig. 2). Geoff Egan notes (pers. comm.) that, with respect to the use of copper-alloy sheet, it may be connected with the group of unusual sheet-metal items such as keys, and be an example of the individualistic use of the material in the medieval period. Another unusual item was a 'bronze' fish hook found by Ecroyd Smith amongst dark material probably from the 'forest bed' that had been re-deposited in the sand dune; the find is not illustrated but Smith remarked that it is unusual in the use of bronze and because it had a diagonal groove beside the barb; it measured 1 3/4in (*c.* 45mm) long with a straight shaft (Ecroyd Smith 1874, 94). He thought it likely to be Roman in date.

Potentially the most significant chronological indicator is the use of drawn wire, as against forged or wrought wire. Some copper-alloy fish hooks at Meols exhibit the fine parallel grooves on the shank characteristic of wire pulled through metal draw-plates (cf. pins from medieval London: Caple 1983, 277). The surface of the iron hooks rarely survives sufficiently well to detect drawing marks on the shaft. The use of drawn copper-alloy wire suggests a later medieval or later date. Although wire drawing was occasionally used in the Roman period for precious metals, which are more malleable than copper-alloy or iron (Higgins 1976, 55), the technique only became widely used in the medieval period. The first description of the technique was by the 12th-century Benedictine monk Theophilus, writing in the 1120s (Carroll 1972). Draw-plates are known from Viking period contexts on Scandinavian sites (Hill 1997, 424), including an example with silver residues in a hoard dated to the 10th to early-11th century at Hedeby, Germany (Armbruster 2004, 110), while an example at Whithorn, which had traces of silver around the holes, was dated to the 12th to mid-13th century (Hill 1997, 424).

Rare surviving manufacturing debris in Britain associated with an assemblage of fish hooks in a 13th–14th century pit at Norfolk Street, Kings Lynn, showed that the smith often worked the hot metal himself, making his own wire by drawing, and sometimes using recycled or 'old iron'. Once the wire was drawn, the tips were first pointed and often annealed. The hook end of the wire was splayed and the hook created by shearing off with a chisel. Finally, the wire was bent and the tab end splayed (Cowgill 2003, 4–5).

At Meols the stratigraphical observations of Ecroyd Smith combined with the use of drawn wire suggest that the neatly made copper-alloy hooks with uniform thickness wire shanks, oval, or triangular hammered tabs, at an angle to the shank, and often with fine and deep barbs, are probably later medieval or post-medieval in date. The consistent use of flattened tabs at Meols, in contrast to the looped eyes seen at other sites, appears to reflect local tradition or individual preference rather than their greater suitability for certain fish. At larger towns, such as medieval York, both types are present, while in medieval Great Yarmouth, and at Meols too, only flattened tabs occur, with no looped eyes present. By contrast, in Waterford, medieval fishermen used looped eyes, though other communities in Ireland in the medieval period used flattened terminals.

Use of fish hooks

Fish hooks were used either tied on single lines (singly or in groups), or in long lining, where a series of hooks, numbering dozens or hundreds, on short lines were attached to long lines trailed either from boats or fixed positions such as stakes. In the latter case, the hooks were baited at low tide and the catch removed at the next low tide. Hooks could be held near the surface by floats, or sunk with weights to catch demersal (bottom-living) species, such as cod and haddock, while fish such as eels, small plaice, and flounder could be caught in shallow waters by spearing (Hutchinson 1994, 130). Pelagic fish, such as herring, which swim in shoals are most readily caught with nets. The use of seine and drift nets for coastal fishing in the medieval period was found all along the west coast, though fish were also captured in sea weirs. These were large fixed structures found commonly along the coasts of Wales and Somerset in particular (Kowaleski 2000b, 25). Various configurations of weir are recorded from different locations. A series of about 30 parallel lines of stakes and wicker work visible on the shore at Leasowe could form part of a series of fish traps, although the alternative that it was intended to act as coastal protection against erosion is a possibility. The only evidence of date is the observation that the lower tail of the stone embankment, constructed in 1829, has a series of gaps to accommodate the alignments, indicating that the stakes are earlier. Navigation of the Rock Channel was blocked by 'Fishyards' or basket traps in 1762 (Dodgson 1972, 326) and a record of stake-nets still in use on the shore at Leasowe in 1908 may refer to these alignments (Farrer and Brownbill 1908, 413).

In the medieval and later period, as today, the size of hook depended upon the type of fish being sought (Steane and Foreman 1988). Prioress Dame Juliana Berners, writing at the end of the 15th century, advised that the best hooks were made from needles, a darning needle for the small fish, embroidery needles for larger fish, and tailor's and shoemaker's needles for the largest. Berners recorded that the steel for hooks was tempered three times for strength. She illustrates hooks that have large barbs and tapering flattened shanks (Berners 1881). Large hooks were appropriate for sea fish, such as cod, large haddock, turbot or halibut, as suggested at Great Yarmouth by fish remains (Rogerson 1976, 221). Historically, fish present in the Mersey Estuary included sufficient salmon, thick-lipped mullet, sturgeon, eels, and smelt to support local fisheries (Hawkins *et al.* 1999, 157).

Barbless hooks

Unless otherwise stated, all fish hooks have a shank of circular section.

3575 Pl. 72 L 29mm, W 12mm, D 3mm. Copper alloy, twisted rectangular section shank, elongated oval tab, point everted.

3576 L 34mm, W 13mm, D 1.9mm. Iron, square hook, point broken.

3577 Pl. 72 L 36mm, W 10mm, D 2.3mm. Copper alloy, oval tab. One strong seam line suggests sheet metal.

3578 L 36mm, W 16mm, Iron, flattened oval shank but irregular due to corrosion, everted point.

3579 L 31+mm, W 19mm, D *c.* 2mm. Iron, very corroded, no visible barb, tab missing. Possibly lead-tin plating.

3580 L 40mm W 17mm D 2.5mm. Iron, with missing terminal.

3581 Pl. 72 L 99mm, W 21mm, D 3mm. Iron, upper end embedded in cylindrical mortar casing (14 x 57mm).

Barbed hooks

Unless otherwise stated, all fish hooks have a shank of circular section.

3582 Pl. 72 L 26mm, W 11mm, D 2mm. Copper alloy, triangular tab, short barb with groove by barb; fine parallel drawing marks on shank.

3583 L 28mm, W 16mm, D 3mm. Iron, tab end flattened with widening at end, low elongated point, small barb.

3584 L 29mm, W 8mm, D 0.8mm. Copper alloy, Elongated tab, vestigial barb.

3585 L 29mm, W 10mm, D 2mm. Copper alloy, irregular oval tab, short barb. Slight traces of drawing marks.

3586 L 31mm, W 11mm, D 1.2mm. Copper alloy, short triangular tab, deep narrow barb.

3587 Pl. 72 L 31mm, W 11mm, D 2mm. Copper alloy, irregular oval tab, deep narrow barb.

3588 L 32mm, W 5mm, D 2mm. Iron, small barb and narrow gape; form of tab uncertain (Hume 1863, pl. XXVI, 4).

3589 L 32mm, W 12mm, D 1.2mm. Copper alloy, shield-shaped tab, short sharp barb, groove below tang.

3590 L 32mm, W 14mm, D 1.8mm. Iron, tab and barb broken.

3591 L 32mm, W 14mm, D 2mm. Iron, asymmetrical oval tab, very small barb.

3592 Pl. 72 L 32mm, W 14mm, D 2mm. Iron, barbed, with missing terminal.

3593 L 33mm, W 12mm, D 2mm. Iron, barbed with flattened terminal.

3594 L 33mm, W 8mm, D 1.5mm. Copper alloy, barbed with flattened terminal, from half-way along shaft (Hume 1863, pl. XXVI, 2).

3595 L 34mm, W 14mm, D 1.5mm. Iron, Irregular oval tab, short barb, point missing.

3596 L 34mm, W 14mm, D 2mm. Copper alloy, oval section shank, tapering at terminal, shield-shaped tab with irregular end. Barb possibly broken.

3597 Pl. 72 L 35mm, W 8mm, D 2mm. Copper alloy, oval tab, short barb. Several parallel drawing marks. Tightly angled shank.

3598 L 35mm, W 13mm, D 2mm. Iron, barb broken, with missing terminal.

3599 Pl. 72 L 36mm, W 10mm, D 1.9mm. Iron, triangular tab, short barb.
3600 L 37mm, W 16mm, D 2mm. Copper alloy , tab damaged, slender point and deep barb, groove below barb.
3601 Pl. 72 L 38mm, W 18mm, D 2.4mm. Copper alloy , flattened oval section, small elongated tab, small barb, and groove at barb.
3602 L 40mm, W 16mm, D 2mm. Copper alloy , short lozenge-shaped tab, deep narrow barb, groove below , slender point.
3603 L 40mm, W 20mm, D 3.4mm. Iron, asymmetrical projecting tab, short barb.
3604 L 40mm, D 4.4mm. Iron, bend and hook missing, short barb.
3605 L 40mm, W 20mm, D 2.5mm. Iron, no tab, point and barb heavily corroded.
3606 L 40mm, W 18mm, D 3.5mm. Iron, shaft at hook heavily concreted, barbed; tab end tapers out and splits; corroded.
3607 L 40mm, W 17mm, D 2.5mm. Iron, tab end missing; point broken off; barbed. Plated with white metal.
3608 L 41mm, W 12mm, D 2mm. Iron, irregular oval tab, short barb.
3609 Pl. 72 L 41mm, W 20mm, D 2.1mm. Iron, irregular oval tab, broad square shaped hook; short barb
3610 L 43mm, W 16mm, D 2mm. Copper alloy. Oval tab, barb and point missing
3611 L 43mm, W 18mm, D 2.2mm min. Iron, circular section shank tapers out into broad triangular tab, short deep barb, short point. White metal plating.
3612 L 43mm, W 16mm, D 2.2mm. Iron, oval tab, short barb and point.
3613 Pl. 72 L 44mm, W 17mm, D 2mm. Copper alloy , shield-shaped tab, long narrow barb, groove at barb.
3614 L 44mm, W 17mm, D 3mm. Iron, tab missing, barb; corroded.
3615 L 44mm, W 13mm, D 2.5mm. Iron, tab damaged, short barb.
3616 L 44mm, W 19+mm, D 3.5mm. Iron, point broken, narrow tab bent away from hook.
3617 L 45mm, W 21mm, D 3mm. Iron, triangular tab, short barb and point.
3618 L 45mm, W 13mm, D 2.2mm. Iron, oval tab, short barb.
3619 L 45mm, W 17mm, D 2.5mm. Iron, barbed fish hook, with flattened terminal.
3620 L 45mm, W 17mm, D 2mm. Iron, barbed, with flattened terminal (damaged).
3621 L 46mm, W 16mm, D 2mm. Copper alloy , irregular oval tab, point broken.
3622 L 46mm, W 23mm, D 3.2mm. Iron, asymmetrical projecting tab, slight barb.
3623 Pl. 72 L 46mm, W 18mm, D 2mm. Copper alloy , barbed, with flat terminal.
3624 Pl. 72 L 47mm, W 24mm, D 4mm. Copper alloy , barbed, forged from a rolled sheet of bronze. T wisted at break (Hume 1847, 9, fig. 2; 1863, pl. XXVI, 1).
3625 L 47mm, W 16mm, D 2.1mm. Copper alloy , irregular triangular tab, broken barb and point, groove below tang.
3626 L 47mm, W 24mm, D 3mm. Iron, asymmetrical tab, shallow barb. Corroded.
3627 L 48mm, W 19mm, D 2.5mm. Iron, white metal plating. Tab end straight with shank, shield-shaped tab; blunt barb, slight groove by barb (Hume 1863, pl. XXVI, 5).
3628 L 49mm, W 19mm, D 3.7mm. Iron, irregular oval tab, short barb.
3629 L 49mm, W 17mm, D 3.5mm. Iron, flattened oval shank, shield-shaped tab, small triangular barb.
3630 L 49mm, W 18mm, D 3.5mm. Iron, groove beside barb, tinned surface; tab shield-shaped and angled outward away from hook; slender long barb.
3631 L 51mm, W 14mm, D 2mm. Copper alloy , irregular oval tab, point broken. Striations of ?drawing marks; one strongly defined 'seam'.
3632 L 51mm, W 15mm, D 2.1mm. Copper alloy , irregular oval tab, point broken; possible drawing marks.
3633 L 51mm, W 23mm, D 4mm. Iron, asymmetrical tab projecting on one side only, medium barb.
3634 L 51mm, W 17mm, D 2.5mm. Copper alloy , oval twisted tab, slight barb, deep groove at barb; some fine possible drawing marks.
3635 L 51mm, W 20+mm, D 2.5mm. Iron, point missing, corroded at tab end, but slight widening at tab.
3636 Pl. 72 L 53mm, W 23mm, D 3.8mm. Iron, asymmetrical projecting tab, short barb.
3637 L 53mm, W 25mm, D 4mm. Iron, asymmetrical tab projecting on one side only, vestigial barb.
3638 L 53mm, W 21mm, D *c.* 2.2mm. Iron, tab corroded; short barb, long point; corroded and coated with grey silt. Possible white metal plating.
3639 L 53mm, W 19mm, D 2mm. Iron, barb broken, flattened terminal.
3640 L 54mm, W 20mm, D 2.7mm. Copper alloy , irregular oval tab, slender point and barb, groove by barb.
3641 L 54mm, W 20mm, D 4mm Iron, broad flat tab, sharply angled below barb (Hume 1863, pl. XXVI, 3).
3642 L 54mm, W 25mm, D 4mm. Iron, rounded point, barbed, flattened subrectangular shaft; asymmetrical oval tab.
3643 L 56mm, W 21mm, D 2.1mm. Copper alloy , irregular oval tab, point and barb broken, groove below barb. Strong striations on shank; sheet metal?
3644 L 56mm, W 25mm, D 3.5mm. Iron, asymmetrical tab, deep barb. Probably copper-plated. Traces of line seen in corrosion products.
3645 L 56mm, W 22mm, D 4mm max. Iron, subsquare section shank, triangular tab, medium deep barb, no groove.
3646 L 56mm, W 21mm, D 5mm. Iron, shank heavily corroded, asymmetrical projecting tab, short barb.
3647 L 57mm, W 22mm, D 3mm. Iron, elongated tab, short barb, corroded.
3648 L 58mm, W 25mm, D 2.6mm. Iron, broad rectangular tab, barb, groove below, slender point.
3649 Pl. 72 L 59mm, W 20mm, D 2.2mm. Iron, oval tab, short barb, groove at barb; square bend.
3650 Pl. 72 L 61mm, W 30mm, D 2.2mm. Copper alloy , imperfect oval tab, transverse groove at barb, elongated sharp point.
3651 L 62mm, W 23mm, D 3.5mm. Iron, trapezoidal tab, short barb.
3652 Pl. 72 L 63mm, W 27mm, D 4.9mm. Copper alloy , flattened oval section, oval tab, small barb, possibly sheet bronze; clear fold line visible.
3653 L 64mm, W 26mm, D 4mm. Iron, asymmetrical tab, shallow barb. Corroded.
3654 L 67mm, W 25mm, D 3mm. Iron, irregular asymmetrical tab, moderate barb.
3655 L 25+mm, W 22mm, D 2.5mm. Iron, slight barb, broken shank.
3656 L 27+mm, W 12mm, D 2.1mm. Copper alloy , tab missing, short barb. One strong seam line suggests sheet metal.
3657 L 27+mm, W 17mm, D 2mm. Iron, prominent barb, tab missing.

3658 L 28+mm, W 13mm, D 1.5mm. Copper alloy, tab missing, blunt barb, short point.
3659 L 39+mm, W 18mm, D 2.6mm. Iron, tab missing, square hook, short barb.
3660 L 39+mm, W 22+mm, D 2.5mm. Iron, point and tab missing.
3661 L 40mm, W -, D 3mm. Iron, damaged shank only, tab and hook missing. Probably part of **3662**.
3662 L -, W 21mm, D 2.8mm. Iron, hook only, probably part of **3661**. Short barb.
3663 L 40+mm, W 16mm, D 3.2mm. Iron, tab missing, short barb.
3664 L 40+mm, W 20mm, D 2.8mm. Iron, tab missing, no barb, blunted point.
3665 L 43+mm, W 17mm, D 4mm. Iron, tab end and point missing, squared profile, part of barb survives.
3666 L 52+mm, W 19mm, D 2.5mm. Iron, tab missing, small barb, groove below barb. Possibly copper-alloy coated.
3667 L 55+mm, W 19mm, D 3.5mm. Iron, tab missing, short barb.
3668 Iron, point only.
3669 D ('ring') 22mm; D (shank) 2.6mm. Iron, bent into a ring shape, projecting tab, short barb, long point.
3670 D ('ring') 20mm; D (shank) 3.2mm. Iron, bent into ring shape. Tab and point missing.
3671 D ('ring') 17mm D (shank) 2mm. Iron, bent into ring shape. Oval tab, no barb.

Multiple hook
3672 Two hooks, one with missing barb, held together in a bent over flat strip of iron. Probably used as a weighted hook/lure for line fishing.

Cockle Rake
3673 Iron, rake with three inwardly curved prongs. Socketed. Probably recent.

Fish spears
Patrick Ottaway and Robert Philpott

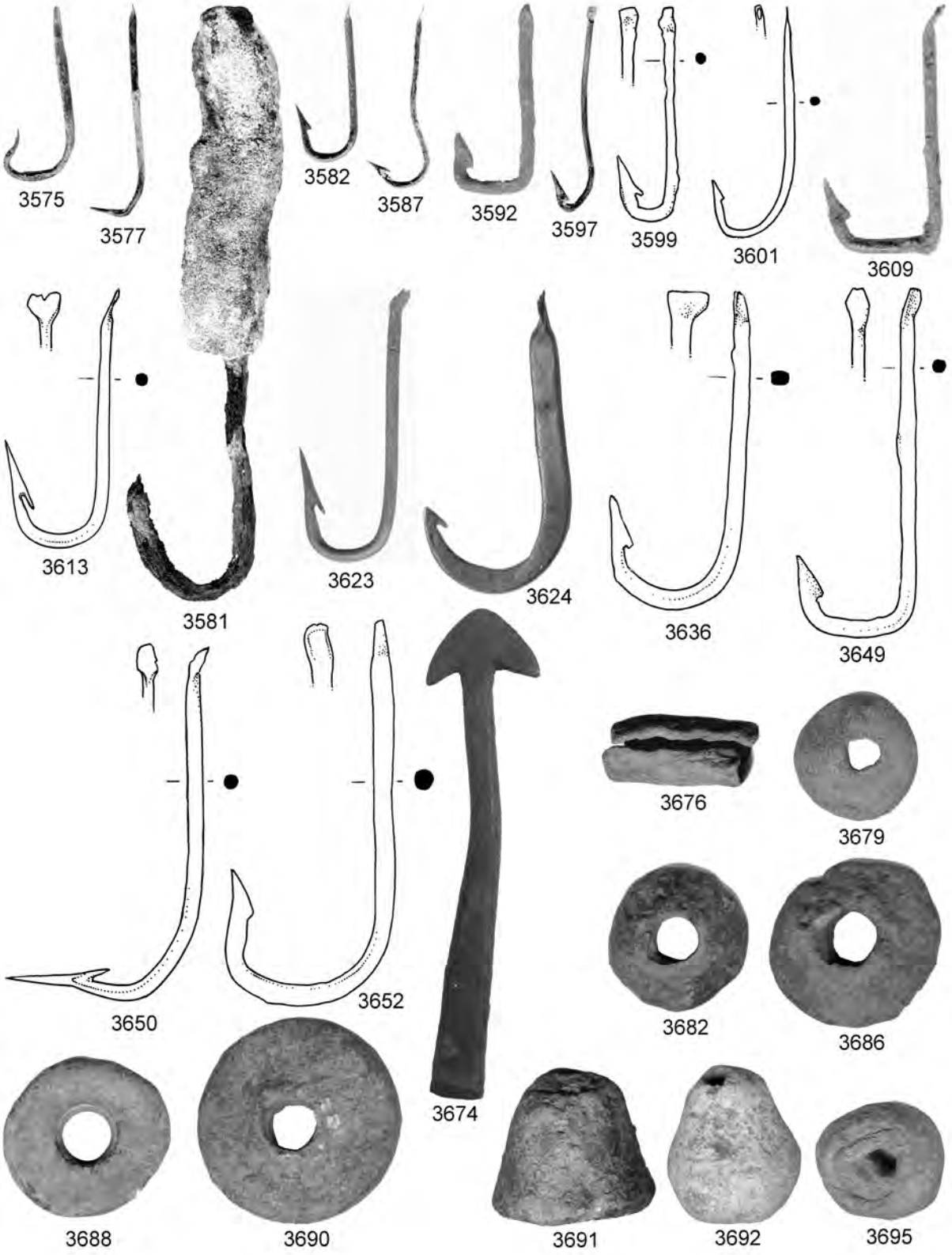
3674 Pl. 72 L 61mm; tine of eel spear. The shank, probably broken or cut off at the base, tapers towards the small blunt triangular head. Specialised eel spears with multiple tines close together were used to spear or snag eels on account of the elongated shape of the fish. Blunt tines were used on spears in the medieval and post-medieval periods to snag eels without piercing the skin (Steane and Foreman 1991, 89). Hume reported that spearing for eels was still practised in his day; he observed eel spearing in the River Birket (Hume 1866a, 17) and notes in south Lancashire place-names such as the Old and New Sniggery, 'snig' being the local term for eel; these being pools where eels were caught.
3675 L 201mm, W 7mm Th 4mm; square-section bar with one pointed terminal and one barbed. A possible eel spear.

Weights for fishing
Geoff Egan

Lead
Three basic forms of fishing weights are recognisable among the Meols assemblage, two by reference to finds elsewhere, in contexts that leave little doubt as to their use in fishing, while a third, lacking such parallels, is less certain, but its neat, spiral form appears appropriate for this purpose. A total of just 19 seems a small showing for such readily lost items at a settlement where fishing was a major contributor to the economy, though the larger number of fish hooks (above) appear to present contradictory evidence. However, 34 other pierced lead items, which are less diagnostic but may have functioned as rudimentary fishing weights, are included below under Miscellaneous items (**3975–4009**).

Net sinker
Cf. Ecroyd Smith 186a7, 137 (?)three and Ecroyd Smith 1875, 99 'in lead, four' (cf. Ecroyd Smith 1869a, 215: 'rectangular, with numerous partial perforations, only one being completed' – described as a net sinker, found not at Meols but nearby, on New Brighton Shore, though this appears to be a different category of object).
3676 Pl. 72
Cylinder/oval tube made of spirally bent sheeting (coming unwound): L 26mm, D 13mm, Wt 11.6g.
Cf. Marsden 1971, 9 – nearly 2000 similar items found in Blackfriars wreck III in London, interpreted as a 15th-century fishing boat, and see Egan 2005a, discussion with no. 820 [22g]. At Whittlesea Mere (Cambridgeshire) weights like this one made up over 37% of an assemblage of 538 lead weights and potential weights; these vary between less than 10g and 40g, with an average of just over 20g. This assemblage is seen as being consistent with seine netting, appropriate for estuarine areas (Fryer 1998, 33–6, fig. 5, nos 1–15).

Irregular plano-convex/conical, etc. weights
At Whittlesea Mere five of this form constituted just 1% of the 538 lead weights and possible weights recovered (Fryer 1998, 34 and 36, fig. 5, nos 16–18). Some of the following may alternatively be settings for small iron bars into masonry for grilles, etc. More or less irregular, sub-circular plano-convex items (the convex side being markedly uneven – this is the main distinguishing feature from items listed as spindle whorls) with regular, circular central holes (which are sometimes sub-polygonal at one end where a flat-sided implement helped form them). These items appear overall too irregular to have been satisfactory spindle whorls. Several are smoothed from sustained wear or handling. The following items are listed in order of weight.
3677
25 x 24mm, Wt 13.2g, D of hole 14mm.
3678
26 x 23mm, Wt 15.5g, D of hole 9mm.
3679 Pl. 72
23 x 22mm, Wt 16.8g, D of hole 5mm.
3680
24 x 24mm, Wt 23.7g, D of hole 8mm.
3681
28 x 26mm, Wt 23.9g, D of hole 20mm.
3682 Pl. 72
24 x 23mm, Th 9mm, Wt 28.3g, D of hole 8mm.
3683
24 x 23mm, Th 8mm, Wt 28.6g, D of hole 8mm.
3684
27 x 27mm, Wt 30.7g, D of hole 8mm.
3685
31 x 28mm, Wt 31.3g, D of hole 8mm.
3686 Pl. 72
30 x 27mm, Th 9mm, Wt 35.7g; sub-polygonal hole, D 9mm.
3687
D 32mm, Th 6mm, Wt 37.4g, D of hole 10mm.
3688 Pl. 72
28 x 30mm, Wt 38.8g, D of hole 10mm.
3689
D 31mm, Th 10mm, Wt 65.9g, D of hole 10mm.



Pl. 72. Fishing Equipment

3690 Pl. 72
36 x 36mm, Wt 80.6g, D of hole 7mm.

Centrally holed items with more or less regular, bell-like profiles:
3691 Pl. 72
Slightly faceted; greatest D 24mm, H 26mm, Wt 91.7g.
3692 Pl. 72
Greatest D 26mm, H 22mm, Wt 60.3g.
3693
Greatest D 27mm, H 26mm, Wt 132.3g.
3694
Somewhat asymmetrical; greatest D 31mm, H 6mm, Wt 91.3g.

Possible fishing weight
This is of appropriate, compact form (?so as not to snag netting), but rougher than the potential commercial weights above. Given such subjective criteria for categorising these items, there is almost bound to have been some overlap between actual usages.
3695 Pl. 72
Spiralled sheet strip (partly unfolded); D 20mm, Th 10mm, central hole D 4mm; Wt 27.2g; rounded from abrasion. The form is well known (e.g. Egan 2006).
[3695-3709, numbers not used]

MISCELLANEOUS ITEMS

Items that seem to be of later medieval date, but for which no convincing identification has been forthcoming have been catalogued at the end of the medieval section (**2348**ff) – these are selectively illustrated.

The items listed below (2.1.9, 2.20, 2.21, 2.22) here (under copper alloy or lead/tin, as appropriate) are presented in two categories, as follows.

Firstly, unrecognised items of which nothing definitive beyond description can be said at this stage – these may be of historic or recent date (generally not illustrated).

Secondly, those which probably are not and probably will never be of any historical interest (i.e. they appear to be from post-1800, or are too indeterminate to add anything significant to the picture of ancient Meols (none of these is illustrated).

Listing is largely in the order in which items were assessed for publication (i.e. in typological terms essentially random) apart from where a few items observed to be similar objects (casting runnels, undiagnostic sheeting, undiagnostic rings/links) have been grouped together at the end of each section.

2.19 Copper alloy items of uncertain date and significance

Geoff Egan

3710 Pl. 73
Cast roundel, D 20mm, Th 8mm; Hercules astride lion with club and flying cape; rust on back.

3711
(?)Fragment, 19 x 12mm: small, cast rectangular frame with broken off extension at one corner.
Possibly part of the openwork bit of a slide key (though it is not certain that these were made in copper alloy rather than iron) cf. Egan 1998, 102, fig. 75, nos 270 and 272 (not an obvious form of dress accessory).
3712
Sheet cylindrical chape: L 109mm, D 9mm; abutting seam; closed by circular folded tab at one end. Similar to needle case ***2240*** (Hume 1863, pl. XXII,1b, and 221).
3713 Pl. 73
(?)Open hasp frame: 24 x 22mm; sub-D-shaped loop with tapered point projecting at a right-angle.
Similar to 18th-century shoe hooks, though this item appears to be complete in one piece.
3714
Strip, 49 x 9mm, with one (?)of original two rivets surviving.
3715
Domed sheet roundel, 18 x 17mm, with seven holes of three sizes symmetrically placed.
3716
Fragment, 13 x 12mm, (?)of mount: cast; broken off at hole for attachment; bifacially bevelled with file marks on one face, transverse rebate on the other.
3717 Pl. 73
Sheet cylinder, L 26mm, tightly bent around inner rod, which protrudes at ends; tooled (?engraved) with paired transverse lines near each end, flanking central, eye-like motif.
3718
Sheet trapezoid 30 x 17mm, single iron rivet survives.
3719
Rod-like object, unequally tapering at each end, L 131mm, D 3mm not pointed enough for a pin/needle).
3720 Pl. 73
Cast fragment, 11 x 8mm, consisting of strip with irregular transverse domed oval boss in middle of surviving portion. The form would be consistent with a fragment from a medieval brooch frame with a false collet, though no parallel is known in this metal.
3721
Distorted: rough and irregular double-pointed, U-bent, staple-like object with central dome between two pointed shafts; overall L 55mm.
This does not seem robust enough to have acted as a staple for any but the least demanding of specifications.

Pins/needles
3722
Corroded point of pin or needle, surviving L 22mm.
3723
Square-section rod; L 24mm, 6 x 6mm.
3724
Corroded fragment of needle with rectangular -section shaft, surviving L 32mm: head incomplete, point broken off. The shaft does not seem to be characteristic of any particular period.
3725
Looped wire L 38mm; (?)brooch pin; dating uncertain – possibly recent.
3726
Pointed shaft of pin or needle; surviving L 38mm.
3727
Possible part of shaft of pin or needle; surviving L 42mm.

3728
Pointed shaft of robust pin or needle, surviving L 47mm.
3729
Pointed shaft of pin or needle; surviving L 51mm.
3730
Pointed shaft of pin or needle; surviving L 51mm.
3731
Pointed shaft of robust pin or needle, surviving L 57mm.
3732
Four-faceted point of robust pin or needle; surviving L 69mm. No obvious parallel has been traced for the distinct section.

Rings
3733
Split frame, D 12mm.
3734
D 18mm, made from uneven, D-section strip, (?too irregular for a finger ring.)
3735
Corroded and opened out: split frame, (?)original D *c.* 24mm; round-section.
Possibly a brooch, but nothing definitive survives.
3736 Pl. 73 (Hume 1863, pl. XXIV, 5)
Obliquely split frame, D 25mm; made of bent strip with slight flange outwards along one side, which has three series of grouped, unevenly filed grooves.
This has several traits similar to those of some Norman-period brooches, but the basic shape seems inappropriate, unless it is some kind of adaptation.
3737
About half circle, D 24mm; polygonal, almost square-section; filed more than half way through at one end. Possibly manufacturing waste, but not obviously for a brooch.
3738
Incomplete: tapering, D-section semi-circle, D 34mm, (?)hook.

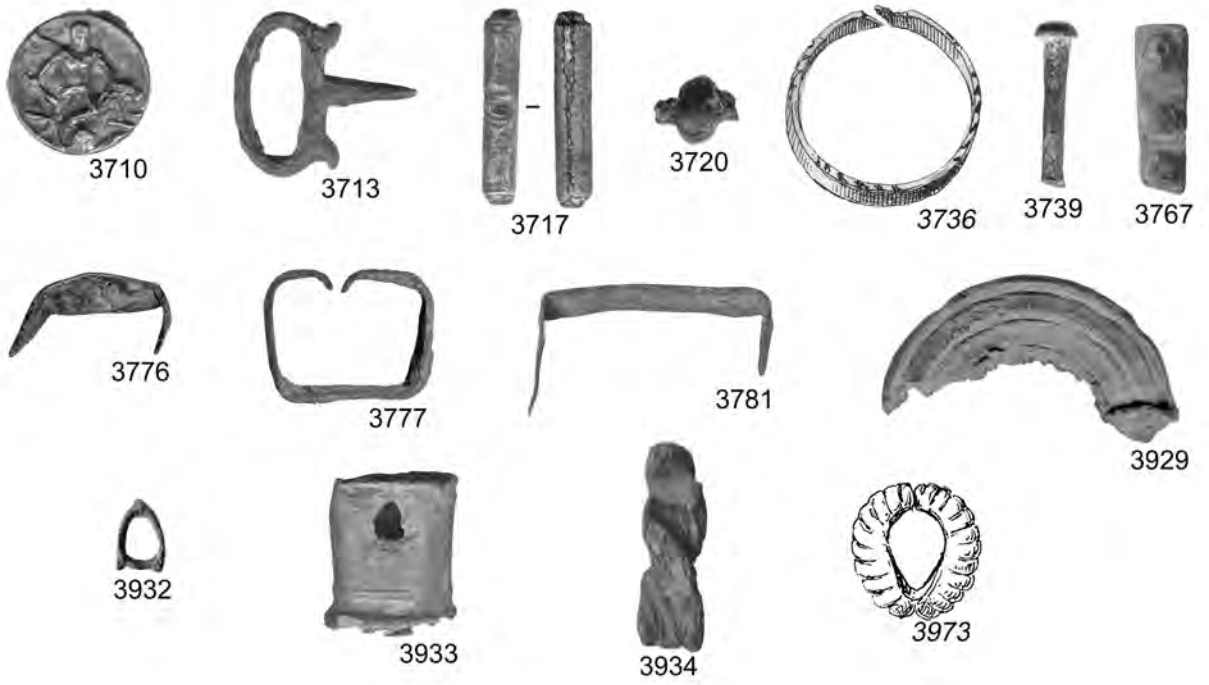
Rivet
3739 Pl. 73 (Hume 1863, 239 and pl. XXIII, 14).
L 22mm, with domed head D 5mm; burred from fixture at other end.
Dating uncertain; Hume described this as a 'medieval nail'.

Sheeting
3740
Incomplete fragment, 8 x 8mm: irregular fringe to round hole.
3741
Sub-rectangular, arc-section fragment, 11 x 8mm; apparently broken off on one side.
3742
Incomplete fragment, 12 x 10mm: (?) subrectangular/strip; two holes of different sizes for attachment; two adjacent corners are cut to angles.
3743
Survives as subrectangular fragment, 13 x 13mm, with one concave side and head of separate rivet.
3744
Rectangle, 14 x 7mm, with single hole for attachment.
3745
Triangular offcut, 15 x 8mm.
3746
Bent, sub-triangular offcut; 15 x 8mm.
3747
Fragment: 17 x 9mm; main, domed sub-rectangular part has hole for attachment and lateral strip; engraved, blunt-cornered lozenge around hole.
3748
Domed rectangle with incomplete lateral tab at middle of one side, overall 18 x 13mm; lead/tin filler in back has rusted imprint from (?iron) rod, etc. that lay parallel to main surface.
3749
Fragment: irregular strip attached to irregular roundel with triangular hole (flanked on slightly concave face by two tiny, back-turned tabs from the piercing); overall 21 x 18mm.
3750
Triangular offcut, 22 x 6mm.
3751
Trapezoid, 22 x 10mm, with (?)tab through central area obscured by corrosion.
3752
Irregular, three-dimensional, almost tick-shaped object, 23 x 7mm, with irregular spine giving sub-triangular -section; flat along one face, as if it had been cast against a featureless surface.
It is difficult to reconcile the robust metal with its resemblance to some kind of filler or plugging for a crack or other gap.
3753
Roughly U-bent, tapering strip, 24 x 8mm, with two roughly pierced holes for attachment in wider end, broken off at a possible third.
3754
Incomplete, U-bent piece, expanding from bend into two plates, both of which are broken off – one with an arched section at a hole for attachment; overall 27 x 12mm.
3755
Worn rectangle, 31 x 27mm, with rounded corners and offcentral hole.
3756
Irregular offcut; 37 x 8mm.
3757
Incomplete: bent strip, L 43mm, expanding to convex, round terminal, D 15mm, having central hole for attachment.
3758
Sub-triangular strip offcut; 48 x 6mm.
3759
U-bent, 52 x 13mm; hole near one end.
3760
Strip, 66 x 6mm, broken in two, with two holes for (?)rivets, and originally riveted at both rusted ends.
3761
Five-sided offcut; 69 x 12mm.

Strips
3762
Incomplete and corroded: strip, 15 x 7mm, with two rough holes; broken off at fold or bend at one end.
3763
17 x 15mm.
3764
(?)Broken off at ends, surviving L 20mm, W 8mm, with symmetrical arrangement of three prongs on one long side and concavity on that end. It is uncertain whether this is part of an object or a waste offcut that had been used for stamping out small circles.
3765
20 x 6mm, no attachment hole.
3766
Scrap, 20 x 8mm – or could be outside edge of rectangular or trapezoid strap loop (L 14mm).
3767 Pl. 73
Incomplete strip, surviving 22 x 7mm, with row of three

repoussé domes; hole for attachment near one end, broken off at the other.
3768
Irregular strip, overall 23 x 22mm; tapers towards one end; multiply bent so that ends overlap.
3769
Irregular strip, 24 x 18mm, tapering to point from broken end; bent twice.
3770
Irregular strip, 25 x 15mm, tapering to point at one end; bent four times into open-squarish outline.
3771
26 x 14mm, and tapers from transversely cut end, similar to **3769**.
3772
Strip, bent roughly into near circle, D 30mm, W 6mm; three holes (?)for attachment; foil covering on inside, with iron wire soldered transversely near one end; file marks on outside (made after this object was bent).
3773
Rough strip, 37 x 7mm, tapered at one end.
3774
Irregularly cut, 67 x 12mm (?broken off at both ends), thickened along one edge and broadening near one end; with three neat but irregularly positioned holes.
3775
Strip, 68 x 11mm, with corners cut to angles and rough hole at one end, the other being bifurcate and bent out of the plane of the remainder. Despite its similarities to folded plates for buckles, this seems too robust to have served such a purpose, even as a replacement.

Double-pointed, irregular sheet strips bent twice or more times (not always symmetrically)
These may have been intended as some kind of rough staple, though their precise use is as obscure as their dating. Despite their similar form, they are not robust enough to act like the iron sintels that held caulking between boat timbers (Vlierman 1996). Hume may perhaps have taken some of them (in the absence of other comparable objects among the surviving Meols assemblages) to be Anglo-Saxon 'keepers of straps', judging from an illustration of a similar, though neater and slightly longer item (Hume 1863, 138, fig). A more recent find of a 'strap guide' from York is of comparable form, but decorated with circle-and-dot motifs and assigned to *c.* 930–75 (Mainman and Rogers 2000, 2568, no. 14020, with reference to plainer , iron versions from Coppergate). The irregularity of the present items, along with their sometimes very sharp points argue against such an interpretation. Some could perhaps be analogous to those for repairing splits in wooden bowls (cf. Ottaway and Rogers 2002, 2829–30 and 3144, fig. 1408, no. 15161, assigned to the early/mid-14th century; Morris 2000, 2188–90, fig. 1040, though these too seem to be of iron). Others could be waste characteristic of some currently undefined product. The present objects may be seen as analogous to several other sheeting fragments listed below.
Most are bent three times into an open square, with the points additionally bent inwards:
3776 Pl. 73
21 x 10mm
3777 Pl. 73
22 x 11mm.



Pl. 73. Miscellaneous items

3778
23 x 15mm.
3779
26 x 11mm.
3780
28 x 11mm.
3781 Pl. 73
30 x 14mm.
3782
40 x 39mm; bent twice so that the points lie parallel.

Wire/rods
3783
Somewhat uneven, two-ply spiral ring of wire, with the ends and at least one more length spiralled around a section of the frame (and doubled back at least once); overall 23 x 21mm.
Presumably not intended as a finger ring (unless it was made by a child), as it would have been too uncomfortable.
3784
Corroded piece of rod, L 56mm.
3785
Slightly irregular piece of rod, possibly rounded from use at one end, broken off at the other; L 30mm.
3786
Slightly tapering, bent length of oval-section rod, broken off at both ends; surviving L 32mm, greatest W 3mm.
3787 and
Corroded: two associated curved pieces of oval-section wire, both Ls 18mm.
3788 22 x 2mm, curved or bent rod.
3789 22 x 15mm, angled rod

Casting waste – irregular runnels
With a combined total of only *c.* 60g from two different alloys, this small amount recovered furnishes no further significant evidence for local casting in copper alloys at any specific historic period (the only hints of local casting in this metal are from the medieval period – see later medieval metalworking, 2.5).
3790
Overall 47 x 22mm, Wt 27.2g; unalloyed copper (Appx 2).
3791
Overall 60 x 30mm, Wt 33.8g; bronze (Appx 2).

2.20 Copper alloy items of no apparent historical significance

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These items are of post-1700 date, or are too indeterminate to add to the history of the site.
3792
Sheet circle, D 30.5mm, with damaged, flanged edge and screw-threaded flange around central hole.
3793
Sheet strip, 25 x 7.5mm, folded tightly back on itself and with rough holes for attachment; broken off at both ends.
3794
Tapering (?pointed) sheet strip, L 20mm, W 2.5mm.
Could be part of a buckle pin that lacks the loop.
3795
Corroded and not quite complete: (?)paper clip, 25 x 10mm (made from sheet strip).
3796
Wire spring with two straight arms joined by narrowed U-loop; overall 50 x 3mm.
(?)Component of hair clasp.
3797
Wrought sheet strip, 23 x 5mm, with pointed end bent out at right-angle (other end is blunt).
Possibly a buckle pin that was not completed as the wrong end was being looped round.
3798
Rough sheeting thistle-head outline; 26 x 20mm.
3799
Rough, centrally holed disc, D 11mm.
3800
As **3799** (D 11mm).
3801
Circular component, D 27mm, with edge rebate, ring of four holes and three blind holes, and screw thread around central hole.
3802
Circular component, D 23mm, with edge rebate, pair of countersunk holes and void arc around central hole; (?part of wristwatch).
3803
Similar to **3821**: D 22mm, but series of radiating ridges on outer face (and no textile).
3804
Small, irregular, lozenge-shaped rove, 16 x 13mm, with countersunk hole.
The form is familiar in iron through the later medieval period, often for boats and occasionally for doors, but no parallel has been traced in the present metal.
3805
Part of recent purse or bag-clasp mechanism; overall 23 x 6mm.
3806
Sheet sub-square, 29 x 28mm, with countersunk hole at each corner, one retaining tack/rivet head; recent.
3807
9 x 7.5mm, slightly domed square with hole at centre.
3808
Sheeting in two joining fragments with countersunk hole and two rectangular cutouts (incomplete ?lock-housing plate); overall 81+ x 23mm; recent.
3809
Ovoid sheet tab, 39 x 12mm; with neat hole near one end; recent.
3810
Bent sheeting with pair of prongs at one end; 29 x 24mm.
3811 (Ecroyd Smith 1868, 119 and pl. no. 18, described as probably from the head of a purse).
Oval loop combining into one strand near rebated collar , and extending beyond into a transversely holed tab, 38 x 13mm; the looped part is obliquely grooved (corded pattern); apparently not smoothed from the casting; dating uncertain, possibly relatively recent.
3812
Tip of flattish, blunt spike; surviving L 14mm, 7 x 7mm; black coating.
3813
(?Cast) sheet-like fragment, 27 x 26mm, retaining right-angled corner.
3814
24 x 17mm; rebated along longest straight side.
3815
Elongated shield-shaped sheet strip, 24 x 10mm, with central hole and rough, fragmentary strip attached on back.

3816
Spatulate sheeting, 20 x 7mm, with hooked profile at narrow end; square hole in centre of remaining portion.
3817
Incomplete, curving sheet strip, 42 x 6mm, with two rough holes and lead (?solder) on both faces at one end.
3818
Cast, robust decoratively moulded object, with the circumference of approximately one-third of a circle, with raised band vertically fluted on widest end, tapering with two rebates to flatter profile, where it is broken off at tab with probable hole for fixture; overall 64 x 66mm; dating uncertain; (?)household fixture like a fire surround or oven; perhaps relatively recent post-medieval.
3819
Bent strip with narrower tab having pair of holes for attachment, L 27mm – part of clasp from recent purse.
3820
Fragment (broken of at both ends), surviving L 49mm, of right-angled edge reinforcing (moulded along one side, and with two holes for attachment) from a recent purse.
3821
Bent-sheet eyelet, D 23mm; textile survives inside the fold (entire item presumably recent).
Perhaps from a sail (recent).
3822
D 12mm, ring.
3823
44 x 19mm, bent rod with transverse grooves.
3824
L 56mm, bent and twisted rod with tapering end.

Hinges
3825
Small hinge, 23 x 6mm, with four countersunk holes.
3826
Very corroded fragment, 50 x 21mm, of pivoting part of hinge (larger than preceding item): three and two loops; surviving part of curved plate retains part of one countersunk hole; traces of green paint.

Pins/needles
Most of these are undatable beyond medieval or later.
3827
L 43mm, D (head) 5mm, a complete pin with a large sheeting head.
3828
L 25mm; neat, spherical sheet head; wire shaft has spiralled groove in central portion, suggesting this may be a recent tie pin.
3829
Corroded: (?)pointed shaft, L 28mm; possibly a buckle or brooch pin.
3830
Head incomplete, point missing and shaft broken in two at bend; surviving L 41mm.
3831
Headless pin/needle, surviving L 43mm.
3832
Headless pin/needle, surviving L 49mm.
3833
Headless pin/needle, surviving L 57mm.
3834
Wire pin with shaft L 58mm and looped head D 5mm; recent.
3835
Headless pin/needle, surviving L 59mm.
3836
Headless pin/needle, surviving L 59mm.
3837
Headless pin/needle, surviving L 108mm.

Rings/links
3838
Obliquely split ring, D 26.5m, with bent-wire loop around point opposite break.
3839
Incomplete: survives as half circle, projected D 40mm.
Possibly part of a buckle frame.
3840
About half, D 41mm.
3841
Relatively broad, thin ring, D 42mm.
3842
Small, turned ring, D 19.5mm, with rounded outer profile and triply bevelled internally.
3843
Sheet ring, D 11.5mm, of varying width.
3844
Soldered, flattish D-section ring, D 11.5mm, made from bent strip.
3845
Plano-convex-section ring, D 16mm, with central groove around latter face.
3846
Ring, D 10.5mm.
3847
Distorted: soldered wire ring, L 25mm.
3848
Cast oval, L 28mm: chain link, etc.
3849
Ring, D 12mm, bent from D-section strip.
3850
Half a neatly finished ring, D 20mm; the ends each exhibit half rough and half smoothed, lipped breaks. While the curious breaks might be consistent with hammering a folded strip, the neat finish seems to argue against a date as early as that assigned to the suggested medieval brooch-production assemblage from the site (**2248**, etc.).
3851
(?)Split ring with slightly uneven circumference, D 19mm.
3852
Fragment of biconvex, tapering ring, D *c.* 18mm.
Possibly part of a small finger ring – date uncertain.
3853
Hollow sheet frame; D 41mm, Th 7mm; opposed attachment holes at one point.
19th/20th-century curtain ring.
3854
Half a ring, D *c.* 17mm.
3855
Ring, D 7mm; square-section.
3856
Oval split link, 11 x 6mm (ends bent apart).
3857
Slightly overlapping wire split ring, D *c.* 12mm.
3858
Irregular ring, D 9mm (?too small for buckle frames etc. – cf. **1249**, etc.).
3859
As preceding item.
3860
Corroded: ring, D 30mm; incomplete (?)sheet sleeve around part of frame.
(?)Recent curtain ring.

3861
D 35mm; hollow with sheet ring around.
(?)Recent curtain ring.
3862
Sheet split ring/collar, D 40mm.
3863
Split ring (square-section), D 16mm.
3864
Fragment, D-section; L 12mm.

Roves
3865
Robust, bevelled (?)rove, D 11mm.
3866
Rough, plano-convex rove, D 9mm.

Tacks/nails
3867
Domed head, D *c.* 8.5mm.
3868
Damaged, domed head, original D *c.* 12mm.
3869
Domed head, D 12mm

Sheeting
3870
Spirally bent piece, 18 x 10mm.
3871
Scrap, 26 x 8mm.
3872
Folded strip, 19 x 11mm, broken off at both ends.
3873
Uneven strip, 37 x 14mm, with evidence of having been bent.
3874
Rough scrap, 17 x 12mm.
3875
Folded irregular strip, 22 x 15mm.
3876
Scrap, 25 x 25mm, with uneven surfaces.
3877
Isosceles-triangle offcut, 23 x 7mm.
3878
Fragment of curving strip, 30 x 12mm; file marks on both faces.
3879
Triangular offcut, 27 x 15mm.
3880
Triangular offcut, 21 x 8mm.
3881
Strip (?sheet) fragment, 30 x 9mm; thickens towards the straight side (the other is irregular); possibly coated.The lack of obvious curvature along the thicker edge seems to rule out the possibility that this might have been part of the rim of a sheet vessel.
3882
Strip, 35 x 3mm; broken off at both ends.
3883
Irregular, hammered strip, 36 x 9mm, broken off at tapered ends
3884
Irregular strip, 26 x 13mm; loosely folded.
3885
Irregular strip, 66 x 15mm, tapering to point at one end; roughly folded into U shape.
3886
Rough, tapering strip, 23 x 12mm; broken off at both ends, possibly at hole in one instance.
3887
Rectangle, 26 x 6mm.
3888
Strip, 27 x 2.5mm; broken off at one end, tapering to point at the other (too thin and sharp for buckle a pin?).
3889
Tapered strip, 43 x 3mm.
3890
Rough strip, 47 x 6mm.
3891
Rough strip, 32 x 5mm (broken in two).
3892
Curved, triangular offcut, 17 x 14mm.
3893
Roughly U-bent strip, L 23mm.
3894
Irregular strip, 52 x 6mm; damaged particularly along one side; bent to make three sides of a rectangle 23 x 19mm.
3895
Strip, 26 x 2mm.
3896
Sub-triangular offcut, 23 x 7mm.
3897
Robust strip fragment, 20 x 4mm.
3898
Sub-triangular offcut, 25 x 6mm.
3899
Irregular scrap, 17 x 13mm.
3900
Crumpled fragment, overall 30 x 30mm.
3901
Strip 32 x 20mm, bent sheeting.
3902
24 x 16mm, sheet fragment, probably modern, perhaps part of a shrapnel piece from World War II.

Wire
3903
Slightly tapering piece, L 14mm.
3904
Bent into ring, D 13mm
3905
Double spiral of thin wire with ends bent around oblong loop; overall 12 x 7mm.
3906
Tiny roll, 9 x 6mm; (three spirals).
3907
Neater version of **3905**; overall 14 x 9mm.
3908
Angular, U-bend and one bent end, 32 x 7mm.
3909
Piece 25 x 8mm; U-bent at one end.
3910
Piece 13 x 6mm, with two pointed ends; unevenly U-bent.
3911
U-bent piece, 17 x 14mm.
3912
Roughly U-bent piece, 15 x 10mm; (splitting at one end).
3913
Scrap 8 x 2mm, apparently broken off at both ends.
3914
Neat, regularly bent piece, L 31mm.
Probably post-medieval.
3915
D-section, 3 x 4mm; L 29mm. Presumably to be cut up for bar mounts.
3916
25 x 25mm, fragment, possibly part of a bell.

2.21 Lead/tin items of uncertain date and significance

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3917
31 x 12mm, strip fragment with simple raised mouldings.
3918
Crude, uneven, flattish roundel, D 12mm, with central hole; it is unclear whether a possible foliate motif or lettering on one side and irregularities on the other were poorly executed or fortuitous.
3919
Centrally holed, circular sheet disc, D15mm.
3920
Irregular, sub-round form, 17 x 14mm; with D-shaped rebate standing proud on one side and recessed circular area on other, both around central, rectangular hole.
3921
Near-hemisphere with raised perimeter at back face, D 11mm (no sign of provision for attachment for use as a button, etc. (cf. the following items).
3922–27
These six items are crude circular blobs, Ds between 8–13mm; apparently cast in the back of tiny almost hemispherical objects (?cf. mounts **968** and **965**, listed as medieval): some are corroded; **3922**, **3925**, **3926** have small holes centrally, possibly for rivets) and **3923** has a pair asymmetrically.
These could have been cast in the backs of buttons, were it not for the lack of adequate provision for any loops.
3928
Rough rod, 19 x 6mm.
3929 Pl. 73
Incomplete roundel or ring, D 41mm, Th 19mm; three concentric grooves; flanged rim is neatly beaded.
Perhaps part of a composite toy watch case, a range of which are known from the mid-17th century onwards (Forsyth and Egan 2006, 336–85); this one may be 18th/early-19th century.
3930
Flattish motif, 39 x 31mm; like an ornate letter C with rounded terminals – (?)fortuitous resemblance (roughly hammered to different thicknesses at different points).
3931
Irregular, flattened roundel, D *c.* 16mm
A series of similar items from early Norman deposits at London may perhaps be a form of very early token (Egan 2006, precise function uncertain); without any indication of dating it would be unwise to read similar purposefulness this into the present, isolated item.
3932 Pl. 73
Small, sub-oval 'frame' with recessed bar , 9 x 6mm, with three knops or stubs symmetrically (?too small for a buckle).
3933 Pl. 73
Cylinder, D *c.* 19mm, blocking at one end; surviving H 12mm; pair of circumferential lines near one end.
Possibly a candle-holder cup.
3934 Pl. 73
(?)Cast single piece with appearance of two-ply , loosely twisted strands, L 29mm, Th 9mm; presumably cold-working waste; Wt 7.4g.
Despite its appearance similar to copper alloy , analysis indicates this is lead (Appx 2).
3935
Joining fragments of corroded openwork, together 14 x 10, 12 x 7mm; perhaps a lozenge or a fragment of this shape.
3936
Corroded (?)sheeting, surviving 23 x 20mm; original perimeter apart from limited straight edge has broken off; neat hole near centre.
3937
Very abraded roundel, burring edges irregularly over both faces into present, round outline; D 18mm, Wt 5.6g.
The abrasion is suggestive of prolonged handling – possibly a weight, though see on following item (neither object' s weight comes close to a recognised standard).
3938
Rough, sub-oval version, 25 x 13mm, of preceding item, Wt 7.7g.
Analogous with **3937**, though the even greater irregularity of this object tends to undermine the tentative suggestion that **3937** might been a weight.
[**3939**: number not used.]

Rings/links
The smallest of these, although of appropriate dimensions, seem too slender for pilgrim-badge attachment loops.
3940
Neat frame; D 8mm.
3941
D 8mm, with slender stubs radiating at cardinal points.
Too neat for a medieval item.
3942
Corroded: split ring, D 8mm.
3943–47
These five items are small, uneven, sub-oval loops, between 10 x 8mm and 11 x 8mm; (?too small for buckle frames and too large for attachment rings from the corners of pilgrim souvenirs).
3948
D 8mm.
3949
D 8mm.
3950
D 8mm.
3951
D 9mm; sprue survives.
3952
Corroded at a couple of points; D 9mm.
3953
D 11.5mm.
Too small for a shoe-buckle frame; alternatively perhaps from a pendant chain.
3954
Corroded and distorted ring, D 12mm (the split may not be original feature).
3955
Flat ring, D 11mm, with four doubly engrailed sides.
3956
Irregular ring, D 8mm, with five knops or stubs around.
3957
D 11mm, as preceding item.
3958
D 8mm – as preceding item.
3959
Delicate loop, D 8mm.

Runnels
3960
Irregular, 27 x 22mm.
36910
Probable runnel, 23 x 18mm.
3962
Irregular, 27 x 15mm.

3963
Abraded and distorted ring, 38 x 10mm.
3964
Irregular, 41 x 35mm.
3965
(?)Irregular, 56 x 27mm: solidified or set in base of vessel, with two subsequent nail holes.
3966
Irregular, 17 x 19mm.
3967
Irregular, 25 x 12mm.
3968
Irregular, 41 x 29mm.
3969
(?)Runnel/blob; D 10mm.
3970
22 x 13mm, pierced or drilled flat strip with 8 irregular holes, possibly a trial piece.

Settings
These imply construction in stone, whether buildings or wharf provision, etc.
3971
53 x 48mm; appears to have held at least three items secure at their point of junction (two at right-angles to a third).
3972
31 x 12mm; for a single rod.
3973 Pl. 73 (Hume 1863, pl. XV, 14).
19 x 17mm, 'lead', oval ribbed object of bead-like appearance with 21 gadroons around its edge, no further explanation was given by Hume.
[**3974**: number not used.]

2.22 Lead/tin items of no apparent historical significance

Geoff Egan

The following are somewhat irregular , more or less parallel-faced, holed roundels. Some may have been worn by handling. Items **3983**, **3985**, **3987**, and **3989** may possibly be regular enough to qualify as spindle whorls, but they are all grouped here because of their lack of regularity. They might, in the context of a coastal settlement, have served as fishing net weights (though none of the items interpreted as fishing weights recovered at the inland site of Whittlesea Mere in Cambridgeshire was of a form analogous to any of the objects listed below (Fryer 1998). Dating, as well as function, is problematic.
3975
Irregular, flattish discoid, 18 x 17mm, with irregular central hole; Wt 2.1g.
3976
Round hole; Wt 7.8g.
3977
Neat, central hole with neat raised ring around, the surrounding perimeter roughly cut as a sub-octagon, 23 x 22mm; Wt 10.8g.
3978
Irregularly cut sheet, 24 x 22mm, with subrectangular central hole; Wt 11.5g.
3979
Round hole; Wt 12.2g.
3980
Round hole; Wt 14.5g.
3981
Round hole; Wt 18.0g.
3982
Round hole; Wt 21.1g.
3983
Sub-round hole; Wt 24.2g.
3984
Round hole; Wt 27.6g.
3985
Round hole; Wt 29.1 g.
3986
Round hole; Wt 30.5g.
3987
Round hole; Wt 30.9g.
3988
Sub-round hole; Wt 34.2g.
3989
Hole slightly sub-round (?from abrasion); Wt 37.6g.
3990
Sub-round hole; Wt 38.4g.
3991
Round hole; Wt 44.6g.
3992
Round hole; Wt 56.0g.
3993
Round hole; Wt 110.8g.

The following items, analogous but less regular than the preceding ones, are most unlikely to have been used as spindle whorls, though they too might perhaps have served to weight fishing nets.
3994
Sheeting, bent over on one side, forming crude roundel 28 x 27mm; neat central hole; Wt 9.8g.
3995
Rough sheet roundel, 39 x 36mm; rough central hole; Wt 10.1g.
3996
Similar to preceding item, 40 x 39mm, and with rougher surfaces; irregular hole; Wt 12.1g.
3997
Uneven holed disc; D 15mm; Wt 5.1g.
3998
Centrally holed, circular sheet disc; D 23mm, Wt 10.9g.
3999
Irregular sheet pentagon with irregular hole; 18 x 17mm, Wt 1.9g.
4000
Robust cylinder with neat central hole; 17 x 13mm; Wt 23.9g.
4001
Sub-D-shaped fragment/(?)runnel with hole; 37 x 23mm, Wt 18.2g.
4002
Irregular blob, 16 x 13mm, Wt 4.4g, with neat, round hole.
4003
Blob with irregular hole; 11 x 11mm, Wt 2.1g.
4004
Distorted, irregular, round-section ring, 12 x 10mm; Wt 1.2g.
4005
Blob with small, offcentral hole, 23 x 19mm, Wt 7.5g.
4006
Rough strip, hammered flat; overlapping to form very crude circle, 47 x 41mm, Wt 16g.
4007
Irregular, plano-convex roundel, D 28mm, Wt 21.5g, with irregular central hole; (?cast into irregular sub-round hole).

4008
Irregular blob, 17 x 16mm, Wt 8.2g, with one flattish surface and pierced central hole.
4009
Rough, sub-conical (truncated) form, 23 x 21mm, Wt 38.2g; hole runs from wide end to turn at a right-angle and emerge from the side.

Sheeting
4010
Squarish with rounded corners; 27 x 26mm; Wt 9.8g.
4011
Crudely cut possible rove of sheeting, D 19mm; central hole is worn.
4012
Irregular, flattish piece of (?)sheeting, 18 x 16mm; pierced near rounded end.
4013
Uncorroded, uneven sheet disc, D 18mm, with small, central hole; Wt 3.8g.
4014
Neat, sub D-shaped sheet, 19 x 14mm, with four drilled holes (three and one), the outer ones being blind and the other two respectively having one and two smaller holes pierced right through; probably relatively recent.
4015
Strip, *c.* 20 x 4mm, bent in into U-shape.
4016
Irregular piece; 18 x 16mm.

Roves (functions uncertain)
4017
Very corroded: D 16mm.
4018
Uneven, with irregular (?)hammered marks, D *c.* 34mm, hole D11mm.
4019
Corroded: possible rove, D 20mm, hole D 5mm.

Other
4020
Abraded, flat half circle 32 x 13mm.
4021
Roughly looped length of wire; 15 x 10mm.
4022
Irregular rod in figure-of-eight configuration; 28 x 13mm.
4023
Rough discoid, 12 x 11mm.
4024
33 x 34mm, rough discoid.
4025
Sheet fragment 52 x 35mm; the two shorter sides are cut straight while one of the longer ones has a series of large serrations (the other is broken off).
4026
Very rough, unevenly four-armed plano-convex item, 11 x 10mm; with central piercing. (?)Cf. **1884** and **2372**.
4027
Roughly cast main blob, 23 x 17mm, with offcentral domed area having form of a neat (machine-made, i.e. post-medieval) thimble-crown grid, and small subsidiary blob, roughly pierced as for suspension. While such an item might perhaps be seen as pendent trinket from an earlier period, the implied post-medieval dating from machine-manufactured thimbles makes this curious item the more enigmatic. Too soft to be an ingenious (19th/20th-century) accessory for striking non-safety matches, though it could perhaps have been used to stub out cigarettes.
4028
Waste 31 x 22mm.
4029
White-metal strip, 75 x 3mm (??resembles iron, but non-magnetic) bent into loop at one end, (?)used and rounded at other; (?)of recent date.
4030
Curved strip, 37 x 11mm; perhaps a handle from a jug, etc. (this could be from a spoon, but for a hollow in the fabric at one end, which suggests it was from a tin-plate item); (?)18th/19th-century.
4031
L 14mm, offcut.
4032
Amorphous blob, 17 x 16mm; (with fortuitous resemblance to a scallop shell).
4033
Uneven, bevel-edged roundel, D 28mm, with central hole (D 10mm); Wt 53.4g.
4034
Fragment of (?) irregular roundel (about half); original D estimated 30–40mm; (if originally holed this would have been offcentre).
4035
Distorted and slightly corroded section of featureless piping, D 20mm, L 7mm.
4036
Dished, C-shaped (?split ring) object, D 9mm.
Possibly a worn rove.
4037
Cylinder: L 11mm, D 10mm; squashed at one end; stamped motif of circle with eight radiating lines on each end (that at squashed end was anyway irregular , while the other is neatly configured).
[**4038–4039**: numbers not used]

2.23 Miscellaneous iron objects

Patrick Ottaway, David Griffiths, and Robert Philpott

Unidentified and/or undatable objects
4040 L 140mm; a bar, of which one half tapers and is fairly roughly formed, whereas the other half has been flattened out and given smooth surfaces, into one of which are stamped three equal-armed crosses. The function of this object is uncertain, but the crosses may be an indication of the quality of the metal in what was a bar intended for forging into a knife or other utilitarian item.
4041 80 x 49 x 7mm; a Y-shaped strap. It is probably from a bifurcated hinge strap, it appears to be made of cast iron and is therefore probably of recent origin.
4042 L 46mm; possibly a latch, which survives as a small L-shaped strip, of which one arm is a stub; at the junction of the arms there is a projection ending in a round spatulate terminal. It is plated with non-ferrous metal.
4043 U-shaped folded sheet of iron with thin copper alloy plates riveted at each end. Bent around the U-shape are two strips of copper alloy, one at each end; each broken at end; One plate is rectangular, two are strip-like and broken; the larger one has an additional rectangle of copper alloy sheeting bent around it with four rivets; the single strip has two rivets.
4044 392 x 39mm; a reaping hook or sickle, probably of recent origin.
4045 L 105mm; a shank which is spirally-twisted in the

centre and tapers towards one end where it is flattened out at the tip. At the other end an arm projects at 90° and is folded over in a double zig-zag. There is the stub of what might have been another arm, in which case the object may have been basically T-shaped.
4046 L 120mm; an incomplete object that appears to have originally been heart-shaped. There is a central strip, which at each end is formed into a pierced terminal. Immediately below the terminals there is, welded on to the central strip, another curved strip making one side of the 'heart'; the curved strip for the other side of the 'heart' is largely missing.
4047 L 231mm; a strip now bent into an elongated S-shape; at one end it is flattened out and widened slightly before coming to a pointed tip, and at the other there is a small square collar around it, above which it is broken. It is possible that this was some sort of tanged tool or implement, perhaps a poker, the tang lying above the collar.
4048 L 125mm, W 29mm; a U-shaped object with tapering arms, which is pierced at the head. This may have been a binding of some sort.
4049 L 290mm; a bar, which is drawn out into a C-shaped loop at each end. In the centre of the bar there is a short projection from the side corresponding to the backs of the loops and linked to it through two slots is a short piece of iron, 63mm long. This has a roughly oval area at the base and then tapers to a pointed tip.
4050 62 x 47mm; badly corroded; possibly a rotating arm of a horse buckle.
4051 L 80mm (Hume 1863, pl. XXVIII, 13); a fragment of harness mount, with one rectangular strap loop.
4052 L 100mm (Hume 1863, pl. XXVIII, 12); a harness mount, about half complete, it had two rectangular strap loops and two attachment holes.
4053 L 229 mm (Potter 1893, pl. B, 22); a cone, presumably iron.
4054 (Ecroyd Smith 1866, no. 2) 'reduced'; a long narrow object with an oval handle and seven attachment holes, tapering to a point. Possibly a chest handle of later medieval or post-medieval date.
4055 24 x 11mm, heavily corroded, possibly a nail.
4056 L 39mm, W 5mm; corroded: cast pipe with conical terminal.
4057 65 x 67mm; a rivet head lump, possibly from a boat.
4058 38 x 33mm; a ball sling shot or other iron shot.

Plates, strips and fragments
Two sections of flat bar with raised spinal ridge:
4059 34 x 8mm.
4060 40 x 16mm.
Two corroded D-shaped fragments with three rivet holes:
4061 12 x 11mm.
4062 13 x 12mm.
There are several plates and strips in the ironwork from Meols that may once have been part of larger objects.

Small S-shaped strip fragments plated with non-ferrous metal
4063 37 x 21 x 4mm.
4064 52 x 13 x 5mm; a short piece which tapers to a point at one end; one side undulates and is pierced twice.
4065 L 58mm; a twisted bar.

Other plates and strips
4066 D 7mm; a circular plate with one rivet.
4067 24 x 27mm; broken at one end, with a looped terminal at the other.
4068 50 x 38mm.
4069 75 x 44mm.
4070 76 x 21mm.
4071–4078 Other unidentified small fragments, mostly too corroded and incomplete to be easily identifiable.
4079 A small box with 40 miscellaneous iron fragments, all heavily corroded, none of which can easily be identified.

2.24 Coins and tokens: pre-Roman to post-medieval

Simon C. Bean

The following catalogue of coins and tokens attempts to minimise duplicate entries caused by multiple references to pieces in the literature. Where there is a suspicion that an entry may be a duplicate this has been stated. It is possible that this approach may have regarded separate coins mentioned in different sources as duplicates, but the approach has been to construct a minimum total of coins rather than a maximum total. When the coins are not extant it has not been possible to determine whether they are regular issues or irregular pieces. This has implications for the Roman coin list.

At times is has been necessary to impose a contemporary interpretation on the descriptions in the old sources. For example, legends and types on coins are apparently incorrectly given, presenting unknown hybrids where a well-known type might be expected. Where the error is clear to the author the original description is given and, where appropriate, a suggestion for modern identification. Weights in grains are taken from original documentation.

It will be seen that from the Short Cross coinage onward, that the descriptions in the original sources become poorer, with groups of coins lumped together rather than being individually described. The same is also true of cut fractions. This has made reconciling potential duplicate references difficult, as comments in this catalogue make clear.

As with all other categories of evidence from Meols (2.0), space considerations have meant that the illustration policy for coins in this monograph has been highly selective. We have inherited an inbuilt selectivity from our antiquarian forebears: very few of the 19th-century finds from Meols, listed in contemporary publications by Hume, Ecroyd Smith, Harris Gibson and Potter, were illustrated so we no longer have any pictorial record for most of those which have not survived. Of those 19th-century finds which are extant, and of more recent finds, we are able here only to publish a selection based on the availability of suitable images (access for photography to some of the museum collections has been unavoidably restricted, while several of the more recently-found coins are in private hands and we have only a partial photographic record of these). Selectivity in illustration has been guided by the practice of the *British Numismatic Journal* Coin Register, which lays emphasis on all pre-Roman, pre-Conquest and late Roman (pre-AD 64 and post-4th century), Roman silver and gold, Anglo-Saxon and medieval down to the 'Tealby' issue of Henry II, with an option to consider coins from other periods and issues for their numismatic interest.

Most of the Meols coins in Liverpool Museum (some of which are no longer available for study) were illustrated in Warhurst 1982. All available images for the Meols coins will be displayed, along with the non-numismatic material, in the online archive (online address, p. iv).

Illustrated coins are marked with an asterisk (see Pls 74–77) Abbreviations, p.332.

Table 2.24.1 PRE-ROMAN COINS

No.	*Authority*	*Date*	*Type*	*Wt*	*Axis*
5000	Siculo-Punic	220-210 BC	Silver drachm, cf. *SNG Copenhagen Sicily* 994/1002		
5001	Siculo-Punic	220-210 BC	Silver drachm, cf. *SNG Copenhagen Sicily* 994/1002		
5002	Siculo-Punic	220-210 BC	Silver drachm, cf. *SNG Copenhagen Sicily* 994/1002		
5003*	Greek: Armenia, Tigranes I	83–69 BC	Silver tetradrachm. Foss (1986) class 1, 14; Bedoukian 33	22.58g	330°
5004	Celtic ?Corieltauvian gold stater	?Later C1st BC -early AD C1st	'One one side bearing a radiate crown or other ornament; Rev. a figure composed of rectangular compartments 74 gr [4.81g]' Liverpool Museum guard book entry for M4071. Hume says much worn		
5005*	Armorica: Coriosolites	*c.* 75–50 BC	Billon, Class II	6.18g	0°
5006*	Armorica: Coriosolites	*c.* 75–50 BC	Billon, Class II	6.20g	0°
5007	Belgic Gaul	*c.* 80–50 BC	Bronze unit, de la Tour XXXIV, 8527		

Table 2.24.2 ROMAN COINS

No.	*Authority*	*Date*	*Type*	*Wt*	*Axis*
5008	C Vibius	90 BC	Denarius, obv. Apollo, PANSA, rev. Minerva and C VIBIVS C F Crawford 342, 4a		
5009*	Augustus 27 BC – AD 14	15 BC	As, RIC I 382	10.11g	80°
5010*		7 BC	As, RIC I 432	10.92g	110°
5011*		7 BC	As, RIC I 435	10.01g	0°
5012*		AD 10–12	As, RIC I 471	9.72g	0°
5013	Claudius AD 41–54	AD 41–50(?+)	As, cf. RIC I 97 probably an irregular piece		
5014		AD 41–50(?+)	As, cf. RIC I 100		
5015		AD 41–50(?+)	Dupondius/As, rev. illegible		
5016		AD 41–50(+)	Dupondius/As, obv. 'CAESAR AVG PM TRP Rev. worn'		
5017		AD 41–50(+)	Head of Claudius visible, otherwise illegible		
5018		AD 41–50(+)	As, LIBERTAS AVGVSTI		
5019	Nero AD 54–68	AD 62–68	Sestertius, cf. RIC I 108		
5020			Sestertius, rev. described as Rome seated, spear in left hand, Victory in right. S C in field.		
5021			Sestertius, uncertain type, described by Hume as 'Broken and defaced'		
5022		AD 66–68	Dupondius or As, obv. and Rev. descriptions are contradictory to known types. Cf. RIC I 117/120		
5023			Dupondius or As, rev. illegible (Watkin), 'Female figure SC' (Longbottom)		
5024	Galba AD 68–9		Dupondius/As, described as Obv. "Imp Galba Cæsar. . . COS III" Bare head of Galba; Rev. "Consecratio" Eagle standing with partially extended wings. No corresponding type known nor are any similar fantasies		
5025			Dupondius/As, cf. RIC I 273		
5026	Vitellius AD 69		Dupondius/As		

Reference	*Collector*	*Museum*
Hume 1863, 290	Fd before 1863; Mayer M4067(a)	Liverpool Museum. Lost
Hume 1863, 290	Fd before 1863; Mayer M4067(b)	Liverpool Museum. Lost
Hume 1863, 290	Fd before 1863; Mayer M4068	Liverpool Museum. Lost
R. Philpott pers. comm.	Fd 1990; purchased Liverpool Museum 1991	Liverpool Museum 1993.37. Fd at edge of embankment and Leasowe Common
Hume 1863, 292	Fd before 1863; Mayer	Liverpool Museum; M4071. Lost
Hume 1863, 292; Chitty and Warhurst 1977, 55; Warhurst 1982, 29, no 3	Fd before 1863; Mayer	Stolen from Liverpool Museum; M4069
Hume 1863, 292; Chitty and Warhurst 1977, 56; Warhurst 1982, 29, no 4	Fd before 1863; Mayer	Stolen from Liverpool Museum; M4070
Num Chron vol I, pl.ii,4; Evans 1864, 120, pl. G11; Allen 1960, 277		'said to have found at or near Liverpool with other British [Celtic] coins'. (Evans 1864, 120)

Reference	*Collector*	*Museum*
		Shotter 2000c, 101; D. Shotter pers. comm.
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
Thompson Thompson Watkin 1886, 282	Found before 1886; Potter	Grosvenor Museum
Hume 1863, 290; Thompson Thompson Watkin 1886, 282 Gibson 1877, 63; Thompson Thompson Watkin 1886, 282; ?Longbottom 1908, 15	Fd before 1863; Thompson Thompson Watkin by 1886	
Ecroyd Smith 1873b, 14; ?Harris	Thompson Thompson Watkin by 1886; Fd 1865	
Ecroyd Smith 1866, 205. *Possibly the same piece as the last*	Fd 1865	
		Shotter 2000c, 101
		Shotter 2000c, 101
Hume 1863, 290; Thompson Thompson Watkin 1886, 282	Fd 1863; Thompson Thompson Watkin by 1886	
Ecroyd Smith 1873b, 19; Thompson Thompson Watkin 1886, 282	Fd 1867	
Hume 1863, 290; Longbottom 1908, 15	Fd before 1863	
Hume 1863, 290	Fd before 1863; Mayer	Liverpool Museum M4072; lost
Ecroyd Smith 1873b, 16; Thompson Thompson Watkin 1886, 282; Longbottom 1908, 15	Fd 1866	Harris Gibson does not list this coin for the Potter Collection, although Longbottom does
Hume 1863, 290; this is presumably that attributed to Vespasian by Thompson Watkin 1886, 282 (Rev. COS VI Eagle on Cippus)	Fd before 1863; Thompson Watkin Collection (?)	
Hume 1863, 290	Fd before 1863	
Hume 1863, 290; Thompson Watkin 1886, 282	Fd before 1863	

No.	Authority	Date	Type	Wt	Axis
5027	Vespasian AD 69–79	AD 71	As, Lyon, RIC II 500	9.00g	180°
5028		AD 77–78	As, Lyon, RIC II 599	8.29g	180°
5029			Dupondius/As, rev. 'A female figure standing'		
5030			Dupondius/As, described as reverse 'COS VI An eagle on a cippus'. Known only as a denarius type		
5031			Denarius, cf. RIC II 48		
5032			Denarius, cf. RIC II 48/65 'PONTIF MAXIM figure obliterated' (Watkin)		
5033			'Base' denarius, attributed by Thompson Watkin on basis of profile of bust.		
5034	Titus AD 79–81	AD 77–78	As, Lyon, RIC II 786, pierced	8.62g	180°
5035	Domitian AD 81–96		As, types similar to RIC II 262 (a dupondius)		
5036	Trajan AD 98–117	AD 103–11	Sestertius, RIC II 485	21.54g	190°
5037		AD 114–17	Sestertius, RIC II 658	26.60g	180°
5038		AD 103–11	Dupondius, RIC II 515	13.38g	170°
5039		AD 115-117	Denarius, RIC II 364		
5040	Hadrian AD 117–38	AD 132–34	Denarius, RIC II 223		
5041			As, described as Obv. Imp Cæs Ner Traian Hadrianus. Laureate head of Hadrian. AX COS III SC Figure of Pax seated		
5042	Antoninus Pius AD 138–61		Sestertius, described as Imp Antoninus Aug Pius laureate head of Pius. Rev. Virtus Aug SC The goddess of Virtue seated		
5043			Sestertius, rev. 'A female figure standing'		
5044			Sestertius, cf. RIC III 1292		
5045		AD 154–55	Dupondius, RIC III 930		
5046			Dupondius/as, 'Third brass' Rev. illegible; Ecroyd Smith 1873b, 10 describes it as having been 'plated with silver, but probably at a later period' – possibly a plated denarius?		
5047	Faustina I		Dupondius/As, 'Second brass', rev. described as 'AETERNITAS S C Eternity standing holding up right hand.'		
5048			Described as 'First brass', cf. Dupondius/As RIC III 1298a for type		
5049	Marcus Aurelius AD 161–80		?Dupondius, rev. described as 'shows Victoria Augusta. A victory standing offering a wreath'		
5050	Faustina II		Dupondius/As, types described as head of Faustina junior/Sphinx		
5051			Dupondius/As, types described as head of Faustina junior/Sphinx		
5052	Lucilla		As, RIC III 1741/2		
5053	Marcus Aurelius/ Commodus		As, much worn. Rev. deity standing right		
5054	Commodus AD 180–92 (Crispina)		Dupondius/as, rev. illegible		
5055	Caracalla AD 196–217	AD 201	Denarius, RIC IVi 54		
5056	Caracalla AD 196–217 or Elagabalus AD 218–22		Denarius. Possibly Caracalla RIC 35 or 339; or Elagabalus RIC 187A	1.92g	180°
5057	Gordian III AD 238–44	AD 241–43	As, RIC IViii, 309		
5058	Trajan Decius AD 249–51 (Herennius Etruscus)		Base radiate, cf. RIC IViii 149		
5059	Gallienus AD 253–68	AD 260–68	Radiate, cf. Cunetio 1230, etc.		
5060		AD 260–68	Radiate, RIC VI 163; Cunetio 1378		
5061		*c.* AD 260–68	Radiate, cf. RIC VI 229; Cunetio 1341		
5062		AD 260–68	Radiate, RIC VI 501		
5063	?Gallienus	AD 260–68?	Radiate, panther on rev., prob. RIC VI 230		
5064	Postumus AD 259–68	*c.* AD 263–65	Radiate, RIC VII 64; Cunetio 2384		

Reference	*Collector*	*Museum*
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
Hume 1863, 290	Fd before 1863	
Thompson Watkin 1886, 282; probably the coin wrongly ascribed to Galba by Hume	Fd before 1886; Thompson Watkin Collection	
Hume 1863, 290 pl. XXVI, 13 and Thompson Watkin 1886, 282 where wrongly attributed to Titus	Fd before 1863; Potter Collection	Grosvenor Museum
Hume 1863, 290; Thompson Watkin 1886, 282 ; Longbottom 1908, 15	Fd before 1863; Harris Gibson does not list this coin	
Thompson Watkin 1886, 282	Fd before 1886; Potter Collection	Grosvenor Museum
	Fd before 1930s; Herd Collection	Liverpool Museum
Hume 1863, 290; Thompson Watkin 1886, 282	Fd before 1863	This – or the last – coin in Grosvenor Museum
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
	Fd before *c.* 1930; Herd Collection	Liverpool Museum
MSMR 2692-3; Cowell and Innes 1994, 221	Fd Mockbeggar Wharf, Wallasey	Private collection
Hume 1863, 290, pl. XXVII, 14; Ecroyd Smith 1873b, 10; Thompson Watkin 1886, 282	Fd 1861; Ecroyd Smith Collection	
	Hume 1863, 290; Thompson Watkin 1886, 282	Fd before 1863
Hume 1863, 290; Thompson Watkin 1886, 282	Fd before 1863	
Hume 1863, 290; Thompson Watkin 1886, 282	Fd before 1863	
Hume 1863, 291; Thompson Watkin 1886, 282; Longbottom 1908, 15	Fd before 1863	Grosvenor Museum
Hume 1863, 290; Thompson Watkin 1886, 282	Fd before 1863; Mayer	Liverpool Museum M4073; lost
Thompson Watkin 1886, 282	Fd before 1886	Fd 1866
Thompson Watkin 1886, 282	Fd before 1886; Thompson Watkin Collection	
Thompson Watkin 1886, 282	Fd before 1886; Thompson Watkin Collection	
Liverpool Museum 'Gatty slips'	Fd before 1867; Mayer Collection	Liverpool Museum M4074; lost
	Hume 1863, 291; Thompson Watkin 1886, 282	Fd before 1863
	Hume 1863, 291; Thompson Watkin 1886, 282	Fd before 1863
Thompson Watkin 1886, 282	Fd before 1886; Thompson Watkin Collection	
On envelope '*Said to have been found at Meols Shore (?) it may be a genuine relic*'		Grosvenor Museum
Hume 1863, 291; Thompson Watkin 1886, 282	Fd before 1863	
Ecroyd Smith 1868, 104 (where wrongly attributed); Ecroyd Smith 1873b, 18; Thompson Watkin 1886, 283	Fd 1867	
MSMR 2591-09	Fd July 1991	Found near Leasowe Lighthouse, SJ 252 913
Harris Gibson 1877, 63; Thompson Watkin 1886, 283	Fd before 1877; Potter Collection	Grosvenor Museum
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863	
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863; Thompson Watkin Collection	
Thompson Watkin 1886, 283; Longbottom 1908, 15	Fd before 1886; Thompson Watkin Collection	
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863	
MSMR 2591-5	Fd *c.* 1986	
MSMR 2591-12	Fd 1994	Described as 'panther reverse'
Harris Gibson 1877, 63; Thompson Watkin 1886, 283; presumably Longbottom 1908, 15	Fd before 1877; Potter Collection	Grosvenor Museum

No.	Authority	Date	Type	Wt	Axis
5065			Radiate, details much worn		
5066			Radiate (base silver), rev. poorly struck, but standing male figure discernable		
5067	Victorinus AD 268–70		Radiate, cf. RIC Vii 75, obv. legend described as Imp C Piav Victorinus		
5068			Radiate, rev. illegible		
5069			Radiate, rev. illegible		
5070	Victorinus AD 268–70 or Tetricus I AD 270–73		Radiate. Oval irregular flan 16–18 mm. Obv. Radiate draped bust right. Illegible. Rev. Spes walking left holding flower and raising drapery of dress. Illegible [SPES PVBLICA]. Very worn. Cf. RIC Tetricus I RIC 135-136 or Victorinus cf RIC 73	1.96g	0°
5071	Tetricus I AD 270–73		Radiate, cf.. RIC VII 109 (but reads PIETAS AVGVSTOR) *A coin of Tetricus II wrongly described?*		
5072			Radiate, rev. described as VIRTVS AVGG Sacrificial instruments *A coin of Tetricus II wrongly described?*		
5073	Tetricus I AD 270–73		Radiate, RIC VII 100	2.27g	180°
5074			Radiate, rev. obliterated		
5075			Radiate, rev. described as 'Tetricus II'		
5076	Tetricus II		Radiate. Described as Obv. Imp Tetricus P L Aug, head of the younger Tetricus; Rev. Hilaritas Aug Hilaritas personified, holding wand and cornucopia' *A coin of Tetricus I, wrongly described?*		
5077	Claudius II AD 268–70		Radiate, cf. RIC Vi 171; Cunetio 2254		
5078			Radiate, cf. RIC Vi 171; Cunetio 2254		
5079			Radiate, cf. RIC Vi 32; Cunetio 1950		
5080			Radiate, described as reverse 'VICTORIA AVG'		
5081			Radiate, cf. RIC Vi 266, etc.		
5082			Radiate, cf. RIC Vi 266, etc.		
5083			Radiate, 'much worn'		
5084			Radiate, rev. 'Jupiter', no details		
5085	Radiate?	'Third century BC' = AD?	Bronze coin with sun motif on one side. Originally stated as C3rd BC, but the verbal description of sun motif fits better an AD C3rd radiate.		
5086	Probus AD 276–82		Radiate, rev. 'Legend obliterated, standing female figure with ' cornucopia		
5087	Carausius AD 286–93		Radiate, rev. PAX AVG Pax with flower in left hand and sceptre in right. P|O/ML *Marks described as* F|O/ML *in first reference – presumably same coin*		
5088			Radiate, 'apparently a rare example'. Possibly same coin as last, although this is listed under 'ADDENDA'		
5089	Constantine I AD 306–37	AD 318–24	Nummus, VICTORIAE LAETAE PRINC PERP mm 'P.AN.' Two Victories with shield inscribed 'VOT X'		
5090		AD 324–30	Nummus, PROVIDENTIAE AVG Camp gate		
5091		AD 324–30	Nummus, PROVIDENTIAE AVG Camp gate		
5092		AD 330–35	Nummus, GLORIA EXERCITVS two soldiers, two standards		
5093		AD 330–35	Nummus, GLORIA EXERCITVS two soldiers, two standards		
5094		AD 330–35	Nummus, GLORIA EXERCITVS two soldiers, two standards		
5095		AD 330–35	Nummus, GLORIA EXERCITVS, two soldiers two standards, described as Constantius		
5096		AD 330–35	VRBS ROMA Wolf and twins		

Reference	*Collector*	*Museum*
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863	
Ecroyd Smith 1869a, 210; Ecroyd Smith 1873c, 50		Fd 1868
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863; Mayer	Liverpool Museum M4075; now lost
Ecroyd Smith 1873b, 19; Harris Gibson 1877, 63; Thompson Watkin 1886, 283	Pd. 1867; Potter	Grosvenor Museum
Thompson Watkin 1886, 283	Fd before 1886	
	Fd before July 1991	Fd near Park Road, Meols
Hume 1863, 291 (where wrongly identified); Thompson Watkin 1886, 283	Fd before 1863; Thompson Watkin Collection	
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863	
MSMR 2591-10	Fd 1992	Found east of Pasture Road, Moreton, approx. SJ 258 913
Thompson Watkin 1886, 283	Fd before 1886	
Ecroyd Smith 1869a, 210; Ecroyd Smith 1873c, 50	Fd 1868	
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863	
Thompson Watkin 1886, 283	Fd before 1886	
Thompson Watkin 1886, 283	Fd before 1886	
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863; Thompson Watkin Collection	
Ecroyd Smith 1866, 205; Ecroyd Smith 1873b, 13	Fd 1865	
Hume 1863, 291; Thompson Watkin 1886, 283 (or next piece)	Fd before 1863; Mayer	Liverpool Museum M4076; now lost
Possibly piece referred to in last reference	Fd before 1867; Mayer	Liverpool Museum M4077; now lost
Harris Gibson 1877, 63	Fd before 1877	Possibly one of the coins listed above
Liverpool Museum identification service 2736	Fd before May 1993	No photograph and only brief description
Rob Philpott pers. comm.	Fd 1949/50	Found by a school-boy at Deneshey slipway in 1949/50 and since lost
Ecroyd Smith 1873b, 17; Thompson Watkin 1886, 283	Fd 1866	
Hume 1863, 291; Ecroyd Smith 1873b, 11; Thompson Watkin 1886, 283	Fd 1862; Ecroyd Smith Collection.	
	Ecroyd Smith 1863, 32; Hume 1863, 362	Fd 1862
Thompson Watkin 1886, 283	Fd before 1886; Potter Collection	Grosvenor Museum
Thompson Watkin 1886, 283	Fd before 1886	
Ecroyd Smith 1866, 205; Ecroyd Smith 1873b, 13. *Possibly the same coin as the last*	Fd 1865	
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863	
Hume 1863, 291; Thompson Watkin 1886, 283	Fd before 1863	
Ecroyd Smith 1866, 205; Ecroyd Smith 1873b, 13		Fd 1865
Harris Gibson 1877, 78	Fd Feb. 1877 or earlier; Potter	*Reference is to the exhibition, not the find of the coin. A duplicate record?*
Harris Gibson 1877, 63; Thompson Watkin 1886, 283	Fd before 1877	Thompson Watkin does not describe this as a Potter coin. I have assumed reference is to one, not two different coins

No.	Authority	Date	Type	Wt	Axis
5097		AD 330–35	VRBS ROMA Wolf and twins		
5098		AD 330–35	VRBS ROMA Wolf and twins		
5099	Constantine I	AD 330–35	AE3 16mm, cf. RIC VII Trier 518-519		
5100	Constantine I	AD 330–35	AE3/4 RIC VII Antioch 86		
5101	Constantine I	Period III AD 335–41	AE4 14 mm. Gloria Exercitus type, one standard. Mintmark and legends illegible		
5102	Constans AD 333–50	AD 347–48	Nummus, RIC VIII Trier 195/6		
5103		AD 347–48	Nummus, RIC VIII Trier 195/6		
5104		*c.* AD 347–48	cf. Nummus, RIC VIII Trier 195/6		
5105	House of Constantine		Nummus		
5106	House of Constantine		Irregular 'minim'		
5107	Magnentius AD 350–53		Æ no further details		
5108	Decentius AD 351–53		AE3 contemporary copy 16–18mm. Obv. ?Cuirassed, bare-headed emperor right; ?A in field to right.]VSNOBCAE[Rev. Falling horseman (FEL TEMP REPARATIO type). Mintmark illegible. Worn. This rev. type was used by Magnentius but not by Decentius, suggesting a contemporary copy	2.02g	180°
5109	Constantius II AD 353–61	AD 353–61	FEL TEMP REPARATIO Falling horseman type		
5110		AD 353–61	FEL TEMP REPARATIO Falling horseman type		
5111	Valentinian I AD 364–75		Nummus, rev. illegible		
5112	Valentinian I AD 364–75		AE4 14–16mm. Obv. Pearl diademed and draped bust right. DNVALE]NTINI ANVSPFAVG Rev. Victory advancing left holding wreath and palm.SECVRITAS [REIPVBLICAE] Mintmark illegible. LRBC Valentinian I, Securitas Reipublicae	2.16g	0°
5113	Valens AD 364–78	AD 364–67	Æ1 Nummus, RESTITVTOR REIPVBLICAE Emperor with Victory on globe in one hand, and standard in other		
5114			Nummus, rev. two soldiers standing *A wrongly identified GLORIA EXERCITVS piece of Constantine I?*		
5115			Nummus, rev. two soldiers standing *A wrongly identified GLORIA EXERCITVS piece of Constantine I?*		
5116	Valens AD 364–78		AE3 18mm. RIC Aquileia CF RIC 9b, 12b, 18a. Moderate wear	2.56g	0°
5117	Probably Valens or Gratian, of the period AD 363–78		AE4 15mm. Obv. Pearl diademed and draped bust right. Illegible. Rev. Victory advancing left holding wreath and palm. S]EC[VRITAS REIPVBLICAE. Mm illegible and largely off flan	1.34g	180°
5118	Magnus Maximus AD 383–8		Siliqua, RIC IX Trier 84 b/c		
5119	'Later Empire'		'Third brass', types illegible		
5120	'Late Empire'		'Third brass', types illegible		
5121–22	'Later Roman Empire'		Small bronze coins (2)		

Unidentified Roman coins

Hume (1863, 292) also mentioned 14 worn and illegible second or third brass coins. In addition to the identified coins, Harris Gibson (1877, 63) referred to 'Nine fragments'; Longbottom's examination of the Potter Collection includes only four unattributable pieces.

Thompson Watkin (1886, 283–4) wrote 'There are also *recorded*, as having been found, about 20 second and third brass coins, quite illegible, and eight *minimi*, or small rude coins. Of these, eight are in the possession of the author, and two belong to Mr Charles Potter . It is however known, that

Reference	*Collector*	*Museum*
Ecroyd Smith 1870, 276; Ecroyd Smith 1873c, 51. *Possibly another reference to the previous coin*	Fd 1869	
Ecroyd Smith 1875, 96. *Possibly another reference to the coin* ***5096***, but distinct from **5097**	Fd 1874	
	Fd March 1995	Found on the beach at Meols
MSMR 2591-12	Fd March 1994	Found on 'bank of clay' NW of Leasowe Lighthouse at approx. SJ 250 918
	Fd March 1995	Found NW of Leasowe light house at approx. SJ 250 918
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863; Thompson Watkin Collection	
Hume 1863, 292	Fd before 1863; Mayer	Liverpool Museum M4078; now lost
?Hume 1863, 292	Fd before 1863; Mayer	Liverpool Museum M4079; now lost. Hume describes only two coins of this type; two are described for the Mayer Collection and a further piece in Watkin's Collection. The same coin or another find?
Ecroyd Smith 1866, 205; Ecroyd Smith 1873b, 13		Fd 1865
Ecroyd Smith 1866, 205; Ecroyd Smith 1873b, 13		Fd 1865
Mayer Guard Book	Fd before 1867; Mayer	Liverpool Museum M4082; now lost
	Fd before July 1991	Fd near Park Road, Meols
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863	
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863	
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863	
	Fd before July 1991	Fd near Park Road, Meols
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863; Mayer	Liverpool Museum M4080; now lost
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863	
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863	
	Fd before July 1991	Fd near Park Road, Meols
	Fd before July 1991	Fd near Park Road, Meols
Hume 1863, 292; Thompson Watkin 1886, 283	Fd before 1863; Mayer	Liverpool Museum M4081; now lost
Ecroyd Smith 1873a, 30, 128	Fd 1872	
Ecroyd Smith 1873b, 17	Fd 1866	
Ecroyd Smith 1873c, 51	Fd 1869	

large numbers of coins found here, have been sold by the finders, dispersed through the country , and their evidence as to the Roman occupation of Meols lost.'

Records at Liverpool Museum include 6 illegible coins M4083–4088; whether these belong to Hume's group (most of the coins Hume refers to seem to have reached the Mayer Collection) cannot be determined. Three small Roman *Aes* are mentioned in Ecroyd Smith (1870, 276) and also an illegible third brass of later empire (Ecroyd Smith 1873a, 128).

Table 2.24.3 BYZANTINE COINS FROM NEAR MEOLS

No.	*Authority*	*Date*	*Type*
5123*	Justin I AD 518–27	AD 518–27	Follis, MIB I 11; D.O. 8e
5124*	Justinian I AD 527–65	AD 540/1	Decanummium, MIB I 199; D.O. 297–8
5125*	Maurice Tiberius AD 582–602	AD 600/1	Follis, MIB II 67D; D.O. 26–43

Table 2.24.4 EARLY MEDIEVAL TO POST-MEDIEVAL COINS AND TOKENS

No.	*Authority*	*Date*	*Type*
5126*	Frisia (Lower Rhineland)	c. 690–710	'Porcupine' sceat, BMC type 4; North 45; Metcalf series E (VICO 3)
5127*	Frisia (Lower Rhineland)	c. 715–50	'Porcupine' sceat, BMC type 4; North 45; Metcalf series E (Secondary)
5128*	Northumbria Æthelred II (first reign)	c. 840–44	Styca, BMC 421; North 188 York, moneyer *Fordred*
5129	Æthelred II (first or second reign)	c. 840–44, c. 844–48	Styca, moneyer not recorded
5130*	Redwulf	c. 844	Styca, cf. BMC 635; North 189, York, moneyer *Cenred*
5131	Uncertain(?)		Styca, cf. Rudding Pl. 1, figs 8, 9
5132	Uncertain(?)		?Styca, described as '3rd brass illegible'. *Probably a Roman coin misplaced in the original reference*
Kings of all England			
5133	Eadgar AD 959–75	c. 970	Three line (BMC ii; Brooke I) Chester (LE), *Teothuc*
5134*	Eadgar or Edward the Martyr AD 975–78	973–78	Reform Small Cross (BMC vi; North 752), central fragment. W inchester style, Jonsson (1987, 88–9)
5135*	Eadgar	973–75	BMC vi; North 752 (reform portrait), cut half York (EFER), *Ae...*
5136*	Æthelred II AD 978–1016	c. 979–85	First Hand (BMC iia, Brooke 2) '-ELE.MO.' 'Half of legend is broken off.' (Chester, *Elemod*)
5137	Æthelred II	c. 979–85	First Hand (BMC iia, Brooke 2), mint and moneyer not recorded. Fragment
5138*	Æthelred II	c. 979–85	First Hand (BMC iia, Brooke 2; Hild. B1; North 770), Shaftesbury (CAFT), *Æethestan*
5139*	Æthelred II	c. 991–97	CRVX type (BMC iiia, Brooke 3; Hild C; North 770), cut half, London *(LV...), ...ric*
5140	Æthelred II		'Common type' York . Possibly the CRVX coin of York (moneyer *Wulfsige*) now in the Grosvenor Museum
5141	Cnut	c. 1018–24	Quatrefoil (BMC type viii, Brooke 2; North 781–6; Hild. E), Chester (LEI), *Ceolnoth*
5142	Cnut	c. 1018–24	Quatrefoil (BMC viii; Brooke 2), Chester (L.EICE), *Gunleof*
5143*	Cnut	c. 1024–30	Pointed Helmet type (BMC type xiv; Brooke 3; Hild. G; North 787), Chester (L.EICE), *Gunleof*
5144	Cnut	c. 1024–30	Pointed Helmet type (BMC xiv; Brooke 3), Chester (LEI), ...oth. Cut halfpenny
5145	Cnut	c. 1030–36	Short Cross type (BMC type xvi; Brooke 4; North 790–4; Hild. B), Chester, *Leofwine*

Wt	*Axis*	*Reference*	*Collector*	*Museum*
15.81g	170°	Philpott 1999a	Fd 1991	Private collection
4.96g	280°	Philpott 1999a	Fd 1987; Borrowdale Road, Moreton	Liverpool Museum
11.13g	210°	Philpott 1999a	Fd 1991	Private collection

Wt	*Axis*	*Reference*	*Collector*	*Museum*
1.10g	90°	Ecroyd Smith 1868, 23-5, fig. 2; Ecroyd Smith 1873b, 19; Dolley 1961, no. 2; Chitty and Warhurst 1977, 58; Warhurst 1982, no. 20	Fd 1866; Ecroyd Smith	Liverpool Museum; 18.11.74
0.44g	270°	Ecroyd Smith 1866, 215, pl. p. 207; Dolley 1961, no. 1; Chitty and Warhurst 1977, 57; Warhurst 1982, no. 19	Fd 1865; Ecroyd Smith	Liverpool Museum; 18.11.74
1.36g	90°	Hume 1863, 292; Dolley 1961, no 3; Chitty and Warhurst 1977, 59; Warhurst 1982, no. 74; Pirie 2000, no. 289	Fd before 1863; Mayer	Liverpool Museum; M4089
?	?	Hume 1863, 292; Dolley 1961, no. 4; Pirie 2000, no. 289.	Fd before 1863	?
0.94g	0°	Hume 1863, 292; Dolley 1961, no. 5; Chitty and Warhurst 1977, 60; Warhurst 1982, no. 96; Pirie 2000, no. 289	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
'7 grains' (clipped)		Ecroyd Smith 1873b, 14	Fd before Sept. 1871	
		Ecroyd Smith 1875, 96.	Fd 1874	
		Harris Gibson 1877, 63; Longbottom 1908, 15	Fd 1870–77; Potter	Grosvenor Museum, 1908
0.48g	110°	Hume 1863, 293; Dolley 1961, 201; Chitty and Warhurst 1977, 62; Warhurst 1982, no. 512	Fd before 1863; Mayer	Liverpool Museum; M4090
0.83g	340°	Hume 1863, 292; Dolley 1961, no. 6; Chitty and Warhurst 1977, 61; Warhurst 1982, no. 509	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
		Harris Gibson 1877, 63; Longbottom 1908, 15; Almost certainly SCBI 5 112, which has a Meols patina. *Probably same as* 5137.	Fd 1870–77; Potter	Grosvenor Museum
?	?	Ecroyd Smith 1875, 97; Dolley 1961, no. 8. *Probably reference to* 5136	Fd 1874	?
1.41g	270°	Hume 1863, 292, pl. XXVII, 15; Dolley 1961, no. 7; Chitty and Warhurst 1977, 63; Warhurst 1982, no. 516	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
0.80g	270°	Hume 1863, 292; Dolley 1961, no. 9; Chitty and Warhurst 1977, 64; Warhurst 1982, no. 527	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
		Longbottom 1908, 15; Dolley 1961, note under coin 9	Potter	Grosvenor Museum in 1908
0.86g	0°	Harris Gibson 1877, 63; Longbottom 1908, 15 (for this coin or the next); Dolley 1961, no. 10; SCBI 5, 195	Fd 1870–77; Potter	Grosvenor Museum
Fragment	?	Ecroyd Smith 1868, 110; Ecroyd Smith 1873c, 43; Dolley 1961, no. 11	Fd 1867	?
0.93g	0°	Hume 1863, 293, pl. XXVII, 16; Dolley 1961, no. 12; Chitty and Warhurst 1977, 65; Warhurst 1982, no. 616	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
		Ecroyd Smith 1875	Fd 1874	
?	?	Ecroyd Smith 1873a, 128; Dolley 1961, no. 13	Fd 1872	?

No.	*Authority*	*Date*	*Type*
5146*	Cnut	c. 1030–36	Short Cross type (BMC type xvi; Brooke 4; North 790), Shrewsbury (SCRO), *Etsige*
5147	Cnut	c. 1030–36	Short Cross type (BMC type xvi; Brooke 4; North 790), W inchester (PIN) *Swileman*
5148	Cnut	c. 1030–36	Short Cross type (BMC xvi; Brooke 4), Chester (LEIC), *Leofwine*
5149	Cnut	c. 1030–36	Short Cross (BMC xvi, Brooke 4), rev. inscription illegible. Cut halfpenny
5150	Cnut		'3/4-bust', London
5151	Cnut		Obv. badly struck and rev. illegible
5152	Harthacnut AD 1035–42	c. 1040–42	Fleur-de-lys (BMC type ii, Brooke 2), cut halfpenny Chester, *Leofnoth*
5153	Edward the Confessor AD 1042–66	c. 1042–44	Pacx type (BMC type iv, Brooke 4), Chester (LGESCESR), *Le[o]fwi*
5154*	Edward the Confessor AD 1042–66	c. 1042–44	Pacx type (BMC type iv; Brooke 4; North 813; Hild. D), cut half London (ON LV), ?(...RIC)
5155	Edward the Confessor AD 1042–66	c. 1046–48	Trefoil Quadrilateral type (BMC iii; Brooke 1), cut halfpenny, Chester (LEI), moneyer off flan.
5156*	Edward the Confessor AD 1042–66	c. 1048–50	Small Flan type (BMC type ii; Brooke 3; North 818; Hild. B), Southwark (SVÐ), *Elfpine*
5157*	Edward the Confessor AD 1042–66	c. 1059–62	Sovereign/Eagles type (BMC ix; Brooke 7; North 827; Hild. H), Chester (LEG, *Brunni[n]c* if SCBI 5, 334)
5158	Edward the Confessor AD 1042–66		Cut halfpenny, Chester (LEI), ...os
5159	?Anglo-Saxon		Penny
5160	William I	c. 1068–70?	Bonnet type (BMC ii; North 842). Fragment
5161*	William I	c. 1072–74?	Two Sceptres type (BMC iv, Brooke iv), Chester (CEI) *Col[...* ('-NCEI≡COL-'), cut halfpenny
5162	William I	c. 1072–74?	Cut halfpenny, Two Sceptres type (BMC iv, Brooke iv). No further details
5163*	William I	c. 1072–74?	Cut halfpenny, Two Sceptres type (BMC iv, Brooke iv), Chester (LIECE), moneyer lost
5164	William I	c. 1074–77?	Cut halfpenny, Two Stars type (BMC type v; North 845), mint uncertain
5165	William I	c. 1074–77?	Cut halfpenny, Two Stars type (BMC type v; North 845). No further details
5166	William I	c. 1074–77?	Cut farthing, Two Stars (BMC v; North 845)
5167*	William I	c. 1083–86?	PAXS type (BMC viii, North 848), W inchester (ÞINE), *Sprieclinc*
5168	William I	c. 1083–86?	PAXS type (BMC viii; North 848)
5169	Henry I AD 1100–1135	c. 1102	Profile/Cross Fleury type (BMC II), mint uncertain
5170	Henry I		Cut halfpenny (type not specified), London
5171	Stephen AD 1135–54	1135 – c. 1145	Cross moline 'Watford' type (BMC I), Chester (CES), *Ailmer. Conceivably what was described as the Henry I 'profile type' penny* 5170
5172		1135 – c. 1145	Cut farthing, Cross moline 'Watford' type (BMC type i, Brooke i)
5173	Stephen/Henry II		Rev. described as cross pattée with smaller crosses in angle, star in centre, moneyer unclear. *Either a poor description or that for a Tealby type of Henry II*
5174	Henry II	1158–80	Cross and crosslets ('Tealby'), further details unclear
5175	Henry II		Cross and crosslets ('Tealby'), further details unclear

Wt	*Axis*	*Reference*	*Collector*	*Museum*
1.09g	0°	Hume 1863, 293; Dolley 1961, no. 14; Chitty and Warhurst 1977, 66; Warhurst 1982, no. 651	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
1.09g	180°	Hume 1863, 293; Ecroyd Smith 1873b, 10; Dolley 1961, no. 15; Chitty and Warhurst 1977, 67; Warhurst 1982, no. 652	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
		Ecroyd Smith 1873a, 128; Harris Gibson 1877, 64	Fd 1872; Potter	
		Hume 1863, 293	Fd before 1863; Mayer	Liverpool Museum M4091: lost.
		Longbottom 1908, 15	Potter	Grosvenor Museum in 1908
		Hume 1863, 293	Fd before 1863	
?	?	Ecroyd Smith 1875, 97; Dolley 1961, no. 16	Fd 1870	?
'15.8gr'	0°	Harris Gibson 1877, 64; Longbottom 1908, 15; SCBI 5, 283	Fd 1870–77; Potter	Grosvenor Museum
0.47g	80°	Hume 1863, 293; Dolley 1961, no. 17; Chitty and Warhurst 1977, 68; Warhurst 1982, no. 695	Fd before 1863; Ecroyd Smith	Liverpool Museum; 18.11.74
		Harris Gibson 1879, 68	Fd 1878; Potter Collection	
0.44g	0°	Ecroyd Smith 1873c, 43; Ecroyd Smith 1874, 110; Dolley 1961, no. 18; Warhurst 1982, no. 734	Fd 1867; Ecroyd Smith	Liverpool Museum 18.11.74; rim damaged deliberate?; I 43 comments on very light weight.
?1.15g	?180'	Probably Ecroyd Smith 1870, 276; Ecroyd Smith 1873c, 51; Longbottom 1908, 15; Dolley 1961, no. 19; this coin is probably SCBI 5, 334 which has a 'Meols' patina	Fd 1869; Potter	Grosvenor Museum in 1908; and probably SCBI 5, 334 which has a 'Meols' patina
		Ecroyd Smith 1872, 144	Fd 1870	
1.66g, sheared in half and encrusted				Grosvenor Museum
		Ecroyd Smith 1870, 276; Ecroyd Smith 1873c, 51= Harris Gibson 1877, 64	Fd 1869; Potter	
		Ecroyd Smith 1870, 276; Harris Gibson 1877, 64	Fd 1869; Potter	
		Ecroyd Smith 1870, 276; Ecroyd Smith 1873c, 51; ?Harris Gibson 1877, 64	Fd 1869; Potter	
		Ecroyd Smith 1875; Harris Gibson 1877, 64	Fd 1874	
		Ecroyd Smith 1875, 75, 97 (?); Longbottom 1908, 16	Fd 1874; Potter	Grosvenor Museum in 1908
		Harris Gibson 1879, 68	Fd 1878	
		Longbottom 1908, 16	Potter	Grosvenor Museum in 1908
1.30g	0°	Chitty and Warhurst 1977, 69; Warhurst 1982, no. 891	Fd before 1867; Mayer	Liverpool Museum; M4092
		Hume 1863, 293; *Probably an early reference to* 5167	Fd before 1863	
		Longbottom 1908, 16	Fd between 1877 and 1908; Potter	Grosvenor Museum in 1908
		Longbottom 1908, 16	Found between 1877 and 1908; Potter	Grosvenor Museum in 1908
'20.4gr'	0°	SCBI 5, 430		Grosvenor Museum, ex. Willoughby Gardener Collection; reputed fd Meols, date of find and acquisition not recorded.
		Ecroyd Smith 1872, 144; *Almost certainly* S6000	Fd 1870 ?Potter	Grosvenor Museum '190'
		Ecroyd Smith 1872, 144. *Possibly* 5171	Fd 1870	
		Harris Gibson 1877, 64; *probably* Longbottom 1908, 16. =?S6001	Fd 1870–77; Potter	
		Harris Gibson 1877, 64; *probably* Longbottom 1908, 16.	Fd 1870–77; Potter	

No.	*Authority*	*Date*	*Type*
5176–77	Henry II		Cross and crosslets ('Tealby'), Ipswich (2 coins)
5178 (+)	Henry II		Cross and crosslets ('Tealby'), 'divided pennies' (number not specified)
5179	Henry II		?'Cross and crosslets' – Tealby type' cut halfpenny, '...ON LVND'
5180	Henry II		Cut farthing, Tealby, Colchester
5181–82	Henry II		Silver pennies (2), Tealby, Colchester
5183	'Rufus or Henry II'		?Cut half, inscriptions illegible
5184	Henry II 'Short Cross'		Class 1b2, London (LVNDE), *Ravl*
5185	Henry II		Short Cross, London (LVNDE), '*Roberde*' (misread, no such moneyer recorded)
5186	Henry II		Irregular local issue, Rhuddlan (RVLA), *Halli*
5187*	John 'Short Cross'		Class 5b2 orn,, Chichester (CICE), *Rauf*
5188*	John		Class 5b3 orn, Canterbury (C x N), *Samuel*
5189*	John		Class 5c, London (LVNDE), *Rauf*
5190	John		Short Cross penny, Class 5s, 5a/5b or 5b, Lincoln (NICO), *Tomas*
5191	John		Short Cross penny Class 5, Canterbury, *Arnaud*
5192	John		London (LVND), no further details
5193–94	Short Cross		Short Cross pennies (2), both London
5195	Henry II, Richard I, John or Henry III		Short Cross penny, London
5196	Henry II, Richard I, John or Henry III		Penny, London
5197	Henry II, Richard I, John or Henry III		Penny, London
5198	John		Short Cross penny, Class 5b or 5c, Ipswich, moneyer uncertain
5199–5211	Short Cross		Pennies (including Tealby type), 'Minted at London, Bristol, &c' (13). *The Bristol coin must belong to the 'Tealby' issue if correctly read*
5212	Richard I, John	1189–1216	Short Cross. Rev. '-NRIC.ON.' Probably moneyer *Henric* of London
5213–15	Henry II, Richard I, John or Henry III		AR pennies (3) (type not specified). 1 minted at London, 2 uncertain
5216–27	Henry II, Richard I, John or Henry III		AR pennies (12), 1 Bury St Edmunds
5228	Henry II, Richard I, John or Henry III		Cut penny, London
5229	Richard I, John or Henry III		Short Cross, cut half, Canterbury (CANT), ...*as*; possibly Henry III class 7, *Tomas*
5230	Henry II, Richard I, John or Henry III		Short Cross, cut half, mint uncertain *Willem*
5231	Henry II, Richard I, John or Henry III		Cut silver penny, London
5232	Henry II, Richard I, John or Henry III		Cut halfpenny, London
5233–35	Henry II, Richard I, John or Henry III		As last (3 cut pennies), three different mint names
5236–37	Henry II, Richard I, John or Henry III		Cut Short Cross halfpennies (2)
5238	Henry II, Richard I, John or Henry III		Short Cross cut halfpenny, folded in half
5239–40	Henry II, Richard I, John or Henry III		Cut halfpennies (2), mint unidentified

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Longbottom 1908, 16. *Almost certainly* S6002 and S6003	Potter	Grosvenor Museum in 1908
		Harris Gibson 1877, 64	Fd 1870–77; Potter	
'11gr'		Mayer Guard Book	Fd before 1867; Mayer	M4094. Liverpool Museum – lost.
		Ecroyd Smith 1872, 144–45	Fd 1871	
		Ecroyd Smith 1872, 144–45	Fd 1871	
'13gr'		Mayer Guard Book	Fd before 1867; Mayer	M4093. Liverpool Museum; lost.
		Harris Gibson 1877, 65. *Almost certainly* S6007	Fd 1870–77; Potter	
		Mayer Guard Book	Fd before 1867; Mayer	M4095. Liverpool Museum; lost.
		Harris Gibson 1877, 64; Harris Gibson 1877, 73, 74	Fd 1870–77; Potter	
1.29g	200°	Chitty and Warhurst 1977, 72; Warhurst 1982, no. 938	Fd before 1874; Ecroyd Smith	Liverpool Museum; 18.11.74
1.42g	340°	Chitty and Warhurst 1977, 70; Warhurst 1982, no. 933	Fd before 1874; Ecroyd Smith	Liverpool Museum; 18.11.74
1.06g	90°	Chitty and Warhurst 1977, 71; Warhurst 1982, no. 950	Fd before 1874; Ecroyd Smith	Liverpool Museum; 18.11.74
		Ecroyd Smith 1871a, 128; Ecroyd Smith 1873c, 55	Fd 1870	
		Ecroyd Smith 1875, 97–8	Fd 1874	
		Harris Gibson 1877, 64. *Possibly duplicate reference to* 5196–97 *and* S6011	Fd 1870–77; Potter	
		Ecroyd Smith 1873b,11	Fd 1861	
		Ecroyd Smith 1873b, 13	Fd 1863	
		Ecroyd Smith 1872, 144–45; *Possibly duplicate reference to* 5192	Fd 1871	
		Ecroyd Smith 1872, 144–45; *Possibly duplicate reference to* 5192	Fd 1871	
		Harris Gibson 1879, 68	Fd 1878	
		Hume 1863, 293; *probably duplicate reference for material that entered Mayer Collection and other pre-1863 finds above*	Fd before 1863	
		Harris Gibson 1877, 64	Fd 1870–77; Potter	
		Ecroyd Smith 1869a, 213 *Note that 'a few odd halved pieces are included in this [penny] designation'*; Ecroyd Smith 1873c, 50. *Possibly includes* 5238	Fd 1868	
		Ecroyd Smith 1870, 276–277; Ecroyd Smith 1873c, 51. *Some may be duplicates of pieces listed in Harris Gibson 1877, 64 as coins of William I are duplicated in both references. Probably also duplicates other references*	Fd 1869	
		Ecroyd Smith 1872, 144–45	Fd 1871	
		Mayer Guard Book	Fd before 1867; Mayer	M4098a. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4098b. Liverpool Museum; lost
		Ecroyd Smith 1872, 144–45	Fd 1871	
		Ecroyd Smith 1872, 144–45	Fd 1871	
		Harris Gibson 1877, 64. *Probably duplicate other references in catalogue*	Fd 1870–77; Potter	
		Harris Gibson 1877, 75	Fd before 1865	
		Harris Gibson 1879, 68	Fd 1878	
		Ecroyd Smith 1872, 144–45	Fd 1871	

No.	*Authority*	*Date*	*Type*
5241	Henry II, Richard I, John or Henry III		Cut silver halfpenny '*...ard*'
5242–43	Henry II, Richard I, John or Henry III		Short Cross, cut halfpennies (2)
5244	Henry II, Richard I, John or Henry III		Short Cross, cut farthing
5245	Henry II, Richard I, John or Henry III		AR penny (type not specified)
5246–56	Henry II–Edward III		'11 quarters of pennies and halfpennies'
5257–60	Henry II–Edward III		2 silver pennies and 2 cut halfpennies, 3 London mint, 1 Durham.
5261*	Henry III		Short Cross class 8 penny, London (LVN), *Nichole*
5262	Henry III		Cut halfpenny, mint uncertain. *Possibly Short Cross*
5263*	LONG CROSS Henry III – Early Edward I		Lawrence class 3ab, Hereford (HERE), *Ricard*
5264*	Henry III – Early Edward I		Cut farthing, Lawrence class 5, mint and moneyer uncertain
5265*	Henry III – Early Edward I		Lawrence class 5b, Canterbury (CANT), *Nicole*
5266	Henry III – Early Edward I		Class 5b, London (LVND), *Nicole*
5267	Henry III		Long Cross. London (LVNDE), *Henri*
5268	Henry III		Long Cross penny, Class 5g Canterbury (CANT), *?Ambroci*
5269	Henry III		Long Cross penny, Canterbury (CANT), *Nicole*
5270	Henry III		Long Cross penny, Canterbury, *Nicole*
5271	Henry III		Long Cross penny, Canterbury, *Nicole*
5272	Henry III		London (...VND), *moneyer uncertain*
5273	Henry III		Long Cross penny, 'Berwick' =?Bury St Edmunds (*Beri* in class 5d)
5274	Henry III		Penny, 'Berwick' =?Bristol
5275	Henry III		Long Cross penny, Bristol. *Probably duplicate reference to last*
5276	Henry III		Long Cross penny, Durham
5277	Henry III		Long Cross penny, Hereford
5278	Henry III		Penny Long Cross, Lincoln
5279	Henry III		Long Cross penny, uncertain mint, Sibcat [sic]
5280–5304	Henry III		Long Cross pennies (25), London. *Undoubtedly includes Mayer pieces*
5305–11	Henry III		Long Cross pennies (7), Canterbury. *Hume (1863) often lists cut halfpennies with whole pennies, failing to make their existence explicit*
5312	Henry III		Long Cross penny 'ING WAL'
5313–5321	Henry III		AR pennies (9) *Presumably Long Cross though attribution to Henry III might imply Short Cross in some C19th publications*
5322–27	Henry III		AR pennies (6), 2 London, 1 Bristol, 1 Gloucester, 2 uncertain
5328	Henry III		Long Cross penny
5329–59	Henry III		Long Cross pennies (31), details uncertain/illegible.
5360*			Long Cross cut halfpenny. Class 1b–3, London
5361*			Long Cross cut halfpenny. Class 1b–3, London
5362*			Long Cross cut halfpenny. Class 1–3, London, *[Nic]ole*

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Ecroyd Smith 1872, 144–45	Fd 1871	
		Mayer Guard Book	Fd before 1867; Mayer	M4096. Liverpool Museum – lost.
		Mayer Guard Book	Fd before 1867; Mayer	M4097. Liverpool Museum; lost
		Ecroyd Smith 1866, 216	Fd 1865	
		Ecroyd Smith 1870, 276–7; Ecroyd Smith 1873c, 51. *Some may be duplicates of pieces listed Harris Gibson 1877, 64 as coins of William I are duplicated in both references. Probably include pieces here listed in Mayer Collection*	Fd 1869	
		Ecroyd Smith 1871a, 128; Ecroyd Smith 1873c, 55	Fd 1870	
		Hume 1863, 293, pl. XXVII, 17.	Fd before 1863	
		Ecroyd Smith 1866, 216; Ecroyd Smith 1873b, 15	Fd 1865	
1.16g	160°	Chitty and Warhurst 1977, 73; Warhurst 1982, no. 1013	Fd before 1867; Mayer	Liverpool Museum; M4111
0.27g	210°	Chitty and Warhurst 1977, 82; Warhurst 1982, no. 1041	Fd before 1867; Mayer	Liverpool Museum; M4127
1.43g	0°	Chitty and Warhurst 1977, 74; Warhurst 1982, no. 1006	Fd before 1867; Mayer	Liverpool Museum; M4108
		Harris Gibson 1877, 65. *Almost certainly* S6021, *or possibly* S6017	Fd 1870–77; Potter	
		Mayer Guard Book	Fd before 1867; Mayer	M4102. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4109. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4108. Liverpool Museum; lost
		Harris Gibson 1879, 68	Fd 1878	
		Ecroyd Smith 1875, 97–8. *Possibly duplicate reference to* 5266	Fd 1874	
		Harris Gibson 1877, 65	Fd 1870–77; Potter	
		Ecroyd Smith 1873b,11; Hume 1863, 293	Fd 1861	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Hume 1863, 293	Fd before 1863	
		Hume 1863, 293	Fd before 1863	
		Hume 1863, 293. *Probably duplicate reference to* 5263	Fd before 1863	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Mayer Guard Book	Fd before 1867; Mayer	M4110. Liverpool Museum; lost
		Hume 1863, 293. *Probably includes* 5267 *and other Mayer pieces*	Fd before 1863	
		Hume 1863, 293. *Probably includes Mayer pieces* 5266, 5268, 5269 *and possibly* S6019	Fd before 1863	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1870, 276–7; Ecroyd Smith 1873c, 51. *Some may be duplicates of pieces listed Ecroyd Smith 1873c, 64 as coins of William I are duplicated in both references*	Fd 1869	
		Ecroyd Smith 1869a, 213; Ecroyd Smith 1873c, 50; latter implies some may be cut halves	Fd 1868	
		Harris Gibson 1877, 75	Fd 1876/7; Potter Collection	
		Hume 1863, 293. Undoubtedly including Mayer and Potter Collection pieces	Fd before 1863	
0.56g				Grosvenor Museum. Labelled 'Meols'
0.61g				Grosvenor Museum. Labelled 'Meols'
0.71g				Grosvenor Museum. Labelled 'Museum cat. 188, ?Meols'

No.	*Authority*	*Date*	*Type*
5363*			Long Cross cut halfpenny. Class 3c, *Nicole*
5364*			Class 1–4, cut halfpenny, reference describes as '*GILRE*', probably Gilebert, Canterbury
5365*			Long Cross cut halfpenny. Class 2/3. . *[Jo]hn, recte Ion*?
5366*			Class 1–4, cut halfpenny. Mint?, *Henri*
5367*			Long Cross cut halfpenny. Class 1–4, ?London
5368*			Lawrence class 3, cut halfpenny, Northampton (NORH), *Philip*
5369*			Long Cross cut halfpenny. Class 3, Exeter. .*Wal.]ter.*
5370			Lawrence class 3, cut halfpenny, uncertain mint, *Willem*
5371*			Lawrence class 3, cut halfpenny, uncertain mint, *Henri*
5372*			Lawrence class 3, cut halfpenny, uncertain mint, *Philip*
5373*			Long Cross cut halfpenny, Class 3/4 London, *Nic[ole]*
5374*			Long Cross cut halfpenny, Class 3/4, London, *Nicole*
5375			Class 3/4 cut halfpenny, London (LV), *[Hen]ri*
5376*			Long Cross cut halfpenny, Class 3, Oxford, *Gefrei*
5377			Long Cross cut halfpenny, Class 3, York if moneyer is *[Ala]in*
5378*			Lawrence class 3 or 5, cut farthing, uncertain mint *(Rica)rd*
5379*			Long Cross cut halfpenny, Class 3/4, uncertain mint, *Nicole*
5380			Long Cross cut halfpenny, Class 4/5, Bury St Edmunds
5381*			Lawrence class 5, cut halfpenny, London (LVNDE), moneyer uncertain
5382			Long Cross cut halfpenny, Class 5, London, *Nicole*
5383*			Long Cross cut halfpenny, Class 5, London, *Hen[ri]*
5384*			Long Cross cut halfpenny, Class 5, London, *Wil[lem]*
5385*			Long Cross cut halfpenny, Class 5, London
5386*			Long Cross cut halfpenny, Class 5, London
5387*			Long Cross cut halfpenny, Class 5, Mint? ...*]n*
5388*			Lawrence class 5b, cut halfpenny, London (...NDE), *Henri*
5389*			Long Cross cut halfpenny, Class 5?, London, *Ricad*
5390	Henry III		Long Cross cut half, London, (...DON[sic]) *Dav[...*
5391*			Long Cross cut halfpenny, Class ?, London, *He[nri].*
5392	Henry III		Long Cross cut half, London (LVND), *Henri*
5393	Henry III		Long Cross cut half, London (LVNDE), *Willem*

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Originally displayed at Warrington Museum with another Meols coin which has been lost since the 1970s and of which there is no record.		Warrington Museum 149'04
0.63g		Harris Gibson 1877, 65	Fd 1870–77; Potter	Grosvenor Museum 'Meols 12'
0.41g				Grosvenor Museum. Labelled 'Meols 9'
0.72g		Harris Gibson 1877, 65. *This reference applies equally to* S6024	Fd 1870–77; Potter	Grosvenor Museum. 'Meols 13'
0.62g				Grosvenor Museum. Labelled 'Meols 17'
0.52g	40°	Chitty and Warhurst 1977, 76; Warhurst 1982, no. 1022	Fd before 1867; Mayer	Liverpool Museum; M4102a
0.56g				Grosvenor Museum. Labelled 'Meols'
0.47g	290°	Chitty and Warhurst 1977, 78; Warhurst 1982, no. 1039	Fd before 1867; Mayer	Liverpool Museum; M4117
0.54g	340°	Chitty and Warhurst 1977, 75; Warhurst 1982, no. 1034	Fd before 1867; Mayer	Liverpool Museum; M4120
0.63g	270°	Chitty and Warhurst 1977, 77; Warhurst 1982, no. 1036	Fd before 1867; Mayer	Liverpool Museum; M4103
0.57g				Grosvenor Museum. Labelled 'Meols 8'
0.41g				Grosvenor Museum. Labelled 'Meols 9'
0.49g		Harris Gibson 1877, 65	Fd 1870–77; Potter	Grosvenor Museum 'Meols 11'
0.51g				Grosvenor Museum. Labelled 'Meols 15'
				Grosvenor Museum. Labelled 'Meols'
0.26g	90°	Chitty and Warhurst 1977, 81; Warhurst 1982, no. 1037	Fd before 1867; Mayer	Liverpool Museum; M4127, see also 5439–5440, now lost.
0.39g chipped				Grosvenor Museum. Labelled 'Meols'
0.64g				Grosvenor Museum. Labelled 'Meols'
0.57g	210°	Chitty and Warhurst 1977, 80; Warhurst 1982, no. 1021	Fd before 1867; Mayer	Liverpool Museum; M4105
0.68g				Grosvenor Museum. Labelled 'Meols 16'
0.65g				Grosvenor Museum. Labelled 'Meols 11'
0.69g				Grosvenor Museum. Labelled 'Meols 16'
0.73g	20°			Grosvenor Museum. Labelled 'Meols 15'
0.57g	20°			Grosvenor Museum. Labelled 'Meols 7'
0.54g				Grosvenor Museum. Labelled 'Meols 14'
0.65g	0°	Chitty and Warhurst 1977, 79; Warhurst 1982, no. 1015	Fd before 1867; Mayer	Liverpool Museum; M4107
				Grosvenor Museum. Labelled 'Meols'
		Mayer Guard Book	Fd before 1867; Mayer	M4118. Liverpool Museum; lost
0.62g				Grosvenor Museum. Labelled 'Meols 18'
		Mayer Guard Book	Fd before 1867; Mayer	M4107. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4102a. Liverpool Museum; lost

No.	*Authority*	*Date*	*Type*
5394	Henry III		Long Cross cut half, London (LVNDE), *Ricard*
5395	Henry III		Long Cross cut half, London (LVNDE), *Moneyer*?
5396	Henry III		Long Cross cut half, London (LVNDE), *Moneyer*?
5397	Henry III		Cut halfpenny, London
5398	Henry III		Cut halfpenny, London
5399			Cut halfpenny, Bristol (BRVST), *moneyer*?
5400	Henry III		Long Cross cut half, Lincoln (LINC)
5401	Henry III		Long Cross cut half, ?York
5402	Henry III		Long Cross cut half, ?York
5403	Henry III		Long Cross cut halfpenny, mint 'OVL', *Will[em]*
5404	Henry III		Long Cross cut half, mint uncertain, *[Phi]lip*
5405	Henry III		Long Cross cut half, 'on Cole', misreading of moneyer *Nicole*?
5406	Henry III		Long Cross cut half ...LVC...
5407			Cut halfpenny, rev. described as '.GI.TER.'
5408	Henry III		Cut halfpenny ...NIC...
5409	Henry III		Long Cross cut halfpenny, uncertain mint
5410	Henry III		Cut halfpenny, uncertain mint
5411	Henry III		Cut halfpenny, uncertain mint '...*still folded in half for purpose of division [into farthings]*.'
5412–5413			'Two other halves' [arrangement of reference implies both London mint]
5414–15	Henry III		Cut Long Cross halfpennies (2)
5416*			Long Cross cut halfpenny, Class? Mint and moneyer uncertain
5417*			Long Cross cut halfpenny, Class? Mint and moneyer uncertain
5418–20	Henry III		3 cut halfpennies, uncertain mint
5421	Henry III		Cut halfpenny, uncertain mint
5422–31	Henry III		Long Cross cut halves (10), mints and moneyer uncertain
5432–46			Cut halves (15)
5447–50			Cut halfpennies (4), mint and moneyers unclear from reference
5451–53	Henry III		Long Cross cut quarters (3), mint and moneyers uncertain
5454	Henry III		Cut farthing from Long Cross penny, London
5455	Henry III		Cut farthing, London
5456	Edward I		New coinage penny, Class 10ab, Bury St Edmunds
5457	Edward I		New coinage, penny, Class 10ab, Bury St Edmunds
5458*	Edward I		Class 10ab5, penny, London
5459	Edward I		New coinage, penny, Bristol
5460	Edward I		New coinage, penny, Bristol (1)
5461	Edward I		New coinage, penny, Bristol
5462	Edward I		Penny, Bristol
5463–64	Edward I		Pennies (2), Bristol
5465–66	Edward I		Two coins, Lincoln (LINCOL)

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Mayer Guard Book	Fd before 1867; Mayer	M4104. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4103. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4105. Liverpool Museum; lost
		Ecroyd Smith 1874, 96	Fd 1873	
		Ecroyd Smith 1875, 97–8	Fd 1874	
		Harris Gibson 1877, 65	Fd 1870–77; Potter	
		Mayer Guard Book	Fd before 1867; Mayer	M4116. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4112. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4113. Liverpool Museum; lost
		Hume 1863, 293, pl. XXVII, 11	Fd before 1863	
		Mayer Guard Book	Fd before 1867; Mayer	M4119. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4121. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4106. Liverpool Museum; lost
		Harris Gibson 1877, 65	Fd 1870–77; Potter	
		Ecroyd Smith 1875, 97–8	Fd 1874	
		Ecroyd Smith 1875, 97–8	Fd 1874	
0.67g		*Very likely duplicate to text reference*		Grosvenor Museum
		Ecroyd Smith 1875, 97–8. Perhaps S6025	Fd 1874	
		Harris Gibson 1877, 65. *Almost certainly duplicate references to* 5397 *and* 5398	Fd 1870–77; Potter	
		Harris Gibson 1877, 75. *May include* 5403	Fd before July 1865; Honorary Secretary	
0.65g				Grosvenor Museum. Labelled 'Meols 6'
0.39g abraded				Grosvenor Museum. Labelled 'Meols 3'
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1874, 96	Fd 1873	
		Mayer Guard Book. *Duplicate reference to such coins as* 5397, 5398, 5408–5411?	Fd before 1867; Mayer	M4122–26. Liverpool Museum; lost
		Harris Gibson 1877, 65. *Likely duplicate records of* 5418–5421	Fd 1870–77; Potter	
		Harris Gibson 1877, 65. *Likely duplicate records of* 5418–5421	Fd 1870–77; Potter	
		Mayer Guard Book	Fd before 1867; Mayer	M4127. Liverpool Museum; lost. See 5365, which is extant.
		Hume 1863, 293, pl. XXVII, 12. *Probably duplicate reference to* 5378, 5451–5453	Fd before 1863	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1875, 97–8	Fd 1874	
		Harris Gibson 1879, 68	Fd 1878	
1.29g	75°	Chitty and Warhurst 1977, 86	Fd before 1867; Mayer	Liverpool Museum; M4129
		Hume 1863, 293. *Possible duplicate reference to* 5460	Fd before 1863	
		Mayer Guard Book. *Possible duplicate reference to* 5459	Fd before 1867; Mayer	M4146. Liverpool to Museum; lost
		Ecroyd Smith 1866, 216; Ecroyd Smith 1873b, 15	Fd 1865	
		Harris Gibson 1877, 65. *Probably duplicate reference* 5463-5464	Fd 1870–77; Potter	
		Ecroyd Smith 1872, 144–5. *Likely duplicate reference to* 5462	Fd 1871	
		Harris Gibson 1877, 65	Fd 1870–77; Potter	

No.	*Authority*	*Date*	*Type*
5467	Edward I–III		Penny Class10cf–15d or Edward III 'Florin' coinage, Canterbury EDWAR ANG DNS HYB
5468	'Edward I to Edward III'		'Short Cross', but has an impossible legend for Canterbury 'CIVITAS CANTOR'
5469*	Edward I or II		Class 10cf2 penny, Canterbury
5470*	Edward II		Class 11b2 penny, London
5471	Edward II		Long Cross Class 11b1 penny, Durham
5472	Edward II		Penny, Class 13–15c, Durham (DVNELM), Bishop Beaumont, mm. lion and fleur-de-lys
5473*			Class 15c penny, London
5474–85			London (LONDON), 12 coins
5486–5515	Edward I/II		New coinage pennies (30), London
5516–28	Edward I–III		New coinage pennies (13), London
5529–31	Edward I–III		New coinage pennies (3), all London
5532	Edward I–III		Penny, London, 'EDW.R'
5533–35	Edward I–III		Pennies (3), London
5536–37	Edward I–III		Pennies (2), London
5538	Edward I–III		New coinage penny, London
5539	Edward I–III		New coinage penny, Berwick (1)
5540	Edward I/II		New coinage penny, Berwick
5541	Edward I or II		Penny, Berwick
5542–43	Edward I–III		Pennies (2), Canterbury
5544–47			Pennies (4), Canterbury (CANTOR)
5548–61	Edward I/II		New coinage, pennies (14), Canterbury
5562–63	Edward I–III		New coinage, pennies (2), Canterbury
5564–74			Pennies (11). Obv. 'EDWAR', Canterbury (CANTOR)
5575–78	Edward I/II		New coinage, pennies (4), Chester
5579	Edward I–III	1279 – 1377	New coinage, Durham (...EME)
5580			Durham (DVNEME)
5581	Edward I–III		New coinage, penny, Durham (DVREMIE) (1)
5582–84	Edward I/II		New coinage, pennies (3), Durham
5585	Edward I or III		New coinage, penny, York
5586	Edward I or III		New coinage, penny, York (1)
5587	Edward I or III		New coinage, penny, ?York (1)
5588			York (EBORACI)
5589–91	Edward I		New coinage, pennies (3), York, Canterbury, Durham
5592–93	Edward I–III		AR pennies (2), 1 London, 1 Lincoln
5594–95	Edward I–III		New coinage, pennies (2), London and Canterbury
5596	Edward I–III		New coinage, penny. CIVI[...

