

Northern Emporium

Vol. 2 The networks of Viking-age Ribe

Edited by Søren M. Sindbæk

Jutland Archaeological Society

Northern Emporium

Vol. 2 The networks of Viking-age Ribe

RIBE STUDIER 3

© Authors, editor and Jutland Archaeological Society 2023

ISBN 978-87-93423-82-4

ISSN 0107-2854

Jutland Archaeological Society Publications vol. 123

Layout and cover: Ea Rasmussen

Language revision: Taylor Grace Fitzgerald & Christina Levisen

Photos except where otherwise credited: Museum of Southwest Jutland

Cover photos: Bird-shaped pendant of amber, find no. A104 X184, ID 200293068;
and micrograph of wrought iron with slag inclusions, find no. A355 X799, ID 200304175.

Printed by Narayana Press

Paper: 130g Arctic Volume White

Published by

Jutland Archaeological Society

Moesgård Allé 20

DK-8270 Højbjerg

Distributed by

Aarhus Universitetsforlag A/S

Finlandsgade 29

DK-8200 Aarhus N

Published with financial support of:

Queen Margrethe II's Archaeological Foundation

The Carlsberg Foundation

The Danish National Research Foundation's Centre for

Urban Network Evolutions (UrbNet), grant DNRF119.



Contents

Preface	7
1. Excavating Ribe's networks <i>Søren M. Sindbæk</i>	9
2. The pottery from Posthustorvet <i>Maria Knudsen</i>	21
3. Rhenish and other imported pottery <i>Christoph Keller</i>	53
4. Tating ware <i>Pieterjan Deckers</i>	69
5. A Samian ware sherd and the recycling of Roman materials <i>Rubina Raja & Søren M. Sindbæk</i>	83
6. Stone and shell products <i>Søren M. Sindbæk & Gry H. Barfod</i>	87
7. Whetstones and touchstones <i>Irene Baug, Dagfinn Skre, Torkil Sørli-Røhr & Tom Heldal</i>	103
8. The numismatic evidence from Posthustorvet <i>Claus Feveile</i>	115
9. Non-ferrous metals: Ornaments, fittings, and vessels <i>Pieterjan Deckers & Søren M. Sindbæk</i>	147
10. Non-ferrous metalworking and the figurative casting moulds from Posthustorvet <i>Pieterjan Deckers</i>	171
11. Iron and slag <i>Line Korsholm Lauridsen, Maryam Alizadeh Zolbin & Thomas Birch</i>	183
12. Vessel-glass sherds from Posthustorvet <i>Lene Lund Feveile</i>	201
13. Glass beads and beadmaking <i>Søren M. Sindbæk</i>	239
14. Bone- and antlerworking <i>Sarah Skytte Qvistgaard & Søren M. Sindbæk</i>	283
15. Amber <i>Søren M. Sindbæk</i>	319

16. Runic inscriptions	329
<i>Lisbeth M. Imer & Søren M. Sindbæk</i>	
17. The leather from Posthustorvet	339
<i>Line Korsholm Lauridsen, Luise Ørsted Brandt, Jacob Kveiborg, & Anna K.E. Tjellén</i>	
18. Textile production	351
<i>Sarah Croix</i>	
19. Textile finds	379
<i>Ulla Mannering</i>	
20. Wood	385
<i>Sarah Croix, Peter Hambro Mikkelsen & Søren M. Sindbæk</i>	
21. Musical instruments	403
<i>Søren M. Sindbæk</i>	
22. An urban network of the Viking Age	411
<i>Søren M. Sindbæk</i>	
List of authors	431

Preface

What made a Viking-age emporium something other than a village was not its size but the activities it housed. If we could move through the streets of Ribe in the eighth or ninth century, we would meet people and see things that were not an everyday sight at that time. Here were travellers with goods from faraway places, with languages and customs brought from different worlds. And here were skilled craftsmen who had spent years learning to make ingenious things such as padlocks, gilded costume jewellery, or delicate antler combs that the most dexterous village craftsman could match. The artisans, the merchants, and their buyers came together here because ships made their journey possible. Ships also provided the craftsmen with necessary materials and with a constant demand for their skills. People's activities in the emporium revolved around maritime networks.

In 2017–2018, with the help of the Carlsberg Foundation, it became possible to carry out a new large excavation in the heart of Ribe's emporium. The excavations were carried out as the first stage of the Northern Emporium project, in collaboration between researchers from the Danish National Research Foundation's Centre of Urban Network Evolutions (UrbNet) at Aarhus University and Museum of Southwest Jutland.

This volume analyses the materials found in this excavation to explore how this early urban place operated and developed in terms of its networks. It complements the first volume, which presented the stratigraphy and constructions of the site, together with the analyses of environmental evidence and geoarchaeology, and discussed the development of Ribe's emporium as a place. The present book presents an overview of all artefact finds, together with essays which explore selected groups of artefacts in closer detail. In this way, it also aims to enable researchers in the future to form a full picture of the archaeological record's potential and to target materials and data relevant for their own investigations. Meanwhile, the studies

concentrate on evidence with particular significance for clarifying the long-distance exchanges, their regional relations and identities, and the activities and interactions between people within the site.