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Harris Gibson 1877, 75. *Duplicate reference to* 5548–5561?	Fd before July 1865; Honorary Secretary	
		Mayer Guard Book	Fd before 1867; Mayer	M4098a. Liverpool Museum; lost
1.26g	330°	Chitty and Warhurst 1977, 88. *Probably duplicate reference to* 5516–5528	?	Liverpool Museum; no accession number
1.25g	135°	Chitty and Warhurst 1977, 87	Fd before 1867; Mayer	Liverpool Museum; M4128
1.08g				Grosvenor Museum. Labelled '?Meols Museum 176'
		Harris Gibson 1877, 66	Fd 1870–77; Potter	
1.27g	60°	Chitty and Warhurst 1977, 89. *Probably duplicate reference to* 5516–5528	?	Liverpool Museum; No accession number
		Harris Gibson 1877, 65	Fd 1870–77; Potter	
		Hume 1863, 293. *Almost certainly includes* 5516–5528	Fd before 1863	
		Mayer Guard Book. *Probably duplicate reference to* 5469 *and* 5473	Fd before 1867; Mayer	M4130–42. Liverpool Museum; lost
		Ecroyd Smith 1873b, 11. *Probably duplicate reference to* 5533–5535	Fd 1862	
		Harris Gibson 1877, 75	Fd before July 1865; Honorary Secretary	
		Hume 1863, 362. *Possible duplicate reference to* 5529–5531	Fd 1862?; Ecroyd Smith	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1873b, 17	Fd 1866	
		Mayer Guard Book. *Possible duplicate reference to* 5540	Fd before 1867; Mayer	M4145. Liverpool Museum; lost
		Hume 1863, 293. *Possible duplicate reference to* 5539	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Harris Gibson 1877, 65. *Possible duplicate reference to* 5542–5543	Fd 1870–77; Potter	
		Hume 1863, 293. *Probably duplicate reference to* 5562–5563	Fd before 1863	
		Mayer Guard Book. *Probably duplicate reference to* 5548–5561	Fd before 1867; Mayer	M4143–4. Liverpool Museum; lost
		Harris Gibson 1877, 66. *Possible duplicate reference to* 5542–5543	Fd 1870–77; Potter	
		Hume 1863, 293	Fd before 1863	
		Harris Gibson 1877, 65. *Probably* S6030	Fd 1870–77; Potter	
		Harris Gibson 1877, 65. *Probably* S6029	Fd 1870–77; Potter	
		Mayer Guard Book. *Almost certainly duplicate reference to* 5582–5584	Fd before 1867; Mayer	M4150. Liverpool Museum; lost
		Hume 1863, 293. *Almost certainly duplicate reference to* 5581 *and* 5646	Fd before 1863	
		Hume 1863, 293. *Almost certainly duplicate reference to* 5586	Fd before 1863	
		Mayer Guard Book. *Almost certainly duplicate reference to* 5585	Fd before 1867; Mayer	M4148. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4149. Liverpool Museum; lost
		Harris Gibson 1877, 65. *Probably* S6037	Fd 1870–77; Potter	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1869a, 213; Ecroyd Smith 1873c, 50, which implies some may be cut halves	Fd 1868	
		Ecroyd Smith 1873b, 11	Fd 1861	
		Mayer Guard Book	Fd before 1867; Mayer	M4152. Liverpool Museum; lost

No.	*Authority*	*Date*	*Type*
5597–5608	Edward I–III		AR pennies (12)
5609	Edward I		New coinage, penny
5610	Edward I–III		Penny, much defaced
5611	Edward I–III		New coinage, penny. Rev. illegible (1)
5612	Edward I–III		Penny, 'badly preserved'
5613*			Class 3b halfpenny, London
5614*			Class 4 halfpenny, London
5615*	Edward I		Class 9 halfpenny, London
5616	Edward I–III		New coinage halfpenny, London (1)
5617*			Halfpenny, London (LONDON)
5618	Edward I–III		AR halfpenny, London
5619	Edward I/II		New coinage, halfpenny, London
5620	Edward I		Halfpenny, London
5621–22	Edward I–III		Halfpennies (2), London
5623	Edward I–III		AR halfpenny
5624	Edward I–III		Cut halfpenny, Canterbury
5625–27	Edward I		Cut halfpennies (3), London (1), illegible (2)
5628–29	Edward I/II		New coinage, halfpennies (2), mint illegible
5630*	Edward I	1279–80 onward	Class 2 Farthing, London
5631			Farthing Class 3de, LINCOL
5632			Farthing, London
5633	Edward I–III		AR farthing, London
5634	Edward I–III		Farthing, London.
5635–37	Edward I–III		AR farthings (3), 2 London
5638–39	Edward I–III		Farthings (2), London
5640–41	Edward I/II		New coinage, farthings (2), mint uncertain
5642	Edward I–III		Halfpenny, cut in half, London
5643	Edward I–III		Cut farthing, uncertain mint
5644	Edward I–III		AR cut quarter of a halfpenny
5645	Edward II–III		Penny, obv. 'EDWAR R.', Durham (DVNELM)
5646	Edward II–III		New coinage, penny, Durham (DVNELME) (1)
5647	Edward III	1327–77	Gold half noble. *'Known only from description, having been disposed of by the finder to a Jew pedlar.'*
5648-49	Edward III		Quarter-noble, London, mm. 'cross' (2 coins)
5650	Edward III		Groat, London
5651	Edward III		Half-groat, London, mm. 'cross'
5652*	Edward III		Penny, Pre-treaty Series C, annulet centre of pellets, London (Wren 1995, 89)

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Ecroyd Smith 1870, 276–7; Ecroyd Smith 1873c, 51. *Some may be duplicates of pieces listed Harris Gibson 1877, 64, as coins of William I are duplicated in both references*	Fd 1869	
		Harris Gibson 1877, 75	Fd 1876/7; Potter	
		Ecroyd Smith 1875, 97–8	Fd 1874	
		Mayer Guard Book	Fd before 1867; Mayer	M4151. Liverpool Museum; lost
		Harris Gibson 1877, 75	Fd before July 1865; Honorary Secretary	
0.64g	330°	Chitty and Warhurst 1977, 84. *Possible duplicate reference to* 5619	Fd before 1867; Mayer	Liverpool Museum; M4154
0.59g	270°	Chitty and Warhurst 1977, 85. *Possible duplicate reference to* 5619	Fd before 1867; Mayer	Liverpool Museum; M4153
0.61g				Grosvenor Museum. Labelled 'Meols 6'
		Mayer Guard Book. *Possible duplicate reference to* 5619	Fd before 1867; Mayer	M4155. Liverpool Museum; lost
		Harris Gibson 1877, 65. *Possible duplicate reference to* S6034 *or* S6035	Fd 1870–77; Potter	Probably Grosvenor Museum no. 180
		Ecroyd Smith 1869a, 214; Ecroyd Smith 1873c, 50	Fd 1868	
		Hume 1863, 293. *Likely duplicate reference to* 55613, 5614 or 5616	Fd before 1863	
		Anon 1879, 68	Fd 1878	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1870, 276–7; Ecroyd Smith 1873c, 51. *Some may be duplicates of pieces listed Harris Gibson 1877, 64 as coins of William I are duplicated in both references*	Fd 1869	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Hume 1863, 293	Fd before 1863	
0.40g	75°	Chitty and Warhurst 1977, 83. *Probably duplicate reference to* 5542–5543	Fd before 1867; Mayer	Liverpool Museum; M4156
		Harris Gibson 1877, 65. *If cut rather than whole farthings, may be duplicate references to* 5642–5643	Fd 1870–77; Potter	
		Harris Gibson 1877, 65. *If cut rather than whole farthings, may be duplicate references to* 5642–5643	Fd 1870–77; Potter	
		Ecroyd Smith 1869a, 214; Ecroyd Smith 1873c, 50	Fd 1868	
		Harris Gibson 1877, 66	Fd 1870–77; Potter	
		Ecroyd Smith 1870, 276–7; Ecroyd Smith 1873c, 51. *Some may be duplicates of pieces listed Harris Gibson 1877, 64, as coins of William I are duplicated in both references*	Fd 1869	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Hume 1863, 293. Possible duplicate reference to 5630	Fd before 1863	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1872, 144–5	Fd 1871	
		Ecroyd Smith 1869a, 214; Ecroyd Smith 1873c, 50	Fd 1868	
		Harris Gibson 1877, 66	Fd 1870–77; Potter	
		Mayer Guard Book. *Almost certainly duplicate reference to* 5582–5584	Fd before 1867; Mayer	M4147. Liverpool Museum; lost
		Hume 1863, 294	Fd before 1863	
		Longbottom 1908, 16; one is presumably that referred to in Harris Gibson 1880, 143	?Fd 1879; Potter	In Grosvenor Museum 1908
		Hume 1863, 294	Fd before 1863	
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
0.96g				Grosvenor Museum. Labelled '?Meols Museum 182'

No.	*Authority*	*Date*	*Type*
5653*	Edward III		Penny. Pre-treaty Series C, annulet centre of pellets. London (W ren 1995, 89)
5654	'Edward III'		New coinage penny, London (1)
5655	'Edward III'		New coinage, penny, Durham (DVREINE) (1)
5656	Edward III		Penny, Treaty period *(Based on use of Hawkins by reference)*, York (EBOR...), rev. quatrefoil in centre of cross
5657			As last, but described as much worn, mint discernable only from quatrefoil. *Possibly another reference to the last coin*
5658	Edward III		Penny, obv. 'EDWARDVS'
5659			As last
5660	Edward III		Penny, mint uncertain
5661-62	Edward III		Halfpennies (2), London
5663	Richard II	1377–99	Penny, York, 'Usual bust' ?=not local dies *Possibly one of the coins listed by Hume (next reference)*
5664–65	Richard II		Pennies (2)
5666	Richard II		Halfpenny (clipped), York. *Presumably a clipped penny; halfpennies are not listed for York in either Richard II or III reign. Probably the same coin as in the next reference*
5667	Richard II		'Halfpenny', York. *Presumably a clipped penny; halfpennies are not listed for York in either Richard II or III reign. Probably the same coin as the last reference*
5668–69	Henry IV, V, VI		Pennies (2), York
5670	Henry IV, V, VI		Penny, base counterfeit. No legend on either obv. or rev.
5671	Henry VI	1422–38	Halfpenny, Calais
5672	Henry VII		Groat class 2a–4b, London
5673	Henry VIII		Half groat, Canterbury
5674	Henry VIII		Halfpenny/farthing, London *Described as a farthing in reference*
5675–76	Mary [?and Philip]	1553–58	Groat (possibly two specimens)
5677–78	Philip and Mary	1554–58	Groats (2)
5679			Sixpence *Described in reference as groat, but described two bust type struck for 6d and 1/- only*
5680	Elizabeth I	1560–1	Shilling, mm. 'Martlet'
5681		1591–95	Shilling, mm. Tun
5682		1565	Sixpence, mm. Rose
5683		1568	Sixpence
5684		1570	Sixpence (clipped)
5685		1569–71	Sixpence, mm. Castle
5686			Sixpence, 1572
5687			Sixpence, 1575
5688			Sixpence, 1581
5689–90			Groats (2), date illegible
5691			Silver threepence, 1565, mm.'a', coronet
5692			Threepence
5693–94			Threepences (2), 1578
5695	?Elizabeth I		Threepence/halfgroat
5696–97	Elizabeth I		Halfgroats (2), 1563
5698			'Two-penny piece'
5699			Penny, '1st issue'

Wt	*Axis*	*Reference*	*Collector*	*Museum*
1.09g				Grosvenor Museum. Labelled '?Meols Museum 186'
		Mayer Guard Book	Fd before 1867; Mayer	M4159. Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4160. Liverpool Museum; lost
		Harris Gibson 1877, 66	Potter	
		Ecroyd Smith 1873a, 130	Fd 1872	
		Harris Gibson 1877, 66	Fd 1870–77; Potter	
		Harris Gibson 1877, 66	Fd 1870–77; Potter	
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294. *Almost certainly duplicate reference to 5667*	Fd before 1863	
		Mayer Guard Book. *Almost certainly duplicate reference to 5666*	Fd before 1867; Mayer	M4162. Liverpool Museum; lost
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Harris Gibson 1877, 66	Potter	
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
		Hume 1863, 294	Fd before 1863	
		Mayer Guard Book	Fd before 1867; Mayer	M4161. Liverpool Museum; lost
		Ecroyd Smith 1873b, 11; presumably same coin as Longbottom 1908, 16. *Probably duplicate reference to 56771–5678*	First reference implies Ecroyd Smith Collection, find 1861; latter reference clearly Potter	In Grosvenor Museum 1908
		Hume 1863, 294. *Probably duplicate reference to 5675–5676*	Fd before 1863	
		Hume 1863, 294	*Fd before 1863*	
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
		Hume 1863, 294	Fd before 1863	
		Harris Gibson 1877, 66	Potter. Found 1870–77 at Great Meols	
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Mayer Guard Book. *Possibly duplicate reference to 5692*	Fd before 1867; Mayer	M4163 Liverpool Museum.
		Ecroyd Smith 1873b, 17. *Possible duplicate reference to 5691*	Fd 1866	Found at Great Meols village
		Hume 1863, 294	Fd before 1863	
		Ecroyd Smith 1873b, 11	Fd 1862	
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908

No.	*Authority*	*Date*	*Type*
5700			Penny, '2nd issue'
5701		No mintmark described	Penny
5702	Elizabeth I/James I		Three pence
5703	James I		Gold, double crown
5704			Shilling
5705			Shilling
5706			Sixpence
5707			Copper farthing
5708			Copper farthing
5709	Charles I	1645	Shilling, mm. eye
5710		1641–43	Shilling, mm. triangle in circle
5711			Shilling, mintmark uncertain
5712			Shilling, group C/D
5713		1645	Sixpence, Tower (under Parliament)
5714–17			Copper 'Rose' farthings (4), 3 in Mayer Collection, mm. crescent (2), mm.? (1)
5718	Charles II	1683	Shilling
5719		1660–62	Hammered silver twopence
5720		1672–75	Halfpenny
5721–25		1672–79	Copper farthings (5)
5726–27		1672–79	Farthings (2)
5728		1673 or 5	Farthing
5729	James II England		English halfpenny described as *'Pewter* with *brass* plug in centre. Ob. – Head of James II' '...Rev. – Plain'.
5730–59		William III and Mary II	Guineas (estimated 30 pieces)
5760		1693	Halfpenny
5761		1694	Halfpenny
5762–63		1694	Halfpennies (2)
5764–65		1694	Farthings (2)
5766	William III	1697	Shilling
5767–70			Halfpennies (4), 1698, 1699, 1701
5771		1695–1701	Halfpenny. Very worn.

IRELAND

5772*	Sihtric?		Cut halfpenny
5773	?Hiberno-Norse		Penny 'thick, of rude execution' Dolley (1962, 201) suggests it might be Hiberno-Norse
5774*	John	c. 1204/5–10?	First coinage. Dot $^{3}/_{4}$ m. Dublin (DIVE), *Roberd*
5775		c. 1210/11?	Dot $^{3}/_{4}$ 0. Limerick (LIME), *Willem*
5776	John		Penny, Dublin
5777	John		Penny, Limerick
5778*			Halfpenny Dublin (D), *Roberd*
5779	John	1199–1216	Cut farthing, Dublin
5780*	Henry III	October 1251 –January 1254	Dykes class D, Dublin (DIVE), *Ricard*

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Longbottom 1908, 16	Potter	In Grosvenor Museum 1908
		Harris Gibson 1877, 66; possibly one of those described Longbottom 1908, 16. *Probably duplicate reference to* 5699–5700	Fd 1870–77; Potter	Found at Great Meols
		Hume 1863, 362	Fd 1862; ?Ecroyd Smith	
		Hume 1863, 294	Fd Before 1863	
		Ecroyd Smith 1873b, 14	Fd 1864	Found at Great Meols
		Ecroyd Smith 1866, 226	Fd 1865	
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Ecroyd Smith 1873b, 17	Fd 1866	
		Hume 1863, 294	Fd before 1863	
		Ecroyd Smith 1870, 279	Fd 1869	
		Ecroyd Smith 1870, 276	Fd 1869	
		Harris Gibson 1877, 66	Fd 1870–77; Potter	Found at Great Meols
		Harris Gibson 1877, 66; Longbottom 1908, 16	Fd 1870–77; Potter	Found at Great Meols
		Hume 1863, 294; 3 = Mayer Guard Book?	Fd before 1863; 3 in Mayer Collection	?3=M4164–5. Liverpool Museum; lost
		Harris Gibson 1877, 66, 78	Fd 1870–77; Potter	Found at Great Meols
		Hume 1863, 294	Fd before 1863	
		Ecroyd Smith 1869a, 216	Fd 1868	
		Hume 1863, 294	Fd before 1863	
		Ecroyd Smith 1873b, 17	Fd 1866	
		Ecroyd Smith 1875, 97	Fd 1874	
		Hume 1863, 295	Fd before 1863	Liverpool Museum. No number.
		Hume 1863, 295	Fd before 1863	Probably a hoard from a wreck, or one concealed near beach.
		Longbottom 1908, 17	Potter	In Grosvenor Museum 1908
		Longbottom 1908, 17. Possible duplicate reference to 5762–5763	Potter	In Grosvenor Museum 1908
		Hume 1863, 295. Possible duplicate reference to 5761	Fd before 1863	
		Hume 1863, 295	Fd before 1863	
		Hume 1863, 295	Fd before 1863	
		Hume 1863, 295; 1 listed in Mayer Guard Book	Fd before 1863; 1 in . Mayer Collection	M4167 Liverpool Museum; lost
			Found 17 June 1956	Williamson Art Gallery and Museum
		Harris Gibson 1877, 67; Longbottom 1908, 15. *Almost certainly* S6039	Fd 1870–77; Potter	
18.5gr	?	Hume 1863, 293; Dolley 1961, 201	Fd before 1863	?
1.36g	160°	Chitty and Warhurst 1977, 90; Warhurst 1982, no. 1059. *Almost certainly duplicate reference to* 5776	Fd before 1867; Mayer	Liverpool Museum; M4099
1.40g	340°	Chitty and Warhurst 1977, 92; Warhurst 1982, no. 1063. *Almost certainly duplicate reference to* 5777	Fd before 1867; Mayer	Liverpool Museum; M4100
		Hume 1863, 293. *Almost certainly duplicate reference to* 5774	Fd before 1863	
		Hume 1863, 293. *Almost certainly duplicate reference to* 5775	Fd before 1863	
1.06g	270°	Chitty and Warhurst 1977, 91; Warhurst 1982, no. 1062	Fd before 1867; Mayer	Liverpool Museum; M4101
		Longbottom 1908, 16	Potter	Grosvenor Museum 1908
0.71g	340°	Warhurst 1982, no. 1065. *Probable duplicate reference to* 5781–5783	Fd before 1867; Mayer	Liverpool Museum; M4115

No.	*Authority*	*Date*	*Type*
5781–83	Henry III		Pennies (3), Dublin
5784	Henry III	1247–54	Cut halfpenny, Dublin (...IVE), *Ric[ard]*
5785	Henry III		Cut halfpenny, Dublin (DIVE)
5786*	Henry III		Cut halfpenny, Dublin, *Ricad*
5787	Henry III		Cut halfpenny
5788	Henry III		Cut halfpenny
5789–90	Henry III		Cut halfpennies (2)
5791*	Edward I		Waterford. Second issue, two pellets below.
5792	Edward I		Second coinage Penny, Dublin
5793–94*	Edward I		Second coinage Pennies (2) Waterford
5795*	Edward I	c. 1279–84	Dublin. Third issue penny.
5796	Edward I	1279–1302	Ireland. Second coinage cut halfpenny, Dublin.
5797–5798	Edward I		Irish AR halfpennies (2), Dublin and Waterford
5799	Edward I	1279–1302	Halfpenny, Dublin
5800	Edward I		Halfpenny, Dublin
5801			Halfpenny, Waterford.
5802			Halfpenny, fragment
5803			Farthing, Dublin
5804	Edward IV		Groat. Rose mint mark, Dublin
5805–07	Elizabeth I		Copper halfpennies (3)
5808	James II		Gun money shilling. *Found in a garden near Meols station*
5809–11	James II Ireland		'Gun money' shillings (3) dated Feb. and 10r 1689
5812	Charles II Token		'St Patrick's coinage' farthing
5813	William and Mary		Farthing 1694
5814	William III	1696	Halfpenny, date illegible
5815	William III		Farthing. *A reference to a halfpenny? – no farthings known. Possibly a Shakespeare (GUILLIEMUS....)/(Harp) North Wales type 'evasion' of the 1790s*

SCOTLAND

5816–17	William 'the Lion' I	1165–1214	Cut halfpence (2 coins) 'Usual bust', mint uncertain
5818*		1195 – c. 1205	Short Cross phase A cut halfpenny. Rev. Walter (...]TER[...)
5819		c. 1205–30	Short Cross phase B cut halfpenny. Rev. ...]LE[...
5820			Short Cross phase B cut halfpenny. Rev. legend described as ...WIEH... *Duplicate record of* 5802?
5821	'David II or Malcolm IV'		Cut halfpenny
5822–23	Alexander III		First coinage Pennies, Edinburgh (2 coins), *described by reference as Alexander II, but no coins of this king are signed Edinburgh*
5824	Alexander III	1250 – c. 1280	Type III–V

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Hume 1863, 293. *One is probably duplicate reference to* 5780	Fd before 1863	
		Harris Gibson 1877, 67	Fd 1870–77; Potter	
		Mayer Guard Book	Fd before 1867; Mayer	M4114. Liverpool Museum; lost
0.57g		*Probably duplicate reference to* 5787 *or* 5788		Grosvenor Museum, labelled 'Meols 10'.
		Ecroyd Smith 1874, 96. *Probably duplicate reference to* 5786, 5789–5790	Fd 1873	
		Ecroyd Smith 1872, 144–5. *Probably duplicate reference to* 5786, 5789–5790	Fd 1871	
		Harris Gibson 1877, 67. *Probably duplicate reference to* 5787 *or* 5788	Fd 1870–77; Potter	
1.37g	200°	Warhurst 1982, no. 1068. *Possible duplicate ref to* 5793–5794	Fd before 1867; Mayer	Liverpool Museum; M4158
		Hume 1863, 293	Fd before 1863	
		Hume 1863, 293, pl. XXVII, 18. *Possible duplicate reference to* 5791	Fd before 1863	
1.20g	270°	Chitty and Warhurst 1977, 93; Warhurst 1982, no. 1067	Fd before 1867; Mayer	Liverpool Museum; M4157
'10.9gr'				Grosvenor Museum. Not seen 'removed 18.2.99 M.O.M' 'Meols 10'
		Ecroyd Smith 1870, 276–7; Ecroyd Smith 1873c, 51. *Probably duplicates references to pieces listed Ecroyd Smith 1873c, 64 – coins of William I are duplicated in both references*	Fd 1869	
		Harris Gibson 1877, 67	Fd 1870–77; Potter	
		Harris Gibson 1879, 68	Fd 1868	
		Harris Gibson 1877, 67	Fd 1870–77; Potter	
		Harris Gibson 1877, 67	Fd 1870–77; Potter	
		Harris Gibson 1877, 65	Fd 1870–77; Potter	
		Ecroyd Smith 1870, 276	Fd 1869	A pre-war coin in Liverpool Museum has a Meols patina.
		Hume 1863, 294	Fd before 1863	
		Ecroyd Smith 1875, 97	Fd 1874	Fd Great Meols
		Hume 1863, 295; 1 = Mayer Guard Book	Fd before 1863; Mayer	Piece in Mayer Collection dated'10r' M4166. Liverpool Museum.
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 295	Fd before 1863	
		Hume 1863, 295	Fd before 1863	
		Hume 1863, 295	Fd before 1863	
		Longbottom 1908, 17. *Probably duplicate reference to* 5818–5819	Potter	In Grosvenor Museum 1908
0.65g		*Probably duplicate reference to* 5816–5817		Grosvenor Museum. Labelled '26b.c.69 Meols Shore'
		Probably duplicate reference to 5816–5817		Grosvenor Museum. Labelled 'Meols Shore'
		Ecroyd Smith 1873a, 129	Fd 1872	
		Mayer Guard Book	Fd before 1867; Mayer	M4168 Liverpool Museum; lost
		Longbottom 1908, 17. *Probably* S6043–S6048	Potter	In Grosvenor Museum 1908
		Harris Gibson 1877, 67. *Probably* S6043–S6048	Potter	

No.	*Authority*	*Date*	*Type*
5825			Type III–V, mullets of 6 points
5826		1280–	Second coinage
5827–30	Alexander III		Second coinage. Type unspecified (4 coins)
5831*	Alexander III		Second coinage. 6 point mullets. Alex on Ed
5832	Alexander III		Penny, St Andrews, *Thomas*
5833–36	Alexander III		Pennies (4)
5837	Alexander III		Cut halfpenny. Rev. illegible
5838	Alexander III		Cut quarter. Rev. illegible
5839	John Baliol	1292–96	Penny, St Andrews
5840	Robert III	1390–1406	Halfpenny, Perth
5841	James I		Copper twopence
5842	Charles I		Copper twopence Described in reference as *'Copper farthing Scotch: thistle crowned'*

CONTINENTAL

5843–46		Later 13th–14th centuries	Sterlings/deniers of uncertain type (4 coins)
5847	Gaucher of Châtillon	1313–22	Sterling. 'GALCHS.COMES.PORC Rev. NIONET NOVA YVE '. Yves mint. Probably Mayhew 237
5848	John of Avenes: Hainaut	c. 1290–1304	Sterling. Valenciennes. 'I COMES HANONIE VALENCHENENS', Mayhew 24, etc.
5849	John of Avenes: Hainaut	c. 1290–97	Sterling, Maubeuge. 'Y COMES HAYONIE rev. MELBODIENSIS'. Mayhew 39
5850	John of Avenes: Hainaut	c. 1291–97	Sterling, Mons. '[IOHS] COMES HANONIE rev. MONETA MONTES'. Mayhew 34
5851	Brabant	1270s/1280s	Brabantinus, 'WALT in angles DEI GRATIA. Rev. DUX BRABANCIE Heraldic lion rampant. mm. quatrefoil'. Mayhew pl. I.1; p. 13 type 1
5852	Brabant	1270s/1280s	Brabantinus, Described as 'Similar to' WALT in angles DEI GRATIA. Rev. DUX BRABANCIE Heraldic lion rampant. Mayhew pl. I.1; p. 13 type 1
5853	Brabant	1270s/1280s	Brabantinus, 'Obv. DUX... ...ANGIE, lion rampant on spade shield. Rev. I Dei gratia, voided cross W A L T in angles.' Mayhew pl. I.1; p. 13 type 1
5854–55			Sterlings, unspecified type (2)
5856	Sicily ?John (1458–79)		Copper, obv. Ioannes Dei G... Eagle with expanded wings. Rev. Rex Sicilie
5857	Naples and Sicily : Ferdinand I	1458–94	Cavallo, 'Ob. FERDINANDUS REX, a crowned head; rev. EQUITUS RE NI, horse walking'
5858	Poland	1548–72	Copper coin of Sigismund (no further details)
5859	Spain Charles II 1665–1700	1672–75	Halfpenny, three punched marks on obv., many irregular punched marks on rev.; edge partially hammered in. Much worn. NB not the size of any British denomination – hence rough treatment?
5860	Arabic	?C18th	Base silver coin with central section sheared out

VARIOUS

5861	C17th copper token		Obv. THOMAS KNIGHT, rev. OF CARNARVAN, 1667 Williamson 1986, no. 26/7
5862			Obv. CHARLES CHRISTIAN Rev. GROCER IN LIVERPOOLE in field: HIS PENNY 1669 Williamson 1986, no. 58
5863		1657	Token, Bristol 1657

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Harris Gibson 1877, 67. *Probably* S6043–S6048	Potter	
		Harris Gibson 1877, 67. *Probably* S6043–S6048	Potter	
		Longbottom 1908, 17. includes 5826?	Potter	In Grosvenor Museum 1908
1.36g		*Possibly duplicate reference to one of the other Potter coins above*		Grosvenor Museum. Labelled as 'prob. Meols' – switched with 28.c.69 in the past?
		Mayer Guard Book	Fd before 1867; Mayer	M4169 Liverpool Museum; lost
		Hume 1863, 295. *Probably duplicate reference to other pennies described above.*	Fd before 1863	
		Mayer Guard Book	Fd before 1867; Mayer	M4170 Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4171 Liverpool Museum; lost
		Longbottom 1908, 17	Potter	In Grosvenor Museum 1908
		Longbottom 1908, 17. *Almost certainly* S6050	Potter	In Grosvenor Museum 1908
		Hume 1863, 294	Fd before 1863	
		Hume 1863, 294	Fd before 1863	
		Longbottom 1908, 16. *Possible duplicate reference to* 5847–5848, 5853–5854 *and* S6051	Potter	In Grosvenor Museum 1908
		Ecroyd Smith 1870, 277; Ecroyd Smith 1873c, 52	Fd 1869	
		Ecroyd Smith 1872, 145	Fd 1870	
'17½ gr'		Mayer Guard Book	Fd before 1867; Mayer	M4173 Liverpool Museum; lost
'13gr'		Mayer Guard Book	Fd before 1867; Mayer	M4174 Liverpool Museum; lost
'19½ gr'		Mayer Guard Book	Fd before 1863; Mayer	M4175 Liverpool Museum; lost
'20gr'		Mayer Guard Book. *Probably duplicate reference to* 5853	Fd before 1867; Mayer	M4176 Liverpool Museum; lost
		Hume 1863, 295. *Probably duplicate reference to* 5852	Fd before 1863	
		Hume 1863, 293. *Probably duplicate reference to* 5849–5851	Fd before 1863	
		Hume 1863, 295; Mayer Guard Book	Fd before 1863; Mayer	M4184a Liverpool Museum; lost
		Hume 1863, 295	Found before 1863; Mayer M4184b	Liverpool Museum; lost
		Hume 1863, 295	Fd before 1863	
			Fd 17 June 1956 on Meols shore	Williamson Art Gallery.
1.70g				Grosvenor Museum
		Ecroyd Smith 1873b, 11; Hume 1863, 294 ?= same coin referred to on p. 361	Fd 1862	
		Ecroyd Smith 1873b, 11; Hume 1863, 361	Fd 1862	
		Longbottom 1908, 17	Potter	Grosvenor Museum, 1908

No.	*Authority*	*Date*	*Type*
5864		1656	Token, Westbury 1656
5865			Penny or halfpenny, illegible
5866			Fragment
5867*	Jetton, English	Edward I	Cf. Barnard 1916, pl. 1, 8
5868	Jetton, English	Edward II	One third fragment of jetton. Obv. Head with sceptre and border of pellets. Rev. A cross and similar border
5869	Jetton, English early Edward III	Late Edward II –	Star and crescent in border of dot, rev. a cross in pellet border cf. Barnard 1916, pl. 1, 17
5870	Jetton, Tournai	C14th or 15th	'Ob. Spade shield with three fleur de lys USEUM CUM TRER, rev. Triple barred cross within a quatrefoil, a small cross in centre and T in each angle'
5871	Jetton, Tournai	Early C16th	Æ Jetton. 'Obv. Large quatrefoil. Rev. trefoil with fleur-de-lys'
5872	Jetton, Nuremburg	Probably c. 1550–1630	Æ jetton
5873–83	Jettons, Nuremburg	Probably c. 1550–1630	Nuremburg, various types (11)
5884	Lead 'token'	Probably Tudor	Obv. ?Cock. rev. Gothic A
M4172	Liverpool		
5885	Lead 'token'	?C17th/18th, but possibly earlier	Obv. 'spade shaped shield bearing a diagonal denticulation' rev. plain
5886	Lead 'token'	?C17th/18th, but possibly earlier	Obv. 'Plain cross with an annulet in each angle' rev. plain
5887	Lead 'token'	?C17th/18th, but possibly earlier	Obv. 'Illegible inscription' rev. plain
5888	Lead 'token'	?C17th/18th, but possibly earlier	Obv. 'Thistlehead between 'x' and 'v'' rev. plain
5889	Lead 'token'	Tudor or later	Obv. Six petalled flower Rev. N
5890–91	?Lead 'token'		"Abbey tokens" ?=Pewter/lead pieces
5892–96	Foreign		'Coppers (sundry)' 5 coins
5897	?British		'Bronze Naval Medal (worn)'
5898–5916			Badly corroded coins and fragments (19 pieces)
5917		Medieval	Gold coin
5918		?Medieval	'Venetian'
5919	Half lead token		Half a disc (originally folded in four and half survives), thin flan. D 20mm. No design visible
5920*	Pewter token	?C14th	Crude; D 20mm. Cross-hatched quatrefoil // opposed quarters cross-hatched all in beaded border. Lead-rich pewter (M. Ponting, Appendix 2).
5921*	Lead token	?C15th–16th	Uniface; letter A to left; fleur-de-lys to each side of inverted purse from which a coin appears to be dropping; D 19mm. Cast
5922*	Lead token	?C17th	Uniface, beehive with diagonal line through; D 14mm. Cast
5923	Lead token		Imprint of Anglesey Parys Mine penny of 1787–91, cowled druid and P M Co in ornate lettering in oak wreath – possibly used as weight

Wt	*Axis*	*Reference*	*Collector*	*Museum*
		Longbottom 1908, 17	Potter	In Grosvenor Museum 1908
		Hume 1863, 294	Fd before 1863	
0.33g		Possibly the last coin		Grosvenor Museum
		Mayer Guard Book	Fd before 1867; Mayer	M4177 Liverpool Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer	M4178 Liverpool Museum
		Mayer Guard Book	Fd before 1867; Mayer	M4179 Liverpool Museum
		Hume 1863, 295	Fd before 1863	
		Ecroyd Smith 1870, 277; Ecroyd Smith 1873c, 52	Fd 1869	
		Harris Gibson 1877, 66 ?= Harris Gibson 1877, 75 (pierced)	Found 1870–77 at Great Meols; Potter	
		Hume 1863, 295	Fd before 1863	
'11 $^{1}/_{2}$ gr'			Mayer Guard Book	Fd before 1867; Mayer Museum; lost
		Mayer Guard Book	Fd before 1867; Mayer Museum; lost	M4180 Liverpool
		Mayer Guard Book	Fd before 1867; Mayer Museum; lost	M4181 Liverpool
		Mayer Guard Book	Fd before 1867; Mayer Museum; lost	M4182 Liverpool
		Mayer Guard Book	Fd before 1867; Mayer Museum; lost	M4183 Liverpool
		Mayer Guard Book	Fd before 1867; Mayer	M4184 Liverpool Museum; lost
		Longbottom 1908, 17	Potter	In Grosvenor Museum 1908
		Longbottom 1908, 17	Potter	In Grosvenor Museum 1908
		Longbottom 1908, 17	Potter	In Grosvenor Museum 1908
		Longbottom 1908, 17	?Potter	In Grosvenor Museum 1908
		Ecroyd Smith 1871b, 128; Ecroyd Smith *1873c, 55*	Fd 1870	'*...picked up by a young son of a Hoylake fisherman... ...but somehow lost on the way to Birkenhead where he thought to dispose of it*' Empty envelope in Grosvenor Museum labelled '*found at great Meols in garden – not from shore*', inscribed in another hand is '*Venetian*?'
				Grosvenor Museum
				Grosvenor Museum
				Grosvenor Museum
				Grosvenor Museum

Table 2.24.5 SUPPLEMENTARY LIST

Coins in Grosvenor Museum that may originate from Meols, have the correct patina (these coins lack any other provenance). Many coins in the Grosvenor Museum have become separated from their correct tickets in the past

No.	*Authority*	*Date*	*Type*
S6000*	Stephen		Cut farthing. Cross moline type. Mint? Moneyer?
S6001*	Henry II		'Tealby' penny. Class E or E, Ipswich. Moneyer indistinct Broken in two
S6002*			'Tealby' penny. Class F. Ipswich, *Nicole*
S6003*			'Tealby' penny. Contemporary forgery, uncertain class
S6004*	Henry II		Short Cross penny. Class 1b, Exeter or Oxford, *Ricard*
S6005*			Short Cross cut halfpenny. Class 1b1, London, *Alain* or *Alain.v*
S6006*			Short Cross cut farthing. Class 1b, London
S6007*			Short Cross cut halfpenny. Class 1b–c, London, *Raul*
S6008*			Short Cross penny. Class 4(?a), Canterbury (CA), *Roberd*
S6009			Short Cross penny. Class 4a, London, *Stivene*
S6010 *			Short Cross cut halfpenny. Class 5bii, Winchester, *Adam*
S6011*			Short Cross penny. Class 5bii, London (LVND), *Be[neit]*
S6012*			Short Cross cut halfpenny. Class 6c2, Canterbury
S6013*			Short Cross cut halfpenny. Class 6c3, York, Peres
S6014*	Henry II		Short Cross cut farthing. Brand class i, Rhuddlan, *Halli*
S6015*			Short Cross cut farthing. Class ?, mint?, *Re*[...
S6016*			Short Cross cut halfpenny. London. Moneyer?
S6017*	Henry III		Long Cross penny. Class 2, London, *Nicole*
S6018			Long Cross penny. Class 3b, Exeter, *Ion*
S6019*			Long Cross penny. Class 5, Canterbury. ...]t.
S6020*			Long Cross penny. Class 5a, Bury St Edmunds, *Iohn*
S6021*			Long Cross penny. Class 5b, London, *Nicole*
S6022*			Long Cross penny. Class 5b, Canterbury, *Willem*
S6023*			Long Cross penny. Class 5c, London, *Henri*
S6024			Long Cross cut halfpenny. Class 1–4, ?mint, *Henri*
S6025			Long Cross cut halfpenny. Class 5, folded and part sheared
S6026			Long Cross cut farthing. Class 2a, ...]*ole*.
S6027*			Long Cross cut farthing. Class 3a/3c, London
S6028*			Long Cross cut farthing. Class?, London
S6029*	Edward III		Long Cross. Pre-Treaty Series C–E, Durham. Obv. largely obliterated
S6030*			Long Cross. 'Florin' Coinage type 2, London. Obv. largely obliterated
S6031*		1353–77	Long Cross. York, obv. obliterated
S6032			Long Cross cut halfpenny. London
S6033			Long Cross halfpenny. Large abraded fragment in two pieces. ?London
S6034*	Edward III		'Florin' Coinage halfpenny. London. Class?
S6035*	Edward III	1335–43	Debased 'star-marked' coinage halfpenny. London. Class?
S6036			Long Cross cut farthing. London
S6037*	Edward III		Long Cross penny. Pre-Treaty Series G
S6038*	Edward III		Long Cross penny. Treaty B, York

IRELAND

S6039	Hiberno-Norse	c. 1035–55	Cut halfpenny. Dolley Phase III.
S6040*	Ireland: Henry III		Cut halfpenny. ?Class 1, Dublin, Moneyer *Ricard*
S6041	Edward I	1279–1302	Second coinage Penny Class 1, Dublin

SCOTLAND

S6042*	Alexander III	c. 1250 – c. 1280	First coinage penny, type III. Mint uncertain
S6043*	Alexander III	c. 1280–92	Second coinage penny. S.5056
S6044	Alexander III	c. 1280–92	Second coinage penny. Type E. 20 point stars
S6045	Alexander III	c. 1280–92	Second coinage penny. Type C. 24 point stars

Wt	*Axis*	*Reference*	*Museum*
0.30g		*Almost certainly* 5172	Grosvenor Museum, labelled 'collection 190', drawer unit 7
1.08g		*Probably* 5174 or 5175	Grosvenor Museum, labelled '150', drawer unit 7
1.01g		*Almost certainly* 5176 or 5177	Grosvenor Museum, drawer unit 7
		Almost certainly 5176 or 5177	Grosvenor Museum, drawer unit 7
1.33g	180°		Grosvenor Collection, labelled 'Museum 204'.
0.6g	270°		Grosvenor Collection, labelled 'Museum 199'.
0.35g			Grosvenor Collection, labelled 'Museum 196'.
0.66g		*Almost certainly* 5184	Grosvenor Collection, labelled 'Museum 201.
1.35g	0°		Grosvenor Collection, labelled 'Museum 212'.
	180°		Grosvenor Collection, no label
0.6g	30°		Grosvenor Collection, labelled 'Museum 203'.
1.07g	170°	*Possibly* 5192	Grosvenor Collection, labelled 'Museum 211'.
0.47g	180°		Grosvenor Collection, labelled 'Museum 200'.
0.57g	50°		Grosvenor Collection, labelled 'Museum 202'.
0.33g			Grosvenor Collection, no label
0.34g			Grosvenor Collection, labelled 'Museum 192'
0.32g		*Possibly* 5184	Grosvenor Collection, labelled 'Museum 197'
1.31g		?Harris Gibson 1877, 65	Grosvenor Museum, labelled 'Museum 213'
1.28g			Grosvenor Museum, labelled 'Museum 209'.
0.78g		?Harris Gibson 1877, 65	Grosvenor Museum, labelled 'Museum 205'.
0.96g			Grosvenor Museum, labelled 'Museum 210'.
1.27g	250°	?Harris Gibson 1877, 65	Grosvenor Museum, labelled 'Museum 161'.
1.16g		?Harris Gibson 1877, 65	Grosvenor Museum, labelled 'Museum 208'.
1.32g		?Harris Gibson 1877, 65	Grosvenor Museum, labelled 'Museum 206'.
			Grosvenor Museum, labelled 'Museum 160'
Clipped			Grosvenor Museum, cabinet 9, tray 4
			Grosvenor Museum, labelled 'Museum 191'.
0.24g			Grosvenor Museum, labelled 'Museum 194'.
0.26g			Grosvenor Museum, labelled 'Museum 189'.
0.97g		*Almost certainly* 5580	Grosvenor Museum, labelled 'Museum cat. 187''
1.01g		*Almost certainly* 5579	Grosvenor Museum, labelled 'Museum cat. 179''
			Grosvenor Museum, labelled 'Museum 185'.
c. 25% sheared away			Grosvenor Museum, cabinet 9, tray IV
			Grosvenor Museum labelled 'Museum 193'
0.46g		*Almost certainly* 5617	Grosvenor Museum, labelled 'Museum 184'
0.58g		*Possibly* 5617	Grosvenor Museum, labelled 'Museum 180'
			Grosvenor Museum. Cabinet 9, tray 4
0.96g		*Probably* 5588	Grosvenor Museum, labelled 'Museum 181'
0.96g			Grosvenor Museum, labelled 'Museum 183'
0.39g		Is this the coin referred to by Dolley 1961? *Very probably the coin now in the Grosvenor Museum with no provenance* 5772	Grosvenor Museum.
0.58g		?Harris Gibson 1877, 67	Grosvenor Museum, labelled 'Museum 172'
		?Harris Gibson 1877, 67	In Grosvenor Museum, cab. 9, tray 2. no label.
1.39g			Grosvenor Museum, labelled '27.C.69'
1.12g Chipped		*Almost certainly one of* 5822–5823	Grosvenor Museum, labelled '28.C.69'
		Almost certainly one of 5822–5823	Grosvenor Museum, labelled '26.C.69'
1.34g		*Almost certainly one of* 5822–5823	Grosvenor Museum, labelled '31.C.69'

No.	Authority	Date	Type
S6046	Alexander III	c. 1280–92	Second coinage penny. Details uncertain
S6047*	Alexander III	c. 1280–92	Second coinage penny. Type E, 20 point stars
S6048*	Alexander III	c. 1280–92	Second coinage penny. Type E?, 20 point stars
S6049*	John Baliol	1292–96	Penny. First coinage. Rev. REX SCOTORUM ?21 points to mullets
S6050	Robert III	c. 1403–06	Light coinage. Halfpenny. Very abraded
S6051	William III of Namur	c. 1350–91	Sterling. Mayhew 361

Abbreviations

AR	silver	mm	Mint-mark
BMC	British Museum Catalogue	MSMR	Merseyside Sites and Monuments Record
C3rd	3rd century	obv.	Obverse
Fd	Found	rev.	Reverse
IRBCH	Inventory of Romano-British Coin Hoards	RIC	*The Roman Imperial Coinage*
LRBC	Late Roman Bronze Coinage	*SNG*	*Sylloge Nummorum Graecorum*

THE COINS

S. C. Bean

There is a minimum of *c.* 900 identifiable coins and tokens recorded as having been found at Meols (**5000–5923**) although the considerable scope for duplication within the record makes a definitive total impossible. The great majority lack a more precise findspot. The record starts with a group of Greek coins and extends into the Stuart period. Individual groups of these coins have been studied in the past (e.g. Hume 1863; Harris Gibson 1877; Chitty and Warhurst 1977; Shotter 2000c), but there has been no previous attempt to consider them as a whole.

To construct the Meols coin list a thorough check has been made of museums in the region. Checks have been made at the British Museum and the museums in the areas to which prominent collectors of Meols material moved. A thorough search of the relevant literature has also been made, from 19th-century local periodicals to the *Sylloge of Coins of the British Isles*. A full check has also been made of accession records in Liverpool Museum. Whilst it is likely that some coins will have been missed, the assembled body of material should be sufficiently large to enable meaningful conclusions to be drawn.

Pre-Roman coins

The Greek and Celtic finds from Meols have been overlooked in the literature surveying such exotic finds (e.g. Milne 1948). Whether this was due to their dismissal as 'plants' or the obscurity of their original publication cannot be discovered. Whilst writers such as Milne (1948) have treated exotic Greek coin finds generously, more recently the trend has been to take a much more conservative line. Indeed, the large body of exotic material from Exeter has been completely dismissed, with good reason, by Boon (1991).

The earliest coins from Meols fall into two groups, coins of Greek and of Celtic origin. W ithin both groups there is a bunching of types. All are 'exotic' finds for the area, and each needs careful consideration. With the exception of the ill-recorded Celtic gold stater (**5004**) the case for viewing these coins as non-ancient 'losses' are as compelling as those for regarding them as ancient losses.

Greek coins

The group of three Siculo-Punic coins (**5000-5002**) is particularly interesting. T raditionally, these would have been regarded as much later Roman, or even recent losses. However, a significant number of copper coins from this series has been recorded from Kent, following systematic recording of finds made by metal detector users in the last ten years. They have been found in close association with British Celtic coins, confirming that they arrived before the Roman Conquest, although it is not clear when (de Jersey 1996, 15; *British Numismatic Journal* Coin Register).

Can the same type of coin have arrived at Meols in the pre-Conquest period? Unfortunately there is no local indigenous coinage of the period to assist. These three coins were used, rather imaginatively in conjunction with the Armorican coins from Meols, to suggest that a trade in lead between Clwyd and the Mediterranean had been conducted through Meols before the Conquest (Laing and Laing 1983). Beyond the Siculo-Punic coins recorded from Kent there is a substantial body of Siculo-Punic coins, most of them copper alloy, recorded from Britain (Milne 1948; Laing and Laing 1983). The great majority of these can probably be dismissed as modern losses, and a few perhaps Roman losses (cf. Boon 1991). Only one has come from a reliable pre-Conquest site, a bronze excavated at Winchester (Cunliffe 1965, 75). A further piece was found below the ramparts of the Iron Age fort at Caburn, Sussex, reportedly in spoil from a rabbit burrow (Spokes 1927, 57; contra Laing 1969, 16 who states that it was found during excavation).

Is there other evidence to suggest that these coins arrived after the Conquest? There was clearly a shortage of copper-alloy coin in Britain following the Claudian invasion, as evidenced by the British-made copies of Claudian asses that appear to have been officially tolerated. Could a large hoard of the Siculo-Punic coins have been unearthed and exported to Britain to help alleviate a shortage of small coin? The clearest evidence is likely to come from other Roman sites and hoards. There is a total of 1912 hoards, containing upwards of 640,000 coins, recorded in the *Inventory of Romano-British Coin Hoards* (*IRBCH*). Within this huge body of material there are only 22 hoards containing a minimum of 136 coins of either Greek or Roman Provincial origin (*IRBCH* p. 438). Only two hoards contained pre-Roman Greek coins, Gloucester 1966c (*IRBCH* 1530, single copper-alloy coins of Massilia) and Cobham 1931/2 (*IRCBH* 1277 and 4th-century BC Rhodes (the integrity of the latter find was questioned by Boon 1991, 39, 40, note 4). The Gloucester hoard contained a broad wash of 4th-century base coinage, amongst which a Greek piece might have gone unnoticed; the Greek piece in the Cobham hoard may have been a curio.

Wt	*Axis*	*Reference*	*Museum*
		Almost certainly one of 5822–5823	Grosvenor Museum, labelled '28.C.69'
1.39g		*Almost certainly one of* 5822–5823	Grosvenor Museum. Labelled '30.C.69'
1.46g		*Almost certainly one of* 5822–5823	Grosvenor Museum, labelled '29.C.69'
1.03g		Longbottom 1908, 17?	Grosvenor Museum, labelled '33.C.69'
0.49g		*Almost certainly* 5840	Grosvenor Museum, labelled '34.C.69'
		Almost certainly one of 5843–5846	Grosvenor Museum, labelled '332a.55'

Siculo-Punic coins are not, however, unknown from Roman sites. The coins recorded from Coventina's Well on Hadrian's Wall produced at least five late-4th to early-3rd-century BC Greek bronze coins [1] in addition to at least three Roman provincial period copper-alloy coins. Amongst the probable total of 16,000 coins from this site they are almost statistically invisible, and we cannot know whether they were regarded as curiosities or simply circulated unspotted as *asses* or *quadrantes*. The close proximity of Coventina's Well to the Roman Fort at Carrawburgh (Allason-Jones and McKay 1985, fig. 2) suggests many of the worshippers either belonged to, or were followers of, the army. If a martial aspect is envisaged for Meols (see below), then these coins could have arrived at both sites with the Roman army. The case for Autonomous Greek coins from Roman sites is, however weak, there were no such pieces from the large body of coins recorded from the reservoir at Bath, although there were a few Roman Provincial pieces (Walker 1988, 306–7). There are seven Autonomous Greek bronze coins, most from the 3rd century BC, recorded from Manchester, including two of Carthage (Conway *et al.* 1909, 69, 83, 106, 138–9[2]). These come from private collections of Roman coin finds, and many are probably intrusive from the collector's wider collection. Only one coin, a 'Carthaginian' bronze, for which further details are not given [3], is clearly recorded as a local find. This coin cannot be intrusive from a larger collection, but as it is not extant for examination, little else can be said about it. The other 'Carthaginian piece' was reportedly found near Hanging Bridge in 1880 with a number of Roman coins and a 3rd-century BC bronze from Epirus. These two pieces entered the collection of the Free Reference Library in King Street, Manchester with 32 Roman coins (Conway *et al.* 1909, 83). The presence of two exotic pieces in so small a sample compared with Bath and Coventina's Well does raise suspicion.

It is possible that the three coins from Meols were not, in fact, ancient losses. This common type was readily available in the 19th century, as waves of the coins, presumably from hoards, found their way onto the market, as evidenced by large institutional collections such as the British Museum and Copenhagen collections. It is not beyond the bounds of possibility that unscrupulous individuals may have acquired such exotic pieces to sell on at a premium to collectors hungry for unusual material from Meols.

Unlike the preceding coins, the Tigranes I *tetradrachm* (**5003**) is unprecedented if accepted as genuine and an ancient loss. This coin was found in a puddle at the edge of the embankment and Leasowe Common, the body of the embankment is reported to have been made of local material (R. Philpott pers. comm.). If the coin arrived before the Conquest a number of questions arise. How did a *tetradrachm* from a small peripheral ruler in Armenia travel though Celtic or Roman Europe, which in the west did not use this denomination, to be deposited in Meols? If it arrived in the Roman period it must have been as a curiosity, as its weight falls outside the standard of the Roman coinage. It is also overtly non-Roman. No such *tetradrachms* are recorded from Romano-British hoards. A number of surface bubbles and the filing to the edge of the coin suggest to the author that the piece is a cast forgery and not ancient.

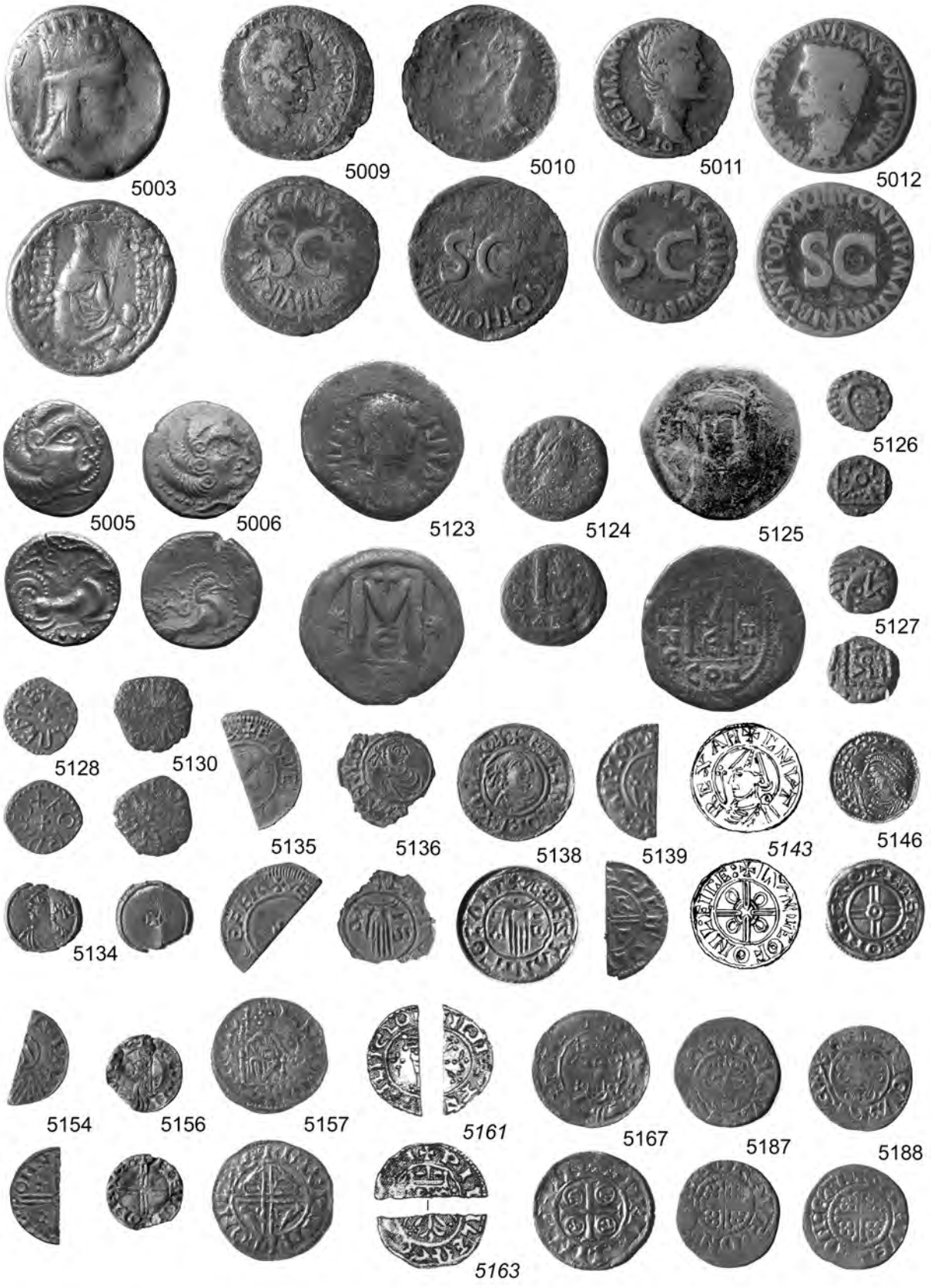
Celtic coins

The presence of Celtic coins at Meols is unusual for several reasons. Meols falls outside the areas that produced coinage in the pre-Roman period and also beyond that in which it readily circulated. Indeed, beyond Meols there are only four Celtic coins, known from North Wales, Cheshire, Wirral, and West Lancashire: a stater of the Dobunni in the name BODVOC, two gold staters of the Corieltauvi[4] and a bronze coin of the Carnutes (cf. La Tour 6088, 6108) from the medieval market site at Llanfaes, Anglesey (Besly 1996, 47, 62, pl. 4.1). There is also an uncertain Gaulish piece recorded in the Broughton collection of Roman coins 'believed to have been found at Deansgate', Manchester (Conway *et al.* 1909, 102). The collection also contained three Greek bronze coins of the 3rd century BC, considered above (Conway *et al.* 1909, 106), which, although now unavailable for examination, are probably intrusive.

We will first consider the gold stater (**5004**) that entered the Mayer Collection. Superficially its weight is too light for all but a number of small peripheral British Celtic gold coinages[5], and too light for the Gallo-Belgic series. The coin is, however, described as much worn (Hume 1863, 292). When the weights of gold staters from the comparable coastal site of Selsey, Sussex, are plotted against those of coins from inland sites it is apparent the coins can lose up to 1g in the abrasive and leaching inter-tidal zone environment (Bean 2000, 3.13, 5.8). Given the fact that there are two coins of the Corieltauvi from Cheshire [6] and a number from West Yorkshire (Cunliffe 1981, fig. 66) the Meols stater is most likely to have been struck by this tribe. The description would be in accordance with the main run of their biface staters and the weight, if originally 0.7–1.0g heavier, would be correct.

The two base silver staters (**5005-5006**) of the Coriosolites from Armorica are of more exotic origin. In France their production does not seem to have outlived the conquest of Gaul, although their use seems to have persisted for several decades on the Channel Islands. The pieces from Meols are little worn, so would appear to have been deposited without a great degree of circulation. In Britain such coins are not found in Roman hoards (*IRBCH* pp. 438–9), but when they are found it is in association with Celtic coins. If these coins from Meols are accepted then they are likely to have arrived before the Conquest.

The distribution of this series in Britain is primarily along the southern coast, around the Severn Estuary and Essex, with a peppering across the remainder of the coin using area (Cunliffe 1981, fig. 68; Celtic Coin Index). Finds of single Coriosolite coins away from this core distribution have been reported from Lesmahago, Lanarkshire [7], Nettleton (pre-1879), Lincolnshire, South Ferriby, Lincolnshire, 'near Halifax, Yorkshire[8], and Hexham, Northumberland[9]. Of these, only the South Ferriby coin seems beyond question.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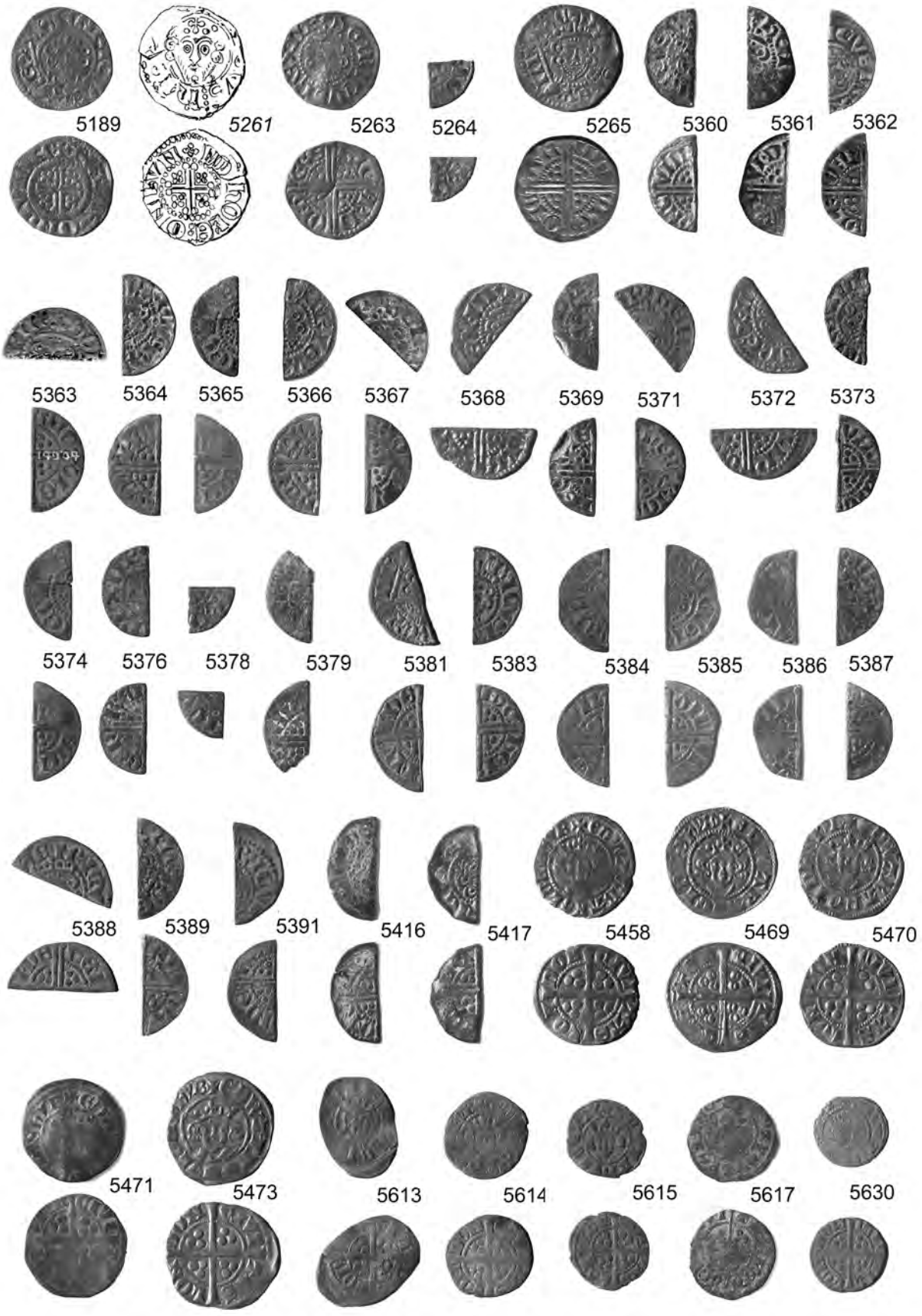
Pl. 74. Coins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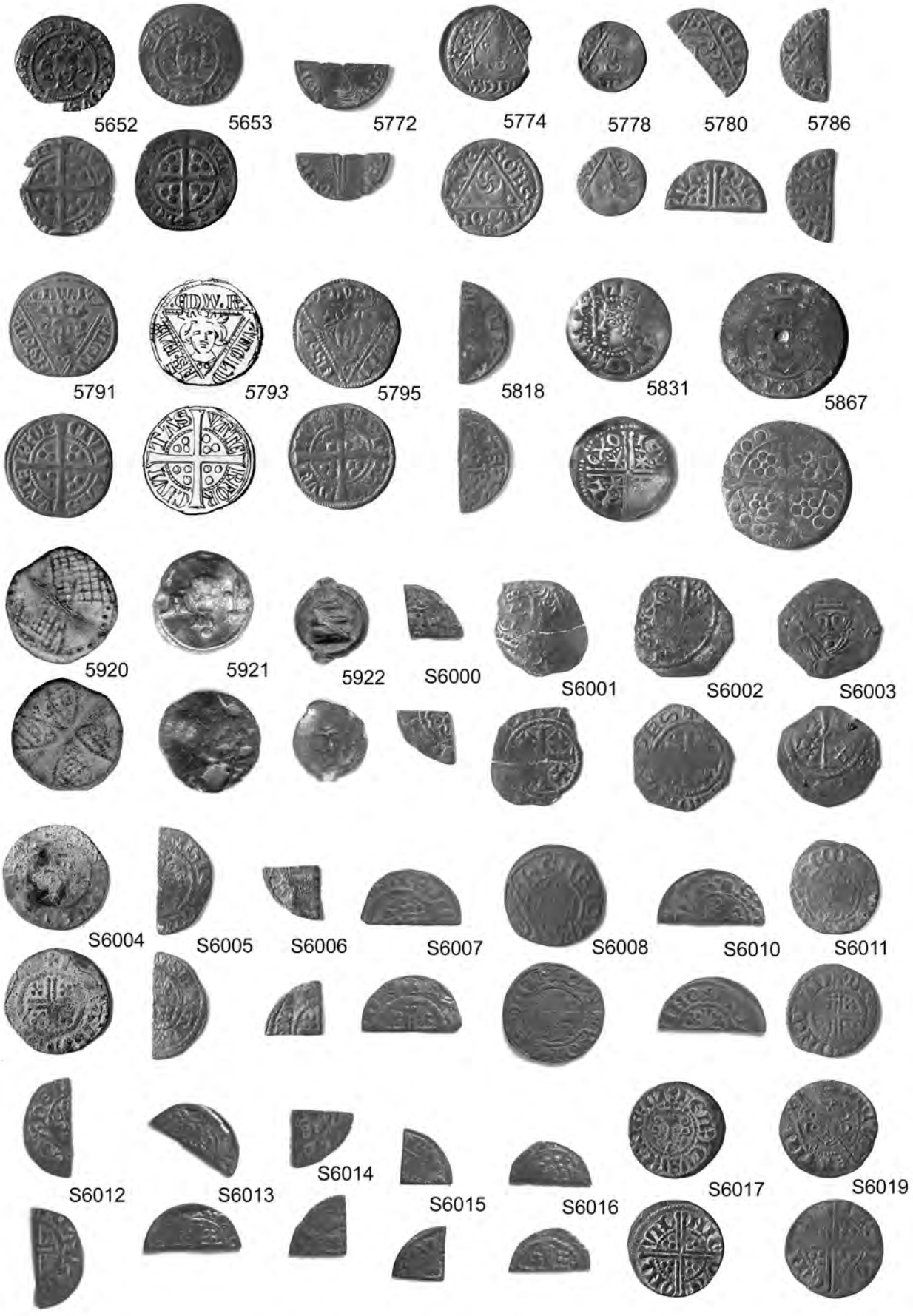
Pl. 75. Coins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S6019

Pl. 76. Coins

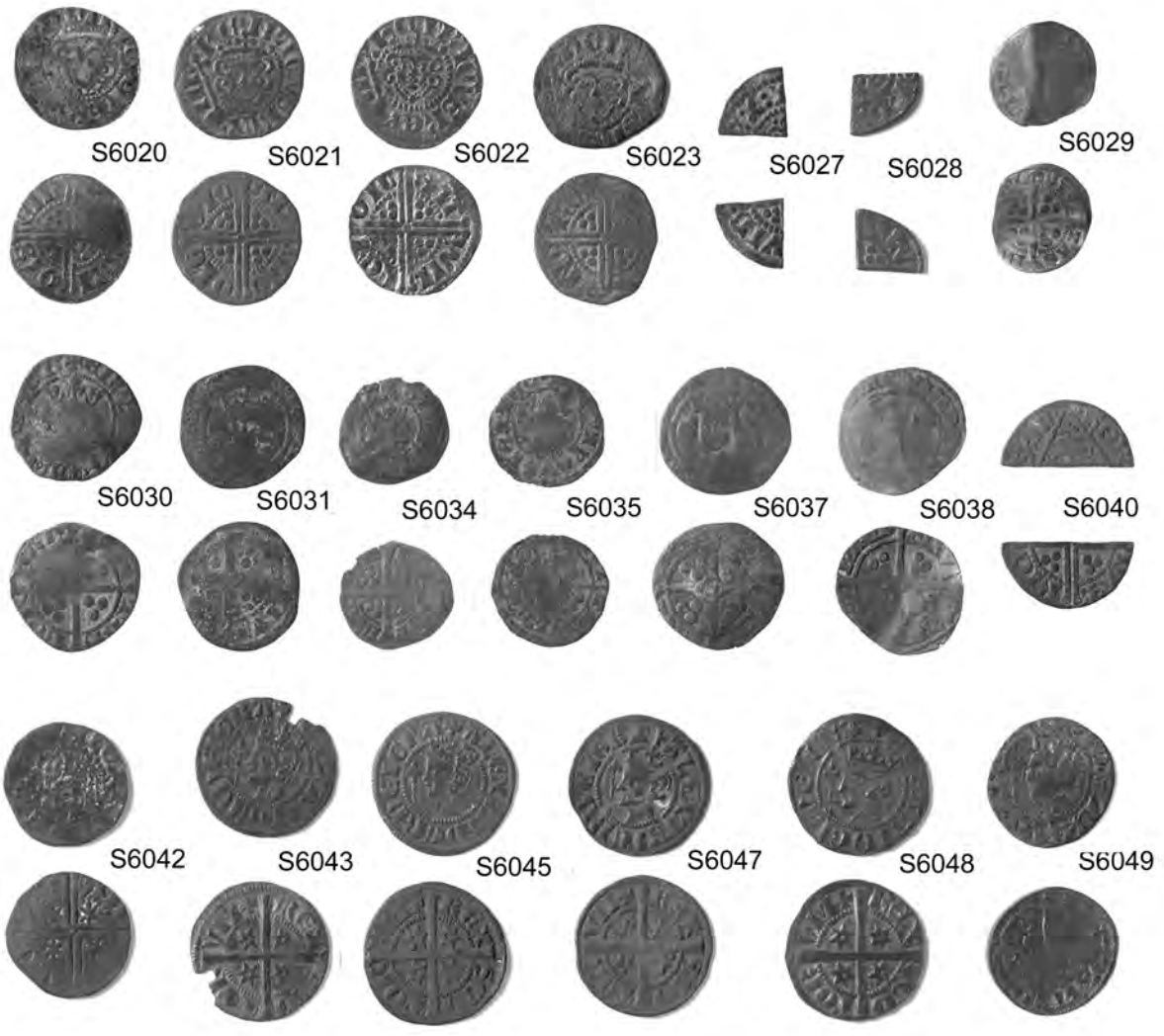
In 1981 these Meols coins were dismissed (Cunliffe 1981, fig. 68), a view maintained by the present expert on the series and curator of the Celtic Coin Index, Dr Philip de Jersey (pers. comm.). If the coins acquired their Meols provenance as 'plants' they may actually have come from the great number of hoards recovered before the date of their first recording 'from Meols' in 1863. There are a large number of recorded (and, by inference, unrecorded) hoards before this date, including the Rennes hoard of at least 15,000 coins found between 1838 and 1845. These would have been some of the more plentiful exotic coins available through the antiquarian market. Unfortunately, the 'Meols' coins were stolen from Liverpool Museum and extant photographs are too inconsistent in tone to judge whether these pieces had the characteristic thick dark 'Meols patina'. The coins cannot, therefore, be accepted without some reservation.

There is reason to add a further Celtic coin to the list of Meols finds. A Gaulish bronze coin (**5007**; de la Tour XXXIV, 8527; Evans 1864, 120, pl. G11, this coin) is recorded tantalisingly as '...said to have been found at or near Liverpool with other British [Celtic] coins' (*Num. Chron.* I, pl. II, 4; Evans 1864, 120; Allen 1960, 277) [10]. If one accepts the other earlier Meols coins then it is tempting to attribute this coin to the site, as a similar Gaulish bronze has been found at Llanfaes (Besly 1996, 47, 62, pl. 4.1). Current opinion is that this type of coin entered Britain before the Roman Conquest, and probably in the latter half of the 1st century BC.

Roman coins

Introduction

The Roman coins found at Meols represent almost every period of issue one might expect on a Romano-British site. During the Roman occupation the nature of coinage, and by implication its use and deposition, changed radically. Until *c.* AD 250 the coinage was dominated by the silver *denarius* (worth 16 *asses*) and its base metal fractions the *sestertius* (4 *asses*), *dupondius* (2 *asses*) and *as*. This was not necessarily a very useful currency. In the later 1st century AD a soldier might expect a salary of about 300 *denarii*, equating to 4800 *asses*. Thus, even an *as* was a relatively valuable coin. This system survived, albeit through a gradual process of debasement of the *denarius* and rising inflation, until *c.* AD 250, when the under-weight *antoninianus*, tariffed at two *denarii* took its place. This coin rapidly became debased and inflation rendered it



Pl. 77. Coins

of little value. Despite various attempts at reform, the late 3rd- and 4th-century coinage was dominated by low-value base metal coins. It is from the mid-3rd century that there is a marked increase in coin loss on British sites. This undoubtedly reflects the increased supply of coinage and also its lower value, which made it less of a target for recovery.

The coins lost on Romano-British sites represent coins in circulation that were actually available to be lost. This is an important point, because it is clear that there was not a regular or consistent (or perhaps often adequate) supply of Roman coin into Britain (cf. Reece 1987, 114–26; *IRBCH* xiv–xix). We should therefore not expect a regular supply of new coin to be lost.

The Meols sample is relatively small and a couple of coins from the same period have the potential to create a lot of 'noise' that might be 'evened out' on sites with larger totals. Very few of the coins have an accurate findspot, therefore all are treated here as a single group.

The coins in the Herd Collection (**5009-5012, 5027-5028, 5034, 5036-5038**) are reported to have been found in the same general area. Their composition as a group is quite unlike that of any other British hoards of the period, and they are here treated as site finds. Their proximity at the time of finding could be due to a variety of processes, including tidal sorting.

We need to ask how representative the recorded coins are of actual losses at Meols. At Meols it appears that almost anything large enough to be recognised was recovered for collection, although small size might have militated against the chances of survival and recovery . Locally, this contrasts with Chester , where there is a positive bias towards larger , legible, and aesthetically attractive pieces within the collections formed by antiquarians (Shotter 2000a, 35–6). It has been argued that the Meols provenance of certain Greek and Celtic pieces is not beyond question. The Roman coins, taken as

Table 2.24.6: Analysis of the Roman coins from Meols based on a division of 21 distinct periods of issue. Table excludes Greek and Celtic coins. If the Celtic coins were considered then there is considerably more period 1 material. This table excludes coins identified in the catalogue as possible duplicates

Period (after Reece 1991)	*Date*	*Total*	*Coins per 1000*
1	up to AD 41	5	44
2	41–54	6	53
3	54–68	7	62
4	69–96	10	88
5	96–117	4	35
6	117–38	2	18
7	138–61	7	62
8	161–80	4	35
9	180–92	2	18
10	193–222	2	18
11	222–38	0	0
12	238–60	2	18
13	260–75	26	230
14	275–96	3	27
15	296–317	0	0
16	317–30	3	27
17	330–48	13	115
18	348–64	4	35
19	364–78	7	62
20	378–88	1	9
21	388–402	0	0
Uncertain		5	44
Total coins		113	

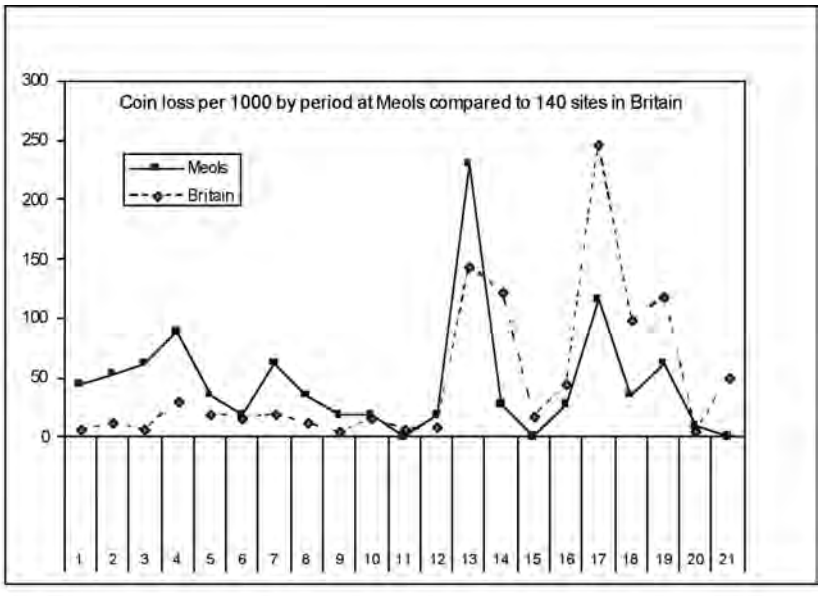


Fig. 2.24.1: Roman coin finds from Meols compared with 'typical' pattern of loss from other British sites

a group, do not raise such questions. The way in which they compare to certain other sites, such as Chester , also suggest that they are a reliable record even if there are intrusive elements. The similarity of the Meols Roman coins to the record from Chester (below) could lead to an extreme view that many of the Meols coins in fact originated in Chester. Given the antiquarian interest in Chester finds, this seems unlikely.

Analysis

The Roman coin list from Meols can be examined in a number of ways. One of these is to arrange the coins into periods of issue. Twenty-one such periods have been identified by Reece (1972; 1987; 1991). This makes the assumption that coins were lost relatively soon after issue, and that the speed of loss is consistent throughout each of the periods. To allow sites with different overall totals of coins

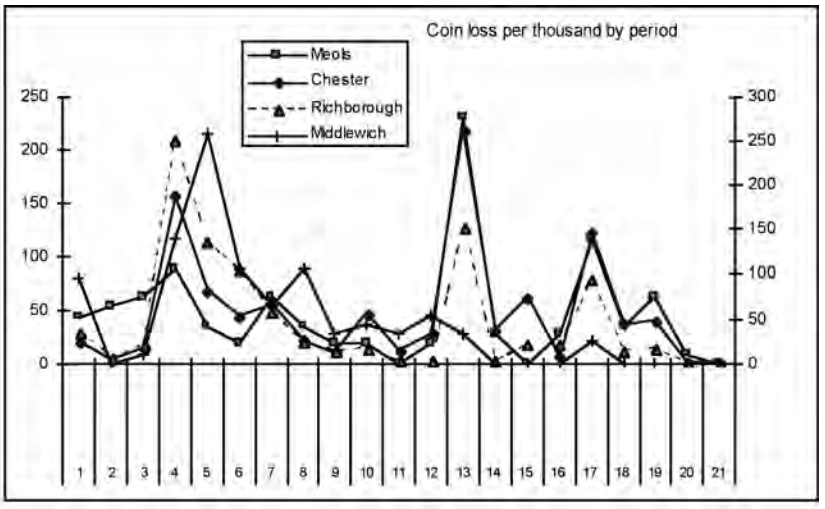


Fig. 2.24.2: Distribution of Roman coins from Meols, Chester, Middlewich and Richborough

Table 2.24.7: Comparison of the Roman coins from Meols with other selected British sites, based on a division of 21 distinct periods of issue

Period	*Date*	*Meols*	*Richborough*		*Exeter*	*Chichester*		
			Chester	*Verulamium*		*London*		*Middlewich*
1	up to AD 41	44	21	35	19	29	3	39	97
2	41–54	53	3	7	28	98	60	13	0
3	54–68	62	14	21	20	88	38	13	11
4	69–96	88	156	251	59	39	148	81	140
5	96–117	35	68	136	24	10	25	29	258
6	117–38	18	45	105	18	0	19	16	107
7	138–61	62	55	59	18	0	19	29	65
8	161–80	35	22	24	10	0	13	10	107
9	180–92	18	11	14	4	0	0	0	32
10	193–222	18	47	17	11	10	9	7	43
11	222–38	0	12	3	8	0	6	7	32
12	238–60	18	28	3	9	0	3	10	54
13	260–75	230	219	153	234	255	79	153	32
14	275–96	27	31	3	178	88	330	130	0
15	296–317	0	62	21	9	0	3	13	0
16	317–30	27	7	21	23	29	13	29	0
17	330–48	115	122	94	157	245	192	254	26
18	348–64	35	37	14	90	29	3	39	0
19	364–78	62	40	17	59	78	35	127	0
20	378–88	9	1	0	0	0	0	0	0
21	388–402	0	1	0	22	0	3	0	0
Uncertain		44							

Table 2.24.8 and 2.24.9: Comparison of the Roman coins from Meols with other selected British sites, based on a division of four broad periods of issue

Period	*Date*	*Meols*	*Chester*	*Caerleon Amphitheatre*	*Housesteads*	*Manchester*
A	up to AD 260	45	48	46	48	39
B	260–96	26	25	38	26	8
C	296–330	3	7	4	9	20
D	330–402	25	20	12	17	32

Period	*Date*	*Meols*	*Verulamium*	*Richborough*	*Exeter*	*London*	*Chichester*	*Middlewich*
A	Up to AD 260	45	68	23	27	34	36	94
B	260–96	26	16	41	35	41	18	3
C	296–330	3	4	3	3	2	4	0
D	330–402	25	12	33	35	23	42	3

Table 2.24.10: Coins from Meols plotted in terms of denomination to show total value of losses per period in asses. Chester shown for comparison. Italicised figures in parentheses show percentage of total loss for that given period. Total Meols coins = 49, total As-value 214; total Chester coins = 628, total As-value 4398.5. Where a description makes it impossible to tell whether a coin is an as or dupondius the lower value has been plotted

Period	*Date*	*Denarius*	*Sestertius*	*Dupondius*	*As or dupondius*	*AsQuadrans*	*Total no. coins*	*Meols As-value*	*Chester As- value*
1	Up to AD 41	1				4	5	20	415 *(9.44)*
2	41–54			2	1	3	6	8	5 *(0.11)*
3	54–68		3	4			7	20	69 *(1.57)*
4	69–96	3			4	4	11	56	870.5 *(19.79)*
5	96–117		2	1			3	10	596 *(13.55)*
6	117–38	2				1	3	33	355 *(8.07)*
7	138–61		3	1	3		7	29	445 *(10.12)*
8	161–80			1	2	1	4	5	227 *(5.16)*
9	180–92				1		1	1	123 *(2.80)*
10	193–222	2					2	32	1293 *(29.40)*

Table 2.24.11: Coins from Meols in terms of as-value-per-coin compared with other regional sites. Based on Shotter 2000b III.10 and Shotter 2000b IV.7 IV.8; Walton-le-Dale plotted from Shotter 2000b IV.8 as more complete that Shotter 2000a III.10; with the addition of Meols, coins which are reported as dupondius/as here plotted with the value of one as

Period	*Date*	*Meols*	*Chester*	*Birdoswald*	*Manchester*	*Wilderspool*	*Walton-le-Dale*	*Lancaster*	*Papcastle*	*Middlewich*
1	up to AD 41	5.00	10.64	16.00	13.11	10	16.0	10.8	0	14.33
2	41–54	1.33	1.25	–	2.00	–	1.0	4.0	1.0	0
3	54–68	2.86	4.31	–	9.00	6.00	6.0	5.0	0	1.0
4	69–96	5.09	4.46	10.00	3.39	5.38	4.23	6.0	5.55	7.23
5	96–117	3.33	6.48	5.94	6.79	4.67	4.68	5.47	2.85	10.5
6	117–38	3	5.38	6.54	5.96	6.23	3.12	8.0	7.73	9.4
7	138–61	4.14	5.71	6.38	6.71	5.85	3.8	8.31	5.79	6.67
8	161–80	1.25	6.49	10.00	10.60	6.50	2.75	5.27	10.8	4.6
9	180–92	1.00	6.47	16.00	–	7.33	4.0	7.2	16.0	4.0
10	193–222	16.00	15.39	14.44	13.67	12.00	13.0	13.3	15.08	13.0

to be compared, the number of coins in each period can be calculated as a percentage of the overall total. These percentages can be plotted directly or multiplied by ten to give coins-lost-per-1000 overall total. Different sites can then be readily compared.

When the Meols coins are compared, a distribution for all British sites (derived from averaging 140 different sites) (Table 2.24.6-7; Fig. 2.24.1) it is immediately clear that, until period 14 (with the exception of 11; see Tables), Meols has a much greater weighting of early coin losses. From period 14 the proportion of coins from Meols is lower than the norm and lacks the rally in period 21. This rally is also absent at Chester and Middlewich (Shotter 2000a; 2000b) and may relate to local conditions. The distribution at Meols is thus similar to several local sites, but not to the British norm.

The coins from Chester present the best match to the Meols coins (Shotter 2000a, III.1; Fig. 2.24.2). Whilst the Chester sample is much larger, at 2035 coins, there is an almost extraordinary degree of correlation. It is only in periods 2, 3, and 15 that there is any noticeable divergence, and this might be excused by the small size of the Meols sample. All three sets of data from Chester closely match the Meols distribution, although the antiquarian collections show a bias for early larger coins and discriminate against later smaller coins.

The second best match is found amongst the Richborough coins (Fig. 2.24.2; Reece 1991, site 129), which like Chester has fewer coins in the first three periods, before following the same broad distribution as Meols. The coins from Sheppard Frere's excavation at Verulamium (Reece 1991, site 6) and Exeter (excavations of 1971; Reece 1991, site 10) show a good match to the Meols distribution and London excavations (Reece 1991, site 32) and Chichester (Reece 1991, site 48) give the next best matches (Table 2.24.7). When compared with Meols, however, all these sites show a relative decline through periods 5–12 (shown most acutely by Exeter). The level of agreement of these sites with the Meols distribution is thrown into focus when the Meols coins are compared with those from Middlewich, which show only a degree of agreement in the pre- and early Flavian periods (Fig. 2.24.2). Middlewich (Shotter 2000b) has produced 93 coins; a similar total to that of Meols. The salt manufacturing role of Middlewich has long been known, but there is evidence for military activity in the King Street area. This method of analysis shows the Meols coins to compare most closely to Chester and a number of other military and civitas sites.

The method of analysing site finds by the 21 periods of issue is evidently useful. However, if coins enter a site several decades after their production and are then lost, the premise on which this approach is based collapses. This picture of rapid loss after issue does not emerge from the majority hoards deposited pre *c.* AD 260 from the north-west and Britain as a whole (cf. *IRCBH*), which include a significant slipstream of earlier issues. This is an obvious problem for sites such as Meols, where very few of the coins are available for examination of wear, and where a small number of coins of the same period, lost late, may unduly influence the picture.

There are also a number of particular weaknesses of the 21 period-of-issue system that are relevant to Meols. Early base coins could circulate into the first ten bronzeless years of Nero's reign (well into period 3) and so periods 2 and 3 merge. The division between 12 and 13 is always difficult, as older records do not discriminate between Gallienus's finer and debased coinage. Likewise, 13 and 14 are an awkward division, as the general orthodoxy says that radiate copies are struck far more after AD 275 than before. When the specimens are unavailable to study, as with the Meols examples, it is difficult to be certain which coins are regular and which irregular. Copies from the 4th century pose less of a problem, for present thinking suggests that they belong fairly closely within the periods of their prototypes.

To overcome these, and other problems, the coins can be divided into four simple phases that more closely mirror the periods of use, outside of which coins are unlikely to have survived for reasons of reform and debasement (Reece 1988; 1991, 12; Table 2.24.8-9).

At Meols this reduction is perhaps heavy-handed. Not all the extant early base coins are heavily worn, and it would seem fair to suggest that many of the pre-Flavian coins were probably lost in the 1st century AD. It is also unlikely that the three *denarii* of Vespasian (**5031-5033**) remained in circulation long after Trajan debased the silver coinage in AD 107. Similarly, the *denarius* of Hadrian (**5040**) is likely to have been removed from circulation soon after the debasement of Septimius Severus in AD 193, had it still been circulating.

This four-period technique suggests that Meols can in fact be viewed as dissimilar to Richborough, Verulamium, Exeter, London, and Chichester (Table 2.24.7), which, on the basis of the 21 periods of coin issue, had appeared similar. What remains, however, is very close agreement with Chester. There is also close agreement with two sites usually characterised as military; Caerleon amphitheatre and Housesteads. The early weighting, though not the later profile, also compares to Manchester.

Ultimately, both the four- and 21-period methods for analysing the Meols coins make the same point; that the closest parallel in the coin record is to be found at Chester.

Another way to characterise the Meols coins for purposes of comparison is to look at the average face value of the coins found at Meols (Table 2.24.10). This theoretically reflects economic activity as much as the wealth of those who used the site. The small sample from Meols may lack great statistical validity, as a single *denarius* would significantly alter the distribution. This method can be applied only to coins *issued* in periods 1–10 of the coinage (pre AD 41–222) as the coinage system and nature of money began to alter after this date. When the coins are plotted it will be seen that there is still a similarity between Chester and Meols (Table 2.24.9), although the clearly defined peaks and troughs in the Chester distribution are less apparent at Meols. On the whole, the value per coin is slightly higher at Chester.

Within north-west England, Walton-le-Dale and Papcastle also show areas of agreement, although less closely than Chester (Table 2.24.11). This analysis has not been attempted for sites outside the region, as the data are not readily available, but would undoubtedly be of interest. What is clear is that the coins at Meols belong to the lower face-value end of the range of denominations to be expected from Roman sites in the region (this is not greatly altered if the uncertain *dupondius/as* coins from Meols are plotted as *dupondii* rather than *asses*, as here).

Discussion

It has been suggested (4.2) that the Augustan pieces may have arrived before the Conquest at Meols. However the close parallels to sites such as Chester (for which no significant pre-Roman settlement is claimed) shows that these coins are more likely to have arrived after the Conquest. The absence of pre-Conquest Roman bronze from Iron Age

coin hoards and secure stratification (Van Arsdell 1989; Haselgrove 1987) also makes this unlikely[11].

At the crudest level, the close similarity between Meols and Chester, as defined by coins lost by period of issue, likely period of loss, and average face value, suggests that whatever happened at Meols produced much the same coin loss pattern at both sites. It should be pointed out, however, that the total from Chester is over 20 times that from Meols (although allowances for the different recovery processes affecting both sites should be made). Whilst the activity leading to coin loss may have been similar, the scale of that activity was very different. On numismatic evidence alone Meols appears to be an outpost for Chester in the Roman period.

The coins from Chester have been examined and discussed in some detail by Shotter (2000a), who makes use of the system based on the 21 periods of issue, and rapid loss after issue. As we have seen above, this invites a possibly erroneously precise degree of interpretation. Some of his themes summarised below, however, are of persuasive relevance to Meols. Shotter (2000a, 39) views the Chester coin evidence as supporting pre-Flavian activity at Chester, although not necessarily a fort. Similar activity on a smaller scale appears at Meols. If Shotter (2000a, 33) is correct in identifying Chester as a possible pre-Flavian base for sea-borne operations against the north Wales coast and north-west England, Meols may well have been an outport given its good strategic position.

The influx Shotter identifies at Chester (2000a, 42) in the late AD 70s is mirrored at Meols, although this is of course a period of substantial coin issue. This has been interpreted as a result of the upgrading of Chester as a fort or base in period 4, which is consistent with the samian record (Shotter 2000a, 44).

Shotter interprets the depressed Hadrianic and Trajanic sample as evidence that the Chester legionaries were being employed to build the Hadrianic and Antonine Walls in Scotland (2000a, 44), the early Antonine recovery in the Chester coin record being the result of Marcus Aurelius withdrawing from Scotland *c.* AD 163. The smaller Meols sample appears to make a stronger case, perhaps confirming the, at least partial, military influence or character of Meols. The House of Constantine issues (period 15) that Shotter sees as being present at Chester contrary to the general pattern of Romano-British coin loss (Fig. 2.24.1), is paralleled, albeit less emphatically, at Meols. The decline in periods 20 and 21 at Chester is mirrored at other sites (Fig. 2.24.2) and Meols. It need not, as Shotter suggests (2000a, 45) denote a sharp change in activity or status of Chester, but a change in the supply of coinage and the mechanisms reliant on it. This is divergent from the general pattern of coin loss in Britain and may suggest unusual local conditions.

When reviewing Shotter's interpretation of the Chester evidence in the light of the Meols coins, it is difficult to deny a military role for Meols, and Shotter (2000a, 41) argues convincingly for the naval character of the settlement at Meols without having examined the coins.

Byzantine coins

There are three Byzantine coins from the general Meols area that have been reported to Liverpool Museum relatively recently (**5123-5125**) (Philpott 1999a)[12]. No coins of this period were recorded amongst the 19th-century finds, and this may be significant. These finds do not come from the beach itself, but slightly inland, in common with some of the later hammered coins in the list. The *decanummium* of Justinianus **5124** was found during construction work before 1987[13] in a garden at Borrowdale Road, Moreton. The other two coins (**5123, 5125**) were found within 30m of one another by a metal-detector user, beside the River Birket, Leasowe in 1991, where they may have been dredged from the river bed. There is reason to suspect that the Leasowe finds are not of ancient deposition. The coin of Maurice Tiberius (**5125**) has a series of irregular old scratches in the obverse fields as if someone has attempted to clean it with a sharp point. These scratches have since patinated, indicating that this piece (and by implication its companion, the coin of Justinus (**5123**), which shows no such marks) are relatively recent introductions to the area. It seems unnecessarily perverse to suggest that these might be local finds, which, once found and crudely cleaned, were then re-deposited before their recent finding.

Byzantine coins found in Britain span the whole period of the coinage from the 5th to 15th centuries. It is generally accepted that the great majority of these are 'secondary' losses, brought back to Britain by traders, sailors, tourists, or soldiers returning from the two World Wars. The subject of Byzantine copper-alloy coin finds from Britain has been examined by Boon (1991). Between 1958 and 1988 he amassed a database of 144 reported finds from Britain, each coin being analysed to determine whether it was an ancient loss. The coins most likely to be ancient losses were those from archaeologically stratified contexts; casual coin finds might also be accepted from sites that had produced other material of the same period. Of his 144 coins, only 3 are from excavated contexts and 5 (including the Moreton coins) from sites with other finds of the period, which, to quote Boon, 'are no more than possible additions, and may well be of disputed status' (Boon 1991, 45). Most of the remainder were demonstrably recent losses, which had thin buff patinas in contrast to the thick green British field patinas that might have been expected (Boon 1991, 45).

The three coins considered here date from the period when the Byzantine Empire was at its maximum extent in the West, stretching across North Africa and into Southern Spain. To service this empire, new mints were opened, resulting in a huge amount of Byzantine copper-alloy coinage being produced. The proximity of the Byzantine Empire to Britain suggests that this is the period from which we might expect ancient imports. It is from this period that there is other evidence for Byzantine imports reaching the Irish Sea Province (Hodges 1982; Fulford 1989; Thomas 1990). However, these are amongst the most common Byzantine coins to be found in former Byzantine lands, and therefore also the most likely to enter Britain more recently.

Locally, two Byzantine pieces were recorded as having been found with eight 3rd-/4th-century Roman coins by a gardener at Otterspool, South Liverpool in 1863 (Ecroyd Smith 1866, 197–8). They were found in a creek below a tree root and therefore considered ancient losses. Unfortunately this is our only record of the find. More recently a *follis* of Justinian has been reported from Runcorn, Cheshire, and an anonymous *follis* from Warburton, Greater Manchester[14], neither have been examined by the author. Two Byzantine and one Ostrogothic coin are recorded from the old Roman fort in Manchester (Conway *et al.* 1909, 69, 116, 139; Nevell 1992, 76–7). Each of these pieces is problematic when examined in detail. The two Byzantine coins[15] were recorded with the Knott Mill hoard, which survived in three parcels held by private collectors. Outside the Roman

content there were four uncertain bronzes, an Autonomous Greek bronze from Syracuse, a probable 15th-century Turkish coin, and the Byzantine pieces. In the original analysis of the hoard the eminent numismatist G. C. Brooke dismissed these pieces as 'probably, or certainly, not belonging to this hoard' (Conway *et al.* 1909, 69), casting doubt on their Manchester provenance. The presence of the probable Turkish coin suggests that the Byzantine coins may have arrived as a parcel of coins from the East, which entered the collector's cabinet and later became confused with the Knott Mill Roman coins (the Syracuse coin is also probably intrusive). These intrusive coins are completely dismissed by *ICHRB* (no. 1396). The Ostrogothic piece was thought likely to be a cast (Conway *et al.* 1909, 139), ancient cast copies do not appear to be a characteristic of this series, although 19th/20th-century casts are well recorded (e.g. *MIC I* 1453–4, pp. 36–7). It belonged to the Rowbotham collections containing 13 coins 'said to have been found in Castlefield [Manchester], but some possibly from outside Manchester' (Conway *et al.* 1909, 114). The case against the Ostrogothic piece is further strengthened by another coin in this group, a 16th/17th-century Dutch card counter in imitation of a Roman coin (Conway *et al.* 1909, 117, coin 13), clearly not an ancient coin find.

There is also a reported 6th- or 7th-century piece found at Denton, Greater Manchester in the vicinity of a late 4th-/early 5th-century AD Roman coin hoard (Nevell 1992, 76–7, 98), this piece was considered to have 'contaminated' the Roman hoard (Shotter 1992, 99). There are ten additional pieces recorded by Boon (1991, 44) from Lancashire of which five are demonstrably not ancient losses, with the remaining five unavailable for examination.

The circumstantial evidence for accepting all the Meols Byzantine coins is therefore weak. We can therefore only accept the *decanummium* of Justinianus as a possible ancient loss at Meols. The function of the coin in Britain, if any, is difficult to determine as this coin does not fit into the prevailing British currency system.

Anglo-Saxon coins

Sceattas and stycas

The post-Roman British list commences with two 'porcupine' sceattas (**5126**, **5127**), both with unequivocal Meols patinas. These coins are well outside the area of their normal distribution. Almost all the provenanced silver sceattas recorded on the Early Medieval Coin Corpus are found to the east of a line that may be drawn from the mouth of the River Tees down to Portland Bill[16]. The only two coins to the west of this line are both from southern Staffordshire[17]. The Meols coins therefore stand in isolation, clearly outside the coin-using area.

Two of the four Northumbrian copper-alloy stycas (**5128-5131**) are extant. One has a convincing Meols patina (**5130**; *SCBI* 29, 96), the other a surface which is altogether less convincing. Finds of Northumbrian copper-alloy stycas are concentrated east of the Pennines and down into East Anglia, with two coins recorded from Lancashire[18]. Three additional records suggest a modest concentration in Merseyside (the three stycas listed by Thompson (1956, 128) as finds from Dove Point are the Meols coins). A blundered retrograde styca of Æthelred II (restored), moneyer ?Eanwulf was found *c.* 1986 by a metal detectorist in dune land at Formby[19]. There have been no further stycas found in the region reported to the Portable Antiquities Scheme.

The presence of these coins at Meols is therefore unusual, but not without precedent, and may be accepted. If one rejects some or all of them then they are likely to have been procured from two possible sources. They are most likely to come from the York Hoard found in 1842 (Thompson 1956, hoard 391) which contained *c.* 10,000 stycas and was dispersed over a period of some years by a silversmith at 6d each. They might also have come from the Hexham Hoard 1833 (Thompson 1956, hoard 188) which contained *c.* 8000 coins, *c.* 2000 of which were dispersed soon after discovery.

Early medieval up to and including 'Cross and Crosslets' ('Tealby') issue

The earliest silver pennies from Meols are from the reign of Eadgar (AD 959–75), one of which was certainly from the Chester mint. It is noticeable that there are no earlier coins with the Chester mint signature. The relatively large series issued from Chester in the reign of Æthelstan (AD 924–39) are unrepresented, as are those of his successor, Eadmund (AD 939–46). Nor are there any coins of Edward the Elder, some of whose coins are attributed to Chester on grounds of style. Local hoards and single finds show that these Chester mint coins were circulating in the area[20], but neither they, nor coins from other mints, were being lost at Meols. However, from the reign of Eadgar there is a fairly continuous pattern of coin loss, although the rare coins of Edward the Martyr (AD 975–78) and Harold II (AD 1066) and the less rare coins of Harold I (AD 1035–40) are not represented. Most of the larger issues of the period are represented.

It is very tempting to associate this sudden evidence of coin loss with some historical event or change. Is it a coincidence that three hoards from Chester were buried in this period[21], one of which, the 1950 Chester hoard, contained coins, ingots, ornaments, and hacksilver, and can firmly be associated with a Viking presence? Does the coin loss at Meols anticipate the renewed Viking raiding recorded in the Anglo-Saxon Chronicle from *c.* 980? Was Meols a Viking staging post? Whatever the stimulus for this initial Saxon coin loss at Meols, coins continued to be lost after the Conquest when there was a fairly consistent rate of loss (see Tables 2.24.24 and 2.24.25). Coins of William II (1087–1100) are, however, absent (unless coin **5183** did belong to William II) even though the Chester mint was active in this period.

Unfortunately there are few sites of comparable geographical situation with which to compare the Meols record. It is an interesting reflection on the nature of the Irish Sea Province that Llanfaes[22], Anglesey, has produced a fragment of a Cnut penny, a cut half of Stephen and two whole and two halved Tealby pennies of Henry II (Besly 1996, 46) despite its distance from the core coin-using area in this period. South Ferriby[123], identified as a minor port in the Anglo-Saxon and medieval periods, with perhaps *ad hoc* markets, has produced very few coins dating before the first decades of the 12th century (Cook *et al.* 1999, 96). Here, the early coins comprise a series Esceat, one cut halfpenny for both Edward the Confessor and William I, two pennies and a cut half of Henry I, a cut Watford type farthing of Stephen and a penny, two cut halves and a cut farthing from the 'Cross and Crosslets ('Tealby') coinage (Cook *et al.*1999, 106–7). Perhaps the best parallel is provided by the unpublished coin finds from the river edge site at Vintry[24], London. This site has produced 36 late Saxon and early Norman coins, 52 coins of Henry I and Stephen and 25 Tealby coins.

Table 2.24.12: Mint origins (where known) for Anglo-Saxon to 'Cross and Crosslets ('Tealby') issues

Ruler	*Type*	*Mint and moneyer*
Eadgar	BMC ii	Chester (*Teothuc*)
	BMC vi	York (*Ae...)*
Æthelred II	BMC iia	Chester (*Elemod*), Shaftsbury (*Æthestan*)
	BMC iiia	London (*...ric*)
	Uncertain	York
Cnut	BMC viii	Chester (2) (*Ceolnoth, Gunleof*)
	BMC xiv	Chester (2) (*Gunleof,...oth*)
	BMC xvi	Chester (*Leofwine*), Shrewsbury (*Etsige*), Winchester (*Swileman*)
Harthacnut	BMC ii	Chester (*Leofnoth*)
Edward the Confessor	BMC iv	Chester (*Le[o]fwi*), London (*...ric*)
	BMC iii	Chester (*moneyer lost*)
	BMC ii	Southwark (*Elfpine*)
	BMC ix	Chester (*Brunni[n]c*)
	Uncertain	Chester (*...os*)
William I	BMC iv	Chester (2) (*Col..., moneyer lost*)
	BMC viii	Winchester (*Sprieclinc*)
Henry I	Uncertain	London (*moneyer lost*)
Stephen	BMC i	Chester (*Ailmer*)
Henry II	Tealby	Ipswich (2) (*Nicole, moneyer not stated*), London (*moneyer lost*), Bristol (**5199,** etc.)

When the mint origins of the Meols coins are tabulated (Table 2.24.12) the dominance of Chester is apparent, with 15 of the 28 coins coming from this mint, the remaining coins represent a sample of mints around the country: London (4 coins), Ipswich (2), W inchester (2), York (2), Shaftsbury (1), Shrewsbury (1), and Southwark (1). The absence of Chester coins of Henry II's 'Tealby' series from Meols may be accounted for by their extreme scarcity[25]. As with the Roman period, Meols appears to be very much in the economic dominion of Chester. It will be interesting to see how the Meols list compares with the finds from Chester when that list is published.

The coinage of the period was dominated by the penny and, with the exception of a very rare issue of halfpennies by Henry I, small change was created by shearing pennies into halves and quarters, often aided by reverse designs featuring cross patterns. Table 2.24.13 shows that of the minimum of 47 coins at least 16 were cut halves and two were cut farthings. It will be seen that the proportion of cut coins to uncut coins increases after the Norman Conquest. Cut farthings may be under -represented, as their small size, which probably promoted their loss, might also have hindered their chances of recovery. There are too few coins from Llanfaes or South Ferriby for comparison, but in broad terms the ratio of cut to uncut coins compares to the probable market site at Dunwich (Hancox 1908).

From the reign of Eadgar to the Conquest the coins were lost at an average of one coin every 3.5 years, a slightly higher rate of loss than at V intry (Tables 2.24.24 and 2.24.25). In the Norman and Plantagenet coinage up to the 'Tealby' issues the rate of loss at Meols halves to a coin every 6.28 years. By contrast, the rate of coin loss at Vintry and South Ferriby doubled in this period. The rate or loss at Meols continues for the Tealby coinage, where a coin is lost every 2.8 years, a similar rate of loss is apparent at Llanfaes and South Ferriby , but at V intry specimens were being lost at a rate of more than 1 per year.

Table 2.24.13: Values of coins found at Meols from Anglo-Saxon to 'Cross and Crosslets' ('Tealby') issues. Fragments have been treated as whole coins where it is apparent they have not been deliberately cut

Ruler	*Type*	*Penny*	*Cut half*	*Cut farthing*
Eadgar	BMC ii	1		
	BMC iv	1	1	
Æthelred II	BMC iia	3		
	BMC iiia		1	
	Uncertain	1		
Cnut	BMC viii	2		
	BMC xiv	1	1	
	BMC xvi	3	1	
	Uncertain	2		
Harthacnut	BMC ii	1		
Edward the Confessor	BMC iv	1	1	
	BMC iii		1	
	BMC ii	1 (small flan)		
	BMC ix	1		
	Uncertain		1	
William I	BMC ii	1		
	BMC iv		3	
	BMC v		3	
	BMC viii	1 (+?1)		
Henry I	BMC II	1		
	Uncertain		1	
Stephen	BMC I	1		1
Stephen/Henry II	Uncertain	1		
Henry II	Tealby	6+	2+	1
Total		29		

Table 2.24.14: Mint and class analysis of Short Cross coins from Meols. Numbers in italics are coins in the Grosvenor Museum which probably originate from Meols

Mint	*Class* *1–2*	*3*	*4*	*5*	*5–6*	*6*	*7*	*8*	*uncert.*	*Total*
London	1, 3		1	1, *1*				1	12, *1*	15, *6*
Bury St Edmunds									1	1
Canterbury			1	1		1	1		2	4, *2*
Chichester				1						1
Colchester									3	3
Ipswich				1						1
Lincoln				1						1
Rhuddlan									1, *1*	1, *1*
Winchester				1						1
York						1				1
Totals	1, *3*		2	5, *2*		2	1	1	19, *2*	27, *11*

Short Cross coinage

In 1180 Henry II introduced a new 'Short Cross' coinage that swept away the previous coins of Stephen, the Anarchy, and the 'T ealby' issues, which were of variable quality in terms of content and production. The new coinage was remarkable, covering not only the closing years of the reign of Henry II, but also his successors Richard, John, and Henry III. The entire series bears only the 'hENRICVS' legend, but the series can be divided chronologically into classes that can be attributed to the various kings. The number of mints was reduced in number and Chester did not contribute to this issue.

Unfortunately, many of the Short Cross coins from Meols are no longer extant and their class cannot be determined from their description. Of those for which a class can be determined many are coins in the Grosvenor Museum, Chester, which are very probably from Meols, although this cannot be conclusively proven in most cases as the labels have become muddled (these are plotted in italics in Tables 2.24.14-15). The general imprecision with which these pennies were described in the old sources, often lumped together with other types, mean that in the following examination we are dealing with minimum numbers, when the original total of Short Cross coins recovered from the site could have been double this number.

The distribution of Short Cross classes found at Meols only compares to that of V intry (Table 2.24.15; cf. Besly 1996, table 2), although the small sample from Meols lacks statistical validity. Interestingly, it does not follow the pattern of either Llanfaes or Wales. There are too few coins to draw many conclusions about the distribution of mints. The dominance of London and Canterbury pieces conforms to other sites such as Llanfaes, South Ferriby and Vintry (Cook *et al.* 1999, table 2; Besly 1996, table 3). At Llanfaes, coins from the Rhuddlan mint account for nearly 14% of the total, at Meols the two specimens (**5186**; **S6014**) (if the Grosvenor coin is accepted) account for only 5% of the total [26], despite Rhuddlan being 22km from Meols and 43km from Llanfaes. These factors suggest that Meols was not conforming to the pattern for north W ales.

When the distribution of denominations is attempted we encounter the problem that the original sources often bulk cut halves and quarters together , making it impossible to discern true totals. This is underlined by the fact that coins in the Grosvenor Museum that very probably come from

Table 2.24.15: Comparative distribution of Short Cross coins from Meols by class

Site	*1–4*	*5+6*	*7*	*8*	*Total*
Meols	1,*5*	5, *4*	1	1	8, *9*
%	35	52	6	6	
Vintry	26	29	7	–	62
%	41.9	46.8	11.2	–	
Llanfaes	67	133	85	5	290
%	23.1	45.8	29.3	1.7	
Wales	20	21	18	1	60
%	33.3	35.0	30.0	1.6	
South Ferriby	16	39	19	–	74
%	21.6	52.7	25.7	–	

Table 2.24.16: Comparative range of values of Short Cross coins from Meols. The Meols total is minimum numbers arrived at from the catalogue, coins very probably from Meols in the Grosvenor Museum are listed in italics, as are percentages that include these coins

Site	*Pennies*	*Cut 1/2d*	*Cut 1/4d*	*Total*
Meols	32+, *4*	13+, *6*	1+, *3*	46+, *13*
%	*69.5, 61.0*	28.2, *32.2*	2.1, *6.7*	
Vintry	17	36	24	77
%	22.1	46.8	31.2	
Dunwich	6	75	75	156
%	3.8	48.1	48.1	
Llanfaes	176	143	31	350
%	50.3	40.9	8.9	
Wales (general)	44	24	4	72
%	61.1	33.3	5.6	
South Ferriby	21	47	11	79
%	26.6	59.5	13.9	

Meols (shown in italics) do not conform to the minimum number total arrived at from the references. Meols compares most closely to the totalled reports of these coins from Wales, with whole pennies dominating over fractions (Tables 2.24.15 and 2.24.16; Besly 1996, 58).

In this period the rate of coin loss at Meols greatly increases from one every 2.8 years in the Tealby coinage to about one coin a year. Very slightly higher rate of loss is apparent at Vintry and South Ferriby, but in this period more than five coins per year were being lost at Llanfaes (Table 2.24.25).

Long Cross coinage

By the middle of the reign of Henry III the coinage was once again in a poor state, being much worn and clipped. The new coinage appeared in 1247 with a cross on the reverse that extended to the edge of the flan in an attempt to dissuade clipping. The earliest coins lack a mint or moneyer's name, but soon there are coins with a number of provincial mint signatures. In 1250 the number of mints was reduced to four: London, Canterbury, Durham, and Bury St Edmunds.

The rate of coin loss at Meols increases in this period, from one coin per year to four, demonstrating a much greater use of money at Meols. This is double the rate of loss at South Ferriby and at least four times that at Vintry, but it compares closely to that from Llanfaes, suggesting that Meols has now caught up with the Welsh site.

Throughout the different classes into which the coinage can be divided the London mint is dominant (Table 2.24.17). Canterbury, as one would expect from its large output, is the second most frequently encountered mint, with remaining mints represented by a couple of coins each. There is no suggestion of a bias to the south-western or Midland mints. When the proportion of whole and cut fractions are compared with other sites, the closest comparison is once again to the pattern from Wales (Table 2.24.18).

Sterling coinage

The 'Long Cross' coinage was swept away by the 'Sterling' coinage introduced by Edward I in 1279 and continued by his successors. This coinage included not only pennies, but also extensive issues of round halfpennies and farthings. A common find from most sites of the period, a minimum of 148 are recorded from Meols. These coins are often recorded in terms of totals in the 19th-century records and the extant coins are too few in number for meaningful conclusions to be drawn from the distribution of different classes.

Table 2.24.18: Comparative range of values of Long Cross coins from Meols. '+' coins are those in the Grosvenor Museum likely to have been found at Meols but now lacking certain provenance. Meols totals are minimum numbers, excluding all possible duplicate records

Site	*Pennies*	*Cut 1/2d*	*Cut 1/4d*	*Total*
Meols	49+2	58+2	6+3	119
%	42.9	49.8	7.5	
Vintry	4	15	10	29
%	13.8	51.7	34.5	
Dunwich	4	34	71	71
%	3.7	31.2	65.1	
Llanfaes	25	110	8	143
%	17.5	76.9	5.6	
Wales (general)	9	10	2	21
%	42.9	47.6	9.5	
South Ferriby	13	53	13	79
%	16.5	67.0	16.5	

Table 2.24.17: Mint and class distribution of Long Cross coins from Meols. Minimum totals shown as possible duplicates and those without specific identification are not plotted. Italicised number are probable Meols coins in Grosvenor Museum, Chester

Mint	*Cl. I*	*Cl. II*	*Cl. II-III*	*Cl. I-III*	*Cl. III*	*Cl. IV*	*Cl. III/IV*	*Cl. IV/V*	*Cl. V*	*Cl. Uncert*	*Total*
London		*1*	2	1,*1*	3	3			9,2	39	57, *4*
Canterbury										7	7
Bury St Edmunds									1, *1*		2
Durham										1	1
Canterbury									2,2		2, *2*
'Berwick' ?Bristol										1	1
Bristol										3	3
Exeter				*1*	1						1, *1*
Hereford	1										1
Gloucester										1	1
Lincoln										2	2
Northampton					1						1
Oxford					1						1
York				1						1	2
Uncertain				*1*	3	2		1	2, *1*	76, *1*	84, *3*
Total	1	*1*	2	1, *3*	9	*5*		1	12, *6*	133	–

During the Sterling period (to 1351) coin loss at Meols declines from four per year in the preceding coinage to 2.4 coins a year. This rate of loss is more than double that from Vintry and Llanfaes (reflecting the decline of these two sites in this period). At South Ferriby the lower level of loss observed in the Long Cross coinage continues, with an average of 1.5 coins lost per year (T ables 2.24.24 and 2.24.25).

The spread of mints represented at Meols compares closely to that of Llanfaes, and as might be expected London and Canterbury dominate (T able 2.24.19). As expected, Chester is well represented. The proportion of coins from Ireland and Scotland is comparable to other sites, although lower than might be expected if a thriving Irish Sea trade is envisaged.

The new Sterling coinage introduced a regular supply of round halfpennies and farthings, although cut fractions continue at Meols. Cut halves and quarters are unknown at Vintry, and South Ferriby, while at Llanfaes there is a single divided either by folding and breaking or cutting (Besly 1996, coin 514) and three coins that have been folded, a possible preparation for division if by shearing (Besly 1996, coins 509, 511, 515). T able 2.24.16 may under -represent cut fractions as these are not always made distinct by early writers, unless the piece is described as cut it has been tallied as uncut.

Table 2.24.19: Comparison of mint origins for sterling period coins of all denominations, up to 1351.'+' coins are those in the Grosvenor Museum that are likely to be from Meols

Mint	*Meols*	*Llanfaes*	*Vintry*	*South Ferriby*
London	62+4	36	60	42
Canterbury	32	16	3	14
Berwick	1			
Bristol	4	3	2	3
Bury	2	1	1	3
Chester	4			
Durham	9	1	2	6
Lincoln	4	3		2
Hull		1		2
Newcastle			1	
York	4+1	4	5	1
Scottish	9+1	3		5
Irish	10+1	6	1	5
Continental	7	5	3	4
Total	148+7	79	78	87

Coinage after 1351

As the 14th century progressed the English coinage became increasingly sophisticated with the introduction of a wide range of denominations. During this period coin loss at Meols declines markedly in contrast to comparable sites (Table 2.24.25, Llanfaes had been abandoned by this time). The Meols total is too small to draw detailed conclusions, but the processes leading to coin loss at Meols must have altered or declined. This is broadly in line with the conclusion of Chitty and W arhurst (1977, 21) who believed the site was abandoned, for whatever reason, during the reigns of Edward II and III. However, the evidence here assembled makes a less clear case for sudden abandonment, instead the numismatic record suggests decline.

There is a recovery in the early modern period, but here two factors come into play. Firstly, a number of these pieces have provenances inland, rather than on the shore, suggesting that the focus of activity may have shifted. Secondly a copper coinage had been introduced, meaning that there was more small change in circulation and being lost. The number of coins from this period is similar to that from South Ferriby, but it is clear that the heyday of Meols has passed.

Table 2.24.20: Denomination of coin loss in Sterling period down to 1351. Figures in parentheses represent the number within that total that are cut

	1d	*1/2*	*1/4d*	*Total*
Meols	131	25 (7 cut)	15 (5 cut)	171
%	76.6	14.6	8.8	
Llanfaes[27]	59	5 (?1 cut)	7	71
%	83.1	7.0	9.9	
Vintry	41	23	14	78
%	52.6	29.5	17.9	
South Ferriby[28]	82	14	9	105
	78.1	13.3	8.6	

Foreign coins

There are a number of foreign coins beyond the Scottish, Irish, and Sterling imitation coins from the site. Of those described in sufficient detail to determine their identification, only two might have enjoyed a currency function in Britain. The copper coin of Charles II of Spain may have been acceptable as a halfpenny , and the intrinsic value of the gold Venetian coin would have made it useful currency. More intriguing are the two copper coins, one a late 15th-century piece from Naples/Sicily, the other a 16th-century Polish copper. England at the time did not use a base metal currency, so these coins would have been useless as money. Do they hint at traders from afar , or are they lost curios/souvenirs or simply intrusive?

Table 2.24.21: Later medieval coins from Meols compared with other sites. Includes Irish, Scottish, and Continental issues, as appropriate

Period	*Site*	*4d*	*2d*	*1d*	*1/2*	*1/4*	*Total*
1351–1412	Meols	1	1	6	2		10
	South Ferriby		1	21	2		24
	York		2	15			17
1412–1464	Meols						0
	South Ferriby			6	9		12
	York			6			6
1464–1544	Meols	2	1		1	1	5
	South Ferriby	2	8	10	2		22
	York	1		3			4

Table 2.24.22: Early modern coins from Meols. Includes Scottish and Irish coins and tokens

Period	*2/6*	*1/-*	*6d*	*4d*	*3d*	*2d*	*1d*	*1/2d*	*1/4d*
Edward VI – Elizabeth		2	8	5	3	3	3	3	
James I – Charles II (hammered)		6	2			1			12
Charles II milled – William III		6						12	13

Table 2.24.23: Early modern coins from South Ferriby. Includes Scottish and Irish coins and tokens

Period	*2/6*	*1/-*	*6d*	*4d*	*3d*	*2d*	*1d*	*1/2d*	*1/4d*
Edward VI – Elizabeth		2	8	10	7	19	17		
James I – Charles II (hammered)	1	3	3	2		10	1	5	5
Charles II milled – William III		3	8		1	1			2

Jettons and lead 'tokens'

Jettons first appear in England in the third quarter of the 13th century. Their introduction mirrors that of Edward' s sterling coinage, and the study of letter and other punches suggest they were produced by the royal mint. They were used in computing monetary transactions, although it has been suggested that long-cross jettons may have been used as small change (Wren 1995, 171). Later jettons are encountered on almost all English medieval sites and were manufactured in many parts of Europe and exported widely.

The Meols group includes three jettons from the reigns of Edward I–III, followed by two manufactured at Tournai in France dating to the 14th–16th century . There are 11 from Nuremburg, which would date *c.* 1550–1630. The latter were mass-produced and are commonly found in England.

The pattern of jetton usage and deposition across England and Wales is not yet fully understood. There are a very large number of Edwardian jettons recorded from Vintry, followed by a significant number of 14th–16th-century French pieces. By contrast, Llanfaes has produced only one jetton, a 14th-century French piece.

The Meols finds include four lead tokens. There was prolific issue of lead 'tokens' from *c.* 1200, and our understanding of this series has recently been enhanced by the large quantity recovered from the Thames muds. In the Tudor period letters appear (Cuddeford 1999, 57) and the series had largely died out by *c.* 1820. The function of these pieces is not well understood, but in the late-17th century they were certainly used as tokens for very small change, and a similar function is likely for some earlier pieces (Cuddeford 1999, 57). Their occurrence at Meols supports a monetary function, and, given the concentration of later 12th- and 13th-century coins, it is likely that some of the simpler lead pieces are of this date. Three pieces have tentatively been dated to the 14th, 15th–16th centuries, and the 17th century Furthermore, two post-medieval lead buttons **3015**, **3021** have been flattened, possibly to pass as small change.

Like jettons, their pattern of usage across Britain is little understood, and they are often excluded or poorly described in earlier coin reports. A few of the Meols pieces can be dated from their description. There are two possible 'Boy-Bishop' tokens of the 14th or early 15th century . These are primarily encountered in East Anglia. T wo further tokens may be of the same date, there are two probable Tudor pieces and four which may be 17th or 18th century. Those detailed from V intry show a much earlier emphasis, none are published from South Ferriby and Llanfaes.

Table 2.24.24: Distribution of post-Roman coins from Meols over time compared with other sites. Includes Irish, Scottish, and foreign material by period (but excludes jettons). Meols coins totals exclude possible duplicates and the William III guineas, which are probably from a wreck, but include probable Meols finds from the Grosvenor Museum. Llanfaes totals include coins from Besly (1996, appendix 2). The figures for sterling and later coins from South Ferriby are derived from Cook et al. 1999, table 9 and the published Vintry list

Period	*Meols*	*South Ferriby*	*Vintry*	*Llanfaes*
Anglo-Saxon	32 (6.1%)	2 (0.4%)	22 (7.5%)	1 (0.17%)
Norman/Plantagenet	14 (2.7%)	5 (1.1%)	56 (19.2%)	1 (0.17%)
Tealby	8 (1.5%)	4 (0.9%)	26 (8.9%)	4 (0.68%)
Short Cross	68 (13.1%)	83 (18.2%)	77 (26.4%)	350 (59.2%)
Long Cross	130 (24.9%)	77 (16.9%)	29 (9.9%)	143 (24.3%)
Sterling to 1351	171 (32.8%)	105 (23%)	78 (26.7%)	71 (12%)
Late medieval	17 (3.3%)	72 (15.8%)		10 (1.7%)
Early modern (1544–1702)	81 (15.6%)	108 (23.7%)	4 (1.4%)	11 (1.9%)

Table 2.24.25: Coin loss per year at Meols and comparable sites. Note: Llanfaes was abandoned in 1296 and Vintry went into decline in the 14th century

Period	*Meols*	*South Ferriby*	*Vintry*	*Llanfaes*
Late Anglo-Saxon (AD 973–1066)	0.3	0.02	0.24	0.01
Norman/Plantagenet	0.16	0.06	0.64	0.01
Tealby	0.28	0.18	1.18	0.18
Short Cross	1.01	1.24	1.15	5.22
Long Cross	4.06	3.5	1.32	6.5
Sterling to 1351	2.38	1.46	1.08	0.99
Late medieval	0.09	0.37	0.0	0.05
Early modern (1544–1702)	0.51	0.68	0.03	0.07

An early medieval mint at Meols?

Blackburn has suggested that Meols may well have been the site of a Viking-period mint (Blackburn 1996). Cnut's *quatrefoil* type contains a number of imitative groups that can be identified primarily on stylistic grounds, groupings confirmed by metrology. Two of these groups clearly originate from Dublin, most are struck from dies cut in Dublin (Blackburn 1996, 2–4), but a group struck from one obverse and two dies are from dies engraved in a distinctive style found only at Chester (Blackburn 1996, 4–5). (There is a further grouping probably struck in Scandinavia that utilise a Hiberno-Norse die (Blackburn 1996, 9–10). It is clear from the Irish titulature on these dies that they were specially commissioned rather than illicitly obtained. This clearly shows one specific example of contact between Chester and Dublin, which may have resonance for Meols in an area where there is strong evidence for Scandinavian influence (e.g. Griffiths 1996). There is evidence that Hiberno-Norse coins were circulating in Chester in the decades up to the Norman Conquest (e.g. Blackburn 1996, 6), and the Hiberno-Norse cut half from Meols, if we are correct in associating **5772** with **S6039**, shows this pattern is true of the broader area.

In addition to these two groups there is another, which behaves in a quite different way. Its existence was first recognised from a single coin in a small group discovered at Pant-yr-Eglwys on the Great Orme in North Wales in 1981 (Boon 1986, 13; Blackburn 1996, 10). The imitation was of a quite distinct style that could not be accommodated amongst official and imitative mints for the type. It closely imitated Chester mint coins, showing skill and consistency in the cutting, but was clearly from a different die cutter, and later coins misunderstand both the legends and designs of the model (Blackburn 1996, 11). Stewart Lyon (pers. comm.) has already tentatively identified this group working on Scandinavian material in Stockholm in the 1960s, and considered it might be of Irish origin. Wider study has identified 43 specimens from 20 obverse and reverse dies. None die-link to other Irish coins and their weight pattern is considerably lighter than the Irish series. Indeed, examination of this issue suggests that it bears the characteristics of an issue that was deliberately lighter than the prototype in order to make a profit. Metallurgical analysis suggests that these coins were simply made by recycling their heavier prototypes (Blackburn 1996, 11–12). In common with the majority of coins of the period, most of the provenanced coins are from Scandinavia. In addition to the Pant-yr-Eglwys coin, two others may be 18th-century finds from Britain and the Isle of Man (Blackburn 1996, 12). This is important as, whilst British coins travelled to Scandinavia in profusion, this traffic was overwhelmingly one way (e.g. Archibald 1991). This proves the mint was local rather than Scandinavian. The coins available to the die cutter must have been preponderantly local ones from Chester (he did not use a single coin as a model), narrowing the options to north-west England or around the Irish Sea. The scale of the production, comparable to one of the smaller or medium-sized Anglo-Saxon mints, makes it unlikely they were produced by a forger operating within an Anglo-Saxon kingdom (Blackburn 1996, 13). From the number found in Scandinavia, they clearly penetrated the currency circulating in the Irish Sea very effectively, so must have been produced somewhere closely associated with this commerce.

Blackburn convincingly demonstrates that this series lacks the characteristics of the Hiberno-Norse series and the Hiberno-Manx series (Blackburn 1996, 13–14). But the Manx series does show that a Norse colony other than that at Dublin, could support a mint. Despite the single securely provenanced British specimen from Pant-yr-Eglwys, Blackburn did not consider that any North Wales site had sufficient archaeological evidence for Norse settlement to support such a mint. Whilst a site in Cumbria would be strategically well sited, this area was under the influence of the York mint, so a Chester model would be unlikely (Blackburn 1996, 14). Closer to Chester, Blackburn identified north-west Wirral with its attested Norse presence (Griffiths 1996, 46–60) with Meols as its trading centre (Blackburn 1996, 14–15). At that time Blackburn had only six coins of Cnut available to him, but from the body of evidence here assembled the same message is clear, of the ten coins at least six are from Chester mint and two of these are of *quatrefoil* type. Tantalisingly, one of these (*5773*, now lost) is described by Hume to have a badly struck obverse and illegible reverse (Hume 1863, 293). Was this one of the most blundered of the imitations in this series? The apparent absence of these coins from Chester can be excused if we accept that the Bryn Maelgwyn hoard, used to characterise coins circulating in Chester at this period, was put together selectively, excluding lightweight coins. Otherwise it seems difficult to understand why there was not a two-way traffic of coins between Chester and Meols. The attribution of this anonymous and ostensibly fraudulent mint to Meols is far from certain; however, the mint must have been close to Chester and economically dominated by it. If the mint were not peripatetic, as the Manx mint may have been (Dolley 1976; but not wholly supported by Bornholdt 1999, 211) then the best site so far identified is Meols.

Notes

1 Allason-Jones and McKay 1985, 54, 66: one Siculo-Punic coin of the same type found at Meols and in Kent; one Sicily: Syracuse: Agathocles; two Campania and Neapolis; one copy of Macedon: Philip II; but Boon 1991, 40 accepts only the worn Neapolis bronze, the others lack a definitive provenance and Boon considers them intrusive.
2 Summary on p. 138–9 omits several coins.
3 Coin 19 in Conway et al. 1909, 106 cannot be this coin; G. F. Hill who examined these coins was sufficiently knowledgeable to have made its identity explicit if it were known to him.
4 Dr Philip de Jersey pers. comm.; Celtic Coin Index nos: 98.1364, 93.0584, and 99.1301, respectively.
5 The Savernake and British Ly3 staters are broadly the right weight, but are both uniface. This leaves the possibility that it might belong to British D, specimens of which come close to the lower end of this weight range (Bean 2000, fig. 2.10), however this type has an unusually concentrated distribution in southern Hampshire and Dorset (Bean 2000, fig. 2.7).
6 See footnote 2.
7 Recorded by Evans (1864, 129) uses the phrase 'said to have been found' in connection with this coin. The precision with which Evans used language suggests that he lacked confidence in the find and its communicant.
8 Originally included as part of the ill-recorded Lightcliffe hoard (*Trans Yorkshire Num Soc* 1957, 14), which certainly contained Corieltauvian and Roman coins. Allen was uncertain whether this coin belonged in the hoard, but satisfied that it had been found in the Halifax area (Allen 1960, 273).
9 See footnote 8, Evans (1864, 129) uses the same phrase for this coin.
10 This coin is mistakenly cited as a Gaulish hoard (Laing and Laing 1983, 7) as it was accidentally plotted as such on the OS Map of Southern Britain in the Iron Age.
11 Silver denarii certainly entered Britain before the Conquest (Bean 2000, 146).
12 Two further Justinian I coins from the Mersey estuary margins have been reported to the Portable Antiquities Scheme (PAS) since 2005. A follis dated AD 548–9, was found on the foreshore at Seacombe 9km east of Dove Point (PAS LVPL-874C64) and another, from Preston-on-the-Hill, Cheshire (PAS LVPL-1440).
13 This is the piece referred to in Boon 1991, 41, 43.
14 Reported to Portable Antiquities Scheme (PAS).
15 Bronzes of Constantine IV (AD 668–85), Sicily mint, Wroth ii, p. 324, 67 [Bellinger, R. and Grierson, P. 1966 *Catalogue of The Byzantine Coins in The Dumbarton Oaks Collection and in the Whittemore Collection.* Washington, no. 62] and a coin described as struck in Alexandria, 7th century AD, of Heraclius? (Conway *et al.* 1909, 69).
16 Interrogation of online database at: www.fitzwilliam.cam.ac.uk/coins/emc.html.
17 A series G sceat from Eccleshall, Staffordshire; Series A3 from Compton, Staffordshire.
18 Interrogation of Early Medieval Coin Corpus footnote 16. Two Lancashire finds: Series Y of Æthelred I, Whitelow, Bury, Lancs; Irregular styca, Lancaster, Lancs.
19 Acquired by Liverpool Museum, accession number 1998.128.
20As footnote 16.
21 Thompson 1956, hoard 84: Chester 1857, deposited *c.* 965; hoard 86: Chester 1950, deposited *c.* 970; hoard 85: Chester 1914, deposited *c.* 985.
22 The site of Llanfaes (Besly 1996) is near Beaumaris on Anglesey. By the 13th century the place was a bond township and a commercial centre with a port, ferry, fishing, and fairs and weekly markets. The fairs and markets were transferred to Beaumaris in 1296 and the population moved soon after. By 1405 all buildings bar a friary had disappeared. Coins recovered by metal detector.
23 South Ferriby (Cook et al. 1999) is on the south bank of the Humber and the site has produced evidence of Iron Age and Roman activity. Finds from the Anglo-Saxon period suggest continued importance. The coins were recovered from the surface and by metal detector.
24 Vintry (Barrie Cook forthcoming) is a river front site in the City of London. Unpublished, but lists in Museum of London and British Museum. The site has provided a considerable coin record from the 11th and 12th centuries, and a good representation from the 13th and 14th centuries, before tailing off swiftly indicating a decline in activity from *c.* 1350.

2.25 Human and animal remains

THE 'LEASOWE MAN' SKELETON

Silvia Gonzalez and Rick J. Schulting

The skeleton (Pl. 78)

The peat bed under which Cust claimed the skeleton lay has recently been dated to 6460±40 BP (Lab no. SRR-1496) (1.2). Cust's interpretation of the skeleton's date as prehistoric in relation to its apparent position in the stratigraphic sequence was therefore not unreasonable. However, the skeleton has now been accelerator mass spectrometry (AMS) radiocarbon dated to 1785±50 years BP (cal AD 95–385). It is the only Romano-British near-complete skeleton found in the area, and thus its deposit must have been intrusive through the peat bed, although no grave cut was recognised at the time. A Roman presence in the immediate vicinity is evidenced by the artefacts recovered from the soil overlying the peat (Ecroyd Smith 1866; Reade 1872).

The Leasowe skeleton is curated in the Natural History Museum (NHM), London (old cat. no. RCS 4.095; NHM PA SK 137); where it was examined in the spring of 2001. A small bone sample was taken from the right tibia at this time for radiometric dating. The skeleton is incomplete (Table 2.25.1), not surprisingly given the way in which it was discovered and the early date of recovery. Nevertheless, the presence of some small hand/foot bones suggests that it was originally a complete primary burial. All the bones of the skeleton that are present are stained a deep brown through contact with the peat in which they lay. There is some adhering sandy sediment, and some bones show old fungal or lichen growth. Some fine rootlets are present.

In the absence of the pelvis, the skull provides the most accurate means of sexing a human skeleton. All the standard morphological criteria (Bass 1987; Krogman and Iscan 1986; Stewart 1979) are unequivocal in identifying this individual as male. The cranium shows strong brow ridges with dull orbital margins, the mastoid processes are large and projecting, and the nuchal area is well-developed. The mandible, while not large, shows a strongly developed chin. The size and robusticity of the long bones are in general agreement with the assessment as male, although

the individual does not appear to have been particularly large. In terms of age at death, all long bones present are in a completely fused, adult state. Cranial sutures are largely obliterated, suggesting an older adult (*c.* 40 years). Slight to moderate degenerative changes (lipping) can be observed on the lumbar vertebrae, again suggesting an older individual. This is in broad agreement with the state of wear of the dentition, discussed below.

The cranium is missing a portion of the top of the vault, together with the sphenoid and most of the basi-occiput (Fig. 2.25.1). Part of the face is also missing through post-mortem damage. The right orbit, although damaged, appears to exhibit healed scars from childhood cribra orbitalia, a condition usually linked to some form of anaemia, whether through dietary deficiency or pathogen load (e.g. intestinal parasites) (Stuart-Macadam 1992). The incomplete and damaged state of the cranium prevents the taking of detailed craniometric measurements. Its length can be estimated at 190mm and breadth at 150mm, for a cranial index of 78.9, making it mesocephalic (or midway between 'long-headed' and 'round-headed'). A selection of measurements for those long bones present is given in Table 2.25.1 (see Bass 1987 for definitions).

On the few long bones that are present, the muscle attachments are strongly marked. This is particularly the case with the popliteal line of the right tibia, which serves as the attachment for the popliteus muscle. The interosseous crest of the surviving left radius is marked and rugous in appearance, suggesting repetitive powerful movements of the forearm. These strong muscle attachments indicate a relatively strenuous physical lifestyle (not unusual in prehistoric and early historic populations).

The femur provides the best single element for the calculation of stature, but unfortunately this bone could not be located during the recent examination of the material. However, early 20th-century records at the NHM provide a length of 462mm for one of the femora (side unspecified). The similarity of other measurements on elements that are still present indicate that the early values can be taken as accurate. Using standard regression formulae (T rotter and Gleser 1952; 1958), the stature of 'Leasowe Man' can thus be calculated as having been approximately 172.7±3.9cm. This is slightly above the average height of 169.1cm (5 ft 6.5 in) calculated for a large sample of males from the Romano-British cemetery at Cirencester (Wells 1982).

The dentition of the skeleton is largely complete, with only the upper and lower central incisors lost post-mortem. The left maxillary third molar seems to have been congenitally absent, although the broken roots shows that its antimere was present on the right. Attrition is marked, with the mandibular lateral incisors, in particular, worn down to dentine stubs. The mandibular first molars are worn to enamel rings, and the third molars show some dentine exposure. Based on Miles's (1963) and Brothwell's (1965) ageing systems, this suggests an age at death of approximately 30–40 years, in broad agreement with the state of cranial suture closure and other indicators. The left maxillary lateral incisor exhibits an extreme angle of wear in a labial-lingual direction. This is not matched on the right side (and unfortunately the central incisors are missing, so that it is not possible to say how localised this pattern is), nor on the adjacent canine, which suggests that it could reflect activity-related wear. The left lateral mandibular incisor also shows a degree of opposing angled wear, although not nearly as extreme. There are a number of dental pathologies on the mandible. A large caries affects the adjoining areas of the left second and third molars, and the fourth right premolar was lost long before death, allowing the tooth crypt to heal over entirely. The maxillary canine shows two slight enamel hypoplasia lines; signs of nutritional stress at the time the tooth was forming in childhood. The mandibular teeth exhibit mild calculus deposits. With the possible exception of the wear on the incisor noted above, none of these conditions is unusual for an individual living at this time.

Stable isotope analysis and Romano-British diet

The stable carbon isotope ($\delta 13C$) value of of –19.6‰ associated with the AMS determination provides some limited insights into Romano-British diet on the Meols site. The technique differentiates well between marine and terrestrial-based diets, and reflects a long-term average (of the order of 5–10 years) of the protein consumed by an individual (see Schoeninger and Moore 1992 for a review of the technique). The Leasowe measurement, while not as accurate as those undertaken specifically for palaeodietary research, suggests that marine protein did not play any significant role in this individual's diet. This is despite the site location directly on the coast (and assuming that he actually spent much of his life in the area). A similar situation applies to an individual from T y Gwyn Road on the Great Orme (LLDMG 1997/216). This individual has been directly dated to 1900±34 BP (OxA-16521, cal AD 27–215), and so is approximately contemporary with the Leasowe skeleton. It exhibits a very similar, though in this case specifically measured, $\delta 13C$ value of –19.8‰, again indicating no appreciable use of marine protein. This is in contrast to high status Romano-British burials at Poundbury in Dorset, which do show slightly elevated $\delta 13C$ values of *c.* –18.2‰, possibly related to the use of the anchovy-based relish *garum* (Richards *et al.* 1998). In general, the British population seems to have made relatively little use of marine foods from the time farming appeared in the neolithic period, until after the Iron Age (see Schulting and Richards 2002a, b).

Summary

The skeleton found at Leasowe is that of an adult male about 30–40 years of age. The man was approximately 173cm tall, and the surviving long bones provide evidence of an active lifestyle in the form of well-marked muscle attachment sites. There is no discernable cause of death. Pathology on the extant remains is limited to mild degenerative changes in the lower vertebrae. Healed scars in the right orbit may indicate childhood anaemia. Possible enamel hypoplastic lines on the upper canine may provide further evidence of possible childhood nutritional stress. The teeth show high rates of wear, and an unusual wear pattern on the anterior dentition that may relate to an unspecified, non-dietary use of the teeth. The left second and third molars were affected by a large caries, and a right premolar was lost long before death.

Stable carbon isotope analysis indicates that, despite presumably living so near the sea, marine foods did not make a significant contribution to the diet of 'Leasowe Man' during Roman times.

The burial rite

Robert Philpott

Detailed consideration of the contemporary accounts of the discovery make it clear that the grave was not, in fact, seen with a peat layer *in situ* above it, nor seen to be eroding

Table 2.25.1: Elements, osteometrics, and indices for 'Leasowe Man' skeleton*

Element	*Side*	*Condition*	*Measurement (mm)*
Cranium		Nearly complete	Length *c.* 190
			Breadth *c.* 148
Mandible		Nearly complete	Symphysis height 30.0
			Bigonial breadth 102.3
			Bicondylar breadth *c.* 108
			Ramus breadth (L) 31.9
			Ramus height (L) *c.* 72
Axis vertebra		Complete	
Cervical vertebra		Complete	
8 thoracic vertebrae		Nearly complete	
5 lumbar vertebrae		Nearly complete	
1st rib	L		
18 rib articular ends and numerous shaft fragments			
Scapula	L	Damaged body	Glenoid cavity length 39.3
Scapula	R	Damaged body	Glenoid cavity length 40.1
Clavicle	L	Damaged ends	Length 142.5
Humerus	L	Complete	Length *c.* 340
			Max. diameter of head 44.6
			Least circumference 60.2
			Max. mid-shaft diameter 21.5
			Min. mid-shaft diameter 17.9
			Biepicondylar width 64.4
			Distal articular width 44.7
Radius	L	Complete	Length 256
Ulna	L	Complete	Length 278.5
Metacarpal II	L		
Metacarpal V	R		
2 phalanges			
Femur		(missing)	Max. length *c.* 462
Tibia	R	Proximal 2/3	
Fibula	L?	Mid-shaft	

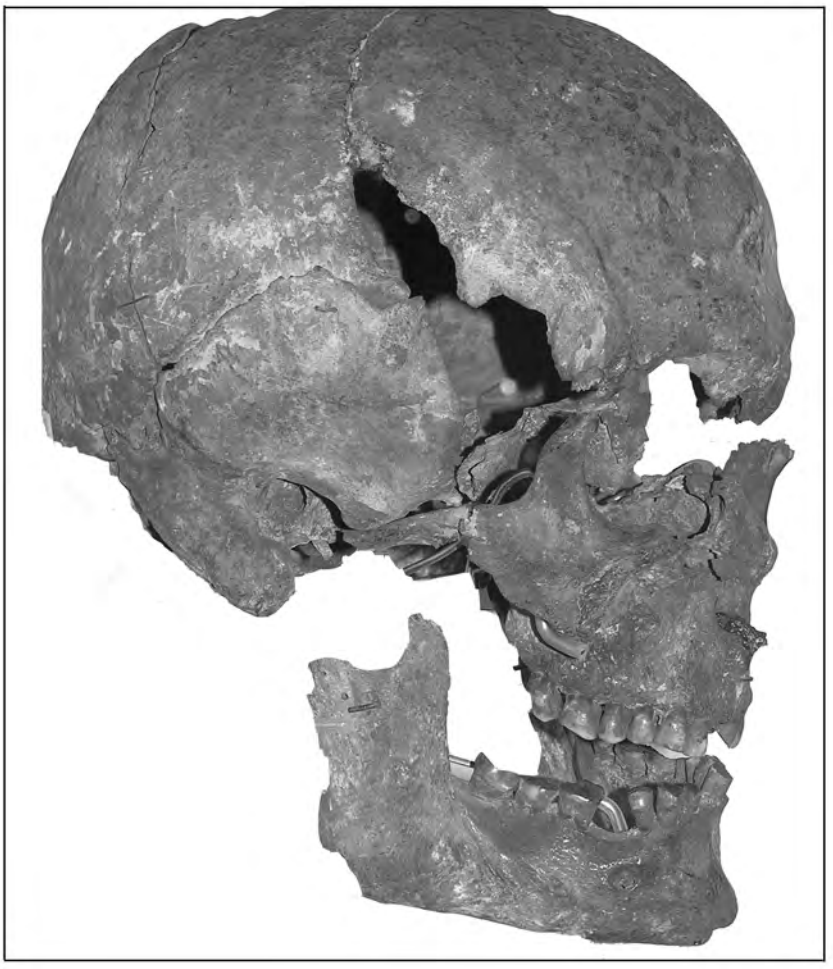
Indices
Cranial index = 78.9 (mesocephalic)
Humeral robusticity index = 17.71
Radiohumeral index = 75.29

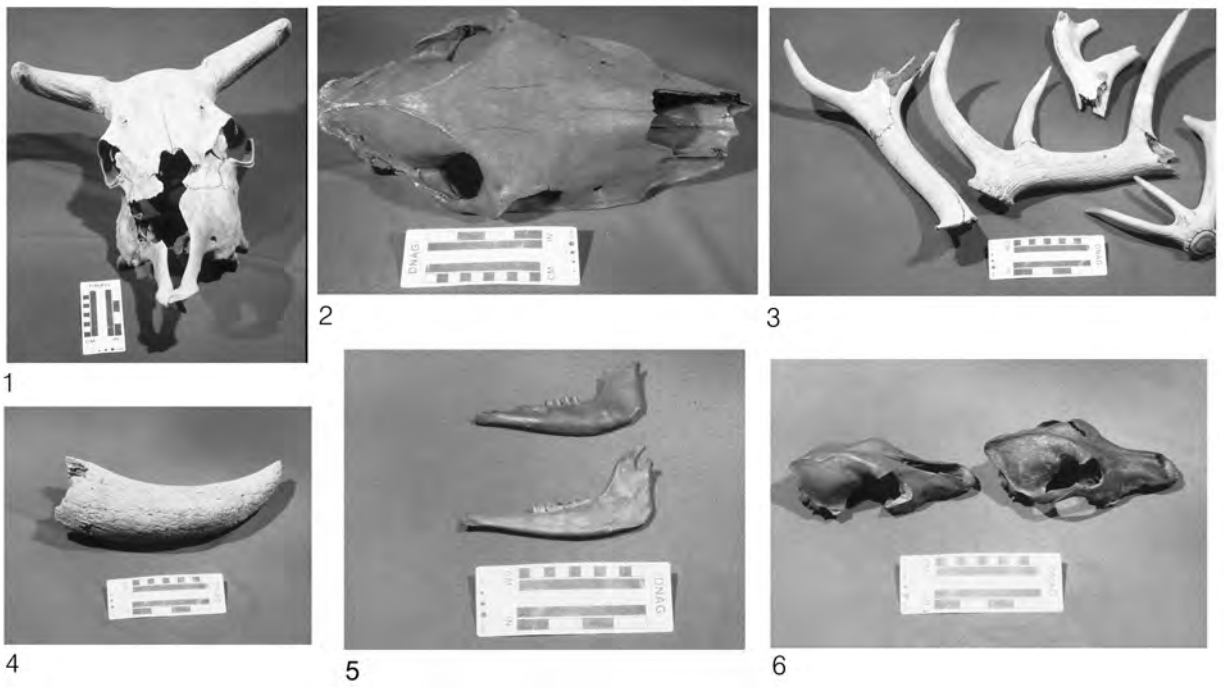
*Elements present in the Natural History Museum, 2001.
Max., maximum; min., minimum.

from under such a layer (Cust 1864). Ecroyd Smith himself at the time took strong exception not only to Cust' s interpretation of the discovery , but also to his subsequent appropriation of the remains (Ecroyd Smith 1865, 211–3; Anon 1864a, 249–50).

The radiocarbon dating of the skeleton enables it to be attributed to the Roman period. The findspot of the burial is well established, though how this related to its contemporary landscape is more difficult to determine. The site lay well to the east of the main concentration of Roman finds recovered from the eastern side of Dove Point in the 19th century. However, a small number of Roman finds have been reported from the general area of Leasowe Castle, including an Aucissa brooch in 1979, and a Roman brooch near the Leasowe Hotel (Ecroyd Smith 1865, 213–4).

The cultural affinities of a single unfurnished inhumation, without grave furniture and with no apparent signs of a coffin, is consistent with later Roman burial practice in Britain, which saw a decline in grave furnishing during the 3rd century followed by the development of unfurnished and extended inhumation as a 'normative' rite by the 4th century. However, in north-west England there is very little surviving evidence for native burial practice for either the pre-Roman Iron Age or the Roman period (Whimster 1981). Most Roman-period burials have been discovered either at military sites or towns where the influence of Romanised burial practices was strongest (Philpott 1991). In the early Roman period cremation was the most common rite in southern and eastern England, but the people of most other areas continued to inhume their dead in the first two centuries of the Roman era. Unfurnished inhumation may have been the usual rural rite in the north west of England, although a crouched posture was common in early native inhumation traditions elsewhere in Britain.





Pl. 78. Human and Animal Bone. (upper) 'Leasowe Man' skull mounted for display at NML, 2005. (lower) Selected animal bone remains from Meols (Silvia Gonzalez).

Key: 1. Bos Longifrons skull; 2. Horse (Equus) skull; 3. Red deer (cervus elaphus) antlers; 4. Cattle (Bos sp) horn; 5. Sheep (Ovis sp) mandibles; 6. Two dogs' (canis sp) skulls.

ANIMAL BONE

Silvia Gonzalez

In the 19th century several authors mentioned finds of animal remains in the Holocene blue clays and peat layers in the intertidal zone around Liverpool Bay (Busk 1865; Ecroyd Smith 1866, 213–4; Reade 1872, 1881; Moore 1857; 1881; Morton 1887; Smith 1924). Some large collections of animal bones were sent to Liverpool Museum by some authors, such as Reade (1881) and Morton (1887), but unfortunately the majority of these finds were lost during World War II bombing of the Museum (Fig. 1.3.1). However, since then more bones have been recovered from the same sediment sequences and amongst a sizeable collection, at Liverpool Museum, there are remains of aurochs *Bos primigenius*, jawbones, teeth, horns; red deer (*Cervus elaphus*), jawbones, antlers, ribs; horse (*Equus*), skull, teeth, vertebrae and wild pig (*Sus scrofa*) (jawbone).

Other important bone collections from similar stratigraphic levels, mainly from the Leasowe area (north Wirral coast), are held today by the Williamson Gallery and Museum, Birkenhead. The collection includes: red deer (antlers, vertebrae), aurochs (jawbones, teeth, horns, vertebrae, horse (skull, vertebrae), dogs (skulls), sheep (jawbone) and goat (jawbone) (Huddart, Gonzalez and Roberts 1999). In the majority of these cases the bones are casual finds and their stratigraphic position is rarely known. However, it is easy to identify the bone remains coming from the peat beds, due to their dark brown coloration, whilst the bones from the blue clays and silts tend to have a more natural look, sometimes heavily mineralised and at times still retaining blue silt grains inside. Typically, it is Ecroyd Smith who most carefully defines the stratigraphic context of discoveries. He distinguishes between the bones of stags, oxen, horses, wild boar , dogs, and so on, which were located within the 'woody deposition', the so-called upper Forest Bed, and the skull of *Bos longifrons* and a worn tusk of *Sus scrofa* (wild boar), which were originally in the 'artificial stratum of soil', otherwise known as the soil bed, which contained finds dated to the 12th–15th centuries (Ecroyd Smith 1866, 213).

There is, however, one exception, in which there is detailed stratigraphic information about the animal bone finds. The animal midden found at Leasowe Bay in the 1960s by the Henderson family and reported by Kenna (1986). He had radiocarbon dated an ox rib from the midden to 3980±70 years BP . The midden included an aurochs skull, several red deer antlers, a wild boar skull, two dogs' skulls, a horse skull and several vertebrae. The midden material is now at the Williamson Art Gallery and Museum in Birkenhead.

This material, in so far as it can be reliably attributed to Meols, is included in ongoing study of animal bone deposits from the region, and full analysis and reporting will follow at a subsequent stage.

3. Landscape and Coastal Change

3.1 Evolution of the north Wirral coast during the Holocene: 10,000 years ago to the present

Ron Cowell and Silvia Gonzalez

History of research in the area: the contribution of geologists and geographers

The presence of terrestrial peats or 'submerged forests' (Fig. 3.1.1) in the inter -tidal zone on north W irral reflects one facet of the changing palaeo-environment associated with sea-level changes during the Holocene, from about 10,000 years ago until the present. Exposures of submerged forests in the north W irral foreshore are still visible today at low tide, especially in front of the Leasowe Lighthouse. However , these modern exposures (Fig. 3.1.2, Fig. 3.1.3) are very small compared with the ones found before the construction of the modern sea wall defences at the end of the 1970s. The best exposures were found around the Leasowe Lighthouse and Dove Point, Meols, where they extended several hundreds of square metres into the sea in the so-called 'Dove Point Spit'.

In particular, in the latter half of the 19th and beginning of the 20th centuries, extensive exposures of inter-tidal peats were a common feature of the coast and were the subject of antiquarian and scientific interest and discussion of the way they originated (Hume 1863; Ecroyd Smith 1866; de Rance 1869; 1872; 1877; Reade 1871; 1872; 1881; 1908; Morton 1887; 1888; 1897). Research into their nature and the types of vegetation present was also undertaken (W. G. Travis 1908; 1922; C. B. T ravis 1926; 1929; Erdtman 1928). However, the complex interaction between the alternating units of terrestrial peats (biogenic units) and marine clays (minerogenic) proved difficult to understand, and they were interpreted then in terms of coastal change (primarily land level) by Binney and T albot (1843), Picton (1849), Reade (1871), and Morton (1888). Of particular importance is the work of Ecroyd Smith (1866), who was the first researcher to draw stratigraphic columns describing the sediment layers in detail, together with the position of the archaeological finds (Fig. 1.2.4).

More recently Tooley (1970; 1974; 1976; 1978; 1982; 1985) undertook detailed stratigraphical, pollen, and micropalaeontological work, which

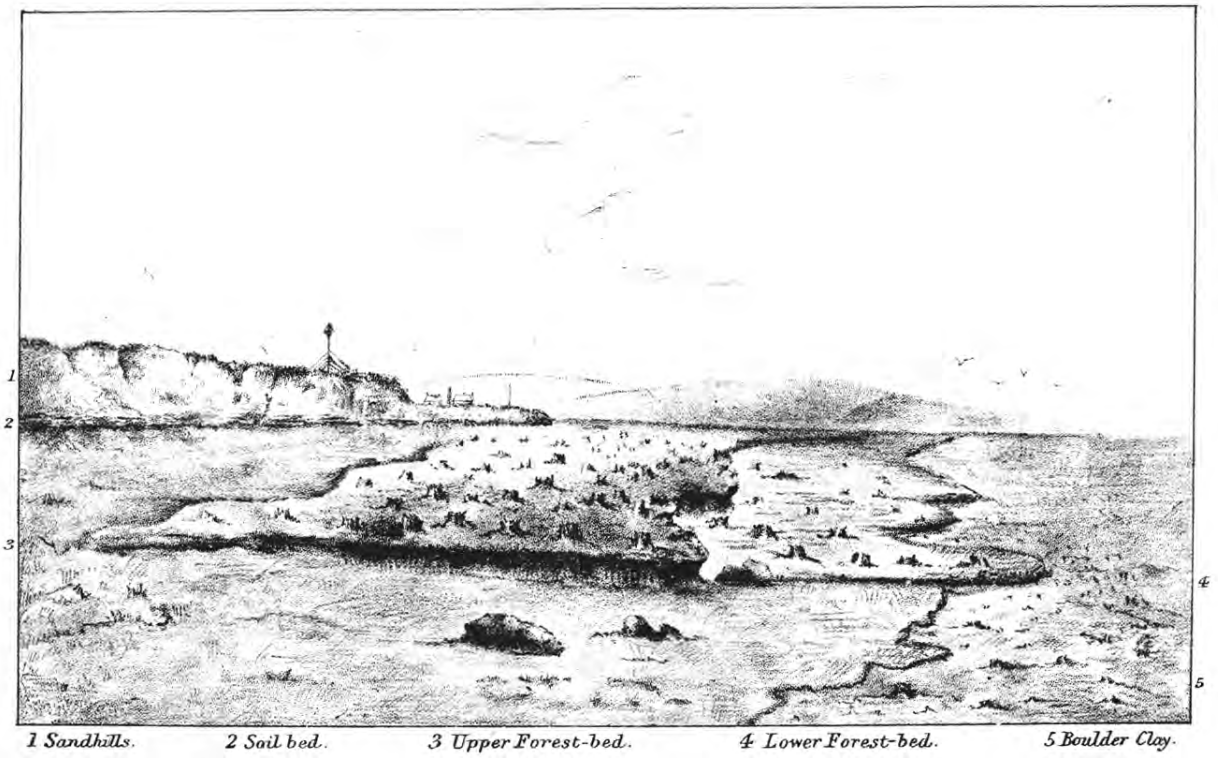


Fig. 3.1.1: Drawing of Meols peat beds (after Morton 1897)

Fig. 3.1.2: Photograph of the 'Ancient Forest' c. 1913 © NML

Fig. 3.1.3: 1996 photograph of remaining peat beds from west, Silvia Gonzalez

established the West Lancashire area (Formby, Hightown, and Downholland Moss) as one of the classic areas for Holocene sea-level reconstructions in the UK. The established sequence for the Lancashire mosslands made possible the reconstruction of sea-level trends for north-west England from about 9000 to 4500 years BP, which provides a general framework for the stratigraphic evidence from Wirral. However, it was not until the work of Kenna (1978; 1979; 1986) that the north Wirral coast was specifically provided with a palaeoenvironmental framework based on stratigraphic observations, associated radiocarbon dates, and a limited amount of pollen analysis. This is based on the mapping of data from logs of 400 boreholes that have penetrated the Holocene deposits for research (Norton 1978), local authority, water company, and civil engineering purposes. These are particularly numerous in the Parkfields area of Meols, between OS Eastings SJ 2300 to SJ 2500. In addition, Holocene sequences were recorded and sampled during renovation of the coastal sea-wall in 1978–79. An additional four sampling sites that provided evidence of pre-Holocene drainage patterns are recorded from civil engineering operations a little inland on the coastal plain.

Subsequent palynological and stratigraphical work on the coast at Meols and in the adjoining mossland embayments of Newton Carr and Bidston Moss provides additional information to extend the sequence more widely across north Wirral. This was undertaken mainly in the early 1980s by Jim Innes and Philippa Tomlinson (Innes and Tomlinson 1991; Innes *et al.* 1990). The creation of the North West Wetlands Survey by English Heritage in 1991 allowed the Merseyside volume in this series to bring much of this work together for Wirral, alongside some new analysis, and set it in its wider archaeological context for the first time (Cowell and Innes 1994).

Palaeogeographic background

The study of the coastal sediments around Liverpool Bay provides detailed evidence of environmental change resulting from changes in sea-level and groundwater, which have been important factors controlling the nature and development of human settlement in the area during the Holocene. The sediments deposited reflect the whole range of coastal palaeoenvironments, including salt marshes, sand-dunes, freshwater and brackish water lagoons, meres, and fens, which humans in the past had the opportunity to exploit.

The earlier surface beneath these sediments consists of Triassic sandstone bedrock overlain by glacial clay tills deposited during the last ice age. It is well established that at the maximum of the last glacial period (the Devensian cold stage) approximately 18,000 years ago, the global sea-level was about 120m lower that it is today (Fairbanks 1989). This means that large land areas, which are today under the sea, would have been exposed at the time. The eastern shelf of the Irish Sea Basin would have been occupied by glaciers, which deposited sediments as they retreated in response to subsequent climatic warming (Thomas 1985; Bowen *et al.* 1986). During the retreat of the glaciers from the region, completed by *c.* 10,000 years ago, large amounts of meltwater became available with a resultant rise in sea-level, which from the mid-Holocene formed a series of marine transgressions of former coastal plains, together with subsequent regressions, as a result of the isostatic adjustment of the land. These variations in marine water volume had large consequences in the changing palaeogeography of the coastal plain over time.

The present-day surface of the coastal plain of Wirral lies at a height of *c.* 5m OD, which represents the upper surface of the Holocene sedimentary sequence. The main evidence for the buried palaeogeography of the coastal plain comes from Kenna's work, outlined above. This shows that between approximately Meols and Leasowe the coastal strip has a very subtle, undulating glacial till subsurface topography of low gradients (Fig. 3.1.4). This would have formed the earliest prehistoric land surface prior to the onset of marine conditions after *c.* 6000 cal BC. The subsurface lies generally ±0.5m in relation to the 0m datum, with small promontories, such as around Leasowe Castle, reaching *c.* 2m OD. Along the coastal plain to the west of OS Easting SJ 2300, the subsurface falls to *c.* –2m in places, although the borehole evidence in this part of the plain is restricted (Kenna 1986).

Towards the north-west corner of Wirral, the subsurface slopes more dramatically to form an extensive depression, called the 'western depression' occupying most of the area between Hoylake and West Kirby, centred on Newton Carr (Kenna 1986). The current land surface of the Holocene deposits here lies between *c.* 6.5m OD and 4.5m OD. A Triassic sandstone outcrop, which follows the bank of the River Dee terminates on the north at West Kirby, at a height of *c.* 50m OD, and marks the south-western edge of the depression. A sandstone surface is recorded in a borehole at 0.41m OD near the western edge of Newton Carr (Fig. 3.1.5). A low, boulder clay ridge, at a height of *c.* 15m OD, marks the southern edge of the embayment.

The sub-Holocene surface topography of the northern part of the depression is not well understood at present, but appears to slope quite sharply to the west and north-west, perhaps forming a shelving ledge out to sea to the east of the Hilbre Islands. These islands consist of sandstone outcrops, which form the only ground in the tidal zone south-west of Meols high enough not to have been subject to burial by Holocene deposits. The buried palaeogeography of the southern part of the Carr is known better from the work of D. Bedlington of Durham University, based on analysis of 10 boreholes (Innes *et al.* 1990). This shows that the outcropping glacial till ridge marking the southern edge of the Carr forms two

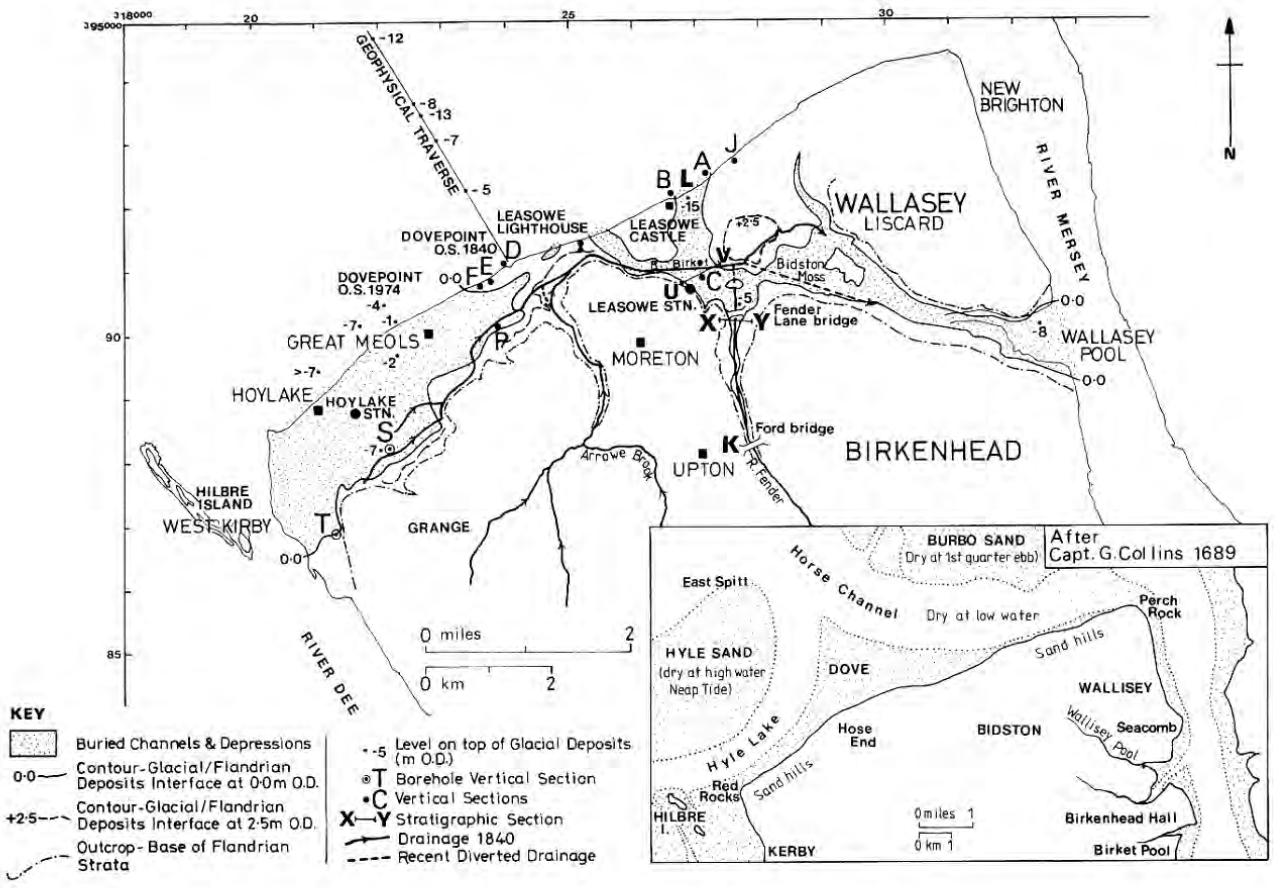


Fig. 3.1.4: Kenna 1986, Fig 2, ©Wiley & Sons, by permission

buried steps in the sub-Holocene surface. The first runs approximately along the line of the Newton Brook, trending south-westwards from *c.* 4m OD to approximately 0m OD, although the far western side of the Carr has not been surveyed. Between here and the River Birket to the north lies a sub-Holocene surface of flatter gradient, between –2.5m and –2.9m OD. This subsequently deepens to the north and west to –4.5m OD and –5.3m OD, respectively , although a slight ridge appears to run northwards, which would have formed a gentle promontory, at *c.* –3.5m OD, within the depression.

Towards the north-eastern corner of W irral, Bidston Moss forms an embayment, with the sandstone ridge on which W allasey is located rising quite steeply to *c.* 33m OD on the north-east and the Bidston sandstone ridge, at about the same height, on the south.

Buried topography of early river channels in north Wirral

The earlier drainage pattern for parts of north Wirral has been reconstructed from borehole logs, geophysical surveys, and observations (Kenna 1986). Several observation points along the present course of the River Fender, to the south of Bidston Moss, show that it follows the earlier course of the river. This has a steeply profiled channel about 400m across, of probable late Devensian age (*c.* 18,000 to 10,000 BP), whose base lies at –5m OD close to the south-western edge of the moss. From this point the channel splits, deepening northwards to –10m OD close to Leasowe Railway Station (SJ 269 907), and is projected to meet the present coast to the east of Leasowe Castle, with a basal depth of c –15m OD (Fig. 3.1.4). A tributary channel flowing north-westwards meets the present coast *c.* 1km the west of that (Kenna 1986). The low base of the channel reflects a period when sea-levels in the Irish Sea basin were as low as –20m OD, during the 10th millennium BP (Tooley 1978). A linear geophysical traverse from the present sea-wall at Dove Point out to sea shows that the subsurface deepens to *c.* –8m OD within *c.* 3km, with undulations reaching –13m OD.

The other main drainage of the coastal zone is formed by the River Birket. Its early channel had an easterly arm, which flowed into the Wallasey Pool on the south-western edge of the W allasey ridge, approximately where the Birkenhead docks are today, before joining the Mersey . The Pool has a shallower gradient, which Kenna (1986) suggests may have been cut once the northerly arm of the Birket, which flowed to the coast west of New Brighton, had been blocked by dune formation, sometime after *c.* 2000–2500 BC.

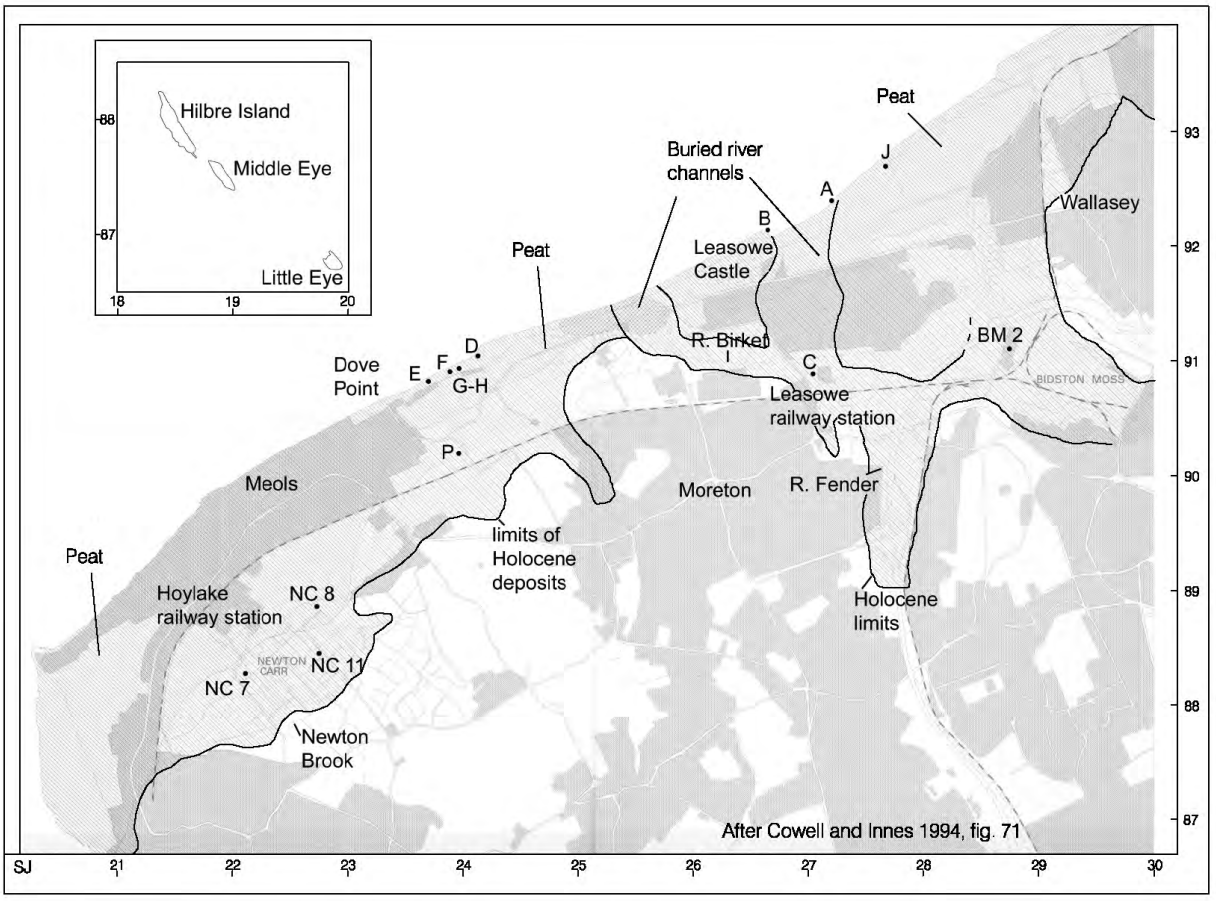


Fig. 3.1.5: North Wirral Coast: places mentioned in text and Table 3.1.1

Palaeoenvironmental evidence for sea-level change on the north Wirral coast

Stratigraphic and palaeoenvironmental research on Wirral (Kenna 1978, 1979, 1986; Innes *et al.* 1990; Bedlington 1995) has revealed a similar sequence to the one found by Tooley in the Lancashire mosslands in terms of changes in coastal sedimentation, which have been interpreted in the context of the Holocene sea-level rise. The detailed Holocene sequence on the north Wirral coast is shown in (Fig. 3.1.6), based on the work of Kenna (1986), which is largely reliant on the recorded sections and samples between Leasowe and Meols outlined above. He divided the sequence into seven units below the sand-dunes, from trenches, natural outcrops, and core information.

The earliest records of wetland environments in the present coastal plain come from the deeper basins, and suggest the onset of marine conditions were first felt at the beginning of the 6th millennium cal BC. On the north-west edge of the plain, at Newton Carr (Fig. 3.1.5), the stratigraphy shows that there are three distinct peat horizons, representing three periods of terrestrial freshwater depositional environments within the basin (Cowell and Innes 1994, fig. 9, table 6; Innes *et al.* 1990). The lowest layer of peat occurs only at the western end of the site, and the pollen assemblage suggests it is likely to have originated in the Holocene I pollen zone (i.e. before 6180–5720 cal BC, which is the Holocene I/II boundary, based on the regional pollen type site of Red Moss, Greater Manchester (Hibbert, Switsur and West 1971)). The pollen assemblage from the upper part of this lowest peat bed suggests an early Holocene II date for the approach of coastal conditions, while the peat is overlain by blue-grey silt in the deeper north-western side of the buried depression, for which pollen and diatom evidence supports an estuarine or marine origin. The end of a marine phase is marked at about 5960–5720 cal BC (7010±50 BP: SRR-2927) at a pollen site south-west of Dove Point (NGR SJ 232906), where at an altitude of 1m OD a very thin blue clay is overlain by a thin peat band (Innes *et al.* forthcoming). At a few other locations, a thin clay layer containing marine shells and marine-estuarine diatoms lying over the glacial till surface probably also reflects this earliest marine phase in north Wirral (Kenna 1986). In the Bidston basin, towards the north-eastern end of the coastal plain, there is less evidence of marine conditions at about this time, with freshwater clays laid down prior to *c.* 6400–6080 cal BC (7360±60 BP; SRR-2926), succeeded by reedswamp conditions (Cowell and Innes 1994, table 2).

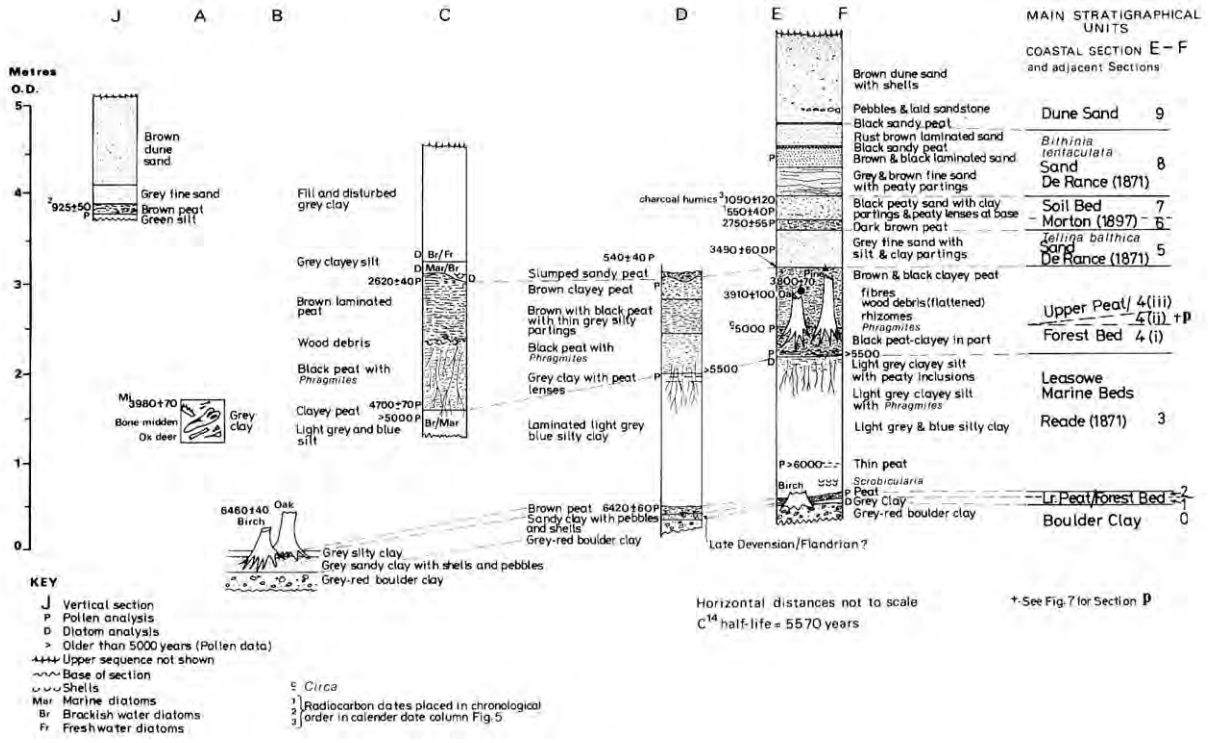


Fig. 3.1.6: Kenna 1986, Fig 4, ©Wiley & Sons, by permission

Within the Meols area the marine deposits lie directly under an extensive, but not continuous, thin band of laminated peats, containing stumps of oak and birch, known as the Lower Peat/Forest Bed (LPFB) (Fig. 3.1.6), which outcropped across the present inter-tidal zone (Morton 1897; Reade 1872; Kenna 1978). Close to Leasowe Castle, radiocarbon dates are available for an oak stump from this layer of 5490–5245 cal BC (6420±60 BP; SRR-1494) and peat in the Parkfields area of Meols has an associated date of 5439–5194 cal BC (6460±40 BP; SRR-1496) (Kenna 1986). A birch stump in the peat at the site to the south-west of Dove Point mentioned above (Innes *et al.* forthcoming) produced a date of 5560–5323 (6510±50 BP; SRR-2928), which fits well with the later 6th millennium BC horizon for a phase of woodland that extended westwards beyond the present coastline. At Newton Carr, the wetter conditions persisted, with an early Holocene II (post *c.* 6050 BC) phase of marine-estuarine deposition giving way to a second peat layer , indicating the development of reedswamp and fen carr across the former marine clay surface (Cowell and Innes 1994, 54).

In the Meols sequences, in the vicinity of Leasowe Lighthouse, the LPFB is overlain by a deposit of grey and blue clays and silts (the Leasowe Marine Beds) (Fig. 3.1.6), reaching over 1m thick towards the south-west. This probably represents, at least partly , upper tidal flat conditions when the prehistoric coastline was further inland than today. A second peat and *in situ* tree root layer, known as the Upper Peat/Forest Bed (UPFB), which overlies the Leasowe marine clay along the central coastal section, provides the best indications of a date bracket for this marine phase. Kenna (1986) divided the UPFB into three lithological and pollen assemblage sub-units. The lowest part of this layer , represented by a black peat with reedswamp characteristics, shows, from associated pollen evidence, the changing palaeoenvironments for the adjacent perimarine zone, with a move from saltmarsh to fen carr woodland. This retreat of marine conditions from the present coast is dated only by the character of the associated pollen assemblage to the mid- to late-Holocene II (*c.* 5000 to *c.* 4000 cal BC). A slightly more precise date for this event might be suggested by the boundary between a blue-grey silt clay and overlying band of peat that marks the end of a marine phase at Park Road, Meols, dated to 4234–3980 cal BC (5250±50 BP; SRR-2694) (Cowell and Innes 1994, 43).

In early Holocene III, its commencement marked by the elm decline, which locally is dated to around 3990–3640 cal BC (Cowell and Innes 1994, 60), the pollen associated with the middle, clayey peat, sub-unit of the UPFB at Meols, reflects nearby saltmarsh conditions taking over from the preceding phase of fen carr reedswamp (Kenna 1986, 13). Potentially correlating with this, at Park Road, Meols (P on Fig. 3.1.5), around 4034–3790 cal BC (5120±50BP; SRR-2929) a peat band is succeeded by an overlying blue-grey clay band that probably represents another coastal inundation of marine or estuarine origin (Cowell and Innes 1994, table 5).

At Bidston (Fig. 3.1.5), direct marine inundation occurred across the mossland for the first time after 3690–3360 cal BC (4740±70 BP; SRR-2924), with an alluvial clay overlying a woody peat with tree trunks and stumps originally attributed to estuarine conditions (Ecroyd Smith 1866). This has been confirmed by Davies and McMillan (1956), who recorded a thin layer of marine *Scrobicularia* clay overlying the peat. However, the peat appeared to have been eroded before the deposition of the clay, which suggests that the marine phase of sedimentation could be appreciably younger than the early- to mid-neolithic event suggested by the radiocarbon date, and it is probably safer to assume that it was some time after that date that marine conditions spread into the Bidston embayment.

Later in the Holocene III period, roughly after the late 4th millennium BC, conditions dried out in these coastal areas, matching the retreat of marine conditions noted generally in north-west England (Tooley 1978). At Park Road, Meols, a peat band at 2.76m OD to 2.88m OD, with associated radiocarbon dates, shows that the period from around 3510–3140 cal BC (4620±50; SRR-2693) up to 3100–2704 cal BC (4315±70; GU-1312) saw the development of reedswamp and the progressive reduction of marine influence. There was another phase of marine deposition after this, although this may have been of local significance only (Cowell and Innes 1994, table 5).

Radiocarbon dates associated with samples of oak and pine from the upper, brown fibrous peat, horizon of the UPFB at Meols, of 2858–2049 cal BC (3910±100 BP; SRR-1493) and the more useful date of 2454–2137 cal BC (3800±40 BP; SRR-1495), respectively, reflect the existence of wooded conditions on the present coast at the beginning of the Bronze Age. This UPFB, which is not necessarily continuous across north Wirral, has been traced inland to within approximately 1km of Bidston Moss, where it is found at thicknesses of over 1m overlying the silty clay fills of the early Birket and Fender channels (Kenna 1986, fig. 6b). Bone of *Bos longifrons* (domestic ox) from Mockbeggar Wharf near Leasowe Castle may also be of this phase, as it is dated to 2861–2310 cal BC (3980±70 BP; Birm-1013) from an altitudinal level about 0.5m lower than the tree roots. Several kilometres to the south, in Reeds Lane, Moreton, a tree trunk lying on the peat, at an altitudinal level *c.* 0.7m higher than the UFPB tree roots produced a date of 2460–1774 cal BC (3695±110 BP; Q-620) (Kenna 1986, 14).

Although the latter date has a broad range, it does suggest that, in general, water tables may have been rising during the early Bronze Age as woodland died and was succeeded by alder fen carr and raised bog. This is confirmed to some extent by a fine sand, with marine-estuarine shells, which post-dates 2012–1680 cal BC (3490±60 BP; GU-1271), in a few slightly inland localities overlying the UPFB. In boreholes close to Hoylake station (Fig. 3.1.5), silts and clays with diatoms of brackish environments with nearby sandy shores overlie the UPFB at altitudes between 2.2m and 3.2m OD (Kenna 1978, 30; 1986, 20).

Subsequent evidence for prehistoric environment is restricted. The alluvial clay of an unknown date after the middle/late Neolithic seals the Bidston Moss sequence (Cowell and Innes 1994, table 2), while at Newton Carr a capping of alluvial silty clay of unknown date is found above the upper peat (Cowell and Innes 1994, table 4). At most places on the coast a loss of prehistoric sediments seems to have occurred, as the upper layers of the coastal sequence are related to more recent episodes of sand-dune production.

Sea-level change in the Roman period

Robert A. Philpott

The question of sea-level is critical to the discussion of the role of Meols during the Roman period. Sea-level determines the extent to which local rivers were navigable by substantial vessels, and hence the extent to which estuarine, riverine, or coastal settlements or forts depended on trans-shipment facilities for movement of goods.

Tooley observes that there are relatively few dated index points for sea-level during the late Iron Age and Roman periods in Britain, making it difficult to assess the position of the ancient coastline, and the impacts on havens, tidal regimes, and on lower courses of rivers at this period (Tooley 1990b, 5). In addition, the resolution of age and altitude using present methodology cannot be obtained with more precision than 100 radiocarbon years and 1m (Tooley 1990b, 5).

Devoy notes that over the period *c.* 500 BC to AD 1000 the relative sea-level had been rising in most parts of north-west Europe, although there were local and regional variations in the pattern. The relative sea-level in north-west Europe at *c.* 2000 BP was probably in the order of 0.5–1.0m below today's levels for Mean High Water Mark of Spring Tides (MHWMST) at the open coast (1990b, 17–18). Britain forms an exception through isostatic rebound, the process of uplift after the end of the last glaciation. A positive upward tendency, i.e. a relative rise in sea-level, has been identified post *c.* 1650 BP, with a negative tendency in the period 1650–1850 BP in north-west Europe (Devoy 1990, 220). However, the impact of isostatic rebound on this part of north-west England has been negligible, with south-west Lancashire, and therefore neighbouring Wirral, probably experiencing crustal stability since 5000 BP to the present (Long and Roberts 1997, 29). In the late Roman period, post-AD 300, eastern Britain, the Netherlands and parts of northern Germany were subject to flooding and marine inundation of coastal zones in which regional climate change may have played a part (Devoy 1990, 18).

Sea-level change in north-west England has been studied by Tooley (1980; 1982) and others. Tooley's initial Lytham I–IX sequence was superseded by a new methodology. The new sequence of transgressive-regressive sea-level overlap tendencies shows a

'regressive overlap' for the later 1st millennium BC to early 1st millennium AD in Liverpool Bay (Tooley 1982, figs 2 and 4). Shennan and others have used data from Downholland Moss and other sites in the north-west to identify a series of negative and positive tendencies for sea-level in the region (Shennan *et al.* 1983). These indicate a negative tendency (i.e. a fall in relative sea-level) from the later 1st millennium BC to the middle Roman period, followed by a rise in sea-level (Long and Roberts 1997, 29, fig. 8).

The application of archaeological data in association with geographical data to determine sea-level for individual sites has been discussed by Sidell (2001). However, direct evidence for the north Wirral coast at this time has not been convincingly demonstrated. A. C. and E. Waddelove attempted to determine the height of the land surface during the Roman period at Meols (Waddelove and Waddelove 1990, 262). Hume had noted, 'the oldest, or Roman articles, are found in the upper stratum of the old forest turf, among the trunks and roots of trees, but their range is extremely limited' (Hume 1863, 391), a stratigraphic observation supported by Ecroyd Smith's stratigraphic section published in 1866. The Waddeloves argued that, as Roman finds were made on the upper forest bed at Dove Point, this therefore represented the Roman ground surface. However, the UPFB dates to the Bronze Age (see above), and the phenomenon is likely to have resulted from the removal by erosion of relatively soft Roman occupation deposits, depositing denser metal objects on the more resistant surface below. This interpretation invalidates the Waddeloves' data, as given for Meols, and as a consequence we are forced to conclude that this part of the stratigraphic sequence in the coastal deposits for the Iron Age and Roman period at Meols is absent (see Cowell and Innes 1994, 30, 44–45).

As the stratigraphic sequence for north Wirral coast is not preserved in the known dated sections, so data from elsewhere in the region must be used to draw some broad conclusions about the relative sea-level in the region at the time. Estimates of the Roman sea-level change at Chester using archaeological data have been undertaken by David Mason (2001, 2002) and A. C. and E. Waddelove (1990). The Waddeloves used recorded archaeological observations in the city to determine the highest astronomical tide (HAT). This is a level that is reached by the tide approximately every 19 years, but much more frequently the sea-level approaches to within 0.2m of the HAT. Allowing a safety margin above the HAT therefore would determine the minimum level for construction of buildings along a tidal shore and the level required for operation of quays in a harbour (Waddelove and Waddelove 1990, 254). They argue that the experience of only four years' tides would be sufficient to establish this point.

The Waddeloves' conclusions depend on a re-interpretation of conventional interpretations of the supposed quay wall and timber landing stage or wharf (Waddelove and Waddelove 1990, 261–2; Waddelove 2001, 132–3), while arguing also that a timber structure fronting a clay bank in the River Dee at Chester represents the early Flavian quay. Based on recorded observations, they concluded that the sea-level in the Roman period was considerably lower than today at Chester and that in the Roman period the HAT level of the River Dee was as much as 3.78m lower than in the late 1st century AD (Waddelove and Waddelove 1990, 261–2; Waddelove 2001). The method, however, depends on the correct identification of Roman structures and other features, as well as the accuracy of levels recorded in the 19th century. Mindful of this, Ward rejected the Waddeloves' conclusions which relied on a bankside wall found under gasometers on the eastern side of the river, since he argued that this, far from being Roman as claimed, was more likely to have been early post-medieval in date, and furthermore it could not be proved that the wall survived to its original height (1996, 8). Added to the uncertainty in applying appropriate correction factors while calculating levels from incompletely preserved features, as well as in correctly estimating safety margins for buildings above the HAT, these together raise considerable doubt over the accuracy of the claimed results.

The Roman sea-level at Chester has also been considered by David Mason. He too rejected the conventional interpretation of the putative quay wall at the Roodee as evidence of a later harbour on the grounds of the logistical problems of overcoming the height difference of ships unloading alongside, and proposes an alternative interpretation as the wall of a defended annex (Mason 2002, 66–72). Mason suggested that, at Chester, even the highest Roman tide levels are unlikely to have ever reached above 4.5m OD, and ordinary tides averaged around 4.0m OD, receding to about 1.5–2.0m at the ebb (Mason 2002, 68). With a tidal range of at least 1.8m in the Dee Estuary, heavily-laden ships were unable to get close to the eastern shore of the Roodee to unload, except at the highest tides. To counter this, a substantial jetty was built projecting from the shore into the deepest part of the river channel to allow offloading under most tidal conditions (Mason 2001, 116–7).

The broad conclusion that sea-level was lower in the Roman period on the west coast receives support from work in the Severn Levels, where archaeological and other evidence suggests a rise of about 2m from 500 BC to the present, though not necessarily uniformly, and a Roman sea-level about 1.6m below that of today (Allen and Rae 1988, 233; Rippon 2000).

One find on the north Wirral coast does offer some corroboration of this. The Leasowe Man skeleton found on the shore in 1864, and only recently radiocarbon-dated to the Roman period (2.25), lay extended as a formal burial 'a little below high-water mark of spring tides' (Ecroyd Smith 1865, 211). Measuring from his section (Ecroyd Smith 1866, pl. XVIII), the burial appears to have lain about 3 feet (0.9m) below the high–water mark. Allowing a margin of safety on the assumption that

the burial would not have taken place in an area regularly flooded by high tides, the sea-level at the time of burial was at least 1m lower than the mid 19th-century level.

The emerging consensus from geographical and archaeological methods for lower relative sea-level in the Roman period in the north-west has important implications for the use of harbours and rivers in the Roman period. As Waddelove points out (2001, 135–6), the size of vessels able to navigate the river estuaries is considerably reduced. Assuming a sea-level 3.78m below the present (2001) level, he has calculated that the ability of larger river barges, requiring a clearance of 2m, to reach the Deva port would be restricted to about 100 days a year, placing dependence on smaller vessels still. Such limitations would place greater emphasis on the trans-shipment role of the port at Meols. However, these calculations depend on a number of untested assumptions, such as that the volume of river flow is similar to that of today, and that it drains the same natural catchment area (Waddelove 2001, 135). Devoy has drawn attention to a number of factors that may affect coastal change and siltation. They include human and environmental factors, such as coastal engineering works, variations in sediment supply from human alteration of land-use, such as forest clearance, as well as climatic changes that may alter sediment supply (Devoy 1990, 18–19). Great caution is needed in interpreting such figures, and further research is required to refine the picture of change through the Roman period.

Coastal environment after the Roman period

Ron Cowell

The main stratigraphic unit post-dating the prehistoric horizons is represented by what is known as the 'Soil Bed' (Morton 1897), which varies in form and thickness across the coast. Kenna (1986, 14) equated this with a band of peaty sand and clayey peat recorded in sections at Meols. Previous writers have explained this layer as a cultivated soil, representing a mix of sand and bog with a little marl (Ecroyd Smith 1866). There appear to be local phases of erosion, which may have removed the original boundary between this layer and those beneath it, but the upper part of this bed at Meols was formed under dune slack conditions. Ecroyd Smith (1866, pl. II) indicated that medieval objects were found in the Soil Bed. Dates for this layer have been produced of cal AD 1010–1220 (925±50 BP; GU-1311) and cal AD 1298–1435 (550±40 BP; SRR-1402) (Kenna 1986, 15). A similar sandy-peaty deposit with tree stumps found at Hightown on the Sefton coast has produced a radiocarbon date of cal AD 720 to 735 and cal AD 760 to 985 (1180±50 BP, Beta-119011).

A second phase of dune slack and sand-dune building conditions succeeds the Soil Bed phase, marked by laminated sands and peaty bands, representing a phase of dune building and mobility after the 14th–15th century AD, on the evidence of radiocarbon dates. Tooley (1978) refers to documentary proof for dune instability on the Lancashire coast in

Table 3.1.1: Radiocarbon dates from stratigraphic sections and boreholes in north Wirral

Location	*Site (Fig. 3.1.5)*		*Laboratory code*	*C14 date (BP)*	*Calibrated date (cal BC)*	*Reference*
Bidston Moss	2	Peat	SRR-2926	7360±6	6400–6080	Cowell and Innes 1994
Bidston Moss	2	Peat	SRR-2925	5840±70	4900–4530	Cowell and Innes 1994
Mockbeggar Wharf	B	*Quercus* (oak) wood	SRR-1496	6460±40	5439–5194	Kenna 1986
Wallasey embankment	D	Peat	SRR-1494	6420±60	5490–5240	Kenna 1986
Park Road, Meols	P	Peat	SRR-2694	5250±50	4234–3980	Cowell and Innes 1994
Park Road, Meols	P	Peat	SRR-2929	5120±50	4034–3790	Cowell and Innes 1994
Park Road, Meols	P	Peat	SRR-2924	4740±70	3690–3360	Cowell and Innes 1994
Reeds Lane, Moreton	C	Peat	SRR-1575	4700±70	3640–3340	Kenna 1986
Park Road, Meols	P	Peat	SRR-2693	4620±50	3560–3140	Cowell and Innes 1994
Park Road, Meols	P	Peat	GU-1312	4315±70	3100–2704	Kenna 1986
Wallasey embankment	E	*Quercus* wood	SRR-1493	3910±100	2858–2049	Kenna 1986
Wallasey embankment	E	*Pinus* (pine) wood	SRR-1495	3800±40	2454–2137	Kenna 1986
Reeds Lane, Moreton	Near C	Wood	Q-620	3695±110	2460–1774	Kenna 1986
Mockbeggar Wharf	A	Bone	Birm-1013	3980±70	2361–2310	Kenna 1986
Wallasey embankment	H	Peat	GU-1271	3490±60	2012–1680	Kenna 1986
Wallasey embankment	G	Peat	GU-1270	2750±55	1030–810	Kenna 1986
Reeds Lane, Moreton	C	Peat	SRR-1574	2620±40	840–783	Kenna 1986
					Date cal AD	
Wallasey embankment	F	Charcoal	SRR-1404	1090±120	670–1210	Kenna 1986
Leasowe sand-dunes	J	Peaty sand	GU-1311	925±50	1010–1220	Kenna 1986
Wallasey embankment	E	Peaty soil and sand	SRR-1402	550±40	1298–1475	Kenna 1986
Wallasey embankment	D	Peat	SRR-1403	540±40	1304–1438	Kenna 1986

the latter half of the 15th century . The laminated, peaty sand layer is then overlain by modern dune accumulation.

Radiocarbon dates

The radiocarbon dates used in Table 3.1.1 are the same as used in the North West Wetlands Survey Merseyside volume (Cowell and Innes 1994). They have been calibrated from Kenna's original radiometric determinations using the CALIB computer programme (Stuiver and Reimer 1986), using a 20-year radiocarbon age dataset that has been derived from the calibration curve published in Stuiver and Pearson (1986), Pearson and Stuiver (1986), Pearson *et al.* (1986), and a 20-year weighted average of data from Linick *et al.* (1985), Stuiver *et al.* (1986), and Kromer *et al.* (1986).

3.2 Coastal change in the medieval and post-medieval periods

David Griffiths and Robert Philpott

The 'Soil Bed' and stratigraphic evidence for historic landuse

In the 1970s in an examination of the sequence of deposits, Ray Kenna observed that the artificial 'soil bed' deposit, consisting of up to 0.75m of black organic sand, was overlain by laminated beds of sand alternating with sandy peat. The sandy component of the 'soil bed' deposit argues for the incorporation into the soil of sand from periodic sand blows, implying the need for the deliberate stabilisation and management of agricultural soils during a period when the influx of sand represented a continuing problem, but not yet an overwhelming one. Above the soil bed is a varying but considerable depth of wind-blown dune sand, which covered to a considerable depth the landscape represented by the soil bed in the period shortly after 550 BP , i.e. in the 15th–16th centuries. This development, which was apparently sudden and catastrophic for agriculture and settlement on vulnerable low-lying land along this coast, fits in with a wider picture of climatic downturn and environmental disaster across Britain associated with the end of the 'medieval warm period' (Lamb 1982).

Later medieval climatic change and sand inundation

Numerous examples can be cited for serious effects of great storms on coastal places in the 14th and 15th centuries. Blown sand could overwhelm agricultural land and even whole settlements. A storm of blown sand on 19 August 1413 obliterated the centre of the medieval town of Forvie, Aberdeenshire, on the east coast of Scotland, while at Newborough, Anglesey, in 1331 186 acres (75ha) were 'destroyed for ever by the inflow of blown sand' (Carr 1982, 262; Lamb 1991, 4, 18; Roberts 2002, 35). Equally devastating was the encroachment of sand dunes, which obliterated the port of Harlech on the west coast of Wales around 1400 (Lamb 1982, 183–5), and at Kenfig on the south Wales coast, sand-dune movements created a lagoon, in approximately 1316, which closed the medieval port, while a later storm there in 1573 carried a line of high sand-dunes 3 km inland (Lamb 1982, 183; 1991, 18–19). The repeated movement of dunes or influxes of blown sand resulted in the progressive covering of agricultural land in the Breckland of Norfolk and Suffolk, probably as a result of three major storms in the period between 1570 and 1668 (Lamb 1991, 39–40).

A hint of climatic disaster in Cheshire is to be found in Chester's petition for a further reduction in the fee-farm payment in 1486 and it seems that the port of Chester was increasingly badly affected by storms and influxes of sand clogging its lengthy and shallow approaches in the later 15th century (4.6). On this basis it can be suggested that anchorages nearer the open sea and the north Wirral coast must have been affected by the same climatic upheavals, and that more sheltered and accessible anchorages must have been necessary . Liverpool, which developed on a sheltered creek off the deepest part of the Mersey Estuary, experienced a steep rise to prominence as an Irish Sea port in the 15th century . The Meols family benefited from these developments. They had moved from Meols to Wallasey by the early 15th century (4.6, Ormerod 1882, ii, 479, 481).

Whilst no documentary references have come to light which make specific mention of catastrophic events on the north Wirral coast, the evidence suggests that the accident of survival that led to the burial and preservation under sand of so many everyday metal artefacts at Meols resulted from one, or possibly more, catastrophic sand blows, which buried the settlement and its agricultural land. Of particular relevance to Meols and the north Wirral coast is that a coincidence of abnormally low tide with a severe storm may expose an exceptionally great expanse of sand to be scoured by the wind (Lamb 1982, 185). Such an event (or events) is likely to be the only explanation for the presence of such large quantities of material from what does not appear to be much more than a coastal fishing and agricultural settlement with a port. Furthermore, the discovery of the objects came explicitly through the erosion of the overlying sand deposits. Sudden and catastrophic burial is more likely than gradual progressive encroachment, since the large quantities of material are unlikely to have been lost, discarded or abandoned by their owners if they had the leisure to move their possessions to a new site.

The evidence for the loss of land at Meols, the shift in village location, and inundation of coastal land can be seen to be part of a wider pattern of coastal change. The sandy coasts of north-west Europe suffered what has been described as a 'long epidemic

of disasters' from the 13th century to about 1800, during which great storms inflicted serious damage on coastal areas ranging from Brittany to Denmark (Lamb 1982; 1991). The effects of great storms on the landscape included 'blown sand, the formation and movement shifting of dunes sometimes forming a continuous coastal barrier, the scouring of sand or dry soil and spreading of drift-sand into nearly flat expanses' (Lamb 1991, 3).

During the medieval period, locally-experienced storms and periods of sea-level change had some effect on settlement patterns and farming practices in other coastal and estuarine areas of Cheshire and south-west Lancashire. Periods of dune instability at a time of low sea-level contrast with those of high sea-level and a consequent increase in the water table; in general terms each would affect the local community, the former by impoverishing, if not obscuring, cultivable soils, and the latter by reducing hard-won reclaimed mosslands and marshlands to wet, summer pasture. In the early 13th century 30 carucates of land were lost to the sea on Wirral and at Ince on the Mersey Estuary (Hewitt 1967, 5). Argarmeols (Birkdale), on the south Lancashire coast had disappeared due to inundation by 1346 and the amount of arable land in Ravenmeols, a little further south, had been reduced by 1289 (Lewis 2002, 40–42). The Cistercian abbey at Stanlow, founded on the Mersey marshes in 1178, was eventually moved to Whalley, in Lancashire, in 1296, after several inundations. Low-lying lands belonging to Norton Priory were flooded in 1332 and again in 1429 and severe flooding of the Mersey marshes occurred on at least five occasions during the 14th century; Frodsham suffered from encroachment early in the 15th century and part of Formby seems to have disappeared at about the same time (Greene 1989, 31; Hewitt 1967, 5 n.11; Lewis 2002, 42). Later still, by 1555–56, it was claimed that the town of Ainsdale had been destroyed by the sea (Lewis 2002, 42). Morehouses, a settlement at the mouth of the Alt, which had been established by the mid-13th century, seems to have survived at least until the middle years of the 17th century and may have been centred on the modern village of Hightown. It suffered, perhaps, from the storms that caused severe damage to Little Crosby and North Meols (Southport) in 1720 (Beck 1954; Tyrer 1972, 31–2).

Silting, and changes to inshore navigation in the post-medieval period

During the medieval and post-medieval periods, the array of inshore channels and anchorages along the north Wirral Coast becomes traceable in the historical record. The most significant of these was the Hoyle or Hyle Lake, which was to give its name to Hoylake, the adjacent village. The Hyle or Hoyle Lake is first mentioned by name in a grant in The Chartulary of Chester Abbey: 'Quitclaim by William Lancelyn, knight, of the 'lake of Hilbre which is called the Heypool' [*lacum de Hildeburghey que uocatur le Heypol*], *c.* 1245–83 (Tait 1923, 298). Tait suggested that the grantor was William Lancelyn I, who died in 1283. The Hoyle Lake anchorage provided an alternative to the drying landing places along the Meols shore for increasingly deeper - draught ships, and its influence may be visible in the westward trend in the location of discoveries of medieval and post-medieval material (1.2).

The 1689 Greenvile Collins chart (Fig. 3.2.1) shows the Hoyle Lake as a broad curving channel that extended from the western side of Dove Point to the north end of Hilbre Island, where it met the main channel into the Dee Estuary . The Horse Channel ran inshore from the open waters to the north, and passing the mouth of the Hoyle Lake turned to the east of Dove Point and reached the Mersey Estuary along the Wallasey shore. The inshore channels were protected by extensive sandbanks off-shore, the Burbo Sand (now the Burbo Bank) to the north-east and the Hyle Sand (now the Hoyle Bank) to the north-west, which was partly dry at low water even on a neap tide. The Horse Channel was dry at low water, but the Hoyle Lake held between five and seven fathoms of water, and the lake is marked as an anchorage. The coastline was lined with 'sand hills' from 'Hose End' (i.e. Hoose) to Red Rocks and West Kirby, and again from close to Mock Beggar Hall (Leasowe Castle) to Perch Rock. Dove Point is here first mapped in detail when it appears as a triangular projection from the north Wirral coast. The Hoyle Lake was no more than a lagoon of permanent deeper water that did not drain at low tide, and which was sheltered from the open sea by high drying sandbanks to the east and north-west. The Horse Channel provided access to the sea between the sandbanks, and the 'lake' had convenient openings to the River Dee via the Hilbre Swash channel along the west side of Hilbre Island, and to the Mersey via the Rock Channel. It afforded temporary shelter and relatively easy landward access over the sands, which coupled with the presence of an inn on Hilbre, made it a frequent assembly and stop-over point for shipping. Off-loading of cargo into lighters, and embarkations from smaller craft were commonplace – the most famous of which being that of King William III (William of Orange), in 1690, who headed seawards via the landing place still known as the 'King's Gap' at Hoylake, *en route* for Ireland and the fateful Battle of the Boyne. The continued role of the Hoyle Lake as an anchorage and transhipment point at this time led to Meols being included in John Adams' s *Index Villaris* of 1690 as a 'seaport town' and the residence of one gentleman.

The growing commercial port of Liverpool began to outweigh the importance of Chester at the end of the medieval period, and from the 17th century onwards it handled the growing maritime traffic of Empire, including the Atlantic slave trade, alongside the more traditional routes of the Irish Sea and European waters. In the 18th and 19th centuries, the north Wirral coast was profoundly affected by the

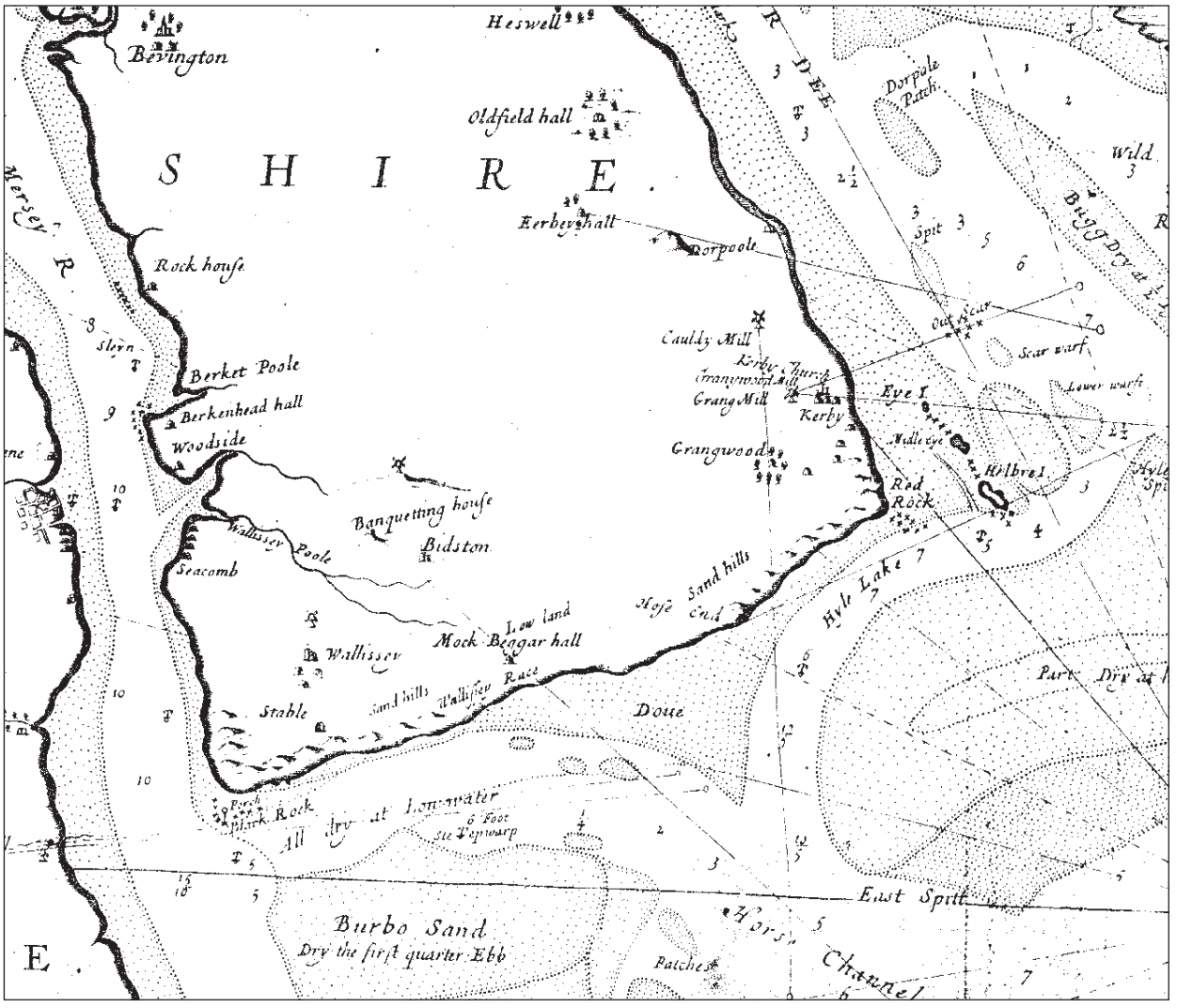


Fig. 3.2.1: Chart of Liverpool Bay by Greenvile Collins, 1689 N↓

rise of the Port of Liverpool. The world's first commercial wet dock (subsequently known as the Old Dock) was built in 1710–15 within the natural tidal creek forming the outlet of the Mossdale Stream into the Mersey immediately south of Liverpool Castle. The ability to berth larger ships led to the need for improvements in navigation along the deep water approaches in Liverpool Bay. Mockbeggar Wharf, as the coastal strip between Dove Point and Rock Island (now Perch Rock) at the mouth of the Mersey mouth became known, was bordered offshore by the Horse Channel, which in the 18th century was the main approach to Liverpool (it is still in use by smaller craft, but the main deep-water approach changed to the Formby or Queen's Channel to the north, following the construction of training walls in the late 19th century). This channel, which was extensively buoyed, took a marked curve northwards out to sea, along the eastern side of Dove Spit. The position of the seaward curve is still marked by a disused lighthouse (Leasowe Lighthouse, set up by an Act of Parliament in 1761, which was originally the inland of an aligned pair leading ships into the Rock Channel). The other lighthouse in this pair appears to have been an experimental semi-moveable wooden affair, apparently intended to be re-located when needed in response to the shifting channel, which was superseded in 1771 by a permanent structure, also in alignment with the existing Leasowe Lighthouse, but in this case behind it to the south on the bluff of Bidston Hill (Ormerod 1882, 497).

A smaller tidal channel leading directly to the drying anchorage off Dove Point was marked by the alignment of the Dove marks (two wooden posts with target-style markers, which stood on the dunes). These were moved several times in response to the shifting channel (Fig. 1.2.5). The offshore sandbanks and the main channels were in a state of constant movement. By 1755 the Fearon and Eyes chart (Fig. 3.2.2) shows the gradual reduction in depth of the Hoyle Lake, which by this time held between 2½ and 3 fathoms of water for much of its length, but locally up to 4½ fathoms. By 1813 the channel had narrowed, but still held between 2 and 4 fathoms of water at low tide. In

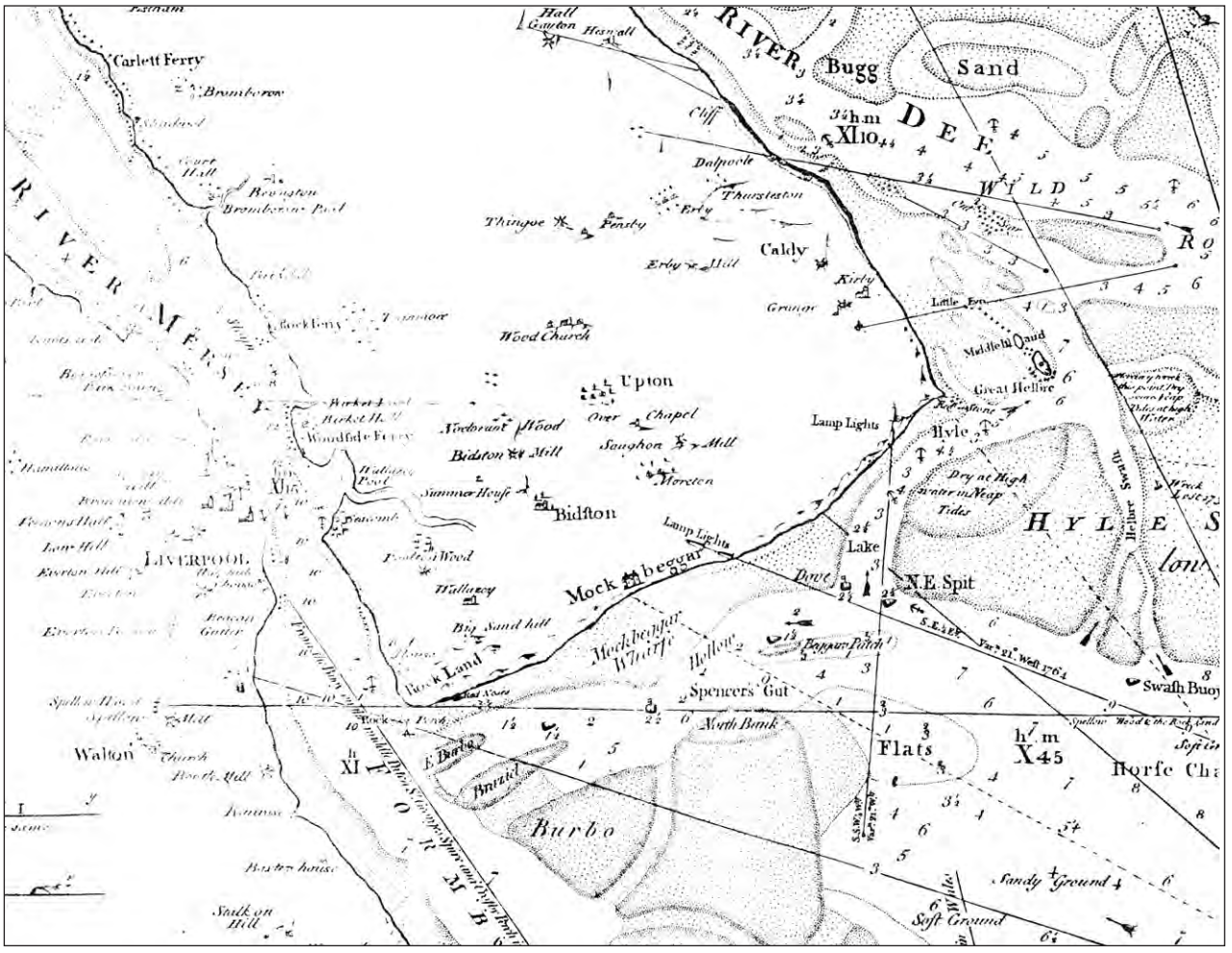


Fig. 3.2.2: Chart of Liverpool Bay by S. Fearon and C. Eyes, 1755 N↓

1835 the Dock Authorities commissioned the first regular annual survey of the lake. This found the lake was a deep elongated pool, with a maximum depth of 21 feet and about 3/4 mile long. Hilbre Island and the Dove Spit marked its western and eastern limits, where only a depth of 2 feet of water remained at low tide. Further rapid silting occurred after 1835; only five years later the depth at Hoylake was only 15 feet. From then on the Hoyle Lake shifted steadily towards the east and lost depth. By 1847 it had largely silted up, with only a chain of isolated pools no more than a fathom deep along the former channel. The largest remaining pool drained toward the Horse/Rock Channel and by 1877 the deepest place was opposite Dove Point, with a maximum depth of 6 feet (Anon 1896, 31–2). By the early 20th century charts and Ordnance Survey maps show no channel at all, the East Hoyle Bank by then forming a continuous sandbank from stretching from the Hilbre Islands eastward along the coast to the vicinity of Leasowe Lighthouse where it met the inshore curve of the deeper Horse/Rock Channel. With the disappearance of the remains of the Hoyle Lake, the former Dove Spit lost its distinctiveness as a coastal feature and became subsumed into the Hoyle Bank.

Coastal retreat and stabilisation 1792–2000

David Griffiths

As the offshore channels changed and silted, the north Wirral coastline was receding (Fig. 3.2.3). The Charles Eyes map of 1792 (Fig. 1.1.4 and Pl. I), with annotations dated 1847, is of fundamental importance in charting coastal change along the northern shore. It shows two major phases of erosion. The first episode, between June 1771 and February 1792 (depicted in pink on the map) saw the loss of a stretch of the coast up to *c.* 105m deep including the 'scite of the old light house' at a position north-west of the present Leasowe Lighthouse. The second episode, over a longer period, records the land 'washed away between 1792 and 1847' with the new configuration of the coastline, including the Wallasey Embankment constructed in 1829, shown in ink. The greatest loss occurred in what is shown in 1792 as a triangular projection of sand-hills in the area of Dove Point, although it is not named as such on the map. The coast had retreated by a maximum of about 450 yards (approximately 410m) by 1847. Erosion of the area north of Leasowe Lighthouse had been arrested by the construction of the embankment in 1829, but between June 1771 and

1847 a strip of coastline up to 240m deep had been eroded away to the tail of the embankment.

The first sea wall at Meols, known as the Leasowe (or Wallasey) Embankment, was constructed in 1829 (Fig. 3.2.3), following an Act of Parliament of 1828[1]. This was prompted by concern amongst local landowners that the low-lying coastal lands to the south in Great Meols and Moreton would be soon be inundated if erosion was allowed to continue unchecked. It cost £20,000 to protect the 3000 acres (1215 ha) of land that lay below the level of the ordinary spring tides. The embankment extended from Leasowe Castle in the east [SJ 266 922] for 2.75km to the south-west [SJ 241 911]. Despite several reconstructions, most recently in 1976, the position and line of this embankment has remained static since 1829. The eastern and western tails of the embankment now form slight protrusions outwards (northwards) from the coast. The line of the embankment is the last remnant of the position and direction of the coastline of the 1820s, which subsequently fell back southwards on either side leaving the ends of the 1829 line exposed.

A further act was passed by Parliament in 1864, which provided for further maintenance of the 1829 embankment and revised the commissioners' role, but did not extend the sea defences. Erosion of the unprotected dunes continued east and west of the 1829 embankment, the results of which brought a continued flow of antiquities to light, as demonstrated in the series of antiquarian reports in the *THSLC* throughout the 1860s, 1870s, and 1880s. By the late 1880s, the land surrounding the ends of the 1829 embankment appears to have been in danger of washing out completely, seriously compromising the effectiveness of the 1829 sea defences. Potter and Cox's most illuminating descriptions of the rectangular houses, trackways, fences, and circular huts date from 1890–93, and there are indications amongst the artefacts that there was an increased pace of destruction and consequent retrieval at this point (1.2).

The increased erosion of the early 1890s led to demands for extensions to the 1829/1864 sea defences and another act was passed in 1894. The 1894 extension extended the Wallasey Embankment westwards to Dove Point and created new inward-curving bastion at its east end to prevent the existing structure washing out from behind (the embankment was progressively reconstructed in 1973–87). Further

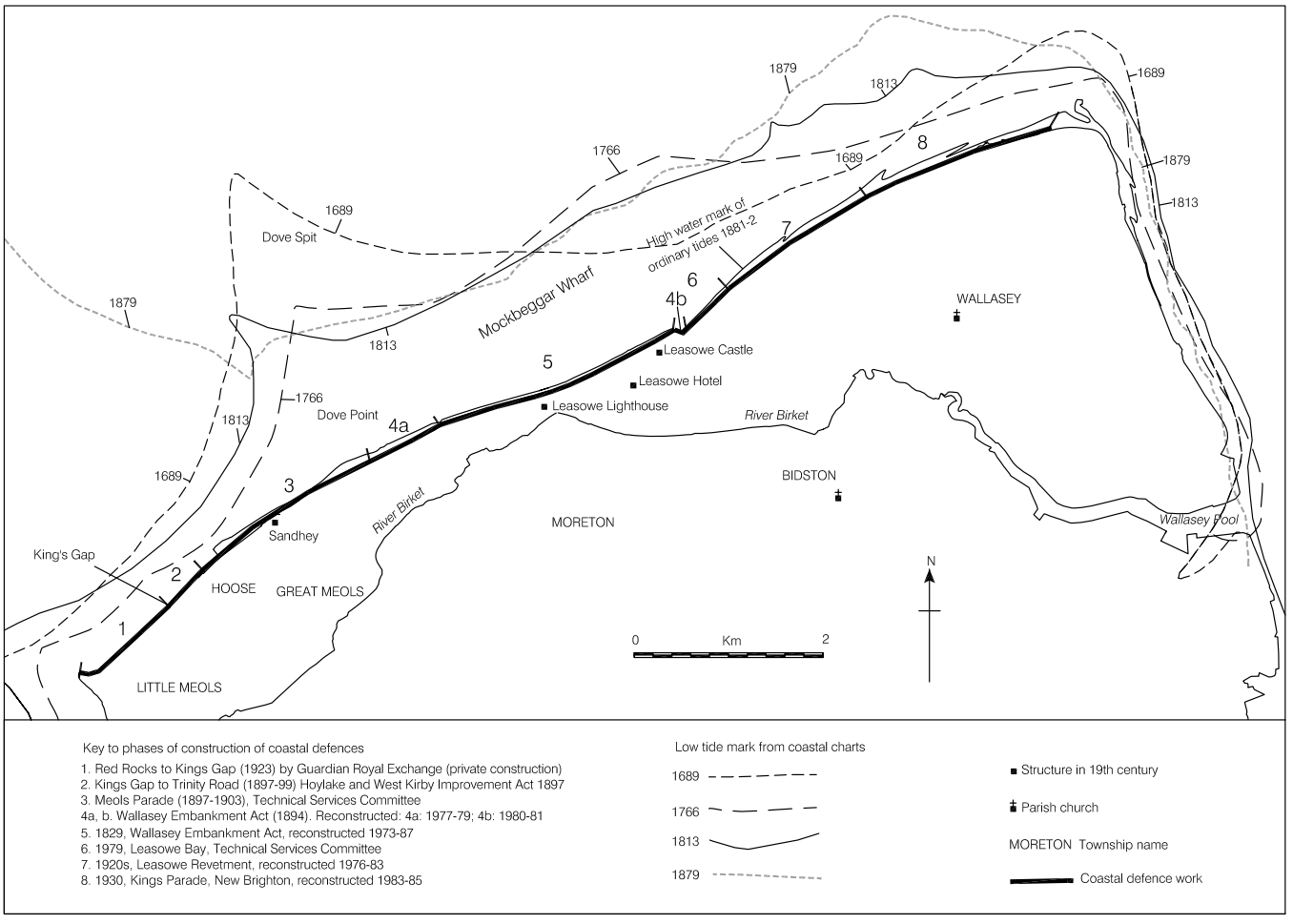


Fig. 3.2.3: Coastal change: retreat and stabilisation

to the west, Meols Parade and the King's Gap to Trinity Road embankment (constructed 1897–1903, reconstructed 1977–79 and 1980–81) were public works resulting from the Hoylake and West Kirby (Improvement) Act of 1897. These served to protect the growing town of Hoylake. The last section of sea wall at the western end of the coastline was the stretch from Kings Gap to Red Rocks, constructed as a private enterprise by local residents and financed by Guardian Royal Exchange in 1923.

The eastern stretch of the north Wirral coast is similarly defined by concrete and stone sea wall, the Leasowe Revetment (constructed 1923, reconstructed 1976–83), which protects the dunescape that remains on low-lying land between Meols and the late Victorian resort town of New Brighton, occupying the north-east corner of the peninsula. New Brighton's sea defences (completed in the 1930s, reconstructed 1983–85) are elaborate, with a concrete promenade, and a marine lake at the furthest north-eastern point of the peninsula beside the low sandstone outcrops traditionally known as the 'Black Rock' or 'Red Noses', and which in the medieval period were the outer limit of the port of Frodsham (4.6). Upon this tidal reef stands a small coastal defence fort of the early 19th century and a lighthouse, which mark the entrance to the Mersey. Between the Wallasey Embankment, and separating it from the Leasowe Revetment, there remains today the only stretch of the north Wirral coast (750m in length) that does not have a solid edge against the sea. This is an erosion-created embayment known as 'Leasowe Bay' and is instead protected by a more radical solution of two offshore breakwaters (constructed 1979) which are designed to redirect and diffuse the force of the sea rather than to resist it.

The eventual 'hardening' and stabilising of the north Wirral coastline resulted from the construction of Hoylake Promenade and Meols Parade in 1900, connecting to the west end of the 1894 sea defences, and Wallasey and Harrison Drive Promenades to the east of the 1894 sea defences. Erosion of the inter-tidal zone including parts of the 'Ancient Forest' north of the sea defences has continued, but coastal retreat was arrested from the early years of the 20th century. This allowed the former coastal commons to be partly developed for roads, suburban housing, and caravan parks. The line of these new defences therefore fixed the position of the coast, and has remained largely unchanged since then, despite repair and reconstruction. Roughly half of the frontage behind the sea walls has been developed; behind the sea wall, the remaining undeveloped central portion is covered by a dune-belt that varies in width from 50m to 250m.

The 'Ancient Forest' was the most obvious surviving trace of the exposed peat and forest beds, which were well-known to both antiquarians and locals in the 19th century, (1.1, and Figs. 3.1.2, 3.1.3) and remained an extensive feature along this coast until the mid-20th century. Even as recently as 1991–96, substantial patches of blackened peat and mud with wood debris were visible along the shoreline. Since then increased deposition of sand has covered most of the remaining patches of former land surfaces, but each spring tide and winter storm brings an altered picture.

Note

1 Geo. IV, 13 April 1829, copy in NML Archives, plan in Cheshire Archives.

3.3 The Hilbre Islands and Red Rocks

David Griffiths

Offshore from the north-west corner of Wirral at the mouth of the Dee Estuary is a cluster of outcrops of 'hard' sandstone geology, which is distinguished topographically from the 'soft' laminated peat and sand beds of the Meols shore of the Wirral mainland. This includes the three Hilbre Islands with their associated spread of exposed inter-tidal sandstone wave-cut platform or reef, and a smaller group of upstanding sandstone tidal platforms off the extreme north-western tip of the Wirral shore, known as the Red Rocks.

The Hilbre group of three islands, largely grassed on top and standing up to 10m OD, are known as the Hilbre Islands or just 'Hilbre'. The largest (and northernmost) island is known as Hilbre Island, the smaller central island as Middle Eye [island], and the very small southern outcrop as Little Eye. The name Hilbre is a contraction of '[Saint] Hildeburgh's Eye', commemorating an otherwise-unknown but evidently Anglo-Saxon sounding saint (Dodgson 1972, 303–4). Connected by an extensive sandstone wave-cut platform and sandbanks, the Hilbre group is more accurately described as a tombolo, as it is accessible on foot from West Kirby and Hoylake on the Wirral mainland at low tide. A bird reserve, with a nearby resident grey seal colony, the Hilbre island group is popular with walkers and birdwatchers. The largest (northern) island is the only one that has upstanding buildings, and remains partly inhabited. The islands were the site of searchlights and anti-aircraft batteries in World War II, and a telegraph and lifeboat station from the mid-19th century (the lifeboat station closed in 1938 and the communications mast is no longer manned). Hilbre has long maintained a sense of isolation and detachment from Wirral proper. In the 18th century and earlier it functioned as an inshore anchorage and landing place beside the Hoyle Lake. The largest island was easily accessible by small boat from the Hoyle Lake anchorage at all stages of the tide, and was the location of a notoriously disreputable sailor's inn, the 'Seagull', part of which survives in the house presently used by the bird reserve warden. Several ships traceable in later medieval documents were registered as 'of Hilbre' (4.6), despite the lack of a permanent harbour. Before the Reformation, the

largest of the three islands was the site of a small monastic 'cell' or chapel of the monastery of St Werburg, Chester, which is recorded in the Domesday Book as belonging to St Evroul in Normandy and was transferred to Chester in *c.* 1150 (Tait 1923, no. 504). Hilbre remains attached to St Oswald's Parish, Chester, rather than the neighbouring St Bridget's, West Kirby.

In the early 16th century, *Leland's Itinerary* and *Holinshed's Chronicle* both mentioned Hilbre as a place of pilgrimage. In 1852 a sandstone circle-cross head in the style of the Cheshire Anglo-Scandinavian school of sculpture was unearthed (now in the Grosvenor Museum, Chester) suggesting that the Early Christian presence pre-dates the Norman Conquest, and may be related to a report of the discovery of a small (undated) burial ground on the largest island, near which a post-Conquest grave slab was discovered in 1864 (Ecroyd Smith 1865) and a blue glass bead of Anglo-Saxon type from the site is in Liverpool Museum (18.11.74; Chitty and Warhurst 1977, 25, no. 14). Excavations in the form of ten narrow slit trenches, directed by Robert Newstead in 1926, revealed Roman pottery, although structural evidence was slight (Newstead 1927). Geophysical (magnetometer) survey on the Middle Eye in 1977 revealed a series of discrete anomalies suggesting pits or ditches of indeterminate date (A. Bartlett, unpub. AML Report G33/77, in Merseyside SMR). Numerous traces of prehistoric middens, a ceramic urn, flint and bronze implements, as well as pieces of Roman and medieval pottery and metalwork have been discovered in the eroding cliff sections around all three islands at irregular intervals since the Second World War. Prehistoric lithics from the Hilbre Islands (those found until *c.* 1994) have been catalogued in the Merseyside volume of the North West Wetlands Survey (Cowell and Innes 1994, 219 ff).

The Hilbre group is a worthy subject of intensive archaeological study in its own right, and although closely-related in its local geographical and historical context, is somewhat divergent from Meols in terms of landscape, environment, and preservation. It is therefore left awkwardly separate, but clearly visible in the background of this study, as it is indeed literally visible in the western backdrop to Meols. Where a few individual objects labelled as coming from Hilbre have become assimilated into 'Meols' collections through their antiquarian association, for the sake of complete coverage of the Meols collections we have included them in our study. Many other objects and topographic observations from Hilbre, however, have not been included here – we leave that task to others, and an inventory and interpretative study is currently under way (C. Longworth, in preparation).

Red Rocks, known as 'Arnald's Eye' in the medieval period (Dodgson 1972, 300) marks the extreme north-western corner of the Wirral penin-

Fig. 3.3.1 Aerial Photograph of Hilbre Island from SW © NML

sula. It is a much smaller and more eroded mass of offshore exposed sandstone than the Hilbre Islands. It was long ago denuded of all soil and vegetation cover and has not supported settlement in the medieval or post-medieval periods. Historically, it marked the outer limit of the English side of the Dee Estuary (4.6). The present exposure is probably a remnant of a more prominent sandstone dome that must have acted as a significant and defined focus for human activity, and possibly settlement, in the otherwise largely wet and low-lying prehistoric landscape. Prehistoric lithic finds have occurred at Red Rocks (4.1; Glenn 1914; Cowell and Innes 1994, 219), and these are now held at the Manchester Museum. Separate study and cataloguing of the Red Rocks material is ongoing (Cowell, in prep. b) and as with the Hilbre Islands, on the basis of its topographical distinctiveness from Meols, this is excluded as a catalogue element from this study.

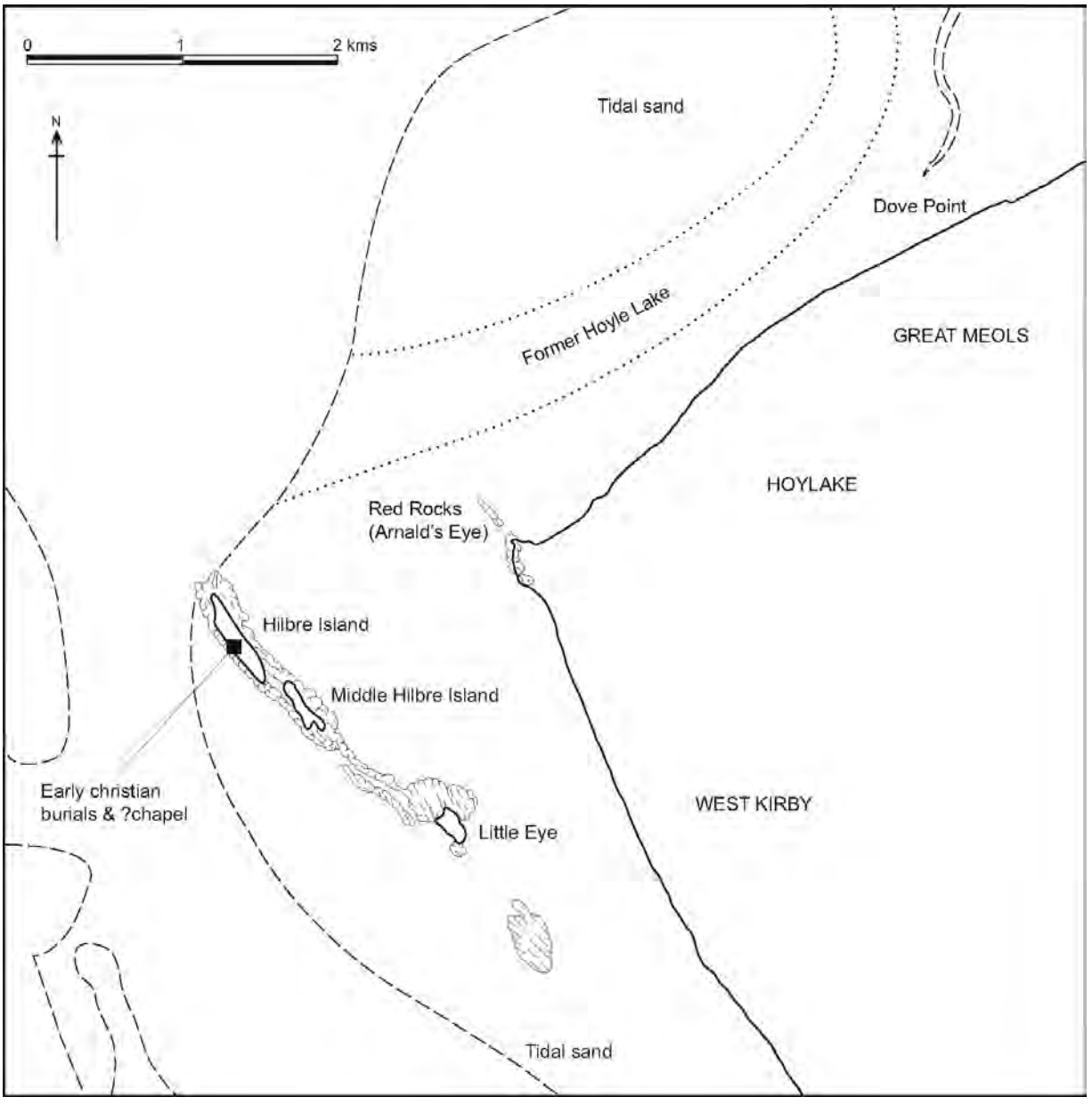


Fig. 3.3.2 Hilbre and Red Rocks, location map.

4. Regional and Historical Analyses

4.1 Meols in the prehistoric period: 9th millennium to *c.* 500 BC

Ron Cowell

Sites on the north Wirral coast, including Meols, Red Rocks near Hoylake, and the Hilbre Islands (Fig. 4.1.1) are often referenced on distribution maps of the region. These attributions are based on general descriptions by authors such as Varley (1964) and Varley and Jackson (1940) of the original data presented by Hume (1863), Shone (1911), and Ecroyd Smith (1866). A few, more quantitative, assessments of varying depth of detail have been made of the stone tools associated with these sites, but not published (Moffatt 1977; Wynne 1959). This current study, therefore, is the first published in-depth assessment of the material from Meols that provides a quantitative basis for such interpretations.

The following discussion of the nature of prehistoric activity in the Meols area is set in the wider archaeological and palaeoenvironmental context of north Wirral. The latter has been set out in detail (3.1) and only the conclusions deriving from that body of evidence are included here. The wider context is a suitable one in which to discuss the prehistoric activity at Meols, as prior to the establishment of a permanent site there, possibly as early as the Iron Age, interpretation of settlement and landuse has to be viewed on a larger scale, incorporating a range of different environments that fluctuated in size and resource potential in relation to changing environmental conditions over long periods.

During this time the stable features in the landscape were formed by the ridges of Triassic sandstone around the wetland inlets at Bidston in the north-eastern corner of Wirral and at Newton and the Hilbre Islands on the north-western corner. Between these two areas of high ground, about 1km inland of the present dunes, the boulder clay surface formed the southward limit of prehistoric marine influence, at an altitude of *c.* 5–6m OD. The coastal strip thus consists of successive layers and land surfaces, which accumulated over the now-buried boulder clay plain and early channels over a period of *c.* 4000 years from *c.* 6000 BC. These deposits outcrop on the seaward side of the high dune belt that borders the coastal plain, representing the palaeoenvironments that the 19th-century antiquarians observed and from which they retrieved their artefacts.

Early mesolithic *c.* 8500–7200 cal BC

The activity represented by the few stone tools from Meols (**1-5**) that can be ascribed to the early mesolithic, based either on form or raw material, appears as if it may have been located to take advantage of the various important river channels in the present coastal plain at a time when the sea-level was low enough for the coast to be many kilometres to the west. This extends the pattern of activity during this period onto the low-lying boulder clay plain at the northern edge of Wirral, where it can be seen as part of the wider use of the north Wirral landscape during the early mesolithic. The more completely recorded site of Greasby Copse, *c.* 5km to the south, is the nearest one to Meols. Raw material use at Greasby and the similar, nearby site of Thurstaston (Cowell 1992), strongly suggests that the north Welsh coast was used as a supply of chert for the manufacture of implements. These sites appear to be residential camps, and are provisionally placed at around the turn of the 8th millennium BC, on the form of the obliquely pointed microliths (Jacobi 1980). In the earliest post-glacial times, around 9000 years ago, with sea-levels at –20m OD, the early mesolithic coastline lay well to the north-west of the present coast, forming an arc running approximately from Anglesey to the southern Lake District (Tooley 1985, fig. 6.1). Thus, early mesolithic sites in the present coastal plain were not 'coastal' at that time. The lower sea-levels at this time would have allowed easy access across the, now tidal, River Dee to the upland areas of the north Welsh coast, where raw materials and complementary wild resources to those found in the lowlands of Wirral would have been available. Sites using the same raw materials have been excavated at Aberffraw on the southern tip of Anglesey (White 1978) and at Rhuddlan in the Clwyd valley (Quinnell and Blockley 1994). Illustrations of two microliths from the low sandstone outcrop at Red Noses, New Brighton, also point to activity on the north-eastern side of Wirral during the early mesolithic (Varley and Jackson 1940).

The Meols material might, therefore, be seen as part of this wide-ranging use of the landscape, and could represent locations for camps, probably of a temporary nature, but the paucity of evidence means they are of unknown size, duration, or function. In contrast to the free-draining, elevated, inland sandstone areas, where the extensive settlement areas occur, the relatively flat, boulder clay surface here does not offer the same attractions for settlement. This, however, must have been offset by important river or channel resources in the vicinity of Meols. The currently tidal River Dee may not have presented the same kind of barrier to the adjacent uplands of north Wales in its pre-tidal stage, and is more likely to have appeared as a major river channel at this

time. The buried channel of the River Fender is recorded *c.* 4km to the north-east of Dove Point, and east of Leasowe castle, with a tributary flowing north-westwards *c.* 1km to the west of that (Kenna 1986). Sites of the same period that would have been positioned closer to the early mesolithic coast now lie under the Irish Sea.

Later mesolithic/earliest neolithic *c.* 7200– 4000 cal BC

As the mesolithic period progressed, local groups would have had to contend, over generations, with the gradual landward retreat of the coastline, with the consequent loss of land and the inland extension of perimarine landscapes. The later mesolithic is thus the first period when the association between settlement, landuse, and the fluctuating contemporary coast can potentially be investigated in the present coastal plain.

The 7th millennium BC, in particular, was a period of relatively rapid sea-level rise in the region (Tooley 1982) and by the later part of the millennium sea-level increase was probably the cause for the presence of waterlogging along the present north Wirral coastline, with the spread of reedswamp into the earlier pine, birch, and hazel woodlands in low-lying areas such as at Bidston Moss and Newton Carr (Cowell and Innes 1994, tables 2, 3, NC7a).

During the later mesolithic on the north Wirral there are two approximate horizons of relative high sea-level apparent, when saltmarsh, tidal or estuarine environments spread inland. However, local conditions may have dictated the extent, timing and perhaps even presence of such conditions at different locations on the present coast. The details are presented in Chapter 3.1, but are summarised here for convenience. Very broadly, the period around 6000–5700 BC marks a period of several centuries of high sea-level, as seen near Dove Point and in the Newton Carr basin, although not seemingly widespread across the present coast. The second lies towards the mid-5th millennium BC, seen at the latter site and at Park Road, Meols. The area around Leasowe, as represented by the Leasowe Marine Beds, was directly affected for most of the 5th millennium cal BC. The north-western part of the coastal plain, around Bidston Moss, was slightly removed from these conditions, as freshwater swamp and fen provided different kinds of wetland resources for much of the later mesolithic.

During periods when tidal flat and saltmarsh formation lay inland of the present tidal zone, the higher sandstone ridges at Wallasey and Bidston in the north-east, and at West Kirby and Grange in the south-west, and lower eminences in the plain itself would have formed suitable bases from which to exploit the plentiful natural resources of the marine zone and flanking freshwater wetlands, of fen and reedswamp, or wooded alder carr.

When direct marine influence was removed from the present coastal plain, areas of freshwater wetland would have retreated as surrounding dryland vegetation, comprising mixed deciduous forest in which elm, oak, and hazel were most abundant, spread across the formerly wet mires (e.g. Cowell and Innes 1994, table 2, BMa). A particular phase of relatively lower sea-level in the late mesolithic is evidenced in approximately 5400–5200 BC with the growth of the Lower Peat/Forest Bed between Meols and Leasowe. Another retreat of marine conditions in the late mesolithic occurred around 4234–3980 cal BC (5250±50 BP; SRR-2694) at Park Road, Meols (Cowell and Innes 1994, 43). Direct marine conditions retreated from the area around Leasowe a little after this approximate date, with the spread of fen and carr woodland. In the lower parts of the Newton Carr basin reedswamp and fen carr, rather than deciduous woodland, remained the dominant environment.

Late mesolithic activity around the coastal strip therefore has to be viewed in the context of the continually alternating sequence of environmental changes related to changes in sea-level. This presumably led to changing patterns of settlement and landuse around the margins of the mosses and the adjoining plain. The dense woodland canopy that had developed by the later mesolithic will have led to the positioning of human occupation so as to take advantage of natural breaks, which would have occurred along the edges of channels, at the coastal fringe, and around the edges of the wetlands. However, the archaeological evidence is restricted because most of these potential locations are now hidden from standard survey techniques; the former coastal fringe sites lie under the sea, the channels are now mostly buried by Holocene deposits, and present landuse around the fringes of the mosslands is mainly pasture or developed land.

However, later mesolithic, and/or possibly earlier neolithic material (see below), is included in the Meols collections and there are other sites nearby that suggest that this part of the north Wirral coast was attractive to hunter-gatherer groups. The location of the later mesolithic sites at Meols cannot be identified, but the surface patination of the flint suggests that it may have been deposited at times when the sea-level was similar to or higher than today.

The more closely provenanced material comes mainly from the Hilbre Islands to the west of Hoylake, which mark the slightly elevated, western edge of a now buried channel or basin running out beyond the present coastline through Newton Carr (Kenna 1978; Bedlington 1995). For over a century, flints have been recorded eroding out of a narrow dark band of soil on the Little Eye island near West Kirby (Ecroyd Smith 1871a). Modern collectors have also reported to National Museums Liverpool a small quantity of, mainly small, chips and spalls, while a rod microlith and a small blade core suggest that at least part of the occupation here is of mesolithic date. More recent excavations have produced potential small pits containing charcoal

and shell fragments (Cowell in prep b). Other descriptions of finds being located on the 'Eye', which is generally associated with Hilbre Island, are less easy to identify with this period (Ecroyd Smith 1872).

The wetland basin of Newton Carr, lying 2.5km to the south-east of the islands, with its alder carr woodland, rich fen, and reedswamp, would also have provided attractive environments to people in the area during periods of lower sea-level in the later mesolithic because of the abundant variety of plants, birds and animals in the wetlands with a range of other wild resources in the adjacent woodlands. It might be thought probable that the elevated land along the boulder clay ridge to the south would have offered a suitable location for exploiting the wetland in the Newton Carr basin, but in fact this seems not to have been the case to any great extent. The original mesolithic junction of the dryland and the wetland, on the southern edge of the basin, is partly hidden by later peat and clays and mostly inaccessible to field-walking because of the occurrence of pasture. The upper part of the slope, however, where survey conditions are better, has produced only one possible site from fieldwalking. It reflects a fairly typical site encountered in field survey across Merseyside generally, comprising a blade core and five waste pieces of local pebble flint (Cowell and Innes 1994, 36). Dating of such sites is difficult, but the core technology may suggest a mesolithic date, and the dissimilarity of the raw material with that from the early mesolithic sites a little to the south suggests a date later in the period for the Newton site.

Due to the lack of precise dating evidence for the lithics and of a direct relationship between Holocene deposits and any prehistoric site, it is not clear if, during periods of lower sea-level, human activity was directly dependent on more distant coastal resources or on inland freshwater wetland resources. If the latter, coastal localities were probably almost always close enough to have been exploited from these locations. The shells in the pits at Little Eye suggest that a coastal environment was within a reasonable distance from the site, while the flintwork from the site is mostly beach flint (Cowell in prep b), but that from the Newton ridge could have been collected from the immediate vicinity of the site (Cowell and Innes 1994, 36).