This book completes the publications of the Northern Emporium project. In the first volume of the series, I expounded my gratitude to the great many people who contributed to this project. Once again, I would like to take the opportunity to thank everyone in the excavation and research team at Aarhus University and the Museum of Southwest Jutland, and the many affiliates who contributed; the Carlsberg Foundation and its board, who had faith in the project; the advisory board; and all my colleagues at UrbNet and elsewhere at Aarhus University, who contributed in so many ways.

For the present volume, I would also like to thank the experts who agreed to contribute their specialism as authors to chapters on the wealth of find materials. Of particular importance for their work was the detailed digital recording of the more than 107,000 artefact finds, most of them with excellent photographs. This work was undertaken by the extremely skilled curator team at the Museum of Southwest Jutland. The results can be accessed and researched freely on the open online database sol.sydvestjyskemuseer.dk/

The archive created by the Northern Emporium project is by no means exhausted with this publication. The great assemblage of contextually recorded artefact finds and the large collection of environmental and geoarchaeological samples were specifically collected with the intention to form a resource for research beyond the framework of the initial project. With these two volumes, however, in addition to the excavation data and artefact records and photos stored in the open online data archive of the Museum of Southwest Jutland, that resource is now thoroughly mapped and accessible to researchers of the past, in the future.

Søren M. Sindbæk

Excavating Ribe's networks



Søren M. Sindbæk

Emporia

The earliest urban sites in Scandinavia emerged during the eighth century AD as part of the changes we describe as the Viking Age. These were a branch of the family of maritime and riverine trading settlements or *emporia* which had first appeared in the North Sea region during the previous century (Skre 2008; Kleingärtner 2013; Naylor 2016; Tys 2020). These places were created in close conjunction with a new technology that was finding its way into society at the time: sailing ships used for transportation on the open sea. The handling of these – and the exchanges they afforded – were what brought people together at the optimal landing sites. Ribe on the western coast of Jutland was one of these places, a river-mouth port which became a nodal point of maritime interaction from around AD 700 (Feveile, ed. 2006; Søvstø 2020). It is the earliest such site presently known in a Scandinavian country. Moreover, it contains some of the most intact archaeological remains from any site in this incipient urban network.

Northern Europe's early medieval emporia express a new development of social connectivity in these regions (Fig. 1.1). One researcher has aptly compared these small but well-connected settlements to the scattered sprawl of mushrooms, which signal a massive branching of mycelia hidden underground (Dhondt 1962, 246). What was new about these networks was to some extent the simple ability to connect places across the open sea: with sea transport came a need for safe havens to resup-

ply and repair ships and to exchange cargoes. Even more, however, it was a matter of bringing things together in new ways and in unprecedented quantities. This in turn allowed people to make different use of resources and to take up new roles and relations. It exposed societies and individuals to opportunities and threats, and it required them in a broader sense to learn to navigate a new world, one which was not so much larger as differently connected.

Those connections are nowhere more clearly articulated than in the emporia. The populations who gathered here developed lifestyles and practices which must have seemed strange from the point of view of people in the surrounding agrarian landscapes. They lived in fairly small houses with little or no space for domestic animals, crammed together on narrow tenement plots. In virtually every household, by contrast, some residents were pursuing special crafts on a scale not seen in villages in the hinterland. Some of these operations even involved the collaboration of a range of craft specialists. Bartering and exchanges were constant features of life here, as was the use of coins, weights, and scales. Strangers regularly arrived and stayed for a time. Some, perhaps, settled in and found spouses among the inhabitants. Undoubtedly, many people here understood multiple languages.

Some of these changes could also be perceived in society more widely, such as the widening engagements beyond home regions or the intensified crafts production, not least in the outfield regions, from where important



Figure. 1.1. Map of Northern Europe with sites mentioned in the text.

products were procured, such as furs, iron, tar, or hones (Stene & Wangen 2017). These changes were never so intense outside the emporia, however. In terms of economy and social fabric, these could easily be taken for urban societies. And yet they were small and widely scattered, and thus far ‘odd’ in terms of what archaeologists consider typical towns and cities (Sindbæk 2022).

One capacity the emporia certainly had was to render the wider world ‘small’ – creating nodes that allowed widely separated cultures and economies to interact across space (Sindbæk 2007b). From the vantage point of the current age of information, an inescapable question is how effective were such early urban networks, not simply in bringing people and things together, but in catalysing developments and changes across the world. Were

the flows of ideas and commodities funnelled through emporia largely regulated by intra-regional dynamics and politics? Or were urban networks to some extent independent dynamics, able to modify or catalyse the parameters of societies?

The key to address these questions lies in establishing the pace and scale of flows and in identifying the responses they engendered from people in the past. However, on the granular timescales of most archaeological datasets available today, questions of this sort are often to no avail. In order to address them, we need firm anchor points – assemblages offering a record of coherently investigated and tightly characterized materials, contexts, and chronology – in order to inform grand narratives on pivotal societal dynamics (Raja & Sindbæk 2020).