In the north-eastern part of the coastal plain there is no evidence that direct marine conditions were ever as close to the Bidston Moss embayment in the late mesolithic as was the case further to the west. There is, by contrast, no artefactual evidence from this area, but palaeoenvironmental evidence suggests conditions may have been a little different. Here, four small woodland disturbances are recognised in the pollen diagram, when the mixed oak woodland on the surrounding dryland appears to have suffered limited reduction from 6400–6080 cal BC (7360±70 BP; SRR-2926) to prior to *c.* 4900–4530 cal BC (5840±70 BP; SRR-2925) (Cowell and Innes 1994, table 2, phases 2, 4, 6, and 8).

The above latest date at Bidston marks a substantial clearance episode associated with evidence that could be interpreted as representing cereal farming, which is succeeded by a further similar phase before *c.* 4000 cal BC (Cowell and Innes 1994, table 2, phases 10, 12). Similar evidence is also present on the nearby Sefton coast (Cowell and Innes 1994, 84–5). If this were the case, then this economic activity would predate by *c.* 500 radiocarbon years the earliest appearance of neolithic cultural and economic evidence in the country . Although the Bidston evidence for this potential early cultivation is tenuous and not without contradiction, it does raise some potentially important issues concerning the nature and rate of adoption of a new form of subsistence, and ultimately a new material neolithic culture (Zvelebil 1986), which have implications for the character of later mesolithic settlement and landuse in the local area. Current views on the adoption of agriculture in this country suggest that it was a long, gradual, and complex process, whereby in some areas hunting and gathering remained dominant, with domesticates or cultigens providing a useful adjunct to be adopted if and when necessary (Zvelebil and Rowley-Conwy 1986). Thus, conditions in this part of Wirral may have encouraged the early adoption of such features, which may explain the differing character and nature of the palaeoenvironmental evidence in the late mesolithic and early neolithic here in contrast to the north-western part of the coast.

Early neolithic *c.* 4000–3200 cal BC

Nationally, a convenient horizon for defining the onset of the early neolithic has been marked by the elm decline, although neolithic cultural activity and evidence of domesticates is recorded in several places before that and there are several difficulties in the interpretation associated with this boundary (Scaife 1988). Regionally, the dates for the elm decline fall between *c.* 3990 and 3640 cal BC (Hibbert *et al.* 1971). In Merseyside, evidence from Wirral shows that the elm decline is present at about the same horizon. At the Park Road, Meols, pollen site it is associated with a date of 4034–3790 cal BC (5120±50 BP; SRR-2929) (Cowell and Innes 1994, table 5). At the Bidston Moss pollen site, it is more difficult to identify and could be represented at either the beginning of phase 16, which dates to before 3690–3360 cal BC (4740±70 BP; SRR-2924), or possibly by the less clear fall in elm pollen at the start of the preceding phase 14 (Cowell and Innes 1994, table 2).

The effects seen at this horizon at Bidston are unique in the county in their scale and effect, with two phases marking major periods of woodland disturbance, in the latter phase associated with a less controversial identification of the adoption of cereal farming, with arable weeds (Cowell and Innes, 1994, table 2, phases 14 and 16). This might, incidentally , strengthen the argument for the validity of cereal

cultivation being represented by the earlier cereal-type pollen grains in the chronologically later mesolithic episodes mentioned above (J. Innes pers. comm.).

By the early neolithic, however, the landscape had changed significantly from the preceding millennium or so, with tree pollen accounting for only *c.* 20% of total pollen by the end of phase 16. This suggests that the area around the moss was the scene of repeated inroads into the forest cover, causing cumulatively major vegetation changes around the mid-4th millennium cal BC.

Closer to Meols, one small-scale clearance episode may be recognised at Newton Carr, shortly after the elm decline, with forest reduction and the spread of *Pteridium* (bracken), *Plantago lanceolata* (Ribwort plantain), and *Triticum* (wheat) pollen (Cowell and Innes 1994, table 4, NC11b). In contrast to Bidston, however, this phase soon ceased and oak/alder woodland regenerated to former levels and stayed this way throughout the rest of the period. This pattern echoes the sparse evidence of settlement activity detected by fieldwalking around the Carr, as detailed above.

The early neolithic period around the elm decline saw the north-western corner of Wirral, such as around the Park Road, Meols site or the Newton basin, under coastal influence, with saltmarsh, areas of deep water, and backing fen reedswamp dominating the landscape (Cowell and Innes 1994, table 5). In some areas, such as around Leasowe, direct marine influence held off for much of the neolithic, although in other areas localised phases of marine advance are evident during the mid- to later 4th millennium BC. At Newton Carr the surface topography of the southern part of the basin led to the formation of small estuarine bays at periods of higher sea-level. One such embayment, identified to the east of the Birket-Carr Lane junction (SJ 230 882), existed for a few centuries at this time (D. Bedlington pers. comm.). At Bidston, the first direct marine inundation occurred across the mossland at an uncertain interval after 3690–3360 cal BC (4740±70 BP; SRR-2924).

Evidence for the settlement pattern of the early neolithic is even sparser than that for the mesolithic on north Wirral, and indeed it is sparse across the region. This may be a function of the present slight typological and technological criteria by which neolithic material can be recognised locally, rather than its non-existence. Until early neolithic flint technology can be identified confidently in the area, most probably from within material currently attributed to the later mesolithic, such sites will remain elusive. However, similarities in flint technology nationally (Pitts and Jacobi 1979), the continuing exploitation of areas such as Bidston Moss seen in the pollen diagrams, and similarities in the nature and scale of woodland disturbance across Merseyside as a whole, point to the conclusion that, in general, the pattern and nature of landuse and settlement differed little in the earlier neolithic from the later mesolithic (Cowell and Innes 1994, chapter 7). This may be supported by a flint core potentially of this date found adjacent to the presumed mesolithic flint scatter from fieldwalking on the southern slopes of the Newton Carr basin, mentioned above (Cowell and Innes 1994, gazetteer site: Me 002).

The most diagnostic artefacts for the period are the flint leaf arrowheads and stone axes. The main evidence from Meols relates to three leaf arrowheads ***15-17*** (Shone 1911) from the 'Cheshire Shore'. The arrowheads have an earliest date nationally in the late 5th millennium cal BC, but not all necessarily belong to the earliest farmers in the area, as their dating range extends into the middle and even late neolithic (Smith 1979; Green 1984). The other main diagnostic artefact of the Neolithic is the polished stone axe. There is a reference (Jackson 1936, 74) to 'fragments of polished stone axes with flattened edges associated with numerous flint flakes and implements' from 'Hoylake'. This probably refers to Red Rocks Point, on the edge of Hoylake, *c.* 4km to the south-west of Meols, from where struck flints have been excavated on a low sandstone outcrop opposite Little Eye (Glenn 1914). Varley (1964) shows axe findspots both here and at Meols, without giving any authority for their attribution. The Meols collection includes a piece of struck greenstone **20** of a type that is associated with Group VI neolithic axes and a sharpening flake **18** that may be the tip of an axe or adze, although more specific dating is not possible.

To the north-east, three stone axeheads have come from the sandstone slopes of Bidston Moss, which provide a potential context for the impact seen in the palynological evidence mentioned above, although their dating need not be restricted to the early Neolithic (Cowell and Innes 1994, 40). There is also a leaf arrowhead included in the material illustrated from New Brighton to the north of Bidston Moss, suggesting reoccupation of the mesolithic site (Varley and Jackson 1940).

It is not possible to determine from the pollen evidence whether the economic balance had tilted in favour of agriculture on Wirral by this date, or if hunting and gathering still played a dominant role, as evidence from neolithic sites elsewhere suggests, even in areas where domesticates and cultigens are shown to be present (Smith *et al.* 1981, 189; Smith 1984, 109). It does, however, suggest that, essentially from the 5th–4th millennium BC, there may have been two zones in north Wirral, where the balance of landuse differed. In the north-west corner, which is lower and more susceptible to flooding, evidence for clearance and agriculture is slight and there is no evidence for the same kind of intensifying clearance up to and after the elm decline, as is found at Bidston on the north-east side of the peninsula. Woodland remained dominant outside the flooded areas, and the area would undoubtedly have been suited for the continuing exploitation of wild resources around the natural open zones formed by channels, coasts, and wetlands. Alternatively, cultivation may have been

established across the whole of north W irral in the early centuries after the elm decline, but in the north-west part of the coast farming may have been taking place too far from the few sampling sites so far established to be represented in the pollen record, or it is possible that woodland could have been used for pannage for domestic pigs or for grazing cattle, which is less likely to show in the pollen record as it would not have necessitated woodland clearance (Smith 1984, 109).

The less inundated north-east may, however, have had a geographic advantage that led to the spread of grassland, which is more amenable to the development of cereal cultivation, alongside potential woodland clearance episodes. The wetland itself could also have provided regularly nutrient-replenished grazing land (Pryor 1978) for either wild or , later, domesticated animals around the margins of the carr woodland. The archaeological evidence is not strong enough to identify whether the settlement associated with this development was of a more sedentary nature than in the mesolithic. One attractive model, which may fit the pattern of landscape changes at Bidston around the elm decline, is illustrated in an area of southern England where small-scale, short-lived settlements appear to have been relocated frequently in response to difficult-to-manage regeneration of weeds and bracken (Smith 1984, 115). Something similar may explain the pattern seen at Bidston, where woodland regeneration follows each episode of clearance and subsequent short-lived phases of grassland.

The associated settlement in the Bidston area was presumably also located on the lower sandstone slopes around the moss, while the nearby coasts and the intersection of several major channels in the area would have provided opportunities for hunting and fishing. As the regularly flooded wetland of the later mesolithic was becoming ombrotrophic (fed from rainwater, and therefore more acidic) by this time (Cowell and Innes 1994, table 2, phases 12–16), the reduced capacity of the mire to sustain the earlier biomass, so attractive for a range of wetland flora and fauna, may have been one factor in a greater investment in cultivation.

Late neolithic *c.* 3200–2400 cal BC / early Bronze Age *c.* 2400–1500 cal BC

By the later 4th millennium cal BC, the local evidence shows that, as with north-west England in general (Tooley 1978, 35), drier conditions had become prevalent across much of north W irral, as sea-level fell and forest developed around the wetlands. At Newton Carr this drier phase saw birch carr communities around the margins of the moss, with mixed oak woodlands dominating the dryland areas. There was some local flooding during this time, as recorded at Meols after 3100–2704 cal BC (4315±70 BP; GU-1312) (Cowell and Innes 1994, table 5). At Newton Carr (pollen site NC11) it is not clear whether a similar phase equates with the middle neolithic flooding seen at Park Road, or the subsequent late neolithic/early Bronze Age phase. At Newton this flooding marked the beginning of the move to estuarine conditions within the embayment. Elsewhere, the late neolithic/early Bronze Age drier conditions produced extensive woodlands, the Upper Peat/Forest Bed, across north Wirral, which also extended to the present beach around Leasowe.

Settlement evidence is slight for the period spanning the late neolithic/early Bronze Age, across the whole of north Wirral. However, the incidence of previously recorded single findspots is stronger around the north-west part of the coast (Fig. 4.1.1). There is some evidence for activity during this period from Meols, including a patinated late neolithic arrowhead **19**, a scraper **20**, a fragment of a polished flint implement **21** and some less diagnostic arrowhead blanks **22–23**. A fragment of coarse gritty pottery with lines of whipped cord impressions **67** has also been found on the shore at Meols (V arley 1964: Grosvenor Museum), which is of late neolithic Peterborough type. Four early Bronze Age arrowheads ***24-27*** come from the 'submerged forest', with another two from the Meols area generally ***28-29***. To the west, Hilbre Island has produced a number of probable oblique arrowheads of later neolithic date and at least one barbed and tanged arrowhead (Cowell and Innes 1994).

These finds probably reflect the continuing exploitation of the woodland for hunting during the period of the Upper Peat/Forest Bed. There is no evidence available from any of the pollen sites for this period to show how far the woodland was being affected by this activity. A stone, perforated adze **66** is recorded from the silt of the early River Birket channel to the east of Meols, suggesting that some settlement and farming may have existed at this time in the locality. A series of inurned cremations come from the sandstone ridge, overlooking the Dee Estuary, to the south-west of Newton Carr (Mayer 1849) and a bucket urn has also come from the lower ground of Middle Eye (Petch 1976), although this find is not demonstrably associated with a burial, and could therefore potentially mark a settlement location.

There is a similar lack of pollen data for the area to the north-east, which makes it difficult to determine to what extent the clearance and cultivation around Bidston Moss continued from the earlier neolithic. The archaeological evidence, unfortunately, does not provide any good indication in the absence of palaeoenvironmental evidence. There are no sites or artefacts dated to the late neolithic period, unless some of the stone axes date from this, rather than from the early part of the neolithic (Smith 1979). Evidence from the Bronze Age is hardly better represented. To the north-west of Bidston Moss a bone midden is recorded from the present beach at Leasowe Bay (Kenna 1986; 2.25). This included an aurochs skull, several red deer antlers, a wild boar skull, two dog skulls, a horse skull, and several verte-

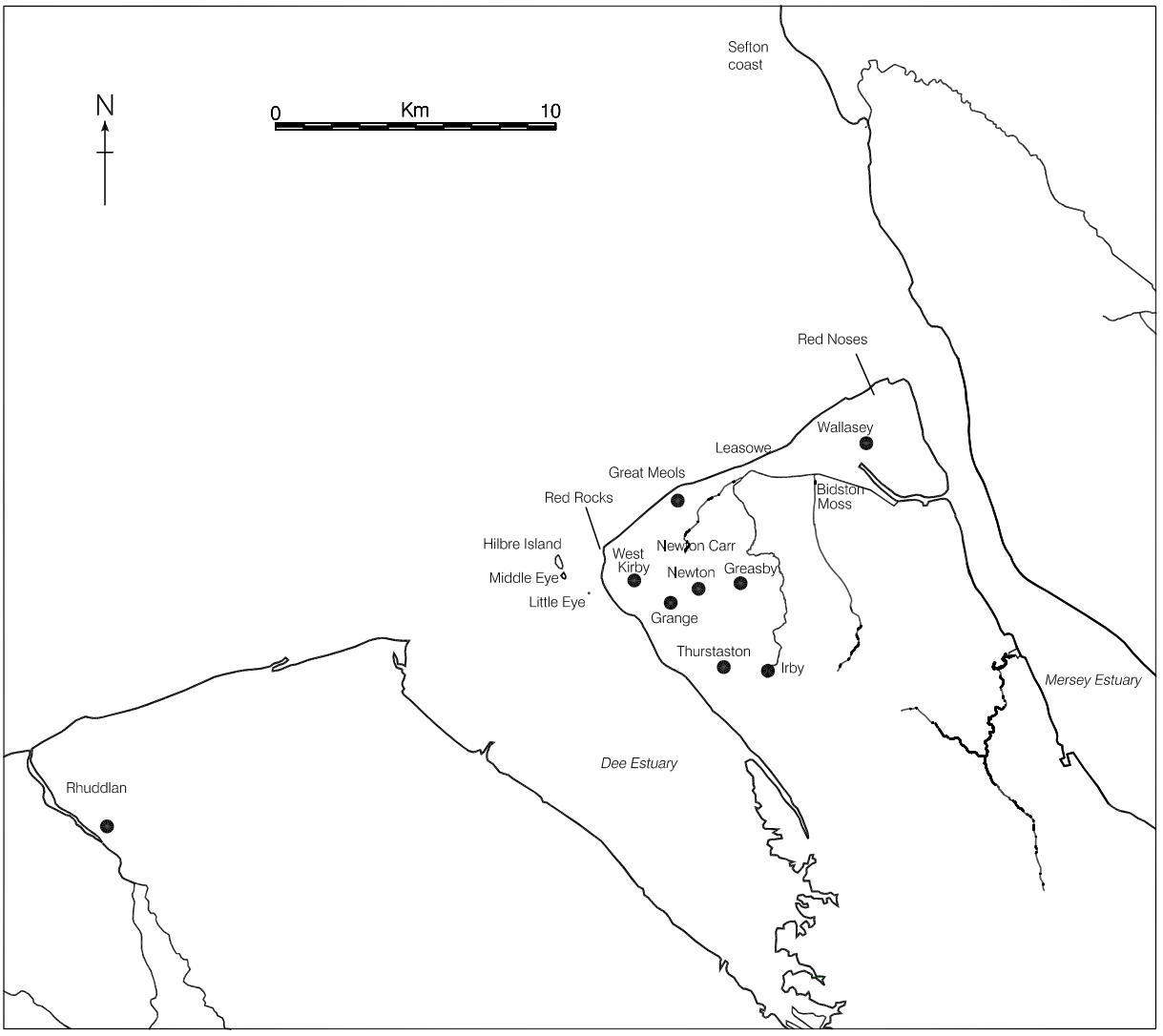


Fig. 4.1.1: Map of places referred to in text

brae. An ox rib produced a radiocarbon date of 2861–2310 cal BC (3980±70 BP; Birm-1013). On the north-east tip of Wirral a barbed and tanged arrowhead is included in the mesolithic/neolithic flint scatter site at New Brighton (Roeder 1900).

The use of woodlands seaward of the present coast must have become more restricted through the early Bronze Age, as after *c.* 2460–1774 cal BC increasing wetness led to several centuries of alder fen carr and raised bog conditions. This may have been the result of rising sea-level, although climatic conditions cannot be ruled out (Kenna 1978). This culminated in the death of the trees in the present coastal zone after about 2012–1680 cal BC (3490±60 BP; GU-1271) as local water-tables rose (Kenna 1986). To the east of Leasowe, landward clays and silts were being laid down in lagoonal-type environments behind the sand barrier, approximately along the present line of the coast, during this time (Kenna 1986).

Later Bronze Age *c.* 1500–700 cal BC

The lack of a satisfactory palaeoenvironmental context for human activity through the 3rd millennium cal BC continues into the later prehistoric period. The peat profiles in both of the wetland embayments relating to this period are truncated, and the coastal peats seem to have suffered a high degree of erosion and disturbance. A peat horizon found in the Leasowe area has produced a pollen spectrum of open woodland and well-represented ruderal herbs, although the date of 1030–810 cal BC (2750±55 BP; GU-1270) is uncertain, due to possible disturbance (Kenna 1986). Elsewhere, there appears to be a substantial break in the stratigraphic record at about this time. The fairly extensive peaty clay 'Soil Bed', found mostly above the late neolithic/early Bronze Age Upper Peat/Forest Bed, seems to belong to the medieval period. It may correspond to a phase of dune building noted on the Sefton coast (Tooley

1978), which on Wirral may have led to a series of dune slack environments across the coastal plain.

In keeping with most of north-west England, there is little archaeological evidence from this period in north Wirral, and that which exists tends to be restricted mainly to metalwork (Fig. 4.1.1) although even this is scarce. To the north-west, there is a thin scatter of metalwork from the sandstone outcrop upon which Wallasey has grown up, on the north edge of Bidston Moss (Cowell and Innes 1994, 44) and a late Bronze Age socketed axe is recorded from Hilbre Island (Cowell 1991).

A middle Bronze Age dirk **68** was found on the present beach, at Leasowe, which on its own says little of the nature of settlement and society at this time. The excavated site at Irby, *c.* 5km to the south, has produced two structures, pottery, evidence of metalworking, and burnt cereals with radiocarbon dates in the 15th century BC (Philpott and Adams, forthcoming), suggesting that the lack of evidence may be more a feature of the difficulties of archaeological visibility in the coastal zone.

4.2 The Iron Age

Robert Philpott

Although, in numerical terms, the later prehistoric assemblage from Meols is small, it is exceptional for the region in both quantity and character. The peculiar circumstances of recovery, which favour metal objects at the expense of ceramic or organic ones, have resulted in an assemblage biased towards metal finds, and the possibility that other material of Iron Age date once existed amongst the lost finds of stone, ceramic, or wood cannot be dismissed.

The present study has brought to light several hitherto unrecognised finds of Iron Age or late Iron Age/early Roman date. These provide a valuable contribution to the discussion of patterns of activity and trade in the Iron Age for a region characterised recently as a 'black hole' in terms of existing knowledge of the period (Haselgrove *et al.* 2001, 24 and table 3).

Chronology of Iron Age activity at Meols

The finds suggest three broad identifiable phases of activity at Meols during the Iron Age, although the tendency of finds to cluster in these periods may obscure what was, in fact, longer term, continuous activity. The first phase of finds consists of three swan-neck pins **83–85**, a ring-headed pin **82**, and a La Tène I brooch **80**; the group dated broadly to the 5th–4th century BC. The three swan-neck pins were all found in November 1893, and while the findspot is not recorded, it may be no coincidence that they appeared at almost exactly the same time as circular buildings were observed eroding out from under the sand-dunes. It is suggested that the buildings may be Iron Age in date (1.2).

The second phase is marked by the earliest evidence of longer-range contacts at Meols, in the form of three silver Carthaginian coins of the late-3rd century BC. These appear to demonstrate contact, perhaps through intermediaries, with the Mediterranean. No other material from Meols can be assigned to this period, but the wider hinterland of north-west England has produced other finds that may represent evidence of similar contacts.

A third phase of activity at Meols is indicated by coins and other material ranging in date from the 1st century BC to the mid-1st century AD. The three Celtic coins include two Armorican pieces, dated to 75–50 BC **5005–5006**, while the uncertain Celtic gold piece ***5004*** may belong to the latter half of the 1st century BC or early-1st century AD (Nicholson 1980, 24). To these should be added less closely dated material, a La Tène III looped brooch of Hawkes and Hull Type 4 **81**, probably of the 1st century BC, as well as material that could date to the late Iron Age or early Roman period, including four spiral finger-rings **86–89**, (included under Iron Age finds), and a looped stud **103**, and the foot of a Roman bronze patera ***204*** of a type found on the Continent in the late-1st century BC to early-1st century AD (the last two are discussed under Roman material, 2.3). A group of four worn Augustan *asses*, minted between 15 BC and AD 11/12 (**5009-5012**), may have been introduced during the late Iron Age although an early Roman period date is more likely, given the presence of other mid-1st century pre-Flavian Roman finds. Doubts over the authenticity of a silver tetradrachm of Tigranes I of Armenia (**5003**), found before 1991 on the embankment at Leasowe (2.24), mean that this otherwise virtually unparalleled find in Britain cannot reliably be included as an ancient loss[1]. However, the report of a second Syrian tetradrachm from nearby Bidston, only 5km east of Dove Point, found in 1950 but reported only in 2007 (PAS LVPL-217656), is an intriguing find from the same region of the eastern Mediterranean and is almost contemporary with the first. The second find, of the Roman province of Syria, was based on a coin of Philip III of Syria (93–83 BC), but minted after 64 BC.

'Exotic' coins from Meols

The 'exotic' coin finds from Meols have prompted several writers to argue that the site was a port during the Iron Age (Laing and Laing 1983; Longley 1987, 104; Higham 1993, 29; Matthews 1996). Laing and Laing (1983) considered that many of the finds of Carthaginian coins in Britain, with the westerly emphasis in their distribution, represented ancient losses through the activities of Mediterranean merchants in search of minerals. They suggested that the Meols pieces might indicate an extension of the trade route beyond southern England to the north-west, with pre-Roman traders in search of lead from north Wales. A similar view was taken by Longley (1987, 104), who saw the unusual finds from Meols

as evidence of trading connections between the Mediterranean, along the western seaways, and Meols as an entrepôt for the mineral wealth of the north Wales coast.

The discovery of considerable numbers of Greek and Carthaginian coins in Britain, particularly in the south and east of England, may result, at least in part, from traffic along the trade routes from the 5th to 2nd centuries BC, even if a dated archaeological context is lacking for almost all the finds (Milne 1948; Laing 1969; Cunliffe 1991, 431; Matthews 1996, fig. 3.2). In the past, some authorities have been sceptical of the introduction of Greek and Siculo-Punic coins in the Iron Age (e.g. Boon 1991; Fitzpatrick 1992, 3–4), and even the Coriosolite coins from Brittany or the Channel Islands have been viewed as unlikely to be ancient losses (e.g. Chitty and Warhurst 1977, 35), although the recognition of the characteristic 'Meols patina' on the Coriosolite coins led at least one writer to view them as a genuine loss in antiquity (W arhurst 1982, xxi). Scepticism about their presence at pre-Roman Meols is prompted because there is still no unequivocal discovery of a Mediterranean coin in a secure pre-AD 43 context, even though several are known from Roman deposits, such as Coventina' s Well on Hadrian's Wall. The Iron Age activity at Meols has been perceived as difficult to interpret, not least because some of the artefacts, notably the Carthaginian coins, occurred well outside what was considered to be their usual distribution zone. This has led some to dismiss them as intrusive additions to the collection.

However, with the accumulation of further finds, both from excavation and chance or metal-detector finds, the archaeological context of the exotic finds can now be seen to be less unusual than it appeared in the 19th century . Although doubts have been expressed that the Siculo-Punic coins were introduced into Britain in the Iron Age, as opposed to the Roman period or in modern times, a recent study of Iron Age coins in Kent has shown that Mediterranean imported coins, largely of Siculo-Punic origin and dated mostly between the 4th and 2nd centuries BC, occur not only as isolated finds, but also at the same sites as Iron Age or Romano-British coins (Holman 2005, 39–41). The existence of trade routes passing through the Mediterranean and reaching Britain is demonstrated by the introduction of the coral used to decorate Iron Age metalwork, and the coins may have been brought by merchants or intermediaries. Furthermore, the occurrence of Carthaginian coins at sites in Brittany , for example, at the long-lived Iron Age and Roman port at Le Yaudet (Cunliffe and Galliou 2000, 205), represents an intermediate port on the journey from the Mediterranean, whether via the Atlantic route or , more likely, using overland and riverine routes via the Loire or Gironde, the mouths of which are attested as the starting point of routes to Britain by Strabo (Greene 1986, 40–1, fig. 14a–b; Cunliffe 1982; McGrail 1997e, 278). The steadily accumulating evidence for coins of this type, particularly at sites where they occur alongside British Iron Age coins, reinforces the conclusion that some, at least, were in circulation in south-east England alongside the native currency.

The increasingly extensive distribution of Coriosolite coins in Britain remains concentrated largely in southern Britain, close to the source of the pieces in Brittany, as might be expected, but does include a thin scatter extending as far north as Scotland (Hunter 1997). The presence of a small number of Iron Age coins in Scotland which, like north-west England, was another non-coin-using region, provides a useful point of comparison. The two principal types there were Corieltauvian coins, from the nearest coin-using area of Britain with their core territory in northern Lincolnshire, and a similar number of Gaulish coins (Hunter 1997), while relatively common coins from the southern English tribes were absent. Hunter saw this as reflecting intermittent contacts, which were socially moderated, between southern Scottish elites and contacts in both east England and in Gaul, the latter direct rather than mediated through British intermediaries, and in the form of gift exchanges in the context of intermarriage or alliances. The coins should be viewed as exotic metalwork rather than currency (Hunter 1997, 519–21).

Regional trade and material culture

From the 5th century BC onwards the tin-producing areas of south-western Britain were in contact with the Mediterranean world, following trade routes that had been established even earlier in the past. Trading contacts between western Britain and the Atlantic coasts of Gaul and Iberia from the 5th to 2nd century BC can be demonstrated through both classical sources and archaeological finds (Cunliffe 1991, 424–34). Ancient sources record the journeys of Pytheas, a Greek merchant who circumnavigated Britain in the period 330–325 BC, while earlier accounts of Carthaginians and T artessians record journeys from southern Iberia to Brittany , Ireland, and Britain in pursuit of trade. Certain locations in the south-west emerged as ports-of-trade where commodities could be exchanged in safety as part of an organised trade. Archaeological finds demonstrate contact with south-west France and Spain from the 5th century BC. The Atlantic route was considered to extend along the south coast to Mount Batten in Devon, Harlyn Bay in Cornwall, and as far as Merthyr Mawr W arren in south W ales (Cunliffe 1991, 430–4).

An influential model for trading contacts in Iron Age Britain has been developed by Cunliffe (Cunliffe 1991). The core-periphery model defines three zones: the first consists of the exchange zone of the emporium of Hengistbury, itself on the south coast of England, where the native population engaged in direct contact with foreign merchants, the second is a broader procurement zone behind the emporium into

which imported goods were redistributed and from which materials were collected and sometimes processed for export, the latter extending as far as Cornwall for the Atlantic route, and the third represents a zone of 'no contact', which embraces the remainder of northern and western Britain, including north-west England. The core-periphery model has been criticised by a number of writers, notably those working within northern Britain, who take issue with the value judgements inherent in the system (e.g. Collis 1996; Matthews 1996; Hunter 1997; Bevan 1999; Haselgrove 1999). The model has been variously criticised for 'subsuming the complexities of the British Iron Age into a south-centred world view' (Hunter 1997, 519) and for a Mediterranean-centred approach in which 'the classical Graeco-Roman cities comprise his core area and demean the northern states to a periphery from which goods were procured' (Matthews 1996, 16).

A key criticism of the core-periphery model for north-western England is that it fails to take account of the 'admittedly limited Irish Sea evidence' (Matthews 2001, 21). The possibility that the Atlantic route extended beyond south Wales to at least as far as Meols has been discussed recently in several papers by Matthews (1996; 1999; 2001). Matthews has argued that, in common with south-coast sites, Meols was an *emporium*, a trading settlement with a good harbour, which formed a point of contact between traders and the population of the hinterland. He posited a distinct community of foreign traders living at Meols who maintained their own traditions of coin use (Matthews 1999, 187). Further, he cited a number of potential locations along the west coast (including Anglesey, Whithorn, and Ronaldsway in the Isle of Man) that might represent further sites, but for which evidence is at present lacking.

There is slight, but nevertheless steadily accumulating, evidence from archaeological finds in support of the view that Iron Age trade extended further than south-west England during the middle and later Iron Age. The ornamented hanging bowl, or lid, from Cerrig-y-Druidion, Denbighshire, in a style characteristic of western France and dated to the early-4th century BC, although plausibly an insular production, demonstrates that the established Atlantic route extended as far as north Wales in the mid Iron Age (Smith R. A. 1926; Cunliffe 1991, 431–2; Megaw and Megaw 2001, 100). There is a small, but

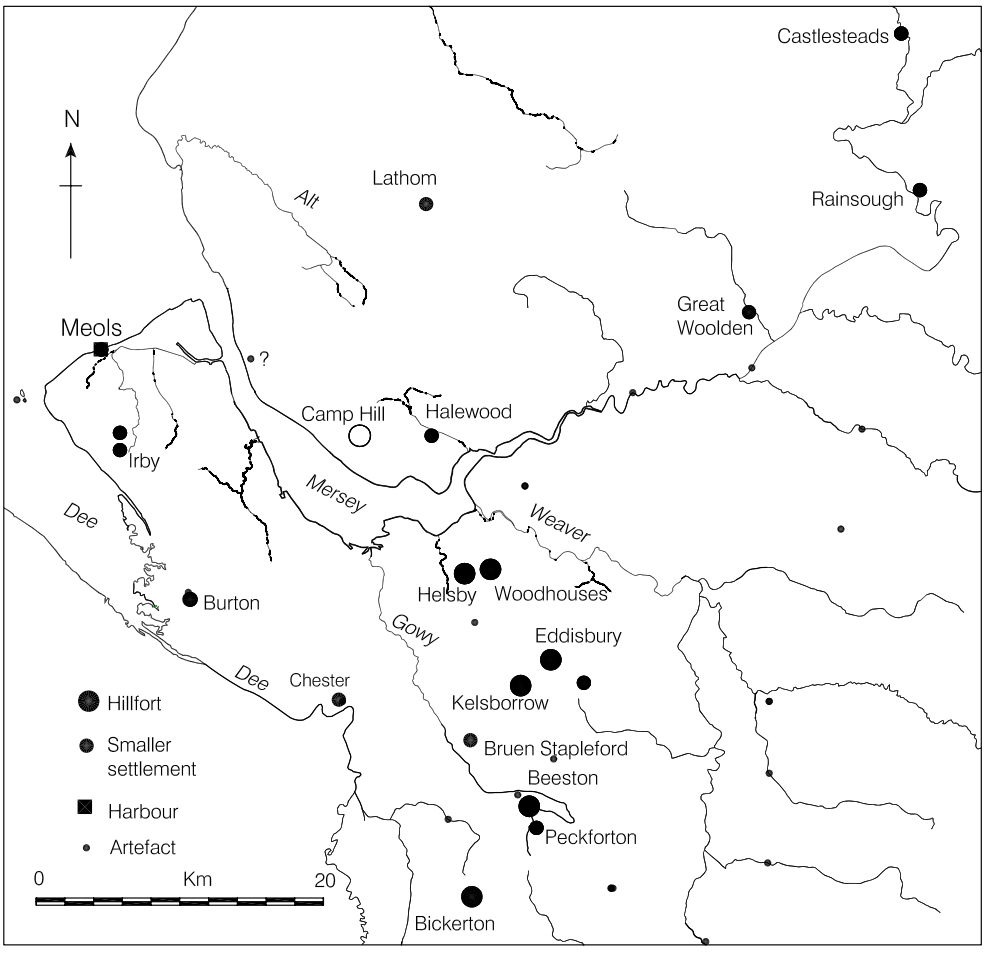


Fig. 4.2.1: Map of places referred to in text

growing, quantity of imported material in Wales that supports the existence of a west-coast trade route in the late Iron Age. A Graeco-Roman lead anchor-stock of 2nd or 1st century BC date, from a sea-going vessel, was recovered from the tip of the Llyn peninsula in north Wales (Boon 1977). To these should be added Carthaginian bronze coins known from three sites with access to the coast in Wales, one from Towyn, Merioneth, another from Caerleon, and a third from Monmouth (Laing and Laing 1983, 8). Later finds, including 1st century BC Gallic coins, have been taken to indicate contact between Gaulish intermediaries and metal producers in south-east Wales (Boon 1988), while an Arretine sherd of Augustan date (*c.* 20 BC – AD 10) is recorded from the island of Steepholm in the Bristol Channel (Boon 1987).

The rather sparse evidence for the existence of an Iron Age trade route around the coast of Wales should be set in the context of 'exotic' imported coins and other objects from north-west England. Together, these make an increasingly strong case for the extension of the west-coast trade route as far as this region from the 5th to 2nd century BC. This could be interpreted as the impact of the trade route on the wider hinterland of Meols in the lowland north-west.

The early period is least well represented. A 5th-century BC Massiliote amphora said to have been dredged from the River Dee at Chester may, for instance, as Matthews has argued, be a genuine ancient loss (Matthews 1999, 177). Of less certain validity as an ancient introduction is the 'neck of an ampulla of Phoenician glass', in blue glass decorated with bands of yellow with close parallels dated to 600 BC, discovered at Rock Ferry, Wirral, *c.* 10km south-east of Meols; it was found on the surface and was considered at the time as possibly a recent introduction (Cox 1895a, 180).

From the 3rd century BC the evidence becomes a little stronger. The pre-Roman coins from Meols, in particular, indicate that the port formed an important node on the west-coast trade route, demonstrating contact (though not necessarily direct contact) with the Mediterranean world during the Iron Age from the late-3rd century BC (for the most recent discussion, see Matthews 1996; 1999; 2001). That Meols may have been the entry point for other material in the north-west of England is suggested by an accumulation of finds, such as coins and pottery, from the broader region.

North-west England has produced a series of finds of coins and other objects imported from the Continent. In the area between the River Irk and Deansgate in Manchester no fewer than seven pre-Roman coins were found, including four 3rd-century Hellenic coins and two 1st-century BC continental Celtic coins. The precise status of these is uncertain (2.24), but two of the Hellenic coins, one from Carthage, the other struck under Pyrrhus at Epirus in Greece, which were found in the bed of the River Irk, have been considered probable ancient losses (Nevell 1994, 37–9). A small number of unpublished Mediterranean coins is known from closer to Meols, reported to Liverpool Museum in the last two decades. These include a bronze coin of Seleucus III (225–223 BC) from the Antioch mint found at Halsall, West Lancashire, a Carthaginian coin of the 3rd century BC from Bolton, a Ptolemaic copper of Ptolemaeus X Soter II with Cleopatra III (117–111? BC) found at Aintree, near Liverpool, and another of the same rulers from Port Sunlight, Wirral. In the absence of a secure archaeological context for any of the foregoing, the possibility that some were souvenirs brought back from the Mediterranean in recent times, particularly during the First World War, cannot be wholly dismissed. However, it is possible that some may reflect the movement of small quantities of exotic finds into the hinterland of the port in ancient times.

For the later period, from the 1st century BC to earlier 1st century AD, once again the broader north-west region has produced a small number of isolated finds from non-archaeological contexts. Two 1st-century BC continental Celtic coins found in the area between the Irk and Deansgate in Manchester have already been mentioned. Further finds consist of a Belgic Gaulish coin, dated 80–50 BC (2.24), recorded in the 19th century, said to have been found 'near Liverpool' with other British coins (Evans 1864, 120; Allen 1960, 277), while there is an unconfirmed report of a Celtic coin, possibly of Tincommius (*c.* 20 BC – AD 5), said to have been found near Otterspool, a small creek about 5km south-east of Liverpool, in the late 1950s but now lost (F. Willis pers. comm.). Two late Iron Age beads are known from Cheshire; one, found in Tarporley and now in the Museum of Archaeology and Anthropology at Cambridge, was already in the Cook Collection by 1773. The bead appears to be blown, a technique of manufacture introduced on the Continent in the 1st century BC, so the bead itself is either a late Iron Age import or is evidence that the technology was introduced at that time to north-west England. The findspot of the second example beside the legionary fortress at Linenhall Street, Chester, might argue for a post-Conquest introduction or survival (Matthews and Vickers 2003; Matthews 2003). These appear to point to trade contacts along the west coast Irish Sea-Atlantic route in the first half of the 1st century BC, which extended as far as Brittany and Gaul.

Matthews (2001, 23–4) suggested that imports to north-west England included exotica such as coins, metalwork, and possibly wine. The evidence for the latter is very slender, being based on a single wine amphora of uncertain provenance and a drinking vessel from Beeston, which, given its reconstructed capacity of over half a litre (Foster 1993, 50–3), is more likely a tankard for beer than a wine cup. Neither the site of Meols itself, nor the broader hinterland, has yielded significant quantities of imported metalwork, ceramics, or other durables that represent obvious high-status commodities, which might be associated with an elite acquiring

prestige goods through trade. The Augustan patera foot from Meols ***204*** could be an Iron Age introduction, but is equally likely to have been a prized high-status item in the baggage of an army officer, introduced in the Roman period. In the lowland north-west of England, Iron Age metalwork is very scarce and pottery virtually absent, either as chance finds or from the few excavated settlements (cf. Nevell 1994; Matthews 2001; Cowell 2005). However, the limited investigation up to now on Iron Age sites means that there has been little opportunity to identify imported material. Excavations at the hillfort at Beeston Castle have produced the largest Iron Age ceramic and metalwork assemblage in Cheshire (Ellis 1993), but the excavated Iron Age sites in the region, such as Irby, Wirral, Bruen Stapleford, Cheshire, or Great Woolden Hall, Salford, have yielded virtually no Iron Age metal finds. The excavated rural site at Irby produced a single La Tène iron brooch, from a post-hole, which produced two radiocarbon dates of 410–200 BC, as well as nearly 500 sherds of Cheshire Stony VCP (Very Coarse Pottery) and a decorated spindle whorl (Philpott and Adams forthcoming). Beeston Castle has a small number of sherds of pottery probably from The Wrekin, Shropshire representing no more than one or two vessels (Royle and Woodward 1993, 73). Only Mellor, Stockport, on the western Pennine fringe, has produced evidence of VCP, other Iron Age pottery and metal-working crucibles, provisionally attributed to the Iron Age, but few other finds (Noble and Thompson 2005, 29). As an indication of the relative rarity of durable Iron Age metalwork in the region as a whole, only 11 Iron Age finds have been reported from north-west England to the Portable Antiquities Scheme (PAS) in the period 1999–2003, by comparison with 89 from the West Midlands and 130 from Yorkshire (PAS 2001, table 6; PAS 2003, table 5). Even this meagre total for the north-west may be artificially boosted by the inclusion in the Iron Age category of several terret rings of types that occur at sites not occupied until the Roman period, suggesting some may post-date the Conquest.

The failure of the north-west of England to produce any quantity of fine metalwork, pottery, or high-status imports, does not in itself preclude involvement in a long-range coastal trade. Recent research on the Iron Age of Britain has seen an increasing recognition of regional differences in economic, cultural, and social terms (Haselgrove *et al.* 2001, 22–24) and has attempted to redress the balance away from the view that durable material culture, in the form of coins, pottery, and metalwork, comprised the only expression of wealth available to early societies. Traditionally, fieldwork and research have been particularly strong in those areas of Britain that used such durable culture, such as Wessex, southern England, and East Yorkshire. Accounts that generalise about the north on the basis of the types of evidence from the south of England fail to engage with the particular kinds of data available in the north (Robbins 1999, 44–5). It has been pointed out, for example, that characteristics of northern Britain in the Iron Age, such as conservatism, may represent stability rather than backwardness (Hunter 1997). Approaches are needed that allow the distinctive character of regions to be explored without 'the connotations of privilege or degradation' (Robbins 1999, 47), and do not reduce the north to a mere 'supply zone' for a southern 'core'. As Robbins (1999) has argued for South Yorkshire, such an approach fails to do justice to the qualitatively different nature of the material culture and the different settlement types encountered in the northern region. There, the absence of evident centralised authority or intensive production stand in contrast to regions further to the south and east. The dependence on durable material culture, notably coins, pottery, and fine metalwork, to define cultural groupings, to construct a chronological framework, and to identify social hierarchy and status differences, will fail to do justice to the northern regions, including the north-west, where these material expressions are absent.

Geographical context of Meols in the Iron Age

Essential to an understanding of the role of Meols is its coastal situation, together with its position with regard to communication corridors and natural resources, as well as of north-west England and north Wales. In addition, its location in terms of geopolitical authorities is significant. The site lay close to the boundaries of what were by the Roman period, if not before, three tribal groups. The Wirral peninsula is usually considered to have lain on the northern margin of Cornovian territory and the adjacent rivers of the Mersey and Dee not only provided the only access to the sea for the Cornovii (White and Barker 1998, 32–4), but are generally accepted as tribal boundaries. The territory of the Deceangli lay across the Dee Estuary in north-east Wales, only 13km away from Meols, while at a similar distance to the north, across the Mersey Estuary, lay the tribal territory of the Brigantes, or perhaps a sept or a distinct tribal grouping, the Setantii (Rivet and Smith 1979, 456–7). The location of Meols on the periphery of three tribal areas is consistent with the position of trading settlements elsewhere in Britain. In the Iron Age and Roman period they frequently grew up close to tribal boundaries, where central control was weakest and trading was flexible. In such places, exchange of goods between tribal groups could take place in convenient neutral territory. The Romano-British trading centre of Redcliff (formerly known as North Ferriby) near the Humber stands at the junction between the tribal areas of the Corieltauvi and the Parisi; South Ferriby has produced nearly 200 Iron Age coins and a large collection of La Tène metalwork (Cunliffe 1991, 178), suggesting a settlement commanding the river crossing. The pair of settlements at Redcliff and South Ferriby on either side of the Humber in the Claudian period, if not

earlier, may have acted as 'gateway community' for products from the Roman province to the south to enter Parisian territory (Cunliffe 1991, 194). The port at Hengistbury in Dorset lay on a tribal boundary, between what became in the late Iron Age the Durotriges and the Atrebates, in an area not only itself rich in natural resources but also situated with easy access to a variety of more distant resources along the south coast (Cunliffe 1987, 338–41).

There is one further hint that Wirral played a significant part in the late Iron Age economy of the Cornovii. Writing in the early 2nd century AD, Ptolemy indicated that the territory of the Cornovii included Chester and probably therefore also the Wirral peninsula. The tribal name itself may be a legacy of the pre-Roman trade route along the west coast. The name 'Cornovii' probably refers to a people living on a peninsula or 'horn' of land, since this is the common characteristic of all three tribes of that name in Britain (Rivet and Smith 1979, 324–5). Tribal names were often bestowed by outsiders, the northern England tribe the Brigantes, a name variously translated as 'high ones or mighty ones', or more prosaically 'upland people', being a notable example (Rivet and Smith 1979, 279). In the case of the Cornovii, the name may have been used initially by outsiders, visitors, or neighbouring tribes-people, who were familiar with the character of the peninsular land-form viewed from a maritime perspective. Rather than the 'horn' of the Wrekin, the prominent volcanic hill near Wroxeter in Shropshire on which an Iron Age hill fort was erected, in the heartland of the tribal territory, the Wirral peninsula may represent an alterative focus of activity in the late prehistoric period that was sufficiently important to confer its name on the whole tribal entity.

Iron Age trade at Meols?

The interpretation of Meols as a port inevitably raises the question as to what commodities attracted traders to Meols, in some cases from some distance, and what was exchanged for those commodities? Meols was well situated for access to the extensive hinterland of Cheshire and Lancashire, through the estuaries and rivers of the Dee and Mersey, as well to coastal regions of north Wales and Lancashire. The salt-producing areas of mid-Cheshire were accessible via the riverine routes of the Weaver and Gowy (Morris 1985; Nevell 2005). Close at hand across the Dee Estuary was the lead-producing area of Halkyn Mountain and Talargoch in Flintshire. One possible objective of the trade was lead-silver from Clwyd (Laing and Laing 1983; Longley 1987, 104). Although lead was not much used in the Iron Age, it served as an important additive to bronze to improve its casting properties, but also by the 1st century BC silver extracted by cupellation was used in its own right. Little is known of pre-Roman exploitation of the north Wales deposits, but the rapid opening of Flintshire mines after the Roman occupation of AD 58–9 may point to earlier working of the mineral (Cunliffe 1991, 460; Blockley 1989, 8; O'Leary 1989, 52; Petch 1987, 227–8).

Within the broader ambit of Meols were other mineral resources. Of uncertain relevance to the Iron Age situation is the existence of three separate sources of copper within the broader region of north Wales and north-west England. While deposits of copper were mined in the Bronze Age and again in the Roman period at Alderley Edge, Cheshire, Parys Mountain near Amlwch in Anglesey, and at the Great Orme, Caernarvonshire, none has so far produced evidence of Iron Age exploitation (Lewis 1996), although it is perhaps significant that at a distance of 50km Great Orme's Head is clearly visible from Meols. Copper has also been worked in relatively recent times in Cheshire at Bickerton, but there is no evidence of Roman or earlier exploitation (Petch 1987, 227).

A further commodity has recently attracted extensive discussion. Higham (1993, 29) and Matthews (1996, 14–17) have argued that salt was one of the commodities passing through Meols in the middle and later Iron Age. The mineral was evaporated out in ceramic containers (VCP) from brine derived from the naturally-occurring brine springs in mid-Cheshire and the containers used to transport the salt (Morris 1985). The distribution of VCP increases in range and volume after 500 BC, travelling over 100km from its source, and suggests transportation along the coast by boat as well as overland using riverine routes, as far as the Severn into the territory of the Dobunni in Herefordshire, Worcestershire, and Gloucestershire, as well as, more significantly for Meols, around the coast of north Wales and into the Severn Estuary (Morris 1985; 1996). The evidence for the salt trade using Meols is circumstantial, since no Cheshire Stony VCP has been recovered from there, although the scarcity of pottery of all dates there makes this in itself unsurprising. In any case, the object of trade may in many cases leave no discernable trace at the port through which it passes. Not only has Meols, most unusually for north-west England, produced a number of finds of the appropriate period, but the earliest finds coincide broadly with the time when the salt distribution begins to expand. The findspots along the north Wales coast indicates a sea-borne mode of distribution that requires a point of embarkation. Given the Iron Age evidence at Meols, its subsequent history as a port, and its favourable location to support such a trade, it is probable that Meols was the harbour from which the salt was shipped. Access from the brine-producing areas of Cheshire to the coast would have involved a journey along the Mersey, then inland via the River Weaver, which was, perhaps significantly, the route used to convey salt to Liverpool from Cheshire in the 17th century (Hyde 1971, 3). How far the Weaver was navigable for small vessels in antiquity is uncertain, although in the 17th century, before the changes to the river to improve navigability upstream, the river was navigable for commercial purposes upstream as far as it was tidal, to

Frodsham Bridge, at which point goods were transferred to land carriages, although fishing boats were used higher up the river (Willan 1951, 1–3).

How the trade in salt, and other mineral and organic products, was organised is difficult to reconstruct. Although there is no direct evidence, it would seem likely that the distribution of salt was undertaken by local traders in the exchange system known as down-the-line trade, whereby goods were passed from one to another, perhaps using kinship alliances (Morris 1996, 51, fig. 5.3a). The presence of Armorican coins has even been seen as indicative either of the presence of foreign traders there or of trade which saw the introduction of coins as curios (Matthews 1996, 19-20). While we would not go as far as Matthews in seeing a distinct community of foreign traders established at Meols in the Iron Age, 'maintaining their own traditions of coin use', at least intermittent contact with the Continent appears to have occurred, and the holding of markets at agreed times, coinciding with the sailing season, is perhaps a more plausible scenario. Morris (1996, 50) argues that in Iron Age England salt production was a household activity, employing a low level of technology and seasonal production, and there is no indication that salt production was tightly controlled. The extensive distribution of brine springs across in Cheshire (Nevell 2005, 12–13, fig. 6) means that, in practical terms, maintaining centralised control over the resource would be difficult.

The question of what was being acquired by the inhabitants of north-west England in exchange for minerals or other commodities remains unanswered at present. The reason for the relative invisibility of trade with and from north-west England may have been its dependence on the outflow of perishable goods, such as skins, furs, timber, and slaves, or raw materials. It is significant that Strabo's list of the exports from Britain in the late-1st century BC (*Geog.* 4.5.2.) includes perishable commodities, such as slaves, hunting dogs, and corn, as well as minerals, such as silver, iron, and gold. One find, which unusually can be traced to its source, is a decorated 3rd-century BC steatite spindle whorl, which was found in excavations on a mid-late Iron Age, Roman, and medieval site at Irby, in north Wirral (Philpott and Adams forthcoming), although its context, set apparently deliberately into the rubble foundation of a medieval wall, argues for the deposition of a 'found' object. The raw material originates in Anglesey and the find hints at the flow of traded items along the north Wales coast, perhaps through Meols. With the exception of salt, the material traces of Iron Age trade around the coast of Wales and in north-western England are confined in general to what must be the peripheral accompaniments to trade rather than the chief commodities themselves. Introduced items include coins, which, to a society that did not mint or use coinage, may have possessed a bullion, symbolic, or curio value, rather than any intrinsic worth as currency.

One of the key functions of an emporium is the processing of raw materials to manufactured goods for export, as can be seen in the emphasis in the Hengistbury record on working of metals from a wider hinterland. The traded items at the Iron Age emporium of Hengistbury Head take the form of exports of pottery, tin, shale, and silver, while imports include wine, glass, and figs. As a result the evidence from Hengistbury, much of it excavated from stratified deposits, reveals a wide range of durable products, while the favourable soils ensured the good preservation of animal bone. However, tracing such traded commodities for the most part requires both materials that are durable and objects that are diagnostic of date and origin.

The chronology of the late Iron Age finds at Meols needs to be set in the context of trade at that time between Britain and the Continent. Evidence from southern and eastern England supports the idea of more extensive and frequent trade, with a wider range of materials in higher volume than before, beginning about 100 BC. The pre-eminent site exemplifying such contacts is Hengistbury Head, Dorset. There, excavations indicate several phases of contact (Cunliffe 1987). The first phase, in approximately 100–50 BC, saw the site at Hengistbury develop rapidly as a port-of-trade in the early-1st century BC, ultimately as a result of increasing Roman involvement in southern Gaul from the later 2nd century BC. Caesar's conquest of Gaul led to the dominance of more direct cross-Channel routes in the decades after 50 BC, via the Somme and later the Rhine. Atlantic traders continued to bring in Spanish wine, and pottery that had been picked up on the way in western Gaul, but Roman traders had turned their attention to the more direct and shorter Channel routes (Cunliffe 1987, 339–46). Away from the principal contact zone, south coast sites, such as Mount Batten, were considered not to be directly involved in the continental trade at this time, but formed part of an east-west network of British coastal trade, receiving local goods along with continental coins as bullion from the primary centre at Hengistbury (Cunliffe 1988, 104).

The impact of this expansion and intensification of trade between Gaul and Britain during the 1st century BC, which can be seen most clearly in the southern ports, appears to have had an impact on north-west England. While the primary focus of trade was the south coast of England, the movement of people and materials extended along the western coast of England and Wales. Though relatively remote from the core zone of contact, Meols and north-west England do not appear to have remained isolated from contact along the Irish Sea coastal route. The increase in the number of 1st-century BC finds from the Continent at Meols (i.e. the Coriosolite coins (**5005-5006**), an uncertain gold coin (***5004***), and perhaps also the patera foot (***204***), if this was not a later, Roman, introduction) may be a consequence of a renewed interest in the raw materials of north-west England and north-east Wales by traders with contacts with the Continent. Against this, Cunliffe has suggested that the 1st

century BC conquest of the Iberian peninsula brought large quantities of valuable metals into Roman control, diminishing the demand for such commodities from Britain (Cunliffe 1988, 104). However, he accepts that metals are specifically mentioned by Strabo in his list of exports from Britain, but argues that other commodities, such as corn and slaves, may have become more important as primary motives for trade. The Gaulish and Coriosolite coins date to the first half of the 1st century BC and imported continental material appears to diminish in the later 1st century BC. It could be argued that the re-focusing of trade routes in southern Britain to concentrate on shorter cross-Channel routes had an impact on the frequency and volume of long-range trade reaching north-western England.

One of the difficulties of interpreting the evidence for trade at Meols is that it is impossible to determine on the basis of the small residue of unstratified finds whether the trade route remained in continuous operation throughout the Iron Age or saw fluctuations such as those demonstrated through excavation at Hengistbury, where the nuances of direction and chronology of trade routes could be teased out of tightly controlled stratigraphic sequences and sizeable assemblages of diagnostic artefacts. Nor at Meols do the artefacts give any indication of the volume of coastal traffic along the route, or the origin of the traders themselves. A significant weakness is the lack of excavated coastal settlements of appropriate date that might help to illuminate these questions. Further research is required, not only on the intermediate ports between Meols and south-western England to determine the nature, frequency and chronology of trade, but also to chart the distribution of goods into the hinterland of Meols. In the light of the fact that coastal erosion has probably destroyed much of the evidence of the Iron Age settlement, the chief hope of determining what went on at Meols is the recognition of its impact on its immediate hinterland.

Character of the settlement

Meols has produced some structural evidence which is most plausibly assigned to the Iron Age. Observations in the late-19th century indicate the discovery of at least three circular structures on the shore (1.2). The form of the structures, the contemporary stratigraphical observations, and the absence of associated Romano-British artefacts, which might have been anticipated had the structure dated to the Roman period, suggest that these were later prehistoric round-houses. Circumstantial evidence, in the form of the swan's neck pins (**83-85**) found during the same erosion phase as the huts were exposed, argues for an Iron Age date. The last circular structure to appear at Meols, observed in 1892, was described as '1 x to 2 feet below the level of the high spring tides' (Cox 1895b, 44), suggesting that during they were occupied during a phase of lower sea-level than that of the late-19th century (3.1).

There is no record of the plan of the Meols settlement of circular huts, nor is there any indication of the disposition or relative spacing of the buildings. Two buildings appeared and were eroded away within a very short space of time, so it is likely that they lay close together . The settlement may have been a small one, little more than a farmstead, although whether open or enclosed by a ditch and bank is uncertain, close to the then shoreline, possibly exploiting summer grazing during a time of reduced flooding and tidal extremes, as has been postulated for Iron Age settlements in wetland environments along the Severn Estuary (Bell *et al.* 2000, 344). Ancient shipping was a seasonal activity, and the likelihood is that the occupants were also engaged in agriculture, as well perhaps as manufacture and procurement of items for trade during the winter months. However, the possibility that the site was a larger nucleated settlement more akin to those identified in southern Britain cannot be confirmed or refuted on current evidence. Ports of the southern coast of England, such as Hengistbury and Mount Batten, lie on promontories with good harbours and, in the case of Hengistbury , protected on the landward side by massive ditches (Cunliffe 1987, 67–71). It is possible that the Iron Age settlement at Meols, adjacent to the anchorage and apparently located on the western side of what was formerly Dove Point promontory , was itself protected by earthworks, but the features recorded by the antiquarians provide no corroborative evidence. The settlement may have acted as a focus for traders from the hinterland to meet at agreed times with maritime traders. The site at Hengistbury has been re-interpreted by Fitzpatrick (2001) as occupied only seasonally, and then by Armorican merchants trading directly with their homeland in Brittany. It is possible that the Iron Age port at Meols involved a permanent settlement occupied round the year , rather than one occupied only during the sailing (and trading) season. If the settlement grew large enough to act as a centre for manufacturing and processing of raw materials (cf. Hengistbury) then a permanent presence may be anticipated. Coastal erosion may have dealt a fatal blow to the chances of ever resolving this question.

The 19th-century observations point to a discontinuity in settlement location between the Iron Age settlement recorded in the 1880s and 1890s, which appears to have lain in the vicinity of Sandhey, north-west of the present Great Meols village, and the Roman nucleus identified on the eastern side of the former Dove Point promontory . If not forcing the abandonment of the Iron Age settlement, a rising sea-level, which by the late-19th century lay below the high water of spring tides, may have raised the water table enough to render the site increasingly unattractive. Alternatively, the shifting of channels and sandbars, which was a characteristic of the historic period and led, for instance, to the infilling of the deepwater harbour of the Hoyle Lake, may have

stimulated a move to a more suitable location. Another possible Iron Age settlement has been identified further to the east along the north Wirral coast. The existence of a 'circular hut' along the shore at New Brighton, in Wallasey township, was recorded summarily in the 19th century 'some distance below high-water mark' (Cox 1895b, 44). Although there is no certainty that the two were contemporary, it raises the intriguing possibility that the coastal margin attracted more than one settlement in the later prehistoric period.

Note

1 The coin, a worn piece, of a type minted 83–69 BC, is said to have been found on the embankment at Leasowe about 2.5km from Dove Point. Authorities on the Armenian series, including Clive Foss and Ruben Vardayan (pers. comms), who saw high-resolution colour photographs of the coin, expressed the view that the Tigranes coin appeared to be a genuine piece. However, Y. T. Nercessian, Secretary of the Armenian Numismatic Society, has pointed out that its high weight (22.58g as against an average of 15.58g for over 700 pieces of this type) makes it likely to be a modern forgery.

4.3 The Roman period

Robert Philpott

In the absence of stratified archaeological deposits and surviving structures, the function of Meols in the Roman period must be determined from two main sources, the composition and chronology of the artefact assemblage, and the location of the site in relation to any contemporary political, economic, and administrative structures, including roads, trade routes, tribal boundaries, and contemporary settlements. Further factors that contribute to an understanding of the role of this coastal site include the nature of trade in Britain and the Roman world, and the physical properties of the vessels that carried that trade. Recent research on Roman sea-level change suggests physical factors that may have affected the role of the site. Finally, the military and civilian development of the wider region following the permanent Roman occupation of the north-west of England provided a background of activity that had a varying degree of impact at different times on Meols.

The geographical context of Meols in the Roman period

As in the Iron Age, the location of the site at Meols (Fig. 4.3.1) was critical to its continued use within the changing geopolitical landscape of the early Roman period. From its position on the end of the Wirral peninsula the site was well placed for direct access via the Dee Estuary to Chester, where there is growing evidence for an early auxiliary fort preceding the well-known legionary fortress, as well as to the lead-producing sites across the Dee in Flintshire. To the east the Mersey represented another estuary and river route accessible for shipping at least as far as Wilderspool, as well as penetrating further inland to northern Cornovian territory of Cheshire along the tributaries of the Gowy and Weaver. The position of Meols in relation to the west-coast route of Britain was equally significant. Westward from Meols across the mouth of the Dee Estuary lay the north Wales coast, with the Roman industrial settlement at Prestatyn no more than 20km away, a site which may have had its own harbour (Blockley 1989, 224). Further west, the copper mines of the Great Orme and the island of Anglesey were easily accessible by water.

Only 30km to the north of Meols, along the south-west Lancashire coast, lay the Ribble Estuary, with the fort of Ribchester upstream. Further north, in Morecambe Bay, the fort at Lancaster was established at the tidal limit of the River Lune, while beyond, along the Cumbrian coast, lay forts such as Ravenglass. Carlisle and the northern frontier itself were accessible via the Solway Firth.

Beyond Anglesey across the Irish Sea lies Ireland, less than 200km from Meols. Direct evidence of trade between Meols and Ireland in the Roman period is lacking so far, but as a west-coast port Meols must be a strong candidate for the Irish Sea trade with Britain, which was certainly current in the late pre-Roman Iron Age and Roman period. Tacitus's observation that the knowledge of harbours and approaches in Ireland was already by his time acquired through merchants begs the question of the point of departure on the British coast for those traders.

The pre-Flavian finds (pre-AD 69)

A significant portion of the Roman assemblage dates to the pre-Flavian period. The coins provide the most precise date of manufacture. Three coins of Claudius (AD 41–54) and five of Nero (AD 54–68) were recorded in the 19th century (Thompson Watkin 1886, 282). To these should be added a Republican silver *denarius*, two more Claudian bronze coins (Shotter 2000c, 101), and four Augustan *asses*. Roman bronze coinage of Augustan date is scarce, though not unknown, in north-west England (Shotter 2000c, 10) and as the Augustan *asses* have been worn through circulation, they are more likely to be introductions during the pre-Flavian period than the late pre-Roman Iron Age. The tight date range and similarity of the four coins may indicate a hoard, perhaps the contents of a purse. The proportion of pre-Flavian coins in Cheshire and Lancashire amongst all casual finds is 11.38% and 8.05% respectively; allowing for the presence of some early *denarii* that circulated as late as AD 120, the volume of coins has been attributed to movements of the Roman army in the region before the foundation of permanent military sites (Shotter 2000c, 105, 244).

Other mid-1st-century material from Meols consists of two Aucissa brooches (**105**, **106**; Hume

1863, 72, pl. IV, 1a–c; Petch 1987, 236), and a Simple Gallic/Colchester type brooch (**108**; BM acc. No. 58.9–16.3). Three finds of pre-Flavian date, which were amongst a tray of material undoubtedly from the 'Cheshire Shore' found in Verulamium Museum in the early 1980s, are very likely to be from Meols, sharing the same very dark patina; they consist of a Colchester-type brooch, in the Liverpool Museum collection (**107**; T8), which also suggests an early-mid-1st century AD date, a wheel brooch of a type usually dated from the Claudian-Flavian period (**143**; Crummy 1983, 17) and a mid-1st century military belt buckle of Grew and Griffiths Type B, a type distributed largely in the south and east of England, though not unknown in the north west (**100**; Grew and Griffiths 1991, fig. 1). A Ritterling 12 samian rim **226**, found in 1955, which is also a pre-Flavian form and may be Claudian in date (M. Ward pers. comm.), although Felicity Wild (2002, 272) suggests the form may occasionally survive in use as late as the Flavian period. Alongside this find are others suggesting the introduction of prestigious high-quality objects. A find illustrated by Ecroyd Smith (1867, 186, pl. VII, fig. 14), but now lost, may also belong to the later 1st century BC or first half of the 1st century AD (***204***). Lloyd-Morgan (1980) commented 'there can be little doubt that it is the foot of a patera of the 1st century AD, and probably dating to the first half', citing den Boesterd (1956, no. 12 for a complete example); and Tassinari (1975, nos 31–34, p. 36, pl. IX). A bronze vessel of this quality could be a pre-Roman introduction, or may have survived as an heirloom, perhaps amongst the possessions of a Roman officer (N. Griffiths pers. comm.). A fragment of glass ***225***, probably from a mould-blown gladiatorial cup, dates to AD 50/55–75/80 (Thompson Watkin 1886, 280, fig.). Other finds are not so closely datable, but could belong to this period. Four spiral finger-rings are a native type of personal ornament and are likely to be late Iron Age or early Romano-British in date (cf. Cool 1998b, 57–8). X-ray fluorescence analysis of one spiral ring **88** indicates bronze with a trace of zinc, suggesting that it is unlikely to be earlier than 1st century BC (Ponting 2004, 3–4). An unusual looped stud **103**, paralleled at Camerton and Wroxeter, should also be dated to the late Iron Age or early Roman period.

Together, this provides a substantial body of pre-Flavian Roman material. Any one of these objects found in isolation in a northern context, such as the Aucissa brooches or military belt buckle, would tend to be dismissed as a Flavian-period survival. Grew and Griffiths (1991, 51), for example, suggest that belt buckles of Type B had largely gone out of use by the AD 60s, but may be as late as the Flavian period when found in the north-west. The existence of such a quantity of pre-Flavian objects increases the probability that most, if not all, were actually in use at Meols in the pre-Flavian period. The significance of the material is considered below.

The function of Meols in the pre-Flavian period

The coin list gives the clear impression that coins circulated at Meols from the time of the earliest Roman intervention in the region onwards. It has been suggested that these early coins may represent the presence of traders from outside the region at the start of the Roman period. In the early Roman period before the establishment of a Roman military presence over the Brigantes, Meols may have served as a gateway community for goods as a market or port located between the Cornovians, who were allies of Rome, and the neighbouring Brigantes and Deceangli. However, in the absence of a coin-using economy amongst the native population, Roman bronze coins are not likely to have held any intrinsic value other than as a source of metal or as curiosities, so the pre-Flavian coins are unlikely to represent losses from merchants engaged in trade with the native tribes. An alternative, and perhaps more plausible, scenario sees the pre-Flavian belt buckle and Aucissa brooches, along with the coins of similar date as evidence of military activity within the tribal territory of the Cornovii. The presence of Augustan *asses*, Claudian coins, and probable Claudian samian suggests that such activity may have occurred as early as the Claudian period (AD 41–54) and almost certainly under Nero (AD 54–68). The scatter of copies of Claudian bronze coins noted in the north-west of England, which, as David Shotter has shown, tend to cluster in the estuaries and river valleys of the Mersey, Ribble, and Lune (Shotter 1997, fig. 1, 9–11; 2000c, 113, fig. II.23), has been interpreted as the result of the military interventions against the western Brigantes under Nero (AD 54–68), as these coins had passed out of circulation by the Flavian period.

The context for early Roman military involvement in the region potentially involves several episodes of recorded history as well as, without doubt, interventions that have remained unrecorded. The Cornovii have plausibly been identified as one of the tribes whose 11 leaders surrendered to Claudius after the Roman invasion of Britain (Webster and Dudley 1965, 185–6). This receives support from the establishment of a number of Roman military sites in the pre-Flavian period on Cornovian territory (Arnold and Davies 2000, 4). From these sites military interventions could be launched against the hostile tribes of the Welsh borderlands, such as that which resulted in the capture of the anti-Roman tribal leader Caratacus in AD 51. In establishing the Cornovii as *socii* or allies, the Roman army acquired access on nominally friendly territory to a window into the Irish Sea, not only through the estuaries of the Dee and Mersey but also via the existing Iron Age harbour on the northern Wirral peninsula. Roman military scouts may already have known of the existence of the harbour through the activities of traders, just as Tacitus records that knowledge of Ireland was acquired through those who visited as merchants by the later 1st century (*Agricola* 24). The rapid exploita-

tion of the lead deposits of Flintshire in the years after the Conquest may indicate early knowledge of the mineral and other resources of the region prior to its permanent incorporation into Roman administration.

The position of Meols at the tip of the peninsula potentially provided the Roman army with an important strategic harbour within Cornovian territory. Located on this broad peninsula projecting between the tribal territories of the Deceangli and Brigantes (or Setantii), the harbour gave ready access not only along the coast to the estuaries of the Mersey and Dee, but also further afield into what was hostile or intermittently unsettled territory during the pre-Flavian years. The thrust of military intervention shifted in direction between north Wales and the Brigantes at different times on account of tribal resistance and demands of military strategy in the region. The location of Meols lent itself as a launching point for military action by sea in two directions, along the Lancashire coast to the Ribble and Lune estuaries to the north against the Brigantes, or along the north Wales coast against the Deceangli and Ordovices.

One of the first Roman military campaigns that may have involved the harbour at Meols was that of Ostorius Scapula in AD 48 against the Deceangli of north Wales. Tacitus records that Scapula was close to the Irish Sea when an uprising amongst the Brigantes led to the abandonment of the campaign. It has been suggested that he was forced to divert his attention across the Cheshire plain before returning southward (Jones and Mattingly 1990, 66) The same military campaign may have left its mark in a small group of finds from Prestatyn on the north-eastern tip of Wales, across the Dee Estuary from Meols, which includes three early brooches and two fragments of polychrome glass. The excavator adduced a pre-Flavian phase of activity on the site, possibly dating to the late AD 40s (Blockley 1989, 223).

A second potential historical context is that Meols may have witnessed the passage of troops for coastal sea-borne action into north Wales under Suetonius Paullinus. In *c.* AD 59 Paullinus was engaged in campaigns against the Ordovices or Deceangli, and in AD 60 attacked and captured Anglesey, perhaps using the vexillation fortress at Rhyn Park near Chirk to launch the attack into Snowdonia. The victory was soured by the outbreak of the Boudican rebellion, which led to an immediate return to London to deal with the rebel forces, although part of the Legio XX may have been left in north Wales to guard the newly secured territory (Nash-Williams and Jarrett 1969, 5; Jones and Mattingly 1990, 69–71). Davies pointed out that there should be temporary camps in north-west Wales that represented this campaign, including one where Paullinus constructed the flat-bottomed boats, which Tacitus records were used to invade Anglesey. He suggested that the attack on Anglesey could not have been contemplated unless the land east of the River Conwy was in Roman hands, but noted that this territory has so far failed to produce a single clearly pre-Flavian installation (Arnold and Davies 2000, 7, 11).

Turning northwards, the accounts of Tacitus, although vague and unspecific, nonetheless demonstrate a turbulent relationship between Rome and the Brigantes from the treaty that created the tribe as clients of Rome, probably soon after the invasion of AD 43, until the resolution of the conflict through occupation by AD 71 (Hanson and Campbell 1986; Shotter 2000c, 113; 2004, 15–38). Tensions that ultimately led to outright hostility between Cartimandua, queen of the Brigantes, and her consort Venutius, who is thought to have had his power-base west of the Pennines, required the intervention of the Roman army on several occasions in the AD 50s and 60s. Tacitus indicated that Roman troops were involved on Brigantian territory under the governors Didius Gallus (AD 52–57) and Vettius Bolanus (AD 69–71). Archaeological evidence for intervention during the reign of Nero is suggested by the distribution of Claudian copies, which did not survive in circulation into the Flavian period (Shotter 2000c, 7–9, fig. 1; 2000c, 113, fig. II.23). The presence of pre-Flavian material, including Claudian coins, at Meols suggests it may have played a part in the sea-borne campaigns against Brigantian territory, which saw the landing of troops in estuaries to meet up with those who travelled overland, a tactic recorded by Tacitus as used later by Agricola in Scotland (*Agricola* 25; Shotter 1997, 11).

The final military episode of the Conquest period that is likely to have involved Meols occurred in the early AD 70s. Coins of Nero, including three issues dated AD 62–68 and two dated AD 66–68, added to pieces of Galba (AD 68–69) and Vitellius (AD 69) may indicate activity around AD 70 or shortly afterwards. One plausible historical context is recorded by Tacitus. In AD 69 the Civil War in Rome provided an opportunity for the rebel Brigantian leader Venutius to oust Cartimandua, who had to be rescued by Roman forces. It has been suggested that Venutius took over Cartimandua's former stronghold of Stanwick, and enlarged it as a stronghold from which he mounted his final defence against Cerialis in AD 71 (Shotter 2004, 22). The Roman attack on Venutius resulted in the decision to occupy permanently the north-west of England. The campaign under Cerealis, probably through a parallel attack either side of the Pennines and led on the western flank by Agricola, saw the establishment of the fort at Ribchester, probably in AD 72–3 (Buxton and Howard-Davis 2000, 43) and another at Carlisle certainly in the same year. The main western thrust of attack is thought to have come from bases in the north-west Midlands at Wroxeter, Whitchurch, and Chesterton, using the King Street line via Middlewich, Wilderspool and Walton-le-Dale (Shotter 2004, 29–31). The use of the fleet to land troops to support land-based operations would require a harbour based on Cornovian territory, and it is in this concerted campaign of Petillius Cerealis that Meols may have played a significant role.

While the pre-Flavian artefacts at Meols may be derived from short-lived episodes of activity in

response to particular threats, its apparently strategic role in the early military campaigns in northern England and north Wales may have demanded the construction of one or more temporary camps, if not a more substantial fort, to provide protection for the troops and naval personnel. However, the extent of coastal erosion at Meols makes it highly unlikely that the remains of any such installation survive today to settle the point.

Roman occupation of north-west England

Prior to the establishment of the permanent military presence in north-west England, the local trade along the west coast already established during the Iron Age is likely to have continued, but with the Roman occupation of Cornovian territory the west coast would have seen patrols by the Roman fleet as well as action in short-lived punitive military campaigns in response to particular threats. However, the establishment of Roman military authority over north-western England during the early AD 70s will undoubtedly have been accompanied by a rapid upsurge in the volume of traffic along this coast. Communication and supply by water were of paramount importance in the choice of sites for military installations and from the earliest Roman occupation of the north-west, forts and other strategic military sites were located wherever possible with access to the sea, estuaries, or navigable rivers. The forts demanded the operation of a coastal transport and supply route to enable them to function.

The permanent military occupation of north-west England was initiated in the AD 70s, probably during the governorship of Petillius Cerealis (AD 71–74). A series of forts was constructed in locations that demonstrate a consistent intention to achieve supply and communication by sea and estuary. Ribchester, founded *c.* AD 72–73, lay on the River Ribble, which has been described as 'more or less navigable' as far as the fort (Buxton and Howard-Davis 2000, 3). The temporary camps at Kirkham, followed by a fortlet or signal-station and then by a stone fort, were probably located for their proximity to the Ribble Estuary and its potential as a landfall for goods shipped by barge or road to Ribchester (Howard-Davis and Buxton 2000, 75–8). The first fort at Lancaster on Castle Hill, also founded in the early AD 70s, stood just above highest tidal reach of the River Lune, while further north still the coastal fort at Ravenglass has been interpreted as a possible base for a naval squadron (T. W. Potter 1979). The foundation of the first timber fort at Carlisle, dated by dendrochronology to AD 72–73 (Caruana 1992), located near the River Eden and within a few kilometres of the Solway Firth, will have stimulated the development of the coastal route.

There is growing evidence that an auxiliary fort preceded the foundation of the legionary fortress at Chester, which began occupation in the early AD 60s and continued into the early or mid-70s, to be replaced *c.* AD 74 by the legionary fortress itself (Strickland 1978, 7; McPeake 1978, 9–10; Shotter 2000c, 77–9; Mason 2001, 31–3). The role of an established fort and later fortress at Chester as the base for coastal operations may thus have occurred as early as the AD 60s (Mason 2001, 31–3). Its location on the River Dee was a critical factor in its location for supply of raw materials in the construction and maintenance of the fortress and in the supply of food and manufactured goods for the garrison (Mason 2002, 64). Various discoveries show that the fortress developed its own harbour facilities (Ward 1996). A series of iron-tipped oak timbers set in concrete in the bed of the ancient river channel at both the Gas Works site and near the Watergate (Thompson Watkin 1886, 163) have been interpreted as a single timber jetty extending 350m from the eastern shoreline of the Roodee (Mason 2001, 114–17).

By the late AD 70s the overland route to Meols appears to have been consolidated by the construction of the road running northwards from the north gate of the legionary fortress at Chester as part of the official military network. The road can be traced with certainty to Street Hey, Willaston (Jermy 1961; 1963; Petch 1987, 219) and as far as Raby in mid-Wirral and, although the full line has not yet been established despite various claims, the projection of the Street Hey alignment gives a direct route to the central part of the north coast of the peninsula, suggesting Meols as the ultimate destination. Significantly, such an alignment would take in the sandstone quarries at Storeton in mid-Wirral, which have been suggested as a source of stone used in the legionary fortress at Chester (Petch 1987, 226).

The primary functions of the state road system were for communication and rapid deployment of troops, and for movement of supplies, although sea and river transport were preferred where possible (Jones and Mattingly 1990, 175). The existence of the road indicates official recognition of the settlement and harbour at Meols, and perhaps indeed an official presence there, as Lloyd-Morgan (1980) postulated. The presence of Roman flue tiles amongst the material from Meols may indicate some sort of official building (Saner 1997, 53–4), and it has been suggested that the existence of the road may indicate that a small military detachment was stationed at Meols (Dan Robinson pers. comm.). Robinson has also suggested that Meols should be seen as having an offensive rather than simply a defensive role, which would have come into prominence in what he has argued was a military expedition to Ireland by Agricola in AD 81 (Robinson 2000).

Meols in the late-1st and 2nd centuries AD

Coastal trade and trans-shipment

The majority of the datable Roman material at Meols belongs to the late-1st and 2nd centuries. The finds assemblage provides some evidence for the character of the site and of the nature of activity practised

there, although, inevitably, the absence of a secure archaeological context and of any evidence of structures results in a highly partial picture.

Fluctuations in the coin loss at Meols, after taking into account the changing volume of coin production and circulation, have been correlated by Simon Bean (2.24) with the presence or absence of the legionary garrison from Chester. Coin loss was strong in the Flavian period immediately after the permanent Roman occupation (AD 69–96) of the north-west, with a drop under Trajan (AD 98–117) and Hadrian (AD 117–38), which may be interpreted as the removal of the Chester garrison to the northern frontier, followed by a rise under Antoninus Pius (AD 138–61) and his successor Marcus Aurelius (AD 161–80), which have been associated with the return of some vexillations from the Antonine Wall to Chester *c.* AD 163. In common with many British sites, the coin list remains low from the later 2nd century until the usual spike in the inflationary period 260–75, with the typical further peak in the mid-4th century (AD 330–48). The fairly close correspondence between the coin-loss at Chester and Meols (2.24) from the Flavian period onwards may argue for a degree of dependence by the latter on the level of activity at the fortress and its canabae. Although less closely datable, the brooches span the period of the late-1st to 2nd centuries (**105**ff), but the use of brooches declined sharply by the 3rd century in Britain, thus a concentration in this period is not in itself surprising. The bulk of the other datable material, such as the finger-rings, button-and-loop fastener, and the lunular pendant are types which are usually assigned to the 1st or 2nd century AD. The small sample of recorded Roman pottery is similarly concentrated in the late-1st to 2nd centuries AD.

The finds give the impression of an active market centre where coins and other objects circulated to be lost in some quantity. The presence at Meols of considerable numbers of Roman coins, in contrast to the rural sites of the hinterland, which are poor in coinage, and of quantities of brooches as well as other artefacts, argues for a sizeable population at the settlement during the late-1st to 2nd centuries AD. A civilian component to the population is demonstrated by the presence of female items, such as the unusually large group of ear-rings **160–201**, more than twice the number known from Roman London when these objects were surveyed by Allason-Jones (1989), needles, and spindle whorls **211–223**, which are generally thought to represent a predominantly female occupation (e.g. Wild J. P. 2002, 8–9). Items that could have been worn by men or women include brooches and finger-rings, including four spiral rings of a native type that was common in the late Iron Age and early Roman period but became scarce later. A very small quantity of possible 'ritual' material, including model tools (an axe and a hammer, **209, 210**) together with a lost phallic amulet (2.3), hints at the superstitions or religious affiliations of the population. The Meols brooch assemblage is large and varied for a Roman-period settlement in north-west England. Some of the brooches, notably the Wirral type, but including other northern and west Midlands types, are likely to have been manufactured locally (Philpott 1999b). In one respect the Meols assemblage is unambiguous: it indicates that the settlement was integrated into the monetary economy of Roman Britain in a way that the rural settlements of its hinterland were generally not, and from an early date. In common with any port, a proportion of the population is likely to have been transient rather than settled. Part of the population appears to be Romanised, and it would seem reasonable to assume that the settlement contained a mixture of native local people engaged in commercial activity, along with incomers from other areas of Britain as well as provinces further afield, perhaps a settled merchant class, and those engaged in seasonal or intermittent trade, perhaps from the rural hinterland.

The major attraction of Meols in the Roman period, as later, was its sheltered landing-place in conjunction with its geographical location. Studies of early landing places indicate that no permanent jetty or quay was required, such as those found at London or at Chester, where harbour facilities may have included a wooden jetty in the Roman period. There was no need for a port to have a hardstanding or permanent structures; a 'hard' could be created by the construction of a brushwood platform on soft mud, while boats could be moored by stone or post (McGrail 1997b; 1997c). The simplest method of berthing a vessel was beaching, as recorded by Caesar (II.1) in connection with the Veneti of north-west Gaul (Marsden 1994, 177–8), and practised at Hengistbury Head, Dorset, at the 1st century BC port (Cunliffe 1987). The absence of such structures at Meols indicates that small boats at any time in the past could quite easily have rested on the bottom, as indeed the small fishing boats still do today.

Although Meols may have lost its primary strategic importance as a military harbour with the establishment of the legionary fortress at Chester in the mid AD 70s, a series of developments in the north-west, combined with its location at the junction between the west-coast trade route and major estuaries ensured that it continued to play a role in the trade and distribution network of the region. An examination of its location, together with a brief consideration of its military and trading context, is necessary to assess its likely functions during the Roman period. A further important factor in determining the function of Meols is the contemporary sea-level, which had an impact on the navigability of rivers in the region (3.1).

West-coast trade in the Roman period

The relatively large finds assemblage at Meols for a site in north-west England, coupled with its location, make a powerful case for its continuation as a port through the Roman period. The constant feature with Meols is the presence of a sheltered anchorage,

although the direction and nature of the traffic that it served has shifted with the changing patterns of trade and coastal shipping over the two millennia from the early Iron Age to the post-medieval period.

The nature of Roman maritime trade provides a context for interpreting the role of the site at Meols. The economic argument for the movement of goods by sea is compelling. It has been estimated that, in the Roman Empire, overland portages cost over 28 times as much per mile as transport by sea (Greene 1986, 39–42). If part of the overland journey could be undertaken by river then relative costs were reduced to about five times that of sea transport, but additional costs were incurred by multiple handling of cargoes. Low-value bulky cargoes could not therefore have been profitable overland for any significant distance.

The west-coast trade route would have involved a complex network of trading connections, with the movement of goods on several levels. In the Mediterranean, where the large number of investigated wrecks allows the nature of trade voyages to be examined, the majority of transactions were probably through regional or inter-regional 'tramping', defined as the 'speculative or small-scale contractual movement of goods along coastal routes. Consignments were often modest and cargoes mixed (Gibbins 1996, 29). The analogy of medieval Mediterranean shipping, allied with evidence from Roman wrecks, suggests that local short-distance journeys, of less than a day, or regional journeys of 2–7 days return, were predominant, conveying mixed cargoes, involving complicated small-scale contractual or speculative movement of goods and frequently calling in at several ports, with goods exchanged or bartered at markets. It is likely that this pattern of trade would apply also to Roman Britain.

The initial influx to the region in the AD 70s of large garrisons requiring supplies, food, and materials through military procurement was followed in time by an increasing tendency towards securing local sources of supply through purchase, taxation, or requisition. The growing productivity of agriculture under settled administration may have increased output, while the expansion of British manufacturing may have made local sources of consumer items more competitive than imported versions (Fulford 1978, 62). The complexity of the supply chain is illustrated by the *Vindolanda* tablets, which show that operating alongside long-distance continental trade, including importation of wine and foodstuffs, was the regional or local movement of goods, acquired either by cash purchase or requisition from a range of suppliers, and transported where possible by water owing to the high cost of overland transport. Accompanying the movement of goods was the transport of military personnel on campaign, special assignments or leave (Birley 2002, 79; Cleere 1978, 38).

Coastal trade along the eastern Irish Sea brought a wide variety of products from other parts of Roman Britain and from the Continent into north Wales and north-west England. At its simplest, trade will have involved local coastal and river traffic plying the Dee and Mersey estuaries, transporting local livestock and agricultural products. The role of the lowland north-west in industrial and manufacturing suggests that trade also involved the movement of manufactured goods or raw materials (lead, coal, iron) from the hinterland of mid-Cheshire, south-west Lancashire, and north Wales, using Meols for trans-shipment onto sea-going vessels for distribution along the existing coastal route as well as serving as a port where cargoes were assembled for transportation to the northern frontier. However, this would be complemented by long-haul traffic engaged in procurement and supply of materials and products from elsewhere in Britain as well as the Continent to Chester for the military garrison and the civilian *canabae*, including redistribution of continental imports (Gibbins 1996, 34). This would include goods not available locally, such as pottery, as illustrated by the supply of black-burnished ware from Dorset to the northern frontier through military procurement.

Distant sources in the first instance may have included importation of grain from the Continent, but the supply of specialised goods, such as olive oil or wine, not available in Britain persisted through the Roman period (Fulford 1978, 62). The presence of imported commodities at *Segontium*, such as Italian and southern Gallic wine, olive oil, and *defrutum* from Spain, and fruit from the southern Mediterranean indicates the nature and origin of trade from the Continent (Webster 1993) while amphora-borne goods also reached Pentre, Flint, on the western side of the Dee Estuary (Arnold and Davies 2000, 111–2). Finds assemblages at the legionary fortress of Chester demonstrate the range of imported goods, including amphorae containing olive oil and other products from Spain, samian pottery from Gaul, and querns from Germany (Carrington 1988, 18–21). Coastal trade to Ribchester included sufficient quantities of Lezoux samian to prompt the suggestion that west-coast British ports were developing trading contacts with the production centre on the Continent (Buxton and Howard-Davis 2000, 418–9). Traded wares from within Britain include the supply of South-East Dorset Black Burnished Ware to the military zone of northern Britain where it occurs in Hadrian's Wall construction levels, and its arrival on the northern frontier marks an apparent increase in traffic along the west coast (Allen and Fulford 1999, 178). Much may have been destined for consumption by the army, and the ware forms a significant component of the pottery assemblages at the legionary fortress of Chester and at Whitchurch (13.9% and 16.3%, respectively), while in Wilderspool and Manchester the ware is even more common (Wilderspool having no less than 31.2%) (Allen and Fulford 1996, 246). The high figure for Wilderspool was considered indicative that the site was a regular landing-point on the navigation to the northern frontier (Allen and Fulford 1996, 259–60). The enlargement of the fort

at Kirkham around AD 120, and its occupation for perhaps 30 years, has been linked to an increase in trade along the River Ribble and the coastal ports to the north and south (Howard-Davis and Buxton 2000, 76).

Without a significant pottery assemblage from Meols itself we are denied one of the more significant archaeological tracers that can yield valuable information on changes through time and the direction of movement of goods. However, the tiny group of surviving pottery does illustrate in microcosm the trading connections of the place, with south Spanish amphorae, samian from Central Gaul, black-burnished ware from Dorset, and a north Kentish mortarium all represented. The possible Kimmeridge shale trencher, if correctly identified, represents a further import from Dorset. Furthermore, it may be possible to detect the impact of the port at Meols on the hinterland through the redistribution of imported goods into the rural sites. The farmstead site at Irby, only 6km from Meols, has produced a relatively high proportion of black-burnished ware in the total assemblage, with the great majority of vessels falling into the period AD 200–350 (J. Evans pers. comm.; Philpott and Adams forthcoming). Although wholly inadequate as a sample, a similar pattern is hinted in small-scale trenching at two other sites, on Hilbre Island and Church Farm, Bidston, which have each produced black-burnished ware as part of very small pottery assemblages (Newstead 1927; Cleary and Philpott 1993). The harbour, and market, at Meols may have provided access for the local rural population to pottery and other manufactured goods, and may have stimulated the market economy in neighbouring rural settlements, even if sites coin loss remained low, since in the Dee-Mersey basin sites such as Irby and Court Farm, Halewood have a markedly higher level of pottery use than sites in Cumbria or north Wales (J. Evans pers. comm.).

A port for an industrial zone?

The establishment of a series of industrial settlements across the Lancashire and Cheshire Plain in the last two decades of the 1st century AD has resulted in the north-west region being regarded as a zone of production largely to meet the demands of the military. Some settlements, such as Middlewich and Northwich, originated as the *vici* of forts, but ultimately outlived their military garrisons, or in the case of Manchester, operated within the vicus of the garrisoned fort. At Wilderspool or Wigan an earlier military phase is as yet unconfirmed (e.g. Strickland 1995, 25; Shotter 2004, 30). The settlements are all characterised by the production of a range of manufactured goods, such as pottery and metalwork, in excess of what they were capable of consuming. Iron smelting and smithing, bronze working, glass and lead working, salt production, and pottery manufacture are all attested. The civilian settlement at Wilderspool is perhaps the best known of these sites. It developed *c.* AD 85–90 at the strategic road crossing of the Mersey, flourished into the mid-2nd century, before declining rapidly in the late-2nd or early-3rd century (Petch 1987, 196–8; Hinchliffe and Williams 1992). The decline of the settlement at Wilderspool has been attributed to the movement of the military markets northward by the re-occupation of Scotland, which led to migration northwards of some of the mortarium potters closer to their market (Hartley and Webster 1973, 97–8; Petch 1987, 197–8).

A further specialised commodity from the region during the Iron Age and Roman period was salt (4.2). The later Iron Age salt trade, which it has been argued by Matthews (1996; 1999) used a port at Meols as a node in the coastal distribution, survived into the Roman period, when it probably initially served a military market. Salt was produced in Cheshire during the late-1st and 2nd centuries at Middlewich (Petch 1987, 202–8; Garner 2005; Dodds 2005), and in the vicus into the 2nd century and beyond (Petch 1987, 202–7; Garner 2005). At Northwich it has been suggested that salt production did not long outlast the abandonment of the fort, as few finds post-date AD 150 (Petch 1987, 198–202), while recent excavations at Kingsley Fields, Nantwich, revealed evidence of salt production from the early-2nd to late-3rd century, with the development of ancillary trades, such as leather working, from the early-3rd century (Connelly and Power 2005, 33–40). The scale and nature of salt production may have changed with the introduction of Roman technology and materials. A key change in the early Roman period appears to have been the replacement of the distinctive Very Coarse Pottery (VCP) containers, which continued to appear on sites up to the mid-1st century AD (Morris 1985, 367–8), by perishable containers, perhaps wooden barrels or leather containers, which effectively render the trade impossible to trace archaeologically (for the possible use of wooden barrels for salt in Gaul, see Peacock 1978, 51). Meols may have continued to serve as a port for the export of salt from mid-Cheshire. Salt from Northwich and Middlewich is likely to have been transported via the River Weaver to the Mersey in the Roman period, anticipating a route that was employed in the 17th century to convey salt to Liverpool from Cheshire (Hyde 1971, 3).

In north-east Wales the lead-silver mining sites also appear to have flourished in the early Roman period. Stamped lead pigs attest extraction under procuratorial control in Deceanglian territory in Flintshire, north-east Wales from AD 74, but there is a suggestion of exploitation perhaps as early as *c.* AD 60. Flintshire has three known mining sites, at Prestatyn, Pentre Flint, and Ffrith (Jones and Mattingly 1990, 179–84; Arnold and Davies 2000, 100–3). At Pentre, occupation began about AD 85–90 and continued into the mid-3rd century with little evidence of activity after then (Arnold and Davies 2000, 102–3). Prestatyn, likewise, saw little activity after AD 160, with limited evidence for the late-3rd and early-4th centuries.

Trans-shipment port

The rise of manufacturing and processing industries in Cheshire and north-east Wales in the last decade or so of the 1st century AD is likely to have stimulated the development of Meols as a trans-shipment port where cargoes were transferred between sea-going vessels and shallower draught river barges for transportation along the estuaries of the Dee and Mersey to the hinterland as well as for the port for Chester. This may have involved the exportation of products from the industrial centres via the river network.

The existence of Roman units of bargemen in northern England in a military context is attested by an inscription at Halton-on-Lune, upstream of Lancaster, which refers to the *numerus barcariorum* (RIB 601), while the *Notitia Dignitatum* identifies a similar unit in the Tyne, based at South Shields. Shotter (1973) notes that one of their functions was transport and lighterage, carrying a ship's cargo to shore, but that they were used also for work upstream along the Lune.

The role of trans-shipment in trade between Britain and the Continent has been examined by Gustav Milne (1990). He has argued that direct long-distance maritime voyages between the Mediterranean and Britain were the exception, and the majority of trade was conveyed through a long chain of trans-shipment centres, where 'cargoes would be laboriously transferred from cart to river barge, or from river barge to sea-going vessel', involving repeated handling of the cargo (Milne 1990, 82). These trans-shipment centres operated in the context of trade between Roman Britain and the Rhine. The form of Roman vessels discovered in Britain and the Rhine provide further evidence for the trans-shipment of cargoes from sea-going vessels to river barges. River barges, such as the New Guy's Hall boat from Southwark, were vessels of northern European type, flat-bottomed, shallow in draft and keel-less, measuring up to 34m long, with a freeboard so low that they would be unsuited to the open sea and must have been used for inland waters (Milne 1990, 82; Marsden 1994, 97–104, 168). By contrast, merchant sea-going vessels such as Blackfriars 1 and St Peter Port 1 had a full form with rounded sides, with a keel and posts, and were propelled by oar and a sailing rig (McGrail 1997d, 227). The transfer of cargoes from large sea-going vessels to smaller craft, either coastal or river, would have been a feature of the trans-shipment centres.

The extent to which Meols served as a trans-shipment port depended, in part, upon the ability of other harbours to cater for sea-going vessels. Chester had its own wharves and harbour facilities (Ward 1996) and the lower sea-level prevailing during the Roman period (3.1) required a pier to deal with large sea-going vessels. The close correspondence between the coin loss at the two sites from the Flavian period onwards suggests that Meols acted as a trans-shipment port for the legionary fortress. Its location provided Meols with an ideal position to act as an entrepôt for shipping using the Dee Estuary bound for Chester and the Flintshire-Deeside lead industry, as well as for other settlements in the Mersey, notably Wilderspool.

The major river systems provided a conduit for manufactured and processed goods from the wider hinterland of the Cheshire and Lancashire plain. It has been suggested (Cleere 1978, 36–7; Hinchliffe and Williams 1992, 171) that wharves may have existed on the Mersey at Wilderspool for the entry of raw materials and export of finished products, although none has yet been discovered. The settlement may have been served directly by sea-going vessels, since the Mersey, with its high tidal range, was navigable beyond the Roman settlement in historic times, while its position at the lowest bridging point of the Mersey represented a conjunction of river traffic with land communication routes. At the end of the 17th century the Mersey was navigable for commercial shipping as far as Bank Quay near Warrington, and for shallower draught vessels probably further into the Manchester embayment. However, the indications of lower sea-level in the Roman period would have diminished the ability of sea-going craft to reach the settlement. It is perhaps no coincidence that by the 17th century the Hoyle Lake offshore from Meols served as a trans-shipment port, this time operating as a harbour near the growing international port of Liverpool, where larger ships transferred part of their cargoes into smaller boats with shallower draughts to enable them to be transported more directly via the inshore tidal coastal channels into Liverpool (Hume 1863, 28). Despite coastal changes and shifting of the sandbanks within the medieval and post-medieval periods, the broad function may have remained the same, even if the eventual destination of the trade was different.

It has been suggested that the mineral wealth of north Wales was exported from the port of Meols via the Dee Estuary (Laing and Laing 1983). Lead was presumably smelted and silver extracted on the spot, but may have been transported to Meols by river barge and then trans-shipped to sea-going vessels at Meols. A find of 20 pigs of north Wales lead in the Mersey at Runcorn, some bearing the name of the emperor Domitian (AD 81–96) and the tribal name DECEANG[L] (Thompson Watkin 1886, 294), has been interpreted as the cargo of a shipwreck (Petch 1987, 227–8; Arnold and Davies 2000, 102), the material being lost en route for processing, perhaps at Manchester or Wilderspool. As late as the 18th century the practice still existed of shipping lead produced in Flintshire across the Dee Estuary to Parkgate in south Wirral (Place 1996, 73).

Trade with the hinterland of Meols

The movement of other commodities, notably perishable goods or materials such as livestock, timber, leather and skins, and preserved or fresh foodstuffs, remains invisible within the region. 'A healthy trade

in perishables and raw materials could well have been carried on without leaving any trace in the archaeological record' (Fulford 1978, 62). Not only does the object of trade leave no impression on the port through which it passes, neither does the port leave much of an impression on its hinterland.

The complexity of local trading patterns along the west coast, some potentially involving Meols, is hinted at by the movement of a few commodities that can be traced to source. The movement of goods within the region by water can be reasonably predicted for bulk cargoes. Local supply routes, which employed the two rivers and their estuaries, included the shipment of roofing tiles from a rather inconvenient site at Tarbock, Merseyside, perhaps in fulfilment of a specific military contract (Philpott 2000a; Swan and Philpott 2000). The short-lived episode of tile-manufacture for the 20th Legion around the year AD 167 required transportation by water from the tidal Ditton Brook, via the Mersey and Dee estuaries to the fortress at Chester. From the late AD 80s to 130s tile had been transported using inland waterways downriver to Chester during the operation of the legionary tileworks at Holt on the River Dee (Grimes 1930). The discovery of the Roman river-side quay at Heronbridge on the Dee upstream of Chester illustrates the importance of river traffic in the life and economy of the Roman settlement there (Mason 2004, 101–3). Another bulk commodity most conveniently moved by water was coal. Roman exploitation of coal is attested in the south-west Lancashire coalfield at Cronton (Adams and Philpott forthcoming) and W igan, and the Mersey may have provided a transport route for that coalfield, while the small Neston outcrop in south Wirral and the north Wales coalfield were also in use in the Roman period. A large deposit of coal was found in the bed of the River Dee at Chester , which, though not dated, is evidence of transport of coal to Chester by water (Mason 2001, 114), although this may have come from the nearer north Wales coalfield rather than south Lancashire. The presence of iron ore in the Coal Measures deposits of south Lancashire and north W ales suggests the routes for both were similarly estuarine and coastal (Bestwick and Cleland 1974, 153).

Shipping would not only have delivered and embarked materials from Meols and its hinterland, but also called there *en route* along the west-coast route from the south-west of England and W ales to the northern frontier and north-western sites. Coastal traffic passing by the mouth of the Dee Estuary without calling at Chester still required a safe haven on the west-coast route, as Liverpool Bay in historical times was a notoriously dangerous stretch of water, with frequent wrecks and loss of life and cargo (Stammers 1976). The settlement itself may have developed the secondary function of servicing the maritime trade, through provision of food and other services, for ships on longer coastal journeys sheltering overnight or from storms, or awaiting a favourable wind. T o some extent Meols may also have developed in its own right as a manufacturing and market centre and therefore acquired a degree of economic independence of Chester and the other Cheshire settlements.

Roman manufacturing at Meols?

Industrial links with Meols have been postulated through salt production in Cheshire and metal ore from north W ales. The pattern of distribution of industrial waste and other residues on Romano-British rural settlements in north-west England, as well as elsewhere in Britain, suggests that copper - alloy working was practised at a range of sites, though the small number of crucibles suggests a low level of production. Several sites in Merseyside have produced evidence of bronze-working, the closest being Irby, Wirral (Philpott and Adams forthcoming), but crucibles from Court Farm, Halewood (Adams and Philpott forthcoming), and industrial waste from two fields about 1km apart in south W irral, which have both also produced Roman finds, are suggestive of further such sites.

It is probable that, in common with all the major nucleated settlements of the Cheshire and Lancashire Plain, as well as some rural sites, metalworking and other industrial production were undertaken at Meols itself. The finds from the shore includes some evidence of metalworking, for instance two runnels of copper alloy **3498** and **3499**, though it is uncertain whether they are Roman or later in date. A medieval date is likely for the 'lump of fused *latten*, a compound metal of which a large proportion of the objects discovered at Hoylake appear to be composed' exhibited to the Historic Society of Lancashire and Cheshire in 1860 by Ecroyd Smith (Anon 1861, 329). Potter recorded the discovery of large quantity of lead 'in the rough state as left after being melted', as well as some 'bronze or latten in the same rough state', and a bronze core from the 'orifice of a mould for metal casting' (Potter 1890, 151), although the dating again is uncertain.

At least a dozen deliberately rubbed pieces of haematite, an iron oxide, were retained, though others were seen but not collected. The presence of the smoothed pieces of the mineral supports the evidence of manufacture of metalwork, since it was used for finishing and polishing metalwork. W orn haematite lumps have been found on several other Romano-British sites in the region that have also produced metal-working waste such as crucibles or moulds. At Meols they are consistently reported by Ecroyd Smith along with Romano-British finds, though in the absence of material in sealed contexts it is speculative to assign these to any particular period. The presence of a small number of later medieval metal items, which have undoubtedly been manufactured at Meols, as well as the fused 'latten', raises the possibility that the metalworking is of that period. However, metalworking at earlier periods would be entirely reasonable given the existence of a port with access to suitable raw or recycled materials.

Ireland

Tacitus stated that merchants were knowledgeable about the approaches and harbours of Ireland (*Agricola* 24) and Ptolemy included ample information about the tribes and coast of Ireland in his atlas (Rivet and Smith 1979, 107). There is also a growing quantity of Roman material recorded from Ireland that has its source in Britain. This concentrates in two periods, the 1st–2nd centuries AD and the 4th to early 5th centuries. Jope and W ilson (1957, 76) observed that some of the earlier 1st century AD material of southern British origin in Ireland 'must have come through trading activity, which is indicated by sites like Lambay'. The trading connections between Britain and Ireland occur mostly in eastern Irish coastal regions, and British influence has been detected on Irish manufactured items in the 1st and 2nd centuries. 'From the objects themselves, the general trend of movement seems to have been into Ireland; virtually no Irish type material of this period has been found in Britain. The export side of Ireland' s trading was in more perishable goods' (Jope and W ilson 1957, 76). Waddell has summarised the evidence, including a number of stray finds that are difficult to interpret, and draws attention to two cemeteries containing burials with Roman artefacts, one at Bray Head, Co. Wicklow, and another at Lambay Island off the north Dublin coast; the latter containing brooches of 1st- and 2nd-century AD date and other items, including a collar of northern British type and a triangular mount with close parallels in Wales. These indicate the direction of close contacts between the Lambay community and parts of Britain. The possibility that these are refugees has been expressed, but equally they may have been settled coastal communities (Waddell 2000, 375–7). The presence of the tribal name of the Brigantes in Ireland may indicate the migration of a section of the tribe of that name from northern England. If so, tribal connections through kinship may have been maintained through northern England during the Roman period.

The Roman familiarity with the east-coast harbours of Ireland raises the question as to which west-coast ports of Britain, in England or W ales, were the points of departure for merchants. The enigmatic site of Drumanagh, north of Dublin, which has produced Roman finds, and has been described as a Roman fort, lies opposite Anglesey , which is halfway between Meols and Ireland by sea. Meols is clearly a candidate for one such trading post; a function it certainly displayed in the V iking period (Griffiths 1992). A trading connection between Chester and Ireland has been suggested by Mason (2001, 113): 'trade with Ireland was well established in the pre-Roman era and positively flourished in the Anglo-Scandinavian and early medieval periods. There is no reason why it should have declined with the advent of Rome. Indeed, T acitus tells us that Agricola obtained useful information about Ireland's approaches and harbours from merchants.'

The later Roman period

Other than coins, Roman material from the 3rd or 4th century is scarcer than that of earlier centuries at Meols, but in part this may reflect the decline in use of certain reasonably diagnostic types of artefact, such as the brooch. The coin list indicates that the site remained in use throughout the period, closing with Magnus Maximus (AD 383–88), although the relatively low proportions of finds for the later 3rd and 4th centuries when coin loss in other areas of England experiences a dramatic rise as the intrinsic value of coins declines, follows the north-western pattern that has been identified elsewhere by Shotter (2000c) and Bean (2.24). Other datable finds include a bracelet fragment of probable 3rd- or 4th-century date, while a significant late find is a probable Hawkes and Dunning Type IIIA buckle plate of the late-4th or early-5th century.

The reduction in visible activity at Meols is shared by several of the nucleated settlements in the region, which suffered a marked decline by the 3rd century AD. Wilderspool, Middlewich, and Northwich all demonstrate a considerable reduction in activity and decline in industrial production by the 3rd century . The reduced rate of coin loss indicates a lower level of transactions and, perhaps too, of the volume of coinage in circulation within the region (Shotter 2000c, *passim*). The lead-silver exploitation at Pentre and Prestatyn in north W ales declined markedly in the later 2nd century, either suggesting abandonment of lead-silver exploitation or a radical change in its organisation (Arnold and Davies 2000, 103). The rapid decline of industrial settlements, such as Middlewich and Wilderspool, during the 3rd century is likely to have reduced the level of commercial activity at Meols itself, with a consequent decline in the availability of manufactured items and products such as salt in the immediate hinterland. However , the longevity of activity at Meols, partly as a consequence of its function as a safe haven on the coastal route, must have secured a sufficient volume of commercial activity to sustain the community there without an absolute dependence on the outflow of goods via the two estuaries.

The decline of the industrial settlements has been attributed to changes in the size and organisation of the army. A reduction in the size of the army by the 4th century, to between 15,000 and no more than 33,500 troops, as opposed to over 50,000 in AD 150, was accompanied by a decline in the quality of the troops. Now largely *limitanei*, frontier troops, rather than the better trained field army , they declined in their economic impact to perhaps 20% compared with the mid-2nd century (Millett 1990, 131). The marked reduction in demand from the military frontier zone, coupled with an increased dependence on local sources of supply, must have diminished the volume of goods transported by coastal traffic.

The relative scarcity of datable 3rd- and 4th-century material from Meols may result from the wider decline of the industrial settlements of the

north-west by the 3rd century. Such a decline had an impact on Meols, both by reducing the volume of traffic along the coastal route and by diminishing the volume of goods to be shipped out through the river-estuary systems with a consequent reduction in the demand for trans-shipment of goods. The west-coast route continued in use, expressed archaeologically most clearly in the continuing importation of Black-Burnished 1 from south-eastern Dorset to the northern military zone until *c.* 350. However, the impact on the best-known rural site in the hinterland, Irby, provides an exception to the decline in traded goods at rural sites, having a relatively strong 3rd–4th century showing, including late-4th century

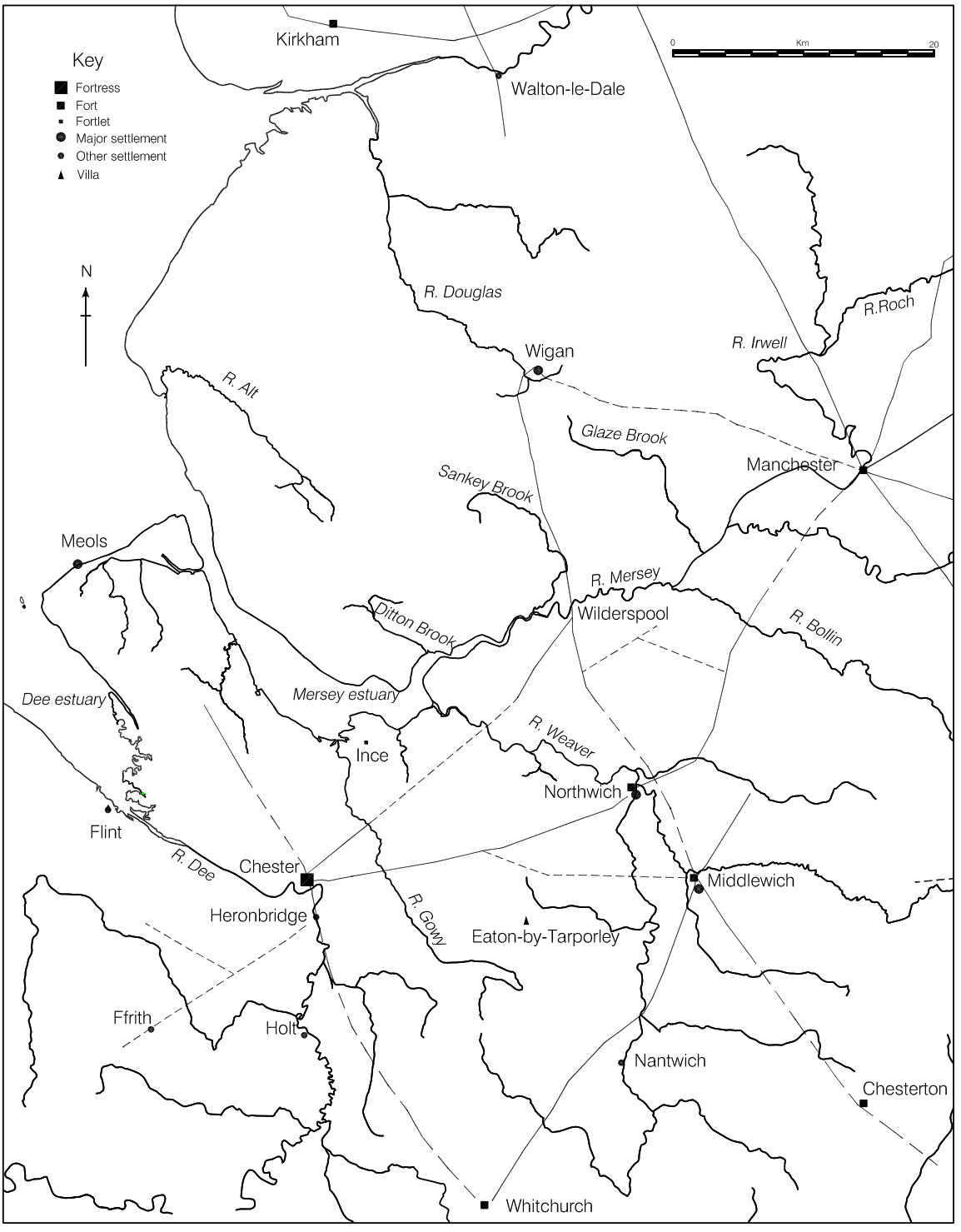


Fig. 4.3.1: Map of places referred to in text

ceramics from east of the Pennines (Griffin, in Philpott and Adams forthcoming).

Rising sea-level through the Roman period may have had an impact on what must have been a relatively low-lying settlement, and potentially changing the configuration of the natural harbour through the period. It is conceivable that the rising sea-level caused a shift of the settlement on the Dove Point promontory, with a retreat to more elevated land. Such a movement of the core of the settlement might account for the apparent decline in the artefact assemblage in the later Roman period, as a result of accident of retrieval. However, the loss of the site through erosion makes this inevitably speculative. On balance, it is more likely that the decline in activity at Meols, marked through the rate of coin loss, is a result of the wider reduction in manufacturing activity by the 3rd century AD at the nucleated settlements of the Dee-Mersey Basin, which diminished the volume of trade both out from the hinterland and passing to the northern frontier.

The political geography of later Roman Britain is likely to have had an impact on the role of the port. Martin Millett has pointed out that trade between civitates may have been subject to customs dues, probably levied at provincial boundaries, although not certainly between those in a single diocese. The attested levels are so low, between 2% and 5%, that they are unlikely to have proved a restriction on trade (Millett 1990, 173–4). The division of Britain into two provinces, probably between AD 197 and 216, is generally thought to have followed *civitas* boundaries along the Mersey (Jones and Mattingly 1990, 143–8), as a measure to prevent concentrating too large a force in the hands of a single governor. Thus, Meols was situated close to the boundary between the two provinces. A further subdivision to create four provinces by *c.* 312 left Chester along with Cheshire, Wales, the west midlands, and south-western England in Britannia Prima, while north of the Mersey, Brigantian territory formed the majority of Britannia Secunda with legionary command from York. Meols may at this time have acquired a new administrative role as a point of collection of taxes on the movement of goods between the provinces.

The probable Hawkes and Dunning Type IIIA belt plate **101** hints at the military use of the port at Meols during the late Roman period. At several sites around the Irish Sea there is renewed military activity, which has been viewed as a response to Irish disruption along the western sea route. In the AD 360s there are reports of attacks by the Picts of Scotland, and the Scots and Attacotti, from Ireland, on the frontier region of Hadrian's Wall and on the western coast. At Lancaster the construction of the coastal fort of the Werry Wall in Lancaster, which can be dated by coins to after the AD 330s, is analogous in some respects to the Saxon Shore forts (Jones and Shotter 1988, 80–4). The fort at Kirkham, Lancs, was seen as part of a coastal trading network involving the port further north at Lancaster, operative into the late-4th century, and an extra day's sail to the south at Chester (Howard-Davis and Buxton 2000, 75–8). Further to the west of Meols, the fort at *Segontium*, near Caernarfon, remained in use into the early AD 390s, while the construction of a late, though undated, fortified landing place at Caer Gybi, Holyhead has been linked to a 4th-century watch-tower on Holyhead Mountain (Arnold and Davies 2000, 33). Mason has argued that Chester would have been the obvious place for a separate naval command for the Irish Sea during the 4th century, and there is evidence of renewed activity in Chester at this period (Mason 2001, 209; 2002, 65). Although late Roman Chester has been described as virtually devoid of a military presence by AD 300 (Hoffman 2002, 86), Shotter has argued on the basis of the coins that 'there is nothing in the coinage that suggests any abnormality in the garrisoning of Chester up to *c.* AD 360 (Shotter 2000c, 80). Mason considers that most of the major buildings were still standing and being maintained well after 350 (Mason 2001, 210). Furthermore, he has suggested that the presence of late Roman material at hilltop sites on the north Wales coast points to the creation of an extensive signalling system to warn of the approach of raiders from the sea; a putative late Roman coastal defence system might extend from Lancaster to Holyhead (Mason 2001, 208–9, fig. 141). The Roman coin list from Meols (2.24) demonstrates continued activity during the mid- to late-4th century, and even though one item does not by itself equate to a garrison, the belt plate begins to look less out of place if a defensive system against sea-borne raiders did exist along the western coast in the 4th century.

The rural hinterland of Meols

Along the north Wirral coast further foci of Roman activity lay close to the postulated nucleated settlement at Meols. Closest to Meols itself, the medieval field-name Claverhill, a name which was last recorded in 1775, indicates an area of locally elevated land in the vicinity of Leasowe Lighthouse. The same locality has been identified by Ray Kenna as the remains of a slightly raised boulder clay island now somewhat reduced on its northern side by coastal erosion (Kenna 1978, fig. 1; Fig. 3.1.4). A number of Roman finds made in the 19th and 20th centuries in the vicinity of the lighthouse may represent a halo effect of material from the lost nucleated settlement on the eastern side of Dove Point, but an alternative explanation is possible. Aerial reconnaissance and excavation have demonstrated that the rural settlement pattern in Merseyside and Cheshire consisted in part of dispersed discrete farmsteads, often enclosed by a ditch, of the type exemplified by the excavated enclosure at Irby (Philpott and Adams forthcoming). The pattern of settlement around the low-lying marshy area to the south of the coastal strip at Meols demonstrates the importance of topographically elevated points in this landscape. These pockets of potential agricultural land close to

the settlement are unlikely to have remained empty. The pattern of recent finds through metal-detecting, archaeological investigation, and chance finds, suggest a number of locations for rural settlement. At Bidston, Roman pottery found in an evaluation excavation at Church Farm (Cleary and Philpott 1993) and a small concentration of Roman coins from the village suggest one focus of rural settlement at the base of the dry sandstone ridge overlooking the expanse of peat bog at Bidston Moss. Another site is probably denoted by two Roman coins and a sherd of pottery from Hoylake Road, Moreton (Philpott forthcoming b), which also took advantage of slightly raised ground above the extensive marsh, while brooches and other finds from Newton may point to a third site on the higher land south of Meols. Wallasey saw some activity in the period, with its early church dedication to St Hilary and a small scatter of Roman finds, but more tellingly the place-name indicates the survival of a British-speaking community in the remote enclave of Wallasey (Dodgson 1972, 324), almost cut off by Wallasey Pool and marshland. At West Kirby three coin finds suggest a further site on the coastal margin (Merseyside Sites and Monuments Record; MSMR). Twenty-three sherds of Roman pottery from three vessels in association with a post-hole and hearth were excavated on Hilbre Island (Newstead 1927, 137–8) and occasional other Roman finds are recorded from the island (Ecroyd Smith 1873b, map), although some finds may relate to the use of Hilbre as a deep-water anchorage.

The location of the Roman burial near Leasowe Castle on another of the main dry raised 'islands' along this stretch of coastline (Kenna 1978, fig. 1) should also potentially be associated with rural settlement. There is no report in the case of the Leasowe skeleton of the position with respect to contemporary features or landscape. Burial in Roman Britain usually, though not invariably, took place outside settlements. At rural sites in the Midlands, the nearest region to have produced any quantity of Romano-British rural burials, the dead were disposed of in a variety of locations, from small nucleated cemeteries to isolated locations on the margin of fields, in field ditches or placed in other negative features. Although an isolated discovery, it is uncertain whether originally it was an isolated burial belonging to a discrete rural settlement or formed part of a formal cemetery. Given the distance from Dove Point, it is unlikely to form part of a cemetery serving the nucleated settlement at Meols.

4.4 The early medieval period

David Griffiths

The latest Roman coin issue found at Meols is **5118**, a *siliqua* of Magnus Maximus (AD 383–88). There is good archaeological evidence for continued occupation as late as the mid-4th century at Chester (Mason 2001, 209–10), but by the 380s, any urban activity seems to have begun to dissipate. Like many other important rural sites of the period, Meols, as a possible civilian out-station of Chester, must have been affected by the decline of the main regional centre. It has been suggested that Magnus Maximus's reign saw the removal of the last regular troops from the legionary fortress (Thacker 2003a, 16). Over the ensuing decades, deprived of its principal economic motor, the majority of the Romano-British civilian population of Chester died away, or drifted away to re-join its British-speaking kindred in the surrounding countryside, apparently leaving only a handful of people clinging to a reduced livelihood within the walls. Archaeological evidence for any continued presence after the mid-4th century is extremely scanty.

There was not, however, a uniform decline in urban life across the west and north-west of Roman Britain, as exemplified by Wroxeter (Shropshire) and to a lesser extent the western forts of Hadrian's Wall, such as Birdoswald and possibly Carlisle, where powerful but increasingly isolated local rulers seem to have maintained a presence that is reflected in continued phases of building and re-use of Roman structures. The notion that a late Roman ecclesiastical presence continued in or around Chester into the 5th and 6th centuries, as it probably did in other Romano-British centres, such as Canterbury, Silchester, and Verulamium, is as yet very difficult to substantiate. The most ancient of Chester's churches, St John's, which is situated beside the amphitheatre outside the south-east corner of the legionary fortress, may possibly have late Roman origins, but cannot be documented in any sense before the 7th century. *Eccles-* place-names, such as Eccleston on the Dee south of Chester, have been suggested as the location of late Roman *Matrix Ecclesiae* (Thacker 1987, 239). Excavations in 1980 at a large early medieval cemetery at Southworth Hall Farm at Winwick, near Warrington (Freke and Thacker 1990), and in 1931–32 at Heronbridge (Mason 2003), on the banks of the River Dee upstream from Chester, both produced unfurnished burials of the post-Roman period, which may provide a glimpse of a Christian presence in this period.

A sub-Roman and post-Roman ecclesiastical presence, British and westward-looking in language and affiliation, could help explain the presence at Meols of imported artefacts of early Christian significance, such as the St Menas Ampulla **300** and the three 6th-century Byzantine coins **5123-5125**. In terms of secular settlement, the contemporary habitative place-name map is sparse. Wallasey (Old English: *Wala-eg* – 'Island of the Welsh', Dodgson 1972, 332), was originally a township name as opposed to any central settlement as such (the settlement became known as 'Kirkeby-in-Waley' in the Viking period). Next to Wallasey is Liscard, a name that was attributed as Welsh: *Llys-an-Garreg* ('Hall at the Rock') by Dodgson, but which has since been argued to be Irish and therefore more likely to be of Hiberno-Norse

origin (Coates 1998). A possible early church site of the British post-Roman period, later Anglicised, is Landican (Old Welsh: *Llan –tegan* 'Church of St Degan', Dodgson 1972, 266–7). An intact curvilinear churchyard survives at Overchurch, 3.25km south-east of Meols, although the church itself has long disappeared, having been superseded by nearby Upton. Overchurch has produced a decorated stone, probably of the later 8th century, bearing an interlaced dragon design and an inscription in fine Anglian runes reading '*The community erected... monument / Pray for Aethelmund..*' (Bailey, forthcoming).

Wirral and the Lower Dee region were subject to the nominal authority of the Kingdom of Powys in the two centuries following the Roman withdrawal from Chester. Chester possibly continued as a seat of the Cadelling dynasty of Powys (Thacker 2003a, 16), although this idea is speculative. This period probably saw the continuity of some of the civil forms of Romano-British life, albeit at a far less prosperous and conspicuous level of consumption, including the maintenance, at least in outline form, of the Romano-British estates of the Lower Dee valley. British overlordship ended abruptly in 616, when Anglian Northumbria defeated the Britons of Powys at a battle at or near Chester, an event described by Bede (Whitelock 1979, 662). Some of the Heronbridge burials, including a group excavated in 2004 and subsequently radiocarbon-dated, are now being interpreted as a battle cemetery associated with the Battle of Chester (Mason 2006, 520–21). The losing side was given spiritual, and possibly temporal, assistance by *Bancornaburg*, a monastery that was evidently large enough to sustain several hundred monks, although Bede may have exaggerated its size to emphasise the scale of the British defeat at the hands of his own royal compatriot, Aethelfrith. The site of the monastery, associated largely on place-name grounds with Bangor-is-y-Coed on the Flintshire bank of the Dee near Wrexham, is obscure and no archaeological evidence has yet been uncovered.

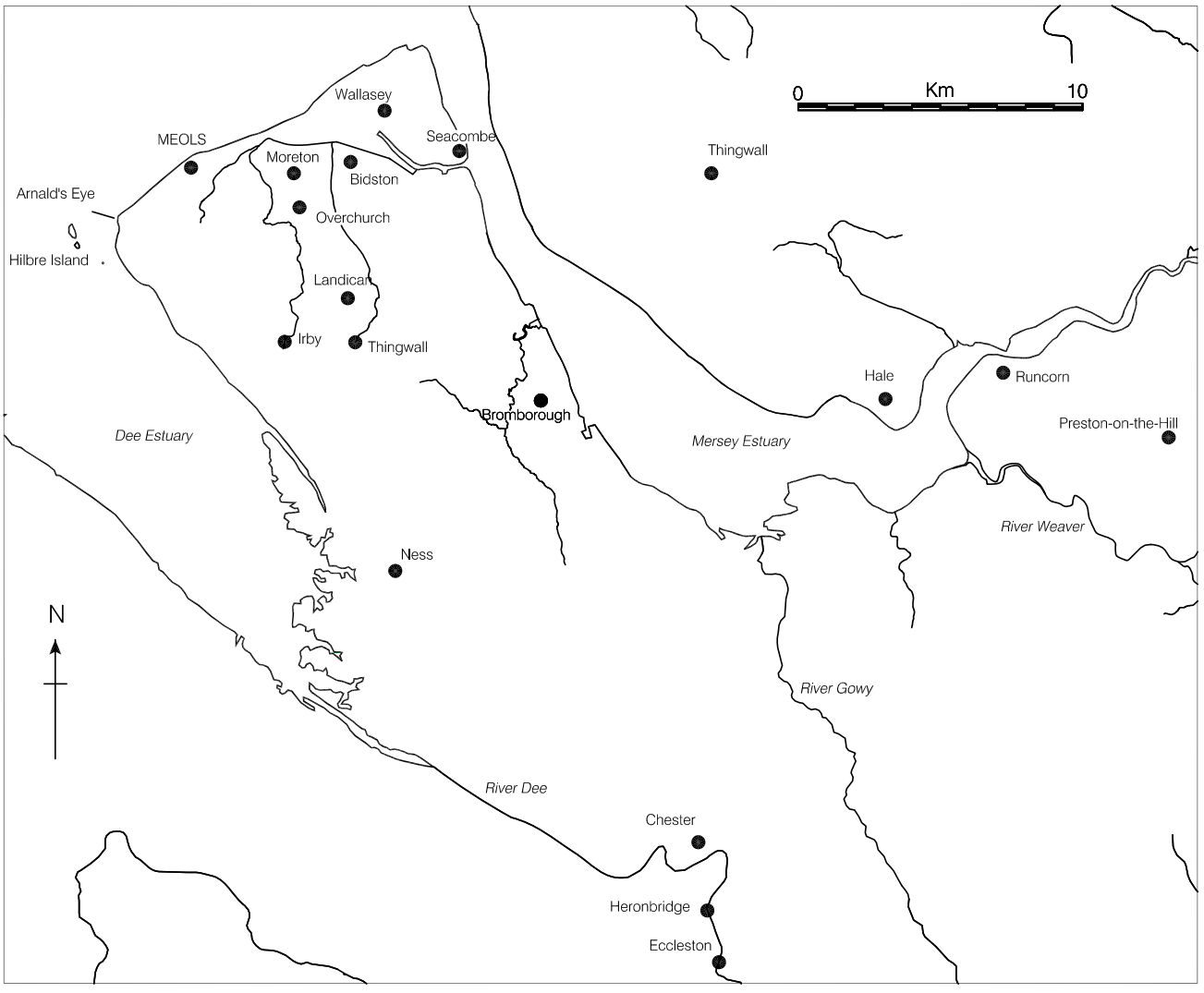


Fig. 4.4.1: Map of places referred to in text

Northumbrian hegemony south of the Mersey was, however, a fleeting affair: the defeat of Northumbria less than three decades later by Penda of Mercia saw the lands between the rivers Dee and Mersey come under Mercian overlordship, whence they remained until Mercia was finally subsumed into the nascent English kingdom under Edward the Elder of Wessex in 918. The infiltration, and eventual take-over, by Anglo-Saxon settlers of the Dee/Mersey basin, bringing the Old English language, and initially Northumbrian, then Mercian allegiances, was probably a long and highly incremental process involving the piecemeal acculturation of existing settlers into the new language and geopolitical identity, at least as much as that by direct immigration from areas to the south and east. The place-names in *–tun* which are today the second most common type in Wirral after the Scandinavian *–by*, attest to the enduring Anglo-Saxon presence. The traditional date for the English 'arrival' in this part of Britain has traditionally been placed by historians in the aftermath of the Battle of Chester, at a time shortly after the Christianisation of England had begun. There are, however, one or two very shadowy indications of a possible Anglo-Saxon presence in the pre-Christian period, notably in the field name 'Harrow' on the border of Heswall and Thurstaston parishes, which is associated elsewhere with Anglo-Saxon pre-Christian shrines or the locations of pagan gatherings (Vipond 1993; Gelling 1993). Nearby, but not at the precise location of the Harrow names, an Anglo-Saxon small-long brooch of the 6th century was found in the same area as a more extensive surface spread of Roman material (Philpott 2000b). The possibility of small numbers of Anglo-Saxon settlers living within a sparsely-populated British-dominated landscape is an attractive theory, and one which may indeed have a parallel in 6th-century Cumbria (O'Sullivan 1996). It may help to explain the presence at Meols of a quoit brooch of the early Anglo-Saxon period **304**. The three small Type G1 penannular brooches from Meols, now all lost ***301–303*** have parallels in both Anglo-Saxon areas and the 'Celtic West', with a number of this broad type group being found at beach and coastal sites, such as at Padstow, Cornwall, Twlc Point, Glamorgan, and Luce Sands, Galloway. Meols, despite having a record of only three examples, counts as a modest regional cluster; few elsewhere are found as anything other than single discoveries.

The middle Anglo-Saxon period (*c.* AD 600–900) is characterised in areas further to the south and east by the increasing power of the Church against the background of increasingly assertive royal and secular elites, and by the spread of trading, markets, and coinage, marked in southern and eastern England by the emergence of the *wics*, riverside trading zones that took on some of the characteristics of towns. The two 8th-century sceattas found at Meols (**5126-5127**) represent the north-western extremity of coin circulation in England at this time. There is also a handful of other objects of the middle Anglo-Saxon period, such as the fine silver disc-headed pin **344**, and some of the small dress pins. It is difficult to be certain of a middle Anglo-Saxon date in the case of the latter group, as the chronological range of stratified and dated parallels overlaps into the later Anglo-Saxon period. The globular -headed pins suggest that objects from the Irish Sea region, and possibly further afield to the north and west, were finding their way to Meols at around the same time. Any of these objects could, of course, be residual, having been in use through several generations or been brought to, and deposited at, Meols long after their date of manufacture. This material is reminiscent of groups of sceattas and dress ornaments found recently at rural 'productive' sites, mostly in eastern and southern England, by metal-detector users, a phenomenon in artefact patterning that is still far from well-understood, but in some cases may indicate informal rural market activity (Griffiths 2003).

As a group, the 7th- to 9th-century objects from Meols attest to a very low level of continued activity at the site. From elsewhere in north-west England and North Wales, there are remarkably few finds of this era. The multi-period site excavated in the 1990s at Llanbedrgoch, Anglesey, has produced a fine 7th-century bird-headed brooch of Northumbrian type (Redknap 2000, 7), but structural evidence at the site from this period is much less clear than from the 9th and 10th centuries. Discoveries of material linking Ireland and Britain in the 7th–9th centuries are surprisingly rare. A fine gilded pseudo-penannular brooch of Irish type, probably dating to the 8th century, was found at Llys Awel, near Abergele on the North Wales coast (Redknap 2000, 23).On the shores of Morecambe Bay, near Arnside, Lancashire, an Irish-style bronze escutcheon bearing a stylised human face was found by chance in 2000, with a further Irish object bearing interlace in 2001 (Youngs and Herepath 2001; Youngs 2002). The interlaced mount from Meols **316**, bearing Irish-style chip-carved interlace, which was possibly originally gilded, like any single example in this pre-Viking Irish group, may have been in circulation long enough to have been brought to its place of discovery during the Viking period, when we know that pre-Viking fine insular metalwork circulated in some quantities in Viking hands and that some of it reached the Scandinavian homelands to be deposited in graves.

There are signs amongst the Meols material that something of a modest upsurge in external contact began to assert itself in the 9th century. The three certain and two possible *styca* coins (**5128-5132**) are examples of a low-value Northumbrian coinage that was possibly issued by the Church. The Meols stycas link the site to a spread of discoveries across the former Kingdom of Northumbria, which until around 920 included the areas that later became Cumbria and Lancashire, and extended as far south and west as the north bank of the Mersey. Hoards and single finds of *stycas* have been found close to estuaries and inlets along the length of the western

Northumbrian seaboard, from a hoard at Otterspool on the bank of the Mersey south of Liverpool, via Lancaster, Grange, and Carlisle, to Whithorn and Luce Sands, Galloway (Pirie 1986; Hill 1997). These, together with other objects found at Meols, including zoomorphic strap ends **320–330**, the single 'Trewhiddle' style strap end ***327***, and possibly some of the polyhedral-headed small dress pins, link Meols with contemporary material culture in Anglo-Saxon England. The spread of *stycas* does not as yet extend to Ireland, but does include market and trading sites in the western fringes of Britain, apart from Meols, including Luce Sands and Llanbedrgoch (Redknap 2000, 65), with a single find from the former Roman fort of *Segontium*, near Caernarfon.

The Meols material includes a significant number of Viking-period objects, all of which are representative of the kinds of material culture circulating in northern and western parts of the British Isles during the 10th and 11th centuries. The bird-shaped attachment from a Viking merchant's balance scales **392** is an intriguing hint of market activity at the site. There is no doubt that the role of Meols as the location for coastal trade increased markedly in the 10th century, setting the scene for its continued prosperity in the period after the Norman Conquest. The inhabitants of, and visitors to, the contemporary settlement at Meols may well have been trades-people, sailors, artisans, herders, tinkers, and pedlars of modest rank, but the material evidently passing through the beach market and settlement at this time speaks of the fashions and cultural affinities of a relatively wealthy local population. A hint of a possible Viking burial is provided by a group of iron weapons **399, 402, 404, 408**, which were found within a short space of time in the winter of 1877–78 (Anon 1878). If these did, as we may suspect, represent a grave group, they may therefore be associated with a series of Viking graves found in sandy coastal locations around the Irish Sea. The nearest to Meols was discovered at Talacre, at the Welsh side of the mouth of the Dee Estuary , in 1932, where an adult male inhumation in a stone cist was accompanied by at least one Viking-style weapon, a socketed iron spearhead (Smith 1932). The discovery of a what was probably a woman's grave at Benllech, Anglesey , in 1945, was found in similar circumstances in sandy ground close to the shore (Redknap 2000, 96), as indeed was another female grave at Three Mile Water, Arklow, Co. W icklow, in 1900 (Ó Floinn 1998, 144). Not all of these coastal graves appear to have a close link with contemporary settlement, but the Benllech example, which was, for many years until the discovery of the nearby Llanbedrgoch settlement, thought to be the isolated result of a very temporary landfall, reminds us that such inhumations are indeed likely to have been connected to settlement in the vicinity (which may in some cases yet remain to be discovered).

Unambiguously Scandinavian 'V iking-type' material, such as the (now lost) drinking horn terminal ***391***, and possibly the ringed pin/brooch hybrid **387/388**, is less common at Meols than objects that speak of the intermingling of the Scandinavians with cultures and fashions of the British Isles. Several individual objects have close parallels elsewhere in the V iking settlements around the Irish Sea. Somewhat later in date, tending towards the 11th century rather than the 10th, are small metal dress and bridle accessories bearing vernacular renditions of some of the V iking-influenced art styles of the period, including buckle **307** and stirrup chape **393**, both of which have Ringerike-style designs, and the lost mount ***319***, which had an Urnes-style design. These objects are outnumbered by the impressive range of ringed-pins, of which 19 complete or partial examples are extant or recorded. Most are copper -alloy with a possible (lost) silver example ***372***. This is the largest group from any single location in the V iking world, with the exception of Dublin, where these objects were manufactured in large numbers (Fanning 1994). This contrasts with five known so far from Chester and 18 from York. The distribution of these pins extends to Scandinavia and Iceland, with single examples known from graves in the Isle of Man and western and northern Scotland. In 2004 an example was discovered in a V iking grave in a small cemetery at Cumwhitton, Cumbria (*Brit Arch News* 70, Nov. 2004). There can be little doubt that ringed pins carried a significant symbolic importance, denoting membership of the western V iking world, and in particular its great commercial entrepôt at Dublin.

The first recorded V iking raid in the Irish Sea region took place in 794, on an island then known to the Irish as *Rechru* or *Rechrainne*, which was probably Rathlin Island, Co. Antrim. Thereafter we know almost nothing about what was happening in the north-west of England until 893, when a band of Danish Vikings, in disarray after their defeat by Alfred at Buttington on the mid-Wales border, briefly occupied 'a deserted city in W irral, which is called Chester' (*Anglo-Saxon Chronicle*, Whitelock 1979, 204). These fugitive Danes were soon chased out of Chester by the Anglo-Saxons, and this may have been the occasion for its permanent occupation and refortification. This was consolidated in 907 by its establishment or official recognition as a Mercian royal *burh*, which became the lynchpin of a string of smaller frontier forts built across the region between 912 and 921, forming a line stretching east-west from Manchester to *Cledemutha* (Rhuddlan, Flintshire).

The turbulent first decade of the 10th century provides the context for a remarkable historical event that seems to have contributed a significant boost to the fortunes of Meols as a settlement and trading place. Vikings had begun to settle in Ireland from around 840, when Dublin and a number of other fortified settlements (the *longphuirt*) were founded. At the turn of the 9th–10th centuries, the tide of political fortune turned against the V ikings in Ireland, and many, if not all, were expelled by a coalition of Irish forces in 902 (Dublin was re-established

as a Viking settlement in 917). In 903, Welsh annals record the expulsion by the Welsh of Gwynedd of one *Ogmundr* and his people from their short-lived takeover of *Maes Ros Melion*, which was probably on the Penmon Peninsula in eastern Anglesey. Thereafter, an independent Irish annalistic source, known today as the 'Three Fragments of Irish Annals' or the 'Fragmentary Annals' record the arrival in Cheshire of one *Ingimund* and his party of Hiberno-Norse followers (Wainwright 1975; Higham 1992; Griffiths 2001). Perhaps surprisingly, in view of subsequent events, they were granted land by the Mercian authorities, which was in all probability the northern portion of Wirral. It is not known whether Ingimund was joining an existing Viking settlement in Wirral, or founding a new one. Æthelflede of Mercia had cause to regret her generosity when, according to the Fragmentary Annals, Ingimund's group then attacked Chester at some point between 905 and 911, hoping to grab some of its evidently conspicuous riches. A legendary siege took place, which was broken by the Mercian defenders' use of imaginative (and possibly imaginary) tactics, such as pouring boiling beer on the attackers and sending out swarms of angry bees.

Despite the Mercian victory in the siege, the result was probably more of a stalemate than a rout. The Hiberno-Norse group under Ingimund may well have established itself to such a confident extent in its own district that dislodging them was felt not to be a worthwhile enterprise by the Mercian rulers, who were experiencing pressure from other directions, including from their aggrandising kin and neighbours to the south in Wessex. Edward the Elder died at Farndon in 924, shortly after suppressing a local rebellion at Chester, and the crisis of English rule in north-west Mercia may have dragged on well into the 930s. J. McN. Dodgson suggested that the Battle of *Brunanburh,* a dramatic confrontation of 937 between the forces of Wessex, under Æthelstan, and a coalition of Hiberno-Norse and Scottish forces, was fought in Wirral at or near to Bromborough (Dodgson 1957). The etymology of Bromborough, meaning '*Stronghold of Bruna*' is a close match, and other more circumstantial evidence, such as the unstable geopolitical situation in the Irish Sea borderlands at the time and the fact that the defeated Viking leader Anlaf fled westwards by sea, named as *Dingesmere* in the 'A' and 'C' versions of the *Anglo-Saxon Chronicle*, to Dublin, could further favour the idea. A local minor name near Bromborough, 'Wargraves', has been seen by advocates of the Wirral location as further supporting evidence, although Dodgson cautioned that this name is of uncertain antiquity and suggested it is in fact a hybrid Norse-English name, *Verri-graefe,* which means 'poor [quality] woodland' (Dodgson 1972, 242). More detailed and uncritically imaginative modern reconstructions of the battle in and around Bromborough tend to lack historical credence. Other plausible locations for the battle have been proposed, including at the Roman fort of Burnswark, Dumfriesshire (which could perhaps favour the well-documented Scottish dimension of the battle and Æthelstan's acknowledged strategic interests in Cumbria) and also in the hinterland of York, bearing in mind that Florence of Worcester, a chronicler writing in the 12th century (but who probably had access to earlier sources), described the invaders' landfall before the battle as having taken place on the Humber (Whitelock 1979, 38).

Viking attacks on Cheshire continued sporadically, such as the attack by a 'northern naval force' mentioned in the *Anglo-Saxon Chronicle* for 980, but their longer-term effects are difficult to gauge. Indeed it is most unlikely that any sense of commonality or coalition between local settlers and external attackers persisted after the period of *Brunanburh*. It has been argued recently that the disparate Viking interests in the Irish Sea region were actually a relatively minor strategic concern for the Anglo-Saxon monarchy in north-west England at this time, being out-weighed by Welsh and other internal threats and instability (Griffiths 2001). It is therefore, perhaps, less of a surprise that the Wirral band of Hiberno-Norse settlers were allowed to stay on, attracting further settlement from around the Irish Sea and possibly the Danelaw (Fellows-Jensen 1985), and even to carve out their own local independence. The cluster of Scandinavian place-names, with the habitative ones largely ending in *–by*, which characterise northern Wirral, are perhaps the most enduring relic of the Viking settlement of the 10th century. The Scandinavian place-names, especially when combined with neighbouring English and British names, convey an impression of ethnic diversity and intermingling (Griffiths 2004). Meols (*Melas*, Domesday 1086), Old Norse, *Melr* ('sandbanks'), is of course a topographic name describing a characteristic location rather than a settlement as such. Some, such as Thurstaston ('Thorstein's Tun', *Thorstein's farmstead*), which combines a Norse personal name with an Old English settlement name, *-tun*, suggest a takeover of an existing settlement. Others, such as Frankby and Irby, denote ethnic distinctions, in these cases the *–by* (farmstead) of the Frank(s) and of the Irish, respectively; and further Hiberno-Norse or Norse-Gaelic influence is found in Arrowe (from Old Norse *aergi* – 'summer pasture or shieling') and Noctorum (from Old Irish *Cnocc-Tirim*, 'dry hill'). Excavations at Hoylake Road, Moreton (2.8km south-east of Meols) in 1987–88 revealed an enclosure ditch that had been re-cut three times, within which were detected the remains of three timber-built structures (Philpott and Adams forthcoming). The upper fill of the ditch produced a mudstone hone and a silver penny of Eadwig (AD 955–59) of the circumscription cross type, minted in south-west England (Cook and Besly 1990, 229, pl. 22, no. 81). At Irby, 6.5km south of Meols, excavations in 1990, produced rare structural evidence of Viking-period occupation in the form of fragments of three probable elliptical buildings marked by gullies (Philpott and Adams forthcoming). These have been

dated to the 10th–12th centuries by association with a Saxo-Norman ceramic spike lamp; an amber bead, probably of the Viking period, comes from the same site. Another site of this period may also exist south-west Wirral, near the edge of the Dee Estuary at Ness, where metal-detected finds of a silver Viking ingot (Bean 2000), a Carolingian denier of Charles the Bald (AD 840–77), and a silver halfpenny of Anlaf Guthfrithsson of York (939–41) have occurred in proximity to a surface spread of Roman material on agricultural land (Cowell and Philpott 1994, 11).

The Scandinavian place-names of Wirral have a direct counterpart across the Mersey in the northern and western portion of the Lancashire Hundred of West Derby (Fellows-Jensen 1985). In both cases, the settlement was dense and well-defined within borders that are commemorated by the names Raby (Wirral) and Roby (West Derby) ('Ra-byr', Old Norse: *farm on the boundary*, Dodgson 1972, 229; Kenyon 1991, 132). Scandinavian settlement stretched from the Mersey along the south Lancashire coast to include areas of flat sandy topography around Formby, which are comparable to Meols, and indeed the *Melr* place-name was present in the case of Argarmeoles and Ravensmeoles, settlements which both disappeared under dune sand in the later medieval period (3.2). The place-name Thingwall, found both in Wirral and West Derby, denotes the field of a local assembly site or mound, in a modest fashion not unlike the great Norse *ping-vollr/vellir* assemblies of Iceland and the Isle of Man. The West Derby 'thing' site has been all but destroyed under modern buildings; however the Wirral thing site may well remain largely untouched if its identification with Cross Hill (SJ 281 842) is accepted (Griffiths 1991). Ormerod recorded that a now-vanished minor hundred within Wirral, the Hundred of Caldy, which was first mentioned in the 1182 Pipe Roll, had survived in relict form until 1819 (Ormerod 1882, ii, 518). By listing the townships that the minor hundred included, Ormerod effectively offered a reconstruction of its geographical extent, which covered the north and west areas of the peninsula, including Meols. Dodgson (1957) used Ormerod's account of the Caldy Hundred to suggest that this was in fact the extent of a semi-independent Viking landholding established in the 10th century. A third, much sparser and smaller, local cluster of Norse names is found in the north-east corner of Flintshire, across the mouth of the Dee Estuary from Wirral (Griffiths 2007). The contiguous nature of the estates in Wirral and in Flintshire held by Leofnoth, as recorded in the T.R.E. (pre-Conquest) values in the Cheshire Domesday Survey (Sawyer and Thacker 1987), is a further indication that north Wirral, together with the Flintshire bank of the Dee Estuary, were set apart in territorial terms from the rest of Cheshire.

There are signs that over the following two centuries a settled and relatively prosperous Anglo-Norse society evolved in Wirral, probably headed by small number of leading families who exercised local lordship over their estates, the extent of which may well have resembled the surviving parish structure. Several of the parish churches still preserve groups, or single examples, of 10th–11th-century stone sculpture, indicating the patronage of local lords. This very public form of art is characteristic of the Viking settlements across northern England and the Isle of Man. The Wirral group consists almost exclusively of a distinctive school of Cheshire red sandstone crosses, largely with circle-heads, and shafts, some of which are elaborately decorated with biblical scenes combined with images from Old Norse mythology in a potent statement of changing systems of belief (Collingwood 1930; Bu'Lock 1958; Bailey forthcoming). The Wirral distribution extends southwards to Chester, where a cluster is associated with St John's Church, and across the Dee Estuary to Whitford, Meliden, and Dyserth in Flintshire. A circle-crosshead from Hilbre Island may well be associated with the early Christian burial ground described by Ecroyd Smith in 1865, which produced another recumbent grave slab of a slightly later date. St Bridget's, West Kirby, the mother church for both Little and Great Meols townships, has a further two cross-head fragments, two shafts, and a recumbent Viking-style 'hogback' grave cover. A more recent discovery of a hogback occurred at Bidston, in 2004 (Bailey and Whalley 2006). This is a relatively small example, with opposed figures of bears or monsters gripping each gable end, which shows strong affinities to the North Yorkshire school centred on Brompton. Some of the church dedications may be instructive in establishing the ancestral geographic links of leading families; Bidston is dedicated to a Northumbrian saint (St Oswald), which would tend to support the sculptural reference. St Bridget (West Kirby) and St Patrick (now St Peter's, Heswall), emphasise Irish links.

The distribution of sculpture in north Wirral: Wallasey, Greasby (both apparently high crosses, now lost), together with extant examples at Bidston, Hilbre and West Kirby, presents a noticeable regional cluster arranged in a semi-circle, at the centre of which lies Meols. The pattern of lordly patronage behind the sculptural assemblage may indicate the presence of the manorial residences of high-ranking families at advantageous locations on higher ground in the present parish centres, but all of which seem to look towards Meols as the local centre of economic activity. In common with the local sculpture, the Meols material of the 10th and 11th centuries shows an increasing trend towards cultural integration amongst the Scandinavian and Anglo-Saxon elements. The Viking-type material, such as the ringed pins, are accompanied by objects common in Anglo-Saxon urban contexts elsewhere, such as the hooked tags, several of the strap ends, polyhedral-headed small dress pins and probably a number of the less culturally diagnostic objects, such as spindle whorls and iron knives. Objects from the period immediately before and during the time of the Norman takeover, such as the zoomorphic buckles **310–314** strengthen the links at Meols with the

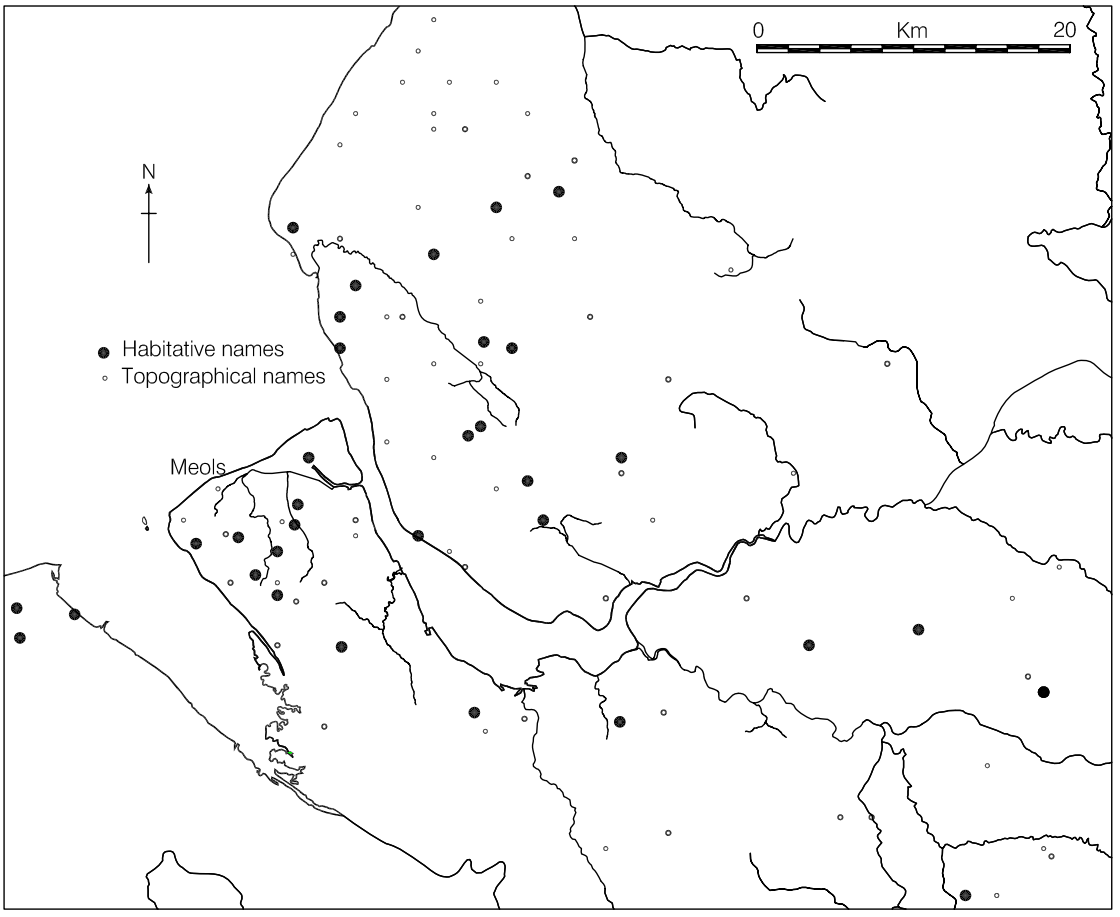


Fig. 4.4.2: Map of Scandinavian place-names

mainstream material culture fashions of England at the time. A lead 'nummular' brooch in the style of a jewelled cross Anglo-Saxon penny of the 11th century **305** is an indication that coinage had a cultural importance beyond its mere functional role in exchange. The Meols coin series, which is in abeyance after the 9th-century *stycas*, picks up again in the third quarter of the 10th century with two coins of Eadgar, leading on to a remarkable regional cluster of coins, 27 in all, ranging from Eadgar to the end of the Anglo-Saxon period and a further nine of William I (**5133-5168**).

The Domesday Book entry for Chester (1086) reveals an officially-sanctioned port where shipping came and went, and market and minting activity took place, under significant fiscal and punitive oversight by the royal authorities (Sawyer and Thacker 1987, 342). There is every reason to assume that this was also the case before the Norman Conquest, as the Normans had every motive to maintain and enhance the taxation system of the defeated Anglo-Saxon monarchy, which had itself been, since the laws of Athelstan issued at Grateley in 926–30, highly restrictive of trade outside official towns or 'ports' (Whitelock 1979, 419). Of the goods traded at Chester, only marten skins are mentioned in Domesday Survey, but we may speculate that salt, horses, slaves, manufactured goods, such as iron tools or weapons, and even bulkier agricultural produce, such as grain and wool, crossed between Chester, Dublin, the Isle of Man, and other centres of market activity around the Irish Sea on a regular basis (Thacker 1988). A dramatic upsurge in trade must have followed soon after the refortification of the *burh* by Æthleflede in 907, as the Chester Mint, as measured by numbers of finds in hoards, became the most productive in England during the reign of Æthelstan (924–39), including supplying the great majority of 10th-century Anglo-Saxon coins found in Ireland. Perhaps Chester's greatest moment of national prominence came in 973, when King Eadgar received the subjection of a number of *subreguli* from the Celtic kingdoms in Wales, Cumbria, and Scotland. Historical account differs as to whether there were six or eight sub-kings and, whereas the *Anglo-Saxon Chronicle* is terse on the details, the later chronicler Florence of Worcester described Eadgar being rowed by these supplicants on the River Dee from the 'palace' to St John's Church (Whitelock 1979, 228). Ironically, partly as a result of Eadgar's own coinage reform of that year, the fortunes of the Chester Mint went into relative decline thereafter, but trade in the city continued to thrive up to and beyond the Norman Conquest.

The picture of economic activity conveyed by coinage and other material at Meols contrasts somewhat with the development of Chester. There are no coins from Meols dating to the zenith of Chester minting between 915 and 950, indeed the earliest after the stycas is post-973. Meols's fortunes stand in curious juxtaposition to Chester's. Given the extent of official policing of trade within Chester, the boundaries of the port of which evidently extended to the mouth of the Dee Estuary (4.6) it would hardly be surprising if some merchants sought to avoid the attention of the reeves by trading in a less heavily-supervised environment. Meols, protected from undue interference by the local independence of the Wirral Viking settlements, and its remoter position at the extreme outside of the Peninsula, and with easier access to the open sea than Chester, was ideally placed to reap such dividends. Indeed the Wirral Viking settlements may even have produced their own English-imitative variety of the 'Hiberno-Norse' coinages, which began to appear in Ireland and the Isle of Man from the late-10th century into the early-11th century (Blackburn 1996; 2.24).

The Norman Conquest resulted in severe upheaval for Cheshire; Chester itself lost 40% of its houses between 1066 and 1086 (Sawyer and Thacker 1987). Whilst the effects of the post-Conquest depredations were almost certainly more acute in the city, the rural aristocracy and economy also suffered, and traditional cultural and regional loyalties were no doubt hurriedly reconsidered in the light of dramatically changed political circumstances. The period immediately before the Conquest had seen increased tension along the Welsh border, and Harold Godwineson (later Harold II) attacked Rhuddlan, which was then temporarily in Welsh hands, from the sea in 1063. The Norman Earls of Chester and Shrewsbury upheld the Anglo-Saxon tradition of military adventure in Wales, which brought them into contact with other geopolitical interests in the Irish Sea region emanating from Ireland, a re-emergent Norway, and the nascent Norse Kingdom of Man and the Isles. The two Earls attempted to overrun Gwynedd in 1098, but received a set-back at the hands of Magnus Barelegs of Norway, whose forces defeated them on the banks of the Menai Straits, in the process killing Hugh of Shrewsbury. Thereafter, however, tensions continued and the Welsh and Norwegian victory had limited long-term effects. The Anglo-Norman takeover of Ireland in 1169–70 brought enhanced opportunities for Cheshire merchants and landowners to acquire land and economic interests in Ireland. As trade with Dublin and other centres continued, Chester and Wirral continued to serve as springboards for Anglo-Norman military and economic involvement in Wales and the Irish Sea region, a role which reached its zenith during the Welsh campaigns of Edward I in the 1270s and 1280s (4.6).

4.5 The historic landscape of Meols

The Place-Name Evidence

Robert Philpott and David Griffiths

The place-names of the townships along the western half of the north Wirral coast are consistent in reflecting the most predominant topographical feature, the sand-dunes. The Meols element of both Great and Little Meols is derived from Old Norse *melr* 'sand-hills' (Dodgson 1972, 296-7; Fellows-Jensen 1985, 147), while the place-name of Hoose, the small township which separates Great Meols from Little Meols, is derived from OE *hol*, meaning 'hollows', with some confusion of the name *hol* with *hyll* and *hōh* i.e. in the dunes (Dodgson 1972, 293). The place-name Hoylake and the sandbank there are derived from *hygel* (ME *huyle*); Dodgson suggests the sand bank was called the 'Hile', 'the hill of sand' and the tidal lake inshore of it would be 'the lake at the Hile' (Dodgson 1972, 299). One implication of the place-names is that the sand-hills were already the most striking physical attribute of this part of the coastal zone by the Norse period when the place-name Meols was bestowed on it. An earlier etymology linked the first element of Dove Point with Celtic *dubh* 'black', a reference to the colour of exposed peat deposits on the shore (cf. Caldy Blacks in the Dee Estuary) [*Cheshire Sheaf* 3, 15], but Dodgson subsequently offered the alternative of a derivation from John Dove, a landowner in 1555 (Dodgson 1972, 299). The sandstone reef at the north-western tip of Wirral, Red Rocks (3.3) was previously known as Arnald's Eye 'Arnald's Island(s)' (Dodgson 1972, 300).

Meols in the Domesday Book

David Griffiths

There are two consecutive Domesday entries for Meols (Great Meols and Little Meols) as follows (trans: Sawyer and Thacker 1987, 351); Hoose was not recorded as a separate township:

> 'The same Robert [of Rhuddlan] holds Melas [Great Meols]. Leofnoth (*Levenot*) held it. There [is] 1 hide that pays geld. The land is for 1 x ploughs. There 1 radman and 2 villeins and 2 bordars have 1 plough. T. R. E. it was worth 15s, now 10s. He found it waste.'

> 'The same Robert [of Rhuddlan] holds Melas [Little Meols]. Leofnoth (*Levenot*) held it. There [is] 1 hide that pays geld. The land is for 3 ploughs. There 1 radman and 3 villeins and 3 bordars have 1 plough. T. R. E. it was worth 10s, and afterwards 8s; now 12s.'

The Domesday references to two manors bearing the same name has been noted as 'obviously components of a former territorial unit' which were held by the

same lord in both 1066 and 1086 (Sawyer and Thacker 1987, 334). Great and Little Meols both formed part of an estate held by Leofnoth before the Norman Conquest; this compact block of land in north-west Wirral, along with three manors across the River Dee in Atiscros Hundred, may have had a strategic function to guard the Dee approaches (Sawyer and Thacker 1987, 308; Griffiths forthcoming). Great and Little Meols were then held by Robert de Rodelent (Rhuddlan) at Domesday in 1086. There was no demesne land in the two Meols manors and Great Meols was 'waste', a term which in north and east Cheshire has been ascribed to the harrying of the North by William's army after the Conquest, but may elsewhere in the county have a technical meaning of having no value to the lord (Sawyer and Thacker 1987, 336). Hume suggested that the waste referred to the encroachment of the sand on the land (1863, 389-90).

Medieval and Later Landholdings

Jane Laughton

Robert of Rhuddlan was dead by 1094, when Earl Hugh granted some of his lands to St Werburgh's abbey in Chester, but not all his holdings were dispersed. His family retained Thurstaston, for example, and by the mid 12th century had adopted the manorial name as its own. Pipard's account in the Pipe Rolls of Cheshire for 1182-3 mentions an interest in Meols (*Mol')* of Bertram the chamberlain and Mabel his wife – *Helyas de hintleston' debet j m. pro habenda rationabili parte su de feodo j militis in Mol' versus Bertram Camerarium et Mabiliam uxorem eius* (Stewart-Brown and Mills 1938, 9, 12). In about 1180 Great Meols was in the hands of Earl Hugh (II) of Chester. Two Stanley of Hooton charters in the John Rylands Library refer to the same three bovates of land in Great Meols, which had been held previously by Warin Werecoc, Robert son of Payn, and Geoffrey, son of Edric. The first charter (no 1274) was granted by Bertram the Chamberlain, who probably died *c.* 1210. This reference confirms that Earl Hugh granted it to his chamberlain Bertram, on the occasion of Bertram's marriage to Mabel, daughter and heiress of William Flamenc (or Fleming) of Meols, no later than the death of Earl Hugh in 1181. Earl Hugh had conferred Mabel 'with her whole inheritance, that is Meols' on Bertram and his heirs by Mabel (Barraclough 1957, 39). Amongst the witnesses is Conan of Meols, who it has been suggested was a relative of Bertram, in which case his name suggests a Breton origin for the family. Bertram took the name 'del Meols' and the family held the manor until the late 17th century. The second charter, dated *c.* 1228-37, of Bernard, son of William Walsh of Tranmere, granted to Hugh Ruff in free marriage with Bernard's sister, Anabel, a separate holding of three bovates in Meols. Thus the land passed to the Walensis (Waley or Walsh) family as the dowry of Bertram's daughter Alice's dowry, and was alienated again in the dowry of her daughter Alice. (Barraclough 1957, 40). The later history of this estate is obscure, but it passed to William de Stanlegh in 1396 and remained in the holding of the Stanleys of Hooton until the 1870s.

In a grant of 1327 Brenard de Tranmore (Tranmere) is found claiming against John de Warwick and Thomas de Congleton and Cecily his wife the custody of the land and heir of John de Michelmeles [Great Meols], who held of plaintiff five messuage and 3 bovates of land in Great Meols. In 1396 William de Stanelgh obtained this estate from the Congletons and died 1397 holding 3 messuages and 3 bovates of land in Mikel Meols of John de Meeles and William de Tranmoll… The property descended in the line of Stanley of Hooton Hall 'till about fifty years ago' [ie. about 1870] (Brownbill 1928, 277) – the marriage settlement of William Stanley refers to his property in Meales amongst many other townships in Wirral[1].

The Stanleys were the leading magnate family in the palatinates of Lancaster and Chester in the 15th century, and branches of their family included the Stanleys of Lathom and Knowsley in Lancashire. During these years their accumulation of official positions and lands enabled the Stanleys to build up an impressive patrimony, particularly in south-western Lancashire, north Wales, and north-western Cheshire. In 1406 Sir John Stanley acquired the Isle of Man with its crown, a lordship which enabled him and his heirs to wield quasi-regal powers, including the receipt of customs revenues. Soldiers who served on the island wore the badges of Stanley lord of Man (Dickinson 1996, 4-6, 20). The family had trading interests. In 1416-17 a ship of John Stanley called the *Mare* of Man was named in Chester's local customs accounts; the *Mare* of Lord Thomas Stanley of Man entered the port in September and December 1474, with Chester fishmongers on board. One of them leased a house in Watergate Street from William Stanley of Hooton, who also held property in Meols[2]. Thomas Stanley's father, the first Lord Stanley, was granted a twenty-year lease of the valuable fishery in the Dee at Chester in 1451, and at the time of his death in 1459 he held property in Seacombe, Liscard, Poulton and Kirby Waley (Clayton 1990, 147; Ormerod 1882, ii, 479). The second Lord Stanley was appointed justiciar of Chester in 1462, and remained in office until his death in 1504. His brother, William Stanley of Holt, served as chamberlain from 1461 until 1495. With his wife, Lady Margaret Beaufort, Thomas was a major benefactor of the chapel at Holywell, and Stanley emblems feature in the chapel (Harris 1979, 13, 20; Jones 1988, 9).

The manorial history of Little Meols followed a slightly different pattern in later centuries to Great Meols. According to Ormerod (1882, 498-9), it was also granted by Earl Hugh to the Meols family, but by the early 13th century was in the hands of the Lancelyns of Poulton in Bebington. It subsequently passed to the Stanleys during the reign of Elizabeth I. Another major landed family with holdings on both

sides of the Welsh border, the Mostyns, acquired land at Little and Great Meols, which together eventually outweighed that of the Stanleys in rental value. Papers in the Mostyn Collection include records of gifts and leases of land in Great Meols going back to 1531, but the first mention of a direct Mostyn involvement is that of Sir Roger Mostyn in 1600 [3].

The small township of Hoose, which lies between the two Meols townships, did not appear to have supported a hamlet in the medieval or post-medieval period and the township was used as a pasture by the Abbey of Basingwerk until the Dissolution. Dodgson notes that documents for Great Meols dated 1346 and 1348 records appurtenances in *howes*, i.e. 'in the Hoose' (1972, 294). Its absence from Domesday and extra-parochial nature until relatively late suggests it may be marginal land won from sandhills (Hume 1863, 387). The historic settlement pattern of Hoose is one of dispersed farms rather than a nucleated settlement (Chitty 1978, 14-6).

The extent of the rateable value and population of the village of Great Meols in the post-medieval period

The following figures have been compiled from a series of documents which give an insight into the size of the settlement in the 16th to 19th centuries, implying that this was relatively stable:

1555: 7 messuages and 9 named tenants; presumably two held land alone; plus 4 messuages in demesne; ie total of 11 messuages.[4]
1592: Stanley of Hooton[5]: 5 named tenants: John Maddocke, Richard Stronghe, Edward Dobbye, Wm Covyntree, Robert Urmston.
1594: 11 messuages[6].
1639: 11 messuages[7].
1663: Hearth Tax: 17 names, each with one hearth.
c.1628-1702[8]: 18 names under 'Meols Tenements and Cottages', each with acreage. Roughly 96 x acres in total. Names: Thos Harinson, Samuell Dunn (13 x acres), Thos Yong, Robert Dunn (9 x + acres), Thos Giule (13 x acres), William Larance, Edward Giule (9 x acres), Elizabeth Mulenex, Andrew Miler, Henry Giule, John Dalby, Henry Taylor, Ogdens, Elizabeth Dalby (x acre), Widd Giule, Peter Pemberton, Widd Mulenex, Robert Linerker.

Rents in Meols in 1646[9]:

Colonel Mostin, his rents in Great Meols, due at Midsummer and Michaelmas:

John Pemberton	5s 7d	
Thos Pemberton	5s 7d	
Widow Guyles house	5s 6d	
Thomas Dawbye	3s 4d	Total £1

Mr Stanley of Hooton, his tenements and rents in Great Meoles …

Robert Maddock	3s 4d	
Richard Coventree	3s 4d	
Wm Guile	3s 4d	
Richard Dawbye	1s 0d	
Widow Harrison	2s 0d	Total 13s

The Physical Form of the Settlements and Field System

Robert Philpott and Jane Laughton

There are two main sources to reconstruct elements of the settlement and surrounding landscape for Great Meols, field-names recorded in documents and maps, and the maps themselves which preserve the configuration of the field system. A few medieval field-names are preserved for the township of Great Meols.

The Chartulary of the Abbey of St W erburgh Chester contains a grant by 'Bertram, son of Richard, son of Herbert, to St W erburgh and the monks dwelling at Hilbre, of a selion known as 'Iago' s Meadow', with meadow adjacent, in Great Meolse, lying between the land of Bertram, son of Henry and lord (of the manor), and the land of Fulk de Meolse'; the Latin has: *vnam sellionem tendentem ad pratum quod dicitur Iagowesmedwe cum prato adiacente* (Tait 1923, 297). The document is dated *c.* 1280-1320. The medieval township also contained an extensive area of pasture known as the *Claverhill* ('clover hill'), first recorded in 1340 and presumably named from the Hare' s-foot clover or the subterranean clover both of which grow on sandy soils and usually near the sea (Dodgson 1972, 298; Mabey 1996, 226). In the *Inquisition Post Mortem* of Thomas Meols in 1555 mentions fields at Meols (referred to as a 'town or hamlet') as Highfield Medowe, Herrotffeld, le Lytle Holt, Crystoresse Hey, Hogekynese Hey, and 'Clare Hyll', described as 'lying between the towns of Moreton and Kyrkby W alley (Wallasey)'. The extent of the Claverhill was clarified in particulars of the sale of Great Meols in 1775, when it was described as lying between Moreton pasture and the sea. Its location is thought to have been that part of the Leasowe lying behind the Embankment near the lighthouse (*Cheshire Sheaf* 1914, 22; 1918, 12). Rents from the herbage of the 'Clarell' (a shortening of Claverhill) were listed in surveys and valuations of *c.*1628-1702: 4s 6d from Great Meols, and 13s 4d apiece from W allasey and Moreton.[10] Claverhill therefore occurs from 1340 to 1775 but not thereafter, suggesting it may have been washed away. The first edition of the Ordnance Survey (1840) depicted Pasture Lane heading north from Moreton towards the coast and reaching the shore at the Leasowe Embankment.

In 1555 Thomas Meols held 7 messuages in Meols; the tenants were Richard L ynacre, Thomas Aynesdale, Robert L ytle, Thomas W odward, John Dove, Thomas Coventre, Henry W right, John Diall

and Margaret Meols widow. The 'Parson's Loones' are recorded in 1639 (Dodgson 1972, 298). The terms selion and loons are characteristic of common open field, referring to the strips in the open field. There is also a group of 'townfield' names in the south-western part of the township, a name which in Cheshire is frequently given to open arable fields (Sylvester 1957, 13; Chapman 1952, 38 n. 13, 58). 'le Car' appeared in 1347 (a reference to the neighbouring Newton Carr). There is also documentary evidence for a windmill in the mid 14th century, when it was worth 12d a year (Ormerod 1882, ii, 495).

The earliest surviving detailed maps of Great and Little Meols and Hoose are the Tithe Award maps of 1844 (Cheshire RO EDT 174/2). Little Meols occupies the north-west corner of the peninsula, and the unusual elongated shape of the Great Meols township in plan, with its long narrow coastal strip joining up with Wallasey township to the east, may be explained by the desire to control the coastline. With Wallasey, the two Meols townships dominate virtually the whole of the northern coast of Wirral. The narrowness of the coastal strip of land which connects the two townships is readily explained by the loss of some land to seaward through encroachment.

Several types of landuse can be demonstrated from field-names or inferred from the form of fields. The field system which survives on the Tithe map of 1844 contains a series of fields with similar names. Some are likely to represent enclosure out of larger units, such as New Field, Town Field and Fox Field. Other field names can be located using the Tithe Award map; Maddocks Field, and Fox Field named in an early 18th century document as part of the Mostyn holding.

The will of Simon Crafts (Crofts) of Great Meols, proved in 1729, lists his landholding which consisted of Madock's Field, Dannatt's Yard, the Middle Field, Higher Hey, Dannatt's Field, Linacre's House, Rie Field, Turbury, Townfield, Lower Field, the Green, Little Park and Little Turbury (Roberts 1992, 29). Some of these fieldnames are identifiable on the Tithe Award map and it confirms the earlier origin of the 'Park' fields. The Turbury fields are a reference to the peat deposits of the shore.

The 1844 Great Meols Tithe map (Fig. 4.5.1) allows some conclusions can be drawn about the extent and form of part of the medieval field pattern. However, the physical landscape of Meols townships as preserved in the Tithe maps has undergone considerable change since the late medieval period and reconstructing the landscape of that period is made more difficult than usual by the loss of a significant proportion of the township land through erosion, the encroachment of sand-dunes on agricultural land, and the shift in the location of the settlement nucleus. Hume recorded the appearance, then erosion, of ridge and furrow 'butts' while Ecroyd Smith observed plough furrows emerging from under the sand dunes, 'of very varying heights' during coastal erosion (Hume 1863, 10; Ecroyd Smith 1866, 213). Dune encroachment was not confined to agricultural land, and it is likely that the village itself was inundated by sand at the end of the medieval period (1.2), perhaps in the last decades of the 15th or early decades of the 16th century, bringing about a southward shift of the settlement focus to the current position of Great Meols.

The post-medieval village of Great Meols is thus a re-foundation of an existing settlement. The village plan is based around a 'green' of common land. The focus of the settlement by 1844 stands on the northern edge of the cultivated lands. To the north, close to the settlement and extending to the coast was an extensive area of common land, presumably consisting of sand-dunes providing rough grazing. The common land also extended in a narrow strip along the coastal margin to the east. Encroachment by sand and the loss through erosion of the land, as well as the move of the nucleus of the village itself, apparently led to a re-organisation, or re-focusing, of the field system of the township. Thus the loss of arable land around the medieval village nucleus to sand and sea must have been compensated for by the taking into cultivation of former marginal land in the southern and eastern part of the township. The process can perhaps be glimpsed in the field-name New Field and in the configuration of other fields in the township.

The Yard or Old Yard(s) occurs as the name of nearly twenty enclosed fields surrounding the nucleus of the post-medieval village and green. As the name is in most cases attached to large areas of land, it does not refer to the small enclosed uncultivated land attached to dwellings or farm buildings, but rather to enclosed fields, one of the meanings of the OE *geard* (Dodgson 1981, 191). The Old Yard or Yard may have been the name originally borne by one of the open arable fields within the township, which was selected for the re-establishment of the displaced village.

By 1844 most of the enclosed fields of the township formed a block in the south-west and southern part of the township. Within this block two distinct groups of fields can be distinguished on morphological grounds. To the south of the village is an irregular series of fields with curvilinear boundaries which resemble assarts. The south-west portion of the township has a group of fields with more regular boundaries; some have slight S-curve suggestive of enclosure out of former open arable, while a block of fields close to the western township boundary looks more rectangular, suggestive of the late enclosure of marginal land. One small block of fields bears the name New Fields, and their neat rectangular form with straight sides, and the name itself, suggest a relatively late origin, perhaps through the enclosure of former marginal land or pasture. Nearby a large group of fields called 'Meadow' indicates the earlier landuse for this area on the margin of the township. The Meadow lies adjacent to a small block of long narrow fields called 'Town Field', usually indicative of open field.

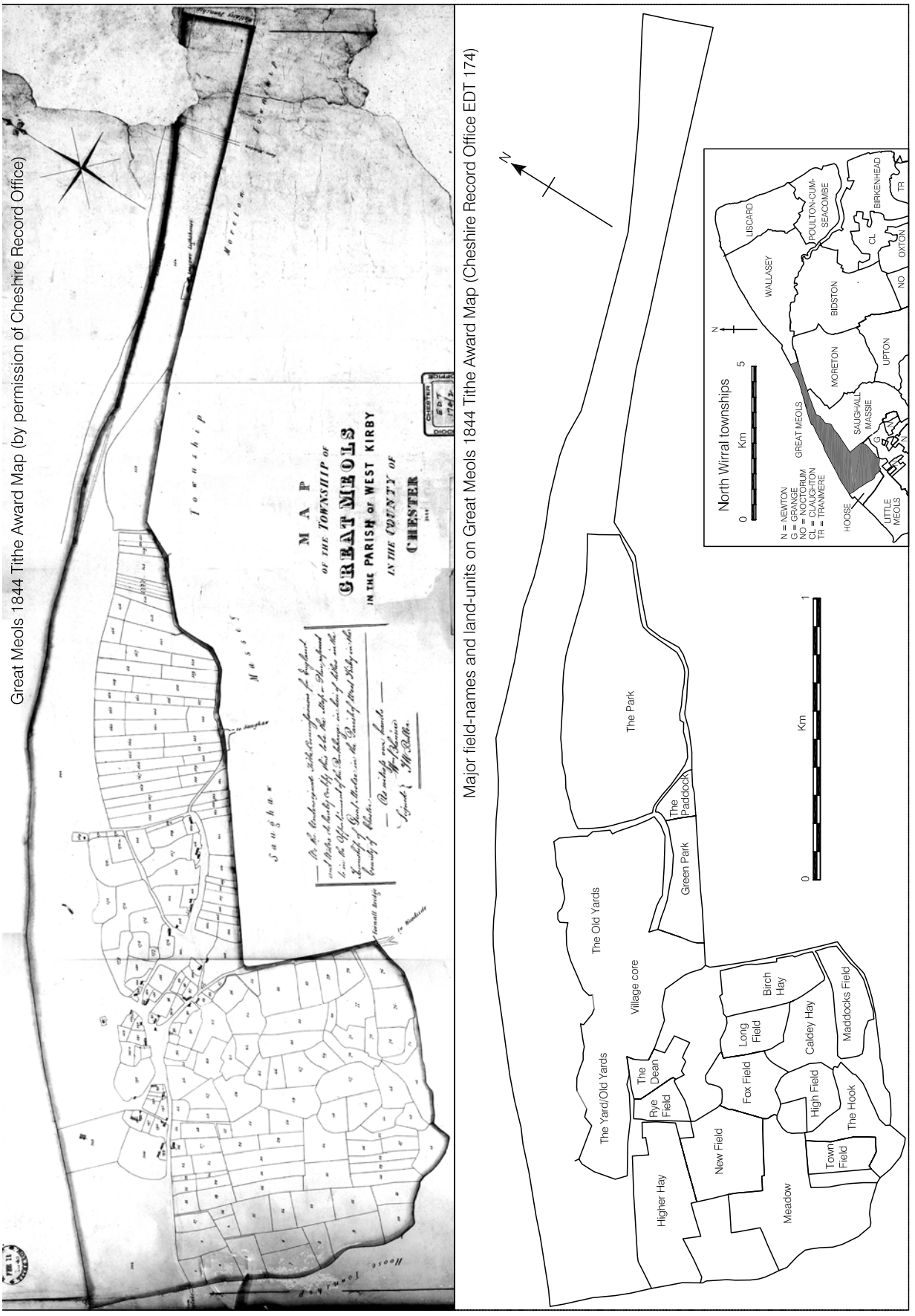


Fig. 4.5.1: Great Meols Tithe Map (1844) with field-names

The Tithe map of 1844 shows a further discrete block of over 40 fields east of the village all bearing the name The Park or Town Park (Dodgson 1972, 298). The name is earlier recorded as Little Park in the 1729 will of Simon Crafts, (Roberts 1992, 29). By 1844 the Park was a large consolidated block of land separated from the shoreline by a strip of common land, which was presumably at that time covered by sand dunes. The fields within 'the park' are subdivided into a large number of long narrow strips, held by a considerable number of tenants. One field remained unenclosed by the Tithe award, with a series of contiguous narrow strips. The area of park field names had a long curvilinear boundary to the west, to the south it ran against the township boundary while the northern side was apparently marked by the edge of the dunes. Rather than representing an enclosed and converted hunting park, for which there is no documentary evidence in medieval or later documents, it is more likely that the term 'park' was used in the more recent sense of 'an enclosed piece of ground for pasture or tillage' or 'paddock, field' (Ekwall 1922, 15; Smith 1956, 59). The conversion of the park to arable may have resulted from the encroachment of sand-dunes or flooding on the existing land in Meols.

North Wirral remained nevertheless a marginal area, and a hint as to the relatively empty and undeveloped sandy landscape at the end of the 18th century is contained in a contemporary description of a grand new residence built in Hoose township:

> High Lake is a new place; the house built by Sir John Stanley was finished only in 1792. The apartments are handsome and commodious, and the accommodation wonderfully comfortable for a situation without either town or even village in its neighbourhood. (*Wirral Notes and Queries* 2, 262). The *Gentleman's Magazine* for 1796 states 'the hotel lately erected by Sir John Stanley, the lord of the manor, is situated within a few yards of the beach, and contains a variety of commodious apartments' (*Wirral Notes and Queries* 2, 235).

Horseracing and deer coursing

Jane Laughton

In 1608 the itinerary of William Webb took him to Wallasey where he saw 'those fair sands, or plains, upon the shore of the sea, which, for the fitness of such a purpose, allure the gentlemen and others oft to appoint great matches, and venture no small sums in trying the swiftness of their horses'. This was later taken to be a reference to Leasowe racecourse, perhaps the earliest such establishment in the country, and it was considered probable that it had been used for many years before Webb wrote his itinerary. In 1593 the eighth Earl of Derby had apparently built an octagonal tower at Leasowe as a stand for viewing these races. It afforded an uninterrupted view over the extent of flat grass which stretched for almost five miles in a straight line from Wallasey to Hoylake. James I may have visited the race course in the early 17th century, attended by a great retinue, and a description of a 'five mile course for a Horse Race near the Town of Liverpool' dating from 1672 is thought to refer to the course, then said to be 'one of the finest grounds of its length in England' (Ormerod 1882, ii, 474-5). 'Wallisey Race' is marked on Greenvile Collins's chart of the Dee, (1689) Fig 3.2.1. The horse races at Wallasey remained fashionable in the 18th century. The first sweepstakes were established in 1723, and subscriptions to the 'Wallasey Stake' from the dukes of Devonshire and Bridgewater, and from Lord Derby and other titled gentlemen made the prize money the 'most considerable' in the kingdom. The races were run on the first Thursday in May each year and attracted large crowds of spectators (Ormerod 1882, ii, 474-5). The (temporary) presence of large numbers of spectators may have contributed to the loss of items which now form part of the Meols collections, such as shoe-buckles (**3046-3091** and 4.6).

It has recently been suggested that deer coursing may have taken place over the same stretch of ground. This sport was very popular in the 16th and 17th centuries, and different forms of coursing are known. *Purlieu* coursing resembled traditional hunting; riders on horseback chased deer through woodland or over open ground, accompanied by dogs. Three breeds of dog were involved, set loose at different stages, and the last dogs made the kill. *Paddock* coursing used a track along which deer and the pursuing dogs were raced. The aim was not necessarily to kill the deer but rather to race the dogs. Tracks could be temporary or permanent and were usually established in woodland or within or close to an existing park. Deer coursing was a spectator sport, with onlookers placed to watch the chase and be close to the kill; bets were placed on the dogs. It has been suggested that Leasowe Castle was originally a viewing stand for *purlieu* coursing. The field names 'Green Park', 'The Park', and 'The Paddock' at Meols suggest, however, that there may once have been a track for *paddock* coursing on the southern boundary of the township. A deer pen or paddock was often found at the start of the course (Bettey 1993, 74; Taylor 2004, 45).

Wrecking

David Griffiths

Another aspect of life on the north Wirral coast, which is documented in post-medieval times, was wrecking. Accidental wrecks were commonplace in the age before modern navigational aids, and the habit of pillaging wrecks was linked to other forms of criminality including illegal buying and selling, tax evasion, and extortion. An 1839 Commission of Inquiry into the need for a more organised constabu-

lary in England and Wales[11] reviewed various crime-ridden localities around the country and concluded that in terms of wrecking, the Cheshire Shore was amongst the worst, if not the worst, in the whole kingdom, rivalled only by certain remote and lawless districts in Cornwall. The Commission reported upon the cross-examination of a local witness 'from the lower classes of population in the area', subsequent to which it went on to describe the means by which wrecked booty was disposed of:

> 'They [the local populace] intermarry, and are nearly all related to each other. They pretend to be fishermen, but although the witness has been at Hoylake for some time, he has not seen or tasted any fish'.
>
> 'Much of the property is sold in the villages and adjacent districts, but most of the plunder is taken to Liverpool and sold there at the marine store dealers. A great quantity of plundered property (indeed nearly all the unsold portion) is concealed underground. Strangers come from all parts and deal with them, so there is no occasion for them to run the risk of taking it to Liverpool, as they might be stopped'.

Whilst the nefarious trade of wrecking reached a particularly profitable and industrious phase in connection with the rise of Liverpool as an Atlantic port in the post-medieval period, it is nonetheless clear that this coastline has been the scene of illicit and lawless maritime activity for much longer. Both accidental and even possibly deliberate wrecking must have happened since the first boats plied these seas, perhaps as long ago as the Iron Age or even the Bronze Age. Its influence on the material culture of the local settlements must not be discounted, although it is and will remain all but completely unquantifiable. It is another aspect of unofficial activity, going largely unrecorded historically, to parallel the informal coastal trade at occasional or seasonal beach markets, which apparently passed beneath, or escaped, the oversight of the customs officials in Chester and Liverpool.

Notes

1 Rylands Deed no 1649
2 CCALS, ZMB 3, f.33v; ZSB 3, ff.14, 29; BL, Harl. Ms 2046, f.27v
3 Mostyn Colln. Univ. Bangor, 5219-5244
4 IPM
5 DFI 212
6 IPM
7 IPM
8 DAR/C/11
9 Harl. MS. 2018, f.9
10 CCALS, DAR/C/11
11 *'First Report of The Commissioners Appointed to Inquire as to the Best Means of Establishing an Efficient Constabulary in the Counties of England and Wales'* (Charles Knight, London).

4.6 Historical commentary on Meols in the later medieval period

Jane Laughton

The range and extent of the medieval finds from Meols is extraordinary, and it may be wondered whether the written sources can help to explain how such a major assemblage could occur at such a seemingly insignificant place. It must be admitted at the outset that the documentary evidence is sparse, at both local and national levels. No manorial records survive, and the historian is accordingly deprived of the surveys, accounts, and court rolls which can shed so much light on the social and economic life of a community. Historical enquiry is also hampered by Chester's palatinate status. From 1290 until the reformation of the palatinate in the Tudor period the county did not pay parliamentary taxes, although, like Durham, it was expected to contribute in other ways. From about 1346 Cheshire had its own system of taxation known as the mize, but as those records merely noted the total charge on individual townships there are no listings of taxpayers to match the poll-tax records of 1377–81 or the lay subsidy contributions of 1522–5 (Morgan 2002, 32; Fenwick 1998, xxi).

The relationship of the county palatine to the national customs system in the 13th and early 14th centuries remains uncertain, but in 1343 Chester was excluded from the system and closed to the export of wool (Thacker 2003a, 48–9). As a result, the port disappeared from the national customs records, thus producing another serious gap in the documentary sources. Records of palatinate customs do survive, enrolled on the accounts of the chamberlain of Chester from 1301 to 1554. Until early in the reign of Edward IV the chamberlain accounted only for the prisage of wine, established as a regular custom in 1275–6, but in 1464–5 a custom on imported iron was introduced, followed in 1537–8 by a custom on exports of leather. All surviving customs returns for the period 1301–1554 have been tabulated; they contain no references to Meols (Wilson 1969, 1–9, 18–62). Chester also imposed its own local customs on merchandise entering and leaving the city. Minor tolls and a 'custom of ships and boats' were included with the city revenues in the later 1270s, and the right to levy these tolls and customs was presumably included among the privileges set out in the fee-farm grant of 1300. A fragmentary account of local customs dating from 1398–9 is the earliest to survive; there exist some 35 accounts from the 15th century, many of them damaged, and 40 more from the years 1500–66. The accounts for 1404–5, 1467–8, and 1525–6 have been calendared, and record just one mention of Meols: the arrival of the *Michael* of Meols with a cargo of fish in January 1526 (Wilson 1969, 8–9, 101–42). A search through the unpublished accounts dating from the 15th and early 16th centuries has produced a second reference: the ship of Robert Meols entered the port of Chester in November 1418.[1]

There is no evidence in the palatinate and local customs records which indicates that Meols was a significant port in the late medieval period. The possibility remains, however, that it was one of the ports or landing places which functioned as a 'hidden trading place'. Such unofficial commercial centres were found throughout England – on marginal sites, in suburban villages, at country inns, and at ports and landing places (Dyer 1994c, 292, 298; 2005, 6). There are no obvious or easy sources which reveal the history of these trading venues; every available document has to be scrutinised, however indirect it may appear, and archaeological and topographical evidence has to be incorporated. The following discussion presents the written evidence.

The medieval settlement (see also 4.5, above)

In the Domesday Book of 1086 Great Meols was assessed at just one hide; there was land for 1 1/2 ploughs, and a recorded population of 1 radman, 2 villeins, and 2 bordars with 1 plough. The next indication of the size and wealth of the settlement is found in the Cheshire mize of 1406, which is the earliest to survive. As the rate was fixed when the mize was established in about 1346, the assessments reveal the levels of wealth just before the Black Death. Meols was assessed at 6s 4d, which has been interpreted as a rate of between 0.20d and 0.30d per acre. Other townships in Wirral were rated at 0.50d per acre, serving to make Wirral one of the wealthiest areas of Cheshire, but comparing poorly with counties such as Oxfordshire and Norfolk, which averaged over 6d an acre (Ormerod 1882, ii, 876; Morgan 2002, 32–3). In 1453–4 the contribution made by Meols to Cheshire's grant of money to the king was amongst the lowest in Wirral (Ormerod 1882, ii, 876).

The arrangement of houses along a 'village street' (1.2) suggests that Meols was a nucleated settlement. The grant of a selion of land to St Werburg and the monks dwelling at Hilbre in *c.* 1280–1320 indicates that there was an open-field system; the selion lay between the lands of two other individuals and the grant included an adjacent meadow (Tait 1923, 297). The medieval township also contained an extensive area of pasture near the sea known as the *Claverhill* ('clover hill') (Dodgson 1972, 298); somewhere there was a windmill, worth 12d a year in the mid-14th century (Ormerod 1882, ii, 495). Meols lay within the parish of West Kirby and did not have a church, nor was there a chartered market. The nearest markets were the Monday market at Bromborough, some nine miles (14km) to the south-east, and the Thursday market at Burton, about 12 miles (19km) to the south. A journey of six or seven miles to market was considered the acceptable norm in the medieval period, and a visit to Bromborough or Burton would have been something of an undertaking. Burton perhaps had more to offer, located as it was at the junction of several major routeways and with its anchorage in the Dee. It displayed urban characteristics; among the 47 tenants listed in 1298 were two merchants, a mercer, two shoemakers, a tailor, and a smith (Booth 1984, 8, 10–12). There may have been an unofficial trading centre at or close to Meols itself. Some of the archaeological finds suggest trade and, as will be shown in the next section (below), there are indications that Wallasey began to develop as a small port in the later medieval period. Ferries crossed the Mersey and linked this corner of Wirral with Liverpool: from Birkenhead by the mid-12th century and from Seacombe by the mid-14th century (Kettle 1980, 128–9; *BPR*, iii, 260). The monks at Birkenhead used the ferry to take produce to Liverpool market, and merchandise was possibly carried in the opposite direction, for sale at 'hidden trading places' in Wallasey or Meols. The Gough Map of *c.* 1360 depicted a direct route between Chester and Liverpool.[2]

The top-ranking town in the area was Chester, administrative centre of the palatinate and regional capital of the north-western plain. It lay some 19 miles (30km) from Meols, too far away for weekly marketing, but within distance for non-routine purchases. Villagers from Meols certainly visited Chester to attend sessions of the county court, among them a man indicted in May 1434 for striking the parson of West Kirby on the head with a stick.[3] Other villagers travelled to the city to trade. In November 1397, for example, men from Meols were in trouble for selling a last of fresh herring against the ordinances.[4] A dozen or so individuals from Meols were named in the civic records in the later medieval period, the first of them Bertram de Meols who was named in a recognizance for eight stone of wool in 1308.[5] In 1340–1 Robert de Meols was involved in a court case concerning a debt for 100 herring; the plaintiff was John the armourer, whose descendant owned a boat based at Pull (Wallasey Pool) in 1396.[6] Locative surnames are not considered to be reliable indicators of places of origin after 1350 but it is clear that, at Chester, surnames of non-residents commonly remained meaningful throughout the later middle ages. The men from Meols, or surnamed Meols, were almost invariably associated with the fish trade. In 1416 a leading city fishmonger acted as pledge for Robert Meols when he sued a shipman for debt; in 1433, when Richard Smith of Meols sued a shipman from Aberystwyth in a plea of trespass and account, he was represented in the sheriffs' court by a fishmonger from Chester.[7] Richard Smith was evidently a wealthy member of his local community; a few years later a group of men led by George Stanley of Hooton broke into his home and carried off silver spoons, a silver girdle, and a number of cheeses.[8] In January 1515 Thomas Meols accused Robert Crosby of breaking an agreement concerning a small boat called a 'cokbotte' and various nets; a few months later the stewards of Chester's Fishmongers' company pursued a debt of 10s owed to them by William Meols, pledge of [ ] Meols.[9]

It seems that the inhabitants of medieval Meols took advantage of their coastal location and

combined farming and fishing activities, possibly on a seasonal basis. The Domesday Book recorded seven fisheries at five manors along the Wirral shoreline, and there were probably others which were not mentioned (Davey 2004, 41). The priory at Birkenhead owned fishyards in the Mersey and in 1353–4 the manorial lords of Kirby [Wallaley], Poulton, Seacombe, and Liscard claimed the right to make fisheries within their manors. The rights applied to the stretch of shoreline from the bounds of the vill of Meols as far as the vill of Seacombe, and from the bounds of the vills of Meols, Moreton, and Bidston; the fisheries extended as far 'as the thread of the water of Mersey' (Ormerod 1882, ii, 472). The large number of fish hooks discovered at Meols indicates the importance of fishing in the local economy. Written evidence for the dual economy only emerges in the 17th century, a period for which more documents are available. Wills and/or inventories survive for 12 men from Great Meols, and occupations are given for nine of them: 2 yeomen, 1 husbandman, 1 seaman, and 5 mariners. One yeoman owned a fishing line and other 'sea gear'; the second yeoman owned half an old boat. The seaman and each of the mariners owned boats, fishing nets, sea lines, cable ropes, and anchors, but their livestock, corn, hay, and agricultural implements were far more valuable. Clearly farming was important to each of the nine, but all except the husbandman did some fishing. None of the men were wealthy; only two had goods valued at more than £50.[10] Their medieval predecessors were doubtless very similar.

The written sources portray late medieval Meols as a small and relatively poor settlement with a population engaged in farming and fishing. Part of the archaeological assemblage supports this picture: the tools for arable and pastoral agriculture, the fish hooks and lead net-weights, the domestic furnishings, and the dress accessories of lead/tin. The archaeology adds a dimension which is not recorded in the documents: the abandonment of the medieval village due to the encroachment of sand, and its relocation further inland, to the site of the present village. As the majority of the metal artefacts date from before the end of the 15th century the archaeologists have suggested that a nucleated village was established on a new site in about 1500–50. Such a fate was not unique. The Sussex ports of Hythe, Romney, Winchelsea, and Hastings also experienced storms and coastal erosion and they too had to be re-sited further inland (Kowaleski 2000a, 468).

There is documentary evidence for loss of land at estuarine settlements along the Mersey due to storms and changes in sea level during the medieval period, but no mention of any catastrophic event on the north Wirral coast. The effects of storms at Chester were occasionally noted. In the mid-1280s, for example, the mills, causeway, and fishery were severely damaged by floods (Thacker 2005b, 106). In 1328–9 strong winds caused much destruction at the castle; the roof and west wall of the great hall collapsed, as did the gable of the chapel tower, and part of the great stable.[11] The demesne marshlands at Frodsham on the banks of the Mersey were flooded on an annual basis. Particularly severe inundations occurred in 1315 and in several years around the mid-14th century. In 1411–12 the meadows were destroyed by floods, and they suffered again in 1420–1, due to the 'horrible tempests'.[12] The manor of Frodsham was one of the earl of Chester's most valued properties, and much money was spent building earthen walls and drainage ditches on the marsh as a defence against the floods: an average of some 30s on maintenance each year in the mid-14th century, and £8 on major repairs in 1360–1 (Booth and Dodd 1979, 30, 32, 45, 47–8). The effect of storms on a coastline dominated by sand dunes like the north Wirral coast would have been of a different nature, and far more devastating. The catastrophic results of a storm at Newborough in Anglesey in December 1330 are documented: the area was overwhelmed by sea and sand and 183 acres of borough lands were lost (Carr 1982, 262). There was no easy way to defend a settlement against the encroachment of the dunes, even if the manorial lord had been willing to fund such an endeavour.

It is possible that the lord of Meols had already moved a few miles to Wallasey by the early 15th century, leaving a bailiff to take care of his interests in Meols. The *inquisition post mortem* of John de Meols (who died in October 1416) taken on 14 January 1417 reveals that he lived in Wallasey, and that his son had been baptised at the church there some five years earlier. His landholdings perhaps indicated the focus of his interests. In addition to land in Meols and a burgage in Chester worth 10s a year, he also held land in Wallasey, Liscard, and Tranmere, all on the north-eastern tip of Wirral. The *inquisition post mortem* of his descendant Thomas, taken in 1555, reveals further investment in property in the same area. Thomas Meols, 'late of Wallasey', held additional lands in that township, including two bovates in Poulton Field sloping down to Wallasey Pool, and a number of messuages in Liverpool. These landholdings were listed again in the *inquisitiones post mortem* of later members of the family dating from 1594 and 1639 (*Cheshire Sheaf*, 1, 1896, no. 216; *Cheshire Sheaf,* 15, 1918, nos. 3518, 3524, 3534). In 1555 and in 1639 the widows were recorded as living in Wallasey, but in 1594 the widow lived at the dower house in Meols. The location of the manor house at Meols is not known, but a field called the Hall Croft was recorded in 1637[13], and Hume mentioned that the 'the remains of an ancient house, like the Hall or proprietary mansion of the neighbourhood, existed till within the last century; and portions of buildings still standing contain some of its materials worked up in them' (Hume 1863, 390–91 and 1.2). A sketch plan of Wallasey dating from about 1665 depicts a three-gabled house in a walled enclosure adjoining the church. It is possible that the Meols family lived there.[14] They became manorial lords of Liscard and Poulton at an

unknown date in the early modern period (Ormerod 1882, ii, 479, 481).

The relocation of the Meols family to Wallasey, and their acquisition of property in Liscard and Tranmere, was perhaps influenced by developing opportunities along that stretch of coastline. The *Mary*, the *George*, and the '*Bote*' of Seacombe (just south of Wallasey) entered the port of Chester in 1419–20; other ships from Seacombe were listed in 1423–4, together with four ships from Liverpool; the *Trinity* of Wallasey arrived with a cargo of herrings in 1430–1.[15] It is possible that the grant of the Isle of Man with its crown to Sir John Stanley of Lathom (Lancashire) in 1406 fostered these developments, although it has been suggested that the economic value of the island at that time centred on its position as an entrepot in the smuggling trade. Stanley and his son are known to have had trading interests (Dickinson 1996, 1, 4–6; Bennet 1983, 130–1, 217, 220). The *Mary* of Man owned by the younger Sir John was named in Chester's customs accounts in April 1417.[16] By 1458–9 the family held property in Seacombe, Liscard, Poulton, and Kirby Wallaey (Ormerod 1882, ii, 479). The Stanleys had a seat at Knowsley near Liverpool and always remained firmly rooted in Lancashire, in spite of holding high office in Cheshire and north Wales and becoming the most powerful family in north-western England (Clayton 1990, 132–3, 144–55). Royal officials and troops regularly embarked at Liverpool for Ireland in the 1390s and in the early years of the 15th century.[17] The port began to encroach on Chester's trade with Ireland before 1500 and became a serious rival in the 16th century (Parkinson 1952, 18–20; Lewis C. P. 2003, 7). Had the Meols family opted to concentrate their resources on the coast facing Liverpool, it may have proved a sound decision. And, in the absence of strong manorial lordship, unofficial trading activities perhaps flourished at Meols.

The port of Chester

The importance of sea-borne trade to Chester's economy is apparent in the Domesday account of the city, with its unusual details of ships entering and leaving the port (*portus civitatis*) and of the tolls levied on each load. The grouping of nine manors, including the two manors of Meols, on either side of the Dee into a single tenurial unit may represent an attempt to control the estuary; if so, this too underlines the vital role played by overseas trade (Sawyer and Thacker 1987, 307–8, 325–6, 342–3, 351, 366). Control of the estuary ultimately passed to the citizens. The privileges set out in the charter of 1300 probably included the right to levy the minor tolls and 'custom of ships and boats' included in the city's revenues in the 1270s. The charter of 1354 gave details of these rights: the citizens were allowed to make attachments for toll and other customs in the water of Dee between Chester and Arnold's Eye, (today known as Red Rocks; 3.3), a promontory at the north-western tip of Wirral.[18] (Morris 1894, 498–9; Dodgson 1972, 300). By that date a number of anchorages had been established downstream from Chester: at Portpool, Shotwick, Burton and Denhall (probably two ends of the same anchorage), Neston, Gayton, Heswall, and Redbank in Thurstaston. In later centuries the estuary was known as 'Chester Water', an indication that many ships nominally bound for Chester routinely unloaded their cargoes at anchorages downstream (Place 1994, 32–5, 53–4). The goods were then brought to the city on smaller craft or on carts.

The need for these additional anchorages stemmed from the fact that the Dee was a shallow river and always prone to silting, as the winds and tides created sandbanks and caused the channel to shift from one side to the other (Place 1994, 31–5; Ward 1996, 4–11; Thacker 2005a, 83–7). The harbour at Chester may have been affected by these fluctuations. It was located on the western side of the fortress in the Roman period, to the south of the city in the 10th, 11th, and 12th centuries, and beyond the Watergate in the later medieval period (Mason 2001, 112–17; Strickland 2003, 9; Thacker 2003c, 207; 2005c, 223; Taylor 1912, 46). An additional anchorage, known as Portpool, had been established at the north-western boundary of the city's liberties before 1296. Leland described it in *c.* 1536–9 as a dock within two bowshots of the northern suburb where a ship could lie at spring tide. Access to the anchorage was via the Portpool Way and this road became increasingly important in the later medieval period, possibly as a result of the shifting location of the harbour from the ancient site near the Dee Bridge to anchorages downstream (Dodgson 1981, 70; Toulmin Smith 1964, iii, 91; Thacker 2003c, 216).

In their petitions to the king for a reduction of their fee-farm payment in 1445, 1484, and 1486, Chester's mayor and citizens cited the loss of their good harbour as a prime cause of their impoverishment. The first two petitions graphically described the 'wreck of sea sand' and 'the silting up of gravel' which obstructed the river channel and had prevented merchant ships from approaching within 12 miles of the city for 40 or 60 years. In 1486 they added the new information that the river channel was now also obstructed by the 'vehement inflow of the sea', that merchants were using other ports and places in the same country (*patria*) where they could unload and reload their goods more easily, and that 200 years had passed since merchant ships had approached within 12 miles of the city (Morris 1894, 511–14, 516–24). Towns throughout England were making similar petitions in the 15th century, often phrased in a conventional format, and their pleas must be treated with caution. Careful analysis of the evidence from Winchester has shown, however, that the city's claims of poverty in the mid-15th century were not greatly exaggerated (Dobson 1977, 3–4, 10–13; Keene 1985, i, 96–8). Chester's petitions did result in successive reductions of the fee farm, indicating perhaps that the authorities believed that their claims had some justification.

The palatinate customs accounts corroborate the claim made in 1486 that two centuries earlier merchant ships were using anchorages some 12 miles from the city: in 1302–3 a Dartmouth ship with a cargo of wine anchored at Heswall (Wilson 1969, 20). The casks were unloaded with the assistance of a windlass, at a cost of 2d per cask, and a small boat carried them from the park near Heswall upstream to the city. There was also a windlass at Redbank, used in July 1319 to unload wine from a Winchester ship and from the *Holirode Cog*, owned by Chester's mayor William (III) of Doncaster.[19] The customs returns reveal that large ships carrying wine and iron anchored at the Dee outports throughout the later medieval period. Heswall, Neston, and Portpool were used on occasion, but the usual anchorage in the years 1353–1492 was Redbank in Thurstaston. From the mid-1490s until 1538–9 Burton and Denhall were preferred (Wilson 1969, 20–62). The change may have resulted from the increasing involvement of Chester merchants in overseas trade from 1500 onwards (Kermode 2003, 68); these men perhaps preferred an anchorage closer to the city. Alternatively, Redbank, in an exposed position closer to the mouth of the estuary, may have been affected by the 'vehement inflow' of the sea mentioned by the citizens in 1486. Redbank was used again in the first half of the 16th century, most often in the month of May. Several anchorages were often in use together. In 1517–18, for example, five ships anchored at Denhall and one at Burton, five berthed at Redbank, and four reached Shotwick close to the city (Wilson 1969, 42–3). The fortunes of each anchorage depended on the unpredictable shifts of the channel, and there was no progressive silting of the estuary downstream from Chester (Place 1994, 33–4).

Ships engaged in trade across the Irish Sea also anchored at Wirral. The anchorages they used were not recorded in the local customs accounts, but other sources suggest that in the 15th century Burton and Denhall were preferred and that goods were regularly taken on to Chester by cart (Laughton, forthcoming). A survey of Denhall in 1999 revealed a series of what were thought to be medieval quays across the mouth of the inlet (*Past Uncovered*, Spring 1999, 4). Most vessels were Irish, but others came from Wales, Anglesey, and (increasingly) from the Isle of Man. Chester vessels became more numerous in the late 1490s. The local customs records are so fragmentary that it is impossible to quantify the amount of traffic handled by the port. An average of some 50 ships arrived each year in the 1420s, 40 in the 1450s, and 30 in the 1470s; the number of ships began to rise at the end of the century and 57 were recorded in 1500–1. These were small totals compared with major ports in eastern and southern England. The size of the vessels varied considerably. One ship arrested and pressed into royal service at Redbank in August 1461 had a crew of 37 mariners, a second had a crew of nine, and a third a crew of seven men.[20] Some Manx vessels were tiny: a 'letell bote of Man' arrived in *c.* 1452, and the 'skaf' and the 'spinas' of Man a few years later.[21]

In the 15th century the clerks who compiled Chester's local customs accounts focused on the quantity of merchandise (listed as horseloads or cartloads) carried into and out of the city and the custom paid, but did not itemise the commodities in detail. Nevertheless, it is clear that hides, animal skins, woollen and linen cloth, and yarn were shipped from Ireland, plus huge quantities of fish.[22] From 1513-14 it became normal practice for imports to be described in full; the merchandise remained the same. The *Michael* of Wallasey arrived in 1526 with a cargo of hides, sheepfells, lambfells, brockfells, marten and otter skins, wool, yarn, checkers, and blankets (Wilson 1969, 136–7). Goods exported to Ireland in the 15th century included high-quality woollen cloth (much of it from Coventry), mercery wares, haberdashery, and dyestuffs; bows from York and knives from Shrewsbury; arrowheads, nails, cards for the textile industry, metal pots and pans, and, until *c.* 1450, salt from Cheshire. There were sophisticated consumers in Dublin keen to buy high-quality products, and considerable demand in Ireland and in the Isle of Man for imported metal products of all kinds. Prominent among Manx imports in the years 1594–1696 were agricultural tools, fish hooks, iron and brass pots, and regular shipments of knives (Dickinson 1996, 127–8, 280–1).

All goods passing through Chester, either from the port towards inland markets or from elsewhere in England *en route* for shipment overseas, had to obtain authorization from the civic officials and pay the necessary customs. The rates were not excessive: 4d per cartload and 1d per horseload for merchandise *en route* to the port, charged on entry and again on exit; a flat rate of 4d for merchandise entering the city from the port and, if the merchandise subsequently left Chester for other inland markets, a further charge of 4d per cartload and 1d per horseload (Wilson 1969, 11–12). Merchants regularly travelled with packs containing goods worth £10 and more, and customs amounting to just a few pence would have seemed acceptable. Yet, numerous attempts were made to evade payment. In November 1476, for example, a Bradford merchant carried four packs of coloured woollen cloth worth £60 through the city to the *Trinity* of Dublin and sailed away without payment. In the following August a Stockport merchant also sailed for Dublin without paying custom on three packs of woollen cloth worth £40.[24] There is much evidence for illegal trading in Chester's suburban inns in the 14th and 15th centuries, sometimes involving carters and porters from the city (Laughton, forthcoming).

The use of anchorages at a distance from the city increased the opportunities for customs evasion. The authorities attempted to control illegal activities, installing customs collectors on the spot and dispatching officials from Chester when ships arrived. There were customs officers at Denhall in the early 14th century (Booth 1984, 10), and in 1406 the

bailiff-errant confronted two Conwy chapmen at Burton and arrested their boat, together with the leather points, knives, cards, and yarn found on board. In April 1414 the deputy chamberlain travelled to Redbank to collect the prise due on a cargo of wine, an intervention which ended in a violent affray during which arrows were fired and men were forced to jump into the water.[25] Similar controls were in place some two centuries later, before the building of a new customs house at Chester: customs officials either boarded ships off the coast of Wirral and Lancashire, or viewed merchants' goods in their inns or cellars.[26]

The ports of Frodsham and 'Pulle'

The port of Frodsham lay below the bridge over the Weaver, near the confluence with the Mersey. Its jurisdiction extended from the bridge to the *Skere* or *Swarteskere* (Black Rock, also known as 'Red Noses') at the north-eastern tip of Wirral and encompassed the port of 'Pulle' (Wallasey Pool) (Dodgson 1972, 326; *Cal Inq Misc*, II, 1308–48, 11). Tolls levied on vessels using the port produced revenues of £10 per annum in the late 13th century (Ormerod 1882, ii, 53). In subsequent years the revenues fell sharply: tolls of 31s 5d were recorded in 1371–2 and of just under £3 in 1373–4. In the first half of the 15th century they fluctuated between 6d and 3s, except in 1438–9 when they amounted to 6s. The customs were levied solely on boats loaded with salt which had travelled down the Weaver from the Cheshire wiches.[27] All such boats should have paid toll at Frodsham, but in 1438 it was alleged that a Liverpool man and others had taken the salt to 'Pulle' instead.[28] This port was linked to Liverpool by the ferry at Seacombe (Dodgson 1972, 330). In July 1357 Robert de Pulle was granted the farm of the ferry for a year from Michaelmas for 6s 8d, and authorised to take a reasonable fare from those who wished to cross to Lancashire (*BPR*, iii, 260). John Armourer, seven times mayor of Chester and originally from the Isle of Man, owned a vessel called *Saint Mary bote de Pull* in 1396.[29] A Guernsey ship with a cargo of Gascon wine anchored at 'Pull' in Wirral in 1397–8 (Wilson 1969, 24), an indication that the port was developing.

The 'port' of Meols

The importance of Meols in earlier centuries was due to its location close to the natural harbour east of Hilbre, known in the 13th century as *le Heypol* ('the deep pool'). At that period the lake extended to Hilbre Island and was also known as 'the lake of Hilbre'; the votive lamp maintained by the monks in the island's chapel perhaps helped to guide vessels to the lake (Griffiths 1996, 52–3; Dodgson 1972, 299, 304; Tait 1923, 298–9; Craggs 2005, 19–20). Hilbre was not recorded as an anchorage in the later medieval period, however, and ships from Hilbre were not named until the late 1490s: the *Michell* of Hilbre entered the port of Chester in November 1497 and August 1498.[30] After the island fell into secular hands at the Dissolution more ships from Hilbre crossed the Irish Sea. In 1565–6, for example, 12 Hilbre ships were named, some of them making up to six voyages. Only one ship from Meols was recorded in the 15th century and the *Michael* of Meols arrived on 27 January 1526 with one passenger and some barrels of fish (Wilson 1969, 74–84, 133). There is no documentary evidence for a formal harbour at Meols in the later medieval period. The small fishing boats owned by the villagers could be beached on the shore and did not need landing facilities.

The relocation of the manorial lords from Meols to Wallasey by the early 15th century perhaps mirrored a shift in the patterns of trading along the shoreline. In later years Wallasey was to develop into a significant centre for fishing, and trading links were established with Liverpool. Herring from Wallasey was regularly taken to Chester in the 15th century: the *Trinity* of Wallasey arrived in 1430–1 with a cargo of herrings, and in 1491 a Wallasey man claimed that a city fishmonger owed him 26s 8d for salted [herring].[31] It is possible that the catch was preserved on the beach. This may explain why some boats bringing salt from the Cheshire wiches, and subject to toll at Frodsham, unloaded at 'Pulle' instead. When Leland journeyed through Wirral in the late 1530s he noted 'Walesey village on the very shore wher men use much to salten hering taken at the se by the mouth of Mersey' (Toulmin Smith 1964, iii, 91). A plan of Wallasey dating from *c.* 1665 depicts narrow strips in the fields to the east of the town, termed 'Shipracks'.[32] David Hall suggests that these may have been 'racks for salting or even just processing fish, i.e. sorting out the species and gutting'.[33] A small cluster of fishermen's huts was sited at Rock Point at this period (*Cheshire Sheaf*, 1, 1896, 91). The fishermen at Meols also specialized in herring; they too may have processed their catch on the beach, and perhaps sold it there as well, at an unofficial beach market. Fish was sold at remote places along the shore of Devon, either from boats grounded on the beach or from the beach itself, and there is evidence for similar beach markets in Dorset and Cornwall (Fox 2001, 88–91). From the late 14th century seaside fish markets developed in a string of villages along the North Sea coast of Holland, most of them unlicensed but not illegal.[34] Meols would appear to have been well sited for a role as an unofficial trading place in the medieval period, located as it was on the northern coast of Wirral, outside the jurisdictions of the ports of both Chester and Frodsham. It lay within palatinate jurisdiction, but customs officials may well have confined their attention to the Dee Estuary.

The archaeological evidence indicates that Meols was more than a beach market for fish. Was it used by merchants dealing in other commodities who did not intend to visit Chester's markets or pay for storage and porterage facilities and who sought to evade tolls? They may have appreciated the liminal

position of Meols. Traders *en route* for overseas destinations who had paid their customs in full may have found themselves in the vicinity of Meols for a totally legitimate reason – a delay to their journey caused by the weather. This was a common experience in later centuries, and medieval travellers doubtless faced similar hold-ups. Indeed, the lodgings which the prior of Birkenhead was licensed to build in 1317 were to house travellers who had been delayed by the weather, the prior having complained that there were no inns nearer than Chester. The Hospital of St Andrew at Denhall had been founded in the early 1230s to help the poor and the shipwrecked, and in 1320 the new warden was reminded that he was to act as hospitaller in admitting poor men, travellers from Ireland, and others (Kettle 1980, 128–9, 184–5). There is no record of other accommodation for medieval travellers and it must be wondered where they stayed. In December 1565 lack of wind for Ireland forced the governor to wait at Hilbre; he reported that he had never been so weary of any place for there was neither meat, drink, nor good lodging.[35] As late as 1784 none of the three houses at Hoylake (as the lake of Hilbre was then known) was deemed 'fit for a Christian', and the first hotel did not open until 1792 (Dodgson 1972, 299; Place 1994, 58).

Campaigns in Wales and Ireland brought large numbers of troops to Wirral on occasion. Henry III and a large army crossed the Dee via the ford at Shotwick in 1245, as did Edward I and his army in 1278 and 1284. A fleet of 27 ships, including 18 from the Cinque Ports and one from Bayonne, anchored near Neston in 1282. There were more than 700 sailors on board, some of whom killed deer at Burton and stole goods worth £9 from the abbot of Basingwerk's grange at Caldy (Morris 1901, 128; Booth 1984, 3; *Cal Inq Misc*, I, 1219–1307, 1302). Soldiers *en route* for Ireland in 1399 also spent time in Wirral. Eighty archers from the hundred of Northwich were assembled on the road outside Chester on 9 May 1399 and conducted to Burton in Wirral for shipment to Ireland eight days later.[36] We can imagine that medieval troops were regularly

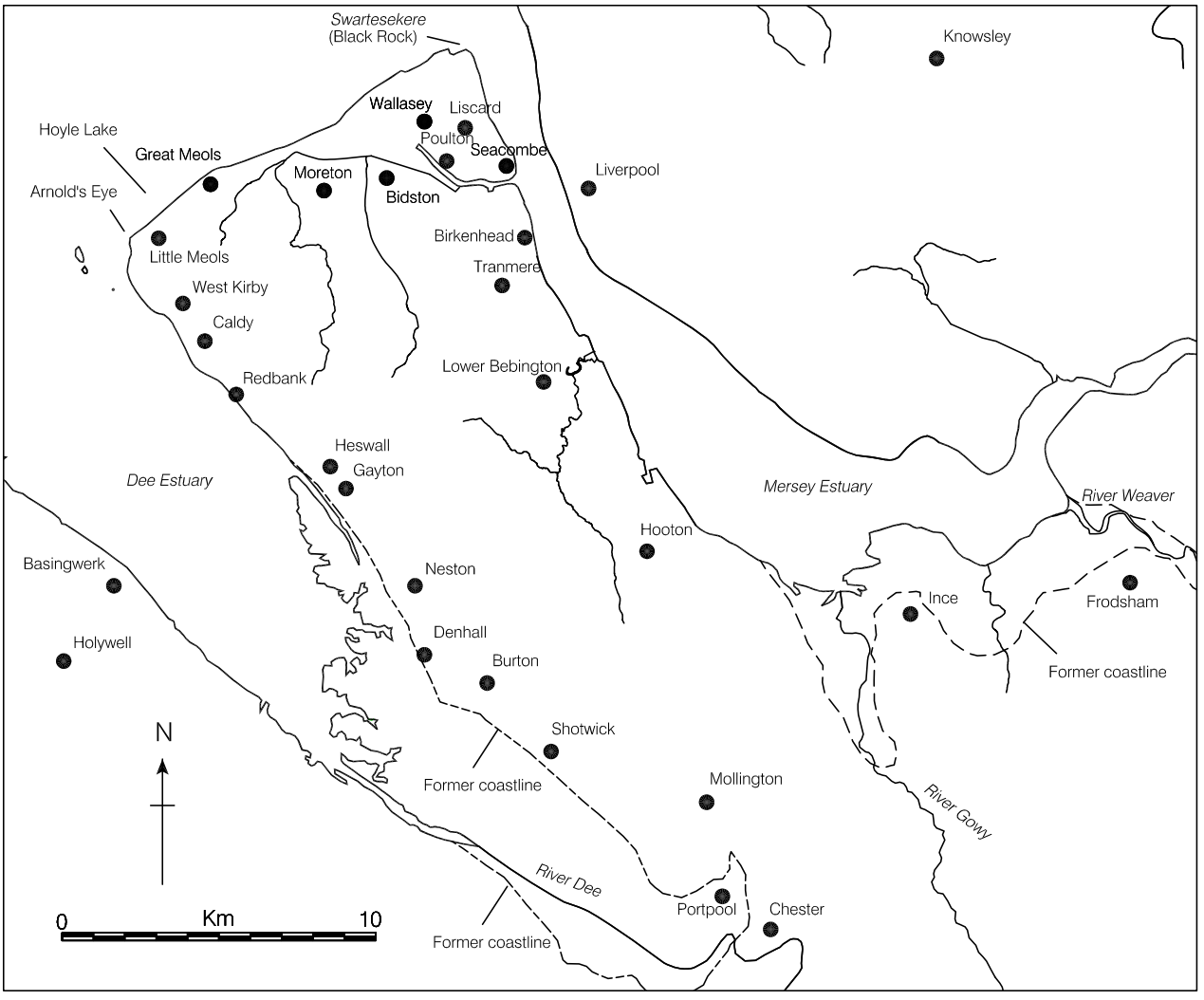


Fig. 4.6.1: Map of places referred to in text

delayed by bad weather or by lack of transport, just as they were in later years. A graphic illustration of the ensuing problems is provided by the accounts of payments for food for 1000 foot soldiers who arrived at Chester and Liverpool *en route* for Ireland in the spring of 1595. Grouped in county contingents of 100 men, most soldiers experienced delay 'for want of wynde' and were forced to disembark and spend additional nights on shore. Three contingents spent six days at Wallasey before they departed for Dublin, and consumed large amounts of cheese and beer while they waited.[37]

In the late 1530s John Leland noted that there had formerly been a monastic cell at Hilbre and a pilgrimage of our lady of Hilbre (Toulmin Smith 1964, iii, 91–2), This pilgrimage may have been of no more than local significance (Craggs 2005, 16–19) but nevertheless the offerings on the feast of the Assumption (15 August) were retained by the rector of West Kirby when he renounced his rights in the island and its chapel to St Werburgh's abbey in 1287 (Tait 1923, 296). The festival was perhaps the occasion for a fair, with booths selling food and cheap souvenirs. The number of visitors may have been quite large. In 1425 a crowd of more than 100 people gathered at Burton to celebrate a church ale in honour of the Virgin and became embroiled in an affray.[38]

Chester as a place of craft manufacture

Meols lay some 19 miles (30km) from the regional capital of Chester, where a wide range of manufactured goods was available, including luxury and specialized products. At any one time in the late medieval period townsmen following some 70 trades and crafts lived in the city, most of them involved in the provision of food and drink, the production of clothing, and in the leather trades. There were also numerous metalworkers, including goldsmiths, pewterers, bellmakers, cutlers, locksmiths, spurriers, brasiers, plumbers, potters, and pinners. Most households in the city contained metal goods of some kind: brass pots, pans, dishes, basins, bowls, and candlesticks; maslin basins; latten salt-cellars and bag-rings; pewter dishes, plates, saucers, voiders, pottingers, and quarter pots. The bowls described as *stangn*[ ] sold by one of Chester's pewterers in 1478–9 were perhaps made of lead/tin.[39] Even middling townspeople owned a few silver spoons and the well-to-do wore costly silver belts with gold decorations and carried daggers with silver ornaments (Laughton, forthcoming). Instances of fraudulent manufacture are recorded. In May 1393 one city goldsmith with two associates conspired to make false metal from silver mixed with copper, lead, and 'alkemany'; from then until July the three used this metal to produce quantities of coins, girdles, lockets, and chapes (metal trimmings for knife scabbards).[40]

Not all the metal wares on offer at Chester's markets and shops had been manufactured in the city. Traders who paid to sell their merchandise in Chester in *c.* 1432 included cutlers from Leighton Buzzard and Shrewsbury, a pewterer from York, and a maker of arrowheads from Sheffield.[41] Those who came to Chester to buy fish brought with them the specialities of their home town: horse bits from Walsall in south Staffordshire, nails from Newcastle under Lyme in the same county, and knives from Shrewsbury. The majority of merchants who passed through Chester *en route* for Ireland in the 15th century came from Coventry, at that time well-known for its lead/tin products as well as for fine woollen cloth. Other exports included knives, cards for textile manufacture, and hardware. All were carted to anchorages along the Dee. Currency frauds and false moneying took place in Wirral: at Bebington in 1468 allegedly perpetrated by a tinker from Ormskirk in Lancashire; and a more serious case at Burton in 1476 involving a large group of merchants from Ireland, Yorkshire, and Lancashire.[42]

Chester as a distributive centre for fish

Fish constituted a vital element of medieval diet, because the Church decreed that meat could not be eaten on almost 150 days in the year (Dyer 1994a, 102, 108; Kowaleski 1995, 307). Chester had easy access to supplies of both freshwater fish and sea fish. An important fishery on the Dee at Eaton just a few miles from the city rendering 1000 salmon a year was recorded in the Domesday Book, and the local monk Lucian noted that there was a flourishing fish trade at Chester in *c.* 1195 (Sawyer 1987, 346; Taylor 1912, 46). Fish may have been imported from Ireland in the Anglo-Saxon period and large quantities were imported throughout the later Middle Ages. There was particular demand for herring, a relatively cheap fish which the poorer townspeople could afford and, as it deteriorated quickly, it was often preserved before the voyage, either by salting (to produce white herring) or by smoking (to produce red herring). In the first half of the 15th century Irish traders who arrived with salmon and herring regularly returned home with hogsheads and crannocks of salt. There are hints in the documents that some fish may have been salted on board, as Flemish and Dutch fishermen had done since *c.* 1400 (Laughton, forthcoming).

Tolls were taken on fish at all four city gates in the earlier 14th century. Tolls on herring, great fish, small fish, and shell fish headed the list of tolls taken at the Northgate, and tolls were also taken from ships and boats carrying herring which entered the port of Chester between Bonewaldesthorne (at the north-western corner of the city walls) and Portpool. Tolls on fish featured prominently among those taken at the Watergate. There was specific mention of horseloads of herring from Wales and Wirral, and of ships and boats arriving with large fish and salted salmon or with herring (Morris 1894, 554–8). The civic authorities attempted to control the sale of fish, but local fishmongers regularly forestalled the market

by going out of the city to intercept fishermen bringing their catch to Chester for sale. In September 1404, for example, five fishmongers were indicted for repeatedly going to Mollington, Shotwick, Burton, and Denhall to buy fish.[43] Non-resident fish-dealers were evidently required to register with the authorities, and the names of these *piscatores de patria* were listed in the Mayors' and Sheriffs' Books in the 15th century. They travelled considerable distances, from the landlocked counties of Staffordshire, Shropshire, Herefordshire, Warwickshire, and Worcesterhire, to buy fish.[44] Much of the trade took place away from the market, often in inns, as was the case at Exeter (Kowaleski 1995, 316). Complaints arose in Chester in 1475 that 'foreign' fish-dealers (i.e. non-citizens) did not bring their fish to the market place to sell, but sold it privately in various houses (Morris 1894, 402). Fish was regularly purchased at inns outside the Northgate in the second half of the 15th century (Laughton, forthcoming). It is possible that some of the herring which was traded had been caught and salted at Meols, and that local supplies were boosted by herring brought to the village from the Isle of Man.

DOCUMENTARY EVIDENCE FOR SOME CATEGORIES OF ARTEFACT FOUND AT MEOLS

Pilgrim badges (1856-1870)

Pilgrimage was a familiar aspect of religious life in medieval England, undertaken to seek healing, to give thanks, or to venerate a particular saint. Hundreds of churches contained shrines, which were visited individually or as part of a tour. Many pilgrimages were local affairs, but considerable numbers of English pilgrims made the journey to Rome or to Compostela, and some travelled as far as the Holy Land. Pilgrims from the continent made their way to England, to show their devotion to English saints. Badges were purchased as souvenirs and pinned to hats and to cloaks as treasured mementoes (Swanson 1989, 294–5; Rubin 2005, 104).

Three cult objects held in particular veneration at Chester were the remains of St Werburg at the abbey, the girdle of St Thomas Becket at the nunnery, and, of greatest significance, the Holy Rood at St John's. The fame of the Rood grew in the late 13th and early 14th century and spread beyond the city. It was especially revered in Wales, and known in Gascony; the oath 'by the rood of Chester' was sufficiently familiar to warrant mention by Langland in his *Vision of Piers the Ploughman* (Thacker 2003, 85–6; Lewis B. J. 2005, 6–21, 24–5). Pilgrim badges were manufactured in the city. A plumber was taken to court in 1492 for failing to deliver two moulds, one depicting flowers and the other an image of St John.[45]

Two places of medieval pilgrimage lay close to Meols. Hilbre Island (4.4, above) had been a holy site since Anglo-Saxon times, if not earlier, and perhaps derived its name from a holy woman called Hildeburg. The site with its pre-Conquest chapel may already have attracted pilgrims in the Anglo-Saxon period (Dodgson 1972, 303; Griffiths 1996, 53; Thacker 1987, 256, 289). The chapel was granted to St Evroul before 1081 and later became a cell of St Werburgh's abbey. The link with a female saint was retained; the monks' chapel was dedicated to the Virgin Mary. The island's fame as a pilgrimage centre perhaps increased in the early 12th century thanks to its association with a miracle performed by St Werburg. The saint was said to have formed new sandbanks and created a ford at Hilbre, which enabled the constable of Chester to cross the Dee to rescue Earl Richard, trapped by the Welsh at Basingwerk Abbey (Ormerod 1882, ii, 501; Dodgson 1972, 304). The earl had been making a pilgrimage to the shrine of St Winifred at Holywell when he was ambushed. There had been a chapel at this well since the 7th century, and such was the well's fame that pilgrims travelled great distances to visit it. A recent history of the shrine claims that it was signposted from as far afield as Northumberland and Norfolk and that, with St David's in Wales, it was part of a vast circuit of pilgrimage (David 1971).

The ships bringing wine and iron, which anchored in the Dee Estuary, linked Chester and Wirral to Gascony and Spain, and to the pilgrimage routes to Compostela (see pilgrim souvenirs ***1865-1866***). Foreign sailors and merchants doubtless carried pilgrim badges as talismans, and English travellers had ready access to ships sailing across the Bay of Biscay. One Wirral resident known to have made the journey was William de Tranmull (Tranmere), witness at the inquiry into the age of John son and heir of William Launcelyn held at Chester in 1392. William remembered John's baptism in the church of Nether Bebington on 6 December 1370, because on that day he began his journey to St James (of Compostela) (*Cheshire Sheaf*, 26, 1929, no.5826).

Political badges (1871, 1872)

The leading magnate family in the palatinates of Lancaster and Chester in the 15th century were the Stanleys of Lathom and Knowsley in Lancashire. During these years their accumulation of official positions and lands enabled the Stanleys to build up an impressive patrimony, particularly in south-western Lancashire, north Wales, and north-western Cheshire. In 1406 Sir John Stanley acquired the Isle of Man with its crown, a lordship which enabled him and his heirs to wield quasi-regal powers, including the receipt of customs revenues. Soldiers who served on the island wore the badges of Stanley, Lord of Man (Dickinson 1996, 4–6, 20). The family had trading interests. In 1416–17 a ship of John Stanley called the *Mare* of Man was named in Chester's local customs accounts; the *Mare* of lord Thomas Stanley of Man entered the port in September and December 1474, with Chester fishmongers on board. One of

them leased a house in Watergate Street from William Stanley of Hooton, who also held property in Meols.[46] Thomas Stanley's father, the 1st lord Stanley, was granted a 20-year lease of the valuable fishery in the Dee at Chester in 1451, and at the time of his death in 1459 he held property in Seacombe, Liscard, Poulton, and Kirby Wallaley (Clayton 1990, 147; Ormerod 1882, ii, 479). The 2nd lord Stanley was appointed justice of Chester in 1462 and remained in office until his death in 1504. His brother, William Stanley of Holt, served as chamberlain from 1461 until 1495. With his wife, Lady Margaret Beaufort, Thomas was a major benefactor of the chapel at Holywell, and Stanley emblems feature in the chapel (Harris 1979, 13, 20; Jones 1988, 9).

John Talbot, second earl of Shrewsbury, was appointed justice of Chester in 1459. A firm Lancastrian, he was killed in July 1460 at the battle of Northampton (Clayton 1990, 77, 149–50). Three entries in the court rolls of Chester's sheriffs reveal his association with townsmen in sales of wine.[47] He was a close ally of Queen Margaret, who saw Cheshire as a source of valuable support in the late 1450s, the years immediately preceding the outbreak of the Wars of the Roses. She visited Chester with the king and their son in October 1456, and in the summer of 1459 she and the young prince came to Cheshire again, in an attempt to gather support. Badges with the Lancastrian symbol of the white swan were distributed to all the local gentlemen (Clayton 1990, 76). The queen was following the precedent set by Richard II, who had showered favours and money on the men of Cheshire at the end of the 14th century. He made the county a principality and distributed his badge of the white hart to the hundreds of men-at-arms and retainers enlisted into royal service.

Seals

In the late medieval period the most prosperous townsmen possessed personal seals, some of them made of silver and attached to silver chains (*Cheshire Sheaf*, 36, 1941, nos. 7902, 8019). Seals were produced in the city. At the start of the 14th century, for example, Thomas the goldsmith made a copper seal to be used at the castle until the palatinate seal arrived.[48] A copper-alloy seal matrix was discovered in the summer of 2004 during excavations at the amphitheatre (Ainsworth and Wilmott 2005, 13). A personal seal matrix bearing the name 'Will[elm]i de Meles' was found at Meols (**2321**). Two men named William Meols were recorded at Chester in the late medieval period: the clerk William Meols, who in 1392–3 acted as keeper and approver of Chester's corn mills and fishery next to the Dee Bridge, and William Meols who owed 10s to the stewards of the Fishmongers' company in 1515.[49] William was attested as a family name of the Meols of Wallasey in the 16th century (*Cheshire Sheaf*, 15, 1918, no. 3524).

Arrows, crossbow bolts and coins

The arrow heads among the medieval finds at Meols are not unexpected. Villagers throughout England owned bows and arrows and were duty-bound to practice their skills for military purposes; they doubtless also hunted from time to time. The crossbow bolts, however, are somewhat unusual in a village context. Edward I's campaigns against Wales in 1277, 1282–3, and 1294–5 may provide an explanation. In those years Chester served as a major supply base and troops, provisions, weapons, and equipment poured into the city. The soldiers and sailors, the workmen cutting paths and roads, and the carters bringing supplies, were paid every three or six days, in cash. Skilled archers and crossbowmen were paid 3d or 4d a day and ordinary foot soldiers and labourers received 2d a day; groups of archers and sailors were regularly given half a day's pay to drink the king's health. Edward's need of ready money was great, and barrels of coin were sent to Chester by cart (J. E. Morris 1901, 138–40). Crossbowmen were employed in increasing numbers. When the fleet arrived in July 1282 to join the king and Rhuddlan became the main naval base, up to 350 crossbowmen and archers went on board as marines. Initially, 4000 quarrels were distributed and more were handed out later. In December 1282, 52 mounted and 533 foot crossbowmen, most of them from Gascony, were serving in north Wales. They brought with them some 70,000 quarrels in 29 barrels and 12 baskets and thousands more quarrels were sent from Bristol and London (J. E. Morris 1901, 160, 162, 173). Edward's Welsh campaigns perhaps help to explain the number of coins pre-dating 1307 and the 36 crossbow bolts discovered at Meols (see also Davey, below).

Horse trappings

In the 17th century horse racing took place on a five-mile course stretching from Wallasey to Hoylake (4.5). The horse races remained fashionable in the following century. The first sweepstakes were established in 1723, and subscriptions to the 'Wallasey Stake' from the Dukes of Devonshire and Bridgewater, and from Lord Derby and other titled gentlemen made the prize money the 'most considerable' in the kingdom. The races were run on the first Thursday in May each year and attracted large crowds of spectators (Ormerod 1882, ii, 474–5). The event is a possible source of some of the horse trappings found at Meols (e.g. **2324-2337; 2828-2863; 3137-3138; 3176-3178**). Other horse trappings may have belonged to troops *en route* for Ireland. In 1689, for example, William III's army of 10,000 men camped for a week at Neston before embarking at Hoylake. The army of the duke of Schomberg camped in the adjacent townships of Great and Little Meols; the memorial stone for one of their number who died during the wait can be

seen in the church of West Kirby. In 1690 the king himself sailed from Hoylake, accompanied by '400 recruits of horse' aboard some 300 ships (Place 1994, 25, 58–9; Ormerod 1882, ii, 486).

18th-century shoe buckles

An exceptionally large number of shoe buckles made of copper alloys or lead/tin were found at Meols (**3046-3091**). Shoe buckles were shipped into the Isle of Man in 1696, and it is likely that there was always a strong demand for such cheap yet fashionable products in this industrially backward region. Another source of shoe buckles may have been the loads of old brass known to have been shipped from Dublin to Chester and Liverpool in the mid-16th century, in vessels from Hilbre, Neston, Liverpool, and Wallasey (Dickinson 1996, 281; Wilson 1969, 76, 80–82, 86–88). This 'recycling' may have continued in the following centuries, and some of the old brass (and other metals perhaps) possibly arrived in the form of shoe buckles. Spectators at the horse races may also have lost shoe buckles.

Perhaps not all losses were accidental. In 1773, as the captain of a cargo vessel wrecked on the north Anglesey shore lay exhausted on the beach, a looter cut off his shoe buckles (Place 1994, 135). In 1839 Cheshire and Cornwall were allegedly the worst counties in the kingdom for wreckers (4.5), and Wallasey people were said to pray for their parents and for 'a good wreck' in the morning (Woods and Brown 1960, 121). Such activities may have had a long history.

Notes

1 CCALS, ZMB 3, f.58.
2 Map of Great Britain known as the Gough Map (Bodleian Library facsimile, 1958).
3 TNA: PRO, CHES 25/12, m.28d.
4 CCALS, ZMB 1, f. 20.
5 36 *DKR*, 337.
6 CCALS, ZSR 51, m.4d; TNA: PRO, WALE 29/290.
7 CCALS, ZSR 132, m.1d; ZSR 135, m.1; ZSR 143, m.1d; ZSR 195, m.1d.
8 TNA: PRO, CHES 25/12, m.37.
9 CCALS, ZSR 515, mm.18d, 25d.
10 CCALS, WS 1613 Linaker; Admon + Inv 1618 Betson; WS 1628 Urmston; WS 1631 Pemberton; WS 1637 Guile; WS 1676 Guile; WS 1677 Dalby; WS 1681 Gowing; WS 1683 White.
11 TNA: PRO, E 101/487/5.
12 TNA: PRO, SC 6, 792/9, m.4; 794/1, m.5.
13 BL, Harl.Ms.2009, f.63v.
14 CCALS, DFI/133.
15 CCALS, ZMB 3, ff.61, 85v, 86, 97; ZSB 1, ff.29v, 56v, 77, 79; ZSB 1, ff.58, 60.
16 CCALS, ZMB, f.33v.
17 *CCR*, 1396–9, 273; *CPR*, 1391–6, 522; *CPR*, 1396–9, 438; *CPR*, 1401–5, 281, 503; *CPR*, 1405–8, 149, 476; *CPR*, 1413–16, 38.
18 CCALS, ZCH 8.
19 TNA: PRO, SC 6/771/2, m.8; SC 6/771/9, m.1.
20 TNA: PRO, SC 6/779/10, m.1d.
21 CCALS, ZSB 1, ff.127, 167, 168v; ZSB 2, f.80.
22 CCALS, ZSB 1, ff.28v–35v, 55v–62v, 73–9v; ZMB 3, ff.63–63v, 85v–86v.
23 CCALS, ZSB 1, ff.24, 24v, 36, 37v, 70v; ZSB 2, ff.91v, 92; ZSB 3, ff.9v, 28. ZMB 1, f.51; ZMB 2, ff.17, 37v, 39, 41, 80v, 82.
24 CCALS, ZSB 3, ff.62v, 63.
25 TNA: PRO, CHES 25/10, m.20; CHES 25/11, m.3d.
26 TNA: PRO, E 134/14 CHAS I/EAST 27.
27 TNA: PRO, SC 6/787/4, m.3; SC 6/787/7, m.3; SC 6/792/8, m.5; SC 6/793/8, m.5d; SC 6/793/10, m.5d; SC 6/795/4, m.5d; SC 6/795/8, m.7d; SC 6/796/4, m.8; SC 6/796/8, m.5.
28 TNA: PRO, CHES 25/12, m.36.
29 TNA: PRO, WALE 29/291.
30 CCALS, ZSB 4, ff.104, 108.
31 CCALS, ZSB 1, f.29v; ZSR 385, m.1.
32 CCALS, DFI/133.
33 I am grateful to David Hall for this suggestion.
34 I thank Jessica Dijkman of the University of Utrecht for providing details of her research in advance of publication.
35 *Calendar of State Papers: Ireland*; 1509–73, 281.
36 36 *DKR*, 491.
37 CCALS, ZCR 60/8/3.
38 TNA: PRO, CHES 25/12, m.9d.
39 CCALS, ZSR 331, m.1.
40 CCALS, ZMB 1, f.8v.
41 CCALS, ZMB 4, ff.40–40v.
42 TNA: PRO, CHES 25/15, mm. 14, 31.
43 TNA: PRO, CHES 25/9, m.37.
44 CCALS, ZMB 1, f.36; ZMB 3, f.62v; ZMB 4, f.27; ZSB 2, f.24; ZSB 3, f.70v; ZSB 4, f.12.
45 CCALS, ZSR 391, m.1d.
46 CCALS, ZMB 3, f.33v; ZSB 3, ff.14, 29; BL, Harl. Ms 2046, f.27v.
47 CCALS, ZSR 303, m.1d; ZSR 315, m.1d; ZSR 316, m.1.
48 TNA: PRO, SC 6/771/7, m.1.
49 TNA: PRO, SC 6/790/3, m.3; CCALS, ZSR 515, m.25d.

(Abbreviations, p. 465)

NOTE ON MEOLS AND THE WELSH WARS

Elizabeth Davey

Activity began in 1241 when Henry III visited Chester and initiated work on new castles at Dyserth and Deganwy. Meols, with its easy access to the north Wales coast and the Irish Sea, would have experienced an increase in seaborne traffic as Henry mustered men and supplies. One item, the 'fine white stone' used for the dressings at Dyserth, may even have come from quarries in north Wirral. By 1245 Henry was at war but his attempts to recover the lands to the west of the Dee eventually failed and both Dyserth and Deganwy fell to Llywelyn ap Gruffydd and were totally dismantled in 1263. It was left to Henry's son, Edward I, to bring north Wales under English control. Edward's campaign began in 1277, with further forays in 1282-3, 1287 and 1294-5. He utilised manpower and resources from all over England as well as Ireland, Ponthieu and Gascony but he drew in

particular on Cheshire and Lancashire. Water transport was critical. Twenty five ships from the Cinque Ports were sent in 1277, as well as ships from Southampton and Bayonne (Morris 1901, 106). Even more, 40 in all, were sent in the war of 1282-3, together with two 'great galleys' from Romney and Winchelsea. Local boats too were bought or requisitioned, some for troop carrying, some for cargo (Morris 1901, 173).

Among the troops were crossbowmen and Morris comments on the 'enormous supplies' of crossbow ammunition assembled for their use (Morris 1901, 91-2). The main source for these was the workshop at St Briavels close to the Forest of Dean, but they were shipped from a depot at Bristol. In 1277 Imbert de Monte Regali, commandant of crossbows, bought thousands of bolts at a time for his brigade at Flint. Just as important to Edward as the army and navy was the civilian workforce. A crucial element of his strategy was the establishment of a ring of castles round the coast of north Wales, all capable of being provisioned and garrisoned entirely by water. Contemporary accounts and pay rolls record hundreds of diggers, woodmen, masons, quarrymen, charcoal burners, and blacksmiths all converging on Chester (Morris 1901, 139). Both soldiers and workers were paid and for a time at least a considerable quantity of money was in circulation in the area. The Wardrobe itself moved to Chester and sums of money, amounting to thousands of pounds, were sent from the Treasury in the Tower as well as from Ireland to pay for wages and materials. One record even describes five barrels of specie carted up to the headquarters at Chester (Morris 1901, 138). A peak in coin usage and casual loss during this period could therefore be expected.

Immense quantities of timber were needed for the construction of the castles. One of the first accounts dates from July 1277 when trees were felled in the forests of Toxteth and Cheshire, their timber to be used at Flint and ferried to the castle site on rafts (Taylor, 310). In the second campaign, in 1282, timber was despatched from Delamere Forest on a number of occasions and boats were sent to ship it to Rhuddlan, while timber described as 'from Lancashire' arrived at Rhuddlan by water in the first week of August. However by far the greatest quantity of timber went to Caernarfon. This was sent out from Liverpool, where a special clerk was appointed to arrange its loading, a process which took nearly two months. The accounts record the clerk's daily wage of 4 x d.being paid for 58 days. Given the vagaries of wind and tide it seems likely that as they passed round the north shore of Wirral shore at least some of these shiploads of timber broke their journey at Meols (Taylor 1963, 372). Equipment and other building materials were also required and stocks of woodcutting, clearing and digging tools were assembled at Chester Exchequer accounts from 1276 to the early 1300s record payment for picks, crowbars, shovels, spades, sieves, a wide range of nails and even a pair of scales (Taylor 1963, 332).

Wages are also recorded for specialist craftsmen and metalworkers, including smiths, plumbers and at least one goldsmith. Apart from the manufacture and repair of tools and weapons they produced numerous items like locks and hinges necessary to the castle building. An early 14th century account for Caernarfon even mentions payment for the manufacture of a dozen iron spikes to prevent birds sitting on the head of a statue of the king. The same account mentions the forging of masons' hammers and punches, the grinding and sharpening of chisels and the making of the little metal drawing instruments used by the master of works.

Clearly the Caernarfon smiths were based in the castle itself but this may not always have been the case. The preparation of at least some of the building material was done "off site" in Wirral; for example 10,000 stones were sent to Flint, ready dressed, from a quarry at Shotwick in 1277 and in the building season of 1278, £53 was paid to masons preparing stones at the quarry at Nesshead (Taylor 1963, 311). If this was true for stone, admittedly a bulky item, it may also have been true for metalwork and individual metalworkers may even have been based at Meols. This is conjecture. What is certain is that the later 13th and the early 14th century saw a level of activity in the Dee and Mersey on a scale that was not to be repeated for centuries. Meols, occupying a pivotal point between the two estuaries, undoubtedly shared in what went on.

5. Conclusions

5.1 Content and integrity of the collections

David Griffiths, Robert Philpott and Geoff Egan

Meols is an unusual case study in British Archaeology. The record of archaeological discovery at Meols over two centuries cannot straightforwardly and uncritically be compared to that produced by a structured programme of investigation. Field survey and excavation, especially to anything approaching modern recording standards, have played a negligible role in the creation of the Meols collections. However, in the preparation of this monograph, careful study and cataloguing, coupled with scientific analysis and recording, have permitted a series of interpretations to be built that have gone at least some of the way to illuminating the archaeological significance of the finds. Much of the meaning that has been read into the Meols material here is based on comparison and interpretation of individual objects or groups of objects with parallels from elsewhere, with reference to the environmental, prehistoric, and historical background of the north Wirral coast and its wider region. However, any attempt to compare Meols in functional and historical terms with other sites and landscapes must take account of the individual factors that have produced the Meols assemblage.

Coastal erosion and retreat provided the means by which the Meols material came to light, and in effect therefore functioned as the factor 'excavating' the remains. Until the line of the coast was stabilised by completion of sea defences in the later 1890s, erosion and long-shore drift achieved what almost no human-led excavation (certainly of the 19th century) was capable of achieving: a near -100% dismemberment of a landscape. This involved the removal of vast tonnages of silt and sand, and the reconstitution of dry land, once with substantial archaeological remains, as a reduced and degraded spread of disturbed and vulnerable traces of ancient settlements in the inter-tidal zone.

Added to the tremendous and relentless destructive power of the sea in exposing the archaeological remains is the entirely happenstance series of human connections and realisations in the mid-19th century that led to their retrieval, recognition, and (at least to some extent) safeguarding for the future. Several unprecedented factors came together; most propitiously it now seems, in the late-1840s and early-1850s. This was precisely the time at which Liverpool was emerging from its past as a raw and fast-developing boom-town, which within living memory had been heavily involved in the slave trade, to acquire a new aura of middle-class respectability with a suite of new cultural institutions to match those already in existence in London and elsewhere. The Historic Society of Lancashire and Cheshire was founded in 1848 and the Liverpool Public Museum in October 1860. Wealthy and influential figures, such as Joseph Mayer, brought prestige to these and they rapidly attracted new members and visitors. Without regular meetings, with their robust exchanges of views, and the growth of the society's new *Transactions*, first Hume and subsequently others would not have been able to generate the interest and sense of shared enquiry that gave rise to the antiquarian story at Meols. Perhaps indeed there is yet more to this: the new and aspiring Historical Society needed a focus. Its home city was widely regarded as an epitome of modernity, with its docks, tenements, warehouses, and new railways. Unlike the antiquarian societies in London or the more ancient cathedral or university cities, there was relatively little to preoccupy the Liverpool antiquarians in the city's fabric itself, although they evidently took pride in its growing civic grandeur. Meols provided a local source of interest, a regular supply of antiquities that could be exhibited, and a source of intrigue, controversy, and debate. It was an entirely open landscape (and from 1866 onwards was conveniently within a few minutes' walk of a suburban railway station) that anyone could visit and collect what they could find; it was not protected by any form of legislation (indeed no protection was afforded to any archaeological site or monument in England until 1882 and it would be much longer again until coastal landscapes and inter-tidal areas received any statutory protection). There was no reason to fear being accused of trespass or theft of objects from the shore at Meols, and the only dangers came from the rising tide and thick mud in the 'Ancient Forest'. In short, it was an ideal focus of interest for the new men of learning in Liverpool, inspired as they evidently were by the formidable energy and articulacy of Hume, and no doubt equally impressed by the diligence and knowledge of Ecroyd Smith.

Factors governing the size and composition of the assemblage

There are a series of different emphases and foci within the Meols collections, which reflect varied conditions of topography; site formation, occupation, and abandonment; the time and manner of exposure; levels of *in-situ* preservation; retrieval bias, and post-retrieval survival. These must be considered in order to inform meaningful comparisons with

other sites and collections elsewhere. Due to the informal and piecemeal means by which they were amassed, the collections of objects from Meols are very largely unstratified and lack a secure archaeological context. These may be partially reconstructed in very general terms in relation to contemporary stratigraphic and topographic observations, but for the most part we remain reliant on 19th-century observations to make any sense at all of the material. Our knowledge of the sites or structures from which they derive is tentative, although there is more coherent evidence for medieval settlement than for other periods (1.2). There remains, however, an imbalance in terms of the available evidence for what Meols represents as a settlement or settlements throughout its long chronology. Historical sources, which begin to emerge in the Roman period, are only helpful in very general and unspecific terms before the 12th and 13th centuries AD (4.6), but it remains the case that at no point in its development is Meols accorded any form of particular status or independent regional significance as a settlement or port by any historical account. It is yet remarkable that such a little-known place, which is not mentioned at all in any historical account until the Domesday Book of 1086 and thereafter apparently only as a minor rural settlement, could have produced an assemblage of such extraordinary range and complexity, which is particularly the case for the later medieval period.

The ground surface at Meols, in contrast to nearby Red Rocks and Hilbre Islands (which are 'hard' sandstone outcrops), must always have been soft, malleable, and easily eroded. The occupation of the various sites and foci at Meols and the realisation of the benefits of settling in this liminal area with access to the sea was inevitably a continuous battle with the environmental forces affecting the low-lying coastline. The instability of the archaeological layers is one reason why so little in the way of *in-situ* structural evidence has survived. The agricultural soils around the settlements of the medieval period (3.2), known as the 'soil bed' was evidently not a 'naturally-occurring' soil, but evidence of a sustained attempt to create viable cultivation on very unpromising and sandy terrain. The admixture of stabilising materials is the only way to achieve this – an effect that may have resulted in domestic and farmyard refuse intermixed with archaeological material being spread extensively across the fields. Ecroyd Smith's observations of material arising from the 'soil bed' (1.3) at seemingly some distance from the core of medieval settlement make a great deal of sense when this factor is considered. The attempt to stabilise the agricultural soils would have had to be renewed almost constantly as winter storms deposited layers of new windblown sand and unhelpful salt-laden marine detritus across the surface of the landscape. The constant digging and shifting of layers in the attempt to preserve the field soils clearly delved into the earlier geological layers of peat and clay, producing a yet more complex and disturbed context for the archaeology. These factors underlie the antiquarians' observations, particular those of Hume and Ecroyd Smith, that much of the material was already apparently detached from its original context when found.

The action of the sea in disaggregating the overlying sand-dunes and washing away lighter agricultural soil, seemingly reducing Roman and medieval finds to the same level as the 'Ancient Forest' or Upper Peat Forest Bed (3.1), also served to sift vulnerable and easily-decayed organic materials from the more durable metal and stone objects, again introducing another factor of pre-retrieval bias. In the early phase of collecting (*c.* 1814–46), curiosity-hunting was the main or exclusive motive. This had the effect of favouring metal items, particularly decorated metalwork and coinage. There is almost no evidence that any other type of material was picked up at this stage, despite the likelihood that the main concentration of Roman remains on the eastern fringe of Dove Point was probably still accessible at this time. Indeed, much of the finer-quality metalwork from the early days of collecting seems to have disappeared before the point when it might have entered a museum collection, as demonstrated by the poor survival rate of the Roman brooches. There followed an intermediate period of collecting and observation (1846–75). This was characterised by the influence above all of Hume and Ecroyd Smith, who for the first time brought an archaeological sensibility to the pursuit, which resulted in the first serious academic discourse about Meols, exhibitions of finds, and a series of publications. Ecroyd Smith was the first to take any serious interest in collecting pottery and clay pipes in addition to metalwork and coinage. Furthermore, the importance of Ecroyd Smith's careful accessioning of the material in Liverpool Museum cannot be underestimated. Nevertheless, it seems clear from the writings of Hume and Ecroyd Smith that, despite the regularity and evident accuracy of their observations and awareness of the geological strata, they encountered only fleeting and fragmentary structural evidence to accompany and explain the flow of finds. Ironically it was Potter and Cox, their successors in the period 1875–95, who had the good luck to be present when a much more significant concentration of buildings and structural evidence was revealed; a concentration that was evidently more impressive than anything seen since the 1820s. Collecting from this latter phase seems to have taken place at a very different and more complete level to that of previous decades. The structural context of Potter and Cox's finds, in the form of stone-founded and wattle-constructed buildings, in one case overlying an earlier roundhouse, was much more visible and easily understandable than that of previous discoveries; it had not already been entirely intruded upon by the sea, and there is evidence in their writings that much of the material was retrieved from primary contexts in middens and occupation layers. Hence the 'capture' of material during this period was of an entirely different order,

and is reflected in the much more varied contents of the Potter Collection in comparison with the others. Organic items, such as wool, leather and wooden implements, together with large numbers of utilitarian objects, such as fishing weights and hooks, iron tools and knives, contribute an entirely new dimension to the archaeological picture. None of these were in any sense desirable as *objects d'art* or as valuable antiquities, yet Potter collected them all the same.

The excellent condition of many of the finds from Meols, including lead-tin objects (an alloy that is highly vulnerable to decay in most soils), is a result of anaerobic, if not actually waterlogged, conditions of burial. It appears that the combination of low-lying, and therefore wet, soils with the overlying sand deposits created special environmental conditions that were highly favourable to the preservation of a range of different kinds of metal and organic artefacts. The 'Meols Patina' (Adams 1994), so consistently observed on the bronze coinage, for instance, is a surface condition most probably produced by survival in wet contexts. The recovery of artefacts of leather, textile, and wood, as well as iron in a good state of preservation not only owes much to favourable soil conditions, but also to a rapid and near-complete practice of retrieval, which was particularly pronounced in the period 1875–95. The unprecedented scope of the retrieval of material from Meols raises some interesting questions about the process by which objects were discarded. In a scenario of manufacture, acquisition, and use of material culture, there is an assumption that the 'normal' process would have involved the recycling of broken or damaged objects where possible, and the discard of items considered irreparable, such as broken ceramic and wooden vessels or worn-out leather items.