The world and the Viking Age

The growth of long-distance contacts and maritime engagement – both of which are prominently expressed at the emporia – was a key dynamic of the Viking Age. This change registers in the archaeological record in terms of a widening access to non-local objects and materials and to the products of skilled specialists. It is also reflected, not surprisingly, in finds of boats and transport facilities, as well as of maritime centres such as emporia.

Since the early twentieth century, researchers have often pictured these changes as being tightly linked to developments elsewhere. To some, their effective cause was to be found in developments in Western Europe and the Carolingian Empire in particular (Schück 1926, 40; Arbman 1937; Jankuhn 1953; Hodges 1982). Others, notably the numismatist Sture Bolin, went further, noting the numerous Islamic silver coins found among hoarded materials in Scandinavia (Bolin 1953). Bolin and others took the chronology of these hoards as evidence that Scandinavians had taken up intensive trade with the east before AD 800. This trade, it was argued, created a powerful link between the Abbasid Caliphate and Northern Europe, which even contributed to fuel the ascent of Carolingian Western Europe.

Bolin's model saw Carolingian prosperity as a response to a grand trade cycle that made Islamic silver available to the north as a consequence of Abbasid policy, following the establishment of Bagdad in Mesopotamia and developing in tandem with the expansion of Abbasid Indian Ocean trade. As similar explanatory models began to gather wider attention in archaeology and historical studies with the introduction of world-systems models in the 1980s, Bolin's idea became widely explored and endorsed in studies of Viking-age long-distance trade (Noonan 1980; Hodges & Whitehouse 1983, 157). Emporia were presented as 'silver faucets' (Franklin & Shepard 1996, 14) linking up along a 'Northern Arc' between the Middle East and Western Europe (McCormick 2001, 563). Whereas many pre-modern societies are depicted as rooted in a slowly changing order, the 'Northern Arc' thesis implied the idea that the effects of upheavals in the Abbasid lands were received and responded to almost instantly by communities far beyond in Russia and Scandinavia.

Others, however, questioned the evidence for distant dominant centres and for a chronology of swift economic turns transmitted by a transcontinental transport of

Islamic silver coins (Sawyer 1985; Ambrosiani 2002). In this view, the expansion of trade and sailing was chiefly a reflection of growing regional prosperity and organizational power (Ambrosiani & Clarke 1991; Näsman 2000; Wickham 2005, 818). If the 'trade model' of the world-system approach was a grand enticing scheme to link together major developments in world history, some now renounce the 'big pipelines' model of change it implies (Hodges 2012, 6–7).

It remains a fact that Middle Eastern coins and beads did arrive in Scandinavia and the Baltic Sea around AD 800 (cf. Kilger 2008, 221; Callmer 2013; Jankowiak 2020, 111). When seeking to explain the emergence of the Viking-age maritime expansion, researchers thus rightly continue to discuss the role of the 'sudden availability of Abbasid coinage in the east – and western Scandinavia's efforts to find a comparable source of wealth' (Barrett 2008, 681). Where views have changed is how these effects might be conveyed. The question is how flows registered in a few emporia and hoard finds could have large-scale implications for political economies. On this point, the hierarchical view of world-system centres and peripheries is increasingly replaced by a search for distributed networks of interrelated interests (Sindbæk 2007a; 2012; Ashby 2015; Baug et al. 2019).

The dynamics we glimpse behind the expansion of maritime interactions in early Viking-age Northern Europe raise questions that are essential for understanding not only cultural and societal change within a particular period and region but also the scale and impact of connectivity in the past. As globalization has come to be widely explored in archaeology, it has become increasingly apparent that its critical hallmark is not *if*, but *how* and *how promptly* people reacted to changing incentives created elsewhere (Jennings 2010, 3). How and to what extent could opportunities such as the trade cycles engendered by a growing Abbasid Empire in the Middle East affect cultural change like the intensification of long-distance sailing in Northern Europe? This makes the Viking Age a benchmark case for understanding cultural processes in the past.

Solutions to these questions will hinge not simply on evidence of contact but more specifically on evidence which may tell us how swiftly and on what scale such contacts developed. In terms of archaeological practice, these are questions which call for rich contextualization and a firm control of chronology. Once again, they direct

attention to the places where interactions and exchange were focused and where their conjunctures are most vividly in evidence: the emporia.

Urban Network Evolutions

Modern globalization, together with network theory and analysis, has brought wider attention to network perspectives as a dynamic force in social relations. In this process of revaluation, researchers have questioned the widely assumed link between early cities and states and have begun to approach urbanization through different frameworks (Scott 2017; Smith 2019; Raja & Sindbæk 2020; Woolf 2020). In a recent reappraisal, Justin Jennings argues that one reason why the assumed link between urbanism and states has persisted so long is that archaeological evidence of the early, formative years of urban societies is much more difficult to obtain than that pertaining to later, much more extensive cities. He notes that ‘our best window into what life was really like during these early years might not be what these settlements were like after an urban society had fully formed within them a couple of hundred years later’ (Jennings 2016, 18).

This perspective is reflected in the present volume, and in the questions it addresses to the artefact finds from Ribe’s emporium. Places like Ribe arguably offer such a rare ‘window’ into the early formation of some form of urban communities. Some insights are provided by the physical frames of interactions and their development, as analysed in the first volume of this series. For many questions about the networks of communities, however, the most important archaeological evidence is obtained from the artefacts, their distribution, and contextual association.