The accumulation of a sequence of casual loss of individual items cannot explain the entire assemblage. In the case of the coins, where neither recycling or deliberate discard are plausible in most circumstances, casual loss is clearly the most likely explanation, particularly in view of the small size of the relatively common fractional quarter - and half-pennies. One component of the assemblage results from the usual process of loss and discard of items through time from the routine domestic and agricultural activities of the inhabitants. Although broken metal objects might be destined for recycling, worn out or broken leather and wooden objects might be discarded (e.g. the medieval shoe recorded as being found in a midden: Cox 1895); this would be accompanied by a minor component of all materials accidentally lost over time. Some items would be more likely to be lost and not recovered than others – the small fractions (half and quarter) silver pennies are particularly prone to loss.

In particular, the size of the later medieval finds assemblage from Meols is in excess of what would have been in the possession and domestic use of the villagers. For the common metal items, such as belt and strap-fittings, the quantities involved are too large to have formed through casual loss. There is probably an element of manufacture and trading too; the assemblage does not solely represent the loss of domestic possessions belonging to the residents of the hamlet of Meols, but in part the loss of small metal items alongside coins in an informal 'hidden' market; commercial activity that resulted in the circulation of a volume of material additional to that possessed by the inhabitants of the village or hamlet of Meols. This would introduce a greater volume of material circulating in the township than was used simply by its inhabitants. Occasional, if at times lengthy , military campaigns in the region, perhaps most obviously that of the W elsh Wars in the reigns of Henry III and particularly Edward I (4.6) may have introduced a significantly greater temporary population presence, with implications for the representation of not only military materials, but also coinage and everyday domestic items. The possibility of a temporary encampment on the margins of the deepwater anchorage at Meols convenient for transportation along the Welsh coast introduces the possibility of extensive traces of occupation and small-scale manufacturing, with associated casual loss of objects in the sand-dunes and along the shore.

The nature of possible temporary occupation is perhaps significant here. T opographically the sand-dunes and pasture along the shore may have provided the intermittent temporary camp for a large body of men over several seasons of campaigning. Whilst billeting of troops could have taken place, it is more likely that many were housed in tents, perhaps on pasture away from the village centre. The W elsh Wars thus provide a context for the massive influx of additional material to the settlement. The high rate of casual loss of personal items as well as coinage, is best explained by the exceptional circumstances of the military campaigns. The volume of coin loss, which is high in the period of the first two Edwards and falls away afterwards, has been explained as a normal pattern reflecting the high volumes of coins minted at that time. However , the volume of coins lost for a rural settlement is unaccountably high. For such a volume of coinage to be in circulation might conceivably be accounted for by the existence of an informal market or fair , but the presence of a transient population of well-paid soldiers and cross-bowmen, paid in coin, would provided a convincing explanation for the rate of coin loss at the site. It is true also that the quantity of other objects is also extremely high. The mass of material demands some special explanation – the military context of the Welsh Wars is a strong contender for the origin of these (4.6).

A pattern of loss might be continuous, but fluctuating according to the volume of commercial traffic, occasional military activity , and the number of associated transactions. The late medieval decline in commercial activity, which resulted in the loss of many smaller boroughs nationwide, might account in part for the low coin loss after Edward III, but could

also in part be a reflection of the low volume of coinage of that date in circulation in any case (2.4). The loss of some material, especially of small fractions of coinage and other small items, may have occurred through circumstances of trading. The physical conditions of the 'market-place' may have increased the chances of loss of objects going unnoticed; the absence of paved streets may have rendered this material more difficult to recover once lost than on a metalled street or market place. The coin assemblage includes a large proportion of cut halfpennies and farthings, tiny fragments, which once lost would be difficult to recover by comparison with whole coins. A similar pattern of recovery of a high proportion of cut halfpennies and quarters by comparison with whole coins by metal-detectorists has been used to identify a possible medieval fair site at the Albany, Ipswich (Newman 1994, 129). Manufacture at Meols of items for sale to outsiders or for domestic consumption would also be a factor in increasing the variety of the assemblage. Several groups of material have been identified as locally manufactured (2.5). These represent material beyond normal domestic possessions.

In addition to the above ongoing processes of loss are likely to be episodes of inundation by sand or sea. Sand blows and encroachment of dunes may have occurred at different times with varying degrees of severity. The experience of other places on the west coast suggests these may have affected smaller or greater areas of land at different times, either from the shifting of dunes or covering of land by blown sand. The loss through sudden inundation by sand of domestic objects, tools and personal possessions, fittings and so on, while this may account for a substantial quantity of material being lost of contemporary date, ought to be detectable in the archaeological record by one or more sudden peaks of material of contemporary date. This would account for a wide range of material of different types; agricultural tools, personal fittings, dress fittings, shoes, etc.

Such peaks can be detected amongst the later medieval material. The leather shoes are mostly of a style fashionable in the late-14th and 15th centuries; a metalwork peak can be seen in the 13th–15th centuries.

To the biases inherent in retrieval practices of the various searchers and collectors, and the preservation and survival of material in its archaeological context, must be added the fraught and unpredictable journey of much of the material between retrieval and entry into museum collections. Hume's *Ancient Meols* and the articles of Ecroyd Smith and Potter allow the extents of known material at various times in the 19th century to be reconstructed with some degree of confidence. What happened to it all subsequently is another matter. It is impossible to reconstruct all the various transactions, loans, gifts, losses, and discards of material when it was in private hands. Some of the collectors were evidently persistent and systematic in their collecting habits, but this did not always translate into any great care being taken of their collections of material after their deaths, as indeed Hume's own case, and that of Ainslie, seem to show. Ecroyd Smith's and Mayer's collections fared somewhat better, having been accessioned to Liverpool Museum, and become public property, only then to fall victim in large part to the disastrous bombing of 3–4 May 1941. Some individual objects have also apparently gone missing from Liverpool Museum in the period since the Second World War, a situation that has been exacerbated by the lack of anything approaching a complete catalogue or integrated study of Meols. Of the significant antiquarian collections, only Potter's had the good fortune to be donated intact and in its entirety after his death to a public museum (at Chester), which unlike Liverpool was spared the depredations of wartime bombing. The collection was kept together and little was done to it until it was repackaged under modern conservation conditions in the 1990s. This survival in itself may be a further factor emphasising the extent and variety of Potter's collection in comparison with the others.

Authenticity of the attributions to Meols

Hume's *Ancient Meols* was published in 1863 and was accompanied by Ecroyd Smith's series of articles in the London reviews *The Gentleman's Magazine* and *The Reliquary*. Consequently the years 1863–65 saw the highest level of interest and public profile for the Meols discoveries at any time before or since. This publicity nevertheless generated a spate of controversy. This may have been building up in the years prior to 1863, but the mid-1860s saw it played out in meetings of learned societies in Liverpool and subsequently in the pages of their journals (1.1). The avowed critic of Hume and Ecroyd Smith (and indeed the only one to have come out unequivocally against them in print) was Joseph Boult (1.2). Boult attacked Hume personally in two addresses to learned societies, which were published as a pamphlet and an article. Hume reacted with vigour and in exacting detail; indeed, given the overwhelming evidence that supported his case, in retrospect he can perhaps be accused of an over-reaction. Ecroyd Smith also fulminated against Boult, as indeed he did at the same time against Sir Edward Cust's theories on the origins of the 'Leasowe Man' – the skeleton found on the shore near the Leasowe Embankment in 1864 (1.1; 2.25).

These controversies concerned the geological and stratigraphic case made by Hume and Ecroyd Smith. Boult's argument, that the forest beds at Meols had been transported by the River Mersey from peat beds many miles upstream at Chat Moss, was given a fair hearing (a version of his was published alongside Hume's article in volume 18 of the *THSLC*). Nevertheless, Boult evidently convinced few and, such was the ferocity of Hume and Ecroyd Smith's counter-attack, he seems to have been divested of any credibility within months. Hume alleged that Boult

had described the antiquities from Meols as a 'mare's nest'. Nevertheless, a careful reading of Boult's stilted prose in the published versions of his arguments shows that whilst he suggested various (often bizarre) reasons for why Roman and medieval artefacts were being found at Meols (such as the idea that the Roman material had been transported *en masse* within the travelling peat bodies), he did not question the fact that these objects had indeed been found at Meols – something that must have been beyond question to all at the time.

Significantly, a book published in 1905 entitled *Archaeology and False Antiquities* referred specifically to *Ancient Meols* (Munro 1905, 214–5), but rather than implying any falsehood in relation to Meols, in fact quoted Hume as an authority on the subject of penannular brooches (in relation to controversial finds of this type from Langbank, Scotland). We therefore search in vain for any surviving denunciation of the authenticity of the Meols finds from the period of antiquarian discovery, or indeed any such case made in print since. Nevertheless, it is important to air legitimate questions as to the authenticity of the Meols material, particularly as some very unusual objects (e.g. the pre-Roman coins, 2.4) have invited scepticism from some numismatic quarters. In a situation where there were a number of antiquarians competing with each other, it is indeed possible that in order to make their own collections more interesting or more extensive than those of their rivals, archaeological material could have been introduced from sites elsewhere and passed off as coming from Meols. There are ostensibly plausible contexts for this – prehistoric, classical, and other exotic antiquities were available in Britain in the 19th century, and were not difficult to obtain from dealers in London and elsewhere. Furthermore, over a century of being stored in private homes and then passing through the hands of generations of museum curators and their assistants may further have contributed to mix-ups, loss, and potentially the unwitting introduction of material from other sites. Conversely, the known history of the dispersal and sale of items from Meols is likely to mean that the net outflow of material disappearing onto the open market outweighed any potential introductions from elsewhere.

Hume, Ecroyd Smith, Mayer, Potter, Cox, and Newstead recorded no doubts about the location of the discoveries. To them it was an established and verifiable fact that the finds were recovered from the Cheshire shore. The precise findspots and most productive areas of the shore, although difficult to reconstruct today, were evidently shared and accepted knowledge amongst these people at the time. The reports of Hume and his colleagues were open to the scrutiny of contemporaries and would have invited potential ridicule had there been any doubt as to the location of the discoveries. Given the general lack of other ready sources for archaeological material in the region, it is furthermore very difficult indeed to see how local inhabitants collecting material from the shore on a casual basis could have obtained material from elsewhere to substitute and sell to the collectors as genuine Meols finds. The possibility that some of the material was obtained from Chester is not entirely out of the question, but there was also antiquarian interest particularly in Roman Chester at the time, hence anything more than occasional stray discoveries would almost certainly have come to the notice of the city's archaeological society. It is more likely, in fact, that one or two Chester objects may have migrated into the Meols collections much later as a result of lax museum practice, but in the primary collecting phase it is difficult therefore to see substitutions of Chester finds as posing anything more than a negligible factor in the Meols collections.

The vast majority of the material from Meols found in the 19th century was also exhibited to eminent audiences, and became well-known and well-published at that time. Hume and Ecroyd Smith promoted and sustained interest in Meols, attracting many other devotees to the cause; they were elected to and remained members of august bodies such as the Society of Antiquaries, and secured such important speaking engagements with organisations such as the Archaeological Institute or the British Association for the Advancement of Science: none of this would have been possible unless they were judged to be legitimate commentators by the majority of their peers in the mid-Victorian antiquarian establishment. There is, moreover, no evidence that any of the collectors were ever accused of substituting material from elsewhere, despite the fact that the various theories and interpretations ventured about the site were repeatedly challenged in robust discussion at meetings and in the letter-writing that prevailed in antiquarian circles at the time. There were significant disagreements about the nature of the discoveries, and there is evidence of a climate of competition between some of the collectors. Although Hume and Ecroyd Smith, and subsequently Potter and Cox, seem to have been friends and collaborators, there were rivalries and even animosities between some of those involved. Ecroyd Smith and Potter clearly had their differences, and Boult had of course received particularly scathing criticism. The very fact that this robust culture of criticism existed must in itself be a supporting factor in terms of authenticity. Indeed, the very fact that there was some rivalry between the Meols collectors would surely have mitigated against all but the most convincing of substitutions. The basis of the entire story, that Meols was the genuine provenance of the material, was apparently accepted universally.

Furthermore, it can now be seen that many of the Meols objects have local parallels – there are surprisingly few objects within the collections that do not have at least one or two comparative finds from north-west England, many of which are 20th-century discoveries, and some of which are from excavations with well-dated stratified contexts. Many of the parallels for the Meols material (such as the Roman

brooches, for instance, which contain a number of regionally-specific types) were not found until the later 19th or the 20th century, so to have confected such a convincing assemblage in the 1840s to 1860s, based on an introduced supply of objects from elsewhere, would presume a knowledge of material culture in the region that quite simply did not become available for many decades after that time.

There are other factors in supporting the authenticity of the collections: many of the copper-alloy objects have a consistent dark green-brown patina, known as the 'Meols Patina', which sets them apart from the generally lighter green patina characteristic of many comparable objects from sites elsewhere in the region. Perhaps most strikingly, some of the objects illustrated and described by Hume and colleagues have been followed by identical or near-identical discoveries in the 20th century. An example of this is the Roman Aucissa brooches **105**, illustrated in *Ancient Meols* (Hume 1863, pl. IV, 1a–c), and **106**, which was found on a section of beach that produced a number of 19th-century discoveries of Roman material, by a metal-detectorist in 1981. In fact, several of the most exotic, and therefore the most controversial finds, such as the St Menas Ampulla **300**, the Syrian tetradrachm **5003**, and the three Byzantine coins of the 6th century AD (**5123–5125**), were found not by 19th-century antiquarians, but much later, apparently entirely randomly by local individuals with no history of involvement in archaeological matters, and who in most cases were engaged in unrelated activities, such as dog-walking, gardening, or digging for lugworms on the beach. These finds now all have local parallels, in the case of the St Menas ampulla, a discovery near Halton, Runcorn, Cheshire, in 1981, the recent discovery on the beach at Seacombe of a follis of Justinian I dating to AD 548–9 found in 2006, and the reporting as late as 2007 of a second Syrian tetradrachm dated to the 1st century BC, found in 1950, at Bidston, only 5km east of Meols and within its hinterland as an ancient port.

Another argument against the authenticity of pre-Roman coins as ancient losses at Meols has been referred to elsewhere (2.24; 4.2). The fact that certain pre-Roman coins had been found in large hoards in the years before the publication of *Ancient Meols* cannot be used to invalidate all subsequent finds from western Europe and stigmatise them as probably from dispersed hoards from outside the region. If individuals were intending to deceive the collectors, why are there relatively so few exotic coins, since the effort involved in passing off single coins as if from Meols would hardly seem worth the reward? If local people or the antiquarians were buying material to pass it off with a Meols provenance, then it is not only the exotic pieces that are in doubt. However, our analyses of the rest of the material have not pointed to any obvious intrusions or substitutions. There is an unusually high level of support for authenticity in the form of two unambiguously-named local finds, a Meols family seal ***2321*** and a Lathom family seal ***2322***. Moreover, the western emphasis of the mint signatures of the medieval coins is appropriate to an Irish Sea port, as are the Scottish and Irish coins. The Roman coins are remarkably consistent with the Chester coin list, except for a large total of pre-Flavian coins, a peak at Meols corroborated by more recent finds, including pottery and other metalwork. There will yet be scepticism that the Mediterranean exotica in particular are genuine ancient finds – perhaps explicable instead as recent losses, possibly minor keepsakes from military service in the Middle East or north Africa during the First and Second World Wars, and eventually thrown out with household rubbish onto allotments or flower beds, or cast onto the muddy foreshore. Nevertheless, with every new discovery, the odds in favour of a genuine ancient provenance shorten slightly, and the chain of events necessary to produce the alternative (sceptical) scenario becomes in itself ever more convoluted and unconvincing.

5.2 Theories on the nature and function of the Meols landscape

David Griffiths and Robert Philpott

Meols (its name prior to the Viking period, if it had one, is unknown) was not a single site, but a series of settlements and areas of activity that occupied a coastal landscape area of up to 8km east–west by 1km north–south. These were in many ways exclusive to each other chronologically and spatially. The archaeological story of Meols is bound up with the fate of the former sandy promontory known as Dove Point (1.2 and Fig. 1.1.3). Until the 19th century Dove Point was a significant feature of the coastline, dominated by extensive sand-dunes and with sheltered tidal channels bordering its north-west and north-east flanks (3.2 and Fig. 3.1.4). Its gradual removal by marine erosion exposed the archaeological material slowly and in a piecemeal manner. This process, and the equally diverse and uncoordinated ways in which the retrieval, collection, and survival of archaeological material occurred, accounts in large part for its unusual, and in many ways perplexing, nature.

The coastal landforms and environment at Meols have throughout been a guiding factor in the ways in which humans have occupied and used this landscape. Since at least the mesolithic period, three 'islands' of slightly higher ground, one at Dove Point and two at Leasowe, separated by lower wetter zones formed by a buried river channel, have provided the basis for settlement zones relatively free from flooding, yet within easy reach of the rich marine and wetland ecosystems afforded by the coast and by the marshes and carrs lying behind it (3.1). Human occupation of the coastal landscape at Meols differed markedly in scale and location over time. Common aspects throughout, however, include fishing, hunting, and wildfowling in the marine and wetland

margins, later followed by the gradual establishment (against the repeated onslaught of wind-blown sand) of viable agricultural soils in the fields and pastures bordering the shore.

The tidal channels off the Meols shore remain a sheltered anchorage today for small boats. These channels are now dry at low tide, beaching craft within easy walking distance of the shore, and are sheltered from the open waters of the Irish Sea by the system of offshore sand-bars and shallows known as the Hoyle Bank. There is good historical evidence in the medieval and post-medieval periods for the role of the now-silted and vanished anchorage known as the Hoyle Lake, between Dove Point and the Hilbre islands as a major regional entrepôt for shipping (3.2; 4.6). Lacking formal quays or the status of a port in its own right, it nevertheless acted as a natural 'harbour', a stretch of sheltered water retaining depth at low tide adequate for temporary moorings of most seagoing ships, and providing a convenient central point for embarkation and provisioning at the outermost limits of the two important but navigationally-difficult estuaries. It was thus possible for seagoing vessels to avoid the lengthy and shallow passage upstream to Chester, or to Mersey ports such as Frodsham, by collecting people or goods that had made their way to the north-western tip of W irral overland or in smaller boats. Draining the wetlands to the south-west of Dove Point is the small River Birket, which opens out into W allasey Pool, a tidal side-creek of the Mersey Estuary until it was enclosed by docks in the 19th century. Hence Meols was once also approachable on a minor watercourse from the 'inland', using skiffs, punts, or log boats such as those found nearby at Moreton (1.2) and also in the bed of the River Mersey near W arrington, the latter radiocarbon-dated to the medieval period (McGrail and Switsur 1979). These factors combine to endow the location of Meols with a significant centrality in relation to the pattern of maritime and riverine traffic in this region, and as the furthest extension of land towards the open sea, a forward position for trading or military activity on the Irish Sea.

The advantages in the location of Meols, equidistant between the maritime outlets of the two estuaries and their hinterlands, with a sheltered drying anchorage, made it an ideal place for the trans-shipment of goods. This was at times combined with a role as a centre of sea-fishing activity. Meols also saw the occasional, possibly seasonal, but nonetheless important, temporary presence of people visiting to trade, to practise their skills of manufacturing, or in transit to military or religious destinations elsewhere – the latter in some documented cases being forced by bad weather to stay longer than they intended (4.6). Although most visible in historical sources of the medieval and post-medieval periods, these factors, we suggest, were the root of much of the economic activity that is arguably evident in the range of more ancient material retrieved from Meols.

From the later prehistoric period onwards we can see increasing evidence at Meols for the importation of coins, metalwork and other materials from elsewhere, and in some cases distant locations. The presence of individual items may prompt debate about their origins and provenance (2.4; 5.1), but the general pattern is consistent through the centuries. The Iron Age (4.2) saw the apparent beginnings of the role of Meols as a regional entrepôt, as trade in salt and lead began to create a network of economic connections along the Mersey and Dee estuaries. The Iron Age finds from Meols represent a highly significant concentration of material of this period, rare in the north-west of England, suggesting activity at the coastal site beginning in the 5th century BC and continuing, at least intermittently, up to permanent Roman settlement following the conquest of the mid-1st century AD. Its longevity must relate to the fact that, despite changes both in sea-level and in the intensity and direction of trade with the Continent during the Iron Age, it maintained a sheltered landing place that, for both Cornovian and neighbouring tribal groups, retained the tradition of a trading centre.

Meols has also produced some structural evidence that is most plausibly assigned to the Iron Age. Observations in the late-19th century indicate the discovery of at least three circular structures on the shore (1.2). The form of the structures, the contemporary stratigraphical observations, and the absence of associated Romano-British artefacts suggest that these were round-houses and that an Iron Age date is most likely. In addition to the circular structures at Meols, another possible Iron Age settlement has been identified along the north Wirral coast. The existence of a 'circular hut' along the shore at New Brighton, in Wallasey township, was recorded summarily in the 19th century 'some distance below high-water mark' (Cox 1895b, 44). The last circular structure to appear at Meols, observed in 1892, was described as '1 $^1/_2$ to 2 feet below the level of the high spring tides' (Cox 1895b, 44), suggesting that they were occupied during a phase of lower sea-level than that prevailing in the late 19th century (3.1).

The circular structures, although stratified in one case beneath medieval buildings (undoubtedly by coincidence), appear not to have been in the same location as the principal Roman focus. This was the earliest known concentration to be exposed in the 1810s and 1820s, lay to the eastern side of Dove Point, and a scatter of more recent Roman finds has confirmed the eastern side of Meols as the area most productive of Roman material. In the 19th century, Romano-British finds were largely confined to one narrow stretch of coastline, on the east side of Dove Point. By the 1860s Hume and Ecroyd Smith indicated that the rate of recovery of Roman material had diminished compared with earlier in that century, and by this time relatively few finds were datable to the Roman period, against a much greater preponderance of medieval objects. This, together with the absence of any reported observations of

Romano-British structures, suggests that the original location of the settlement, conjectured by Hume (1863, 391–2), to lie on a high sandy promontory that represented the source of the Roman finds was lost in the extensive erosion that is documented during the 18th and 19th centuries. The observation by Hume and Ecroyd Smith that Roman material was found on the Upper Peat/Forest Bed suggests that an episode (or episodes) of erosion had previously removed what were presumably soft Roman occupation layers, depositing dense metal items on the Bronze Age surface below . It is possible that the anchorage at this time lay on a precursor of the Horse or Rock Channel rather than the Hoyle Lake, which appears to have attracted the principal activity in the early medieval period.

There is little indication of the physical character of the Romano-British settlement at Meols. Whilst for the medieval period, and perhaps also the Iron Age, there are reports of structures observed on the eroding shore, no unequivocal Roman structure has come to light. Building materials are represented only by two large fragments of combed flue tile. While these may indicate that substantial buildings existed at the settlement, they may be strays from ships' cargoes, since as a bulk commodity tile was commonly transported by river or sea. One factor at play in this 'invisibility' of Roman structural remains could be that the main focus of Roman activity at Meols apparently lay furthest out on the former coastline compared with earlier and later activity . Many of the Roman finds made in the 19th century were relatively early discoveries dating to before Hume arrived on the scene, and the supply of Roman finds seems to have declined in comparison with medieval finds in the later part of the 19th century. It is rather more likely that the principal Roman focus at Meols had already long gone, having been lost without record to the sea in the 1820s or even before this time.

The strong pre-Flavian concentration of Roman finds, some of unequivocally military character , argues for at least an intermittent military presence in the first three decades after the Roman invasion of Britain in AD 43. The interpretation of the site as a springboard for military incursion by sea against hostile tribes of north Wales and north-west England demands some temporary fortification, at least, to protect troops stationed there, if only one or more temporary camps of the type that have been recognised in recent years in north-west England (Philpott 1999b). Whether the classic Roman provincial model of a civil settlement developing as the vicus outside a more substantial fort, as seen at other nucleated settlements in north-west England, such as Middlewich or Northwich, can be postulated for Meols on the grounds of the character and chronology of the finds is more debatable, and in the absence of structural remains essentially incapable of proof. A scatter of Roman finds east of the main group at Meols mentioned above may represent one or more discrete rural settlements that exploited dryland locations close to the harbour in a predominantly low-lying and waterlogged landscape. Such settlements provide a context for the Leasowe Man find as an isolated rural burial.

From the later 1st century, this Cornovian coastal site was an important node in a network of routes that enabled it to function not only as a safe haven on the west-coast route which served both military and civil trade and transportation, but also a trans-shipment point serving military and industrial settlements inland via the two principal estuaries and their rivers. A lower sea-level than today in the Roman period would have enhanced the importance of trans-shipment from the legionary fortress at Chester , and Meols may have performed a similar function as a trans-shipment port for the lead and silver extracted from the Flintshire side of the Dee Estuary. It may be postulated that a continuation of the Iron Age salt trade, archaeologically invisible during the Roman period through the adoption of organic containers, may also have contributed to the commodities passing through the port. The finds at Meols suggest an active market centre in the later 1st and 2nd centuries AD, while the pattern of coin loss at Meols suggests it did not experience the same marked decline as the industrial settlements of the Cheshire Plain from the 3rd century AD onwards. Meols may have had a degree of independence from these industrial sites afforded by its location on a long-distance coastal route. A further potential axis of trade from Meols is that with Ireland, which achieved considerable prominence in the maritime network from the 10th century AD onwards. Tacitus's observation that Roman merchants already knew the approaches and harbours of Ireland raises the possibility that Meols was one of the ports from which they sailed in the early Roman period.

In the 4th century the growing problem of raiders and pirates in the Irish Sea led to the renewal of coastal defences at Lancaster , Segontium, and new installations on Anglesey. A strategic role for Meols, or the north Wirral coast, guarding the approaches to the twin estuaries, is a possibility that provides a context for the latest Roman finds, a coin of 383–88, and a belt-plate of late-4th- or early-5th-century date, the latter perhaps the clearest indication of a military involvement of the late Roman army.

There are striking correspondences in the post-Roman period with the later prehistoric coinage from Meols in the form of a small scatter of 'exotic' imported Mediterranean items, which has also resulted from a combination of antiquarian and more modern circumstances of discovery (2.4). A case has been put above that the simplest and most convincing explanation for the presence of the St Menas ampulla and Byzantine coins at Meols is that they mark a genuine post-Roman presence (4.4). The evidence for early Christianity in Wirral has been surveyed above (4.4), and it provides the most likely context for small-scale and possible highly sporadic activity and importation at Meols in the 5th, 6th, and possibly the early-7th century. The small group of sceattas and

styca coins **5126–5132**, coupled with a small but striking collection of pre-Viking metalwork (2.4) imply that the landing place at Meols was showing signs of a modest revival in the 8th and 9th century AD, when it evidently became a peripheral link to the Irish Sea for the rising economy based on silver coinage, *wics* and *emporia* in southern and eastern England. It was the onset of Viking influence and the rise of a silver-rich proto-urban economy around the Irish Sea in the 10th century that seems to have produced a step change in the importance and prosperity of Meols (4.4). This prosperity was marked by the re-emergence of a recognisable economic hinterland around Meols, marked by the striking semi-circle of Hiberno-Norse stone sculpture from Wallasey in the east, via Bidston and Greasby to West Kirby and Hilbre Island in the west. These represent the presence of a settled and self-confident Anglo-Scandinavian local elite in the 10th and 11th centuries, who were the descendants of the original Viking incomers to Wirral from the early-10th century. The presence of this earlier, less settled and anglicised, generation is hinted at by the discovery of a group of iron weapons **402–408** in 1877–78, possibly suggesting a furnished burial of this period.

It is clear from Hume's and Ecroyd Smith's observations that the geographic focus of much of the early medieval and later medieval discoveries was up to 1.2km to the west of most of the Roman material (Fig. 1.2.2). This suggests a movement in the direction of the 'Hoyle Lake', which may have developed as a deep-water anchorage in the post-Roman period, and away from the Roman focus on the eastern side of Dove Point. However, there is no certain link between Ecroyd Smith's stated location for the finds of 'Anglo-Danish' and medieval coins published in 1873 (Fig. 1.2.1), and the group of apparently medieval buildings that Potter and Cox saw in the eroding face of the shoreline in 1874–76 and in 1891–92 (1.2), the location of which we may tentatively identify based on antiquarian descriptions coupled with reference to Ordnance Survey maps of the time (1.2, Fig. 1.2.2). The medieval buildings were superimposed upon a later prehistoric focus composed of circular structures, but it is unlikely that this was the only concentration of this period within the Meols landscape. Hence we must remain aware that, throughout the periods represented, the material in the Meols collections must be counted as the equivalent of that from several sites elsewhere.

The physical character of early medieval Meols is not easily distinguishable from the later medieval settlement. Wood and wattle buildings with clay floors and stone foundations of the later medieval period, and some wattle 'sheds', apparently without such clearly defined floors and foundations, were witnessed by Potter and Cox in the early 1890s (1.2), and the latter in particular may have been buildings of early medieval date. The recently-excavated Viking-period trading site of Llanbedrgoch, Anglesey (Redknap 2004) in some ways provides a potential parallel for Meols, not least because the artefacts that it has produced are in many ways comparable to those of the 9th–11th centuries collected at Meols. Although the chronology of the Anglesey site is relatively restricted compared with Meols, and does not continue into the later medieval period, its rebuilding in the late-9th and 10th centuries indicates a swift upsurge of prosperity connected with emerging markets around the Irish Sea – very much a scenario that seems to lie at the heart of the Meols story at this time.

It has been argued above on the basis of finds and coinage (4.4) that Viking-period Meols had a role as a beach-market, possibly an unofficial or even an illicit one, operating outside the customs jurisdiction of the port of Chester. In the 10th and 11th centuries Wirral was a semi-independent Viking enclave on the edge of English Mercia, and via Meols had its own distinct economic links with other Viking settlements around the Irish Sea. The Wirral Viking settlements may for a short time in the early 11th century have had its own mint, possibly located at Meols, producing Hiberno-Norse coins imitative of Cnut's contemporary English coinage (2.4; Blackburn 1996). The theme of unofficial or illicit trading activity, which is prompted by the Viking-period material, is also picked up consistently in interpretations of the few medieval historical sources that exist for Meols (4.6), and it is striking that that 14th-century sources indicate that Meols lay just beyond the official limit of the port of Chester at Arnald's Eye (now known as Red Rocks, on the north-western tip of Wirral).

The later medieval documentary evidence for Meols (4.6) is limited, and because of its particular nature and focus, e.g. as formal palatine, court, and customs records compiled within the administrative sphere of Chester, is not necessarily well-equipped to help us answer some of the 'informal' social and economic questions about Meols raised by the archaeological material. In terms of scale and content, therefore, the historical sources could be taken to indicate that Meols was little more than a small fishing village, not even important enough to merit its own parish church. But, as argued above, the archaeological evidence, and in particular the large number of coins, points to trading activity. The two types of evidence are seemingly contradictory. Did Meols therefore function as a 'hidden' trading place, as did the small harbours of Exmouth in Devon and Saltfleethaven in Lincolnshire, which are now known to have served as unofficial places of exchange (Dyer 1994c, 299–300)? Meols was well sited for such a role, located as it was on a stretch of coastline outside the jurisdiction of the ports of Chester and also of Mersey ports such as Frodsham. The large number of merchants who used Chester merely as a port of transit and who had no intention of frequenting the city's markets or of using its storage and porterage facilities, certainly included some who sought to evade the tolls imposed on goods 'entering' and 'leaving' the city. The civic authorities dealt with those detected within the city's

liberties; the county court heard the charges brought against those discovered at anchorages along the Dee. Customs officials probably confined their attention to the Dee Estuary, however, and patrolled as far as Hilbre (Dodgson 1972, 300). Traders wishing to engage in illicit activity perhaps took advantage of the liminal position of Meols, which lay somewhat apart from the official trading centres. The position of Meols in a no-man's land outside two areas of customs jurisdiction certainly gave it advantages as a potential unofficial trading location, and its invisibility in contemporary port and customs documents could partly explain the conundrum whereby a seemingly vast and complex array of medieval finds (far more than would be expected in an obscure fishing hamlet), including the regionally pre-eminent concentration of coinage, was found at a settlement without any recognised port or commercial status. Market activity, possibly involving trade from beached boats in the shallow inshore channels and a gathering of temporary stalls and booths on the shoreline and around the settlement, may well have been a seasonal activity linked to feast days, or the conjunction of harvests and major tides (Figs 5.2.1, 5.2.2). Pilgrimage seems to have swelled the traffic on the north Wirral coast. Hilbre Island, offshore to the west (3.3), with its chapel and monastic connections, was evidently a regular stop (if minor in status) on a pilgrimage trail that encompassed sites and locations in north-west England and north Wales (4.6). Fishing was also an important activity, which may at times have attracted a larger transient population as seasonal factors brought boats and related market trading from elsewhere. Fishing has left its mark in the range of finds (2.18) and indeed several of the references in later medieval sources to Meols concern the import of fish to Chester (4.6).

There was also a series of more defined historical events that brought people, goods, and money to the north Wirral shore (4.6) One such was the sudden increase in military tension that affected the Dee and north Wales in the mid- to late-13th century, as first Henry III and, subsequently and more successfully, Edward I mounted campaigns to pacify and subjugate the Welsh principality of Gwynedd. Wirral was used as a springboard for these campaigns, with armies crossing the Dee Estuary to Wales at low tide from ports and settlements on the Cheshire bank, such as Shotwick. The strategic location of the Meols anchorage at the mouth of the Dee Estuary, but on English territory and within easy striking distance of the Welsh coast, must have favoured its involvement. The increased military and commercial traffic at this time may have contributed to the significant numbers of items of contemporary weaponry, such as arrows and crossbow bolts, and coinage, which have been found at Meols. The Welsh campaigns were a lengthy and drawn-out affair with significant construction and consolidation activity following the initial attacks. The likely effects probably extended beyond transient market activity to include semi-permanent settlement, manufacturing, and the repair of ships and equipment. The campaigns of Edward I are relatively well documented, but it is probable that this was far from the first occasion when there was a sudden increase in military activity and traffic in the area – as indeed is suggested above for the period of the initial Roman Conquest of north Wales and north-west England, and possibly also in the period immediately after the Norman Conquest when the Earls of Chester, Princes of Gwynedd, and Magnus Barelegs, King of Norway, were all active in pursuing competing political claims around the Irish Sea. Another historical upheaval, although perhaps a more short-lived one, came in 1689–90, when part of Little Meols township was used as a camp and depot beside the embarkation point at the Hoyle Lake, for the army of William III ('William of Orange'), which crossed to Ireland to uphold the Protestant cause with victory at the Battle of the Boyne in July 1690. The king himself passed through in June 1690 on his way to Ireland, an occasion marked by the name 'King's Gap', which has since then referred to the landing place in Little Meols nearest to the Hoyle Lake. The campsite, as Ecroyd Smith recorded, has produced a number of the post-medieval finds in the Meols assemblage, including a number of the clay pipes (2.17).

The enormous range of later medieval material (*c.* AD 1100–1500) is in marked contrast to the sparse documentary record for Meols. It is characterised in particular by metalwork and coinage, and has been commented upon extensively above (2.5; 2.6; 2.24). There is an exceptional range of objects of this period, unparalleled in north-west England and rivalled only by that from international trading cities such as London. In London, deposition of finds on the waterlogged waterfront sites has preserved finds such as lead/tin through the existence of particular soil conditions and it seems that this factor also existed at Meols. An unusually complete proportion of material carefully retrieved from a settlement or settlements that underwent complete or near-complete destruction in a relatively short period may, to some extent, explain the extraordinary numerical preponderance of later medieval objects in the Meols collections and its apparent dissonance in scale with the extent of material retrieved by (usually only very partial) excavation from minor and middle-ranking sites elsewhere. The material from this period is not as anomalous or inexplicable at it may at first seem. The Roman finds constitute a curious assemblage, rich in brooches, ear-rings, and coins, yet almost completely lacking in pottery. While accident of retrieval may account for this in part, it is also likely that the core of the settlement had already been lost when the antiquarians began to collect in earnest. The early medieval finds are also much more extensive than from other sites in north-west England, yet in type and range correspond closely to those of contemporary urban and proto-urban centres such as Chester, Llanbedrgoch, and Dublin. The quantity and chronology of finds of later medieval coinage

from Meols bear legitimate comparison with villages and rural market sites elsewhere, especially where complete or near-complete retrieval has been practised, such as Llanfaes, Anglesey, and Great Linford, Buckinghamshire (2.24).

In the later medieval material from Meols, metalwork is predominant, including unusual and significant evidence for metalworking. The huge range and number of dress accessories (2.5) provide a significant addition to the nationally-known stock of evidence for these items. It is clear that some were being made on site, and there is rare evidence for explicit links between objects found at Meols and the names of local families, pre-eminently the Meols family itself, but also the nearby Lathom family who held lands in south-west Lancashire, in the form of lead/tin seal matrices ***2321*** and ***2322***, both of which are sadly no longer extant in the collections. Hume and Ecroyd Smith were the first to draw attention to the range of later medieval material from Meols. In both cases they developed an astonishingly perceptive and well-informed insight into it. This had already taken shape by the early 1860s, which was well before the uncovering of the core of the medieval settlement in the 1870s–90s. Hume was enterprising in his search for parallels, seeking them widely amongst the museum collections, burial monuments, and heraldic publications of the time. He was assisted in his task by others who were developing a deep and discriminating knowledge of material of this period, such as Albert Way, sometime secretary of the Archaeological Institute. Ecroyd Smith took an interest in the ceramic and glass material, collecting the majority of pieces evident in the pottery collections (2.16) and post-medieval clay pipes (2.17). Not all of Ecroyd Smith's pottery collection has survived. The later medieval and post-medieval pottery contains some finer imported pieces, but is predominantly composed of relatively mundane local coarsewares, yet its retrieval and collection as a group must count as a far-sighted achievement for the 1850s and 1860s, and a tribute to the modernity of Ecroyd Smith's approach at that time. Ecroyd Smith also recognised the rarity of the medieval glass vessels at a relatively early stage (1871a, 128). Aristocratic sites aside, Tyson found no medieval rural domestic glassware at all in her much more recent national survey (Tyson 2000). Against this background, the small Meols vessel glass assemblage, comprising only half a dozen fragments, assumes some significance in apparently being the only medieval glass vessels from such a context in the country so far. Questions of urban and rural status for the later medieval material had already occurred to the antiquarians by the 1860s, and remain relevant today (e.g. Egan 2005c).

Hume (1863, 380–86) was perceptive in comparing Meols to two medieval towns on the east coast of England, which had disappeared as a result of coastal change, Dunwich (Suffolk) and 'Ravenspur' (more accurately Ravenserodd) located on a sand-spit in the Humber near Spurn Head (East Yorkshire). Dunwich and Ravenserodd are sites for which we have somewhat better historical information than we have for Meols, and we may only speculate how comparable their circumstances really were. These were towns somewhat exceeding medieval Meols in status: Dunwich was a Domesday borough with 236 burgesses in 1086, which was confirmed as a free borough by King John in 1200 (Beresford and Finberg 1973, 166), yet by the mid-14th century was suffering dramatic erosion and damage, losing as many as 600 buildings in a few years (Kowaleski 2000a, 468). The site of the town today is all but lost to the sea, with some medieval remains (once inland of the main town focus) still to be seen exposed in the low coastal cliffs. Dunwich was in its heyday a full-scale medieval town with the rights and privileges as such. Ravenserodd, however, perhaps provides an even more intriguing parallel for Meols. This was a scatter of settlements, Ravenser, Old Ravenser, and Ravenserodd, which grew suddenly, almost from nothing, into a coastal market and town in the later 13th century (Beresford 1967, 513–4). Its status as a town was tenuous, it was taxed as a borough in 1294 and confirmed as such by a charter of Edward I in 1299 (Beresford and Finberg 1973, 186), yet had lapsed back to being taxed as a vill between 1307 and 1313, only to resume its taxable status once again as a borough in 1315. Fishermen and merchants used its liminal position at the mouth of the Humber to unload ships and conduct informal market activity, which was evidently a matter of concern for royal tax collectors. Ravenserodd never became established enough to have its own parish church, depending for its ecclesiastical connections on nearby and more longstanding Easington. Its brief flourish as a market and port was brief: between 1334 and 1347, 200 houses were washed away, and its tax assessment was reduced from £15 to £5, thereafter within 20 years declining to almost nothing (Beresford 1967, 514). Its site was both its greatest asset and worst disadvantage. The sand spit upon which it stood, for a brief period provided an unrivalled strategic position in relation to the Humber approaches on the east coast and centrally within a network of economic contacts within Yorkshire and Lincolnshire. However, such was its vulnerability that coastal erosion and the climatic problems that were increasing in the 14th century reduced it literally to nothing in a few decades.

Meols also experienced a steep decline, and perhaps a precipitous abandonment, although somewhat later than the unlucky Ravenserodd. The chronology of the material towards the end of the later medieval period, and in particular that of the 15th century, may help to cast some light on the date of the decline of later medieval Meols. It has been claimed previously that the abandonment of the medieval coastal settlement at Meols is already seen in the reduction in the number of coins of the 14th century recovered from the site (Chitty 1978, 21), although the sudden drop in the presence of

coin must be seen against the background of national changes in minting patterns. The research for this publication (2.24) has shown that these went from 119 for the Long Cross coinage of 1247–79 and 148 for the sterling coinage of 1279–1351, to just 10 for the period 1351–1412, none for 1412–64, and just five for 1464–1544. The examination of the whole finds assemblage indicates that the bulk of the metal artefacts date to before the end of the 15th century, with markedly fewer objects beyond that. Interestingly, this is also the conclusion reached by Hume (1863, 60). However, Geoff Egan has suggested there are potentially two peaks within the medieval non-ferrous metalwork, one in the late-Norman or early-Plantagenet period, the other in the late-14th or early-15th century, the latter corresponding with a substantial rise in the number of buckles. Hence there is something of a dissonance between the fall-off in the representation of coin in the early- to mid-14th century and the maintenance of significant numbers of metalwork objects, mostly dress accessories through to the end of the 15th century. The leather and wood objects (2.10; 2.12), where easily datable, confirm that there remained a significant representation of material through to an apparently sudden cut-off point towards the end of the 15th century.

It has been argued above (4.5) that the sudden drop in material of the early-16th century onwards was probably a consequence of increased or even catastrophic inundation by wind-blown sand (4.5) particularly as the quantity and range of finds suggests sudden rather than long-term depopulation. The availability of such a large body of material of this period is more likely to represent to some extent a sudden disastrous covering of the settlement, its houses and fields, by blown sand, rendering the recovery of material impossible. The 19th-century antiquarian reports show that several medieval houses and part of the former arable fields had been buried by sand (1.2). Between the late-1870s and early-1890s the antiquarians record seeing the remnants of several medieval buildings, in some cases with datable objects in association, emerging from under their covering of sand-dunes during erosion of the coast. Similarly 'butts' or medieval cultivation ridges were recorded revealed by storms removing overlying sand (Hume 1863, 10). It is probable that the antiquarians' conclusion is correct and that the medieval village of Meols was abandoned due to sand encroachment on the agricultural land and the houses, causing its removal further inland to the present village site. If so, this would place it in direct association with historically-documented medieval villages on the south-west Lancashire coast, Ravenmeols and Argarmeols, which also succumbed to sand at this time (3.2). Parts of these must remain intact buried under sand-dunes, much as medieval Meols must have been in the period between its disappearance and subsequent exposure in the later 19th century.

The shift in location of findspots of later material argues for a transfer of the village site, suggesting that the village at Great Meols was a new nucleated settlement established on a new site at some point in the late-15th century or soon afterwards. The post-medieval objects from post-AD 1500–50 do include significant collections of shoe buckles and clay tobacco pipes, although some of the latter are not from the beach, which are more likely to reflect activity along the shoreline or a little way inland in the village of Great Meols. Corroboration of the suggestion that there was a shift in the location of the settlement at Meols at the start of the post-medieval period comes from observations about the findspots of coins of Elizabeth and later rulers. Hume noted that 'the more modern objects (i.e. more recent than Roman) are found further westward, certain Saxon examples, chiefly coins, being found nearly a mile to the west, and on the clay; thus showing a gradual change of residence in the direction of the Dee, owing no doubt to such physical causes as those we are considering. The articles that belong more strictly to modern historic times, e.g. to the sixteenth, seventeenth, eighteenth, and nineteenth centuries, are found nearer to the village of Hoylake, or still further removed from the original Roman position. Thus, keeping to seaward of the present water-line, we trace the course of habitation from the eastern side of Dove Point to the village of Hoylake' (Hume 1863, 392). Potter confirmed that the findspots of later coins were geographically separated from the earlier finds. 'On close enquiry, I have found that every coin I possess of these later reigns [Elizabeth, later Scottish kings including James I of England, Charles I and II, James II, William and Mary], and the relics left of William's army, have come from the higher and cultivated lands of Great Meols, or westward from Great Meols to Hilbre and West Kirby' (Potter 1876, 138). It is clear that, by the 17th century, the modern landscape of Meols, which is visible in sources such as the 1844 tithe map and award, had begin to take shape (4.5, Fig. 4.5.1).

THE POTENTIAL FOR FUTURE ARCHAEOLOGICAL RESEARCH AT MEOLS

The present project has focused on the rich yield of finds revealed through erosion on the coastal zone. The finds have come down to us largely without the benefit of close findspots or contextual information. The sites located on the promontory of Dove Point (which produced the vast majority of the finds) have been largely, if not entirely, removed and destroyed by marine erosion. Nevertheless, when sand movements permit visibility, some traces of archaeological features are still occasionally to be seen on the foreshore at Meols. Regular rows of stake alignments exist at the foot of the Leasowe Embankment (which possibly once supported fishing nets, or alternatively may have acted as silt traps to try to prevent undermining of the sea wall). On the exposed peats and

sands of the inter -tidal zone, traces of ditches and possible stake-holes are occasionally visible amongst the vanishing traces of the 'Ancient Forest' or cut into the boulder clay beneath. A long-term coastal monitoring project involving frequent sustained visits and recording, particularly after storms have disturbed the equilibrium of sand and silt deposition, is the only way to build up anything more than an anecdotal picture of the extent of remaining archaeology in the inter-tidal zone.

Equally intriguingly, the hinterland of Dove Point which remains protected behind the sea-walls, and two further low Boulder Clay rises in the area of Leasowe Lighthouse and Castle, identified by Ray Kenna (3.1, Fig. 3.1.4), upon which more recent Roman finds have been recorded, may indicate areas of remaining potential for intact settlement remains. The work of Kenna and, more recently , the North-West Wetlands Survey in charting and dating borehole evidence (3.1) have shown that the strata observed and documented by Hume and Ecroyd Smith, including the two peat/forest beds with the soil bed above, survive largely intact across the coastal hinterland of Meols. Despite the encroachment of modern housing and development, there are areas in immediate proximity to the sea walls which remain open land and potentially available for geoprospection or selective excavation.

A number of potential foci exist for further research. The later medieval settlement was exposed not long before the shoreline was consolidated by the construction of this section of embankment in 1894 and the land surfaces sealed by the embankment. There remains a possibility that outlying structures of the medieval settlement survive under the reduced and modified dunes behind the embankment in the area of the shore near Great Meols village. Future research should be directed in the first instance at assessing the survival of the deposits and structural remains at these foci of habitation. Such work should aim where possible to recover evidence of the houses and yards, the agricultural and maritime aspects of the economy, evidence of manufacturing and craft industries, and of the trading activity of the settlements. The 19th-century finds and observations demonstrate the potential for good preservation of organic and metal items in waterlogged or anaerobic conditions. The application of modern techniques would vastly improve the yield of information on settlement, economy, trade and chronology of the Meols settlements. In addition a programme of research is required which seeks to investigate the range of short-lived temporary activities for which the finds represent the physical residue, such as the assembling of soldiers and materiel on military campaigns, intermittent beach market trading, fishing, or the seeking of shelter or commercial opportunities by traders on the west-coast route. Accurate plotting of modern findspots and information on their stratigraphic context will assist in defining more closely areas of potential for further investigation.

In this respect, the nearby dryland 'islands' have high potential for the survival of traces of what may be outlying settlements. Fields around Leasowe Lighthouse which produced two metal-detected finds of Byzantine coins (**5123**, **5125**) have yet to be subjected to geophysical survey in the hope of elucidating whether these findspots are connected to any structural remains. There is also the line of the possible Roman road. The 1792 Eyes map (Fig. 1.1.4) illustrates the extensive area south of the shoreline which then lay below high water. Even in a time of lower sea-level, a Roman road approaching the settlement in a straight line across the wetland to the rear of the shore would require to be constructed on a raft of brushwood or a corduroy of logs (cf. Thompson Watkin 1883, 48). Identifying precisely the alignment of the road as it approaches the coastline may assist in locating more accurately the focus of the original Roman settlement.

Further research requires a consideration of the wider geographical setting, embracing the landscape of the hinterland and of the intertidal zone beyond the modern embankment. The dynamic and unstable transition between dry land, salt marsh and sea due to marine transgression and regression over time, with consequent impact on the vegetation and the viability of settlement and agriculture, is fundamental to an appreciation of the context of the coastal settlements. The mosslands of the north W irral coastal zone have produced no direct evidence for sea-level change more recent than the early Bronze Age (Cowell and Innes 1994, 27-30, table 1). As a result, it is difficult to characterise the palaeogeography and palaeoenvironment of the coastal zone from the mid Bronze Age through to the early medieval period. The boat discovered at the Railway Inn, Meols (1.2) in the 1930s reminds us that the settlement and agricultural activity exposed through 19th century erosion of the coast is only part of the story of the past use of the coastal zone and its hinterland. Further work should aim to chart sea-level change through to the medieval period, to supplement the existing information on the ancient landforms and river courses, and to provide additional evidence for their changing nature through time.

A further avenue for exploration and research is the intertidal zone and the inshore sea-bed. New, fast-developing prospection techniques, such as surface and sub-surface surveys to determine sediment and type and depth on the sea-bed, using techniques such as side-scan sonar, seismic and acoustic surveying, are capable of detailed three-dimensional mapping of the drowned landforms and infilled early river channels, and may identify potential surviving archaeological deposits. Equally a programme of continuous monitoring of the intertidal zone is vital to the identification of archaeological features in the shifting pattern of silting and exposure under different conditions and times of year.

The severity of coastal erosion at Dove Point may have deprived us of the opportunity to examine some of the early settlements directly . Research to deter-

mine the role of Meols might focus on the impact of the port on the rural sites of its hinterland, through their access to traded goods and the degree of integration into the market economy. Research might also profitably be extended to the study of artefact types and distributions on either side of the Irish Sea which might enable patterns of movement in traded items between north-west England, north Wales and Ireland to be identified in which Meols may have played a part.

The coastal zone on the landward side of the embankment is an area of considerable archaeological importance. Future research should maximise the opportunity to examine the numerous small windows into deposits underlying the dunes resulting from development along this zone extending from Hoylake to Wallasey. In view of the extensive residential and commercial development along the coastal zone since the 19th century, a high priority should be accorded to development control measures which take the opportunity to examine even small interventions, to recreate more fully the wider landscape context of the extent, nature and date of the deposits which have been identified along the shore.

Finally, the present volume should not be considered the last word on the artefacts. Just as Abraham Hume recognised that his work would be superseded by the work of future scholars, it is to be hoped that the current volume will stimulate further analytical and synthetic studies of the finds themselves. As stated above in the Preface, cataloguing and publishing the stock of existing data on Meols has been our preoccupation in this volume. Now that enormous task is complete, the way lies open to further investigation and the systematic attempt to glean new evidence from the landscape of Meols.

Appendix 1: Collectors and collections of material from Meols

The following information was compiled in the late-1970s by Gill Chitty and Margaret W arhurst in connection with a publication of Meols material in Liverpool Museum (Chitty and Warhurst 1977); additions have been made by Robert Philpott and David Griffiths between 1999 and 2007. A small number of additional finds recovered by metal-detector users since the 1980s remain in private hands and are not considered here.

INDIVIDUAL COLLECTORS

Table A1.1: Cheshire shore collection, documentation and collectors (from Hume 1863, 51)

	Number of objects	*Collected in or since*
Mr Ainslie	100	1817
Mrs Longueville	12	1840
Dr Hume	800	1840
Mr Mayer	1000	1847
Mr Ecroyd Smith	1100	1856
Mr Robinson	50	1849

Reverend Abraham Hume

Hume was born in Hillsborough, Co. Down in 1814 and, after an education in Ireland and Scotland, became curate of St Augustine's, Liverpool, 1843–47, and vicar of All Saints, Vauxhall, Liverpool, 1847–84. He took an active part in many of the public, scientific, educational, and ecclesiastical movements in Liverpool. The site at Meols was first brought to Hume's notice when he saw Mrs Longueville's Collection (1.1) at Hoylake Parsonage. He obtained a number of these objects on loan in 1846. It is implied in *Ancient Meols* that by the time of publishing (Hume 1863) he had ceased to collect himself.

Some of his collection was donated to the Historic Society of Lancashire and Cheshire in 1848 and placed by them on permanent loan to the Liverpool Public Museum and the Birkenhead Public Museum.

It appears that some of the collection is in the Grosvenor Museum, Chester, as part of the Potter Collection (e.g. Hume 1863. pl. V, 18, a ring-headed pin that Hume identifies as his own). Other objects that he illustrates as his own are in the Warrington Museum (Hume 1863, pl. XXII, 7, pl. XII, 21, and pl. XIV, 5), also two ear-rings (Hume 1863, pl. XXV, 2 and 3), which are under Warrington Museum's Acc. no 149'04. The main body of his collection has not been identified, however, and perhaps remains in private hands.

Hume's will, proved at Liverpool 13 April 1885, contains amongst a list of his property, an entry listing 'Museum articles, or antiquities and curiosities of various kinds'. He makes a bequest of these, 'also so many of my Museum Articles as are of sufficient value or interest may be taken by the Principal or any person or persons authorised by him for the use of University College, Liverpool'. After various bequests, the residue was to become the property of Hume's nephew George Alexander Hume.

Hume was working on a second edition of *Ancient Meols* when he died. 'The excellent engraving of the … ornamented strap … is printed from a block cut for our lamented friend, the late Canon Hume. It was intended for one of the illustrations to a new edition of his *Ancient Meols*, on which he was engaged at the time of his death' (Potter 1889, 200).

References

Hume 1847a,b,c; 1859; 1862; 1863; 1866 a,b,c.

Henry Ecroyd Smith

'About July, in the year 1855 Mr. H. Ecroyd Smith (b. 1823) came to reside in Liverpool. He had some practical experience as an archaeologist … Knowing what a storehouse of antiquarian objects had been discovered at Meols, near Hoylake, he visited the place frequently; and the result is a more minute acquaintance on his part with the locality, and a larger collection of objects than is possessed by any other person. His objects, as a whole, are less select than those of Mr. Mayer, but they are very varied, and possess great interest, from the fact that a large proportion of them were procured by himself *in situ*' (Hume 1863, 50).

Ecroyd Smith sold a small parcel of representative objects to the British Museum in 1858 for £5 5s. These are mentioned in a letter from Ecroyd Smith to Charles I. Gatty, written in 1880, in which Ecroyd Smith states that 'the whole of my Meols Relics passed into the hands of the [Liverpool Museum] Committee save … a small lot made up of representative articles for the British Museum about 1860'. They are entered in the British Museum in the original register under 9th–16th September 1858, with the observations 'all found on the sea shore at Hoylake, Cheshire, 1856–7', 'purchased from Henry Ecroyd Smith (Liverpool)'. The British Museum register records 82 entries, representing 90 items, the first three (BM Reg. 1858 9-16 1-3) are in the Department of Prehistoric and Romano-British Antiquities, the remainder are in the Department of Medieval and Later Antiquities (BM Reg. 1858 9-16 4-82).

Ecroyd Smith sold his collection to the Liverpool Public Museum in 1874 just before he left the area for unknown reasons, 'the writer upon leaving for a lengthened period, the neighbourhood of this very remarkable (and still in many respects mysterious) locality, and whilst compiling his possible final annual report of the historic outcrop' (Ecroyd Smith 1874, 95). He was succeeded in his position at the Museum by Charles Gatty in 1873, owing to his own ill-health. Ecroyd Smith left the north-west in 1875, and moved to Saffron Walden (see NML Letter Guard Book, p. 180; Potter 1876, 121), and subsequently to Kirby

Malham, Yorkshire, where he died in 1889.

The Ecroyd Smith finds were badly affected by the 1941 bombing of Liverpool Museum, with many lost as a result. An exception is the pottery (2.16) and clay pipes (2.17), and a small number of other objects, such as crossbow bolts and roves.

Documentation

A handwritten register in Liverpool Museum is labelled 'Summary of a Collection of Antiquarian and other Remains found upon and near the Cheshire Sea Shore & made by H. Ecroyd Smith, 1855–74'. It contains a copy of the letter offering his collection to the Museum; and a very generalised list of items quantified in bulk, tray by tray, without detailed descriptions. There are a total of 2959 items. These have no accession numbers except for a very few where, at a later date in a different hand and ink, numbers have been entered in the margin or on the opposite page.

Gatty slips for the objects designated by accession numbers 18.11.74.1 – 167 give simple descriptions, dimensions, and, occasionally, useful sketches. This does not approach an account for the 3000 objects in the collection. The considerable collection of coins is not itemised or mentioned. A card index is transcribed from Gatty slips.

Ecroyd Smith's own account of his finds from the Cheshire shore and those others to which he had access is fully documented in the *THSLC* and other periodicals.

Ecroyd Smith recorded that he personally found one brooch on the shore (Ecroyd Smith 1869a, 210). He goes on to describe how he discovered human remains on the shore, noting that 'the writer has repeatedly noticed portions of burnt bones …', and furnishing a romantic account of his activities, 'The writer, accompanied by a young friend, was lingering in the gathering shades of an August evening near the old forest stumps, hoping ere departure to find some relic of this period, when a circular patch of black matter on the blue clay attracted his attention' (Ecroyd Smith 1869a, 211).

References

Ecroyd Smith 1860; 1862; 1863; 1864a,b; 1865a, b; 1866; 1867a, b; 1868; 1869a, b; 1870; 1871a, b; 1872; 1873a,b, c; 1874, 1875.

Joseph Mayer

Joseph Mayer was born in Newcastle-under-Lyme, Staffordshire in 1803. He became a jeweller and goldsmith in Liverpool and formed a large and eclectic collection of antiquities and art (Gibson and Wright 1988). 'Mr. Mayer … made occasional visits to the place (Meols) and, having succeeded in interesting some of the resident people in the subject, he was soon in the possession of a valuable collection. This embraces about a thousand articles of all kinds, the principal of which are classified and arranged on cards … in the accompanying plates, about forty-four per cent of the figures represent selections from among them' (Hume 1863, 50).

Mayer gave his collection to the Liverpool Public Museum in 1867, some time before his death in 1886. Its size cannot be estimated accurately as the records are incomplete (see below); however, even a rough guess shows that the Meols collection was considerably less than the 1000 objects which he was credited with in *Ancient Meols* (see Table A1.1, above). Like Ecroyd Smith's collection, it suffered badly as a result of damage and loss during World War II.

Documentation

The Mayer Collection was allocated a running number initially by Henry Ecroyd Smith, the Assistant Curator (see Resume Mayer Collection, manuscript compiled in 1928). The Cheshire Shore material is covered by accession numbers 4059M–7753M, but these numbers are not exclusive.

The 'Gatty slips'

A catalogue on individual paper slips ('Gatty slips') was compiled in 1873 by the Assistant Curator of the Mayer Collection, Charles Gatty. Each accessioned object has a simple description with dimensions and occasionally a rough sketch. The sequence of slips starts at 5500 and is incomplete. The Meols/Hoylake material begins at 5649–5835, inclusive, with odd other references (some uncertain provenance): 7427, 7752–7754, ?7988.

Stock Book Mayer Collection No. 14

The Stock Book Mayer Collection No. 14 is one of the 18 provisional Stock Books started by Ecroyd Smith (see Resume Mayer Collection) – a bound handwritten inventory, case by case, of the contents of the collection. It covers Mayer Nos. 4000–4292 and 4293–4649, which are allocated to an accession date 12.2.57. Pages 18–39 are an inventory of 'Table Cases North End, Relics from the Cheshire Shore'; a very simple enumeration of the objects with a word or two of description. This listing is misleading, however, as in some cases it is unrelated to the numbers that objects later received (e.g. 4059M 'Card contg. objects in bronze, latten, pewter and glass found upon the sea beach of Cheshire and collected by Joseph Mayer, 1846 to 1859', under which numbers are listed 201 subjects, some of which can be identified with published objects that later have been given quite a different Mayer number, e.g. 5715M (***2316***) – Seal of S'JOHN DE OSECOTT). This probably arose because at the time of the preliminary inventory all the objects were mounted on cards, but later it became necessary to give each one a separate number when they were removed from the card. The coins, however, have retained the same numbers as they are given in Book No. 14 as they were numbered individually (nos. 4067M–4184M). There are approximately 900 objects listed in the inventory (4059M–4225M). This suggests that Mayer had ceased to collect actively after he placed his collection in the hands of Revd Hume for the purposes of study in 1860.

Card index of the Cheshire shore material

The card index of the Cheshire shore material is incomplete; several odd cards and some blocks of cards being missing. It is in some parts more complete than the Gatty slips (it starts at 4059M), although it appears to be a transcription of that index. It includes the Ecroyd Smith, Roeder, and Historic Society of Lancashire and Cheshire Collections, and must have been compiled originally early in the 20th century.

The NML reference copy of *Ancient Meols* has been annotated in pencil to indicate the illustrations of Mayer's collection. However, this is not always correct. There is evidence in the 'Proceedings' sections of the *THSLC* that Mayer was a frequent speaker and contributor to meetings and wrote about other topics, but he did not write up his own Meols collections for publication, preferring to leave that task to Hume and Ecroyd Smith.

Charles Potter

Charles Potter was Henry Ecroyd Smith's chief rival in collecting from Meols from 1868 onwards 'Through the increasing publicity of his annual dissertations on the produce of this remarkable shore, combined with the greater facilities for visiting and lodging in this immediate neighbourhood, it would have been strange indeed had the writer continued to be almost the sole recipient of the various "finds", as latterly has been the case. Two chief rival collectors have been fortunate enough to secure between them nearly three-fourths of their number in the last year, including several unique and valuable articles, which are described as fully as if in the writer's own collection, and carefully engraved in illustration. To these competitors, Messrs. C. Potter and J. R. Allen, he is indeed indebted for the opportunity of examining the large proportion of finds from the site' (Ecroyd Smith 1868, 100). From 1875 Potter took over Ecroyd Smith's role as chief observer and collector at Meols when the latter left the district.

'This fine collection of Antiquities was purchased by T. S. Gleadowe, MA, and generously placed in the Grosvenor Museum' (Shone 1911, 51). The Potter Collection exists in a complete state in the Grosvenor Museum, Chester. Some of the material is mounted on cards dated in ink 1891–3, but it appears that Potter had largely ceased collecting after 1893.

It seems possible also that Potter had acquired some items from Hume's collection. 'As it is quite impossible to say where all the coins described by Dr. Hume in his book … ultimately found a resting place, it seems reasonable at least to suppose that a few of them passed into Mr. Potter's hands; and that therefore, our list and Dr. Hume's may, occasionally, be describing the same specimen' (Longbottom 1908, 5)

At least one item from Charles Potter's collection is currently in the Williamson Art Gallery and Museum amongst material in the Hoylake Historical Society collection, this is a lead pilgrim's ampulla'; the underside of the mount on which this hangs has a handwritten label in Potter's handwriting, with a description, initialled 'C.P.'. Fragments of one 17th-century cup in the Williamson Collection join sherds in the Grosvenor Museum and have been stuck together at some stage in the past.

> 'I commenced to search for and collect these relics of a bygone time making it one of the principal considerations that, when I purchased from the residents of the district, the vendor should inform me of the exact spot on which the object was found, and all particulars …' (Potter 1876).

References

Harris Gibson 1877; Longbottom 1908; Potter 1876; 1889; 1890; 1893.

Philip Barrington Ainslie

'About Christmas 1858, I was accidentally made acquainted with the fact that some objects … found on the shore of Great Meols, were in the possession of P.B. Ainslie Esq., of Guildford, in Surrey. He had been a merchant in Liverpool, and had known the town since 1804. In 1817, a fisherman named Buchanan brought to him a large collection of ancient metallic objects, which he said he had found at an unusually low tide near the submarine forest on that part of the Cheshire Coast. Mr. Ainslie visited the site on many occasions after this and his examination of it is the first which is on record, while his specimens are the earliest found of all those with which we are acquainted' (Hume 1863, 49)

'In the close of March 1859, I visited him, and made sketches from nearly a hundred of the Cheshire antiquities which he still retained. Many objects had been given away to friends … I had drawings made of twenty of the most interesting of these objects and sixteen of them are reproduced on the accompanying plates' (Hume 1863, 49). Ainslie, who lived at the Mount, Guildford, died in 1869; his collection was probably dispersed as no object survives with a clear attribution to his collection.

Mr Buchanan

'About Christmas 1858, I was accidentally made acquainted with the fact that some objects … found on the shore of Great Meols, were in the possession of P.B. Ainslie Esq., of Guildford, in Surrey. He had been a merchant in Liverpool, and had known the town since 1804. In 1817, a fisherman named Buchanan brought to him a large collection of ancient metallic objects, which he said he had found at an unusually low tide near the submarine forest on that part of the Cheshire Coast. Mr. Ainslie visited the site on many occasions after this and his examination of it is the first which is on record, while his specimens are the earliest found of all those with which we are acquainted' (Hume 1863, 49).

Mrs Longueville

Mrs Longueville was the wife of the curate of West Kirby who was resident at Hoylake. 'It appeared that these and numerous other articles had been found by an old man in the village. He had resided there since 1810; and since about 1828 he had amused himself at intervals with picking up curious pieces of metal when the tide had retired' (Hume 1863, 47) Acquired at second hand by Mrs Longueville from this individual, this small collection was noticed by Hume and initiated his interest in the site.

This collection is now at the Grosvenor Museum, Chester. It is numbered 254–371 / 1913. The objects are stitched onto two cards labelled: 'The Original Hoylake Antiquities, Mrs. Longueville, Eccleston'. In re-boxing the Meols material in the 1990s, these were removed from the cards.

Documentation

The collection was donated to the Grosvenor Museum in November 1913 by Mr J. Simpson (Grosvenor Museum Accessions Register).

William Banks

William Banks 'a shoemaker and a fisherman' lived in a cottage between Goose Green, Meols and the shore (Roberts 1992, 62). 'William Banks who has resided here and discovered antiquities for more than half a century, stated that the forest as described by Dr Hume in his book, has been completely destroyed' (Sulley 1889, 258). Ecroyd Smith describes the discovery of one iron object on the shore: 'William Banks, a fisherman of Great Meols, was passing along the upper reach of the shore to visit his nets beyond the Dove Spit, when, keeping as usual a good look out for curiosities, he noticed protruding from a patch of the black woody deposit (F), freshly uncovered by a spring tide, an iron ring. Upon stooping to pick it up, he was

surprised to find it fast, and a hard pull was necessary to extract the fourteen inches of metal attached to the loop' (Ecroyd Smith 1866, 208).

Banks appears to have acquired at least one Hume artefact (an Iron Age ring-headed pin, **82**), a piece that was subsequently acquired by Robert Newstead.

George Sinclair Robertson and Charles S. Robertson

There are only two references to the collection of these two individuals. 'Messrs. G. S. Robertson and C. Potter have kindly placed their late acquisitions at his service for record …' (Ecroyd Smith 1872, 142) and in the report for the following year, 'we are enabled to present figures of several of Mr Charles S. Robertson's objects described last year …' The plate is titled 'Medieval objects in metal etc., recently found upon Meols Beach, Cheshire and now in the collection of George Sinclair Robertson' (Ecroyd Smith 1873a, 127). The latter suggests the two were closely related.

There are shears similar to those illustrated in the above in the Grosvenor Museum and the seal illustrated is also there; however, the sword is notably absent.

Charles Backhouse Robinson

Robinson exhibited finds from Meols three times at the earliest meetings of the Historic Society of Lancashire and Cheshire, a cursory note from the first meeting (Anon 1849a) and a record of his exhibition of a musket rest (Anon 1850) was followed by more expansive detail in the records of subsequent meetings: on 7 November 1850 Robinson exhibited 'a collection of antiquities from Hoylake; 3 arrowheads, two pins, one buckle, a portion of a small square buckle, two fish hooks, two small chain links, a stone amulet, clasps, and other items (A1, 2). He also exhibited 'further antiquities from Hoylake' to the Society at the meeting of 5 December 1850 (Anon 1851, 14). The items are not described, but a reference on plate 1 has two medieval 'brooches' from Hoylake illustrated (one 'lead', the other 'silver'). The latter **1973** is in the BM Meols Collection (acc. No. 63-1.20-13).

> '… One other discoverer, Mr. C. B. Robinson, who visited the adjacent watering place of Hoylake during several summers, examined the surface, and occasionally dug into the black earth, in connection with which most of the objects were found. He was rewarded by the finding of several articles of great interest, though they were not very extensive in point of numbers' (Hume 1863, 50).

Robinson gave some of these items to the Historic Society of Lancashire and Cheshire, which placed them on permanent loan to the Liverpool Public Museum.

A Charles Backhouse Robinson, of Frankton Grange, Shrewsbury, was 'ejected' from the Historic Society of Lancashire and Cheshire at the meeting of 22 April 1875 for being several years in arrears in his subscription (*THSLC* 27, 1875, 189); in the list of members (same vol., p. xvi)

John Romilly Allen

John Romilly Allen gained prominence elsewhere as a specialist in early Christian and medieval stone sculpture. In 1867 Allen, with Charles Potter, was referred to as a major rival of Ecroyd Smith's in collecting Meols material (Ecroyd Smith 1868, 100–1), but no specific items were attached to his name there. The collections of Romilly Allen, along with those of Charles Potter and Joseph Mayer, were exhibited at the September 1870 meeting of the British Association for the Advancement of Science in Liverpool (Ecroyd Smith 1871a, 132). **2014**, a circular lead mirror case was presented by J. R. Allen in 1883 (BM Reg. 1883 5-1).

Albert Way

The British Museum Accession Register shows that 'Two objects were purchased from Albert Way Esq.', Honorary Secretary of the Archaeological Institute, in 1863 (BM Reg 1863 1–20, 13 and 14).' No. 13 is **1973**, a lead and no. 14 is a lead brooch. No. 13 was illustrated in the *THSLC* 1851, exhibited 5 December 1850, (pl. 1) by Mr C. B. Robinson.

W. Thompson Watkin

W. Thompson Watkin recorded some of the finds of other collectors, and in referring to the 70 undoubted Roman fibulae he notes, 'Of these several came into the possession of the late Mr. Joseph Mayer, F.S.A., and many into the hands of Mr. H. Ecroyd Smith, and Mr. Charles Potter, besides other collectors…. Two other fibulae, now in the possession of the writer, are here also engraved.' Later, referring to the coins from Meols, he noted 'Those amongst them which are marked (P), are in the collection of Mr. Charles Potter, and those marked (W) in that of the writer' (Thompson Watkin 1886, 282). Twelve coins were marked (W), and he recorded that a further eight illegible pieces were in his possession, giving a total of 20 (Thompson Watkin 1886, 284). It seems that Thompson Watkin acquired coins from other collectors; he notes in a footnote (p. 282) that a coin mentioned by Hume (1863, 290) which the latter attributed to Galba should be identified as Vespasian; this coin was in Thompson Watkin's possession in 1886. However, he did not state from whom he acquired it. Another coin, of Tetricus, then in Thompson Watkin's possession, is also referred to in a footnote (p. 283) as mis-described by Hume in *Ancient Meols* (Hume 1863, 291).

There is no evidence that Thompson Watkin collected directly from the shore himself, but he clearly had access to Potter's collection. Thompson Watkin's detailed listing contains eight coins of Potter's (Thompson Watkin 1886, 282–3), in addition to two other illegible pieces held by Potter, and was able to illustrate and refer to brooches and other material in Potter's collection (e.g. Thompson Watkin 1886, 280); he had also spoken to Potter about the latter's observations of buildings eroding out of the sand-hills (Thompson Watkin 1886, 281).

Mr Jonothan Armstrong

'Mr. Jno. Armstrong of Rock Ferry' is recorded as the finder of two glass beads (Ecroyd Smith 1874, 95). No other information is known about this collector.

Dr Philip Nelson

Dr Nelson donated an 'ornamental leather belt' from the Cheshire Shore to Liverpool Museum in 1906. No other details known (Accessions Register and Card Index).

Charles Roeder

Various items found at Meols were donated to the Liverpool Museum in 1901 (Accessions Register and Card Index). Thompson Watkin records that a piece of dark reddish glass had been found at Dove Point in 1884 by Mr Charles Roeder of Manchester (Thompson Watkin 1886, 280).

F. W. Longbottom

It appears that a group of material came from a joint expedition undertaken with Robert Newstead in March 1905 (Grosvenor Museum, Acc. No. 241–245.1906, donated by F.W. Longbottom). Longbottom also published a short article on the coinage from Meols in the Potter Collection (Longbottom 1908).

Robert Newstead

Robert Newstead was Curator of the Grosvenor Museum (1886–1905) before becoming a lecturer (later Professor) of Entomology at Liverpool University, and took up the curatorial post again on an honorary basis in his retirement until his death in 1947. He made major contributions to archaeology in Cheshire, and was amongst the first to attempt systematic excavations of Roman Chester. With F. W. Longbottom he made a visit to the Meols Shore in March 1905, but he took up his scientific lectureship at the University shortly afterwards and his interest in the site seems to have dissipated. He undertook excavations on Hilbre Island in 1926, but the results were disappointing (Newstead 1927).

The Warrington Museum Collection from Meols has a label associated with the small group of findings – 'Various objects collected at Great Meols Shore (submerged forest) by Messrs. R. Newstead and W. F. Longbottom, 1905'.

The other group of material there is numbered 149'04, which, according to the accessions register, represents 'about a hundred brass objects found by William Banks in the 1890s'. Donor: R. Newstead, Chester. Amongst this material are three finds, at least, that belonged to Hume and had been illustrated by him (Hume 1863, pl. XXII, 7; XXV, 2 and 3)

At the Grosvenor Museum, Chester, Acc. Nos. 205–210.1905 were donated by Robert Newstead from the 'Submerged Forest at Great Meols'.

John Ralph Shaw, of Arrowe

An account by Revd Hume, on 28 July 1857 of the discovery of the remains at Hoylake on the occasion of the visit of the Archaeological Institute to Chester in July 1857 (Anon 1864b) records that 'these were chiefly in the possession of Mr. Mayer, Mrs. Longueville, of Eccleston, Mr Ecroyd Smith, Mr. Ainslie, of Guildford, Surrey, Mr C.B. Robinson, Mr. Shaw, of Arrowe, the Historic Society of Lancashire, and himself'. John Ralph Shaw, High Sherriff of Cheshire, does not appear to be mentioned elsewhere as a collector. Shaw not only possessed Arrowe Hall in Wirral, but also owned Sandhey, a house with extensive grounds that bordered the shore in Great Meols. Shaw constructed his own sea-wall around the part of the grounds of Sandhey, which bordered the beach; this was known locally as 'Shaw's Battery' (NGR SJ 223 901).

John Clare, of Hoylake

Mr Clare exhibited at the Historic Society of Lancashire and Cheshire 2 finds from the shore at Hoylake on 18 April 1878, a lead weight 'found on the sea shore near Hoylake', and an inscribed stone from the same place (Anon 1878, 166).

Frank Simpson

A local Chester antiquary (1863–1942) – who owned a spindle whorl from Meols, purchased by Robert Newstead, 16 December 1942 (new No. 497).

F. H. Williams

Seven flints found *c.* 1897 near Red Rocks, Hoylake, form part of the collection given to the Grosvenor Museum/Chester Archaeological Society by F. H. Williams in 1900.

COLLECTIONS UNASCRIBED TO AN INDIVIDUAL

Historic Society of Lancashire and Cheshire

Collection placed on permanent loan with the Liverpool Public Museum in 1860. The collection was composed of gifts made at various times by members of the Society.

'By authority of the Council, some of the objects of which the Liverpool Museum already possessed specimens, have been deposited in the Birkenhead Public Museums on permanent loan …' (Bailey and Gladstone 1913, 4). This loan included various finds from the Cheshire shore, a few of which stayed in Liverpool, but most of which went to Birkenhead. All were given to the society by Dr Hume and C. B. Robinson Esq., in 1848. The Historic Society of Lancashire and Cheshire's material is marked 'H.S.' followed by a number.

Documentation

Bailey and Gladstone 1913.

Warrington Museum and Art Gallery

RA 1556 Metal Fragments (24)
RA 1557 Stone Amulet
RA 1558 Earthenware Bead

It is not clear who the donor was, and the only reference is 'see *Ancient Meols* by Hume, 1863'. Some of these objects can be identified in Hume's collection.

Warrington Museum and Art Gallery

106'23 Three horseshoes, piece of flint and relics bought from Stevens's Auction Rooms Ltd, Lots 62, 63, Sale 13.

Hoylake Historical Society (now in the Williamson Art Gallery and Museum, Birkenhead)

A collection of material formerly on display in the public library at Hoylake from the Hoylake Historical Society. The library transferred this collection to the Williamson Art Gallery and Museum shortly after Christmas 1976, according to a handwritten note on a letter from Gill Chitty (Liverpool Museum) to Mr D. Gradwick,

Librarian at Hoylake Public Library , dated 1 November 1976. This is now in store in the W illiamson Art Gallery and Museum (stock no. 5042) and consists of about 75 objects. It is a separate group of material from the group loaned by the Historic Society of Lancashire and Cheshire. Some of the cards on which the material was mounted indicate that some pieces were found in June 1956 so must have been added later to the Hoylake Historical Society collection; a medieval knife, at least, has 'Potter Colln' on the back of the card on which it is mounted and the lead ampulla has a label from 'CP' stuck on the base of the stand.

Appendix 2: Material characterisation and investigation of an assemblage of objects from Meols

Matthew J. Ponting

Summary

A selection of 151 objects from Meols was submitted to the Ancient Monuments Laboratory, English Heritage, for X-ray fluorescence analysis in 2003. Most of the objects were later medieval or post-medieval and consisted of glass beads, buckles, strap loops, and other small items in silver, copper, lead, and tin-based alloys. Many of the glass beads are of a particular composition that dates them to the early medieval period, and the metal compositions indicate a variety of alloy types typical of the medieval and later periods.

Material analysed

A group of 151, mainly later medieval, objects were selected for analysis by Geoff Egan and Robert Philpott. The aim was to address some specific questions about certain groups of objects and a number of individual pieces by conducting X-ray fluorescence analysis on the surfaces of the objects. X-ray fluorescence was chosen because it is quick and non-destructive. The quality of the data produced by this technique is generally limited, because the surface composition is changed over time by the action of the burial environment. It was therefore not possible to address questions requiring high precision analysis and the measurement of trace elements, such as looking for chemical signatures that may help distinguish between local and imported objects. However, it is possible to distinguish between copper, brass, and bronze, and between lead-rich and tin-rich pewter, as well as to characterise different glass compositions. Because of specific questions, permission was given to undertake more invasive analysis of the silver-alloy objects.

Analytical technique

An EDAX Eagle II X-ray fluorescence spectrometer was used to analyse a small area on each object. Where an object had several distinct parts, such as a buckle or a decorated mount, each part was analysed separately. The operating parameters were an accelerating voltage of 40kV and a current of 200mA, counting for 100 seconds. Appropriate standard reference materials were analysed alongside the unknowns, and reasonable agreement between the certified and measured compositions was achieved. However, the greatly varying geometry of the objects due to differences of size and shape, together with the fact that the analysis was of a corroded surface, means that the standard reference materials could only be used as a guide to instrumental performance rather than the accuracy and precision of the analysis. Wherever possible a clean, bright area of metal was chosen for analysis, but this was not possible for all the metal objects. In the case of the silver-alloy objects, a small area was abraded to reveal bright metal. Many of the glass objects were heavily degraded and this is reflected in the quality of the results.

Results

The analyses of the metal objects enabled the alloy type of each piece to be determined and the approximate proportions of the main alloying metals estimated.

Copper alloys

The copper-alloy objects can be divided into those of copper, bronze (the alloy of tin and copper), brass (zinc and copper), or a mixed alloy containing significant amounts of both tin and zinc, commonly called gunmetal. Where lead has been added to any of the alloys, the alloy is referred to as leaded-bronze, leaded-brass, etc. The proportion of the different alloying metals has been the subject of some discussion (Bayley 1991; 1998), but much depends on the nature of the data under scrutiny. For the data presented here, the criteria suggested by Bayley (1991) for medieval alloys have been used. Brass is defined as having approximately four times as much zinc as tin, and bronze approximately three times as much tin as zinc. Gunmetals obviously fall in between. Un-alloyed copper is problematic for medieval metalwork, because the degree of 'contamination' by other metals is relatively greater than with alloys of earlier periods. Again, the criteria suggested by Bayley (1991) to define un-alloyed copper are used broadly here; less than 8% zinc, less than 2.5% tin, and less than 5% lead.

The majority of copper-alloy objects are made of gunmetal (61%), with 22% being bronzes and only 9% of both brass and un-alloyed copper. There is no strong correlation between alloy type and artefact type other than with the small group of four swan's neck and ring-headed pins (**82 – 85**). All four of these are made of bronze with an estimated tin content of approximately 10% and make up 40% of all bronze items in the group analysed. The measured surface tin content varies between 20% and 39% which is the level that would be expected for a bronze with a true tin content of around 10%. For example, pin **82** has a surface tin content of 20.1%, whereas a slightly abraded area gave a tin content of 11.1%, still probably a little high because clean metal was not exposed by the abrasion, but reasonable close to the likely 'true' value. Ring-headed and swan's neck pins are a form of personal ornament originating in the late Bronze Age and continuing into the early Iron Age. The ring-headed form is generally regarded as having developed from the swan's neck pin and is therefore a later, solely early Iron Age phenomenon (Megaw and Simpson 1984, 389). The bronze metalwork of the late Bronze Age is characterised by the use of relatively highly leaded alloys, with the likelihood of a gradual decline in the amount of lead used towards the end of the period (Dungworth 1996, 400). Early Iron Age bronzes, on the other hand, are usually almost lead-free; Dungworth found a mean lead content of only 0.9% for the 112 objects that he analysed. It is therefore of interest that the three earlier swan's neck pins (**83 – 85**) all contain significant levels of

lead, even accounting for some surface depletion, levels that are consistent with the metalwork from Scarborough and Staple Howe (Dungworth 1996). Furthermore, the ring-headed pin (**82**) contains the least lead, at approximately 1.5%, and is therefore well within the spread of northern British Iron Age objects.

The other bronze objects form an unrelated group and include a single finger-ring, a brooch, a knife haft, the only non-pewter strap loop, and two pieces of workshop waste. The alloy of the finger-ring **88** is consistent with the suggested late Iron Age or Roman date; however; the alloy also contains almost 1% of zinc, an alloy trait that makes it unlikely to be earlier than the 1st century BC and quite possibly Roman. There are therefore only three bronze items (6.5%) that are likely to be of medieval date, suggesting that it was an uncommon alloy during that period. This is a similar picture to that found by the analysis of the medieval items from London, where 12% of the copper-alloy objects analysed were found to be bronze (Heyworth 1991).

Table A2.1: Alloy type by artefact type

Artefact type	*Alloy type*				*Total*
	Brass	*Gunmetal*	*Bronze*	*Unalloyed copper*	
Brooch		4	1		5
Buckle		1		1	2
Door handle	1				1
Finger ring		1	1		2
Key		5		1	6
Knife end-cap	1	5	1		7
Mount	1	1		1	3
Pin		2			2
Ring pin			4		4
Strap loop		2	1		3
Unknown		2			2
Waste	1	5	2	1	9
Total	4	28	10	4	46
% of total	8.7%	60.9%	21.7%	8.7%	100.0%

Three of the four brass objects are relatively high-status objects; a knife end-cap **2146** (the majority of which are gunmetal), a decorated strap-clasp or mount **890**, and a fragment of a door handle **2025**; only a piece of brass scrap **2266** is more mundane, but is suggestive of brass working at Meols. The brass door handle is a particularly prestigious object, and reflects the fact that brass in the medieval period was a relatively high-status metal. Similarly, the decorated strap-clasp is also an up-market item and this is reflected in the quality of the metal used in its production. Gunmetal, on the other hand, is ubiquitous; the majority of brooches, keys, knife end-caps, non-pewter strap loops, and even waste metal are made of it. The measured tin and zinc contents of the gunmetals are very variable, although differences in burial environment will have affected both the tin and zinc contents to varying degrees. Zinc will tend to be depleted at an object's surface, whereas tin will be enriched, as described above. The reality may therefore be a less broad distribution of compositions, possibly in the range of 5–10% tin and 10–15% zinc. This suggests that the gunmetals can probably be associated with the medieval term *latten* (for a discussion of this, see Bayley 1991) and, as such, are very similar to the objects analysed from London (Heyworth 1991).

Un-alloyed copper accounts for only four items (9%). The London analyses again show a similarly low incidence of un-alloyed copper (approximately 10% of the copper-alloys) (Heyworth 1991). The pieces made of un-alloyed copper are: a buckle **558**, a key **2064**, a decorative stud or mount **1070**, and some metalworking waste **3790**. The key is made of an alloy that is almost brass, containing approximately 4% or so of zinc and little else, but being employed to make a rather crude key (a replacement for one lost or broken?) suggests that the metal sheet was perceived as copper rather than brass, not having sufficient zinc to affect its colour. The flattened ends used to form the bit of the key

Table A2.2: All copper alloys

Catalogue number	*Material*	*Type*
82	Bronze	Pin
83	Bronze	Pin
84	Bronze	Pin
85	Bronze	Pin
88	Bronze	Finger ring
205	Gunmetal	Mount
386	Gunmetal	Ring
558	Unalloyed copper	Buckle
890	Brass	Strap clasp
1070	Unalloyed copper	Mount
1326	Gunmetal	Strap loop
1396	Bronze	Strap loop
1414	Gunmetal	Strap loop
1548	Bronze	Strapend
1651	Gunmetal	Brooch
1736	Gunmetal	Brooch
1742	Gunmetal	Brooch
1886	Gunmetal	Pinhead
1887	Gunmetal	Pin
1979	Gunmetal	Ring
2025	Brass	Door handle
2062	Gunmetal	Key
2064	Unalloyed copper	Key
2065	Gunmetal	Key
2066	Gunmetal	Key
2067	Gunmetal	Key
2068	Gunmetal	Key
2143	Gunmetal	Knife end-cap
2144	Bronze	Knife end-cap
2145	Gunmetal	Knife end-cap
2146	Brass	Knife end-cap
2148	Gunmetal	Knife end-cap
2149	Gunmetal	Knife end-cap
2150	Gunmetal	Knife end-cap
2249	Gunmetal	Waste
2256	Gunmetal	Waste
2257	Gunmetal	Unknown
2260	Gunmetal	Waste
2264	Gunmetal	Waste
2265	Gunmetal	Waste
2266	Brass	Waste
3061	Gunmetal	Shoe buckle
3113	Gunmetal	Hinged lid
3788	Bronze	Waste
3790	Unalloyed copper	Waste
3791	Bronze	Runnel

were fixed together by a pure copper rivet, probably used because of its softness, but also because it was assumed to be of the same composition as the main key.

Gilding was usually done on a fairly pure copper substrate, because the presence of alloying metals can cause the gold to discolour (Egan and Prichard 1991, 27; Oddy 1982). However, no traces of gold were found on the buckle **558** or the mount **1070**, and so these were unlikely to have been gilded.

The presence of pieces of waste material, including spillages of metal and crucible fragments with traces of metal **3498** and **3499**, suggests that copper-alloy working (casting) was being conducted in the area. The composition of these nine pieces broadly reflects the composition of the artefacts; five are gunmetal, two are bronze, and there is one piece each of brass scrap and un-alloyed copper waste.

Because the analyses were limited to surface XRF, it was not possible to obtain any useful trace element data that would have allowed a discussion of metal groups and production centres. However, it was noted that the two gunmetal sheet discards **2264** and **1920** both contain a significant amount (approximately 1%) of antimony.

Lead/tin alloys

This is the second most frequent alloy among the objects analysed and makes up 39% of all the metal items (33 pieces). Heyworth (1991) divides this alloy into three types on the basis of their lead/tin ratios; alloys that are predominantly tin, predominantly lead, or pewter, where there is a significant amount of both lead and tin. The London alloys are described as predominantly tin or pewter, with 52% being tin, 46% being pewter, and only 2% being lead. When described in the same fashion, the Meols pieces correspond quite well with these figures (Table A2.3), although there is a greater proportion of lead objects (12%) and correspondingly less pewter.

The lead objects consist of a jetton **5920**, an ornamental mount **3138**, a twisted bar **3934**, and a spindle whorl **2293**; the spindle whorl and the bar are almost pure lead, whilst the jetton and mount contain 5% or so of tin. The tin and pewter objects are of similar types, in fact equal numbers of strap loops and buckles are made of tin and pewter. One brooch pin is made of tin, as is the mirror case decoration **2013** and the spoon top **2162**, which suggests that the increased tin content indicated higher status,

Table A2.3: All lead/tin alloys

Catalogue number	*Material*	*Type*	*Copper (%)*	*Lead (%)*	*Antimony (%)*
252	Lead-rich pewter	Brooch	> 1	> 20	
434	Lead-rich pewter	Ring	> 1	> 20	> 1
606	Tin	Buckle	> 1		> 1
609	Tin	Buckle	> 1		
611	Lead-rich pewter	Clasp		> 20	
947	Tin-rich pewter	Clasp		> 20	
983	Tin-rich pewter	Mount	> 1	> 20	
1007	Tin	Mount	> 1		
1045	Tin	Mount	> 1		
1057	Tin	Mount	> 1		
1487	Tin	Strap loop	> 1		
1489	Tin	Strap loop	> 1		> 5
1490	Lead-rich pewter	Strap loop	> 1	> 20	> 5
1491	Tin	Strap loop			
1493	Tin-rich pewter	Strap loop		> 20	
1494	Lead-rich pewter	Strap loop		> 20	
1495	Lead-rich pewter	Strap loop		> 20	
1496	Tin	Strap loop			
1603	Tin	Strap end	> 1		> 5
1773	Tin-rich pewter	Brooch	> 1	> 20	
1787	Tin-rich pewter	Brooch		> 20	
1808	Tin	Brooch pin			
1809	Tin-rich pewter	Brooch pin		> 20	
2013	Tin	Mirror case?	> 1		
2162	Tin	Spoon top	> 1		
2291	Tin-rich pewter	Buckle		> 20	> 1
2292	Lead-rich pewter	Brooch	> 1	> 20	> 1
2293	Lead	Spindle whorl		> 20	
2294	Lead-rich pewter	Buckle		> 20	
2346	Tin	Mount	> 1		
3138	Lead	Brooch		> 20	
3934	Lead	Bar		> 20	
5920	Lead	Jetton		> 20	

although three of the four brooches are made of pewter. Some of the pieces also contain up to a few percent of copper, and there is evidence for a loose correlation between the amount of copper and the amount of tin in the alloy. Re-deposition of copper onto the surface of the objects would account for the looseness of the correlation; more invasive analysis might result in a better correlation.

Seven of the pewter objects **434, 606, 1489, 1490, 1603, 2291, 2292** contain significant traces (over 1%) of antimony and copper. Three **1489, 1490, 1603** of these contain between 5% and 20% antimony. Antimony was added to harden pewter from about 1680 (Hornsby, Weinstein, and Homer 1989, 47). However, Britannia metal, containing 2–5% antimony and 1–2% copper, appears to have been introduced in the middle of the 18th century (W. R. Lewis 1960, 19). All the Meols objects containing significant antimony are either buckles **606, 2291, 434**, and **2292**, or strap loops/ends **1490 1603**, and **1489**, and all but one **2291** contain copper, indeed, it is the strap loops/end that contain particularly elevated levels of antimony. A variant of pewter called Ashberry metal contains up to 25% antimony and has the effect of enhancing casting properties, enabling very hard, sharp castings (Lewis 1960).

Despite being made of lead with only a small amount of tin, ornamental mount **3138** is a very decorative object and is enhanced by the addition of brass appliqués. These appear to be made of thin sheet metal that has been soldered or burned-on.

252 was originally thought to be a buckle with bands of red and blue enamel. Analysis shows that the body of this object is a 1:2 tin:lead pewter with *c.* 2% of copper. The concentric bands are in fact an inlay of a silver/copper sulphide niello on a thin sheet of pure copper that was backed with the pewter, after the niello had been applied. The material that was between the bands has long since corroded or dissolved away. The niello contains no lead, which suggests that it may be Roman or early medieval because silver/copper/lead niellos only appear in the 13th century. Copper/silver niello is commonest in the early medieval period (LaNiece 1983, 286), whilst Roman niello is usually silver or copper sulphide, but rarely both.

The importance of lead-tin alloys in the repertoire of medieval materials is reflected in the issuing of ordinances and charters to regulate the industry in London and the establishment of a Guild of Pewterers (Welch 1902). The documents provide useful insights into the production of these alloys in London and can be used in understanding the material from Meols. The 1348 ordinance of the London Guild of Pewterers distinguishes between two types of pewter: Fine metal and Lay metal. Fine metal was mainly tin with an unspecified addition of copper, whilst Lay metal was tin with added lead. The amount of lead in the pewter was clearly of concern, and although the exact level permitted is unclear, somewhere around 20% seems likely. Later, in the 16th century, the records indicate that three grades of pewter were in use: Fine (tin containing 4% copper), Trifle (tin with 4% lead and copper) and Lay (tin with up to 15% lead). Of these, Fine and Trifle were permitted for eating and drinking use, whilst Lay was not. The control of the amount of lead added seems to have been a major concern of the regulation and the reason for the introduction of pewterer's marks for tableware in the 16th century (Welch 1902: 94–7). Outside of London, however, the Guild's control seems to have been limited, although by the 17th century inspections in the Midlands and further afield are recorded (Hornsby *et al.* 1989, 13).

The high proportion of Meols objects analysed that appear to contain in excess of 20% lead (19 objects; 58%) suggests that contravention of the Guild's regulations was endemic. Whilst a number of items probably made no pretence of being anything other than lead, such as the spindle whorl (**2293**) and perhaps the jetton (**5904**), examples of other object types exist that were made of the correct alloy, so the lead-rich versions could well be sub-standard. For example, four of the nine pewter strap loops are made of metal containing high levels of lead. However, it may be that the Guild regulations for pewter did not apply to small dress accessories. It is therefore of interest that the pewter spoon top **2162** was found to conform precisely with the Guild regulations containing approximately 4% copper and approximately 4% lead (Dungworth 2002).

Silver alloys

Six of the objects submitted for analysis are made of an alloy of silver and copper (**1815, 1816, 1818, 1819, 1827,** and **1991**). Initial surface analysis revealed a fairly base silver-copper alloy (approximately 80% silver), which, under normal environmental conditions, would suggest an even baser bulk composition. However, more invasive analysis involving the abrasion of a small area to expose representative bulk metal revealed that a relatively thick sulphide crust was obscuring an essentially sterling silver composition.

Table A2.4: All silver alloys

Number	*Type*	*Silver %*	*Gold %*		
			Copper %		*Lead %*
1815	Brooch	91.8	6.5	0.4	1.3
1816	Brooch	90.5	7.4	1.3	1
1818	Fragment	91.5	4.3	3.3	0.9
1819	Brooch	90.1	7.1	0.4	2.4
1827	Brooch pin	92.3	5.8	0.4	1.6
1991	Ring	92.0	4.8	1.9	0.8
	Sterling	92	7.4	0.2	0.4

A section cut from a Victorian florin was analysed alongside the objects to provide a standard against which to monitor accuracy. The florin was struck on the sterling standard and should be nominally 92.5% silver, and indeed, as the analysis shows, it within 1% of that figure. We can thus be reasonably confident that the bulk analyses of the objects are accurate.

It should be noted that the traces of gold and lead are lower in the florin than in the objects. This is consistent with the objects being earlier in date, when the refining process was not as rigorous. Indeed, Percy (1870) states that, for reasons of economy, the product of an initial, large-scale cupellation was continued until the metal was only approximately 94% fine silver, the remainder consisting chiefly of lead. Thus a subsequent, smaller-scale after-cupellation was necessary to reduce the impurities to a negligible level. The criteria for determining when the silver had reached a sufficient level of purity were very subjective; to do with colour, drop-shape, etc., and so complete chemical purity was never in practice achieved. The amounts of lead remaining in the silver are therefore an index of the rigour of the process, whilst the amounts of gold relate directly to the ore source/s as this metal can not be oxidised away by cupellation. Analyses of silver trial

plates held by the Royal Mint (Forbes and Dalladay 1959) show that gold and lead at similar levels to the Meols objects were usual prior to 1600, when efforts were made to procure purer metals. T rial plates of 1873 and 1900 were produced from stock metals that are 'typical of coinage and silver wares of corresponding date' (Forbes and Dalladay 1959), and have gold and lead levels at least an order of magnitude lower than in the Meols objects. It is therefore likely, on the basis of the silver composition, that the Meols objects were produced before 1600. Furthermore, the brooches as a group contain over 1% lead (mean 1.6%) and 0.6% gold, whereas the ring and the gilded fragment contain 0.9% lead and over 2% gold. This suggests that the brooches are made from less well-refined silver from a low-gold source whilst the other two objects are made from better -refined metal from a high-gold source. The metal of neither group is made of silver of purity equivalent to post-1600 coinage metal.

In addition to the silver objects, there were two small, bone-ash cupels or tests (**3130, 3131**). These were used for the assaying of silver and are saturated with litharge (lead oxide), which shows that they have been used. The size and shape of the cupels is very similar to those from the T ower of London, which are securely dated to the 16th century (Bayley 1991).

Glass

There are 60 glass objects in the assemblage analysed, 48 of which are beads. The majority of the remainder are pinheads, with a small group of four fragments of vessel glass **3391, 3392, 3394, 3395** and a single ring fragment **3393**. The majority of the objects are made of a glass that has a particularly high lead content, generally over 60% lead oxide. Such a glass would have a low melting point (approximately 750°C) and would therefore be relatively easy to produce using a simple furnace; it is also a highly refractive glass, lending it a jewel-like appearance (T yson 1996). Glass of this composition occurs in Britain especially about the 10th century , when it is used for the manufacture of beads, rings, and other trinkets (Bayley and Doonan 2000). This glass is characteristically translucent yellow in colour, although copper was sometimes added to produce a translucent green, or when present in larger quantities, a very dark opaque green that can appear almost black. From the 13th century , glass of this composition began to be used to make vessels in north-west Europe and examples are also known from Britain (T yson 1996). However, there is still some debate as to whether the production of lead-glass vessels from the 13th century is a direct continuation of the earlier trinket glass industry. One of the stylistic features of these lead-glass vessels is the use of 'berry' prunt decoration, which used to be thought a 17th-century innovation. Lead glass 'berry' prunt fragments are known from medieval contexts in Bedford and Swan Lane, London, and there is also one from Meols **3395**. This consists of a yellow glass stem made of high-lead glass with a prunt of very dark green/black glass coloured by approximately 2% copper. A small amount of zinc was also detected, suggesting that the copper was added in the form of brass, and indeed, Book III of Heraclius's *De coloribus et artibus Romanorum* (probably 12th century) refers specifically to brass (*auricalcum*) as the colorant for green lead-glass (Merrifield 1967). The other three vessel fragments **3391, 3392, 3394** are all yellow lead-glass, containing between 68% and 83% lead oxide, and are therefore all consistent with a 13th/early-14th-century date.

The pinheads are likewise made of high-lead glass and are therefore likely to be of medieval date. There is a similar range of colours and colorants.

Most of the beads are made of high-lead glass and could therefore be as early as the 10th century. Similarly, the ring fragment **3393** is high-lead translucent yellow glass. Its lead oxide content is approximately 78% and is in close agreement with the lead oxide content ascertained by Bayley (1990) for glass rings from 10th–13th-century contexts in Winchester. The high-lead glass beads are also predominantly yellow in colour and contain an average of approximately 75% lead oxide (Std.Dev. 10.4). The yellow colour is the result of traces of iron in the glass, probably from contamination of the raw materials (Bayley 1990). The green beads are coloured by the addition of small amounts of copper or copper -alloy (approximately 0.5–3%) and the black beads all have high iron contents (approximately 5–10%) and some have traces of copper too (up to 3%). These results are very similar to those of Anglo-Scandinavian beads from York (Bayley and Doonan 2000) and suggest an almost identical production technology, further supporting an early date for these beads.

Of the beads that are not high-lead glass, two are soda-lime-silica glass and two arsenical opal glass. The soda-lime-silica glass beads are coloured, one green **3379** and one blue **3390**. The blue melon-shaped bead is coloured with a small amount of copper and a trace of cobalt. Its general composition is consistent with that of similar beads from Anglo-Scandinavian Y ork (Bayley and Doonan 2000), although such compositions are also consistent with Roman glass and have been used to suggest the re-working of Roman blue glass in the early medieval period, or its importation from the eastern Mediterranean (Bayley and Doonan 2000, 2528). The green soda-lime-silica bead is unlikely to be early medieval, but could be Roman. The arsenical glass beads **3380, 3381** have to be considerably later in date: arsenic appears to have been introduced as an additional flux in the later 17th century (T urner 1956) and especially to enhance brilliance or as an opacifier producing opaque white or opaline glass. It appears to have become a common glass constituent by the 19th century . The two beads contain 8% and 20% arsenic trioxide, respectively, with the remainder being mostly silica with some lime, potash, and alumina.

Conclusion

The analysis of objects from the Meols assemblage has provided some useful information, both on specific objects and on several general issues. The proportions of the different metal alloy types fit well with the published work on medieval objects from London and also demonstrate the high degree to which pewter was used for small items. There is no apparent correlation of alloy type with object type, except for the prehistoric pins, which are all of bronze. However, there is an indication that brass was a scarce and relatively high-status alloy and that the medieval and post-medieval gunmetals tend to have more zinc than tin. The extent to which the composition of the pewter contravenes the Guild of Pewterers' regulations suggests that either the regulations did not apply to dress accessories, or that the Guild was unable (or un-willing) to enforce its regulations in far -away Meols. An interesting comment on this question is the fact that the analysis of the spoon top shows that its alloy adheres closely to the regulations. The silver objects are all of a similar , sterling silver

composition suggesting rigorously controlled regulation of precious metal. This is further supported by the inclusion of cupels in the assemblage. Furthermore, the level of impurities in the silver objects is relatively high, which may indicate a later medieval date.

The glass compositions suggest that the majority of glass objects, beads, pinheads, and vessels are medieval in date, and that some of the beads may be as early as the 10th century. Beads of soda-lime-silica composition may be Roman or early medieval. T wo beads opacified with arsenic are probably 18th or 19th century and serve to highlight the large date-range of glass from Meols.

Table A2.5: Glass analyses (X = element detected)

Catalogue number	*Type*	*Colour*	*Copper (Cu)*	*Cobalt (Co)*	*Iron (Fe)*	*Lead (Pb)*	*Arsenic (As)*
3384/4	Bead	Yellow				x x x	
3384/3	Bead	Yellow				x x x	
3384/2	Bead	Green	x			x x x	
1886	Pinhead	Yellow				x x x	
1887	Pinhead	Yellow				x x x	
3340	Bead	Yellow				x x x	
3341	Bead	Yellow				x x x	
3342	Bead	Yellow				x x x	
3343	Bead	Yellow				x x x	
3344	Bead	Yellow				x x x	
3345	Bead	Yellow				x x x	
3346	Bead	Yellow				x x x	
3347	Bead	Yellow				x x x	
3348	Bead	Yellow				x x x	
3349	Bead	Yellow				x x x	
3350	Bead	Yellow				x x x	
3351	Bead	Yellow				x x x	
3352	Bead	Yellow				x x x	
3353	Bead	Yellow				x x x	
3354	Bead	Yellow				x x x	
3356	Bead	Yellow				x x x	
3357	Bead	Yellow				x x x	
3358	Bead	Yellow				x x x	
3359	Bead	Yellow				x x x	
3360	Bead	Yellow				x x x	
3361	Bead	Yellow				x x x	
3362	Bead	Black			x	x x x	
3363	Bead	Yellow				x x x	
3364	Bead	Yellow				x x x	
3365	Bead	Yellow				x x x	
3366	Bead	Yellow				x x x	
3367	Bead	Yellow				x x x	
3368	Bead	Yellow				x x x	
3369	Bead	Yellow				x x x	
3370	Bead	Yellow				x x x	
3371	Bead	Yellow				x x x	
3372	Bead	Yellow				x x x	
3373	Bead	Green	x			x x x	
3374	Bead	Black			x	x x x	
3375	Bead	Black			x	x x x	
3376	Bead	Black	x			x x x	
3377	Bead	Black	x		x	x x x	
3378	Bead	Black	x		x	x x x	
3379	Bead	Green	x				
3380	Bead	Opal					x x
3381	Bead	Opal					x x
3382	Bead	Green	x			x x x	
3383	Bead	Green	x			x x x	
3384/1	Bead	Black			x	x x x	
3385	Pinhead	Yellow				x x x	
3386	Pinhead	Green	x			x x x	
3387	Pinhead	Green	x			x x x	
3388	Pinhead	Green	x			x x x	
3389	Pinhead	Black			x	x x x	
3390	Bead	Blue	x	x			
3391	Vessel	Yellow				x x x	
3392	Handle	Yellow				x x x	
3393	Ring	Yellow				x x x	
3394	Vessel	Yellow				x x x	
3395	Prunt	Blue/black	x		x	x x x	

Appendix 3: Concordance of Publication and Archive Numbers with Museums

GM = Grosvenor Museum, Chester
GM P = Grosvenor Museum, Potter Collection
GM L = Grosvenor Museum, Mrs Longueville Collection
NML = National Museums Liverpool
WarrM = Warrington Museum and Art Gallery
WillM = Williamson Art Gallery and Museum, Birkenhead
BritM = British Museum
PO = Private Ownership
N/E = Non-extant

Publication Number	*Archive Number*	*Collection*	*Publication Number*	*Archive Number*	*Collection*	*Publication Number*	*Archive Number*	*Collection*	*Publication Number*	*Archive Number*	*Collection*
1	4347	GM P	51	4330	GM	121	3352	NML N/E	171	994	GM
2	4348	GM P	52	4309	GM	122	3353	NML N/E	172	889	GM
3	4352	GM	53	4319	GM	123	3380	N/E	173	907	GM
4	4353	GM	54	4326	GM	124	3123	N/E	174	890	GM
5	4324	GM	55	4341	GM	125	3126	N/E	175	989	GM
6	4337	GM	56	4310	GM	126	3129	N/E	176	5026	WarrM
7	4312	GM	57	4317	GM	127	1002	BritM	177	30	GM P
8	4340	GM	58	4318	GM	128	3122	N/E	178	5025	WarrM
9	5609	WillM	59	4307	GM	129	3125	N/E	179	883	GM
10	5608	WillM	60	4322	GM	130	3127	N/E	180	884	GM
11	4339	GM	61	4325	GM	131	3130	N/E	181	881	GM
12	2970	NML	62	4354	GM	132	3164	NML N/E	182	3376	N/E
13	4320	GM	63	4301	GM	133	5560	WillM	183	3381	N/E
14	4323	GM	64	4349	GM P	134	5007	WarrM	184	3135	N/E
15	3357	N/E	65	132	GMus	135	3162	NML N/E	185	891	GM
16	3358	N/E	66	4385	WillM	136	3167	NML N/E	186	1007	BritM
17	3359	N/E	67	111	GM	137	3168	NML N/E	187	987	GM
18	4334	GM	68	4202	PO	138	3169	NML N/E	188	995	GM
19	4351	GM P	80	3040	N/E	139	3170	NML N/E	189	892	GM
20	4355	GM	81	1787	GM	140	3356	N/E	190	885	GM
21	4332	GM	82	5116	WarrM	141	3354	N/E	191	882	GM
22	4342	GM	83	116	GM P	142	3355	N/E	192	985	GM
23	4350	GM P	84	117	GM P	143	284	NML	193	492	GM P
24	4343	GM P	85	118	GM P	144	73	GM	194	886	GM
25	4345	GM P	86	1014	BritM	145	113	GM	195	5024	WarrM
26	4346	GM P	87	5592	WillM	146	114	GM P	196	893	GM
27	4344	GM P	88	963	GM	147	2989	NML	197	3324	N/E
28	3361	N/E	89	3036	N/E	148	3165	NML N/E	198	992	GM
29	3385	N/E	90	5130	WarrM	149	1019	BritM	199	993	GM
30	5610	WillM	100	282	NML	150	998	GM	200	996	GM
31	4302	GM	101	1627	GM	151	3105	? N/E	201	3325	N/E
32	4384	NML	102	5559	WillM	152	930	GM	202	72	GM
33	4331	GM	103	1839	GM	153	5594	WillM	203	1906	GM
34	4311	GM	104	74	GM	154	5595	WillM	204	3117	? N/E
35	4333	GM	105	50	GM L	155	1015	BritM	205	128	GM P
37	4338	GM	106	5006	WarrM	156	3320	N/E	206	4039	NML
38	4336	GM	107	280	NML	157	3319	N/E	207	3317	N/E
38	4304	GM	108	1003	BritM	158	3322	N/E	208	3316	N/E
39	4314	GM	109	252	NML	159	142	GM P	209	77	GM
40	4315	GM	110	3128	N/E	160	908	GM	210	21	GM P
41	4335	GM	111	3119	N/E	161	928	GM	211	497	GM.
42	4306	GM	112	3121	N/E	162	966	GM	212	104	GM
43	4327	GM	113	3131	N/E	163	988	GM	213	627	GM
44	4313	GM	114	3120	N/E	164	1008	BritM	214	628	GM
45	4316	GM	115	3318	N/E	165	990	GM	215	629	GM
46	4303	GM	116	42	GM P	166	967	GM	216	608	GM
47	4305	GM	117	1001	BritM	167	991	GM	217	610	GM
48	4308	GM	118	3124	N/E	168	986	GM	218	611	GM
49	4328	GM	119	3166	NML N/E	169	970	GM	219	5529	WillM
50	4329	GM	120	3172	NML N/E	170	927	GM	220	1983	GM

221	1984	GM
222	2139	GM
223	2972	NML
224	3304	N/E
225	3339	N/E
226	5591	WillM
227	4102	NML
228	4103	NML
229	4104	NML
230	4163	NML
231	4100	NML
232	5596	WillM
233	5597	WillM
234	2958	NML
235	2723	GM
236	2725	GM
237	4101	NML
238	4184	NML
250	4019	NML
251	5558	WillM
252	5557	WillM
253	3227	N/E
254	3118	N/E
255	3067	? N/E
300	68	GM
301	3033	? N/E
302	3034	?N/E
303	3035	?N/E
304	40	GM P
305	38	GM P
306	3202	N/E
307	257	NML
308	1348	GM
309	3029	? N/E
310	174	GM P
311	41	GM L
312	54	GM P
313	55	GM P
314	5576	WillM
315	1986	GM
316	47	GM P
317	14	GM P
318	12	GM P
319	3031	? N/E
320	1	GM P
321	3025	? N/E
322	3037	? N/E
323	44	GM P
324	3026	? N/E
325	5241	WarrM
326	3027	? N/E
327	3024	? N/E
328	1625	GM
329	3278	N/E
330	3275	N/E
331	48	GM P
332	248	NML
333	3277	N/E
334	39	GM L
335	3367	N/E
336	2	GM P
337	4	GM P
338	5	GM P
339	8	GM P
340	10	GM P
341	3	GM P
342	9	GM P
343	45	GM L
344	43	GM P
345	3028	? N/E
346	283	NML
347	122	GM P
348	123	GM P
349	2326	GM
350	133	GM P
351	134	GM P
352	1957	GM
353	3115	? N/E
354	129	GM P
355	6	GM P
356	7	GM P
357	52	GM P
358	258	NML
359	3096	? N/E
360	285	NML
361	3114	? N/E
362	120	GM P
363	127	GM P
364	260	NML
365	3330	N/E
366	255	NML
367	256	NML
368	126	GM P
369	124	GM P
370	62	GM P
371	119	GM P
372	3023	? N/E
373	61	GM P
374	64	GM P
375	67	GM P
376	66	GM P
377	63	GM P
378	5301	WarrM
379	3018	? N/E
381	3020	? N/E
382	65	GM
383	121	GM P
384	972	GM
385	5029	WarrM
386	5030	WarrM
387	135	GM P
388	136	GM P
389	56	GM P
389	3019	? N/E
390	51	GM P
391	3021	? N/E
392	5556	WillM
393	58	GM P
394	3030	? N/E
395	5097	WarrM
396	3144	N/E
397	2454	GM
398	2550	GM
399	130	GM P
400	3150	N/E
401	3151	N/E
402	2706	GM P
403	2417	GM
404	178	GM P
405	137	GM P
406	2687	GM
407	177	GM
408	2894	GM
409	53	GM P
410	20	GM P
411	2617	GM
415	155	GM P
416	4007	NML
417	4006	NML
418	360	GM
419	804	GM P
420	4022	NML
421	5054	WarrM
422	4008	NML
423	5021	WarrM
424	4009	NML
425	145	GM P
426	87	GM
427	2931	NML
428	909	GM
429	812	GM P
430	148	GM P
431	959	GM
432	286	NML
433	3245	N/E
434	888	GM
435	865	GM
436	4010	GM
437	5511	WillM
438	319	GM
439	301	GM
440	295	GM
441	359	GM
442	1392	GM
443	293	GM
444	1339	GM
445	1477	GM
446	1620	GM
447	4013	NML
448	373	GM
449	374	GM
450	352	GM
451	1618	GM
452	370	GM
453	291	GM
454	366	GM
455	323	GM
456	4014	NML
457	141	GM P
458	1474	GM
459	345	GM
460	4011	NML
461	305	GM
462	1467	GM
463	1469	GM
464	309	GM
465	1468	GM
466	341	GM
467	304	GM
468	344	GM
469	2976	NML
470	342	GM
471	343	GM
472	5308	WarrM
473	1321	GM
474	297	GM
475	1344	GM
476	375	GM
477	2900	GM
478	1351	GM
479	1334	GM
480	372	GM
481	316	GM
482	1342	GM
483	1466	GM
484	1431	GM
485	1473	GM
486	1465	GM
487	792	GM
488	5243	WarrM
489	1338	GM
490	3242	N/E
491	3243	N/E
492	1335	GM
493	3244	N/E
494	1479	GM
495	361	GM
496	299	GM
497	1470	GM
498	278	NML
499	1896	GM
500	2895	GM
501	5244	WarrM
502	3248	N/E
503	311	GM
504	270	NML
505	1346	GM
506	3241	N/E
507	5262	WarrM
508	358	GM
509	1324	GM
510	320	GM
511	5053	WarrM
512	290	GM
513	363	GM
514	382	GM
515	321	GM
516	279	NML
517	5051	WarrM
518	331	GM
519	378	GM
520	5052	WarrM
521	1472	GM
522	2903	GM
522	328	GM
523	4012	NML
524	5246	WarrM
525	1903	GM
526	371	GM
527	389	GM
528	351	GM
530	386	GM
531	388	GM
532	294	GM
533	349	GM
534	347	GM
535	346	GM
536	348	GM
537	5248	WarrM
538	5250	WarrM
539	298	GM
540	318	GM
541	35	GM P
542	1350	GM
543	3247	N/E
544	267	NML
545	385	GM
546	350	GM
547	266	NML
548	383	GM
549	5040	WarrM
550	1345	GM
551	292	GM
552	5046	WarrM
553	3246	N/E
554	365	GM
555	324	GM
556	314	GM
557	1341	GM
558	381	GM
559	2905	GM
560	37	GM P
561	5569	WillM
562	1488	GM
563	2910	GM
564	1490	GM
565	1478	GM
566	5574	WillM
567	5571	WillM
568	1487	GM
569	4015	NML
570	5570	WillM
571	5034	WarrM
572	1022	BritM
573	34	GM P
574	5567	WillM
575	1498	GM
576	2911	GM
577	1501	GM
578	5573	WillM
579	1023	BritM
580	1484	GM
581	5578	WillM
582	391	GM

583	276	NML
584	1421	GM
585	2909	GM
586	1021	BritM
587	2913	GM
588	5575	WillM
589	390	GM
590	33	GM
591	3231	N/E
592	3233	N/E
593	2914	GM
594	1026	BritM
595	1617	GM
596	5035	WarrM
597	322	GM
598	2896	GM
599	1562	GM
600	1900	GM
601	1482	GM
602	2176	GM
603	1481	GM
604	3049	? N/E
605	168	GM P
606	2901	GM
607	2072	GM
608	462	GM
609	1970	GM
610	393	GM
611	464	GM
612	1898	GM
613	1513	GM
614	5044	WarrM
615	1320	GM
616	1516	GM
617	3260	N/E
618	3261	N/E
619	467	GM
620	5015	WarrM
621	937	GM
622	355	GM
623	1371	GM
624	1365	GM
625	772	GM
626	273	NML
627	1300	GM P
628	1363	GM
629	442	GM
630	441	GM
631	1369	GM
632	173	N/E
633	457	GM
634	1494	GM
635	1492	GM
636	1407	GM
637	32	GM P
638	1902	GM
639	1899	GM
640	82	GM
641	873	GM
642	468	GM
643	466	GM
644	4017	NML
645	3262	N/E
646	1319	GM
647	1515	GM
648	340	GM
649	338	GM
650	300	GM
651	1464	GM
652	337	GM
653	325	GM
654	364	GM
655	317	GM
656	1471	GM
657	2898	GM
658	5045	WarrM
659	353	GM
660	5211	WarrM
661	5254	WarrM
662	376	GM
663	1519	GM
664	362	GM
665	1032	BritM
666	357	GM
667	302	GM
668	5247	WarrM
669	368	GM
670	330	GM
671	315	GM
672	356	GM
673	384	GM
674	387	GM
675	422	GM
676	326	GM
677	2899	GM
678	329	GM
679	5245	WarrM
680	1340	GM
681	5251	WarrM
682	5228	WarrM
683	1336	GM
684	5048	WarrM
685	5059	WarrM
686	377	GM
687	5056	WarrM
688	4016	NML
689	5041	WarrM
690	380	GM
691	369	GM
692	379	GM
693	2897	GM
694	367	GM
695	1031	BritM
696	790	GM
697	2907	GM
698	1024	BritM
699	1485	GM
700	5564	WillM
701	5565	WillM
702	5037	WarrM
703	2906	GM
704	1495	GM
705	1567	GM
706	5577	WillM
707	1496	GM
708	2902	GM
709	5572	WillM
710	36	GM P
711	3232	N/E
712	1500	GM
713	1502	GM
714	1616	GM
715	1028	BritM
716	1561	GM
717	5038	WarrM
718	1489	GM
719	5566	WillM
720	5033	WarrM
721	3366	N/E
722	2912	GM
723	1503	GM
724	2239	GM
725	1885	GM
726	1408	GM
727	1030	BritM
728	1509	GM
729	2522	GM
730	2525	GM
731	1507	GM
732	2519	GM
733	1553	GM
734	1518	GM
735	1343	GM
736	455	GM
737	1506	GM
738	3265	N/E
739	5267	WarrM
740	788	GM
741	780	GM
742	1347	GM
743	3264	N/E
744	463	GM
745	170	GM P
746	465	GM
747	172	GM P
748	167	GM P
751	336	GM
752	1430	GM
753	1499	GM
754	5036	WarrM
755	5568	WillM
756	3270	N/E
757	5039	WarrM
758	1476	GM
759	1905	GM
760	1475	GM
761	1901	GM
762	1349	GM
763	2044	GM
764	1559	GM
765	1558	GM
766	1557	GM
767	784	GM
768	1497	GM
769	3234	N/E
770	3235	N/E
771	2908	GM
772	2035	GM
772	2904	GM
773	5091	WarrM
774	5229	WarrM
775	2178	GM
780	5249	WarrM
781	5221	WarrM
782	1624	GM
783	793	GM
784	796	GM
785	5213	WarrM
786	791	GM
787	5165	WarrM
788	5252	WarrM
789	794	GM
790	787	GM
791	955	GM
792	296	GM
793	954	GM
794	1480	GM
795	5016	WarrM
796	1907	GM
797	5253	WarrM
798	1510	GM
799	5224	WarrM
800	1923	GM
801	2963	NML
802	1508	GM
802	847	GM P
804	1615	GM
805	1322	GM
806	5222	WarrM
807	5027	WarrM
808	1646	GM
809	5232	WarrM
810	392	GM
811	5235	WarrM
812	4020	NML
813	1670	GM
814	5226	
815	5237	WarrM
816	268	NML
817	1623	GM
818	5043	WarrM
819	5075	WarrM
820	1411	GM
821	1412	GM
822	1665	GM
823	1405	GM
824	5042	WarrM
825	1403	GM
826	1483	GM
827	19	GM
828	1401	GM
829	1669	GM
830	1422	GM
831	1409	GM
832	1415	GM
833	5278	WarrM
834	1621	GM
835	5242	WarrM
836	1410	GM
837	2177	GM
838	1619	GM
839	1413	GM
840	1406	GM
841	2939	NML
842	1420	GM
843	1418	GM
844	1423	GM
845	1486	GM
846	1404	GM
847	1417	GM
848	1419	GM
849	1626	GM
850	3236	N/E
851	3054	N/E
852	3056	N/E
853	3237	N/E
854	476	GM
855	1980	GM
856	169	GM P
857	171	GM P
858	1429	GM
859	2032	GM
860	5167	WarrM
861	951	GM P
862	870	GM
863	327	GM
864	1990	GM
865	5105	WarrM
866	878	GM P
867	5106	WarrM
868	144	GM P
869	1798	GM
870	1808	GM
871	1799	GM
872	1797	GM
873	5169	WarrM
874	2928	NML
875	5108	WarrM
876	5168	WarrM
877	143	GM
878	5207	WarrM
879	1801	GM
880	879	GM P
881	877	GM P
882	5171	WarrM
883	5206	WarrM
884	1793	GM
885	1804	GM
886	5208	WarrM
887	1807	GM
890	140	GM P
891	1400	GM
892	339	GM
893	1374	GM

894	250	NML
895	1375	GM
896	1396	GM
897	1326	GM
898	797	GM
899	1399	GM
900	785	GM
901	1915	GM
902	1370	GM
903	2066	GM
904	3267	N/E
905	5506	WillM
906	1397	GM
907	1398	GM
908	1865	GM
909	1373	GM
910	3368	N/E
911	3266	N/E
912	1376	GM
913	5239	WarrM
914	1389	GM
915	1456	GM P
916	5121	WarrM
917	1458	GM P
918	1451	GM P
919	1457	GM P
920	1452	GM P
921	1455	GM P
922	1459	GM
923	5120	WarrM
924	1388	GM
925	1385	GM
926	1386	GM
927	5150	WarrM
928	1454	GM P
929	1673	GM
930	1453	GM P
931	1450	GM P
932	2377	GM P
933	1622	GM
934	460	GM
935	394	GM
936	471	GM
937	798	GM
938	461	GM
939	458	GM
940	396	GM
941	459	GM
942	395	GM
943	469	GM
944	5549	WillM
945	164	GM P
946	3271	N/E
947	472	GM
948	5550	WillM
949	1327	GM
950	474	GM
951	470	GM
952	2175	GM
953	5217	WarrM
954	5238	WarrM
955	5219	WarrM
956	477	GM
957	479	GM
958	5220	WarrM
959	5194	WarrM
960	15	GM
961	5067	WarrM
962	3287	N/E
963	1049	BritM
964	3290	N/E
965	1749	GM
966	1044	BritM
967	1742	GM
968	1746	GM
969	1046	BritM
970	1739	GM
971	1740	GM
972	1720	GM
973	2942	NML
974	1743	GM
975	1741	GM
976	5196	Warr M
977	2927	NML
978	5128	WarrM
979	1894	GM
980	1895	GM
981	1949	GM
982	2996	GrM
983	593	GM
984	3060	N/E
985	1050	BritM
986	1710	GM
987	1703	GM
988	1737	GM
989	2924	NML
990	1735	GM
991	1708	GM
992	1707	GM
993	1922	GM
994	5148	WarrM
995	574	GM
996	1932	GM
997	2021	GM
998	1919	GM
999	1950	GM
1000	2968	NML
1001	1927	GM
1002	2019	GM
1003	1931	GM
1004	1933	GM
1005	1921	GM
1006	1726	GM
1007	576	GM
1008	1733	GM
1009	3064	? N/E
1010	1725	GM
1011	1750	GM
1012	5004	WarrM
1013	1835	GM
1014	1851	GM
1015	1717	GM
1016	2379	GM P
1017	1085	BritM
1018	1716	GM
1019	1768	GM
1020	1719	GM
1021	4031	NML
1022	5138	WarrM
1023	3063	? N/E
1025	1728	GM
1026	1435	GM
1027	5133	WarrM
1028	4027	NML
1029	17	GM P
1030	5072	WarrM
1031	1723	GM
1032	5095	WarrM
1033	1721	GM
1034	1755	GM
1034	1754	GM
1035	1724	GM
1036	1722	GM
1037	5087	WarrM
1038	5193	WarrM
1039	3288	N/E
1040	1718	GM
1041	28	GM
1042	251	GM P
1043	3059	N/E
1044	1887	GM
1045	578	GM
1046	2384	GM P
1047	1045	BritM
1048	1893	GM
1049	3065	? N/E
1050	3286	N/E
1051	570	GM
1052	572	GM
1053	573	GM
1054	1732	GM
1055	579	GM
1056	577	GM
1057	575	GM
1058	1727	GM
1059	3058	N/E
1060	571	GM
1061	1952	GM
1062	3384	N/E
1063	5122	WarrM
1064	1764	GM
1064	1751	GM
1065	5562	WillM
1066	1752	GM
1067	1762	GM
1068	1753	GM
1069	3329	N/E
1070	2219	GM
1071	5119	WarrM
1072	1852	GM
1073	1763	GM
1074	1729	GM
1075	2006	GM
1076	3216	N/E
1077	3181	N/E
1078	84	GM
1079	5195	WarrM
1080	83	GM
1081	1047	BritM
1082	2002	GM
1083	644	GM
1084	85	GM
1085	645	GM
1086	655	GM
1087	1600	GM
1088	1591	GM
1089	5553	WillM
1090	1584	GM
1091	1576	GM
1092	1585	GM
1093	1589	GM
1094	1597	GM
1095	1581	GM
1096	1590	GM
1097	1583	GM
1098	1593	GM
1100	1596	GM
1101	5552	WillM
1102	1578	GM
1103	1579	GM
1104	1580	GM
1105	1588	GM
1106	1599	GM
1107	1595	GM
1108	5555	WillM
1109	1582	GM
1110	1586	GM
1111	5554	WillM
1112	1587	GM
1113	1677	GM
1114	5151	WarrM
1115	1048	BritM
1116	5551	WillM
1117	1577	GM
1118	1594	GM
1119	1598	GM
1120	1971	GM
1121	1966	GM
1122	1445	GM
1123	1447	GM
1124	1446	GM
1125	1449	GM
1126	1448	GM
1127	3066	? N/E
1128	3218	N/E
1129	1920	GM
1130	2027	GM
1131	3378	N/E
1132	3055	N/E
1133	1918	GM
1134	592	GM
1135	1928	GM
1136	1951	GM
1137	5123	WarrM
1138	1888	GM
1139	3370	N/E
1140	3285	N/E
1141	1955	GM
1142	1954	GM
1143	1836	GM
1144	1953	GM
1145	2392	GM
1146	2393	GM
1147	3289	N/E
1148	1960	GM
1149	587	GM
1150	1730	GM
1151	5563	WillM
1152	582	GM
1153	585	GM
1154	1958	GM
1155	580	GM
1156	581	GM
1157	1961	GM
1158	1967	GM
1159	1959	GM
1160	586	GM
1161	584	GM
1162	589	GM
1163	583	GM
1164	588	GM
1165	1969	GM
1166	2951	NML
1167	1731	GM
1168	2036	GM
1169	1947	GM
1170	2064	GM
1171	1929	GM
1172	1942	GM
1173	5149	WarrM
1174	4028	NML
1175	1941	GM
1176	1940	GM
1177	1890	GM
1178	4029	NML
1179	5181	WarrM
1180	5061	WarrM
1181	1944	GM
1182	5184	WarrM
1183	5173	WarrM
1184	1936	GM
1185	5136	WarrM
1186	5139	WarrM
1187	5177	WarrM
1188	5144	WarrM
1189	1934	GM
1190	5175	WarrM
1191	5141	WarrM
1192	1935	GM
1193	5179	WarrM
1194	1938	GM
1195	5174	WarrM
1196	5172	WarrM
1197	1089	BritM