A re-evaluation of emporia from a perspective of network dynamics is evident in much recent research, which approaches these places in terms of the communities of inhabitants (Skre 2011a; 2011b; Croix 2015) or their cooperation and bottom-up interaction (Croix, Neiß & Sindbæk 2019; Ashby & Sindbæk 2020). It is also visible in approaches that look beyond regional hinterlands and into maritime ‘hinterworlds’ (Taylor 2012), to interaction with a distant ‘outfield’ economy of hunting, collecting, and extraction (Ashby, Coutu & Sindbæk 2015; Hennius 2018; Baug et al. 2019.). It has yet to be addressed, however, from the point of view of

detailed, contextual analyses of artefact assemblages. This is what has been a key ambition for the Northern Emporium project.

Discussions of the emporia has sometimes stalled at the apparently paradoxical evidence for their relatively sophisticated exchange networks and craft industries contrasted with their decidedly unassuming sizes and settlement complexity. This is the root of the long-standing debate about how far they should be considered urban places. The predicament is partly caused by a record that remains slim and partial at many sites. Yet even more importantly, it reflects a perspective that emphasizes political institutions and organization and that assigns urbanism as a stage in a process of social evolution. Reassessments across archaeology have shown how accepted models of ‘early’ urbanism, from ancient Mesopotamia and Greece to medieval Europe, have issued from highly institutionalized urban societies that had developed for centuries prior to their ‘classical’ configuration (Scott 2017; Woolf 2020).

This realization emphasizes the importance of exploring other cases, such as the emporia, where a process of early urbanization may genuinely be followed. New approaches shift the focus away from the planning, monumentality, and public institutions of cities, which have often been the focus of archaeological approaches to urbanism, and towards the networks of interactions that characterized societies. In this perspective, the peculiar configuration of emporia may take on new significance. Yet it is also a perspective that demands new forms of data and sets different requirements for fieldwork methods and priorities in order to illuminate urban networks and their evolution.

The maritime expansion of Scandinavian societies in the Viking Age prompted remarkable changes in terms of the investments and attention required and the prospects, concerns, and opportunities unlocked. The interactions and societal transformations associated with these nautical circuits mark a striking precursor to processes linked to modern globalization. Maritime expansion in the Viking Age thus poses questions as to how and why societies in the past evolved with the sea.

At the centre of these questions, in the best position to provide scientifically legitimate answers, are the emporia. The exploration of sites like Ribe provides our best clues for a history of some of the most intriguing examples of premodern urban networks and their

wider societal implications. Such clues must be based on the ‘high-definition’ articulation of the archaeological record – stratigraphy, chronology, and context – in order to gain any meaningful understanding of the evidence. The key to the questions, however, is in the analysis of the artefact material, which may reveal the flows of things and materials, their uses, and their valuation in a way no other data can provide. It is this material – and the analyses that may expose and validate its significance – which is in focus for the present book. A significance which is basic both for the widest configuration of the early medieval world, and for a small urban node on the edge of its interactions.

Northern Emporium and Posthustorvet

The Northern Emporium project, which conducted excavations and research in the emporium in Ribe in 2016–2022, aimed to create and explore just such a contextual, high-definition archaeological record, which would enable a new approach to an important aspect of the history of early-medieval Northern Europe. Today, Ribe surrounds its twelfth-century cathedral, and is located on a low rise by a river, approximately where the tides from the Wadden Sea meets West Jutland’s old main road, Oksevejen. Long before the episcopal town of Ribe emerged here in the eleventh century, there had been activity near this crossroads in the landscape. Ribe originated along the northern bank of the river, just north of what later became the medieval town, as early as the eighth century. Here, the first traces of the town were excavated in 1972, revealing the earliest place in present-day Denmark we may call a town.

While excavations have regularly uncovered news about Ribe, the emporium’s earliest history was difficult to follow because the opportunities for excavation in the densely populated urban area were limited. The results of the Northern Emporium project have changed a number of assumptions about the history of the site. It was long thought that for the first many years of its history, Ribe existed only as a market that was seasonally filled with boats, stalls, and goods. We can now show that there was a dense, year-round settlement already in the early 700s along the river, with activities similar to those that characterized the place well up into the Viking Age. We have also learned that

this place remained in operation until the beginning of the tenth century and probably beyond that.

Thus, the question remains as to why a place like this emerged in a part of the world that had not previously seen anything resembling trading towns. Archaeologists often explain the emergence of towns as an expression of political development. Indeed, there is little reason to doubt that a place like Ribe relied on local authorities to recognize and protect it. Yet something is missing in that narrative. Whatever political frameworks were in operation, they do not quite explain why leaders would sponsor or protect such a peculiar place, or why anyone would choose to settle there. A common answer is that everyone could benefit from the trade. However, this simply changes the question. Why at that time and not earlier? Why in this particular form? In addition to the political top-down perspective, we must try to understand the towns from the bottom up, in the form of the things they made possible.

This way of approaching the emporium shifts the focus from the political and institutional frames to the networks that enabled a community to exist and to interact with a wider world. The idea of networks offers a different perspective on the place of urbanism in world history and on the archaeology of past urban communities.

Based on a targeted excavation of one of the best-preserved parts of Ribe’s stratigraphy from the eighth and ninth centuries, the Northern Emporium project was designed to obtain evidence for the organization and development of the site; and, by linking its rich artefact record to well-understood and well-dated contexts, to reconstruct the history of its link to the wider world. The present volume presents the artefact finds from the excavation and analyses them as evidence for the evolution of the early urban network in which this emporium formed an important node.

The excavation conducted at Posthustorvet, Ribe, from June 2017 to August 2018 examined an area with up to 2.3 m in depth containing largely intact settlement deposits from the eighth to early tenth century in the heart of Ribe’s emporium. It covered a surface of 124 m², reduced at the bottom level to 76.3 m². The area comprised one almost-complete building plot, together with the adjacent road area and parts of another plot opposite the road (Fig. 1.2). The excavation followed detailed stratigraphic principles and was documented using 3D laser scanning of the surfaces of all excavation units, as detailed in the first volume of this series (Croix et al. 2022).

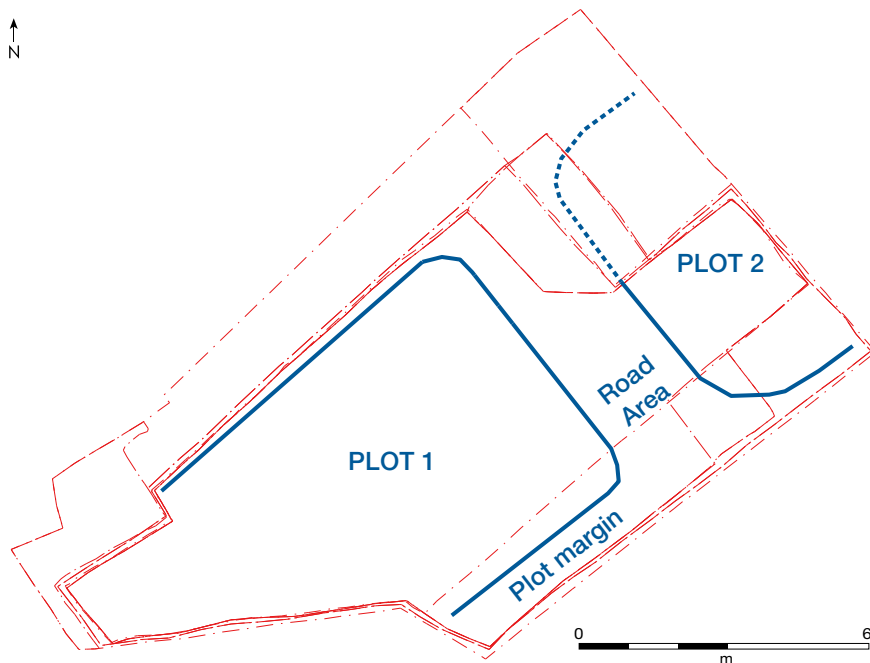


Figure 1.2. Plan of the main excavation with names of principal areas and features.

The description of features and artefact finds makes reference to several numbered units used in the recording and analysis of the excavation. They are specified by letters as follows:

A: Excavation units. Volumes of deposit or constructions recorded, examined, and removed as a unit.

F: Phase units.

K: Construction units. Groups of A-units analysed as parts of buildings or constructions.

P: Sampling units. Samples of deposits or materials such as wood, recorded and removed for analysis.

X: Finds-registration units. Finds or groups of finds recorded separately or relating to a single excavation unit and curated as museum objects.

ID: Finds records units. These are used in the excavation's finds database. One X-unit may contain multiple finds records, as the finds retrieved from one A-unit are separated during registration into different materials and types.

The total of 1,168 excavation units (A-units) include 660 cuttings and/or deposits, while 508 are wooden construc-

tions. Some large units, which could not be subdivided on physical observations, were separated into smaller spits or areas according to finds-registration units (X-units). This is the case in particular for a series of extensive and largely featureless 'dark earth' deposits (A882, A550, A440, A396, and others), which occurred between the major construction units. In all, parts of 40 construction (K-units) were identified, many of which belonged to recognizable remains of buildings (Fig. 1.3).

The excavation units were combined into 18 main phases (F-units), defined as a sequence of units and constructions from a limited time period, which could be distinguished across the excavation area based on observed stratigraphic relations. Phases F₁–F₂ comprise the landscape development prior to settlement c. AD 700. Phases F₃–F₁₄ comprised the stratified remains of a continuous settlement between c. AD 700–900. Phases F₁₅–F₁₇ display medieval and early modern stratigraphies, while F₁₈ designates modern disturbances. The absolute chronological framework of the excavation is established with reference to dendrochronological samples and radiocarbon dates (Daly 2022; Philippsen & Olsen 2022).

Descriptions, reports, and records relating to the excavations are filed under the site code SJM 3 and are available on request from the Museum of Southwest Jutland. Records and photos of artefact finds can be consulted using the finds-registration number (X-units) in the online database: sol.sydvestjyskemuseer.dk/.