1198	5185	WarrM
1199	5188	WarrM
1199	1592	GM
1200	5180	WarrM
1201	5135	WarrM
1202	1945	GM
1203	1946	GM
1204	1937	GM
1205	5137	WarrM
1206	5140	WarrM
1207	5090	WarrM
1208	1084	BritM
1209	5187	WarrM
1210	1943	GM
1211	5176	WarrM
1212	5189	WarrM
1213	5145	WarrM
1214	1948	GM
1215	5142	WarrM
1216	5182	WarrM
1217	1939	GM
1218	1088	BritM
1219	4030	NML
1220	5178	WarrM
1221	5183	WarrM
1222	5191	WarrM
1223	5146	WarrM
1224	1891	GM
1225	5190	WarrM
1226	5143	WarrM
1227	2277	GM
1228	1886	GM
1229	1889	GM
1230	1087	BritM
1231	5089	WarrM
1232	2068	GM
1233	1083	BritM
1234	1086	BritM
1235	5192	WarrM
1236	1434	GM
1237	5147	WarrM
1238	3282	N/E
1239	1108	GM
1240	2161	GM P
1241	1378	GM
1242	953	GM
1243	5233	WarrM
1244	2158	GM P
1245	2157	GM P
1246	2159	GM P
1247	2160	GM P
1248	5276	WarrM
1249	1367	GM
1250	2152	GM P
1251	1301	GM P
1252	1366	GM
1253	1364	GM
1254	1033	BritM
1255	1107	GM
1256	2214	GM
1257	16	GM
1258	2040	GM
1259	1956	GM
1260	5083	WarrM
1261	2181	GM
1262	264	NML
1263	1795	GM
1264	1101	GM
1265	1111	GM
1266	1112	GM
1267	5017	WarrM
1268	1110	GM
1269	1118	GM
1270	1119	GM
1271	1061	BritM
1272	1113	GM
1273	1115	GM
1274	1116	GM
1275	1109	GM
1276	1117	GM
1277	1114	GM
1278	1062	BritM
1279	1129	GM
1280	1133	GM
1281	4034	GM
1282	1131	GM
1283	1135	GM
1284	3371	N/E
1285	1121	GM
1286	1125	GM
1287	1105	GM
1288	1106	GM
1289	1120	GM
1290	1136	GM
1291	1127	GM
1292	1126	GM
1293	1124	GM
1294	1123	GM
1295	1122	GM
1296	1132	GM
1297	1134	GM
1298	1130	GM
1299	3089	? N/E
1300	3372	N/E
1301	1103	GM
1302	1128	GM
1303	5132	WarrM
1303	5088	WarrM
1304	3088	N/E
1305	26	GM
1306	1102	GM
1307	3090	? N/E
1308	5060	WarrM
1309	1325	GM
1310	1377	GM
1311	1323	GM
1312	1313	GM
1313	1882	GM
1314	1025	BritM
1315	414	GM
1316	5268	WarrM
1317	1904	GM
1318	418	GM
1319	411	GM
1320	420	GM
1321	416	GM
1322	410	GM
1323	413	GM
1324	775	GM
1325	415	GM
1326	419	GM
1327	773	GM
1328	774	GM
1329	1037	BritM
1330	1302	GM
1331	1307	GM
1332	1057	BritM
1333	3255	N/E
1334	3257	N/E
1335	409	GM
1336	1311	GM
1337	407	GM
1338	1315	GM
1339	412	GM
1340	779	GM
1341	417	GM
1342	408	GM
1343	782	GM
1344	776	GM
1345	777	GM
1346	3256	N/E
1347	778	GM
1348	5063	WarrM
1349	435	GM
1350	434	GM
1351	5066	WarrM
1352	746	GM
1353	3254	N/E
1354	1305	GM
1355	1304	GM
1356	771	GM
1357	1393	GM
1358	770	GM
1359	5050	WarrM
1360	4003	NML
1361	1372	GM
1362	5065	WarrM
1363	5069	WarrM
1364	728	GM
1365	733	GM
1366	737	GM
1367	725	GM
1368	735	GM
1368	748	GM
1370	732	GM
1371	736	GM
1372	749	GM
1373	1036	BritM
1374	5055	WarrM
1375	5062	WarrM
1376	5257	WarrM
1377	5068	WarrM
1378	721	GM
1379	717	GM
1380	727	GM
1381	729	GM
1382	734	GM
1383	738	GM
1384	742	GM
1385	743	GM
1386	744	GM
1387	433	GM
1388	5058	WarrM
1389	4002	GM
1390	5064	WarrM
1391	437	GM
1392	718	GM
1393	722	GM
1394	723	GM
1395	740	GM
1396	756	GM
1397	5057	WarrM
1398	5258	WarrM
1399	739	GM
1400	730	GM
1401	731	GM
1402	429	GM
1403	753	GM
1404	724	GM
1405	741	GM
1406	1312	GM
1407	750	GM
1408	1308	GM
1409	431	GM
1410	440	GM
1411	428	GM
1412	747	GM
1413	752	GM
1414	755	GM
1415	5255	WarrM
1416	1310	GM
1417	436	GM
1418	751	GM
1419	726	GM
1420	745	GM
1421	1035	BritM
1422	5256	WarrM
1423	5259	WarrM
1424	438	GM
1425	1306	GM
1426	720	GM
1427	432	GM
1428	439	GM
1429	719	GM
1430	716	GM
1431	430	GM
1432	1883	GM
1433	400	GM
1434	397	GM
1435	404	GM
1436	1354	GM
1437	766	GM
1438	399	GM
1439	1357	GM
1440	769	GM
1441	1358	GM
1442	4005	NML
1443	401	GM
1444	1356	GM
1445	763	GM
1446	406	GM
1447	1303	GM
1448	1359	GM
1449	1034	BritM
1450	175	GM P
1451	3251	N/E
1452	403	GM
1453	758	GM
1454	761	GM
1455	1355	GM
1456	1361	GM
1457	398	GM
1458	405	GM
1459	402	GM
1460	765	GM
1461	768	GM
1462	762	GM
1463	759	GM
1464	1314	GM
1465	764	GM
1466	1029	BritM
1467	4004	NML
1468	1360	GM
1469	1391	GM
1470	760	GM
1471	5129	WarrM
1472	767	GM
1473	1309	GM
1474	1362	GM
1475	757	GM
1476	1317	GM
1477	5225	WarrM
1478	2235	GM
1479	1881	GM
1480	1318	GM
1481	1352	GM
1482	5008	WarrM
1483	5266	Not used
1484	1884	GM
1485	1353	GM
1486	2237	GM
1487	754	GM
1488	424	GM
1489	427	GM
1490	426	GM
1491	165	GM P
1492	1380	GM
1493	425	GM
1494	166	GM
1495	423	GM
1496	478	GM
1497	795	GM
1498	590	GM
1499	591	GM

1500	2003	GM
1501	3276	N/E
1502	3113	N/E
1503	3273	N/E
1504	1433	GM
1505	1439	GM
1506	1647	GM
1507	1440	GM
1508	1442	GM
1509	1416	GM
1510	1426	GM
1511	1427	GM
1512	2374	GM P
1512	2381	GM P
1513	1672	GM
1514	1632	GM
1515	1441	GM
1516	1425	GM
1517	1042	BritM
1518	1043	BritM
1519	1414	GM
1520	1444	GM
1521	1656	GM
1522	5240	WarrM
1523		Not used
1524	1040	BritM
1525	1655	GM
1526	5073	WarrM
1527	1443	GM
1528	1039	BritM
1529	5074	WarrM
1530	1643	GM
1531	1642	GM
1532	1664	GM
1533	1641	GM
1534	1911	GM
1535	1630	GM
1536	138	GM P
1537	4000	NML
1538	139	GM P
1539	1390	GM
1539	800	GM
1540	5078	WarrM
1541		Not used
1542	1648	GM
1543	1638	GM
1544	1659	GM
1545	1912	GM
1546	1657	GM
1547	1651	GM
1548	259	NML
1549	1635	GM
1550	1909	GM
1551	1652	GM
1552	1913	GM
1553	5164	WarrM
1554	1636	GM
1555	1637	GM
1556	1634	GM
1557	1629	GM
1558	1649	GM
1559	2966	NML
1560	1663	GM
1561	1650	GM
1562	1661	GM
1563	1654	GM
1564	5548	WillM
1565	1437	GM
1566	1640	GM
1567	4001	GM
1568	5260	WarrM
1569	5163	WarrM
1570	5231	WarrM
1571	11	GM P
1572	1436	GM
1573	2271	GM
1574	1428	GM
1575	2276	GM
1576	2278	GM
1577	5085	WarrM
1578	1653	GM
1579	1628	GM
1580	5086	WarrM
1581	1631	GM
1582	5084	WarrM
1583	5507	WillM
1584	1644	GM
1585	1645	GM
1586	1438	GM
1587	1658	GM
1588	1424	GM
1589	2375	NML
1590	5081	WarrM
1591	1639	GM
1591	1660	GM
1592	1662	GM
1593		Not used
1594	1667	GM
1595	1997	GM
1596	1998	GM
1597	1633	GM
1598	1041	BritM
1599	2969	NML
1600	1993	GM
1601	1994	GM
1602	1992	GM
1603	475	GM
1604	5079	WarrM
1605	480	GM
1606	2030	GM
1607	3279	N/E
1608	3281	N/E
1609	2001	GM
1610	2023	GM
1611	1995	GM
1612	1999	GM
1613	2038	GM
1614	1974	GM
1615	2013	GM
1616	1996	GM
1617	2031	GM
1618	2000	GM
1619	2041	GM
1620	2949	NML
1621	3280	N/E
1622	1368	GM
1623	5076	WarrM
1624	1666	GM
1625	5082	WarrM
1626	1668	GM
1627	5080	WarrM
1640	3224	N/E
1641	3191	N/E
1642	3043	N/E
1643	3190	N/E
1644	3344	N/E
1645	898	GM
1646	902	GM
1647	894	GM
1648	899	GM
1649	900	GM
1650	1006	BritM
1651	811	GM P
1652	897	GM
1653	808	GM P
1654	809	GM P
1655	935	GM
1656	896	GM
1657	1005	BritM
1658	5160	WarrM
1659	1784	GM
1660	803	GM P
1661	867	GM
1662	895	GM
1663	805	GM P
1664	807	GM P
1665	933	GM
1666	4038	NML
1667	810	GM P
1668	960	GM
1669	974	GM
1670	806	GM P
1671	973	GM
1672	925	GM
1673	934	GM
1674	5198	WarrM
1675	926	GM
1676	801	GM P
1677	802	GM P
1678	814	GM P
1679	88	GM
1680	910	GM
1681	1004	BritM
1682	4021	NML
1683	942	GM
1684	943	GM P
1685	2047	GM
1686	3362	N/E
1687	90	GM
1688	1853	GM
1689	2999	NML
1690	263	NML
1691	1090	BritM
1692	2049	GM
1693	3044	N/E
1694	3042	N/E
1695	3323	N/E
1696	842	GM P
1697	941	GM
1698	836	GM P
1699	277	NML
1700	254	NML
1701	824	GM P
1702	275	NML
1703	818	GM P
1704	253	NML
1705	261	NML
1706	816	GM P
1707	817	GM P
1708	962	GM
1709	939	GM
1710	4023	NML
1711	5031	WarrM
1712	940	GM
1713	94	GM
1715	820	GM P
1716	5028	WarrM
1717	815	GM P
1718	827	GM P
1719	825	GM P
1720	826	GM P
1721	5152	WarrM
1722	828	GM P
1723	829	GM P
1724	97	GM
1725	2046	GM
1726	3048	? N/E
1727	844	GM P
1728	96	GM
1729	841	GM P
1730	840	GM P
1731	839	GM P
1732	89	GM
1733	2065	GM
1734	2077	GM
1735	269	NML
1736	95	GM
1737	146	GM
1738	1989	GM
1739	1988	GM
1740	2118	GM
1741	2114	GM
1742	1987	GM
1743	1985	GM
1744	274	NML
1745	874	GM P
1746	952	GM
1747	5156	WarrM
1748	147	GM P
1749	1010	BritM
1750	5200	WarrM
1751	834	GM P
1752	1962	GM
1753	1965	GM
1754	3107	? N/E
1755	1017	BritM
1756	843	GM P
1757	2054	GM
1758	845	GM P
1759	822	GM P
1760	2051	GM
1761	25	GM P
1762	5125	WarrM
1763	821	GM P
1764	1968	GM
1765	3081	? N/E
1766	3205	N/E
1767	3193	N/E
1768	2048	GM
1769	1964	GM
1770	2043	GM
1771	846	GM P
1772	24	GM P
1773	91	GM
1774	831	GM P
1775	833.1	GM P
1776	833.2	GM P
1777	832	GM P
1778	837	GM P
1779	838	GM P
1780	3083	? N/E
1781	2052	GM
1782	830	GM P
1783	835	GM P
1784	3046	N/E
1785	3223	N/E
1786	3045	N/E
1787	2045	GM
1788	1963	GM
1789	3225	N/E
1790	2050	GM
1791	5070	WarrM
1791	5134	WarrM
1792	5155	WarrM
1793	2053	GM
1793	1926	GM
1794	1926	GM
1795	2115	GM
1796	2120	GM
1797	2119	GM
1798	2112	GM
1799	5209	WarrM
1800	853	GM P
1801	2117	GM
1802	5107	WarrM
1803	2116	GM
1804	2113	GM
1805	2111	GM
1806	5109	WarrM
1807	852	GM P
1808	851	GM P
1809	850	GM P
1810	849	GM P
1811	1766	GM

1812	5157	WarrM
1812	1908	GM
1813	3226	N/E
1814		Not used
1815	93	GM
1816	98	GM
1817	813	GM P
1818	2109	GM
1819	92	GM
1820	3228	N/E
1821	3104	N/E
1822	3047	N/E
1823	3222	N/E
1824	3221	N/E
1825	3192	N/E
1826	854	GM P
1827	855	GM P
1828	1892	GM
1829	1682	GM
1830	1693	GM
1831	1687	GM
1832	1689	GM
1833	1690	GM
1834	1692	GM
1835	1694	GM
1836	1684	GM
1837	1685	GM
1838	1683	GM
1839	1686	GM
1840	1691	GM
1841	1681	GM
1842	1930	GM
1843	2106	GM
1844	2103	GM
1845	2104	GM
1846	5202	WarrM
1847	2105	GM
1848	2710	GM P
1849	2100	GM
1850	2101	GM
1851	2664	GM
1852	2665	GM
1853	2666	GM
1854	5113	WarrM
1855	2108	GM
1856	3080	N/E
1857	3363	N/E
1858	1917	GM
1859	3230	N/E
1860	3229	N/E
1861	5124	WarrM
1862	1765	GM
1863	2010	GM
1864	2007	GM
1865	3209	N/E
1866	3180	N/E
1867	3079	N/E
1868	5539	WillM
1869	112	GM
1870	2055	GM
1871	2026	GM
1872	2037	GM
1873	1916	GM
1874	3086	N/E
1875	856	GM P
1876	1769	GM
1877	5118	WarrM
1878	1767	GM
1879	1760	GM
1879	1759	GM
1880	1757	GM
1881	3374	N/E
1882	1758	GM
1883	1053	BritM
1884	1761	GM
1885	3074	? N/E
1886	5281	WarrM
1887	262	NML
1888	5127	WarrM
1889	2336	GM
1890	2322	GM
1891	2368	GM P
1892	5111	WarrM
1893	2367	GM P
1894	2122	GM
1895	2290	GM
1896	2362	GM
1897	2331	GM
1898	5542	WillM
1899	2323	GM
1900	2341	GM
1901	2345	GM
1902	2348	GM
1903	2318	GM P
1904	2325	GM
1905	2329	GM
1906	2357	GM
1907	2321	GM P
1908	2124	GM
1909	125	GM P
1910	2337	GM
1911	2299	GM
1912	2347	GM
1913	2300	GM
1914	2353	GM
1915	2315	GM P
1916	2343	GM
1917	2355	GM
1918	2350	GM
1919	2333	GM
1920	2358	GM
1921	2359	GM. P
1922	2352	GM
1923	2338	GM
1924	2339	GM
1925	5114	WarrM
1926	2123	GM
1927	2356	GM
1928	2304	GM
1929	2292	GM
1930	2319	GM P
1931	2302	GM
1932	2360	GM. P
1933	2332	GM
1934	2330	GM
1935	2340	GM
1936	2327	GM
1937	2125	GM
1938	2364	GM. P
1939	2365	GM. P
1940	2328	GM
1941	2334	GM
1942	2342	GM
1943	2294	GM
1944	2324	GM
1945	2370	GM. P
1946	2311	GM P
1947	2312	GM P
1948	2303	GM
1949	2310	GM P
1950	2288	GM
1951	2301	GM
1952	2291	GM
1953	2366	GM. P
1954	2308	GM
1955	2289	GM
1956	2369	GM. P
1957	2314	GM
1958	2298	GM
1959	2297	GM
1960	2346	GM
1961	5540	WillM
1962	2317	GM
1963	2293	GM
1964	2313	GM P
1965	2335	GM
1966	2296	GM
1967	2316	GM
1968	2351	GM
1969	2320	GM
1970	2361	GM P
1971	281	NML
1972	2056	GM
1973	1091	BritM
1974	287	GM P
1975	1461	GM
1975	1462	GM
1975	1463	GM
1975	1460	GM
1976	59	GM
1977	151	GM P
1978	5585	WillM
1979	913	GM P
1980	938	GM
1981	914	GM P
1982	915	GM
1983	154	GM P
1984	5159	WarrM
1984	5158	WarrM
1985	1316	GM
1986	3321	N/E
1987	3102	N/E
1988	3103	N/E
1989	3099	N/E
1990	3210	N/E
1991	152	GM P
1992	3098	N/E
1993	3100	N/E
1994		not used
1997	490	GM
1998	642	GM
1999	639	GM
2000	491	GM L
2001	637	GM
2002	643	GM
2003	3073	? N/E
2004	2004	GM
2005	640	GM
2006	641	GM
2007	638	GM
2008	636	GM
2009	1713	GM
2010		not used
2011	1104	GM
2012	3075	? N/E
2013	2916	GM
2014	1092	BritM
2015	2107	GM
2016	3332	N/E
2017	1612	GM
2018	1613	GM
2019	1614	GM
2020	2991	NML
2021	1384	GM
2022	2250	GM
2023	3095	? N/E
2024	3094	? N/E
2025	2071	GM
2026	149	GM P
2027	1012	BritM
2028	948	GM
2029	975	GM
2031	1602	GM
2032	947	GM
2033	5022	WarrM
2034	931	GM
2035	946	GM
2036	1607	GM
2037	2934	NML
2038	950	GM
2039	945	GM
2040	1093	BritM
2041	2929	NML
2042	932	GM
2043	944	GM
2044	1011	BritM
2045	1601	GM
2046	949	GM
2047	5586	WillM
2048	2933	NML
2049	2935	NML
2050	5020	WarrM
2051	5201	WarrM
2052	557	GM
2053	561	GM
2054	1058	BritM
2055	563	GM
2056	558	GM
2057	562	GM
2058	565	GM
2059	3010	N/E M
2060	560	GM
2061	559	GM
2062	564	GM
2063	3009	N/E M
2064	27	GM
2065	552	GM
2066	551	GM
2067	548	GM
2068	550	GM
2069	2941	NML
2070	3008	N/E M
2071	3012	N/E
2072	3007	N/E M
2073	3013	N/E
2074	3005	N/E M
2075	3146	N/E
2076	2223	GM
2077	1796	GM
2078	1802	GM
2079	1806	GM
2080	1785	GM
2081	1791	GM
2082	1038	BritM
2083	2253	GM
2084	5280	WarrM
2085	5323	WarrM
2086	4032	NML
2087	1383	GM
2088	2394	GM
2089	1924	GM
2090	2183	GM
2091	1877	GM
2092	1876	GM
2093	1878	GM
2094	5018	WarrM
2095	1875	GM
2096	1874	GM
2097	2441	GM
2098	2258	GM
2099	2428	GM
2100	2067	GM
2101	1734	GM
2102	482	GM
2102	481	GM
2103	483	GM
2104	485	GM
2105	5014	WarrM
2106	5292	WarrM
2107	2922	NML
2108	2220	GM
2109	1811	GM
2110	2992	GrM
2111	2993	GrM

2112	2443	GM
2113	2444	GM
2114	3093	? N/E
2115	484	GM
2116	1843	GM
2117	2407	GM
2118	2411	GM
2119	2265	GM
2120	2425	GM
2121	2414	GM
2122	2409	GM
2123	2408	GM
2124	2406	GM
2125	2421	GM
2126	2416	GM
2127	2413	GM
2128	2415	GM
2129	2418	GM
2130	2204	GM
2131	2389	GM
2132	2410	GM
2133	2404	GM
2134	2405	GM
2135	2412	GM
2136	2400	GM
2137	2399	GM
2138	3345	N/E
2139	5099	WarrM
2140	5230	WarrM
2141	1844	GM
2142	3292	N/E
2143	2279	GM
2144	2280	GM
2145	2284	GM
2146	2287	GM
2147	3377	N/E
2148	2283	GM
2149	2282	GM
2150	2286	GM
2152	79	GM
2153	80	GM
2154	2074	GM
2155	1857	GM
2156	245	GM P
2157	246	GM
2158	244	GM P
2159	81	GM
2160	3068	? N/E
2161	3072	? N/E
2162	271	NML
2163	649	GM
2164	652	GM
2165	650	GM
2166	653	GM
2167	243	GM P
2168	647	GM
2169	654	GM
2170	179	GM P
2171	651	GM
2172	2166	GM
2173	2168	GM
2174	1568	GM
2175	505	GM
2176	1991	GM
2177	519	GM
2178	1975	GM
2179	535	GM
2180	509	GM
2181	1976	GM
2182	5535	WillM
2183	534	GM
2184	5538	WillM
2185	595	GM
2186	501	GM
2187	1978	GM
2188	1979	GM
2189	513	GM
2190	5536	WillM
2191	529	GM
2192	538	GM
2193	612	GM
2194	510	GM
2195	5537	WillM
2196	511	GM
2197	1977	GM
2198	3291	N/E
2199	3295	N/E
2200	3196	N/E
2201	3199	N/E
2202	633	GM
2203	3062	? N/E
2204	2133	GM
2205	2136	GM
2206	2090	GM
2207	1020	BritM
2208	2128	GM
2209	2126	GM
2210	2095	GM
2211	2135	GM
2212	2134	GM
2213	2092	GM
2214	3309	N/E
2215	3310	N/E
2216	3307	N/E
2217	2127	GM
2218	2097	GM
2219	2131	GM
2220	5309	WarrM
2221	2080	GM
2222	2078	GM
2223	1018	BritM
2224	2079	GM
2225	2129	GM
2226	2138	GM
2227	23	GM L
2228	2132	GM
2229	2110	GM
2230	2096	GM
2231	2098	GM
2232	5096	WarrM
2233	2082	GM
2234	2081	GM
2235	2089	GM
2236	2094	GM
2237	3311	N/E
2238	3306	N/E
2239	3308	N/E
2240	3305	N/E
2241	3312	N/E
2242	3201	N/E
2243	5581	WillM
2244	3092	N/E
2245	983	GM
2246	901	GM
2247	1610	GM
2248	887	GM
2249	5161	WarrM
2250	968	GM
2251	906	GM
2252	1611	GM
2253	5104	WarrM
2254	5270	WarrM
2255	13	GM P
2256	2165	GM
2257	2162	GM
2258	1504	GM
2260	2172	GM
2262	5199	WarrM
2263	2230	GM
2264	2378	GM. P
2265	2385	GM. P
2266	1872	GM
2267	2217	GM
2268	2210	GM
2269	2386	GM
2270	2209	GM
2271	2193	GM
2272	2202	GM
2273	2390	GM
2274	2212	GM
2275	2195	GM
2276	2388	GM
2277	2211	GM
2278	2198	GM
2279	2197	GM
2280	2213	GM
2281	2199	GM
2282	2194	GM
2283	2196	GM
2284	2200	GM
2285	2207	GM
2286	2201	GM
2287	2387	GM
2288	2205	GM
2289	2192	GM
2290	2206	GM
2291	1973	GM
2292	819	GM P
2293	1982	GM
2294	5049	WarrM
2295	2726	GM
2296	2727	GM
2297	2728	GM
2298	2729	GM
2299	3082	? N/E
2300	1328	GM
2301	1329	GM
2302	1330	GM
2303	2070	GM
2304	1910	GM
2305	3338	N/E
2306	712	GM
2307	713	GM
2308	714	GM
2309	715	GM
2310	4037	NML
2311	107	GM P
2312	109	GM P
2313	108	GM P
2314	106	GM P
2315	105	GM P
2316	3078	N/E
2317	3195	N/E
2318	3194	N/E
2319	3189	N/E
2320	60	GM
2321	3053	? N/E
2322	3077	? N/E
2323	3375	N/E
2324	4025	NML
2325	71	GM P
2326	1834	GM
2327	1873	GM
2328	2073	GM
2329	2076	GM
2330	272	NML
2331	3326	N/E
2332	3331	N/E
2333	3334	N/E
2334	3335	N/E
2335	3336	N/E
2336	3347	N/E
2337	2998	NML
2338	2281	GM
2339	2619	GM
2340	2022	GM
2341	2016	GM
2342	2012	GM
2343	3108	N/E
2344	3110	N/E
2345	3272	N/E
2346	1880	GM
2347	486	GM
2348	249	GM L
2349	4033	WarrM
2350	905	GM
2351	1854	GM
2352	1856	GM
2353	1862	GM
2354	2028	GM
2355	2164	GM
2356	2215	GM
2357	2221	GM
2358	2264	GM
2359	2266	GM
2360	2376	GM. P
2361	5261	WarrM
2362	2938	NML
2363	5305	WarrM
2363	5304	WarrM
2364	3379	WarrM
2365	3337	WarrM
2366	473	GM
2367	487	GM
2368	524	GM
2369	823	GM P
2370	876	GM P
2371	1981	GM
2372	2015	GM
2373	2039	GM
2374	2042	GM
2375	2060	GM
2376	2179	GM
2377	2926	NML
2378	5306	WarrM
2379	3106	? N/E
2380	3217	N/E
2381	3346	N/E
2400	857	GM P
2401	864	GM
2402	862	GM
2403	858	GM P
2404	2979	NML
2405	5223	WarrM
2406	1565	GM
2407	150	GM P
2408	859	GM P
2409	156	GM P
2410	303	GM
2411	5215	WarrM
2412	5214	WarrM
2413	1491	GM
2414	306	GM
2415	310	GM
2416	308	GM
2417	312	GM
2418	307	GM
2419	313	GM
2420	332	GM
2421	5299	WarrM
2422	453	GM
2423	456	GM
2424	1517	GM
2425	5047	WarrM
2426	5218	WarrM
2427	2520	GM
2428	2521	GM
2429	5205	WarrM
2430	872	GM
2431	1402	GM
2432	5314	WarrM
2433	2447	GM
2434	1569	GM
2435	2683	GM

2436	2402	GM
2437	2401	GM
2438	4453	NML
2439	1573	GM
2440	1574	GM
2441	5604	WillM
2442	4471	GM
2443	5606	WillM
2444	5601	WillM
2445	5603	WillM
2446	4473	GM
2447	5607	WillM
2448	4466	GM
2449	4462	GM
2450	5605	WillM
2451	5602	WillM
2452	4458	GM
2453	2696	GM
2454	5600	WillM
2455	4455	GM
2456	2691	GM P
2457	4491	GM P
2458	4489	GM P
2459	4467	GM P
2460	4480	GM P
2461	4483	GM P
2462	4459	GM P
2463	4484	GM P
2464	4461	GM P
2465	4486	GM P
2466	4482	GM P
2467	4454	GM P
2468	4481	GM P
2469	1081	BritM
2470	2424	GM P
2470	4452	GM P
2471	4474	GM P
2472	4479	GM P
2473	4457	GM P
2474	4456	GM P
2475	4465	GM P
2476	4470	GM P
2477	4476	GM P
2478	4477	GM P
2479	4475	GM P
2480	4469	GM P
2481	4478	GM P
2482	1082	BritM
2483	4487	GM P
2484	4488	GM P
2485	2693	GM P
2486	4472	GM P
2487	2257	GM P
2488	4464	GM P
2489	2694	GM P
2490	4485	GM P
2491	2695	GM P
2492	4463	GM P
2493	2697	GM
2494	4468	GM P
2495	2692	GM P
2496	103	GM P
2497	4460	GM P
2498	1078	BritM
2499	1080	BritM
2500	4444	GM P
2501	4440	GM P
2502	4447	GM P
2503	494	GM P
2504	4448	GM P
2505	4446	GM P
2506	1079	BritM
2507	4451	GM P
2508	4445	GM P
2509	4450	GM P
2510	495	GM P
2511	496	GM P
2512	5508	WillM
2513	4441	NML
2514	4449	NML
2515	4443	NML
2516	4442	NML
2517	2431	GM
2518	2398	GM
2519	2609	GM
2520	2918	GM
2521	2478	GM
2522	2435	GM
2523	2869	GM
2524	2870	GM
2525	2867	GM
2526	2868	GM
2527	2866	GM
2528	2600	GM
2529	2397	GM
2530	2396	GM
2531	2615	GM
2532	2679	GM
2533	2426	GM
2534	2891	GM
2535	2429	GM
2536	2395	GM
2537	2601	GM
2538	1575	GM
2539	1840	GM
2540	2682	GM
2541	3348	N/E
2542	2260	GM
2543	976	GM
2544	956	GM
2545	866	GM
2546	871	GM
2547	957	GM
2548	2224	GM
2549	1603	GM
2550	1606	GM
2551	1609	GM
2552	1605	GM
2553	1608	GM
2554	1604	GM
2555	2440	GM
2556	1571	GM
2557	5227	Warr M
2558	2255	GM
2559	2516	GM
2560	2450	GM
2561	1570	GM
2562	1572	GM
2563	2442	GM P
2564	2439	GM
2565	2712	GM
2566	1842	GM
2567	2430	GM
2569	555	GM
2569	5532	WillM
2570	556	GM
2571	547	GM
2572	554	GM P
2573	566	GM P
2574	553	GM
2575	567	GM
2576	5521	WillM
2577	568	GM
2578	5522	WillM
2579	546	GM
2580	545	GM
2581	544	GM
2582	543	GM
2583	541	GM
2584	5544	WillM
2585	5543	WillM
2586	569	GM
2587	3003	N/E M
2588	3004	N/E M
2589	3000	N/E M
2590	3002	N/E E-S
2591	2713	GM P
2592	2715	GM P
2593	2717	GM P
2594	549	GM
2595	3001	N/E M
2596	2432	GM
2597	2708	GM
2598	2709	GM P
2599	2451	GM
2600	70	GM P
2601	2612	GM
2602	2556	GM
2603	2465	GM
2604	2475	GM
2605	2481	GM
2606	2457	GM P
2607	2486	GM
2608	2561	GM
2609	2552	GM
2610	2466	GM
2611	2480	GM
2612	2551	GM
2613	2474	GM
2614	2580	GM
2615	1071	BritM
2616	2560	GM
2617	2479	GM
2618	2477	GM
2619	2557	GM
2620	2555	GM
2621	2554	GM
2622	2476	GM
2623	1072	BritM
2624	2573	GM
2625	2456	GM
2626	2455	GM
2627	2563	GM
2628	2546	GM
2629	2583	GM
2630	2467	GM
2631	2487	GM
2632	2574	GM
2633	2468	GM
2634	2585	GM
2635	2547	GM
2636	2469	GM
2637	2582	GM
2638	2545	GM
2639	2570	GM
2640	2459	GM
2641	2462	GM
2642	2461	GM P
2643	2458	GM
2644	2544	GM
2645	2529	GM
2646	2471	GM
2647	2470	GM
2648	2564	GM
2649	2578	GM
2650	5524	WillM
2651	2571	GM
2652	2579	GM
2653	2540	GM P
2654	2577	GM
2655	2581	GM
2656	2464	GM
2657	5528	WillM
2658	2463	GM
2659	2548	GM
2660	2572	GM
2661	2584	GM
2662	3145	N/E
2663	3298	N/E
2664	3179	N/E
2665	3299	N/E
2666	3212	N/E
2667	2532	GM
2668	2530	GM
2669	2482	GM
2670	2569	GM
2671	2503	GM
2672	2498	GM
2673	2533	GM
2674	2539	GM
2675	2593	GM
2676	2534	GM
2677	2538	GM P
2678	2489	GM
2679	2590	GM
2680	2589	GM
2681	2491	GM
2682	2501	GM
2683	2507	GM
2684	2499	GM
2685	2484	GM
2686	2504	GM P
2687	5527	WillM
2688	2588	GM
2689	2502	GM
2690	2591	GM
2691	2535	GM
2692	2592	GM
2693	2505	GM
2694	2542	GM
2695	5583	WillM
2696	2541	GM
2697	2492	GM
2698	2568	GM P
2699	2586	GM
2700	2512	GM
2701	2510	GM
2702	2511	GM
2703	2514	GM
2704	2513	GM
2705	3301	N/E
2706	3300	N/E
2707	3214	N/E
2708	2543	GM
2709	2566	GM P
2710	2493	GM
2711	2506	GM
2712	2508	GM
2713	2500	GM
2714	2490	GM
2715	2562	GM
2716		not used
2717	2497	GM
2718	2536	GM P
2719	2515	GM
2720	2008	GM
2721	1831	GM
2722	2526	GM
2723	2608	GM
2724	2565	GM P
2725	2575	GM
2726	2485	GM
2727	2558	GM
2728	2549	GM
2729	2495	GM
2730	2483	GM
2731	2496	GM
2732	2553	GM
2733	2531	GM
2734	2527	GM
2735	2559	GM
2736	2494	GM
2737	2528	GM
2738	2576	GM

2739	2488	GM
2740	2703	GM
2741	2684	GM
2742	2685	GM
2743	3138	N/E
2744	2623	GM
2745	2707	GM P
2746	3057	N/E
2747	2720	GM
2748	2721	GM
2749	2613	GM
2750	5203	Warr M
2751	2083	GM
2752	2093	GM
2753	2137	GM
2754	2611	GM
2755	2598	GM
2756	2595	GM
2757	2594	GM
2758	5579	WillM
2759	2604	GM
2760	5580	WillM
2761	2681	GM
2762	2689	GM
2763	3139	N/E
2764	3159	N/E
2765	2603	GM
2766	2607	GM
2767	5501	WillM
2768	2606	GM
2769	2602	GM
2770	2605	GM
2771	2620	GM
2772	2610	GM
2773	2997	GrM
2774	176	GM P
2775	2875	GM
2776	2676	GM
2777	3141	N/E
2778	2714	GM P
2779	2873	GM
2780	3143	N/E
2781	2596	GM
2782	2678	GM
2783	2614	GM
2784	2677	GM
2785	2688	GM
2786	2680	GM
2787	2686	GM
2788	2423	GM
2789	2434	GM
2790	5520	WillM
2791	5216	WarrM
2792	3154	WarrM
2793	2631	GM
2794	2634	GM
2795	3149	N/E
2796	3148	N/E
2797	3147	N/E
2798	2661	GM
2799	2639	GM
2800	2637	GM
2801	2635	GM
2802	2636	GM
2803	2632	GM
2804	2638	GM P
2805	2633	GM
2806	2627	GM
2807	2452	GM
2808	2630	GM
2809	2629	GM
2810	2625	GM
2811	2624	GM
2812	2626	GM
2812	2173	GM
2813	3152	N/E
2814	2628	GM P
2815	2937	NML
2816	2453	GM
2817	2675	GM
2818	445	GM
2819	443	GM
2820	334	GM
2821	3250	N/E
2822	3249	N/E
2823	444	GM
2824	2523	GM
2825	5510	WillM
2826	452	GM
2827	454	GM
2828	447	GM
2829	2943	NML
2830	450	GM
2831	333	GM
2832	446	GM
2833	448	GM
2834	451	GM
2835	2524	GM
2836	1551	GM
2837	2892	GM
2838	2893	GM
2839	2669	GM
2840	2668	GM
2841	2671	GM
2842	2254	GM
2843	449	GM
2844	2667	GM
2845	2673	GM
2846	2672	GM P
2847	2886	GM
2848	2674	GM
2849	2888	GM
2850	5584	WillM
2851	2887	GM
2852	2889	GM
2853	2618	GM
2854	2890	GM
2855	2660	GM
2856	2659	GM
2857	2663	GM
2858	1077	BritM
2859	1075	BritM
2860	1074	BritM
2861	2662	GM
2862	1076	BritM
2863	1073	BritM
2864	2645	GM
2865	2644	GM
2866	2656	GM
2867	2925	NML
2868	2651	GM
2869	2640	GM
2870	2647	GM
2871	2650	GM
2872	3155	N/E
2873	3158	N/E
2874	3156	N/E
2875	3157	N/E
2876	2643	GM
2877	2657	GM
2878	2649	GM
2879	2654	GM
2879	3303	
2880	2646	GM
2881	2642	GM
2882	2641	GM
2883	2652	GM
2884	2653	GM
2885	2658	GM
2886	2648	GM
2887	5534	WillM
2888	4408	GM P
2889	4412	GM P
2890	4424	GM P
2891	4407	GM P
2892	4428	GM P
2893	4426	GM P
2894	4430	GM P
2895	4423	GM P
2896	4417	GM P
2897	4431	GM P
2898	4427	GM P
2899	4432	GM P
2900	4433	GM P
2901	4416	GM P
2902	4429	GM P
2903	4414	GM P
2904	4436	GM P
2905	4422	GM P
2906	4434	GM P
2907	4421	GM P
2908	4435	GM P
2909	4425	GM P
2910	4419	GM P
2911	4402	GM P
2912	4409	GM P
2913	4404	GM P
2914	4413	GM P
2915	4401	NML
2916	4437	GM P
2917	4418	GM P
2918	4420	GM P
2919	4411	GM P
2920	4410	GM P
2921	4035	NML
2922	4403	GM P
2923	4415	GM P
2924	4405	GM P
2925	4406	GM P
2926	2472	GM p
2927	3153	N/E
2928	2460	GM
2929	2473	GM
2930	2567	GM P
2931	2509	GM
2990	861	GM
2991	3263	N/E
2992	1566	GM
2993	2975	NML
2994	354	GM
2995	1563	GM
2996	1514	GM
2997	1560	GM
2998	1337	GM
2999	1511	GM
3000	2062	GM
3001	1525	GM
3002	1493	GM
3003	1897	GM
3004	1564	GM
3005	880	GM P
3006	1395	GM
3007	5077	WarrM
3008	1738	GM
3009	1837	GM
3010	1838	GM
3011	2057	GM
3012	3087	? N/E
3013	3198	N/E
3014	1700	GM
3015	1827	GM
3016	1698	GM
3017	1756	GM
3018	5587	WillM
3019	1914	GM
3020	1697	GM
3021	1828	GM
3022	1680	GM
3023	1679	GM
3024	3204	N/E
3025	1699	GM
3026	1702	GM
3027	1705	GM
3028	1688	GM
3029	1696	GM
3030	1712	GM
3031	1736	GM
3032	1704	GM
3033	1706	GM
3034	1678	GM
3035	1701	GM
3036	5588	WillM
3037	3052	N/E
3038	46	GM
3039	1778	GM
3040	1777	GM
3041	1780	GM
3042	1782	GM
3043	1779	GM
3044	1774	GM
3045	1770	GM
3046	3051	N/E
3047	3109	N/E
3048	1505	GM
3049	1550	GM
3050	1532	GM
3051	1540	GM
3052	5590	WillM
3053	1537	GM
3054	1539	GM
3055	1545	GM
3056	1548	GM
3057	1552	GM
3058	5512	WillM
3059	1546	GM
3060	1528	GM
3061	1549	GM
3062	1554	GM
3063	1538	GM
3064	1541	GM
3065	5589	WillM
3066	5514	WillM
3067	1512	GM
3068	1526	GM
3069	1529	GM
3070	1530	GM
3071	1533	GM
3072	1536	GM
3073	1543	GM
3074	1547	GM
3075	1527	GM
3076	1542	GM
3077	1544	GM
3078	5094	WarrM
3079	1534	GM
3080	1535	GM
3081	1379	GM
3082	1531	GM
3083	5513	WillM
3084	1524	GM
3085	1556	GM
3086	1522	GM
3087	4018	NML
3088	1520	GM
3089	1521	GM
3090	1523	GM
3091	5071	WarrM
3092	2140	GM
3093	2141	GM
3094	2130	GM
3095	2091	GM
3096	5112	WarrM
3097	2349	GM
3098	2354	GM

3099	265	NML
3100	5541	WillM
3101	2363	GM. P
3102	5561	WillM
3103	5593	WillM
3104	911	GM
3105	912	GM
3106	3097	N/E
3107	3333	N/E
3108	2372	GM. P
3109	2005	GM
3110	3071	N/E
3111	3327	N/E
3112	3328	N/E
3113	2174	GM
3114	2029	GM
3115	1814	GM
3116	1815	GM
3117	1816	GM
3118	1972	GM
3119	1850	GM
3120	594	GM
3121	2059	GM
3122	2058	GM
3123	3061	? N/E
3124	1394	GM
3125	5533	WillM
3126	2517	GM
3127	646	GM
3128	648	GM
3129	2063	GM
3130	498	GM
3131	499	GM
3132	1846	GM
3133	1847	GM
3134	5126	WarrM
3135	1333	GM
3136	1331	GM
3137	1381	GM
3138	86	GM
3139	2011	GM
3140	3084	? N/E
3141	131	GM P
3142	2261	GM
3143	5310	WarrM
3144	1555	GM
3145	2936	NML
3150	5505	WillM
3151	2599	GM
3152	489	GM
3153	335	GM
3154	2716	GM
3155	1841	GM
3156	2874	GM
3157	2917	GM
3158	5509	WillM
3159	5582	WillM
3160	110	GM
3161	542	GM
3162	2268	GM
3163	2518	GM
3164	5502	WillM
3165	5523	WillM
3166	5525	WillM
3167	5526	WillM
3168	2587	GM
3169	2622	GM
3170	2621	GM
3171	2403	GM
3172	3187	N/E
3173	2616	GM
3174	2919	GM
3175	3213	N/E
3176	5321	WarrM
3177	5320	WarrM
3178	5322	WarrM
3179	3111	N/E
3180	5700	PO
3190	2597	GM
3191	3022	N/E
3192	3116	N/E
3193	5504	WillM
3194	3350	N/E
3195	3351	N/E
3196	3314	N/E
3197	3349	N/E
3198	3315	N/E
3199	3294	N/E
3200	2793	GM P
3201	2799	GM P
3202	2811	GM P
3203	2801	GM P
3204	2802	GM P
3205	2806	GM P
3206	2808	GM P
3207	2809	GM P
3208	2810	GM P
3209	2796	GM P
3210	2804	GM P
3211	2805	GM P
3212	2803	GM P
3213	2812	GM P
3214	2813	GM P
3215	2814	GM P
3216	2815	GM P
3217	2848	GM P
3218	2853	GM P
3219	2816	GM P
3220	2817	GM P
3221	2821	GM P
3222	2825	GM P
3223	2818	GM P
3224	2847	GM P
3225	2819	GM P
3226	2820	GM P
3227	2834	GM P
3228	2822	GM P
3229	2823	GM P
3230	2824	GM P
3231	2826	GM P
3232	2828	GM P
3233	2829	GM P
3234	2830	GM P
3235	2831	GM P
3236	2832	GM P
3237	2833	GM P
3238	2835	GM P
3239	2842	GM P
3240	2836	GM P
3241	2837	GM P
3242	2838	GM P
3243	2839	GM P
3244	2840	GM P
3245	2841	GM P
3246	2845	GM P
3247	2843	GM P
3248	2844	GM P
3249	2846	GM P
3250	2861	GM P
3251	2849	GM P
3252	2850	GM P
3253	2851	GM P
3254	2855	GM P
3255	2852	GM P
3256	2854	GM P
3257	2856	GM P
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3260	2859	GM P
3261	2860	GM P
3262	2862	GM P
3263	2791	GM P
3264	2797	GM P
3265	2800	GM P
3266	2827	GM P
3267	2786	GM P
3268	2789	GM P
3269	2792	GM P
3270	1387	GM
3271	2784	GM P
3272	2785	GM P
3273	2794	GM P
3274	2795	GM P
3275	2798	GM P
3276	2863	GM P
3277	3112	? N/E
3278	2790	GM P
3279	2864	GM P
3280	2807	GM P
3281	2865	GM P
3282	2787	GM P
3283	2788	GM P
3284	288	GM P
3285	289	GM P
3286	2878	GM
3287	2881	GM
3288	2733	GM
3289	2734	GM
3290	4273	GM
3291	3142	N/E
3292	3186	N/E
3293	3343	N/E
3294	2876	GM
3295	2879	GM
3296	2880	GM
3297	2885	GM
3298	2877	GM
3299	2883	GM
3300	2884	GM
3301	2882	GM
3302	2701	GM
3303	3211	N/E
3304	5503	WillM
3305	609	GM
3306	31	GM P
3307	2730	GM
3308	2762	GM
3309	2763	GM
3310	2764	GM
3311	2765	GM
3312	2761	GM
3313	607	GM
3315	2749	GM
3316	2738	GM
3317	2742	GM
3318	2747	GM
3319	2739	GM
3320	1065	BritM
3321	2757	GM
3322	2760	GM
3323	2758	GM
3324	2736	GM
3325	2741	GM
3326	2743	GM
3327	2744	GM
3328	2745	GM
3329	2740	GM
3330	2746	GM
3331	100	GM
3332	2737	GM
3333	2759	GM
3334	2772	GM
3335	3136	N/E
3336	3137	N/E
3337	2773	GM
3338	3342	N/E
3339	4201	WillM
3340	706	GM
3341	700	GM
3342	701	GM
3343	695	GM
3344	705	GM
3345	697	GM
3346	693	GM
3347	685	GM
3348	684	GM
3349	692	GM
3350	678	GM
3351	702	GM
3352	698	GM
3353	691	GM
3354	677	GM
3355	710	GM
3356	675	GM
3357	681	GM
3358	687	GM
3359	671	GM
3360	689	GM
3361	668	GM
3362	673	GM
3363	708	GM
3364	679	GM
3365	694	GM
3366	709	GM
3367	658	GM
3368	703	GM
3369	680	GM
3370	682	GM
3371	683	GM
3372	688	GM
3373	696	GM
3374	674	GM
3375	676	GM
3376	672	GM
3377	686	GM
3378	670	GM
3379	690	GM
3380	661	GM
3381	711	GM
3382	707	GM
3383	704	GM
3384	662	GM
3385	669	GM
3386	656	GM
3387	659	GM
3388	660	GM
3389	657	GM
3390	699	GM
3391	665	GM
3392	666	GM
3393	667	GM
3394	664	GM
3395	663	GM
3396	2965	NML
3397	1009	BritM
3398	3171	NML N/E
3399	3293	N/E
3400	4166	NML
3401	2756	GM
3402	2722	GM
3403	4165	NML
3404	2774	GM
3405	2960	NML
3406	2956	NML
3407	4167	NML
3408	4168	NML
3409	4105	NML
3410	4112	NML
3411	4134	NML
3412	4133	NML
3413	4146	NML
3414	4147	NML
3415	4158	NML
3416	4162	NML

3417	4170	NML
3418	4171	NML
3419	2724	GM
3420	4151	NML
3421	4152	NML
3422	4154	NML
3423	4176	NML
3424	2959	NML
3425	2961	NML
3426	4140	NML
3427	4161	NML
3428	2755	GM
3429	4139	NML
3430	4130	NML
3431	4111	NML
3432	4118	NML
3433	4183	NML
3434	4116	NML
3435	4129	NML
3436	4106	NML
3437	4107	NML
3438	4108	NML
3439	4132	NML
3440	4142	NML
3441	4120	NML
3442	4121	NML
3443	4123	NML
3444	4145	NML
3445	4149	NML
3446	4135	NML
3447	4136	NML
3448	4141	NML
3449	4122	NML
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3451	4156	NML
3452	4173	NML
3453	4119	NML
3454	4172	NML
3455	4117	NML
3456	4131	NML
3457	4126	NML
3458	4127	NML
3459	4128	NML
3460	4114	NML
3461	4150	NML
3462	4144	NML
3463	4138	NML
3464	4137	NML
3465	4113	NML
3466	4148	NML
3467	4159	NML
3468	4115	NML
3469	4124	NML
3470	4160	NML
3471	4169	NML
3472	4155	NML
3473	4143	NML
3474	4153	NML
3475	2955	NML
3476	3220	N/E
3477	2750	GM
3478	2952	NML
3479	2953	NML
3480	2954	NML
3481	2957	NML
3482	2962	NML
3483	2752	GM
3484	5599	WillM
3485	4386	GM
3486	4387	GM
3487	4388	GM
3488	4125	NML
3489	4175	NML
3490	4109	NML
3491	4174	NML
3492	4177	NML

3493	4178	NML
3494	4180	NML
3495	4181	NML
3496	4179	NML
3497	4164	NML
3498	2753	GM
3499	2754	GM
3500	4203	NML
3501	4204	NML
3502	4205	NML
3503	4206	NML
3504	4207	NML
3505	4208	NML
3506	4209	NML
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3510	4213	NML
3511	4214	NML
3512	4215	NML
3513	4216	NML
3514	4217	NML
3515	4218	NML
3516	4219	NML
3517	4220	NML
3518	4221	NML
3519	4222	NML
3520	4223	NML
3521	4224	NML
3522	4225	WillM
3523	4226	NML
3524	4227	NML
3525	4228	NML
3526	4229	NML
3527	4230	NML
3528	4231	NML
3529	4232	NML
3530	4233	NML
3531	4234	NML
3532	4235	NML
3533	4236	NML
3534	4237	NML
3535	4238	NML
3536	4239	NML
3537	4240	NML
3538	4241	NML
3539	4242	NML
3540	4243	NML
3541	4244	NML
3542	4245	NML
3543	3132	N/E
3544	4246	NML
3545	4247	NML
3546	4248	NML
3547	4249	NML
3548	4250	NML
3549	4251	NML
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3552	4254	NML
3553	4255	NML
3554	4256	NML
3555	4257	NML
3556	4258	NML
3557	4259	NML
3558	4260	NML
3559	4261	NML
3560	4262	NML
3561	4263	NML
3562	4264	NML
3563	4265	NML
3564	4266	NML
3565	4267	NML
3566	3133	N/E
3567	4268	NML
3568	2731	GM

3569	4270	NML
3570	4271	NML
3571	4269	NML
3572	4272	NML
3575	220	GM P
3576	234	GM
3577	214	GM
3578	1069	BritM
3579	223	GM
3580	2977	NML
3581	211	GM
3582	221	GM P
3583	5102	WarrM
3584	189	GM
3585	215	GM
3586	191	GM
3587	212	GM
3588	3382	N/E
3589	187	GM
3590	206	GM
3591	233	GM
3592	2984	NML
3593	2987	NML
3594	2995	NML
3595	208	GM
3596	1066	BritM
3597	213	GM
3598	2986	NML
3599	160	GM
3600	184	GM
3601	157	GM
3602	192	GM
3603	205	GM
3604	217	GM
3605	228	GM
3606	5517	WillM
3607	5546	WillM
3608	209	GM
3609	229	GM
3610	194	GM
3611	224	GM
3612	226	GM
3613	162	GM
3614	190	GM
3615	236	GM
3616	5518	WillM
3617	227	GM
3618	231	GM
3619	2982	NML
3620	2988	NML
3621	180	GM
3622	235	GM
3623	2973	NML
3624	29	GM P
3625	198	GM
3625	188	GM
3627	5547	WillM
3628	196	GM
3629	1070	BritM
3630	5545	WillM
3631	181	GM
3632	182	GM
3633	201	GM
3634	222	GM P
3635	5519	WillM
3636	163	GM
3637	199	GM
3638	225	GM
3639	2985	NML
3640	185	GM
3642	5100	WarrM
3643	183	GM
3644	202	GM
3645	203	GM
3646	219	GM
3647	207	GM

3648	193	GM
3649	161	GM
3650	159	GM
3651	210	GM
3652	158	GM
3653	200	GM
3654	1067	BritM
3655	1068	BritM
3656	216	GM
3657	5515	WillM
3658	186	GM
3659	232	GM
3660	5516	WillM
3661	237	GM
3662	238	GM
3663	197	GM
3664	230	GM
3665	5101	WarrM
3666	195	GM
3667	218	GM
3668	239	GM
3669	240	GM
3670	241	GM
3671	242	GM
3672	2448	GM
3674	5531	WillM
3675	2719	GM
3676	617	GM
3677	502	GM
3678	597	GM
3679	537	GM
3680	516	GM
3681	515	GM
3682	540	GM
3683	598	GM
3684	514	GM
3685	518	GM
3686	596	GM
3687	526	GM
3688	508	GM
3689	539	GM
3690	512	GM
3691	614	GM
3692	616	GM
3693	615	GM
3694	613	GM
3695	634	GM
3710	99	GM
3711	421	GM
3712	488	GM L
3713	1382	GM
3714	1432	GM
3715	1813	GM
3716	1821	GM
3717	1869	GM
3718	2537	GM P
3719	2981	NML
3720	5282	WarrM
3721	5011	WarrM
3722	4492	
3723	2748	GM
3724	2102	GM
3725	5110	WarrM
3726	2088	GM
3727	2087	GM
3728	2144	GM
3729	2085	GM
3730	2086	GM
3731	2142	GM
3732	18	GM
3733	5032	WarrM
3734	997	GM
3735	977	GM
3736	978	GM
3737	5264	WarrM
3738	2231	GM

3739	4026	NML
3740	2148	GM P
3741	5210	WarrM
3742	5234	WarrM
3743	5279	WarrM
3744	5186	WarrM
3745	5296	WarrM
3746	2246	GM
3747	5197	WarrM
3748	5277	WarrM
3750	5297	WarrM
3751	5294	WarrM
3752	2373	GM. P
3753	2184	GM
3754	2383	GM. P
3754	2182	GM
3755	1879	GM
3756	2263	GM
3757	2185	GM
3758	2251	GM
3759	1845	GM
3760	2233	GM
3761	2247	GM
3762	5236	WarrM
3763	2245	GM
3764	1866	GM
3765	5272	WarrM
3766	1868	GM
3767	5271	WarrM
3768	2236	GM
3769	2243	GM
3770	2238	GM
3771	2244	GM
3772	5093	WarrM
3773	2249	GM
3774	1864	GM
3775	2382	GM. P
3776	2248	GM
3777	2241	GM
3778	2978	NML
3779	2242	GM
3780	2240	GM
3781	2983	NML
3782	5009	WarrM
3783	1789	GM
3784	2084	GM
3785	2143	GM
3786	5300	WarrM
3787	5302	WarrM
3787	5303	WarrM
3788	5166	WarrM
3789	2186	GM
3790	5013	WarrM
3791	5289	WarrM
3792	102	GM
3793	799	GM
3794	860	GM P
3795	1773	GM
3796	1794	GM
3797	1805	GM
3798	1819	GM
3799	1823	GM
3800	1826	GM
3801	1825	GM
3802	1829	GM
3803	1830	GM
3804	1833	GM
3805	1849	GM
3806	1860	GM
3807	22	GM P
3808	1871	GM
3808	1861	GM
3809	1863	GM
3810	1867	GM
3811	2075	GM
3813	2216	GM
3814	2228	GM
3815	2285	GM
3816	2380	GM P
3817	2446	GM
3818	2751	GM
3819	2940	NML
3820	2980	NML
3821	5023	WarrM
3822	863	GM
3823	789	GM
3824	5103	WarrM
3825	1810	GM
3826	1812	GM
3827	2295	GM
3828	2121	GM
3829	875	GM P
3830	2099	GM
3831	2309	GM P
3832	2371	GM P
3833	2344	GM
3834	1792	GM
3835	2306	GM P
3836	2307	GM P
3837	2305	GM P
3838	848	GM P
3839	868	GM
3840	869	GM
3841	916	GM
3842	917	GM
3843	918	GM
3844	919	GM
3845	920	GM
3846	921	GM
3847	922	GM
3848	923	GM
3848	924	GM
3849	929	GM
3850	964	GM
3851	965	GM
3852	971	GM
3853	984	GM P
3854	1000	GM
3855	1013	BritM
3856	1776	GM
3857	1790	GM
3858	2154	GM P
3859	2156	GM P
3860	2930	NML
3861	2932	NML
3862	4040	NML
3863	5162	WarrM
3864	5263	WarrM
3865	101	GM
3866	958	GM
3867	1832	GM
3868	1818	GM
3869	1824	GM
3870	1671	GM
3871	1674	GM
3872	1675	GM
3873	1676	GM
3874	1820	GM
3875	1858	GM
3876	1859	GM
3877	2163	GM
3878	2167	GM
3879	2169	GM
3880	2203	GM
3881	2226	GM
3882	2229	GM
3883	2232	GM
3884	2234	GM
3885	2267	GM
3886	2272	GM
3887	2269	GM
3888	2270	GM
3889	2273	GM
3890	2274	GM
3891	2275	GM
3892	2391	GM
3893	5170	WarrM
3894	5265	WarrM
3895	5269	WarrM
3896	5273	WarrM
3897	5274	WarrM
3898	5275	WarrM
3899	5287	WarrM
3900	5291	WarrM
3902	2222	GM
3903	936	GM P
3904	961	GM
3905	1771	GM
3906	1772	GM
3907	1781	GM
3908	1783	GM
3909	1786	GM
3910	1788	GM
3911	1800	GM
3912	1803	GM
3913	2024	GM
3914	5115	WarrM
3915	1016	BritM
3916	2227	GM
3917	2208	GM
3918	78	GM
3919	604	GM
3920	635	GM
3921	1695	GM
3922	1709	GM
3923	1711	GM
3924	1744	GM
3925	1745	GM
3926	1747	GM
3927	1748	GM
3928	1809	GM
3929	1855	GM
3930	2014	GM
3931	2018	GM
3932	2189	GM
3933	2944	NML
3934	5019	WarrM
3935	5153	WarrM
3935	5154	WarrM
3936	5288	WarrM
3937	5311	WarrM
3938	5312	WarrM
3939		not used
3940	980	GM
3941	2069	GM
3942	903	GM
3943	2145	GM P
3944	2146	GM P
3945	2147	GM P
3946	2149	GM P
3947	2151	GM P
3948	2150	GM P
3949	2153	GM P
3950	2155	GM P
3951	981	GM
3952	982	GM
3953	2025	GM
3954	904	GM
3955	2187	GM
3956	2188	GM
3957	2190	GM
3958	2191	GM
3959	5284	WarrM
3960	619	GM
3961	2017	GM
3962	2020	GM
3963	2171	GM
3964	2974	NML
3965	5012	WarrM
3966	5212	WarrM
3967	5286	WarrM
3968	5293	WarrM
3969	5307	WarrM
3970	1817	GM
3971	618	GM
3972	2449	GM
3973	3297	N/E
3974		not used
3975	520	GM
3976	506	GM
3977	517	GM
3978	521	GM
3979	528	GM
3980	536	GM
3981	530	GM
3982	507	GM
3983	533	GM
3984	504	GM
3985	522	GM
3986	2945	NML
3987	532	GM
3988	531	GM
3989	523	GM
3990	527	GM
3991	503	GM
3992	525	GM
3993	500	GM
3994	599	GM
3995	600	GM
3996	601	GM
3997	602	GM
3998	603	GM
3999	605	GM
4000	606	GM
4001	620	GM
4002	622	GM
4003	623	GM
4004	624	GM
4005	625	GM
4006	626	GM
4007	630	GM
4008	631	GM
4009	632	GM
4010	621	GM
4011	999	GM P
4012	2033	GM
4013	5005	WarrM
4014	5092	WarrM
4015	5285	WarrM
4016	5295	WarrM
4017	979	GM
4018	5001	WarrM
4019	5298	WarrM
4020	1051	BritM
4021	1775	GM
4022	1870	GM
4023	1925	GM
4024	1332	GM
4025	2009	GM
4026	2034	GM
4027	2061	GM
4028	1848	GM
4029	2180	GM
4030	2218	GM
4031	5290	WarrM
4032	2921	NML
4033	5002	WarrM
4034	5003	WarrM
4035	5010	WarrM
4036	5283	WarrM
4037	5313	WarrM
4040	5530	WillM
4041	2702	GM P
4042	2705	GM P

4043	4439	WarrM
4044	2690	GM
4045	2438	GM
4046	2670	GM
4047	2718	GM
4048	2872	GM
4049	2920	GM
4050	2433	GM
4051	3340	N/E
4052	3341	N/E
4053	3184	N/E
4054	3219	N/E
4055	2971	NML
4056	2923	NML
4057	2698	GM
4058	2704	GM
4059	5316	WarrM
4060	5315	WarrM
4061	5318	WarrM
4062	5317	WarrM
4063	2225	GM
4064	2259	GM
4065	2711	GM P
4066	1822	GM
4067	2420	GM
4068	2427	GM
4069	2871	GM
4070	2436	GM
4071	5204	WarrM
4072	781	GM
4073	783	GM
4074	786	GM
4075	2437	GM
4076	2422	GM
4077	2445	GM
4078	5319	WarrM
4079	4490	NML

Abbreviations

AMS	accelerator mass spectrometry
AR	silver
BAR	British Archaeological Reports
BL	British Library
BMC	British Museum Catalogue
BPR	Register of Edward the Black Prince ()
c.	circa
C3rd	3rd century
Cal Inq Misc	Calendar of Inquisitions Miscellaneous (Chancery) preserved in the Public Record Office (HMSO)
CBA	Council for British Archaeology
CCALS	Cheshire and Chester Archives and Local Studies
CCR	Calendar of the Close Rolls preserved in the Public Record Office (HMSO)
CPR	Calendar of the Patent Rolls preserved in the Public Record Office (HMSO)
CUP	Cambridge University Press
D	diameter
DCMS	Department of Culture, Media and Sport
DKR	Reports of the Deputy Keeper of the Public Records
Fd	found
g	grams
gr	grains
H	height
Harl. Ms	Harleian Manuscripts
HAT	highest astronomical tide
L	length
LHS	left-hand side
LMMC	London Museum Medieval Catalogue
LPFB	Lower Peat/Forest Bed
LRBC	Late Roman Bronze Coinage
MHWMST	Mean High Water Mark of Spring Tides
MSMR	Merseyside Sites and Monuments Record
NGR	National grid reference (Ordnance Survey)
NHM	Natural History Museum, London
NMGM	National Museums and Galleries on Merseyside (former title of NML)
NML	National Museums Liverpool
Obv.	obverse
OD	Ordnance Datum
OMH	Old Market Hall (Chester)
OUP	Oxford University Press
PAS	Portable Antiquities Scheme
Rev.	reverse
RHS	right-hand side
RIC	The Roman Imperial Coinage
SMR	Sites and Monuments Record
SNG	Sylloge Nummorum Graecorum
Th	thickness
THSLC	Transactions of the Historic Society of Lancashire and Cheshire
TNA: PRO	The National Archives: Public Record Office
UPFB	Upper Peat/Forest Bed
VCP	Very Coarse Pottery
W	width
Wt	weight

Classes of original records

Public Record Office

CHES 25	Palatinate of Chester: Chester County Court: Indictment Rolls and Files
E 101	Exchequer: Accounts, Various
E 134	Exchequer: Depositions taken by Commission
SC 6	Special Collections: Ministers' and Receivers' Accounts

British Library

Harl.Ms.	Harleian Manuscripts

Cheshire and Chester Archives and Local Studies

DAR	Estate and Family Papers: Arderne Collection
DFI	Estate and Family Papers: W. F. Irvine Collection
WS	Wills and Probate Records: Supra Series
ZCH	Chester City Records: Charters
ZCR 60	Chester City Records: Private Records: Thomas Hughes (antiquary)
ZMB	Chester City Records: Mayors' Books
ZSB	Chester City Records: Sheriffs' Books
ZSR	Chester City Records: Pentice Court Rolls

Bibliography

Abbitt M. W. 1973 'The colonial shoe buckle' in Noël Hume A. (ed.) *Five Artefact Studies (Colonial Williamsburg Occasional Papers in Archaeology* 1), Colonial Williamsburg Foundation, Virginia, 25–53.

Adams J. 1690 *Index Villaris,* 2nd edn, London.

Adams M. H. 1994 *The Influence of Surface Degradation on Ancient Metallurgical Objects: The Effect of Microstructure and Soil Type upon Corrosion of Southern British Bronze Age Metalwork*, Unpublished PhD thesis, University of Liverpool, Liverpool.

Adams M. H. and Philpott R. A. forthcoming *Excavations on a Romano-British and Early Medieval Site at Court Farm, Halewood, Merseyside,* NML monograph, NML, Liverpool.

Addyman P. V. 1964 'A Dark Age Settlement at Maxey, Northants' *Medieval Archaeol* 8, 20–73.

Addyman P. V. and Priestley J. 1977 'Baile Hill, York: a report on the institute's excavations' *Archaeol J* 134, 115–56.

Ager B. 1985 'The smaller variants of the Anglo-Saxon quoit brooch' *Anglo-Saxon Studies in Archaeol Hist* 4, Oxford, 1–58.

Ainsworth S. and Wilmott T. 2005 *Chester Amphitheatre: From Gladiators to Gardens,* English Heritage and Chester City Council, London.

Akerman J. Y. 1855 *Remains of Pagan Saxondom*, John Russell Smith, London.

Algar D. 2001 'Marbles' in Saunders P. (ed.) *Salisbury Museum Medieval Catalogue Part 3*, Salisbury and South Wiltshire Museum, Salisbury, 171-2, and 209.

Allan J. P. (ed.) 1984 *Medieval and Post Medieval Finds from Exeter 1971–80*, Exeter Archaeological Report 3, Exeter City Council and the University of Exeter, Exeter.

Allason-Jones L. 1987 'Metalwork' in Heslop D. H. *The Excavation of an Iron Age Settlement at Thorpe Thewles, Cleveland, 1980–1982,* CBA Research Report 65, London, 77–82.

Allason-Jones L. 1988 'The small finds' in Bishop M. C. and Dore J. N. *Corbridge: Excavations of the Roman Fort and Town, 1947–80,* Historic Buildings and Monuments Commission for England, London, 159–218.

Allason-Jones L. 1989 *Ear-rings in Roman Britain,* BAR, Brit Ser 201, Oxford.

Allason-Jones L. 1991 'Objects of copper alloy' in Holbrook N. and Bidwell P. *Roman Finds from Exeter,* Exeter Archaeological Reports 4, Exeter City Council and University of Exeter, 242–63.

Allason-Jones L. 1993 'Small finds' in Casey J. and Davies J. L. *Excavations at Segontium (Caernarfon) Roman Fort, 1975–1979,* CBA Research Report 90, London, 165–210.

Allason-Jones L. and McKay B. 1985 *Coventina's Well,* Oxbow Books, Oxford.

Allason-Jones L. and Miket R. 1984 *The Catalogue of Small Finds from South Shields Roman Fort,* Soc Antiqs of Newcastle upon Tyne Monograph Ser 2, Newcastle.

Allen D. F. 1960 'The origins of coinage in Britain: a reappraisal' in Frere S. S. (ed.) *Problems of the Iron Age in Southern Britain,* Institute of Archaeology, London.

Allen J. R. L. and Fulford M. G. 1996 'The distribution of South-East Dorset Black Burnished Category I pottery in South-West Britain' *Britannia* 27, 223–81.

Allen J. R. L. and Fulford M. G. 1999 'Fort building and military supply along Britain's Eastern Channel and North Sea coasts: the later second and third centuries' *Britannia* 30, 163-84.

Allen J. R. L. and Rae J. E. 1988 'Vertical salt-marsh accretion since the Roman period in the Severn Estuary, southwest Britain' *Marine Geology* 83, 225–35.

Allen L. 2003 'The finds' in Hardy A., Dodd A. and Keevill G. (eds), *Aelfric's Abbey: Excavations at Eynsham Abbey, Oxfordshire 1989–92,* Thames Valley Landscapes 16, Oxford University School of Archaeology, 247–340.

Amery A. and Davey P. J. 1979 'Post medieval pottery from Brookhill, Buckley, Clwyd (Site 1)' *Medieval and Later Pottery in Wales* 2, 49–85.

Andrews G. 1992 'Other objects of stone' in Hinchliffe J. and Williams J. H. *Roman Warrington: Excavations at Wilderspool,* Dept of Archaeology, University of Manchester, 162.

Anon 1849a 'Exhibitions (a collection of antiquities discovered at Hoylake, C. B. Robinson)' *Trans Hist Soc Lancashire Cheshire* 1, 24 and pl. opp. p. 28.

Anon 1849b 'Notice of coins found at Leasowe Castle in 1834' *Trans Hist Soc Lancashire Cheshire* 1, 103–4.

Anon 1850 'Exhibitions (A musket rest from Hoylake, C. B. Robinson)' *Trans Hist Soc Lancashire Cheshire* 2, 24.

Anon 1851 'Exhibitions (Further antiquities from Hoylake, C. B. Robinson)' *Trans Hist Soc Lancashire Cheshire* 3, 14–15, pl. 1.

Anon 1856 'Reports of meetings: J. Boult lecture on some of the recorded changes in the Liverpool Bay previous to 1800' *Trans Hist Soc Lancashire Cheshire* 8, 252–3.

Anon 1861 'Proceedings, thirteenth session, 1860–61' *Trans Hist Soc Lancashire Cheshire* 13, 323–40.

Anon 1862 'Proceedings archaeological section' *Trans Hist Soc Lancashire Cheshire* 14, 190.

Anon 1864a 'The pre-historic man of Cheshire' *Trans Hist Soc Lancashire Cheshire* 16, 249–50.

Anon 1864b 'A brief abstract of the proceedings of the Society, from July, 1857, to December, 1859' *J Chester Architect Archaeol Hist Soc* 2 (for 1855–62), 235–76.

Anon 1875 'Proceedings, twenty-seventh session, 1874–75' *Trans Hist Soc Lancashire Cheshire* 27, 169–91.

Anon 1876 'Proceedings, twenty-eighth session, 1875–76' *Trans Hist Soc Lancashire Cheshire* 28, 173–94.

Anon 1878 'Proceedings, thirtieth session, 1877–78' *Trans Hist Soc Lancashire Cheshire* 30, 151–78.

Anon 1879 'Proceedings, thirty-first session, 1878–79' *Trans Hist Soc Lancashire Cheshire* 31, 105–18.

Anon 1887 'Proceedings, thirty-sixth session, 1886–87' *Trans Hist Soc Lancashire Cheshire* 39, 159–65.
Anon 1888 'Proceedings, thirty-sixth session, 1887–88' *Trans Hist Soc Lancashire Cheshire* 40, 184–6.
Anon 1893 'Report for 1891–2' *Trans Hist Soc Lancashire Cheshire* 44, 353–6.
Anon 1896 'The Hoyle Lake' *The Cheshire Sheaf,* 3rd series, 1 (April 1896), 31–2.
Anon 1901 'Report for 1899' *Trans Hist Soc Lancashire Cheshire* 51, 233–4.
Anon 1927 'Wire brooch of Roman period' *Antiq J* 7, 64–5.
Arbman H. 1940 *Birka 1: Die Gräber*, Kungl. Vittehets och Antikvitets Akademien, Uppsala.
Archibald M. M. 1976 'Medieval and modern hoards' *Coin Hoards* 2, 110–27.
Archibald M. M. 1991 'Against the tide: coin movement from Scandinavia to the British Isles in the Viking Age' *NNF-Nytt* 1991: 1, 13–22.
Armbruster B. 2004 'Goldsmiths' tools at Hedeby' in Hines J., Lane A. and Redknap M. (eds) *Land, Sea and Home,* Soc for Medieval Archaeol Monograph 20, Maney, Leeds, 109–23.
Armstrong P., Tomlinson, D. and Evans D. H. 1991 *Excavations at Lurk Lane, Beverley, 1979–82*, Sheffield Excavation Rep. 1, Sheffield.
Arnold C. J. and Davies J. L. 2000 *Roman and Early Medieval Wales,* Sutton, Stroud.
Ashton W. 1909 *The Battle of Land and Sea* on the Lancashire, Cheshire and North Wales Coasts, with Special Reference to the Lancashire Sandhills, privately printed, Manchester.
Astill G. G. 1993 *A Medieval Industrial Complex and its Landscape: The Metalworking Water Mills and Workshops of Bordesley Abbey* CBA Research Report 92, York.
Atkinson D. 1942 *Report on Excavations at Wroxeter (the Roman City of Viroconium) in the County of Salop 1923–1927,* The University Press, Oxford.
Axworthy J. 1978 'Ancient Meols: some pottery from the collection of the 19th century antiquarian Henry Ecroyd Smith' Unpublished typescript, Merseyside Archaeological Society, Liverpool.

Baart J. M., Krook W., Lagerweij A. B. *et al.* 1977 *Opgravingen in Amsterdam*, Fibula-van Dishoeck, Amsterdam.
Bailey G. 2000 *Finds Identified*, Greenlight, Witham.
Bailey R. N. 1970 'An Anglo-Saxon pin-head from Pontefract' *Yorkshire Arch J* 62, 405–6.
Bailey R. N. forthcoming 'Lancashire and Cheshire' *British Academy Corpus of Anglo-Saxon Stone Sculpture*, OUP, Oxford.
Bailey R. N. and Whalley J. 2006 'A Miniature Viking-Age hogback from the Wirral' *Antiq J* 86, 345–56.
Bailey R. T. and Gladstone R. 1913 'Catalogue of the Museum of the Historic Society of Lancashire and Cheshire' *Trans Hist Soc Lancashire Cheshire* 65, 222–39.
Baines P. 1977 *Spinning Wheels, Spinners and Spinning,* Scribner, New York.
Baker D., Baker E., Hassall J. and Simco A. 1979 'Excavations in Bedford 1967–1977' *Bedfordshire Archaeol J* 13.
Bangert S. 2006 'Menas Ampullae in Britain?!' *Minerva* 17.4, Jul–Aug 2006, 44–5.
Bangert S. forthcoming *The Ashmolean Collection of Menas Ampullae within their Social Context,* BAR Int Ser, Oxford.
Barker D. 1985 'The Newcastle-under-Lyme Clay Tobacco Pipe Industry' in Davey P. J. (ed.) *The Archaeology of the Clay Tobacco Pipe IX. More Pipes from the Midlands and Southern England,* BAR 146i, Oxford, 238–89.
Barnard F. P. 1916 *The Casting-Counter and the Counting-Board*, OUP, Oxford.
Barraclough G. 1957 *Facsimiles of Early Cheshire Charters,* Record Soc Lancashire Cheshire, Chester.
Bass W. M. 1987 *Human Osteology: A Laboratory and Field Manual (3rd edn),* Missouri Archaeological Society, Columbia.
Batey C. E. 1988 'A Viking-Age bell from Freswick Links, Caithness' *Medieval Archaeol* 32, 213–16.
Baumgartner E. and Krueger I. 1988 *Phönix aus Sand und Asche: Glas des Mittelalters*, Klinkhardt und Biermann, Munich.
Bayley J. 1990 'Glass rings and the manufacture of high-lead glass' in Biddle M. (ed.) *Object and Economy in Medieval Winchester*, Winchester Studies 7.ii. Clarendon Press, Oxford, 268–9.
Bayley J. 1991 'Alloy nomenclature' in Egan G. and Pritchard F. (eds) *Medieval Finds from Excavations in London: 3, Dress Accessories c. 1150 – c. 1450*, HMSO, London, 13–7.
Bayley J. 1992 *Anglo-Scandinavian Non-Ferrous Metalworking from 16–22 Coppergate,* The Archaeology of York 17/7, CBA, York.
Bayley J. 1998 'The production of brass in antiquity with particular reference to Roman Britain' in Craddock P. T. (ed.) *2000 Years of Zinc and Brass*, British Museum Occ. Paper 50, BMP, London, 7–26
Bayley J. and Butcher S. 2004 *Roman Brooches in Britain: A Technological and Typological Study based on the Richborough Collection,* Society of Antiquaries, London.
Bayley J. and Doonan R. 2000 'Glass manufacturing evidence' in Mainman A. J. and Rogers N. S. H. (eds) *Finds from Anglo-Scandinavian York*, The Archaeology of York: the small finds 17/14, CBA, York, 2519–28.
Bayley J., Dungworth D. and Paynter S. 2001 *Archaeometallurgy,* Centre for Archaeology Guidelines 1, English Heritage, London.
Bean S. C. 2000 *The Coinage of the Atrebates and Regni,* Studies in Celtic Coinage 4, Oxford University School of Archaeology, Oxford.
Beck J. 1954 'Inundation of the Lancashire coast in 1720' *Trans Hist Soc Lancashire Cheshire* 105, 91–105.
Bedlington D. 1995 *Holocene Sea-level Changes and Crustal Movements in North Wales and Wirral,* Unpublished PhD thesis, University of Durham.
Bell M. 1997 'Environmental archaeology in the coastal zone' in Fulford M., Champion T. and Long A. J. (eds) *England's Coastal Heritage, A survey for English Heritage and the RCHME,* English Heritage and RCHME, London, 56–73.
Bell M., Caseldine A. and Neumann H. (eds) *Prehistoric Intertidal Archaeology in the Welsh Severn Estuary,* CBA Research Report 120, London.
Bennet M. J. 1983 *Community, Class and Careerism; Cheshire and Lancashire Society in the Age of Sir Gawain and the Green Knight,* CUP, Cambridge.
Beresford G. 1987 *Goltho: The Development of an Early Medieval Manor, c850–1150,* English Heritage, London.
Beresford M. 1967 *New Towns of the Middle Ages, Town Plantation in England, Wales and Gascony,* Lutterworth Press, London.

Beresford M. and Finberg H. P. R. 1973 *English Medieval Boroughs, A Handlist*, David and Charles, Newton Abbot.
Berners J. 1881 *Treatise of Fysshynge with an Angle,* Facsimile edition with introduction by W. Blades, Elliot Stock, London.
Bersu G. and Wilson D. M. 1966 *Three Viking Graves in the Isle of Man,* Soc for Medieval Archaeol Monograph 1, London.
Besly E. 1996 'Short Cross and other Medieval coins from Llanfaes, Anglesey' *Brit Numis J* 65 (for 1995), 46–82.
Besly E. 1997 'Coinage from post-medieval wrecks' in Redknap M. (ed.) *Artefacts from Wrecks: Dated Assemblages from the Late Middle Ages to the Industrial Revolution,* Oxbow Monograph 84, Oxbow Books, Oxford.
Bestwick J. D. and Cleland J. H. 1974 'Metal working in the north west' in Jones G. D. B. and Grealey S. *Roman Manchester*, Manchester Excavation Committee, Manchester, 143–57.
Bettey J. H. 1993 *Estates and the English Countryside*, Batsford, London.
Bevan B. 1999 'Northern exposure: interpretative devolution and the Iron Ages in Britain' in Bevan B. (ed.) *Northern Exposure: Interpretative Devolution and the Iron Ages in Britain,* University of Leicester, Leicester, 1–19.
Biddle M. 1967 'Two Flavian burials from Grange Road, Winchester' *Antiq J* 47, 224–50.
Biddle M. (ed.) 1990a *Object and Economy in Medieval Winchester*, Winchester Studies 7i and ii, Clarendon Press, Oxford.
Biddle M. 1990b 'Tweezers' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 690–2.
Biddle M. 1990c 'Pins of medium length with glass heads' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 556–7.
Biddle, M. 1990d 'Crossbow boltheads' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 1076–80.
Biddle M. and Cook L. 1990 'Buttons' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 571–81.
Biddle M. and Hinton D. A. 1990 'Annular and other brooches' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 639–43.
Bidwell P. T. 1985 *The Roman Fort of Vindolanda at Chesterholm, Northumberland*, London.
Biggs N. 1995 *Bullion Weights: An Outline Catalogue,* White House, Llanfyllin.
Binney E. W. and Talbot J. H. 1843 'On the petroleum found in the Downholland Moss, near Ormskirk' Paper read at the Fifth Annual General Meeting of the Manchester Geological Society, 6 October 1843.
Birley A. 2002 *Garrison Life at Vindolanda: A Band of Brothers,* Tempus, Stroud.
Bishop M. C. 1996 *Finds from Roman Aldborough: A Catalogue of Small Finds from the Romano-British Town of Isurium Brigantum,* Oxbow Monograph 65, Oxbow Books, Oxford.
Bishop M. C. 1998 'Military Equipment' in Cool H. E. M. and Philo C. (eds) *Roman Castleford. Excavations 1974-85. Vol. I. The Small Finds,* West Yorkshire Archaeology Service, Wakefield, 61-82.
Blackburn M. 1986 *Anglo-Saxon Monetary History,* Leicester University Press, Leicester.
Blackburn M. 1996 'Hiberno-Norse and Irish Sea imitations of Cnut's *Quatrefoil* Type' *Brit Numis J* 66, 2–20.
Blair C. 1958 *European Armour circa 1066 to circa 1700,* Batsford, London.
Blindheim C. 1978 'Trade problems in the Viking Age, some reflections on insular metalwork found in Norwegian graves of the Viking Age', in *The Vikings, Proceedings of the Symposium of the Faculty of Arts at Uppsala University, 1977*, Uppsala, 166–76.
Blockley K. 1989 *Prestatyn 1984–5: An Iron Age Farmstead and Romano-British Industrial Settlement in North Wales,* BAR Brit Ser 210, Oxford.
Blockley K. and Day M. 1989 'Moulds' in Blockley K. *Prestatyn 1984–5: An Iron Age Farmstead and Romano-British Industrial Settlement in North Wales,* BAR Brit Ser 210, Oxford, 183–92.
Böhme-Schöneberger A. 1993 'Die reichen Gräber von Goeblingen-Nospelt als Zeichen der Romanisierung der einheimschen Bevölkerung' in Struck M. (ed.) *Römerzeitliche Gräber als Quellen zu Religion, Bevölkerungsstruktur und Sozialgeschichte* Archäologische Schriften des Instituts für Vor- und Frühgeschichte der Johannes Gutenberg-Universität Mainz 3, 337–43.
Boon G. C. 1977 'Greco-Roman Anchor-stock from N Wales' *Antiquaries J* 57, 10-30.
Boon G. C. 1986 *Welsh Hoards 1979–1981*, National Museums and Galleries of Wales, Cardiff.
Boon G. C. 1987 'A decorated Arretine sherd from Steepholm, Bristol Channel' *Antiquaries J* 67, 375-6.
Boon G. C. 1988 'British coins from Wales' in Robinson D. M. (ed.) *Biglis, Caldicot and Llandough. Three Late Iron Age and Romano-British Sites in South-east Wales. Excavations 1977-79,* Oxford, 92.
Boon G. C. 1991 'Byzantine and other exotic ancient bronze coins from Exeter' in Holbrook N. and Bidwell P. T. *Roman Finds from Exeter,* Exeter Archaeological Reports: Volume 4, Exeter.
Booth P. H. W. (ed.) 1984 *Burton in Wirral: A History,* Burton and South Wirral Local History Society, Burton.
Booth P. H. W. and Dodd J. P. 1979 'The manor and fields of Frodsham' *Trans Hist Soc Lancashire Cheshire* 128, 27–57.
Bornholdt K. 1999 'Myth or mint? The evidence for a Viking-Age coinage from the Isle of Man' in Davey P. J (ed.) *Recent Archaeological Research on the Isle of Man,* BAR Brit Ser 278, Oxford, 199–213.
Boult J. 1865 *On the Alleged Submarine Forests on the Shores of Liverpool Bay*, Polytechnic Society, Liverpool.
Boult J. 1866 'Further observations on the alleged submarine forest on the shores of Liverpool Bay and the River Mersey' *Trans Hist Soc Lancashire Cheshire* 18, 89–126.
Bourke C. 1980 'Early Irish hand-bells' *J Roy Soc Antiq Ir* 110, 52–66.
Bowden K. F. 1953 'Physical oceanography of the Irish Sea' in Smith W. (ed.) *A Scientific Study of Merseyside,* University of Liverpool, Liverpool, 69–80.
Bowen D. Q., Rose J., McCabe A. M. and Sutherland D. G. 1986 'Correlation of quaternary glaciations in England, Ireland, Scotland and Wales' *Quaternary Science Reviews* 5, 299–340.
Bowen E. 1972 *Britain and the Western Seaways,* Thames and Hudson, London.
Brenan J. 1998 'Furnishings' in Egan G. *The Medieval*

Household, Daily Living c.1150–c.1450, Medieval Finds from Excavations in London 6, London, 65–84.
Brigham T. 1990 'The late Roman waterfront in London' *Britannia* 21, 99–184.
Britnell W. J. 1989 'The Collfryn Hillslope Enclosure, Llansantffraid Deuddwr, Powys: Excavations 1980-82' *Proc Prehistoric Soc* 55, 89-134.
Brothwell D. R. 1965 *Digging Up Bones,* Cornell University Press, Ithaca.
Brown A. (ed.) 1999 *The Rows of Chester: The Chester Rows Research Project*, English Heritage Archaeological Report 16, English Heritage, London.
Brown A., Leaning J. B. and Little J. H. 1975 'Excavations at Halton Brow, Runcorn, 1967' *J Chester Archaeol Soc* 58, 85–9.
Brownbill J. 1928 *West Kirby and Hilbre, A Parochial History*, Henry Young, Liverpool.
Bruce-Mitford R. and Raven S. 2005 *A Corpus of Late Celtic Hanging Bowls*, OUP, Oxford.
Bruton F. A. 1909 *Roman Manchester,* Manchester University Press, Manchester.
Bryant S., Morris M. and Walker J. S. F. 1986 *Roman Manchester: A Frontier Settlement,* Greater Manchester Archaeological Unit, Manchester.
Bryce T. 1912–13 'Note on the balance and weights of the Viking Period found on the Island of Gigha' *Proc Soc Antiq Scot* 47, 436–44.
Bu'Lock J. D. 1958 'Pre-Norman Crosses of West Cheshire and the Norse Settlements around the Irish Sea' *Trans Antiq Soc Lancashire Cheshire* 68, 1-11.
Bu'Lock J. D 1960 'The Celtic, Saxon and Scandinavian Settlement of Meols in Wirral' *Trans Hist Soc Lancashire Cheshire* 112, 1–28.
Bu'Lock J. D. 1972 *Pre-Conquest Cheshire 383–1066,* Chester Community Council, Chester.
Bulmer M. 1980 'An introduction to Roman samian ware, with special reference to collections in Chester and the north-west' *J Chester Archaeol Soc* 62 (for 1979), 5–72.
Bulmer W. 1938 'Dragonesque brooches and their development' *Antiq J* 18, 146–53.
Burgess C. 1974 'The Bronze Age' in Renfrew C. (ed.) *British Prehistory*, Duckworth, London, 165–233.
Burnham B., Keppie L. J. F., Esmonde Cleary A. S., Hassall M. W. C. and Tomlin R. S. O. 1993 'Roman Britain in 1992. I. Sites Explored' *Britannia* 24, 267–322.
Bushe-Fox J. P. 1913 *Excavations on the Site of the Roman Town at Wroxeter, Shropshire, in 1912,* Reports of the Research Committee of the Society of Antiquaries of London I, Oxford.
Bushe-Fox J. P. 1916 *Third Report on the Excavations on the Site of the Roman Town at Wroxeter, Shropshire 1914,* Reports of the Research Committee of the Society of Antiquaries of London IV, Oxford.
Bushe-Fox J. P. 1926 *First Report on the Excavations of the Roman Fort at Richborough,* Reports of the Research Committee of the Society of Antiquaries of London VI, Oxford.
Bushe-Fox J. P. 1949 *Fourth Report on the Excavations of the Roman Fort at Richborough, Kent,* Reports of the Research Committee of the Society of Antiquaries of London XVI, Oxford.
Busk G. 1865 'An account of the discovery of a human skeleton beneath a bed of peat on the coast of Cheshire' *Transactions Ethnological Soc London* 6, 101–4.
Buxton K. and Howard-Davis C. L. E. 2000 *Bremetennacum. Excavations at Roman Ribchester 1980, 1989-1990,* Lancaster Imprints Series 9, Lancaster University Archaeological Unit, Lancaster.

Cane C. 2002 'Lead and pewter objects' in Baker N. (ed.) *Shrewsbury Abbey: Studies in the Archaeology and History of an Urban Abbey,* Shropshire Arch and Hist Soc Monograph 2, 114.
Cantor L. 1983 *The Medieval Parks of England: A Gazetteer,* Loughborough University, Loughborough.
Capelle T. 1968 *Die Metallschmuck von Haithabu*, K. Wachholtz, Neumunster.
Caple C. 1983 'Pins and wires' in Mayes P. and Butler L. A. S. *Sandal Castle Excavations 1964–1973: A Detailed Archaeological Report*, Wakefield Historical Publications, Leeds, 269–78.
Caple C. 1992 'The Detection and Definition of an Industry: the English Medieval and Post Medieval Pin Industry' *Archaeol J* 148, 241–55.
Care-Evans A. 1994 *The Sutton Hoo Ship Burial,* British Museum, London.
Carr A. D. 1982 *Medieval Anglesey,* Anglesey Antiquarian Society, Llangefni.
Carrington P. 1977 'Chester: Crook Street (1973–4) Pit Group' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool, 14–17.
Carrington P. 1988 'Finds from the Headquarters Building' in Ward S. *Excavations at Chester: 12 Watergate Street 1985,* Chester City Council, Grosvenor Museum, Chester, 16–21.
Carroll D. L. 1972 'Wire Drawing in Antiquity' *Amer J Archaeol* 76.3, 321–3.
Caruana I. D. 1992 'Carlisle; Excavation of a Section of the Annexe Ditch of the First Flavian Fort, 1990' *Britannia* 23, 45–109.
Casey J. and Davies J. L. 1993 *Excavations at Segontium (Caernarfon) Roman Fort, 1975–1979,* CBA Research Report 90, London.
Cennini C. d'A. 1960 *The Craftsman's Handbook* (trans. D. V. Thompson), Dover Publications, New York.
Cessford C., Morris C. and Spoerry P. 1998 'Appendix G: Beads' in Spoerry P. and Hinman M. *The Still, Peterborough. Medieval Remains Between Cumbergate and Westgat*e, Archaeological Field Unit Monograph 1, Cambridgeshire County Council, Cambridge, 120.
Chapman V. 1953 'Open Fields in West Cheshire' *Trans Hist Soc Lancashire Cheshire* 104 (for 1952), 35–59.
Cherry J. 1988 'Medieval jewellery from Ireland: a preliminary survey' in MacNiocaill G. and Wallace P. (eds) *Keimelia: Studies in Medieval Archaeology and History in Memory of Tom Delany,* Galway University Press, Galway, 143–61.
Cherry J. 1991 'Harness pendants' in Saunders P. and Saunders E. (eds) *Salisbury and South Wiltshire Museum Medieval Catalogue* 1, Salisbury and South Wiltshire Museum, Salisbury, 16–28.
Chitty G. 1978 'Wirral Rural Fringes Survey' *J Merseyside Archaeol Soc* 2, 1–26.
Chitty G. and Warhurst M. 1977 'Ancient Meols: finds from the Cheshire shore in Merseyside County Museums' *J Merseyside Archaeol Soc* 1, 19–42.
Clark J. 1986 *Medieval Horseshoes,* Finds Research Group 700–1700 Datasheet 4.
Clark J. 1995 *The Medieval Horse and its Equipment, c. 1150– c.1450*, Medieval Finds from Excavations in London 5, HMSO, London.
Clarke G. 1979 *The Roman Cemetery at Lankhills,*

Winchester Studies 3, Clarendon Press, Oxford.
Clarke J. C. 1998 'Other artefacts of stone' in Cool H. and Philo C. (eds) *Roman Castleford. Excavations 1974–85. Vol. I. The Small Finds,* West Yorkshire Archaeology Service, Wakefield, 253–65.
Clarke H. and Carter A. 1977 *Excavations at King's Lynn 1963–1970,* London, 403–8.
Clayton D. J. 1990 *The Administration of the County Palatine of Chester: 1442–85,* Chetham Society 35, Manchester.
Cleary R. and Philpott R. 1993 *An Archaeological Evaluation at Church Farm, Bidston,* Unpublished report, Field Archaeology Unit, Liverpool Museum.
Cleary R. M., Hurley M. F. and Shee Twohig E. 1997 *Skiddy's Castle and Christ Church Cork. Excavations 1974–77 by D. C. Twohig,* Cork Corporation and University College Cork, Cork.
Cleere H. 1978 'Roman harbours in Britain south of Hadrian's Wall' in Taylor J. du Plat and Cleere H. (eds) 1978 *Roman Shipping and Trade: Britain and the Rhine Provinces,* CBA Research Report 24, London, 36–40.
Clough T. H. McK. and Cummins W. A. 1988 *Stone Axe Studies. Vol. 2: The Petrology of Prehistoric Stone Implements from the British Isles,* CBA Research Report 67, London.
Coates R. 1998 'Liscard and Irish Names in Northern Wirral' *J English Place-Name Soc* 30 (for 1997–8), 23–6.
Collingwood R. G. 1930 *The Archaeology of Roman Britain,* Methuen and Co., London.
Collingwood R. G. and Richmond I. A. 1969 *The Archaeology of Roman Britain*, Methuen, London.
Collis J. R. 1996 'Across the Great Divide' in Champion T. and Collis J. R. (eds) *The Iron Age in Britain and Ireland: Recent Trends,* University of Sheffield, Sheffield, 1996 1–4.
Colvin H. M. 1963 *The History of the King's Works, Vol 1, The Middle Ages,* HMSO, London.
Connelly P. and Power D. 2005 'Salt making in Roman Nantwich. Recent discoveries at Kingsley Fields, Welsh Row' in Nevell M. and Fielding A. P. (eds) *Brine in Britannia. Recent Archaeological Work on the Roman Salt Industry in Cheshire,* Archaeology North West 7 (for 2004–5), 31–40.
Conway R. S. 1906 *Melandra Castle,* Manchester University Press, Manchester.
Conway R. S., McInnes J. and Brooks G. C. 1909 ' The Roman coins of Manchester' in Bruton F. A. (ed.) *The Roman Fort at Manchester,* University Press, Manchester, 1–153.
Cook B. J., Carey R. and Leahy K. 1999 'Medieval and early modern coin finds from South Ferriby, Humberside' *Brit Numis J* 68 (for 1998), 96–118.
Cook B. J. and Besly E. M. 1990 'Coin Register 1989' *British Numismatic J* 59 (for 1989), 221-33.
Cool H. E. M. 1990a 'Roman metal hair pins from southern Britain' *Archaeol J* 147, 148–82.
Cool H. E. M. 1990b 'Silver and copper-alloy objects (other than brooches)' in Wrathmell S. and Nicholson A. (eds) *Dalton Parlours: Iron Age Settlement and Roman Villa,* West Yorkshire Archaeology Service, Wakefield, 79–92.
Cool H. E. M. 1993 'The Copper Alloy and Silver Gravegoods' in Farwell D. E. and Molleson T. L. *Excavations at Poundbury 1966–80. Volume II: The Cemeteries,* Dorset Natural History and Archaeological Society Monograph Series no 11, Dorchester, 89–96.
Cool H. E. M. 1998a 'The brooches' in Cool H. E. M. and Philo C. (eds) *Roman Castleford. Excavations 1974–85. Vol. I. The Small Finds,* West Yorkshire Archaeology Service, Wakefield, 29–57.
Cool H. E. M. 1998b 'Personal ornaments other than brooches' in Cool H. E. M. and Philo C. (eds) *Roman Castleford. Excavations 1974–85. Vol. I. The Small Finds,* West Yorkshire Archaeology Service, Wakefield, 57–61.
Cool H. E. M. 1998c 'The needles, weights, table utensils, seal boxes, furniture, fittings, fastenings and miscellaneous objects' in Cool H. E. M. and Philo C. (eds) *Roman Castleford. Excavations 1974–85. Vol. I. The Small Finds,* West Yorkshire Archaeology Service, Wakefield, 91–117.
Cool H. E. M. forthcoming 'The Metal Objects' in Philpott R. A. and Adams M. H. *Irby, Wirral: Excavations on a Late Prehistoric, Romano-British and Medieval Site, 1987–96,* NML, Liverpool.
Cool H. E. M. and Philo C. (eds) 1998 *Roman Castleford. Excavations 1974–85. Vol. I. The Small Finds,* West Yorkshire Archaeology Service, Wakefield.
Coombs D. G. 1991 'Bronze objects' in Musson C. R. *The Breidden Hillfort: A later prehistoric settlement in the Welsh Marches*, CBA Research Report 76, London, 132–9.
Cormack W. F. 1965 'Northumbrian coins from Luce Sands, Wigtownshire' *Trans Dumfriesshire Galloway Natur Hist Antiq Soc* 52, 149–50.
Cotter E. P. 1929 *The Port of Liverpool including Birkenhead and Garston,* United States Government Printing Office, Washington.
Cowell R. W. 1991 'The prehistory of Merseyside' *J Merseyside Archaeol Soc* 7, 21–61.
Cowell R. W. 1992 'Greasby, North Wirral, Merseyside: interim report on the excavation of an early Mesolithic site' *Archaeology North West*, 4, 7–15.
Cowell R. W. 1995 'Some later prehistoric finds from Merseyside and the North West' *J Merseyside Archaeol Soc* 9 (for 1990–1), 25–44.
Cowell R. W. 2005a 'Prehistoric hunter-gatherers on Alderley Edge' in Timberlake S. and Prag A. J. N. W. (eds) *The Archaeology of Alderley Edge,* BAR Brit Ser 396, Oxford, 20–32.
Cowell R. W. 2005b 'Late Prehistoric Lowland Settlement in North West England' in Nevell M. and Redhead N. (eds) *Mellor: Living on the Edge. A Regional Study of an Iron Age and Romano-British Upland Settlement,* Manchester Archaeological Monographs 1, University of Manchester and Mellor Archaeological Trust, 65–76.
Cowell R. W. in prep a. 'The stone tool assemblage from Irby' in Philpott R. A. and Adams M. H. *Irby, Wirral: Excavations on a Late Prehistoric, Romano-British and Medieval Site, 1987–96,* NML, Liverpool.
Cowell R. W. in prep b. 'Excavations on an early prehistoric site on Little Eye Island, West Kirby, Wirral'. NML, Liverpool.
Cowell R. W. and Innes J. B. 1994 *The Wetlands of Merseyside* North West Wetlands Survey 1, Lancaster University Archaeological Unit, Lancaster.
Cowell R. W. and Philpott R. A. 1994 'Some Finds from Cheshire reported to Liverpool Museum' *Cheshire Past* 3, 10-11.
Cowgill J. 2003 'Fish-hook production in 13th–14th century Kings Lynn' *Historic Metallurgy Society Newsletter* 53 (Spring 2003), 4–5.
Cowgill J., de Neergaard M. and Griffiths N. 1987

Knives and Scabbards, Medieval Finds from Excavations in London, 1 HMSO, London.
Cox E. W. 1895a 'Recent antiquarian "finds" in Cheshire' *Trans Hist Soc Lancashire Cheshire* 46 (for 1894), 175–80.
Cox E. W. 1895b 'Traces of submerged lands on the coasts of Lancashire, Cheshire and North Wales' *Trans Hist Soc Lancashire Cheshire* 46 (for 1894), 19–56 and 199–200.
Cox E. W. 1896 'Leaves from an antiquary's note-book' *Trans Hist Soc Lancashire Cheshire* 47 (for 1895), 235–52.
Cracknell P. M. 1990 'A group of marked brooches from Gloucester' *Britannia* 21, 197–206.
Craggs S. 2005 'Hilbre Island in medieval times: a few legends revisited' *Cheshire History* 44 (for 2004–05), 14–26
Cramp R. J. 1964 'An Anglo-Saxon pin from Birdoswald' *Trans Cumberland Westmorland Antiq Arch Soc* 64, 90–93.
Croom A. 2003 'Sexing brooches' *Lucerna* 26 (July 2003), 16–19.
Crowfoot E., Pritchard F. and Staniland K. 1992 *Textiles and Clothing* (*Medieval Finds from Excavations in London* 4), Boydell Press, London.
Crummy N. 1983 *Colchester Archaeological Report 2: The Roman Small Finds from Excavations in Colchester, 1971–9,* Colchester Archaeological Trust, Colchester.
Crummy N., Ottaway P. and Rees H. in prep. *Small Finds from Excavations in Winchester 1971-86*, Winchester Museum Service Archaeol. Rep.
Cuddeford M. 1999 'Lead money' *Coins and Antiquities* June 1999, 55–57.
Cunliffe B. 1965 *Winchester Excavations 1949–60: Volume I*, Hampshire Museums Committee, Winchester.
Cunliffe B. 1968 *Fifth Report on the Excavations of the Roman Fort at Richborough, Kent,* Reports of the Research Committee of the Society of Antiquaries of London 23, Oxford.
Cunliffe B. 1971 *Excavations at Fishbourne 1961–1969. Vol. II. The Finds,* Reports of the Research Committee of the Society of Antiquaries of London 27, London.
Cunliffe B. 1981 *Coinage and Society in Britain and Gaul,* CBA Research Report 38, London.
Cunliffe B. 1982 'Britain, the Veneti and beyond' *Oxford J Archaeology* 1, 39-68.
Cunliffe B. 1984 'Relations between Britain and Gaul in the First Century BC and Early First Century AD' in Macready S. and Thompson F. H. (eds) *Cross-channel trade between Gaul and Britain in the pre-Roman Iron Age,* Soc of Antiquaries Research Report 4, London.
Cunliffe B. 1987 *Hengistbury Head, Dorset: Vol. 1: The Prehistoric and Roman Settlement, 3500 BC–AD 500,* Oxford University Committee for Archaeology, Monograph No 13, Oxford.
Cunliffe B. 1988 *Mount Batten Plymouth: A Prehistoric and Roman Port,* Oxford University Committee for Archaeology, Monograph 26, Oxford.
Cunliffe B. 1991 *Iron Age Communities in Britain,* 3rd edn, Routledge, London.
Cunliffe B. 2000 'Brittany and the Atlantic Rim in the later first millennium BC' *Oxford J Archaeol* 19(4), 367–86.
Cunliffe B. and Galliou P. 2000 'Britons and Bretons: Some New Evidence from Le Yaudet' *Archaeological J* 157, 200-28.
Curle C. L. 1982 *Pictish and Norse finds from the Brough of Birsay, 1934–74,* Society of Antiquaries of Scotland, Monograph 1, Edinburgh.
Curle J. 1911 *A Roman Frontier Post and its People. The Fort of Newstead in the Parish of Melrose,* Society of Antiquaries of Scotland, Glasgow.
Cust E. 1864 'The pre-historic man of Cheshire: or, some account of a human skeleton found under the Leasowe shore in Wirral' *Trans Hist Soc Lancashire Cheshire* 16, NS 4 (for 1863–4), 193–200.

d'Onofrio M. (ed.) 1999 *Romei e Giubilei: Il Pellegrino Medievale a San Pietro 350–1350*, Electa, Milan.
Dalton O. M. 1901 *Catalogue of Early Christian Antiquities and Objects from the Christian East,* British Museum, London.
Davey E. 2004 'Very plentious in fish – a survey of fisheries in Wirral' *Cheshire History* 43 (for 2003–04), 40–6.
Davey P. J. (ed.) 1977 *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool.
Davey P. J. 1991 'Merseyside: the post-Roman pottery' *J Merseyside Archaeol Soc* 7 (for 1986–87), 121–42.
Davey P. J. 1993 'The clay pipes' in Ellis P. (ed.) *Beeston Castle, Cheshire: A Report on the Excavations 1968–85*, English Heritage, London, 172–80.
Davey P. J. and Morgan D. E. M. 1977 'Hen Blas' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool.
Davey P. J. and Rutter J. A. 1977 'A note on continental imports in the north west 800–1700 A.D.' *Medieval Ceramics* 1, 17–30.
David C. 1971 *St Winefride's Well: a History and Guide,* Privately printed.
Davies J. and McMillan N. F. 1956 'Notes on post-glacial deposits in the Wirral, Cheshire' *Liverpool Manchester Geol J* 1.6, 507–11.
Dawson M. 1985 'Metalwork' pp 210–4, in Dool J. 'Derby racecourse: excavations on the Roman industrial settlement, 1974' *Derbyshire Archaeol J* 105, 155–221.
DCMS 2002 *Treasure Annual Report 2000*, DCMS, London.
de Jersey P. 1994 *Coinage in Iron Age Armorica,* Oxford University Committee for Archaeology, Oxford.
de Jersey P. 1996 *Celtic Coinage in Britain,* Shire Books, Princes Risborough.
De Rance C. E. 1869 *The Geology of the Country Between Liverpool and Southport. Explanation of Quarter Sheet 90SE of the 1 inch Geological Survey Map of England and Wales*, Memoir of the Geological Survey of the United Kingdom, HMSO, London.
De Rance C. E. 1872 *Explanation of Quarter-Sheet 90 N.E. of the One-Inch Geological Survey Map of England,: Illustrating the Geology of the Country Around Southport, Lytham, and South Shore,* Memoir of the Geological Survey of the United Kingdom, HMSO, London.
De Rance C. E. 1877 *The Superficial Geology of the Country Adjoining the Coast of South-West Lancashire,* Memoir of the Geological Survey of the United Kingdom, HMSO, London.
Dearne M. J. 1998 'The Brooches' in Dearne M. J. and Lord T. C. *The Romano-British Archaeology of Victoria Cave, Settle: Researches into the Site and its Artefacts,* BAR Brit Ser 273, Oxford, 53–66.
Dearne M. J. and Parsons J. 1997 'Recent Romano-British metal detector finds in the Sheffield and

Rotherham museum collections and their relationship to rural settlement patterns' *Yorks Archaeol J* 69, 39–92.
Deetz J. 1993 *Flowerdew Hundred: The Archaeology of a Virginia Plantation, 1619–1864*, University Press of Virginia, Charlottesville.
Deevy M. B. 1998 *Medieval Ring Brooches in Ireland*, Wordwell, Wicklow.
den Boesterd M. H. P. 1956 *The Bronze Vessels in the Rijksmuseum G. M. Kam at Nijmegen*, G. J. Thieme, Nijmegen.
Dent J. 1982 'Cemeteries and settlement patterns of the Iron Age on the Yorkshire wolds' *Proc Prehistoric Soc* 48, 437–57.
Dent J. G. 1984 'Fish spears and eel glaives: some notes on development and design' *Folk Life, J Ethnological Studies* 23, 105–15.
Devoy J. J. N. 1990 'Controls on coastal and sea-level change and the application of archaeological-historical records to understanding recent patterns of sea-level movement' in S. McGrail (ed.) *Maritime Celts, Frisians and Saxons,* CBA Research Report 71, London, 17–26.
Dickinson J. R. 1996 *The Lordship of Man under the Stanleys: Government and Economy in the Isle of Man, 1580–1704,* Chetham Society 41, Manchester.
Dickinson T. M. 1982 'Fowler's type G penannular brooches reconsidered' *Medieval Archaeol* 26, 41–68.
Dixon P. 1994 *Crickley Hill. Vol. 1: the Hillfort Defences,* University of Nottingham, Nottingham.
Dobney K. 2001 'A place at the table: the role of vertebrate zooarchaeology with a Roman research agenda' in James S. and Millett M. (eds) *Britons and Romans: Advancing an Archaeological Agenda,* CBA Research Report 125, London, 36–45.
Dobson R. B. 1977 'Urban decline in late medieval England' *Trans Roy Hist Soc* 27, 1–22.
Dodds L. 2005 'Salt making in Roman Middlewich: part 2. Discovery and rediscovery. Excavations along King Street, 2001–2' in Nevell M. and Fielding A. P. (eds) *Brine in Britannia: Recent Archaeological Work on the Roman Salt Industry in Cheshire,* Archaeology North West 7 (for 2004–5), 25–30.
Dodgson J. McN. 1957 'The background to Brunanburh' *Saga Book of the Viking Society* 14, 303–16.
Dodgson J. McN. 1970 *The Place-Names of Cheshire. Part I,* English Place-Name Society 44, CUP, Cambridge.
Dodgson J. McN. 1972 *The Place-Names of Cheshire. Part IV: The Place-Names of Broxton Hundred and Wirral Hundred,* English Place-Name Society 47, CUP, Cambridge.
Dodgson J. McN. 1981 *The Place-Names of Cheshire. Part V(1.i): The Place-Names of the City of Chester; The Elements of Cheshire Place-Names,* English Place-Name Society 48, Nottingham.
Dolley M. 1961 'The Anglo-Saxon coins from Meols sands' *Trans Hist Soc Lancashire Cheshire* 113, 197–201.
Dolley M. 1976 'A Hiberno-Manx coinage of the eleventh century' *Numismatic Chronicle* 7th series, 16, 75–84.
Douglas D. C. and Greenaway G. W. 1981 *English Historical Documents Volume II, 1042–1189*, Eyre Methuen, London.
Drack W. 1997 'Zur Geschichte des Wasserhahns' *Mitteilungen der Antiquarischen Gesellschaft in Zürich* 64, Zürich.
Drescher J. 1946 *Apa Mena: A Selection of Coptic Texts Relating to St. Menas,* La Société d'Archéologie Copte, Cairo.
Duco D. 1988 'The crowned L: the history of a famous Gouda pipemaker's mark' *Clay Pipe Research*, I, Society for Clay Pipe Research, 67–86.
Dulley A. J. F. 1967 'Excavations at Pevensey, Sussex, 1962–6' *Medieval Archaeol* 11, 209–32.
Dungworth D. 1996 'The production of copper alloys in Iron Age Britain' *Proc of the Prehistoric Soc* 62, 399–421.
Dungworth D. 2002 *Analysis of Post-Medieval Lead-Tin Alloy, Copper Alloy and Glass Artefacts from Southwark, London*, Centre for Archaeology report 64/2002, English Heritage, London.
Dunning G. C. 1934 'The swan's-neck and ring-headed pins of the early Iron Age in Britain' *Antiquaries J* 91, 269–95.
Dyer C. 1986 'English peasant buildings in the later middle ages (1200–1500)' *Medieval Archaeol* 30, 19–45.
Dyer C. 1989 *Standards of Living in the Middle Ages: Social Change in Medieval England c 1200–1520*, Cambridge University Press, Cambridge.
Dyer C. 1994a 'The consumption of freshwater fish in medieval England' *Everyday Life in Medieval England,* Hambledon Press, London, 101–11.
Dyer C. 1994b 'English peasant buildings in the later Middle Ages (1200–1500)' in Dyer C. (ed.) *Everyday Life in Medieval England,* Hambledon Press, London, 133–65.
Dyer C. 1994c 'The hidden trade of the Middle Ages: evidence from the West Midlands' in Dyer C. (ed.) *Everyday Life in Medieval England,* Hambledon Press, London, 283–303.
Dyer C. 2005 *An Age of Transition? Economy and Society in England in the later Middle Ages,* OUP, Oxford.

Ecroyd Smith H. 1860 'Notes on clay pipes: their uses and forms, makers and dates' *Trans Hist Soc Lancashire Cheshire* 12, 209–15.
Ecroyd Smith H. 1862 'Inscribed Norman box' *The Gentleman's Magazine and Historical Review* 132 (2), July–Dec 1862, 755–6.
Ecroyd Smith H. 1863 'Archaeological products of the seashore of Cheshire in 1862' *The Reliquary* 4, 31–3.
Ecroyd Smith H. 1864a 'Proceedings' *Trans Hist Soc Lancashire Cheshire* 16, (new series 4, for 1863–4), 227–50.
Ecroyd Smith H. 1864b 'Archaeological products of the seashore of Cheshire in 1863' *The Reliquary* 4, 249–50.
Ecroyd Smith H. 1865 'Notice of an early conventual cemetery in Wirral' *Trans Hist Soc Lancashire Cheshire* 17, 271–6.
Ecroyd Smith H. 1866 'Notabilia of the archaeology and natural history of the Mersey District during three years, 1863–4–5, Part I' *Trans Hist Soc Lancashire Cheshire* 18, 195–266.
Ecroyd Smith H. 1867a 'Archaeology of the Mersey District 1866' *Trans Hist Soc Lancashire Cheshire* 19, 169–88.
Ecroyd Smith H. 1867b 'A record of the archaeological products of the sea-shore of Cheshire in 1866' *The Reliquary* 7, 233–5.
Ecroyd Smith H. 1868 'Archaeology in the Mersey District, 1867' *Trans Hist Soc Lancashire Cheshire* 20, 87–130.
Ecroyd Smith H. 1869a 'Archaeology in the Mersey District 1868' *Trans Hist Soc Lancashire Cheshire* 21, 199–224.

Ecroyd Smith H. 1869b 'A record of the archaeological products of the sea-shore of Cheshire in 1867' *The Reliquary* 9, 167–76.
Ecroyd Smith H. 1870 'Archaeology in the Mersey District 1869' *Trans Hist Soc Lancashire Cheshire* 22 (for 1869–70), 267–94.
Ecroyd Smith H. 1871a 'Archaeology in the Mersey District 1870' *Trans Hist Soc Lancashire Cheshire* 23, 119–53.
Ecroyd Smith H. 1871b 'Reliques of the Anglo Saxon churches of St Bridget and St Hildeburga, West Kirby, Cheshire' *Trans Hist Soc Lancashire Cheshire* 23, 13–46.
Ecroyd Smith H. 1872 'Archaeology in the Mersey District 1871' *Trans Hist Soc Lancashire Cheshire* 24, 131–51.
Ecroyd Smith H. 1873a 'Archaeology in the Mersey District, 1872, and Liverpool Notabilia' *Trans Hist Soc Lancashire Cheshire* 25, 113–52.
Ecroyd Smith H. 1873b 'Local numismatic waifs and strays. Part I' *J Liverpool Numismatic Soc* 1, 10–21.
Ecroyd Smith H. 1873c 'Local numismatic waifs and strays. Part II' *J Liverpool Numismatic Soc* 1, 43–56.
Ecroyd Smith H. 1874 'Archaeology in the Mersey District, 1873', and Liverpool Notabilia' *Trans Hist Soc Lancashire Cheshire* 26, 83–113.
Ecroyd Smith H. 1875 'Archaeology in the Mersey District, and Liverpool Notabilia in 1874' *Trans Hist Soc Lancashire Cheshire* 27, 85–112.
Egan G. 1995a *Lead Cloth Seals and Related Items in the British Museum,* British Museum Occasional Paper 93, London (2nd edn).
Egan G. 1995b 'England's post medieval cloth trade: a survey of the evidence from cloth seals' in Hook D. and Gaimster D. (eds) *Trade and Discovery: The Scientific Examination of Goods,* British Museum Occasional Paper 109, British Museum, London, 315–26.
Egan G. 1996a *Playthings From the Past*, Jonathan Horne, London
Egan G. 1996b 'Some archaeological evidence for metal-working in London, c1050–c1700AD' *Historical Metallurgy* 30.2, 83–94.
Egan G. 1997 'Non ceramic finds' in Thomas C., Sloane B. and Philpotts C. *Excavations at the Priory and Hospital of St Mary Spital, London,* Museum of London Archaeological Monograph 1, Museum of London, London, 201–10.
Egan G. 1998 *The Medieval Household, Daily Living c.1150–c.1450,* Medieval Finds from Excavations in London 6, London.
Egan G. 2000 'Butcher, baker, spoon and candlestick maker?: Some early highly decorated lead wares in northern Europe' in Kicken D., Koldeweij A. M. and ter Molen J. R. (eds) *Lost and Found: Essays on Medieval Archaeology for HJE van Beuningen*, Rotterdam Papers 11, Rotterdam, 102–15.
Egan G. 2001 'Lead/tin alloy metalwork' in Saunders P. (ed.) *Salisbury and South Wiltshire Museum Medieval Catalogue* 3, Salisbury and South Wiltshire Museum, Salisbury, 92–118.
Egan G. 2002 'Information on lead finds' in Ayre J. and Wroe Brown R. (eds) *The London Millennium Bridge: The Medieval and Later Waterfronts of St Peter's Hill, City of London and Bankside, Southwark*, Museum of London Archaeological Studies 6, London.
Egan G. 2003 'Two medieval copper alloy foundry excavations in London,' in Proceedings of an International Conference on Archaeometallurgy in Europe, Milan.
Egan G. 2005a *Material Culture in London in an Age of Transition: Selected Tudor and Stuart Period Finds c1450–c1700 from Excavations at Riverside Sites in Southwark, South London,* Museum of London Archaeology Monograph 19, Museum of London, London.
Egan G. 2005b 'Observations on some of the small finds' in Woodfield C. (ed.) *The Church of Our Lady of Mount Carmel and Some Conventual Buildings at the Whitefriars, Coventry,* BAR 389, Archaeopress, Oxford, 338–58.
Egan G. 2005c 'Urban and rural finds: material culture of country and town c1050–1500' in Giles K. and Dyer C. (eds) *Town and Country in the Middle Ages: Contrasts, Contacts and Interconnections, 1100–1500,* Soc for Med Arch Monograph 22, London, 197–210.
Egan G. 2006 'The earliest English lead tokens?' in Cook B. and Williams G. (eds) *Coinage and History in the North Sea World, c 500–1250* (*Essays in Honour of Marion Archibald/The Northern World* 19), Brill, Leiden (Netherlands), 589–600.
Egan G. forthcoming a, report on finds from Bermondsey Abbey, Southwark.
Egan G. forthcoming b, report in Bowsher D. *et al.* (eds) finds from Guildhall Yard site, London
Egan G. forthcoming c report on finds in Meredith J. 'Excavations at Languard Fort, Suffolk' *Post Medieval Archaeology*
Egan G. forthcoming d, report on finds from Hereford Wye-bridge waterfront.
Egan G. forthcoming e 'Archaeological Evidence for textile finishing in London *c.* 1200-1700'.
Egan G. forthcoming f report on finds from Bordesley Abbey, Worcestershire
Egan G. and Forsyth H. 1997 'Wound wire and silver gilt' in Gaimster D. and Stamper P. (eds) *Age of Transition: The Archaeology of English Culture 1400–1600,* Soc for Medieval Archaeology Monograph 15/Oxbow Monograph 98, Oxbow Books, Oxford, 215–38.
Egan G. and Pritchard F. 1991 *Dress Accessories c. 1150 – c. 1450,* Medieval finds from excavations in London 3, Museum of London, HMSO, London.
Ekwall E. 1922 *The Place-Names of Lancashire,* Chetham Soc 81 (new ser.), Manchester.
Ellis P. 1993 *Beeston Castle, Cheshire: Excavations by Laurence Keen & Peter Hough 1968–85,* English Heritage Archaeological Report 23, English Heritage, London.
Engemann J. 1989 'Das Ende der Wallfarten nach Abu Mina' *Jahrbuch für Antike und Christentum* 32, 172–86.
Erdtman G. 1928 'Studies in the post-arctic history of the forests of North-West Europe. I. Investigations in the British Isles' *Geologiska Föreningens i Stockholm Förhandlingar* 50 (2: 373), 123–92.
Evans D. H. 1979 'Gravel-tempered Ware: a survey of published forms' *Medieval and Later Pottery in Wales* 2, 18–48.
Evans J. 1864 *The Coins of the Ancient Britons,* John Russell Smith, London.

Fairbanks R. G. 1989 'A 17,000-year glacio-eustatic sea level record' *Nature* 342, 637–42.
Fairholt F. W. 1859 *Tobacco: Its History and Associations*, Chapman and Hall, London.
Fanning T. 1976 'Excavations at Clontuskert Priory, Co.

Galway' *Proc. Royal Irish Academy* 76, 97–169.
Fanning T. 1994 'Viking age ringed pins from Dublin' *National Museum of Ireland, Medieval Dublin Excavations 1962–81, Ser B,* 4, Royal Irish Academy, Dublin.
Farrer W. and Brownbill J. (eds) 1908 'A history of Lancashire 2' *The Victoria History of the Counties of England,* Archibald Constable and Co, London.
Feachem R. W. de F. 1951 'Dragonesque fibulae' *Antiq J* 31, 32–44.
Fellows-Jensen G. 1985 *Scandinavian Settlement Names in the North-West,* C. A. Reitzels Forlag, Copenhagen.
Fenwick C. C. (ed.) 1998 *The Poll Taxes of 1377, 1379 and 1381; Part I: Bedfordshire-Leicestershire*, British Academy/OUP, Oxford.
Fingerlin I. 1971 *Gürtel des Höhen und Späten Mittelalters,* Deutscher Kunstverlag, Munich.
Finneran N. 2002 *The Archaeology of Christianity in North Africa,* Tempus, Stroud.
Fitzpatrick A. 1992 'The role of Celtic coinage in south east England' in Mays M. (ed.) *Celtic Coinage: Britain and Beyond,* BAR 222, Oxford, 1–32.
Fitzpatrick A. P. 2001 'Cross-Channel exchange, Hengistbury Head, and the end of hillforts' in Collis J. R. (ed.) *Society and Settlement in Iron Age Europe. Actes du XVIIIe colloque de l'Association Française pour l'Étude de l'Age du Fer, Winchester, (April 1994),* Sheffield Archaeological Monograph 11, J. R. Collis Publications, Sheffield.
Foley K. M. 1981 *Glass and Metalworking Industrial Material from Anglo-Scandinavian Lincoln*, Unpublished MSc dissertation, University of London Institute of Archaeology, London.
Forbes J. S. and Dalladay D. B. 1959 'The metallic impurities in the silver coinage trial plates (1279–1900)' *J Institute Metals* 87, 55–8.
Forsyth H. and Egan G. 2006 *Toys, Trifles and Trinkets: Base Metal Miniatures from London 1200–1800*, Museum of London, London.
Foss C. 1986 'The coinage of Tigranes the Great: problems, suggestions and a new find' *Numismatic Chronicle* 146, 19–66.
Foster J. 1993 'Iron Age copper alloy objects' in Ellis P. *Beeston Castle, Cheshire: Excavations by Laurence Keen & Peter Hough 1968–85,* English Heritage Archaeological Report 23, London, 50–3.
Fowler E. 1960 'The origins and development of the penannular brooch in Europe' *Proc Prehist Soc* 26, 149–77.
Fowler E. 1963 'Celtic metalwork of the fifth and sixth centuries AD, a reappraisal' *Archaeol J* 120, 98–160.
Fox A. 1955 'Some evidence for a Dark Age trading site at Bantham, near Thurlestone, South Devon' *Antiq J* 35, 55–67.
Fox H. 2001 *The Evolution of the Fishing Village: Landscape and Society along the South Devon Coast, 1086–1550,* Leicester Explorations in Local History 1; Leopard's Head Press, Oxford.
Fox R. and Barton K. J. 1986 'Excavations at Oyster Street, Portsmouth, Hampshire, 1968–71' *Post-Medieval Archaeol* 20, 31–255.
Foy D. and Sennequier G. 1989 *A travers le verre du moyen âge à la renaissance*, Musée Départemental des Antiquités, Rouen.
Freke D. 2002 *Excavations on St Patrick's Isle, Peel, Isle of Man, 1982–88, Prehistoric, Viking, Medieval and Later*, Centre for Manx Studies Monographs 2, Liverpool.
Freke D. and Thacker A. T. 1990 'The inhumation cemetery at Southworth Hall Farm, Winwick' *J Chester Archaeol Soc* 70, 31–8.
Frere S. S. 1984 *Verulamium Excavations Volume III,* OUP, Oxford.
Frere S. S. and St Joseph J. K. 1974 'The Roman fortress at Longthorpe' *Britannia* 5, 1–129.
Fryer V. 1998 'The lead weights' in Lucas G. 'A medieval fishery on Whittlesea Mere, Cambridgeshire' *Medieval Archaeol* 42, 32–7.
Fuglesang S. H. 1980 'Some aspects of the Ringerike style' *Medieval Scandinavia Supplements* 1, Odense.
Fulford M. 1978 'The interpretation of Britain's late Roman trade: the scope of medieval historical and archaeological analogy' in Taylor J. du P. and Cleere H. (eds) *Roman Shipping and Trade: Britain and the Rhine provinces,* CBA Research Report 24, London, 59–69.
Fulford M. 1989 'Byzantium and Britain: a Mediterranean perspective on post-Roman Mediterranean imports in western Britain and Ireland' *Medieval Archaeol* 33, 1–6.