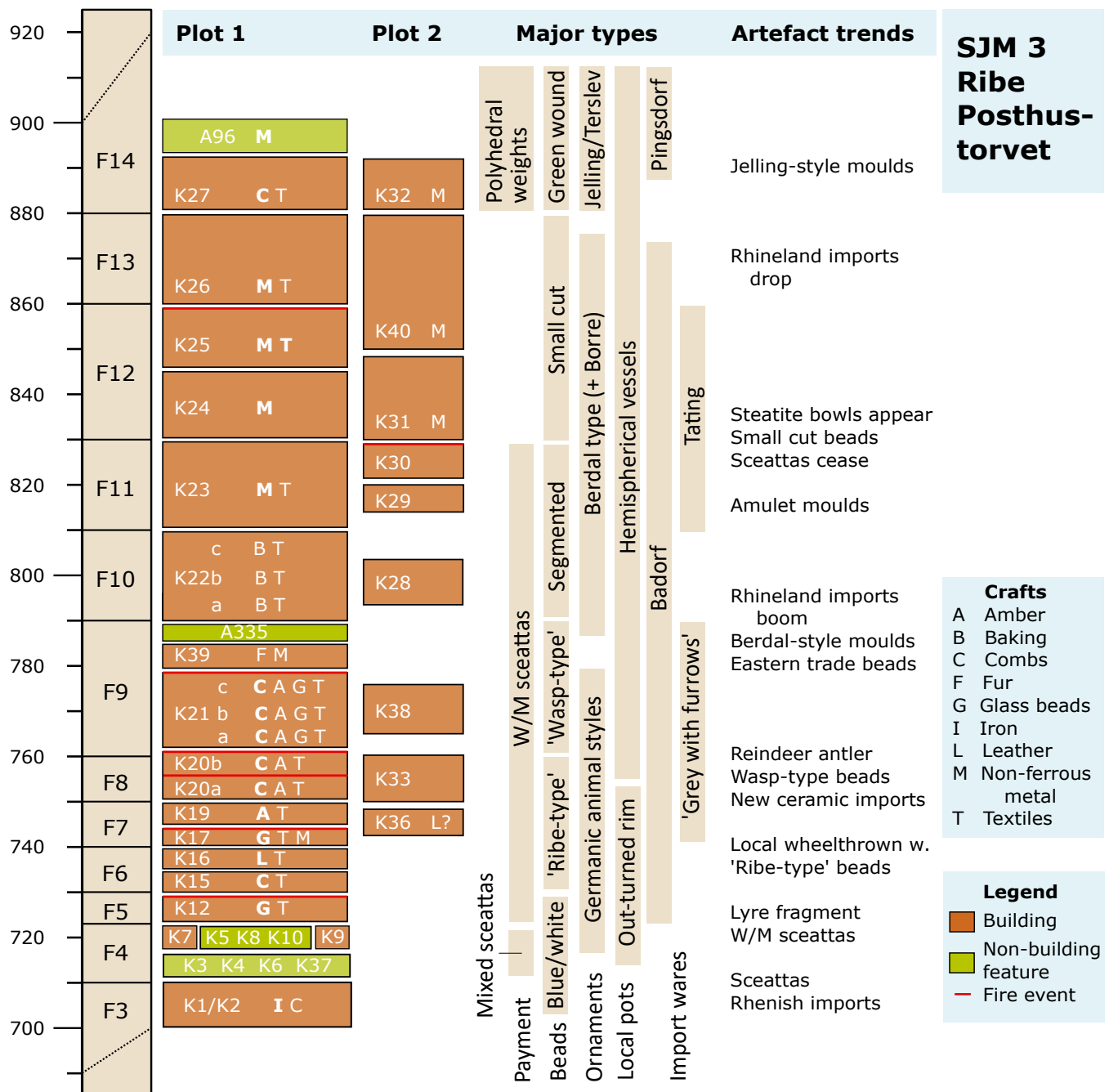


Figure 1.3. Table of main chronological phases, absolute dates, and main features identified in the excavation.

Artefacts and networks

Archaeological exploration of emporia in northern Europe began with the discovery and first excavations of Birka in Sweden in the 1870s. Since then, many other sites have been the objects of exploration (see historical overviews in Willemsen 2010; von Carnap-Bornheim, Hilberg & Schultze 2014; Crabtree 2018; Sindbæk 2020). Gradually, more detailed recording methods were introduced, especially in excavations in Birka, Kaupang, and Ribe (Skre 2007a; Ambrosiani 2013; 2021; Croix et al. 2019).

The archaeological evidence retrieved from these excavations comprises a complex mixture of constructions and stratigraphy, environmental evidence, and artefact finds. The latter are the most direct pointers to social interactions and networks. They include things and materials imported from outside the local region: North French ceramics at Hamwic, Rhenish wares and glass vessels at North Sea and Baltic sites, Slavic pottery at Scandinavian emporia, and Norwegian stone products at sites along the southern North Sea, to name some of

the items that recur most frequently (Hodges 1981; 1991; Keller 2004; Brorsson 2010; Sindbæk 2013). They also tend to include items that point to transport by means of sailing vessels: heavy bulk cargos like wine barrels, transport amphora, and quern stones – things found consistently at emporia, but rarely at sites that were not accessible for maritime traffic. A third recurring feature of emporia archaeology is objects and workshop debris relating to specialized craft production, notably crafts that were dependent on quantities of non-local raw materials like raw glass, metals, and deer antler, and that thus relied directly on sea contacts for both supplies and markets (Sindbæk 2007a; Ashby & Sindbæk 2020).

It is such finds that mark emporia out among smaller trading posts, or rulers' seats and their associated beach markets (Skre 2007b). A characteristic of the emporia is not simply the occurrence of such materials but the sheer number and diversity of finds that follow from the density of habitation and the wide variety of activities. It is not uncommon for excavations to turn out artefact finds in the thousands, occasionally even millions (Schietzel 2014).

Assemblages of such magnitude are off the scale by the standards of most other settlement sites. Beyond reflecting the intensity of activities and exchange, the volume of finds provides unique opportunities for analysis. To process, analyse, and publish them adequately have formed a major challenge throughout their research history. In response, a range of approaches have been attempted.

A published item-by-item catalogue, once the standard of archaeological publication, is impractical and perhaps pointless for assemblages on this scale. Their role has widely been taken over by electronic databases. One alternative, exemplified in the first major study on finds from Birka, is to limit attention to the specific artefacts that speak to specific problems (Arbman 1937). Such an approach was effectively adopted for the publication of excavations in Kaupang 1999–2001 (Skre, ed. 2008; 2011). This strategy, however, entails a risk of leaving part of the record unexamined as well as difficult to discover and access, even if it is logged in museum archives.

As an alternative, one might aim for the methodical examination of all finds, each one analysed and presented category by category. This was the long-term strategy adopted for excavations in Hedeby since the 1960s (*Berichte* 1969–2002). As the Hedeby studies exemplify, however, such an effort may risk splitting up informa-

tion on the assemblage and means that many groups will be analysed in isolation from many others. A coherent cross-examination and synthesis will only be possible at the end of a very long research process.

In order to define the most viable approach, it is necessary to consider in what ways artefact studies are likely to inform research. At the most basic level, artefact studies must aim to determine the material, function, and type of archaeological objects. In addition, traces on individual objects can reveal important details of manufacture and use – in effect, the biography of objects. These may be highly specific observations, which are less easily presented and synthesized but which can be highly significant for wider questions. Forensic methods, including chemical and biochemical analysis, increasingly contribute decisive information to artefact studies (Ashby & Sindbæk 2020). These can have seminal implications for the identification of materials and their origin, and they add a further level of complexity to the study and presentation. At this level, though, one can often summarize information as properties of individual finds, which can often be effectively stored and communicated in searchable databases.

Excavations conducted using contextual methods add further details on date and situation, which in principle renders each find an object of unique significance. This is what allows us to speak of the context of use and deposition of an object, and of trends in its distribution and chronology. It also speaks of the practical and semantic associations of the materials: it makes a difference to interpretation, for example, if amber pieces are found in a context of likely workshop materials, such as antler debris, or together with finished adornments such as beads. We may even use such observations to garner a sense of the appreciation of objects – which items were carefully curated and which were likely to be lost without being retrieved.

It is such details that make detailed artefact studies a rich vein of archaeological research and which also raise a requirement for site-based publications. To avoid getting lost in the details, the critical question is what we require to know from artefacts in the context of the site from which they are retrieved and what they may more usefully reveal in other contexts of enquiry. For a site publication, we need finds to tell us about the conditions of habitation: who lived in a place and how. We need them to explicate the range of resources, connections, skills, and concepts which enabled a group of people to succeed, and how these people were gathered together

in terms of a community and an economic organization. Equally importantly, we need their evidence in order to understand interactions. How did people share and exchange, monopolize, or pool resources? Did they get by on a basis of relationships of family groups, friendships, masters and apprentices, chiefs and servants? Were their networks in the settlement fleeting and mobile or established for the long term?

Beyond this, in order to understand a place and its networks, we need to reveal the trends of changes and fluctuations. This is where the significance of high-definition methods of excavation and analysis becomes crucial. With a stringent characterization of contexts and chronology, artefact finds can not only help us to establish a broad picture of events and processes but may also offer insights into specific developments, such as learning and specialization, divisions of labour, networks of practice, and the shifting routes and contacts which defined global interactions.

Based on these considerations, the present volume aims to present a basic overview of all artefact finds groups recovered in the excavations. This shall serve to provide a balanced presentation of the materials and to make them findable and accessible to future research. For some groups, notably the rich assemblages of debris associated with metalworking, the presentations amount only to a preliminary survey of the distribution and the resources available for future research. More detailed studies are devoted to selected groups on the principle that these have a particular potential to inform our understanding of either the pattern of practices and social affiliations in the emporium or the shifting networks of material flows, which define its wider connectivity. Another guiding principle has been to focus on groups for which the materials from Posthustorvet form a relevant, coherent assemblage which merits study in the context of that particular excavation, rather than together with the find materials from other excavations in Ribe or from wider regions. Many of the rich finds from the site will certainly merit such wider comparative artefact studies in the future.