Gardiner M. F., Cross R., Macpherson-Grant N. and Riddler I. 2001 'Continental trade and non-urban ports in mid-Anglo-Saxon England: excavations at Sandtun, West Hythe, Kent' *Archaeological J* 158, 161–290.
Garner D. 2005 'Salt Making in Roman Middlewich: Part 1. Discoveries before 2000' in Nevell M. and Fielding A. P. (eds) *Brine in Britannia: Recent Archaeological Work on the Roman Salt Industry in Cheshire,* Archaeology North West 7 (for 2004–5), 15–24.
Gask N. 1926 *Old Silver Spoons of England*, Spring Books, London (reprint 1973).
Geddes J. and Carter A. 1977 'Objects of non ferrous metal, amber and paste,' in Clarke, H. and Carter, A. *Excavations in Kings Lynn 1963–1970,* Soc Medieval Archaeol Monogr 7, 287–91.
Gelling M. 1993 'Paganism and Christianity in Wirral?' *J English Place-Name Soc* 25, 11.
Gibbins D. 1996 'Roman shipping and trade: a view from the Mediterranean' in Carrington P. (ed.) *Where Deva Spreads her Wizard Stream. Trade and the Port of Chester,* Chester, 24-39.
Gibson M. and Wright S. M. 1988 *Joseph Mayer of Liverpool, 1803-1886,* Soc of Antiquaries Occasional Paper 11, London.
Gläser M. (ed.) 1995 '*Daz Kint Spilete und was Fro' : Spielen vom Mittelalter bis Heute*¸ Lübeck.
Glenn T. A. 1914 'Flint flakes found at Hilbre Point' *Trans Lancashire Cheshire Antiq Soc*, 32, 245–6.
Gonzalez S. and Huddart D. 2002 'Formby Point' and 'Hightown', in Huddart D. and Glasser N. F. (eds) *Quaternary of Northern England,* Geol Conservation Review Series, Peterborough, 569–88.
Gonzalez S., Huddart D. and Roberts G. 1997 'Holocene development of the Sefton Coast: a multidisciplinary approach to understanding the archaeology' in Sinclair A., Slater E. and Gowlett J. (eds), *Archaeological Sciences 1995*, Oxbow Monograph 64, Oxbow Books, Oxford, 289–99.
Goodall A. R. 1979 'Copper alloy objects' in Andrews D. D. and Milne G. (eds) *Wharram, A Study of Settlement on the Yorkshire Wolds*, Soc Medieval Archaeol Monogr 8, 108–14.
Goodall A. R. 1981 'The medieval bronzesmith and his products' in Crossley D. W. (ed.) *Medieval Industry,* CBA Research Report 40, London, 63–71.

Goodall A. R. 1984 'Objects of non ferrous metal' in Allan J. P. (ed.) *Medieval and Post Medieval Finds from Exeter 1971–80*, Exeter Archaeological Report 3, Exeter, 337–48.
Goodall A. R. 1991 'The copper alloy and gold' in Armstrong P., Tomlinson D. and Evans D. H. *Excavations at Lurk Lane, Beverley*, Sheffield Excavation Rep. 1, Continuum International Publishing Group, Sheffield, 202–6.
Goodall I. H. 1975 'Metalwork from Goltho' in Beresford G. *The Medieval Clay-Land Village: Excavations at Goltho and Barton Blount*, Soc Medieval Archaeol Monogr 6, 79–98.
Goodall I. H. 1977a 'Iron objects' in Durham B. 'Archaeological investigations in St Aldates, Oxford' *Oxoniensia* 42, 142–8.
Goodall I. H. 1977b 'Iron' in Armstrong P. *Excavations in Sewer Lane, Hull 1974*, East Riding Archaeologist 3, Hull Old Town Report Series 1, 63–7.
Goodall I. H. 1979 'Iron objects' in Andrews D. D. and Milne G. *Wharram. A Study of Settlement on the Yorkshire Wolds 1, Domestic Settlement, Areas 10 and 6*, Soc Medieval Archaeol Monogr 8, 115–23.
Goodall I. H. 1980 *Ironwork in Medieval Britain: an Archaeological Study,* Unpublished PhD thesis, Dept of Archaeology, University College, Cardiff.
Goodall I. H. 1983 'Iron objects' in Mayes P. and Butler L. *Sandal Castle Excavations 1964–73,* Wakefield Historical Publications, Wakefield, 240–51.
Goodall I. H. 1984 'Iron objects' in Allan J. P. (ed.) *Medieval and Post Medieval Finds from Exeter 1971–80*, Exeter Archaeol. Rep. 3, Exeter, 337.
Goodall I. H. 1990a 'Iron buckles and belt fittings' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 526–39.
Goodall I. H. 1990b 'Arrowheads' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 1070–76.
Goodall I. H. 1991 'The ironwork' in Armstrong P., Tomlinson D. and Evans D. H. *Excavations at Lurk Lane, Beverley*, Sheffield Excavation Rep. 1, Continuum International Publishing Group, Sheffield, 132–46.
Goodall I. H. 1993 'Iron knives' in Margeson S. *Norwich Households. Medieval and Post-medieval Finds from Norwich Survey Excavations 1971–78*, East Anglian Archaeol 58, 124–33.
Goodall I. H. and Carter A. 1977 'Iron objects' in Clarke H. and Carter A. *Excavations in King's Lynn 1963–70*, Soc Medieval Archaeol Monogr 7, 291–8.
Goodburn D. 1986 'Do we have evidence of a continuing Saxon boat building tradition?' *Int J Nautical Archaeol* 15.1, 39–47.
Goodburn R. 1984 'The Non-Ferrous Metal Objects' in Frere S. S. *Verulamium Excavations Volume III,* Oxford University Committee for Archaeology Monograph No 1, Oxford, 19–68.
Goubitz O., van Driel-Murray C. and Groenman-van Waateringe W. 2001 *Stepping Through Time*, Stichting Promotie Archeologie, Zwolle.
Goudge C. 1983 'The leather' in Heighway C. *The East and North Gates of Gloucester*, Western Archaeol Trust Monogr 4, 173–85.
Graham-Campbell J. A. 1976 'Western British, Irish and Later Anglo-Saxon' *Archaeol J* 133, 277–9.
Graham-Campbell J. 1982 'Some New and Neglected Finds of Ninth-century Anglo-Saxon ornamental Metalwork' *Medieval Archaeol* 26, 144–51.
Graham-Campbell J. 1984 'Western influences on penannular brooches and ringed pins' in Arwiddson G. (ed.) *Birka II;1, Systematische Analysen der Gräberfunde*, Kongliga Vitterhets Historie och Antikvitets Akademien, Stockholm, 31–38.
Graham-Campbell J. 1987 'Western penannular brooches and their Viking age copies in Norway: a new classification' in Knirk J. E. (ed.) *Proceedings of the Tenth Viking Congress, Larkollen, Norway 1985*, Universitetets Oldsaksamling, Oslo, 231–46.
Graham-Campbell J. (ed.) 1992 *Viking treasure from the north west: the Cuerdale hoard in its context*, National Museums and Galleries on Merseyside Occasional Paper 5, Liverpool.
Graham-Campbell J. 1998 'The finds' in Gowen M. *Three Irish Gas Pipelines: New Archaeological Evidence in Munster*, Dublin, 166–68.
Graham-Campbell J. 2002 'Tenth-century graves: the Viking-Age artefacts and their significance' in Freke D. *Excavations on St Patrick's Isle, Peel, Isle of Man, 1982–88, Prehistoric, Viking, Medieval and Later*, Centre for Manx Studies Monogr. 2, Liverpool, 83–98.
Graham-Campbell J. and Okasha E. 1992 'A pair of inscribed hooked tags from the Rome (Forum) 1883 hoard' *Anglo-Saxon England* 20, 221–9.
Grant A. 1983 *North Devon Pottery: The Seventeenth Century*, University of Exeter, Exeter.
Grant A. 1988 'Bone deposition and animal husbandry: the animal bone remains' in Cunliffe B. *Mount Batten Plymouth: A Prehistoric and Roman Port,* Oxford University Committee for Archaeology Monogr 26, Oxford, 28–35.
Green M. J. 1975 'Romano-British non-ceramic model objects in south-east Britain' *Archaeol J* 132, 54–70.
Green M. 1981 'Model objects from military areas of Roman Britain' *Britannia* 12, 253–69.
Green S. H. 1980 *The Flint Arrowheads of the British Isles,* BAR Brit Ser 75, Oxford.
Green S. H. 1984 'Flint arrowheads: typology and interpretation' *Lithics* 5, 19–39.
Greene K. 1986 *The Archaeology of the Roman Economy*, B. T. Batsford, London.
Greep S. 1994 'Antler roundel pendants from Britain and the north-western Roman provinces' *Britannia* 25, 79–97.
Grew F. and Griffiths N. 1991 'The pre-Flavian military belt: the evidence from Britain' *Archaeologia* 109, 47–84.
Grew F. and de Neergaard M. 1988 *Shoes and Pattens, Medieval Finds From Excavations in London 2*, HMSO, London.
Grieg S. 1940 'Part II, Scotland' in Shetelig H. (ed.) *Viking Antiquities of Britain and Ireland*, H. Aschehoug, Oslo.
Griffiths D. 1988 'A Group of late Anglo-Saxon hooked tags from Cheshire' *J Chester Archaeol Soc* 70, 39–49.
Griffiths D. 1991 *Anglo-Saxon England and the Irish Sea region AD 800–1100: an Archaeological Study of the Lower Dee and Mersey as a Border Area,* Unpublished PhD thesis, University of Durham, Durham.
Griffiths D. 1992 'The Coastal Trading Ports of the Irish Sea' in Graham-Campbell J. (ed.) *Viking treasure from the North West: the Cuerdale hoard in its context*, National Museums and Galleries on Merseyside Occasional Paper 5, Liverpool, 63–72.
Griffiths D. 1994 'Trade and the late Saxon port' in Ward S. W. *Excavations at Chester, Saxon Occupation within the Legionary Fortress, Sites Investigated*

1963–81, Chester Archaeological Service Monograph 7, Chester, 124–28.
Griffiths D. 1996 'The maritime economy of the Chester region in the Anglo-Saxon period' in Carrington P. (ed.) *Where Deva Spreads her Wizard Stream. Trade and the Port of Chester,* Chester City Council, Chester, 49–60.
Griffiths D. 2001 'Great sites: Meols' *British Archaeol* 62 (Dec 2001), 20–5.
Griffiths D. 2003 'Markets and productive sites: a view from Western Britain' in Pestell T. and Ulmschnieder K. (eds) *Markets in Early Medieval Europe*, Windgather Press, Macclesfield, 62–72.
Griffiths D. 2004 'Settlement and acculturation in the Irish Sea region' in Hines J., Lane A. and Redknap M. (eds) *Land Sea and Home*, Soc for Medieval Archaeol Monograph 20, Leeds, 125–38.
Griffiths D. forthcoming 2007 'Maen Achwyfan, and the Context of Viking Settlement in North-East Wales' *Archaeol Cambrensis* 155.
Griffiths N. 1995 'Harness pendants and associated fittings' in Clark J. (ed.) *The Medieval Horse and its Equipment,* Medieval finds from excavations in London 5, London, 61–71.
Grimes W. F. 1930 'Holt, Denbighshire: The Works-Depôt of the Twentieth Legion at Castle Lyons' *Y Cymmrodor* 41, 1–235.
Grimes W. F. 1951 *The Prehistory of Wales,* National Museum of Wales, Cardiff.
Groenmann-van Waateringe W. 1984 'Die Lederfunde von Haithabu' *Berichte über die Ausgrabungen in Haithabu* 21, Neumünster.
Grossmann P. 1998 'The pilgrimage center of Abu Mina' in Frankfurter D. (ed.) *Pilgrimage and Holy Space in Late Antique Egypt,* Leiden, 281–302.
Guido M. 1978 *The Glass Beads of the Prehistoric and Roman Periods in Britain and Ireland*, Society of Antiquaries of London, London.
Guilbert G. 1982 'Prehistoric artefacts from the 1960–7 excavations' pp. 36–55, in Brassil K. S., Guilbert G. C., Livens R. G., Stead W. H. and Bevan-Evans M. 'Rescue excavations at Moel Hiraddug between 1960 and 1980' *Flintshire Historical Soc J* 30 (for 1981–2), 13–88.

Haak B. 2004 'Zwei spätmittelalterliche Trippen aus Lüneburg' *Denkmalpflege in Lüneburg 2004*, Lüneburger Stadtarchaologie (Germany), 13–18.
Haedeke H.-U. 1970 *Metalwork*, Weidenfeld and Nicholson, London.
Haedeke H.-U. 1976 *Zinn: Katalog des Kunstgewerbemuseums der Stadt Köln* 3, Köln.
Haldenby D. 1992 'An Anglian site on the Yorkshire Wolds' *Yorks Archaeol J* 64, 25–39.
Haldenby D. 1994 'Further Saxon finds from the Yorkshire Wolds' *Yorks Archaeol J* 66, 51–6.
Haldenby D. 1998 'A study of 9th century Anglo-Saxon strap ends' *Treasure Hunting* February 1998, 42.
Hancox E. R. H. 1908 'Find of medieval cut halfpence and farthings at Dunwich' *Brit Numismatic J* 5, 123–4.
Hanson W. S. and Campbell D. B. 1986 'The Brigantes: From Clientage to Conquest' *Britannia* 17, 73-89.
Harris A. 2003 *Britain, Byzantium and the West,* Tempus, Stroud.
Harris B. E. 1979 'Administrative history' in Harris B. E. (ed.) *The Victoria History of the County of Chester*, Volume II, OUP for Institute of Historical Research, London, 1–97.
Harris Gibson J. 1877 'Synopsis of the coins found on the Meols beach, Cheshire, since 1870, in the Collection of Mr. C. Potter' *J Liverpool Numismatic Soc* 2, 63–84.
Harris Gibson J. 1879 'Notes, Historical and Antiquarian, relating to Lancashire and Cheshire' *Trans Hist Soc Lancashire Cheshire* 31, 67–82.
Harris Gibson J. 1880 'Notes, historical and antiquarian, relating to Lancashire and Cheshire' *Trans Hist Soc Lancashire Cheshire* 32, 143–6.
Harrison H. M. and Davey P. J. 1977 'Ewloe Kiln' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool, 92–9.
Hartley K. F. 1977 'Two Major Potteries producing mortaria in the first century A.D.' in Dore J. and Greene K. (eds) 1977 *Roman Pottery Studies in Britain and Beyond,* BAR Supplementary Ser 30, Oxford, 5–17.
Hartley K. F. and Webster P. V. 1973 'The Romano-British pottery kilns near Wilderspool' *Archaeol J* 130, 77–103.
Harvey Y. (with Goodall I. and Biek L.) 1975 'Catalogue' in Platt C. and Coleman Smith R. C. S. (eds) *Excavations in Medieval Southampton 1953–1969* 2 *The Finds*, Leicester University Press, Leicester, 254–314.
Haselgrove C. 1987 *Iron Age Coinage in South East England; The Archaeological Context,* BAR 174i and ii, Oxford.
Haselgrove C. 1999 'Iron Age societies in central Britain: retrospect and prospect' in Bevan B. (ed.) *Northern Exposure: Interpretative Devolution and the Iron Ages in Britain,* University of Leicester, Leicester, 253–78.
Haselgrove C., Armit I., Champion T., Creighton J., Gwilt A., Hill J. D., Hunter F. and Woodward A. 2001 *Understanding the British Iron Age: An Agenda for Action,* Trust for Wessex Archaeology, Salisbury.
Hatcher J. 1996 'The great slump in the mid-fifteenth century' in Britnell R. and Hatcher J. (eds) *Progress and Problems in Medieval England: Essays in Honour of Edward Miller,* CUP, Cambridge, 237–72.
Hattatt R. 1989 *Ancient Brooches and other Artefacts,* Oxbow Books, Oxford.
Hattatt R. 2000 *A Visual Catalogue of Richard Hattatt's Ancient Brooches,* Oxbow Books, Oxford.
Hawkes C. F. C. and Hull M. R. 1947 *Camulodunum. First Report on the Excavations at Colchester 1930–1939,* Reports of the Research Committee of the Society of Antiquaries of London, XIV.
Hawkes S. C. and Dunning G. C. 1961 'Soldiers and settlers in Britain, fourth to fifth century: with a catalogue of animal-ornamented buckles and related belt-fittings' *Medieval Archaeol* 5, 1–70.
Hawkins S. J., Allen J. R., Fielding N. J., Wilkinson S. B., and Wallace I. D. 1999 'Liverpool Bay and the estuaries: Human impact, recent recovery and restoration' in Greenwood E. F. (ed.) *Ecology and Landscape Development: A History of the Mersey Basin*, Liverpool University Press/ NMGM, Liverpool, 155–65.
Hayward J. F. 1957 *English Cutlery, Sixteenth–Eighteenth Century,* HMSO, London.
Hebblethwaite S. M. 1987 'Physique' in Harris B. E. and Thacker A. T. (eds) *A History of the County of Chester. Vol. I.* OUP, Oxford, 1–35.
Hencken H. O'N. 1932 *The Archaeology of Cornwall and Scilly*, Methuen and Co., London.
Hencken H. O'N. 1942 'Ballinderry Crannog, No. 2' *Proc Roy Ir Acad* 47, C, 103–240.

Henderson J. 1986 'Beads and rings' in Tweddle D. *Finds from Parliament Street and Other Sites in the City Centre*, The Archaeology of York: The Small Finds 17/4, Council for British Archaeology, London, 210–26.
Henig M. 1989 'Finger Rings' in Blockley K. 1989 *Prestatyn 1984–5: An Iron Age Farmstead and Romano-British Industrial Settlement in North Wales,* BAR Brit Ser 210, Oxford, 99-100.
Henry F. 1965 *Irish Art in the Early Christian Period (to 800 AD)*, Methuen, London.
Henry F. 1967 *Irish Art During the Viking Invasions 800–1020 AD,* Methuen, London.
Herepath N. 2004 'A survey of Roman brooches from Cheshire' *Lucerna (The Roman Finds Group Newsletter)* 27 (January 2004), 9–12.
Herson J. 1996 'Canals, Railways and the Demise of the Port of Chester' in Carrington P. (ed.) *Where Deva Spreads her Wizard Stream. Trade and the Port of Chester,* Chester City Council, Chester, 75–89.
Hewitt H. J. 1967 *Cheshire under the Three Edwards,* Cheshire Community Council, Chester.
Hewitt N. E. and Morgan D. E. M. 1977 'Dyserth Castle' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool, 34–41.
Heyworth M. 1991 'Metallurgical analysis of the dress accessories' in Egan G. and Pritchard F. (eds) *Medieval Finds from Excavations in London: 3, Dress Accessories c. 1150 – c. 1450*, HMSO, London, 387–95.
Hibbert F. A., Switsur V. R. and West R. G. 1971 'Radiocarbon dating of Flandrian zones at Red Moss, Lancashire' *Philosophical Trans Royal Soc London* 177, 161–76.
Higgins D. A. 1982 'Reconstruction and Interpretation of the Pipes' in Davey P. J. *et al.* 'The Rainford clay pipe industry: some archaeological evidence' in Davey P. J. (ed.) *The Archaeology of the Clay Tobacco Pipe* 7, BAR Brit Ser 100, Oxford, 197–209 (91–306).
Higgins D. A. 1987a, *The Interpretation and Regional Study of Clay Tobacco Pipes: A Case Study of the Broseley District*, Unpublished PhD Thesis, University of Liverpool, Liverpool, September 1987.
Higgins D. A. 1987b *Some Clay Pipes from Cheshire and Merseyside*, North West Archaeological Trust, Report No 3, Liverpool.
Higgins D. A. forthcoming 'Clay tobacco pipes and other pipe-clay objects from excavations at Big Lea Green Farm, Sutton, Merseyside, 2002', NML, Liverpool.
Higgins D. A. and Davey P. J. 1994 *Draft Guidelines for Using the Clay Tobacco Pipe Record Sheets*, Unpublished draft, (copy deposited in the site archive).
Higgins R. 1976 'Jewellery' in Strong D. and Brown D. (eds) *Roman Crafts,* Duckworth, London, 53–61.
Higham N. J. 1988 'The Cheshire Burhs and the Mercian Frontier to AD 924' *Trans Antiq Soc Lancashire Cheshire* 98, 193–222.
Higham N. J. 1992 'Northumbria, Mercia and the Irish Sea Norse 893–926' in Graham-Campbell J. (ed.) *Viking treasure from the north west: the Cuerdale hoard in its context,* National Museums and Galleries on Merseyside Occasional Paper 5, Liverpool, 21–30.
Higham N. J. 1993 *The Origins of Cheshire*, Manchester University Press, Manchester.
Higham N. J. 2004 'Viking Age Settlement in the north-western countryside: lifting the veil?' in Hines J., Lane A. and Redknap M. (eds) *Land Sea and Home*, Soc for Medieval Archaeol Monograph 20, Leeds, 297–311.
Hildyard E. J. W. 1949 'Further excavations at Cambokeels in Weardale' *Archaeologia Aeliana* 4th ser. 27, 177–205.
Hill P. 1997 *Whithorn and St Ninian, The Excavation of a Monastic Town 1984–91*, Sutton, Stroud.
Hinchliffe J. and Williams J. H. 1992 *Roman Warrington: Excavations at Wilder-spool,* Dept of Archaeology, University of Manchester, Manchester.
Hindle B. P. 1982 *Medieval Roads,* Shire Archaeology, Princes Risborough.
Hinton D. A. 1974 *Catalogue of the Anglo-Saxon Ornamented Metalwork 700–1100 in the Department of Antiquities, Ashmolean Museum, Oxford*, Ashmolean Museum, Oxford.
Hinton D. A. 1990a 'The medieval gold, silver and copper-alloy objects from Winchester' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 29–35.
Hinton D. A. 1990b 'Two and three piece strapends and belt plates/folded sheet strapends' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 503–6.
Hinton D. A. 1990c 'Buckles and buckle plates' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 506–26.
Hinton D. A. 1990d 'Belt hasps and other belt fittings' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 539–45.
Hinton D. A. 1990e 'Metal finger rings' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 646–52.
Hinton D. A. 1990f 'Fittings from reliquaries and other fine caskets: Handles' in Biddle M. (ed.) 1990 *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 778–9.
Hinton D. A. 1996 'The gold silver and other non-ferrous alloy objects from Hamwic, and the non-ferrous metal-working evidence, Southampton finds volume 2' *Southampton Archaeology Monographs* 6, Sutton, Stroud.
Hinton D. A. and Welch M. 1976 'The finds: objects of iron and bronze' in Cunliffe B. *Excavations at Portchester Castle II, Saxon,* Society of Antiquaries of London Research Report 33, London, 195–219.
Hinton P. (ed.) 1988 *Excavations in Southwark 1973–76, Lambeth 1973–79*, LAMAS and SAS Joint Publ. 3, London
HMSO 1930–33 *The Register of Edward the Black Prince,* HMSO, London.
HMSO 1966 *An Archaeological Survey of County Down*, HMSO, Belfast.
Hodges R. 1982 *Dark Age Economics. The Origins of Towns and Trade AD 600–1000,* Duckworth Publishing, London.
Hoffman B. 2002 'Where have all the Soldiers gone? Some thoughts on the presence and absence of soldiers in fourth-century Chester' in Carrington P. (ed.) *Deva Victrix: Roman Chester Re-assessed,* Chester Archaeological Society, Chester, 79–88.
Holbrook N. and Bidwell P. T. 1991 *Roman Finds from Exeter,* Exeter Archaeological Reports 4, Exeter City Council, University of Exeter, Exeter.
Holdsworth P. 1976 'Saxon Southampton; a new review' *Medieval Archaeol* 20, 26–61.
'Holly' 1922 '3986. Thirteenth century grave-slab found at Meols' *The Cheshire Sheaf* 3rd series 17 (for 1920), 23–4.

Holman D. 2005 'Iron Age coinage and settlement in East Kent' *Britannia* 36, 1–54.
Holmes M. R. 1951 'The so-called 'Bellarmine' mark on Imported Rhenish Stoneware' *Antiq J* 31, 174–9.
Hornsby P. R. G., Weinstein R. and Homer R. F. 1989 *Pewter: a Celebration of the Craft, 1200–1700*, Museum of London, London.
Howard-Davis C. 2000 'Copper alloy' in Buxton K. and Howard-Davis C. *Bremetenacum: Excavations at Roman Ribchester 1980, 1989–1990,* Lancaster Imprints, Lancaster, 242–61.
Howard-Davis C. L. E. and Buxton K. 2000 *Roman Forts in the Fylde: Excavations at Dowbridge, Kirkham, 1994*, Centre for North West Regional Studies, Lancaster.
Huddart D. 1992 'Coastal environmental changes and morphostratigraphy in southwest Lancashire, England' *Proc Geologists' Assoc* 103, 217–36.
Huddart D., Gonzalez S. and Roberts G. 1999 'The Archaeological Record and Mid-Holocene Marginal Coastal Palaeoenvironments around Liverpool Bay' *Quaternary Proc* 7, 563–74.
Hudson B. 2005 *Viking Pirates and Christian Princes*, OUP, Oxford.
Huggins P. J. and Huggins R. M. 1973 'Excavation of a monastic forge and Saxo-Norman enclosure, Waltham Abbey, Essex 1972–3' *Essex Archaeol Hist* 5, 127–84.
Hughes B. and Hughes T. 1972 *Georgian Shoe Buckles*, Greater London Council, London.
Hull M. R. 1968 'The Nor'Nour Brooches' in Dudley D. 'Excavations on Nor'Nour in the Isles of Scilly' *Archaeol J* 124, 28–64.
Hull M. R. 1971 'The Brooches' in Cunliffe B. *Excavations at Fishbourne 1961–1969. Vol. II. The Finds,* Reports of the Research Committee of the Society of Antiquaries of London, No 27, London, 100–7.
Hull M. R. and Hawkes C. F. C. 1987 *Corpus of Ancient Brooches in Britain: Pre-Roman Bow Brooches,* BAR Brit Ser 168, Oxford.
Hume A. unpub. *Ancient Meols*, printer's galley proofs pasted on opposite pages; Liverpool RO Hq 913 (719) MEO.
Hume A. 1847a 'An account of the antiquities found at Hoylake' *Literary Philosophical Soc Liverpool* 2 (for 1845–6), 53–72.
Hume A. 1847b 'An account of a recent visit, by several members of the Society, to the submarine forest at Leasowe' *Proc Literary Philosophical Soc Liverpool* 1 (for 1844–5), 97–107.
Hume A. 1847c *The Antiquities Found at Hoylake in Cheshire,* Longman, Brown, Green and Longmans, London.
Hume A. 1859 'Outline of the sea coast of Cheshire' *Trans Hist Soc Lancashire Cheshire* 11, 219–32.
Hume A. 1862 'Metallic ornaments and attachments to leather' *Trans Hist Soc Lancashire Cheshire* 14, 129–66.
Hume A. 1863 *Ancient Meols: Some Account of the Antiquities near Dove Point on the Sea Coast of Cheshire,* John Russell Smith, London.
Hume A. 1866a 'Changes in the sea coast of Lancashire and Cheshire' *Trans Hist Soc Lancashire Cheshire* 18, 1–88.
Hume A. 1866b *Supplement to Ancient Meols: Examination of the Changes in the Sea Coast of Lancashire and Cheshire,* John Russell Smith, London.
Hume A. 1866c *Fallacies and Incorrect Statements on the Subject of the Local Submarine Forest, Their Exposure and Correction,* T. Brakell, Liverpool.
Hunter F. 1997 'Iron Age coins in Scotland' *Proc Soc Antiq Scot* 127, 513–25.
Hurley M., Scully O. with McCutcheon S. 1997 *Late Viking Age and Medieval Waterford. Excavations 1986–1992,* Institute of Public Administration, Waterford.
Hurst J. G. 1974 'Sixteenth and Seventeenth century imported pottery from the Saintonge' in Evison V. I., Hodges H. and Hurst J. G. *Medieval Pottery from Excavations: Studies Presented to G.C. Dunning,* St Martin's Press, London, 221–5.
Hutchinson G. 1994 *Medieval Ships and Shipping*, Leicester University Press, Leicester.
Hyde F. E. 1971 *Liverpool and the Mersey: An Economic History of a Port 1700–1900,* David and Charles, Newton Abbot.

Innes J. B., Bedlington D. J., Kenna R. J. B. and Cowell R. W. 1990 'A preliminary investigation of coastal deposits at Newton Carr, Wirral, Merseyside' *Quaternary Newsletter* 62, 5–12.
Innes J. B., Nelms R. J. and Tomlinson P. R. forthcoming 'Radiocarbon dating and palaeoecology of the inter-tidal Lower Peat and Forest Bed at Dove Point, Meols, Wirral'.
Innes J. B. and Tomlinson P. R. 1991 'Environmental archaeology in Merseyside' *J Merseyside Archaeol Soc* 7, 1–20.
Ireland S. 1986 *Roman Britain: A Sourcebook*, Croom Helm, London.
Ivens R. J. 1995 'The finds' in Ivens R. J., Busby P. and Shepherd N. (eds) *Tattenhoe and Westbury: Two Deserted Medieval Settlements in Milton Keynes,* Buckinghamshire Arch. Soc. Monograph 8, 305–96.

Jackson J. W. 1936 'The prehistoric archaeology of Lancashire and Cheshire' *Trans Lancashire Cheshire Antiq Soc* 50 (for 1934–5), 65–106.
Jackson R. 1985 'Cosmetic sets from late Iron Age and Roman Britain' *Britannia* 16, 165–92.
Jackson R. 1990 *Camerton: The Late Iron Age and Early Roman Metalwork,* British Museum Publications, London.
Jackson R. 1993 'The function and manufacture of Romano-British cosmetic grinders: two important new finds from London' *Antiquaries J* 73, 165–9.
Jackson R. G. and Price R. 1974 *Bristol Clay Pipes: A Study of Makers and their Marks*, Bristol City Museum Research Monograph 1, Bristol.
Jacobi R. M. 1978 'The mesolithic of Sussex' in Drewett P. (ed.) *Archaeology in Sussex to AD 1500,* CBA Research Report 29, London, 15–22.
Jacobi R. M. 1980 'The early Holocene settlement of Wales' in Taylor A. J. (ed.) *Culture and environment in prehistoric Wales,* BAR Brit Ser 76, Oxford, 131–206.
Jacobi R. M. 1987 'Misanthropic miscellany: musings on British early Flandrian archaeology and other flights of fancy' in Rowley-Conwy P., Zvelebil M. and Blankholm H. P. (eds) *Mesolithic North-west Europe: Recent Trends*, University of Sheffield, Sheffield, 163–8.
James R. 1636 *Iter Lancastriense, A Poem Written 1636,* (Corser T. ed.) Chetham Soc 8, for 1845.
Jarvis R. C. 1950 'The head port of Chester; and Liverpool, its creek and member' *Trans Hist Soc Lancashire Cheshire* 102, 69–84.

Jenkins J. G. 1974 *Nets and Coracles,* David and Charles, Newton Abbot.
Jenning C. 1974 *Early Chests in Wood and Iron,* The Stationery Office Books, London.
Jermy K. E. 1961 'The Roman road in Wirral' *J Chester Archaeol Soc* 48 (for 1960–1), 1–13.
Jermy K. E. 1963 'The Roman road in Wirral: air photography and some further notes' *J Chester Archaeol Soc* 50, 1–2.
Jessop O. 1996 'A new artefact typology for the study of medieval arrowheads' *Medieval Archaeol* 40, 192–205.
Jessop O. 1997 *Medieval Arrowheads,* Finds Research Group 700–1700, Datasheet 22.
Johns C. 1996 *The Jewellery of Roman Britain: Celtic and Classical Traditions,* UCL Press, London.
Jones G. D. B. 1980 'Archaeology and coastal change in the north-west' in Thompson F. H. (ed.) *Archaeology and Coastal Change,* Society of Antiquaries Occasional Paper 1, London, 87–102.
Jones G. D. B. and Mattingly D. 1990 *An Atlas of Roman Britain,* Basil Blackwell, Oxford.
Jones G. D. B. and Shotter D. C. A. 1988 *Roman Lancaster: Rescue Archaeology in an Historic City 1970–75,* Department of Archaeology, University of Manchester, Manchester.
Jones M. 2002 *The Secret Middle Ages: Discovering the Real Medieval World,* Sutton, Stroud.
Jones M. K. 1988 'Sir William Stanley of Holt: politics and family allegiance in the late fifteenth century' *Welsh Hist Rev* 14, 1–22.
Jope E. M. and Wilson B. C. S. 1957 'A burial group of the first century AD, near Donaghadee, Co. Down' *Ulster J Archaeol* 20, 73–95.

Kaufmann K. 1906 *Ausgrabung der Menas-Heiligthümer,* Finck and Baylaender, Cairo.
Keene D. J. 1985 *Survey of Medieval Winchester,* Clarendon Press, Oxford.
Keevill G. forthcoming '*Excavations at Carlisle Cathedral*' English Heritage, London.
Kelly J. H. and Greaves S. J. 1974 *The Excavation of a Kiln Base in Old Hall Street, Hanley, Stoke-on-Trent, Staffs, SJ885475*, City of Stoke-on-Trent Museum Archaeological Society Report 6.
Kendrick J. 1853 'An account of the excavations at the Mote Hill, Warrington, Lancashire' *Trans Hist Soc Lancashire Cheshire* 5, 59–68.
Kenna R. 1978 'Early settlement on the North Wirral Coastal Area' *J Merseyside Archaeol Soc* 2, 27–34.
Kenna R. 1979 'Coastal change and early settlement on the North Wirral – 2' *J Merseyside Archaeol Soc* 3, 41–51.
Kenna R. J. B. 1986 'The Flandrian sequence of North Wirral (N.W. England)' *Geological J* 21, 1–27.
Kennett A. M. (ed.) 1982 *Chester and the River Dee: An Illustrated History of Chester and its Port,* Council of the City of Chester, Chester.
Kenyon D. 1991 *The Origins of Lancashire,* Manchester University Press, Manchester.
Kenyon K. M. 1938 'Excavations at Viroconium, 1936–7' *Archaeologia* 88, 175–228.
Kenyon K. M. 1948 *Excavations at the Jewry Wall Site, Leicester,* Reports of the Research Committee of the Society of Antiquaries 15, London.
Kermode J. I. 2003 Contribution to Thacker, A.T. 2003b 'Economy and society, 1500-50' in Lewis C. P. and Thacker A. T. (eds) *The Victoria History of the County of Chester*, Volume V, Part 1, OUP for Institute of Historical Research, London.
Kettle A. J. 1980 'Religious houses' in Harris B. E. (ed.) *The Victoria History of the County of Chester*, Volume III, OUP for Institute of Historical Research, London, 124–87.
Kilbride-Jones H. E. 1980 *Celtic Craftsmanship in Bronze,* Croom Helm, London.
Kilby K. 1971 *The Cooper and his Trade*, John Baker, London.
King A. 2004 'Post-Roman upland architecture in the Craven dales and the dating evidence' in Hines J., Lane A. and Redknap M. (eds) *Land Sea and Home*, Soc for Medieval Archaeol Monograph 20, Leeds, 335–44.
Kirk J. R. 1949 'The bronzes from Woodeaton, Oxon.' *Oxoniensia* 14, 1–45.
Kitson-Clark M. 1941 'Late Saxon pin heads from Roos, East Yorkshire, and South Ferriby, Lincs' *Proc Leeds Philos Lit Soc* 5, 333–38.
Kolltveit G. 2006 *Jew's Harps in European Archaeology,* BAR Int Ser 1500, Archaeopress, Oxford.
Kowaleski M. 1995 *Local Markets and Regional Trade in Medieval Exeter,* Cambridge.
Kowaleski M. 2000a 'Port towns: England and Wales 1300–1540' in Palliser D. M. (ed.) *The Cambridge Urban History of Britain*, Volume I, *600–1540,* CUP, Cambridge, 467–94.
Kowaleski M. 2000b 'The western fisheries' in Starkey D. J., Reid C. and Ashcroft N. (eds) *England's Sea Fisheries: The Commercial Sea Fisheries of England and Wales since 1300,* Chatham Publishing, London, 23–8.
Kowaleski M. 2000c 'The expansion of the south-western fisheries in late medieval England' *Economic History Review* 53, 429–54.
Krogman W. M. and Iscan M. Y. 1986 *The Human Skeleton in Forensic Medicine,* Charles C. Thomas, Springfield, Illinois.
Kromer B., Rhein M., Bruns Z.M., Schoch-Fischer H., Munnich K.O., Stuiver M. and Becker B. 1986 'Radiocarbon calibration data for the sixth and eighth millennium BC' *Radiocarbon* 28, 954-60.
Krueger I. 1990 'Glasspeigel im Mittelalter 1: Fakten, Funde und Fragen,' in *Bonner Jahrbuch* 190, 233–319.
Krueger I. 1995 'Glasspiegel im Mittelalter 2: Neue Funde und neue Fragen,' in *Bonner Jahrbuch* 195, 209–48.
Krueger I. 1996 'Research in medieval glass: where are we standing now?' *Annales du 13e Congrès de l'Association Internationale pour l'Histoire du Verre*, Association Internationale pour l'Histoire du Verre, Lochem, 277–88

Laing J. and Laing L. 1983 'A Mediterranean trade with Wirral in the Iron Age' *Cheshire Archaeological Bull* 9, 6–8.
Laing L. 1969 'A Greek tin trade with Cornwall?' *Cornish Archaeol* 7 (for 1968), 15–23.
Laing L. R. and Laing J. 1987 'The Early Christian period settlement at Ronaldsway, Isle of Man: a reappraisal' *Proc Isle of Man Natur Hist Antiq Soc* 9.3, 389–415.
Laing L. R. and Longley D. 2006 *The Mote of Mark: A Dark Age Hillfort in South-West Scotland*, Oxbow Books, Oxford.
Laking G. F. 1920 *European Armour and Arms through Seven Centuries* 2, G. Bell and Sons, London.
Lamb A. J. 1851 'Notes on use of the clay tobacco pipe in England' *Trans Hist Soc Lancashire Cheshire* 3, 29–31.
Lamb H. H. 1982 *Climate, History and the Modern World,* Methuen, London.

Lamb H. H. 1991 *Historic Storms of the North Sea, British Isles and Northwest Europe,* CUP, Cambridge.
Lane A. and Campbell E. 2000 *Dunadd: An Early Dalriadic Capital*, Oxbow Books, Oxford.
Lang J. T. 1988 'Viking Age decorated wood: a study of its ornament and style' *Medieval Dublin Excavations 1962–81, ser. B, 1,* Royal Irish Academy, Dublin.
LaNiece S. 1983 'Niello: an historical and technical survey' *Antiquaries J* 63.2, 279–97.
Laughton J. forthcoming *Life in a Medieval City: Chester 1270–1520,* Windgather Press, Bollington.
Lawson G. 1990 'Jew's harp' in Biddle M. (ed.) 1990 *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 724–5.
Leach P. 1982 *Ilchester, Volume 1: Excavations 1974-5,* Western Archaeological Trust, Bristol.
Leahy K. 2000 'Middle Anglo-Saxon metalwork from South Newbald and the 'productive site' phenomenon in Yorkshire' in Geake H. and Kenny J. (eds) *Early Deira: Archaeological Studies of the East Riding in the Fourth to Ninth Centuries AD,* Oxbow Books, Oxford, 51–82.
Lewcun M. 1985 'The Hunt family identified' *Society for Clay Pipe Research Newsletter* 8, 14–21.
Lewis B. J. 2005 *Welsh Poetry and English Pilgrimage: Gruffudd ap Maredudd and the Rood of Chester,* University of Wales Centre for Advanced Welsh and Celtic Studies, Research Papers 23, Aberystwyth.
Lewis C. A. 1996 *Prehistoric Mining at the Great Orme: Criteria for the identification of early mining,* MPhil thesis, University of Wales Bangor, Agricultural and Forest Sciences, Bangor.
Lewis C. P. 2003 'Introduction' in Lewis C. P. and Thacker A. T. (eds) *The Victoria History of the County of Chester*, Volume V, Part 1, OUP for Institute of Historical Research, London, 1–8.
Lewis C. P. 2005 'Open spaces and parks' in Lewis C. P. and Thacker A. T. (eds) *The Victoria History of the County of Chester,* Volume V, Part 2, OUP for Institute of Historical Research, London, 298-304.
Lewis J. 2002 'The Archaeology of changing landscape, the last thousand years in Merseyside: 1. Sefton Rural Fringes' *J Merseyside Archaeol Soc* 11, 5–88.
Lewis W. R. 1960 'Tin in cast and wrought forms' in Hedges E. S. (ed.) *Tin and its Alloys*, Edward Arnold, London, 16–49.
Lightbown R. W. 1992 *Medieval European Jewellery*, Victoria and Albert Museum, London.
Lindsay H. and Webber P. 1993 'Studying finds from the medieval waterfront' *London Archaeol* 7.5, 133–9.
Linnick T. W., Suess H. E. and Becker B. 1985 'La jolla measurements of radiocarbon in south German oak tree-ring chronologies' *Radiocarbon* 27, 20-32.
Lloyd-Morgan G. 1978 'Some small Roman bronzes in the Grosvenor Museum, Chester' *J Chester Archaeol Soc* 61, 25–32.
Lloyd-Morgan G. 1980 'Roman finds from Meols' Unpublished typescript, Merseyside Archaeological Society, Liverpool.
Lloyd-Morgan G. 1994 'Metal' in Ward S. W. *Excavations at Chester, Saxon Occupation within the Legionary Fortress, Sites Investigated 1963–81,* Chester City Council, Chester, 97–8.
LMMC 1940 *London Museum Medieval Catalogue* (Ward-Perkins J. B. ed.), HMSO, London.
Long A. J. and Roberts D. H. 1997 'Sea-level change' in Fulford M., Champion T. and Long A. J. (eds) *England's Coastal Heritage. A Survey for English Heritage and the RCHME,* English Heritage and RCHME, London, 25–49.
Long C. D. 1975 'Excavations in the medieval city of Trondheim, Norway' *Medieval Archaeol* 19, 1–32.
Longbottom F. W. 1908 'A few notes on the coins of the Potter-Meols Collection, found on the Cheshire shore, and presented to the Chester and North Wales Archaeological and Historic Society by Mr. T. S. Gleadowe' *J Archit Archaeol Hist Soc Chester and N Wales* NS 14, (for 1907), 5–17.
Longley D. M. T. 1987 'Prehistory' in Harris B. E and Thacker A. T. (eds) *Victoria History of Cheshire 1*, OUP, Oxford, 36–114.
Lowther A. W. G. 1948 'A study of the potteries on Roman flue-tiles and their distribution' *Surrey Arch Soc*, Research Paper No. 1.
Lynn C. 1978 'Early Christian domestic structures: a change from round to rectangular plans' *Ir Archaeol Res Forum* 5, 29–45.
Lynn C. J. 1988 'Ulster's oldest wooden houses' in Hamlin A. and Lynn C. J. (eds) *Pieces of the Past, Archaeological Excavations by the Department of the Environment for Northern Ireland 1970–86,* HMSO, Belfast, 44–47.

Mabey R. 1996 *Flora Britannica,* Random House, London.
MacGregor A. and Bolick E. 1993 *A Summary Catalogue of the Anglo-Saxon Collections (Non-Ferrous Metals): Ashmolean Museum Oxford*, BAR Brit Ser 230, Tempvs Reparatvm, Oxford.
Macgregor M. 1976 *Early Celtic Art in North Britain,* Leicester University Press, Leicester.
Mack R. P. 1975 *The Coinage of Ancient Britain,* Spink and Son /B. A. Seaby, London.
Mackreth D. F. 1973 'The brooches' pp 131–6, in Cameron H. and Lucas J. 'Tripontium: Second interim report on the excavations by the Rugby Archaeological Society at Cave's Inn. Near Rugby, Grid Reference SP 57, 535795' *Trans Birmingham and Warwickshire Archaeol Soc* 85 (for 1971–3), 93–144.
Mackreth D. 1985 'Brooches from Roman Derby' *Derbyshire Archaeol J* 105, 281–99.
Mackreth D. F. 1989 'Brooches' in Blockley K. *Prestatyn 1984–5: An Iron Age Farmstead and Romano-British Industrial Settlement in North Wales,* BAR Brit Ser 210, Oxford, 87–99.
Mackreth D. F. 1990 'The Brooches' in Wrathmell S. and Nicholson A. (eds) *Dalton Parlours. Iron Age and Settlement and Roman Villa,* West Yorks Archaeology Service, Wakefield, 92–4.
Mackreth D. F. 1994 'Copper alloy and iron brooches' in Cracknell S. and Mahany C. (eds) *Roman Alcester: Southern Extramural Area. 1964–1966 Excavations. Part 2: Finds and Discussion,* CBA Research Report 97, London, 162–77.
Mackreth D. F. 1995 'The iron brooch' in Hughes G., Leach P. and Stanford S. C. 'Excavations at Bromfield, Shropshire 1981–91' *Trans Shropshire Archaeol and Hist Soc* 70, 69–70.
Mackreth D. F. 1996a 'The copper alloy brooches' in Hughes G. *The Excavation of a Late Prehistoric and Romano-British Settlement at Thornwell Farm, Chepstow, Gwent, 1992,* BAR 244, Tempvs Reparatvm, Oxford, 67-71.
Mackreth D. 1996b 'Colchesters in the North' *Roman Finds Group Newsletter* 11 (April 1996), 5–8.
McPeake J. C. 1978 'The first century A.D.' in Strickland

T. J. and Davey P. J. (eds) *New Evidence for Roman Chester,* Institute of Extension Studies, Liverpool, 9-16.
Mainman A. J and Rogers N. S. H. 2000 *Craft, Industry and Everyday Life: Finds from Anglo-Scandinavian York,* The Archaeology of York: The Small Finds 17/14), York Archaeological Trust/CBA, York.
Major H. 1994 'Miscellaneous finds' in Godbold S. 'A Napoleonic coastal gun battery; Excavations at Bathside Bay, Harwich' *Essex History Archaeol* 25, 214–17.
Malcolm G. and Bowsher D. 2003 *Middle Saxon London: Excavations at the Royal Opera House 1989–99,* MOLAS Monograph 15, Museum of London, London.
Mann J. E. 1983 *Early Medieval Finds from Flaxengate*, Lincoln Archaeological Trust, the Archaeology of Lincoln, Volume 14–1, Lincoln.
Manning W. H. 1985 *Catalogue of the Romano-British Iron Tools, Fittings and Weapons in the British Museum* British Museum Publications, London.
Margeson S. 1985 'The small finds' in Atkin M., Carter A. and Evans D. H. *Excavations in Norwich 1971–1978*, 2, East Anglian Archaeology 26, 52–66.
Margeson S. 1993 *Norwich Households: The Medieval and Post Medieval Finds from Norwich Survey Excavations 1971–1978,* East Anglian Archaeology 58, Norwich.
Margeson S. 1997 *The Vikings in Norfolk,* Norfolk Museums Service, Norwich.
Marsden P. 1971 'Archaeological finds in the City of London 1967–70' *Trans London Middx Arch Soc* 23.1, 1–14.
Marsden P. 1994 *Ships of the Port of London First to eleventh centuries AD,* English Heritage Archaeological Report no 3, London.
Mason D. J. P. 1985 'Excavations at Chester, 26–42 Lower Bridge Street, the Dark Age and Saxon Periods' *Grosvenor Museum Archaeological Excavation and Survey Reports* 3, Chester.
Mason D. J. P. 2001 *Roman Chester: City of the Eagles,* Tempus, Stroud.
Mason D. J. P. 2002 'The town and port of Roman Chester' in Carrington P. (ed.) *Deva Victrix: Roman Chester Re-assessed,* Chester Archaeological Society, Chester, 53–73.
Mason D. J. P. 2003 'The Heronbridge Archaeological Research Project' *J Chester Archaeol Soc* 78, 49–106.
Mason D. J. 2004 'The Heronbridge Archaeological Research Project. An interim report on the 2002 and 2003 seasons of the Society's new fieldwork initiative' *J Chester Archaeol Soc* 78, 49-106.
Mason D. J. P. 2006 'AD 616, The Battle of Chester' *Current Archaeol* 202, 517–24.
Matheson C. 1929 *Wales and the Sea Fisheries,* National Museum of Wales, Cardiff.
Matthews K. 1996 'Iron Age sea-borne trade in Liverpool Bay' in Carrington P. (ed.) *'Where Deva spreads her Wizard Stream': Trade and the Port of Chester,* Chester Archaeology Occasional Paper No. 3, Chester, 12–23.
Matthews K. J. 1999 'The Iron Age of north-west England and Irish Sea trade' in Bevan B. (ed.) *Northern Exposure: Interpretative Devolution and the Iron Ages in Britain,* University of Leicester, Leicester, 173–95.
Matthews K. J. 2001 'The Iron Age of North-west England: A socio-economic model' *J Chester Archaeol Soc* 76 (for 2000-1), 1-51.
Matthews K. 2003 'Lightning can strike twice!' *The Past Uncovered* October 2003, 3.
Matthews K. and Vickers T. 2003 'Iron Age bead from Tarporley rediscovered' *The Past Uncovered (Newsletter of Chester Archaeology)* June 2003, 3.
Matthews L. G. and Green H. J. M. 1970 'Post-medieval pottery of the Inns of Court' *Post-Medieval Archaeol* 3 (for 1969), 1–17.
May T. 1904 *Warrington's Roman Remains,* Mackie and Co., Warrington.
Mayer J. 1849 'On the British urns found at West Kirby' *Trans Hist Soc Lancashire Cheshire* 1, 153–5.
McGrail S. (ed) 1979 *The Archaeology of Medieval Ships and Harbours in Northern Europe*, BAR Int Ser 66, Oxford.
McGrail S. 1997a *Studies in Maritime Archaeology,* BAR Brit Ser 256, Oxford.
McGrail S. 1997b 'The interpretation of archaeological evidence for maritime structures' in McGrail S. (ed.) *Studies in Maritime Archaeology,* BAR Brit Ser 256, Oxford, 49–63.
McGrail S. 1997c 'Early landing places' in McGrail S. (ed.) *Studies in Maritime Archaeology,* BAR Brit Ser 256, Oxford, 65–71.
McGrail S. 1997d 'Romano-Celtic boats and ships: characteristic features' in McGrail S. (ed.) *Studies in Maritime Archaeology,* BAR Brit Ser 256, Oxford 223–8.
McGrail S. 1997e 'Cross channel seamanship and navigation in the late first millennium BC' in McGrail S. *Studies in Maritime Archaeology,* BAR Brit Ser 256, Oxford, 265–88.
McGrail S and Roberts O. T. P. 1999 'A Romano-British boat from the shores of the Severn Estuary' *Mariner's Mirror* 85.2, 133–46.
McGrail S. and Switsur R. 1979 ' Medieval logboats of the River Mersey – a classification study' in McGrail S. (ed.) *The Archaeology of Medieval Ships and Harbours in Northern Europe*, BAR Int Ser 66, Oxford, 93–115.
McWhirr A. 1976 *Archaeology and History of Cirencester*, BAR Brit Ser 30, Oxford.
Meaney A. L. 1964 *A Gazetteer of Early Anglo-Saxon Burial Sites,* Allen and Unwin, London.
Megaw J. V. S. 1990 'Bone whistles and related objects' in Biddle M. (ed.) *Object and Economy in Medieval Winchester,* Clarendon Press, Oxford, 718–23.
Megaw M. R. and Megaw J. V. S. 2001 *Celtic Art,* Thames and Hudson, London.
Megaw J. V. S. and Simpson D. D. A. 1984 *Introduction to British Prehistory*, Leicester University Press, Leicester.
Meinardus O. F. A. 1961 *Monks and Monasteries of the Egyptian Deserts,* The American University at Cairo Press, Cairo.
Mende U. 1981 *Die Türzieher des Mittelalters,* Bronzgeräte des Mittelalters 2, Berlin.
Merrifield M. P. 1967 *Original treatises on the arts of painting*, Dover, New York.
Merrifield R. 1965 *The Roman City of London,* Ernest Benn, London.
Metcalf D. M. 1987 'A topographical commentary on the coin finds from ninth-century Northumbria c780 – c870' in Metcalf D. M. (ed.) *Coinage in Ninth-Century Northumbria*, BAR Brit Ser 180, 361–82.
Metcalf D. M. 1992 'The monetary economy of the Irish Sea province' in Graham-Campbell J. (ed.) 1992 *Viking treasure from the North West: the Cuerdale hoard in its context*, National Museums and Galleries on Merseyside Occasional Paper 5, Liverpool, 89–106.
Miles A. 1963 'Dentition in the estimation of age' *J*

Dental Res 42, 255–63.
Miles H. 1977a 'Rhuddlan' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool, 60–1.
Miles H. 1977b 'Rhuddlan Kiln' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool, 100–1.
Millett M. 1990 *The Romanization of Britain*¸ Cambridge University Press, Cambridge.
Milne G. 1990 'Maritime traffic between the Rhine and Roman Britain: a preliminary note' in McGrail S. (ed.) *Maritime Celts, Frisians and Saxon,* CBA Research Report 71, London, 82–4.
Milne J. G. 1948 *Finds of Greek Coins from the British Isles: The Evidence Reconsidered in the Light of the Rackett Collection from Dorset,* OUP, London.
Mitchiner M. 1986 *Medieval Pilgrim and Secular Badges*, Hawkins Publications, Sanderstead.
Moffatt M. 1977 *The Prehistory of the Wirral Peninsula,* Unpublished Certificate in Archaeology Thesis, University of Liverpool, Liverpool.
Moffett C. 2002 'Small stone artefacts' in Baker N. (ed.) *Shrewsbury Abbey: Studies in the Archaeology and History of an Urban Abbey,* Shropshire Arch and Hist Soc Monograph 2, 132.
Montembault V. 1996 'Étude des Cuirs' *Catalogue de l'Exposition Metz Médiéval, Mises au Jour*, Metz, 153–64.
Montembault V. 1999 'Mystery Object' *Archaeological Leather Group Newsletter* 10, 4–6.
Moore D. (ed.) 1970 *The Irish Sea Province in Archaeology and History*, Cambrian Archaeological Association, Cardiff.
Moore S. 1999 *Cutlery for the Table: A History of British Table and Pocket Cutlery*, Hallamshire Publications, Sheffield.
Moore T. J. 1857 'Notice of mammalian remains discovered in the excavations at Wallasey for the Birkenhead New Docks' *Trans Hist Soc Lancashire Cheshire* 10, 265–8.
Moore T. J. 1881'Notes on the mammalian remains from Hightown' *Proc Liverpool Geological Soc*, 4, 277–80.
Morgan P. 2002 'Medieval Cheshire' in Phillips A. D. M. and Phillips C. B. (eds) *A New Historical Atlas of Cheshire,* Cheshire County Council and Cheshire Community Council Publications Trust, Chester.
Morley J. C. 1887 *A Brief Memoir of Rev Abraham Hume, Vicar of Vauxhall,* Privately printed, Liverpool.
Morris C. A. 1984 *Anglo-Saxon and Medieval Woodworking Crafts: The Manufacture and Use of Domestic and Utilitarian Wooden Artifacts in the British Isles, 400–1500 AD*, Unpublished PhD Thesis, University of Cambridge, Cambridge.
Morris C. A. 1990 'Recording ancient timbers: the technologist's view' in Coles J. *et al.* (eds) 'Waterlogged wood. the recording, sampling, conservation and curation of structural timber' *Wetland Arch Res Project (WARP) Occasional Paper* 3, 9–5.
Morris C. A. 2000 *Craft, Industry and Everyday Life: Wood and Woodworking in Anglo-Scandinavian and Medieval York,* The Archaeology of York 17/13, CBA for York Archaeological Trust, York.
Morris E. L. 1985 'Prehistoric Salt Distributions: Two Case Studies from Western Britain' *Bulletin of the Board of Celtic Studies* 32, 336-79.
Morris E. L. 1996 'Iron Age Artefact Production and Exchange' in Champion T. C. and Collis J. R. (eds) *The Iron Age in Britain and Ireland: Recent Trends,* J. R. Collis Publications, Dept of Archaeology and Prehistory, University of Sheffield, 41-65.
Morris J. E. 1901 *The Welsh Wars of Edward I*, OUP, Oxford.
Morris R. H. 1894 *Chester in the Plantagenet and Tudor Reigns,* Printed for the author, Chester.
Mortimer C. 2002 'Bedern and the foundry' in Ottaway P. and Rogers N. 2002 *Craft, Industry and Everyday Life: Finds from Medieval York*, The Archaeology of York 17/15, York, 2708–17.
Morton G. H. 1887 'Stanlow, Ince and Frodsham Marshes' *Proc Liverpool Geological Soc* 5, 349–51.
Morton G. H. 1888 'Further notes on the Stanlow, Frodsham and Ince Marshes' *Proc Liverpool Geological Soc* 6, 50–5.
Morton G. H. 1897 *Geology of the Country Around Liverpool, Including the North Flintshire,* George Phillip and Son, London.
Mould Q. 1997 'Leather' in Hawkes J. W. and Fasham P. J. *Excavations on Reading Waterfront Sites, 1979–1988,* Wessex Archaeol Rep 5, 108–41.
Mould Q. 1998 'The lead-alloy artefacts' in Cool H. and Philo C. (eds) *Roman Castleford. Excavations 1974–85. Vol. I. The Small Finds,* West Yorkshire Archaeology Service, Wakefield, 121–8.
Mould Q. 2000 'The small finds' in Ellis P. (ed.) *The Roman Baths and Macellum at Wroxeter: Excavations by Graham Webster 1955–85,* English Heritage Archaeol Report 9, London, 108–44.
Mould Q. 2001 Unpublished report for Avon Archaeological Unit, Bristol.
Mould Q. 2006 'Assessment of the leather from Belgrade Plaza, Coventry' Unpublished text for Northamptonshire Archaeology, Northampton.
Mould Q., Carlisle C. and Cameron E. 2003 *Craft, Industry and Everyday Life: Leather and Leatherworking in Anglo-Scandinavian and Medieval York,* The Archaeology of York 17/16, CBA for York Archaeological Trust, York.
Mountford A. 1975 'The Marquis of Granby Hotel site, Burslem, Stoke-on-Trent, Staffs.' *City of Stoke-on-Trent Museum Archaeological Society Reports*, 7, 21–7.
Muldoon S. and Brownsword R. no date *Pewter Spoons and Other Related Material of the 14th–17th Centuries in the Collection of the Herbert Art Gallery and Museum*, Leisure Services, City of Coventry.
Munro R. 1905 *Archaeology and False Antiquities,* Methuen, London.
Murray H. K. and Murray J. C. 1993 'Excavations at Rattray, Aberdeenshire: a Scottish deserted burgh' *Medieval Archaeol* 37, 109–218.
Musson C. 1991 *The Breidden Hillfort: A Later Prehistoric Settlement in the Welsh Marches*, CBA Research Report 76, London.
Mustad 2007 *Mustad Hook Catalogue* Online Product Catalogue: http://www.mustad.no/catalog
Mynard D. C. 1969 'Excavations at Somerby, Lincs 1957' *Lincolnshire History Archaeol* 4, 63–91.

NAU 1998 *Norfolk Archaeological Unit Annual Review 1997–8*, Norfolk Archaeological Unit, Norwich.
Nash-Williams V. E. and Jarrett M. G. 1969 *The Roman Frontier in Wales,* 2nd edn, Cardiff.
Neal D. S. and Butcher S. A. 1974 'Miscellaneous objects of bronze' in Neal D. S. 1974 *The Excavation of the Roman Villa in Gadebridge Park Hemel Hempstead 1963–8* Reports of the Research Committee of the Soc of Antiquaries of London, 31, 128–50.

Nevell M. 1992 *Tameside before 1066,* Tameside Metropolitan Borough Council, Manchester.
Nevell M. 1994 'Late Prehistoric Pottery Types from the Mersey Basin' in Carrington P. (ed.) *From Flints to Flower Pots: Current Research in the Dee-Mersey Region,* Chester City Council, 33-41.
Nevell M. 1999 'Great Woolden Hall. A Model for the material culture of Iron Age and Romano-British rural settlement in North West England?' in Nevell M. (ed.) *Living on the Edge of Empire: Models, Methodology and Marginality. Late Prehistoric and Romano-British Rural Settlement in North-West England*, Council for British Archaeology North-West, Manchester, 48–63.
Nevell M. 2005 'Salt Making in Cheshire; The Iron Age Background' in Nevell M. and Fielding A. P. (eds) *Brine in Britannia: Recent Archaeological Work on the Roman Salt Industry in Cheshire,* Archaeology North West 7 (for 2004-5), 9-14.
Newman C. 2006 'The medieval period resource assessment' in Brennand M. (ed.), *The Archaeology of North West England: An Archaeological Research Framework for North West England: 1 Resource Assessment*, Archaeology North-West 8.18, Manchester, 115–44.
Newman J. 1994 'A possible medieval fair site at The Albany, Ipswich' *British Numismatic J* 64, 129.
Newstead R. 1927 'The excavations at Hilbre, 1926' *Trans Hist Soc Lancashire Cheshire* 78, 136–42.
Newstead R. 1928a 'Records of archaeological finds at Chester' *J Chester Archaeol Soc* 27, part II, 59–162.
Newstead R. 1928b 'Report on the excavations on the site of the Roman Fortress at the Deanery Field, Chester' *Liverpool Annals of Archaeol Anthropol* 15, 3–32.
Newstead R. N. 1934 'Medieval pottery and kiln at Ashton, Near Chester' *Liverpool Annals of Archaeol Anthropol*, 21, 5–26.
Newstead R. N. and Droop J. P. 1936 'Excavations in the Deanery Field and Abbey Green, Chester, 1935' *Annals Archaeol Anthropol Liverpool* 23 (1), 3–50.
Newstead R. N. and Droop J. P. 1939 'Excavations in Chester 1939, the Princess Street clearance area' *J Chester Archaeol Soc* 34, 49–172.
Nicholson R. 2000 'Fish bone' in Buxton K. and Howard-Davis C. L. E. 2000 *Bremetenacum: Excavations at Roman Ribchester, 1980, 1989–90*, Lancaster Imprints, Lancaster, 384–6.
Nicholson S. M. 1980 *Catalogue of the Prehistoric Metalwork in Merseyside County Museums,* Merseyside County Council/University of Liverpool, Liverpool.
Noake P. 1993 'The post-medieval pottery' in Ellis P. (ed.) *Beeston Castle, Cheshire: Excavations by Laurence Keen & Peter Hough 1968–85,* English Heritage Archaeological Report 23, London, 191–211.
Noble P. and Thompson A. 2005 'The Mellor excavations 1998 to 2004' in Nevell M. and Redhead N. (eds) *Mellor: Living on the Edge. A Regional Study of an Iron Age and Romano-British Upland Settlement,* Manchester Archaeological Monographs, University of Manchester Field Centre and Mellor Archaeological Trust, Manchester, 117–34
Noël Hume I. 1970 *A Guide to Artifacts of Colonial America,* Alfred A. Knopf Inc., New York.
North J. J. 1975 *English Hammered Coinage* 1, Spink and Son, London.
Norton D. 1978 *A Chronological Investigation of the North Wirral Coastline during the Quaternary Period*, Unpublished BA dissertation, Edge Hill College of Higher Education, University of Lancaster, Lancaster.
Ó Floinn R. 1998 'The archaeology of the Early V iking Age in Ireland' in Clarke H. B., Ní Mhaonaigh M. and Ó Floinn R. (eds) *Ireland and Scandinavia in the Early Viking Age*, Four Courts Press, Dublin, 131–65.
Ó Ríordáin B. 1971 'Excavations at High Street and Winetavern Street, Dublin' *Medieval Archaeol* 15, 73–85.
Ó Ríordáin S. P. 1942 'Excavation of a Large Earthen Ring-Fort, Garranes, Co. Cork' *Proc Roy Ir Acad C* 47, 77–150.
Ó Ríordáin S. P. 1950 'Lough Gur excavations: Carraig Aille and the spectacles' *Proc Roy Ir Acad C* 52, 39–111.
O'Ferrall R. S. M. 1951 'A pilgrim's flask found in Derby' *J Derbyshire Arch Natur Hist Soc* 71, 78–9.
O'Leary T. J. 1989 *Pentre Farm, Flint 1976-81: An official building in the Roman lead mining district,* BAR Brit Ser 207, Oxford.
O'Neil B. H. St J. 1945 'Criccieth Castle, Caernarvonshire' *Archaeologia Cambrensis* 98, 1–51.
O'Rourke D. 1997 'Leather artefacts' in Hurley M., Scully O. with McCutcheon S. *Late Viking Age and Medieval Waterford. Excavations 1986–1992,* Institute of Public Administration, Waterford, 703–42.
O'Sullivan D. 1996 'Six Pagan Anglian burials from Cumbria' *Anglo-Saxon Studies Archaeol Hist* 9, 15–23.
Oddy W. A. 1982 'Gold in antiquity: aspects of gilding and assaying' *J Royal Soc Arts* 130, 730–43.
Oddy W. A. 2004 'The manufacture of wire since the Bronze Age: a technological investigation using the microscope' in Martini M., Milazzo M. and Piacenti M. (eds) *Physics Methods in Archaeometry* (*Proceedings of the International School of Physics 'Enrico Fermi'*) Italian Physical Soc, Varenna, 257–67.
Oddy W. F. and Tylecote R. F. 1990 'Objects associated with gold working' in Biddle M. 1990 *Object and Economy in Medieval Winchester*, Winchester Studies 7,ii, Clarendon Press, Oxford, 76–8.
Oldenstein J. 1976 'Zur Ausrüstung römischer Auxiliareinheiten' *Bericht der Römisch-Germanischen Kommission* 57, 49–284.
Olivier A. 2000 'Brooches' in Buxton K. and Howard-Davis C. *Bremetenacum: Excavations at Roman Ribchester 1980, 1989–1990,* Lancaster Imprints no 9, Lancaster, 234–41.
Olivier A. C. H. 1996 'Brooches of silver, copper alloy and iron from Dragonby' in May J. *Dragonby: Report on Excavations at an Iron Age and Romano-British Settlement in North Lincolnshire,* Oxbow Monograph 61, Oxbow Books, Oxford, 231–64.
Opie I. 1976 'Games' in Ketteringham L. L. (ed.) *The Excavation of a 13th/14th century Sub-manor House with its Ironworks in Netherne Woods, Merstham, Surrey*, Surrey Archaeological Soc Research Vol 2, 65.
Orico I. 1959 *The Merchant of Prato Francesco di Marco Datini,* The Reprint Society, London.
Ormerod G. 1882 *The History of the County Palatine and City of Chester*; 2nd edition, revised and enlarged by T. Helsby, Routledge, London.
Oswald F. and Pryce T. D. 1920 *An Introduction to the Study of Terra Sigillata,* Longmans, Green and Co., London.
Ottaway P. 1992 *Anglo-Scandinavian Ironwork from 16–22 Coppergate,* The Archaeology of York 17/06, York Archaeological Trust, York.
Ottaway P. 2002 'The knives' in Allen T. G. and Hiller J. *The Excavation of a Medieval Manor House of the*

Bishops of Winchester at Mount House, Witney, Oxfordshire, Thames Valley Landscapes Monogr 13, Oxford University School of Archaeology, Oxford, 151–2.

Ottaway P. and Rogers N. 2002 *Craft, Industry and Everyday Life: Finds from Medieval York*, The Archaeology of York 17/15, York.

Oxley J. E. 1983 'Nantwich, An eleventh century salt town and its origins' *Trans Hist Soc Lancashire Cheshire* 131, 1–20.

Painter K. and Sax M. 1970 'The British Museum collection of Roman head-stud brooches' *Brit Mus Quart* 34, 153–74.

Parfitt K., Corke B. and Cotter J. 2006 *Townwall Street, Dover: Excavations 1996,* Canterbury Archaeological Trust Occasional Paper 3, Canterbury.

Parkinson C. N. 1952 *The Rise of the Port of Liverpool,* University Press, Liverpool.

Partridge C. 1981 *Skeleton Green: A Late Iron Age and Romano-British Site,* Britannia Monograph 2, Society for the Promotion of Roman Studies, London.

PAS Database: Portable Antiquities Scheme database of recorded finds in England and Wales. Available from: www.finds.org.uk.

Peacock D. P. S. 1978 'The Rhine and the problem of Gaulish wine in Roman Britain' in Taylor J. du Plat and Cleere H. (eds) *Roman shipping and trade: Britain and the Rhine provinces,* CBA Research Report 24, London, 49-51.

Pearson G. W., Pilcher J. R., Baillie M. G., Corbett D. M. and Qua F. 1986 'High precision C14 measurement of the Irish oaks to show the natural C14 variations from AD 1840-5210 BC' *Radiocarbon*, 28, 911-34.

Pearson G. W. and Stuiver M. 1986 'High precision calibration of the radiocarbon time-scale, 500-2500 BC' *Radiocarbon*, 28, 839-62.

Peers C. and Radford C. A. R. 1943 'The Saxon Monastery of Whitby' *Archaeologia* 89, 27–88.

Percy J. 1870 *Metallurgy, Vol. III, part 1: Lead desilverization*, De Archaeologische pers Nederland, Eindhoven.

Petch D. F. 1976 'Stray finds: Little Hilbre Island' *Cheshire Archaeol Bull* 4, 37.

Petch D. F. 1987 'The Roman period' in Harris B. E. and Thacker A. T. (eds) *A History of the County of Chester,* 1. OUP, University of London, Institute of Historical Research (Victoria History Counties of England), 115–236.

Petersen J. 1940 'British antiquities of the Viking period found in Norway' in Shetelig H. (ed.) *Viking Antiquities of Great Britain and Ireland Part V*, Aschehoug, Oslo.

Petersen J. 1951 *Vikingetidens Redskaper,* Norske Videnskaps-Akademi, Oslo.

Philpott R. A. 1991 *Burial Practices in Roman Britain: A Survey of Grave Treatment and Furnishing A.D. 43–410,* BAR Brit Ser 219, Tempvs Reparatvm, Oxford.

Philpott R. A. 1999a 'Three Byzantine coins found near the north Wirral coast in Merseyside' *Trans Hist Soc Lancashire Cheshire* 148, 197–202.

Philpott R. A. 1999b 'A Romano-British brooch type from north-west England' *Britannia,* 30, 274–86.

Philpott R. A. 2000a 'Roman tile-stamps' in Cowell R. W. and Philpott R. A. *Prehistoric, Romano-British and Medieval Settlement in Lowland North West England: Archaeological Excavations along the A5300 Road Corridor in Merseyside,* National Museums and Galleries on Merseyside, Liverpool, 94–6.

Philpott R. A. 2000b 'Recent Anglo-Saxon finds from Merseyside and Cheshire and their archaeological significance' *Medieval Archaeol* 43, 194–202.

Philpott R. A. forthcoming a 'Roman Merseyside: 25 years on' *J Merseyside Archaeol Soc* 12.

Philpott R. A. forthcoming b 'Medieval settlement in Merseyside *J Merseyside Archaeol Soc* 12.

Philpott R. A. and Adams M. H. forthcoming *Irby, Wirral: Excavations on a Late Prehistoric, Romano-British and Medieval Site, 1987–96,* NML, Liverpool.

Picton J. A. 1849 'The changes of sea-levels on the west coast of England during the historic period' *Proc Literary Philosophical Society Liverpool*, 36th session, 5, 113–5.

Pirie E. J. E. 1964 *Sylloge of Coins of the British Isles. Vol. 5: Grosvenor Museum Chester: Part 1 The Willoughby Gardner Collection of Coins with the Chester Mint Signature,* British Academy, London.

Pirie E. J. E. 1986 'Finds of 'sceattas' and 'stycas' of Northumbria, in Blackburn M. A. S. (ed.) *Anglo-Saxon Monetary History*, Leicester University Press, Leicester, 67–90.

Pirie E. J. E. 2000 *Thrymsas, Sceattas and Stycas of Northumbria: an Inventory of Finds recorded to 1997*, Llanfyllin.

Pitts L. F. 1985 'Small finds other than ironwork' in Hurst H. R. *Kingsholm,* Gloucester Archaeological Reports Vol. 1, Gloucester, 26–35.

Pitts M. and Jacobi R. M. 1979 'Some aspects of change in flaked stone industries of the mesolithic and neolithic in southern Britain' *J Archaeol Science* 6, 163–77.

Place G. 1994 *The Rise and Fall of Parkgate, Passenger Port for Ireland, 1686–1815,* Chetham Society 39, Manchester.

Place G. 1996 'Parkgate and Ireland' in Carrington P. (ed.) *'Where Deva Spreads her Wizard Stream': Trade and the Port of Chester,* Chester Archaeology Occasional Paper No. 3, Chester, 72–4.

Plater A. J., Long A. J., Huddart D., Gonzalez S. and Tooley M. J. 1999 'The land of the Mersey Basin: sea-level changes' in Greenwood E. F. (ed.) *Ecology and Landscape Development: A History of the Mersey Basin*, Liverpool University Press/ NMGM, Liverpool, 13–20.

Platt C. and Coleman-Smith R. 1975 *Excavations in Medieval Southampton 1953–1969, 2: The Finds,* Leicester University Press, Leicester.

Ponting M. 2004 *Material Characterisation and Investigation of an Assemblage of Objects from Meols, Cheshire,* English Heritage Centre for Archaeology Report 6/2004, London.

Portable Antiquities Scheme 2001 *Portable Antiquities Annual Report 1999–2000,* Department for Culture, Media and Sport, London.

Portable Antiquities Scheme 2003 *Portable Antiquities Scheme Annual Report 2001/02–2002/03,* Resource, London.

Potter C. 1869 'Observations on the Cheshire Coast' *Trans Liverpool Geol Soc* 10th session, 37–58.

Potter C. 1876 'Observations on the geology and archaeology of the Cheshire shore' *Trans Hist Soc Lancashire and Cheshire* 38, 121–42.

Potter C. 1889 'Leather, bronze, pewter, &c., ornaments, from the Cheshire Shore' *Trans Hist Soc Lancashire Cheshire* 41 (for 1888), 195–202.

Potter C. 1890 'Antiquities of the Meols Shore' *Trans Hist Soc Lancashire Cheshire* 42 (for 1889), 143–52.
Potter C. 1893 'Agricultural and mechanical implements found on the Meols shore' *Trans Hist Soc Lancashire Cheshire* 43–44 (for 1891–2), 233–44.
Potter T. W. 1979 *Romans in North-West England: Excavations at the Roman forts of Ravenglass, Watercrook and Bowness on Solway,* Cumberland and Westmorland Antiquarian and Archaeological Society Research Series, Vol 1, Cumberland and Westmorland Antiquarian and Archaeological Society, Cumbria.
Price J. and Cottam S. 1998 *Romano-British Glass Vessels: A Handbook*, Practical Handbook in Archaeology 14, CBA, London.
Pryor F. 1978 *Excavation at Fengate, Peterborough, England: The Second Report*, Archaeological Monograph ROM, 5, Royal Ontario Museum, Toronto, Canada.
Pye K. and Neal A. 1993 'Late Holocene dune formation on the Sefton Coast, northwest England' in Pye K. (ed.) *Dynamics and Environmental Context of Aeolian Sedimentary Systems,* Geological Society of London, Special Publication 72, Geological Society Publishing House, Bath, 201–17.

Quinnell H. and Blockley M. R. 1994 *Excavations at Rhuddlan, Clwyd 1969–73: Mesolithic to Medieval,* CBA Research Report 95, London.

Raftery B. 1984 *La Tène in Ireland: Problems of Origin and Chronology,* Vorgeschichtlichen Seminars Marburg, Marburg.
Rahtz P. A. 1992 *Cadbury Congresbury,* BAR Brit Ser 223, Tempvs Reparatvm, Oxford.
Rahtz P. A. and Hirst S. 1974 *Beckery Chapel, Glastonbury 1967–8,* Glastonbury Antiquarian Society, Glastonbury.
Rahtz P. A., Dickinson T. and Watts L. 1980 *Anglo-Saxon Cemeteries 1979*, BAR Brit Ser 82, Oxford.
Rasch M. 1988 'Today's beach, yesterday's harbour' in Hårdh B. (ed.) 'Trade and exchange in prehistory' *Acta Archaeologica Lundensia* 8, no. 16, Lund, 279–86.
Re:source 2003 *Portable Antiquities Scheme Annual Report 2001/02–2002/03*, PAS, London
Read B. 1995 *History Beneath Our Feet*, 2nd edn, Anglia, Ipswich.
Read B. 2001 *Metal Artefacts of Antiquity: A Catalogue of Small Finds from Specific Areas of the United Kingdom. Vol. I,* Portcullis Publishing, Langport.
Read B. 2005 *Metal Buttons c. 900 BC– c. AD 1700*, Portcullis Publishing, Langport.
Reade T. M. 1871 'The geology and physics of the post-glacial period, as shown in the deposits and organic remains in Lancashire and Cheshire' *Proc Liverpool Geol Soc* 2, 36–88.
Reade T. M. 1872 'The post-glacial geology and physiography of west Lancashire and the Mersey estuary' *Geological Magazine* 9, 93, 111–19.
Reade T. M. 1881 'On a section of the Formby and Leasowe Marine Beds and Superior Peat Bed, disclosed by cuttings for the outlet sewer at Hightown' *Proc Liverpool Geol Soc* 4, 4, 269–77.
Reade T. M. 1908 'Post-glacial beds at Great Crosby as disclosed by the New outfall sewer' *Proc Liverpool Geol Soc* 10, 4, 249–61.
Redknap M. 1991 *The Christian Celts, Treasures of Late Celtic Wales*, National Museum of Wales, Cardiff.
Redknap M. 2000 *Vikings in Wales, An Archaeological Quest*, National Museums of Wales, Cardiff.
Redknap M. 2004 'Viking-age settlement in Wales and the evidence from Llanbedrgoch' in Hines J., Lane A. and Redknap M. (eds) *Land Sea and Home*, Soc for Medieval Archaeol Monograph 20, Maney, Leeds, 139–75.
Redknap M. forthcoming, pilgrim souvenirs from Wales, National Museums and Galleries of Wales.
Reece R. 1972 'A short survey of Roman coins found at fourteen sites in the British Isles' *Britannia* 3, 269–76.
Reece R. 1987 *Coinage in Roman Britain,* B. A. Seaby, London.
Reece R. 1988 'Numerical aspects of Roman coin hoards in Britain' in Casey J. and Reece R. (eds) *Coins and the Archaeologist*, 2nd edn, B. A. Seaby, London, 86–101.
Reece R. 1991 *Roman Coins from 140 Sites in Britain,* David Brown Book Co., Cirencester.
Rees S. 1979 *Agricultural Implements in Prehistoric and Roman Britain* 2 vols. BAR Brit Ser 69 (i, ii), Oxford.
Reinert F. 1993 'Nécropoles rurales romaines précoces dans l'ouest du pays trévire (Grand-Duché de Luxembourg et régions limitrophes)' in Ferdière A. (ed.) *Monde des Morts, Monde des Vivants en Gaule Rurale*, Archea, Tours, 177–84.
Richards M. and Schulting R. 2000 'Stable isotopes from human remains from the Severn Estuary' in Bell M., Caseldine A. and Neumann H. *Prehistoric Intertidal Archaeology in the Welsh Severn Estuary,* CBA Research Report 120, London, 70–1.
Richards M., Hedges R. E. M., Molleson T. I. and Vogel J. C. 1998 'Stable isotope analysis reveals variations in human diet at the Poundbury Camp cemetery site' *J Archaeol Science* 25, 1247–52.
Richardson C. 1998 'A catalogue of recent acquisitions to Tullie House Museum and reported finds from the Cumbrian area 1990–1996 1: Tullie House acquisitions' *Trans Cumberland Westmorland Antiq Arch Soc* 98, 1–60.
Richardson K. M. 1960 'A Roman brooch from the Outer Hebrides, with notes on others of its type' *Antiquaries J* 40, 200–13.
Riddler I. 2001 'The small finds' pp. 228–52, in Gardiner M. F., Cross R., Macpherson-Grant N. and Riddler I. 'Continental trade and non-urban ports in Mid-Anglo-Saxon England: excavations at Sandtun, West Hythe, Kent' *Archaeol J* 158, 161–290.
Rippon S. 2000 'Roman and later landscape development: the creation of the historic landscape' in Bell M., Caseldine A. and Neumann H. (eds) *Prehistoric Intertidal Archaeology in the Welsh Severn Estuary,* CBA Research Report 120, London, CD section 16.9.
Rivet A. L. F. and Smith C. 1979 *The Place-Names of Roman Britain,* Book Club Associates, London.
Roach Smith C. 1854 *Catalogue of the Museum of London Antiquities*, Privately printed, London.
Robbins G. 1999 'Research and regionality: South Yorkshire as an example' in Bevan B. (ed.) *Northern Exposure: Interpretative Devolution and the Iron Ages in Britain,* University of Leicester, Leicester, 43–9.
Roberts C. 1986 *Changes in the History of Hoylake in 50 years. Victorian Hoylake: Recollections of Hoylake, 1865–1915,* Ceejay Publishing, Hoylake.
Roberts D. 2007 'Herts and District MDS', report in Club Activities *The Searcher* 261, 55-6.
Roberts H., Cuttler R. and Hughes G. forthcoming 'Cefn Cwmwd, Rhostrehwfa. Pit circle, early Bronze Age cremation cemetery, Iron Age/Romano-British farmstead and early medieval occupation' in Cuttler

R., Davidson A. and Hughes G. (eds) *The Archaeology of the Anglesey By-Pass*, Oxbow Books, Oxford.
Roberts O. T. P. 2002 'Accident not intention: Llyn Cerrig Bach, Isle of Anglesey, Wales – site of an Iron Age shipwreck' *Int J Nautical Archaeol* 31.1, 25–38.
Roberts S. J. 1992 *Hoylake and Meols Past,* Phillimore, Chichester.
Robinson A. H. 1980 'The sandy coast of south-west Anglesey' *Trans Anglesey Antiq Soc* [1980], 37–66.
Robinson D. J. 2000 'The Romans and Ireland again: some thoughts on Tacitus' *Agricola* chapter 24' *J Chester Archaeol Soc* 75, 19-31.
Roeder C. 1900 'On a newly discovered neolithic settlement at the Red Noses, New Brighton, near Liverpool' *Trans Hist Soc Lancashire Cheshire* 50 (for 1898), 123–30.
Roesdahl E. 1978 'Aggersborg in the Viking Age' in Bekker-Nielsen H., Foote P. and Olsen O. (eds) *Proceedings of the Eighth Viking Congress, Aarhus 1977*, Odense University Press, Odense, 107–22.
Roesdahl E., Graham-Campbell J. A., Connor P. and Pearson K. (eds) 1981 *The Vikings in England and in their Danish Homeland*, The Anglo-Danish Viking Project, London.
Rogers I. 1996 'The conquest of Brigantia and the development of the Roman road system in the north-west' *Britannia* 27, 365–8.
Rogers N. S. H. 1993 *Anglian Finds from Fishergate,* The Archaeology of York: The Small Finds 17/9, York Archaeological Trust/CBA, York.
Rogerson A. 1976 'Excavations on Fuller's Hill, Great Yarmouth' *East Anglian Archaeology* 2, 131-245.
Romilly Allen J. and Cox E. W. 1893 'The Early Christian monuments of Lancashire and Cheshire' *Trans Hist Soc Lancashire Cheshire* 45, 1–32.
Ross S. 1991 *Dress Pins from Anglo-Saxon England, Their Production and Typo-Chronological Development,* Unpublished DPhil Thesis, University of Oxford, Oxford.
Royle C. and Woodward A. 1993 'The prehistoric pottery' in Ellis P. *Beeston Castle, Cheshire: Excavations by Laurence Keen & Peter Hough 1968–85,* English Heritage Archaeological Report 23, London, 63–78.
Rubin M. 2005 *The Hollow Crown: A History of Britain in the Late Middle Ages,* Penguin History of Britain, Harmondsworth.
Rule M. 1982 *The Mary Rose: The Excavation and Raising of Henry VIII's Flagship*, Windwards, London.
Rule M. and Monaghan J. 1993 *A Gallo-Roman Trading Vessel from Guernsey,* Guernsey Museum Monograph, Guernsey.
Russell J. 1939 'English medieval leatherwork' *Archaeol J* 96, 132–41.
Rutter J. A. 1976 '457. Chester (Northgate St.), Cheshire, 1901' in Archibald M. M. *Coin Hoards, Vol 2,* Royal Numismatic Society, London, 118.
Rutter J. A. 1977a 'Chester: Old Market Hall (1967–70), pit group' Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool, 18–21.
Rutter J. A. 1977b 'Chester, Upper Northgate Street Hoard Pot' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool,22–3.
Rutter J. A. 1977c 'Ashton Kiln' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool,70–85.
Rutter J. A. 1977d 'Chester: Deanery Field Kiln No. 2' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool,86–91.
Rutter J. A. 1978 'A pit group from Barton village, Cheshire & an unprovenanced curfew fragment in the Grosvenor Museum, Chester' *J Chester Archaeol Soc* 61, 33–8.
Rutter J. A. 1984 'Lifestyle in the rows, with particular reference to a collection of pottery from 11 Watergate St., Chester, found in 1894' *J Chester Archaeol Soc* 67, 55–75.
Rutter J. A. 1985 'Glass, other metal, industrial and organic artifacts' in Mason D. J. P. 1985 *Excavations at Chester: 26–42 Lower Bridge Street 1974–6. The Dark Age and Saxon Periods,* Chester City Council, Chester, 62–5.
Rutter J. A. 1986 'Finds from the Excavation' in Turner R. C., Sale C. B. and Axworthy Rutter J. A. 'A Medieval Garden at the Belgrave Moat, Chester' *J Chester Archaeol Soc* 69, 73–6.
Rutter J. A. 1988 'Medieval and later ceramics, clay tobacco pipes and glass' in Ward S. *Excavations at Chester, 12 Watergate St 1985: Roman Headquarters Building to Medieval Row,* Grosvenor Museum Excavation Report 5, Chester City Council, Chester, 54–8.
Rutter J. A. 1990a 'Building materials from the Dominican Friary: roof tiles and slates' in Ward S. W. *et al. Excavations at Chester: The Lesser Medieval Religious Houses: Sites Investigated 1964–1983,* Grosvenor Museum Excavation and Survey Reports 6, Chester City Council, Chester, 106–14.
Rutter J. A. 1990b 'Arrowcroft Scheme 1977–9' in Ward S. W. *et al. Excavations at Chester: The Lesser Medieval Religious Houses: Sites Investigated 1964 – 1983,* Grosvenor Museum Excavation and Survey Reports 6, Chester City Council, Chester, 210–21.
Rutter J. A. 1990c 'Appendix 2: petrological analysis of thin-sectioned ceramic fabrics' in Ward S. W. *et al. Excavations at Chester: The Lesser Medieval Religious Houses: Sites Investigated 1964–1983,* Grosvenor Museum Excavation and Survey Reports 6, Chester City Council, Chester, 280–6.
Rutter J. and Davey P. 1980 'Clay pipes from Chester' in Davey P. J. (ed.) *The Archaeology of the Clay Tobacco Pipe*, III, BAR Brit Ser 78, Oxford, 41–272.
Rygh O. 1885 *Norske Oldsager,* Tapir Forlag, Christiania-Oslo.
Rynne E. 1965 'A bronze ring-brooch from Luce Sands, Wigtownshire: its affinities and significance' *Trans Dumfriesshire Galloway Natur Hist Antiq Soc* 52, 99–113.

Salaman R. A. 1986 *Dictionary of Leather-Working Tools c.1700–1950 and the Tools of Allied Trades,* Astragal Press, London.
Saner R. J. 1997 *A Catalogue and Analysis of the Artefacts from Meols, Wirral,* Unpublished MPhil thesis, University of Birmingham, Birmingham.
Savory H. N. 1964 'The metalwork' in Gardner W. and Savory H. N. *Dinorben: A Hill-fort Occupied in Early Iron Age and Roman Times,* The National Museum of Wales, Cardiff, 131–66.
Gardner W. and Savory H. N. 1964 *Dinorben: A Hill-fort Occupied in Early Iron Age and Roman Times,* The National Museum of Wales, Cardiff.
Savory H. N. 1971 *Excavations at Dinorben, 1965–9*, National Museum of Wales, Cardiff.

Sawyer P. H. 1970 'The Vikings and the Irish Sea' in Moore D. (ed.) *The Irish Sea Province in Archaeology and History*, Cambrian Archaeological Association, Cardiff, 86–92.
Sawyer P. H. 1987 'Translation of the text' in Harris B. E. (ed.) *The Victoria History of the County of Chester*, I, OUP for Institute of Historical Research, London, 342–70.
Sawyer P. H. and Thacker A. T. 1987 'Domesday survey' in Harris B. E. and Thacker A. T. (eds) *A History of the County of Chester. Vol. I.* OUP for Institute of Historical Research, London, 293–370.
Scaife R. G. 1988 'The elm decline in the pollen record of south east England and its relationship to early agriculture' in Jones M. (ed.) *Archaeology and the Flora of the British Isles,* Botanical Society of the British Isles Conference Report 19, Oxford University Committee for Archaeology, Oxbow Books, Oxford, 21–33.
Schnack C. 1998 *Die mittelalterlichen Lederfunde aus Schleswig. Ausgrabung Schild 1971–1975. Futterale, Riemen, Taschen und andere Objekte,* Ausgrabungen in Schleswig, Berichte und Studien 13, K. Wachholtz, Neumünster.
Schoeninger M. and Moore K. 1992 'Stable bone isotope studies in archaeology' *J World Prehistory* 6, 247–96.
Schulting R. J. and Gonzalez S. forthcoming (2007) 'The Prestatyn skeleton reconsidered' in Bell M. (ed.) *Prehistoric coastal communities: the archaeology of western Britain 6000-3000 Cal BC*, CBA Research Report 149, York.
Schulting R. J. and Richards M. P. 2002a 'The wet, the wild and the domesticated: the mesolithic-neolithic transition on the west coast of Scotland' *Eur J Archaeol* 5, 147–89.
Schulting R. J. and Richards M. P. 2002b 'Finding the coastal mesolithic in southwest Britain: AMS dates and stable isotope results on human remains from Caldey Island, Pembrokeshire, South Wales' *Antiquity* 76, 1011–25.
Scully O. M. B. 1997 'Metal artefacts' in Hurley M. F., Scully O. M. B. and McCutcheon S. W. J. *Late Viking Age and Medieval Waterford. Excavations 1986–1992,* Institute of Public Administration, Waterford, Ireland, 438–89.
Sedlmayer H. 1999 *Die römischen Bronzegefäße in Noricum*, Editions Monique Mergoil, Montagnac.
Shennan I., Tooley M., David M. J. and Haggart B. A. 1983 'Analysis and interpretation of Holocene sea-level data' *Nature* 302, 404–6.
Shone W. 1911 *Prehistoric Man in Cheshire,* Simpkin Marshall Hamilton Kent and Co., London.
Shotter D. C. A. 1973 'Numeri Barcariorum: a note on RIB 601' *Britannia* 4, 206–9.
Shotter D. C. A. 1992 'A late Roman coin hoard' in Nevell M. *Tameside before 1066,* Tameside Metropolitan Borough Council, Manchester, 99.
Shotter D. C. A. 1997 *Romans and Britons in North-West England,* 2nd revised edn, Centre for North-West Regional Studies, University of Lancaster.
Shotter D. C. A. 2000a 'Chester – the evidence of Roman coin loss' *J Chester Archaeological Soc* 75, 33–50.
Shotter D. C. A. 2000b 'Middlewich – the evidence of Roman coin loss' *J Chester Archaeological Soc* 75, 51–60.
Shotter D. C. A. 2000c *Roman Coins from North-West England: Second Supplement,* Centre for North-West Regional Studies, Lancaster.
Shotter D. C. A. 2004 *Romans and Britons in North-West England,* 3rd edn, Centre for North-West Regional Studies, University of Lancaster.
Sidell E. J. 2001 'Archaeology and sea-level change: improved resolution through the combined use of geographical and archaeological methodologies' in Millard A. (ed.) *Archaeological Sciences 97. Proceedings of the Conference held at the University of Durham, 2nd–4th September 1997,* BAR Int Ser 939, Oxford, 185–92.
Simpson G. 1968 'The samian pottery' in Mountford A. R., Gee J. and Simpson G. 'The excavation of an early Neronian pottery kiln and workshop at Trent Vale, Stoke-on-Trent' *North Staffs J Field Studies* 8, 19–38.
Simpson G. 1979 'Some British and Iberian penannular brooches and other early types in the Rhineland and the "Decumates Agri" ' *Antiquaries J* 59, 319–42.
Sjøvold T. 1962 *The Iron Age Settlement of Arctic Norway 1: Early Iron Age,* Tromsø Museums Skrifter 10.1, Universitetsforlage, Tromsø.
Smith A. G., Grigson C., Hillman G. and Tooley M. J. 1981 'The neolithic' in Simmons I. G. and Tooley M. J. (eds) *The Environment in British Prehistory,* Duckworth, London, 125–209.
Smith A. H. 1956 *English Place-Name Elements. Part II: The Elements Jafn-Ytri*, Cambridge University Press, Cambridge.
Smith F. G. 1932 'Talacre and the Viking grave' *Proc Llandudno Colwyn Bay and Dist Field Club* 17, 42–50.
Smith G. 1924 'Some evidences of early man within and near to the northern portion of the Vale of Clwyd' *Proc Liverpool Geological Soc* 14, 117–22.
Smith I. F. 1979 'The chronology of British stone implements' in Clough T. H. McK. and Cummins W. A. (eds), *Stone Axe Studies,* CBA Research Report 11, CBA, London, 13–22.
Smith J. B. 1998 'More votive finds from Woodeaton, Oxfordshire' *Oxoniensia* 63, 147–85.
Smith R. A. 1926 'Two early British bronze bowls' *Antiquaries J* 6, 276-83
Smith R. A. 1937 'Coventry Treasure Trove' *Brit Mus Quart* 11.4, 167 no. 90.
Smith R. W. 1984 'The ecology of neolithic farming systems as exemplified by the Avebury region of Wiltshire' *Proc Prehistoric Soc* 50, 99–120.
Snape M. 1993 *Roman Brooches from North Britain,* BAR Brit Ser 235, Tempvs Reparatvm, Oxford.
Sotheby Sale Catalogue 1981 *Boucles et Accessoires du Costume de l'Antiquité et du Moyen Age*, Sotheby Parke Bernet, Monaco (sale at Monte Carlo, Monaco, 16/6/81).
Sparkes I. G. 1976 *Old Horseshoes*, Shire Album 19, Aylesbury.
Spencer B. 1961 'Two additions to the London Museum' *Trans London Middx Archaeol Soc* 20.4, 214–17.
Spencer B. 1980 *Medieval Pilgrim Badges from Norfolk*, Norfolk Museums Service, Norwich.
Spencer B. 1982 'Pilgrim souvenirs from the medieval waterfront excavations at Trig Lane, London 1974–76' *Trans London Middlesex Archaeol Soc* 33, 304–23.
Spencer B. 1990 *Pilgrim Souvenirs and Secular Badges*, Salisbury and South Wiltshire Museum Medieval Catalogue 2, Salisbury.
Spencer B. 1998 *Pilgrim Souvenirs and Secular Badges,* Medieval Finds from London Excavations 7, HMSO, London.
Spokes S. 1927 'Discovery of a Carthaginian coin near the Caburn' *Sussex Archaeol Collns* 68, 57–9.

Stammers M. K. 1976 *West Coast Shipping,* Shire Publications, Aylesbury.
Stanford H. 1953 *The Queen's Beasts*, Newman Neame, London.
Stanford S. C. 1967 'The deserted medieval village of Hampton Wafer, Herefordshire' *Trans Woolhope Naturalists' Field Club* 39, 71–92.
Starkey D. J., Reid C. and Ashcroft N. 2000 *England's Sea Fisheries: The Commercial Sea Fisheries of England and Wales since 1300,* Chatham Publishing, London.
Stead I. M. 1976 *Excavations at Winterton Roman Villa and Other Roman Sites in North Lincolnshire,* HMSO, London.
Stead I. M. 1986a 'The brooches' in Stead I. M. and Rigby V. *Baldock: The Excavation of a Roman and Pre-Roman Settlement, 1968–72,* Britannia Monograph Series 7, Society for the Promotion of Roman Studies, London, 108–25.
Stead I. M. 1986b 'Other bronze objects' in Stead I. M. and Rigby V. *Baldock: The Excavation of a Roman and Pre-Roman Settlement, 1968–72,* Britannia Monograph Series 7, Society for the Promotion of Roman Studies, London, 125–40.
Stead I. M. and Rigby V. 1986 *Baldock. The excavation of a Roman and Pre-Roman settlement, 1968–72,* Britannia Monograph Series No 7, Society for the Promotion of Roman Studies, London.
Stead I. M. 1993 'Iron Objects' in Ellis P. (ed.) *Beeston Castle, Cheshire: a Report on the Excavations 1968–85 by Laurence Keen and Peter Hough,* HBMCE Archaeological Rep 23, London, 53–4.
Stead I. M. and Rigby V. 1989 *Verulamium: the King Harry Lane site,* English Heritage Archaeological Report 12, English Heritage, London.
Steane J. M. and Foreman M. 1988 'Medieval fishing tackle' in Aston M. (ed.) *Medieval Fish, Fisheries and Fishponds in England*, BAR 182, Oxford, 137–86.
Steane J. M. and Foreman M. 1991'The archaeology of medieval fishing tackle' in Good G. L., Jones R. H. and Ponsford M. W. (eds) *Waterfront Archaeology,* CBA Research Rep 74, London, 88–104.
Stewart T. D. 1979 *Essentials of Forensic Anthropol*, Charles C. Thomas, Springfield, Illinois.
Stewart-Brown R. 1910 'Cheshire Chamberlain's Accounts 1301–1360' *Rec Soc Lancashire Cheshire* 59.
Stewart-Brown R. and Mills M. (eds) 1938 *Cheshire in the Pipe Rolls 1158–1301,* Record Soc Lancashire Cheshire 92.
Stimson A. 2005 'The navigation instruments' in Gardiner J. (ed.) *Before the Mast: Life and Death aboard the Mary Rose, The Archaeology of the Mary Rose* 4, *Mary Rose* Trust, Portsmouth, 267–81.
Stone L. M. 1974 *Fort Michilimackinac 1715–1781: An Archaeological Perspective on the Revolutionary Frontier*, Michigan State University Museum/Mackinac Island State Park Commission, East Lansing, Michigan.
Strickland T. J. 1978 'Our Understanding of Roman Chester in the early 1960's' in Strickland T. J. and Davey P. J. (eds) *New Evidence for Roman Chester,* Institute of Extension Studies, Liverpool, 7-8.
Strickland T. J. 1995 *The Romans at Wilderspool; The story of the first industrial development on the Mersey,* Greenalls Group PLC, Warrington.
Strickland T. J. 2003 'Roman Chester' in Lewis C. P. and Thacker A. T. (eds) *The Victoria History of the County of Chester,* Volume V, Part 1, OUP for Institute of Historical Research, London, 9–15.
Stuart-Macadam P. 1992 'Porotic hyperostosis: a new perspective' *Amer J Physical Anthropol* 87, 39–47.
Sulley P. 1889 *The Hundred of Wirral,* B. Haram and Co., Birkenhead.
Stuiver M. and Pearson G. W. 1986 'High precision calibration of the radiocarbon time-scale, AD 1950-500 BC' *Radiocarbon*, 28, 805-38.
Stuiver M., Pearson G. W. and Brazunias T. 1986 'Radiocarbon age calibration of marine samples back to 9000 Cal 1/r BP' *Radiocarbon*, 28, 980-1021.
Stuiver M. and Reimer P. J. 1986 'A computer program for radiocarbon age calculation' *Radiocarbon* 28, 1022–30.
Summerfield J. 1997 'The small finds' in Wilmott T. *Birdoswald: Excavation of a Roman fort on Hadrian's Wall and its successor settlements: 1987–92*, English Heritage Archaeol Report 14, English Heritage, London, 269–361.
Swan V. and Philpott R. A. 2000 'Legio XX VV and tile production at Tarbock, Merseyside' *Britannia* 31, 55–67.
Swann J. 1981 *Shoe Buckles: Catalogue of Shoe and Other Buckles in Northampton Museum*, Northampton Museum, Northampton.
Swann J. 1982 *Shoes,* Batsford, London.
Swanson R. N. 1989 *Church and Society in Late Medieval England,* Blackwell Publications, Oxford.
Swanton M. 1964 'An Anglo-Saxon Cemetery at Londesborough in East Yorkshire' *Yorkshire Archaeol J* 41, ii, 273-4.
Sylvester D. 1957 'The open fields of Cheshire' *Trans Hist Soc Lancashire Cheshire* 108, (for 1956), 1–33.

Tait J. 1920 *The Chartulary or Register of the Abbey of St Werburgh, Chester, Part I,* Chetham Soc New Ser 79.
Tait J. 1923 *The Chartulary or Register of the Abbey of St. Werburgh Chester, Part II,* Chetham Soc New Ser 82.
Talbot E. J. 1977 'Deganwy Castle' in Davey P. J. (ed.) *Medieval Pottery from Excavations in the North West*, University of Liverpool, Liverpool, 30–3.
Tassinari S. 1975 'La Vaisselle de Bronze, Romaine et Provinciale, au Musée des Antiquités Nationales' *Gallia Supp*. 29, Paris.
Taylor A. J. 1963 'The King's Works in Wales' in Colvin H.M. (ed.) *The History of the King's Works*, Vols. I and II, HMSO, London.
Taylor C. 2004 'Ravensdale Park, Derbyshire, and medieval deer coursing' *Landscape History* 26, 37–57.
Taylor M. V. (ed.) 1912 *Liber Luciani de Laude Cestrie,* Record Society Lancashire Cheshire, 64, 1–75.
Taylor J. du Plat and Cleere H. (eds) 1978 *Roman Shipping and Trade: Britain and the Rhine Provinces,* CBA Research Report 24,, London.
Taylor R. 1974 *Weoley Castle. Hand List of Exhibits,* Birmingham.
Thacker A. T. 1987 'Anglo-Saxon Cheshire' in Harris B. E. and Thacker A. T. (eds) *The Victoria History of the County of Chester Volume 1*, OUP for Institute of Historical Research, London, 237–92.
Thacker A. T. 1988 'Early Medieval Chester: the historical background' in Hodges R. and Hobley B. (eds) *The Rebirth of Towns in the West,* CBA Research Report 68, London, 119–24.
Thacker A. T. 2003a 'Early Medieval Chester' in Lewis C. P. and Thacker A. T. (eds) *The Victoria History of the County of Chester*, Volume V, Part 1, OUP for

Institute of Historical Research, London, 16–33.
Thacker A. T. 2003b 'Late Medieval Chester' in Lewis C. P. and Thacker A. T. (eds) *The Victoria History of the County of Chester*, Volume V, Part 1, OUP for Institute of Historical Research, London, 34–89.
Thacker A. T. 2003c 'Topography, 900–1914' in Lewis C. P. and Thacker A. T. (eds), *The Victoria History of the County of Chester*, Volume V, Part 1, OUP for Institute of Historical Research, London, 206–38.
Thacker A. T. 2005a 'Water transport' in Lewis C. P. and Thacker A. T. (eds), *The Victoria History of the County of Chester*, Volume V, Part 2, OUP for Institute of Historical Research, London, 83–90.
Thacker A. T. 2005b 'Mills and Fisheries' in Lewis C. P. and Thacker A. T. (eds.), *The Victoria History of the County of Chester*, Volume V, Part 2, London, 104-13.
Thacker A. T. 2005c 'City walls and gates' in Lewis C. P. and Thacker A. T. (eds) *The Victoria History of the County of Chester*, Volume V, Part 2, OUP for Institute of Historical Research, London, 213–24.
Thomas C. 1981 *Christianity in Roman Britain to AD 500,* Batsford, London.
Thomas C. 1990 '"Gallici Nautae de Galliarum Provinciis" – A Sixth/Seventh Century Trade with Gaul, reconsidered' *Medieval Archaeol* 34, 1–26.
Thomas C. and Bogdan N. Q. forthcoming 'The leather-work' in *The Perth High Street Archaeological Excavation 1975–1977.*
Thomas G. 2003 'Late Anglo-Saxon and Viking strap-ends 750–1100, Part 1' *Finds Research Group AD 700–1700, Datasheet* 32.
Thomas G. 2004 'Late Anglo-Saxon and Viking strap-ends 750–1100, Part 2' *Finds Research Group AD 700–1700, Datasheet* 33.
Thomas G. forthcoming 'The Anglo-Saxon hooked tags from Vesle Hjerkinn' in Weber B. *et al. Vesle Hjerkinn, Final Excavation Report.*
Thomas G. S. P. 1985 'The quaternary of the Northern Irish Sea Basin' in Johnson R. H. (ed.) *The Geomorphology of the North-West England,* Manchester University Press, Manchester, 143–58.
Thompson F. H. 1956 'Pilgrim's flask from Meols' *J Chester Archaeol Soc* 43, 48–9.
Thompson F. H. 1958 'Miscellanea' *J Chester Archaeol Soc* 45, 71–4.
Thompson F. H. 1962 'Late Saxon pin from Linenhall Street' *J Chester Archaeol Soc* 49, 59.
Thompson F. H. 1965 *Roman Cheshire*, Cheshire Community Council, Chester.
Thompson F. H. 1976 'The excavation of the Roman amphitheatre at Chester' *Archaeologia* 105, 127–239.
Thompson J. D. A. 1956 *Inventory of British Coin Hoards AD 600–1500*, Royal Numismatic Soc., London.
Thompson Watkin W. 1883 *Roman Lancashire* (reprinted in 1969 by S. R. Publishers Ltd), Thomas Brakell, Liverpool.
Thompson Watkin W. 1886 *Roman Cheshire* (reprinted in 1974 with a preface by D. F. Petch), EP Publishing, Wakefield.
Toft L. A. 1988 'A study of coastal village abandonment in the Swansea Bay Region 1270–1540' *Morgannwg* 32, 21–37.
Tooley M. J. 1970 'The peat beds of the south-west Lancashire coast' *Nature in Lancashire* 1, 19–26.
Tooley M. J. 1974 'Sea-level changes during the last 9,000 years in north-west England' *Geographical J* 140, 18–42.
Tooley M. J. 1976 'Flandrian sea-level changes in west Lancashire and their implications for the "Hillhouse coastline" ' *Geological J* 11(2), 37–52.
Tooley M. J. 1978 *Sea-Level Changes: North-West England During the Flandrian Stage,* Clarendon Press, Oxford.
Tooley M. J. 1980 'Theories of coastal change in north-west England' in Thompson F. H. (ed.) *Archaeology and Coastal Change,* Soc of Antiquaries Occasional Paper 1, London, 74–86.
Tooley M. J. 1982 'Sea-level changes in northern England' *Proc Geologists' Assoc* 93, 43–51.
Tooley M. J. 1985 'Sea-level changes and coastal morphology in north-west England' in Johnson R. H. (ed.) *The Geomorphology of the North-West England,* Manchester University Press, Manchester, 94–121.
Tooley M. J. 1990a 'The chronology of coastal dune development in the United Kingdom' *Catena Suppl*, 18, 81–88.
Tooley M. J. 1990b 'Sea-level and coastline changes during the last 5000 years' in McGrail S. (ed.) *Maritime Celts, Frisians and Saxons,* CBA Research Report 71, London, 1–16.
Toulmin Smith L. (ed.) 1964 *The Itinerary of John Leland in or about the Years 1535–1543*, 5 volumes, London, 1907–10; reprinted 1964, Southern Illinois University Press, Carbondale.
Travis C. B. 1926 'The peat and forest bed of the south-west Lancashire coast' *Proc Liverpool Geol Soc* 14, 263–77.
Travis C. B. 1929 'The peat and forest beds of Leasowe, Cheshire' *Proc Liverpool Geol Soc* 15, 157–78.
Travis W. G. 1908 'On plant remains in peat in the Shirdley Hill Sand at Aintree, south Lancashire' *Trans Liverpool Botanical Soc* 1, 47–52.
Travis W. G. 1922 'On peaty beds in the Wallasey sand-hills' *Proc Liverpool Geol Soc* 13, 3, 207–14.
Trotter M. and Gleser G. C. 1952 'Estimation of stature from long bones of American whites and negroes' *Amer J Physical Anthropol* 10, 463–514.
Trotter M. and Gleser G. C. 1958 'A Re-evaluation of estimation based on measurements of stature taken during life and of long bones after death' *Amer J Physical Anthropol* 16, 79–123.
Turner R. C., Sale C. B. and Axworthy Rutter J. A. 1986 'A medieval garden at the Belgrave Moat, Cheshire' *J Chester Archaeol Soc* 69, 59–77.
Turner W. E. S. 1956 'Studies in ancient glass and glass-making processes. Part III. The chronology of the glassmaking constituents' *J Soc Glass Technology* 40, 39–52.
Tweddle D. 1986 *Finds From Parliament Street and Other Sites in the City Centre*, The Archaeology of York 17/4, York Archaeological Trust/CBA, York.
Twemlow J. A. 1918 *Liverpool Town Book. Vol. I 1550–1571,* University Press, Liverpool.
Tyers P. 1993 'The plain samian ware' in Manning W. H. *Report on the Excavations at Usk. The Roman Pottery,* University of Wales, Cardiff, 125–60.
Tylecote R. F. 1986 *The Prehistory of Metallurgy in the British Isles,* The Institute of Metals, London.
Tyrer F. 1972 *The Great Diurnal of Nicholas Blundell of Little Crosby, Lancashire. Vol. III: 1720–1728,* Record Soc Lancashire and Cheshire 112, Liverpool.
Tyson R. 1996 *Medieval High-Lead Glass Table Vessels*, Finds Research Group 700–1700 Datasheet 21.
Tyson R. 2000 *Medieval Glass Vessels found in England c AD 1200–1500*, CBA Research Report 121, London.

Tyson R. 2004 'Medieval glass vessels used in Ireland c AD 1200–1500' *J Glass Assoc* 7, 7–21.
Tyson R. 2006 'The glass' in Saunders A. D. (ed.) *Launceston Castle Excavations*, Society for Medieval Archaeology Monograph Series 24, 341-55.

Ullrich D. G. 1989 'Halbedelsteine und Glasfunde' in A. von Müller and K. von Müller-Muci (eds), *Ausgrabungen, Funde und Naturwissenschaftliche Untersuchungen auf dem Burgwall in Berlin-Spandau*, 57–99, 253–60.

van Arsdell R. D. 1989 *Celtic Coinage of Britain,* Spink and Son, London.
van Beuningen H. J. E. and Koldeweij A. M. 1993 *Heilig en Profaan: 1000 Laatmiddeleeuwse Insignes uit de Collectie HJE van Beuningen,* Rotterdam Papers 8, Rotterdam.
van Beuningen H. J. E., Koldeweij A. M. and Kicken D. 2001 *Heilig en Profaan* 2: *1200 Laat Middeleeuwse Insignes uit en Particuliere Collecties,* Rotterdam Papers 12, Rotterdam.
Varley W. J. 1964 *Cheshire Before the Romans,* A history of Cheshire 1, Cheshire Community Council, Chester.
Varley W. J. and Jackson J. W 1940 *Prehistoric Cheshire,* Cheshire Rural Community Council, Chester.
Vaughan J. E. 1981 'The leather' in Harbottle B. and Ellison M. 'An excavation in the castle ditch, Newcastle-upon-Tyne, 1974–6' *Archaeol Aeliana* 9, 184–90.
Vipond P. 1993 'Harrow Fields in Heswall-cum-Oldfield' *J English Place-Name Soc* 25, 9–10.
Vlierman K 1996, '…Van Zintelen, van zintelroeden ende Mossen…:' Een Breeuwmethode als Hulpmiddel bij het Dateren van Scheepswrakken uit de Hanzetijde (Scheepsarcheologie 1 /Flevobericht 386) Nederlands Instituut voor Scheeps en Onderwater Archeologie/Rijksdienst voor het Oudheidkundig Bodemonderzoek, Lelystad, Netherlands.
von Falke O. and Meyer E. 1983 *Romanische Leuchter und Gefässe: Giessgefässe der Gotik,* Bronzegeräte des Mittelalters 1, Berlin.

Waddell J. 2000 *The Prehistoric Archaeology of Ireland*, Wordwell, Bray
Waddelove A. 2001 'The River Dee and the Deva Harbour: a reassessment' in Higham N. J. (ed.) 2001 *Archaeology of the Roman Empire,* BAR Int Ser 940, Oxford, 131–40.
Waddelove A. C. and Waddelove E. 1990 'Archaeology and research into sea level during the Roman era: towards a methodology based on highest astronomical tide' *Britannia* 21, 253–66.
Wagner A. R. 1959 'The swan badge and the swan knight' *Archaeologia* 97, 127–38.
Wain P. 1981 *Romano-British site at Meols*, Unpublished typescript in NML History File, NML, Liverpool.
Wainwright F. T. 1948 'Ingimund's invasion' *Eng Hist Rev* 63, 145–69.
Wainwright F. T. 1975 *Scandinavian England,* (ed. Finberg H. P. R.) Phillimore, Chichester.
Walker D. R. 1988 'The Roman coins' in Cunliffe B. (ed.) *The Temple of Sulis Minerva at Bath, volume 2: The finds from the sacred spring,* Oxford University Committee for Archaeology, Oxford.
Walton P. 1991 'Textiles' in Blair J. and Ramsey E. (eds) *English Medieval Industries. Craftsmen, Techniques, Products*, Hambledon Press, London, 319–54.
Walton Rogers P. 1997 *Textile Production at 16–22 Coppergate*, The Archaeology of York 17/11, CBA for York Archaeological Trust, York.
Wamers E. 1994, *Die Frühmittelalterlichen Lesefund aus der Löhrstrasse (Baustelle Hilton 2) in Mainz,* Mainzer Archäologische Schriften 1, Mainz.
Ward S. W. 1990 *Excavations at Chester: The Lesser Medieval Religious Houses: Sites Investigated 1964 – 1983* Grosvenor Museum Excavation and Survey Reports, 6, Chester.
Ward S. W. 1994 *Excavations at Chester, Saxon Occupation within the Legionary Fortress, sites investigated 1963–81,* Chester Archaeological Service Excavation and Survey Reports 7, Chester.
Ward S. W. 1996 'The course of the River Dee at Chester' in Carrington P. (ed.) *'Where Deva Spreads her Wizard Stream': Trade and the Port of Chester,* Chester Archaeology Occasional Paper 3, Chester, 4–11.
Warhurst M. 1982 *Sylloge of Coins of the British Isles. Vol. 29: Merseyside County Museums,* British Academy, London.
Warhurst M. 1985 'The bale tokens' in Davey P. J. and McNeil R. (eds) 'Excavations in South Castle Street, Liverpool 1976 and 1977' *J Merseyside Archaeol Soc* 4, 138–9.
Warner R. 1996 'Yes, the Romans did invade Ireland' *British Archaeol* 14 (May), 6.
Waterman D. 1959 'Late Saxon, Viking and early medieval finds from York' *Archaeologia* 97, 59–105.
Watson R. C. and McClintock M. E. 1979 *Traditional Houses of the Fylde,* Centre for North-West Regional Studies Occasional Paper 6, University of Lancaster, Lancaster.
Weber B. 1987 'Vesle Hjerkinn – A Viking age mountain lodge? A preliminary report' in Knirk J. E. (ed.) *Proceedings of the Tenth Viking Congress, Larkollen, Norway 1985*, Universitetets Oldsaksamling, Oslo, 103–11.
Webster G. and Dudley D. R. 1965 *The Roman Conquest of Britain,* B. T. Batsford Ltd, London.
Webster G. and Dunning G. C. 1960 'A medieval pottery kiln at Audlem, Cheshire' *Medieval Archaeol* 5, 109–25.
Webster J. 1992 'The Bronze objects' in Hinchliffe J. and Williams J. H. *Roman Warrington: Excavations at Wilderspool,* Dept of Archaeology, University of Manchester, Manchester, 90–4.
Webster P. V. 1989 'The Pottery' in O'Leary T. J., Blockley K. and Musson C. 1989 *Pentre Farm, Flint 1976-81: An official building in the Roman lead mining district*, BAR Brit Ser 207, Oxford, 94-123.
Webster P. V. 1993 'Coarse Pottery' in Casey J. and Davies J. L. *Excavations at Segontium (Caernarfon) Roman Fort, 1975–1979,* CBA Research Report 90, London, 250–316.
Webster P. V. 1996 *Roman Samian Pottery in Britain,* CBA Practical Handbook in Archaeology 13, York.
Wedepohl K. H., Krueger I. and Hartmann G. 1995 'Medieval lead glass from northwestern Europe' *J Glass Studies* 37, 65–82.
Welch C. 1902 *History of the Worshipful Pewterers Company*, Blades, East and Blades, London.
Wells C. 1982 'The human burials' in McWhirr A., Viner, A. and Wells C. (eds) *Roman-British Cemeteries at Cirencester,* Cirencester Excavation Committee, Cirencester, 135–72.
Wheeler D. and Mayes J. (eds) 1997 *Regional Climates of the British Isles,* Routledge, London.

Whimster R. 1981 *Burial Practices in Iron Age Britain: A Discussion and Gazetteer of the Evidence c. 700 B.C. – A.D. 43,* BAR Brit Ser 90, Oxford.
White R. B. 1978 'Excavations at Trwyn Du, Anglesey 1974' *Arch Cambrensis* 127, 16–39.
White R. H. and Barker P. A. 1998 *Wroxeter: Life and Death of a Roman City,* Tempus Publishing Ltd, Stroud.
White S. 1986 'A late Roman fixed plate buckle from Highdown, Ferring, W. Sussex' *Medieval Archaeol* 30, 91–2.
White S. D. 2004 *The Dynamics of Regionalisation and Trade: Yorkshire Clay Tobacco Pipes c1600–1800*, BAR Brit Ser 374, Oxford.
Whitelock D. 1979 *English Historical Documents 1, 500–1042*, 2nd edn, Eyre Methuen, London.
Wild F. 2002 'The development of the Roman road system in the north-west: the evidence of the samian ware' *Britannia* 33, 268–74.
Wild J. P. 1970 'Button-and-loop fasteners in the Roman provinces' *Britannia* 1, 137–55.
Wild J. P. 2002 'Textile industries of Roman Britain' *Britannia* 33, 1–42.
Wilkinson M. 1979 'The fish remains' in Maltby M. *Faunal Remains on Urban Sites: The Animal Bones from Exeter,* Department of Prehistory and Archaeology, University of Sheffield, Sheffield, 74–81.
Wilkinson M. 1982a 'Fish' in T. O'Connor 'Animal bones from Flaxengate, Lincoln *c.* 870–1500' *The Archaeology of Lincoln* 18.1, CBA for Lincoln Archaeol Trust, London, 4–6.
Wilkinson M. 1982b 'Fishbones' in Higham R. A., Allan J. P. and Blaylock S. R. 1982 'Excavations at Okehampton Castle, Devon. Part 2 – the Bailey' *Devon Archaeological Soc Proc* 40, 135–8.
Willan T. S. 1951 'The navigation of the River Weaver in the eighteenth century' *Chetham Soc* 3rd ser. 3, Manchester.
Willemsen A. 1998 *Kinder Delijt: Middeleeuws Speelgoed in de Nederlanden (Nijmegse Kunsthistorische Studie* 6), Katholiek Universiteit Nijmegen, Netherlands.
Williams C. 1995 'Cross-Bearing Grave Slabs in Merseyside' *J Merseyside Archaeol Soc* 9, 79–95.
Williams D. 1997 *Late Saxon Stirrup-Strap Mounts, A Classification and Catalogue,* CBA Research Report 111, York.
Williams J. H., Shaw M. and Denham V. 1985 'Middle Saxon palaces at Northampton' *Northampton Development Corporation Archaeol Monogr 4*, Northampton.
Williamson G. C. 1986 *Seventeenth Century Tokens of the British Isles and Their Values,* revised edn by Dickinson M., Seaby, London.
Wilson D. M. 1964 *Anglo-Saxon Ornamental Metalwork 700–1100, Catalogue of Antiquities of the Anglo-Saxon Period 1*, British Museum, London.
Wilson D. M. 1966 'A Medieval Boat from Kentmere, Westmorland' *Medieval Archaeol* 10, 81-8.
Wilson D. M. 1976 'Scandinavian settlement in the north and west of the British Isles, An archaeological point of view' *Trans Roy Hist Soc* 26 (5 ser), 95–114.
Wilson K. P. (ed.) 1969 *Chester Customs Accounts 1301–1566,* Record Soc Lancashire Cheshire 111, Liverpool.
Winston-Allen A. 1997 *Stories of the Rose. The Making of the Rosary in the Middle Ages*, University Park, PA, The Pennsylvania State University Press.
Withers P. and Withers B. 1993 *British Coin Weights: A Corpus of the Coin Weights Made for Use in England, Scotland and Ireland*, Galata Print, Llanfyllin.
Witt J. 2000 *Werke der Alltagskultur, Teil 1: Menasampullen*, Staatliche Museen zu Berlin – Preussischer Kulturbezits, Skulpturensammlung und Museum für Byzantinische Kunst, Bestandkataloge Vol. 2. Wiesbaden.
Wood L. S. and Wilmore A. 1927 *The Romance of the Cotton Industry in England*, OUP, Oxford.
Wood M. 1981 *In Search of the Dark Ages*, BBC Books, London.
Woodfield C. 1981 'Finds from the Free Grammar School at the Whitefriars, Coventry, c1545–c1557/58' *Post-Medieval Archaeol* 15, 81–159.
Woods E. C. and Brown P. C. 1960 *The Rise and Progress of Wallasey: A History of the Borough,* 2nd edn, Wallasey Corporation, Wallasey.
Woodward A. 1993 'The prehistoric pottery' in Ellis P. (ed.) *Beeston Castle, Cheshire: A Report on the Excavations 1968–85*, English Heritage, London, 63–79.
Worrell S. 2006 'Roman Britain in 2005. II. Finds reported under the Portable Antiquities Scheme' *Britannia* 37, 429–66.
Wren C. R. 1995 *English Long-Cross Pennies 1279–1489,* Plantagenet Books, Herne Bay.
Wright J. 1996 *Higher Lane, Fazakerley, Merseyside: Final Report of Evaluation and Excavation,* Unpublished report, Lancaster University Archaeological Unit (in MSMR).
Wylie W. M. 1852 *Fairford Graves*, Privately published, Oxford.
Wynne M. E. 1959 *The Role of the River Mersey in the Bronze Age* Unpublished MA Thesis, University of Liverpool (ii), Liverpool.

Youngs S. 2002 'Cumbria, Arnside' in Geake H. (ed.) 'Medieval Britain and Ireland 2001' *Medieval Archaeol* 46, 129–30.
Youngs S. and Herepath N. 2001 'Cumbria, Arnside' in Geake H. (ed.) 'Medieval Britain and Ireland 2000' *Medieval Archaeol* 45, 237–8.

Zeepvat R. 1992 'The finds' in Mynard D. C. and Zeepvat R. (eds) *Excavations at Great Linford, 1974–80, Buckinghamshire Archaeol Soc Monograph* 3, 137–213.
Zvelebil M. 1986 'Mesolithic prelude and Neolithic revolution' in Zvelebil M. (ed.) *Hunters in Transition,* Cambridge University Press, Cambridge, 5–16.
Zvelebil M. and Rowley-Conwy P. 1986 'Foragers and farmers in Atlantic Europe' in Zvelebil M. (ed.) *Hunters in Transition,* Cambridge University Press, Cambridge, 67–93.

Extended Reference List of Contents

V: Copper alloy, lead and glass objects

VI, Conjectural reconstructions of Meols by Sarah Pevely
Fig. 5.1.1 *above*: Medieval Meols, from above looking west. Fig. 5.1.2 *below*: Medieval beach market scene

Meols, on the north coast of the Wirral Peninsula (north-west England), is one of Britain's richest and most fascinating archaeological landscapes. As a low sandy promontory known as Dove Point was gradually destroyed by the sea during the 19th century, the remains of ancient settlement sites were exposed along the foreshore and in the sand-dunes near the water's edge. Thousands of artefacts from the prehistoric, Roman, medieval and post-medieval periods were picked up from the eroding coastline.

A devoted group of Victorian collectors saved much of the material for posterity, and left many records and observations, including descriptions of ancient burials and buildings. These have been augmented by further discoveries in the 20th century. This monograph presents the first modern and comprehensive study of Meols, together with a catalogue of the surviving material.

Front cover: Aerial photograph of the Meols shore looking west, 2001 (Robert Philpott) © National Museums Liverpool.

Back cover: Detail from *An Abridged Plan of the River Dee and Hyle Lake surveyed in the Year 1732 by John Mackay Math.*

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ISBN 978-1-905905-03-4

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