References

- Ambrosiani, B. 2002. Osten und Westen im Ostseehandel zur Wikingerzeit. In: K. Brandt, M. Müller-Wille & C. Radtke, eds. *Haithabu und die frühe Stadtentwicklung im nördlichen Europa*. Neumünster: Wachholtz, 339–348.
- Ambrosiani, B. 2013. *Stratigraphy: Excavations in the Black Earth 1990–1995, Vol. 1: Part One: The Site and the Shore; Part Two: The Bronze Caster's Workshop*. Stockholm: Riksantikvarieämbetet.
- Ambrosiani, B. 2021. *Stratigraphy: Excavations in the Black Earth 1990–1995, Vol. 2: Part Three: The Later Part of the Birka Period; Part Four: The Finds*. Stockholm: Riksantikvarieämbetet.
- Ambrosiani, B. & H. Clarke 1991. *Towns in the Viking Age*. London: Leicester University Press.
- Arbman, H. 1937. *Schweden und das karolingische Reich. Studien zu den Handelsverbindungen des 9. Jahrhunderts*. Stockholm: Wahlström & Widstrand.
- Ashby, S.P. 2015. What really caused the Viking Age? The social content of raiding and exploration. *Archaeological Dialogues*, 22(1), 89–106.
- Ashby, S.P. & S.M. Sindbæk. 2020. Crafting the Urban Network. In: S.P. Ashby & S.M. Sindbæk, eds. *Crafts and Social Networks in Viking Towns*. Oxford–Philadelphia, PA: Oxbow, 1–30.
- Ashby, S.P., A.N. Coutu & S.M. Sindbæk 2015. Urban Networks and Arctic Outlands: Craft Specialists and Reindeer Antler in Viking Towns. *European Journal of Archaeology* 18(4), 679–704.
- Barrett, J.H. 2008. What caused the Viking age? *Antiquity* 82(317), 671–685.
- Baug, I., D. Skre, T. Heldal & Ø.J. Jansen 2019. The beginning of the Viking Age in the West. *Journal of Maritime Archaeology* 14, 43–80.
- Berichte* 1969–2002. *Berichte über die Ausgrabungen in Haithabu*, vols 1–34. Neumünster: Wachholtz.
- Bolin, S. 1953. Mohammed, Charlemagne and Ruric. *Scandinavian Economic History Review* 1, 5–39.
- Brorsson, T. 2010. *The pottery from the Early Medieval trading site and cemetery at Gross Strömkendorf, Lkr. Nordwestmecklenburg*. Wiesbaden: Reichert.
- Callmer, J. 2013. At the watershed between the Baltic and the Pontic before Gnezdovo. In: L. Bjerg, J.H. Lind & S.M. Sindbæk, eds. *From Goths to Varangians. Communication and Cultural Exchange between the Baltic and the Black Sea*. Aarhus: Aarhus University Press, 39–85.
- Carnap-Bornheim, C. von, V. Hilberg & J. Schultze 2014. Research in Hedeby: Obligations and Responsibilities. In: C. von Carnap, ed. *Quo Vadis? Status and Future Perspectives of Long-Term Excavations in Europe*. Hamburg: Wachholtz Murmann, 225–248.
- Crabtree, P.J. 2018. *Early medieval Britain. The rebirth of towns in the post-Roman West*. Cambridge: Cambridge University Press, 114–128.
- Croix, S. 2015. Permanency in Early Medieval Emporia: Reassessing Ribe. *European Journal of Archaeology* 18(3), 497–523.

- Croix, S., M. Neiß & S.M. Sindbæk 2019. The Réseau Opérateur of Urbanization: Craft Collaborations and Organization in an Early Medieval Workshop in Ribe, Denmark. *Cambridge Archaeological Journal* 29(2), 345–364.
- Croix, S., P. Deckers, C. Feveile, M. Knudsen, S.S. Qvistgaard, S.M. Sindbæk & B. Wouters 2019. Single Context, Metacontext, and High Definition Archaeology: Integrating New Standards of Stratigraphic Excavation and Recording. *Journal of Archaeological Method and Theory* 26(4), 1591–1631.
- Croix, S., P. Deckers, C. Feveile, M. Knudsen, S. Skytte Qvistgaard, S.M. Sindbæk & B. Wouters 2022. Excavation atlas. In: S.M. Sindbæk, ed. *Northern Emporium I. The making of Viking-age Ribe*. Aarhus: Aarhus University Press, 49–217.
- Daly, A. 2022. Dendrochronology. Oak from Ribe – a glimpse into structures from the eighth century. In: S.M. Sindbæk, ed. *Northern Emporium I. The making of Viking-age Ribe*. Aarhus: Aarhus University Press, 327–339.
- Dhondt, J. 1962. Les problèmes de Quentovic. In: G. Barberini, ed. *Studi in onore di Amintore Fanfani I, Antichità e alto medioevo*. Milano: Giuffrè, 57–78.
- Feveile, C., ed. 2006. *Det Ældste Ribe. Udgravninger på nordsiden af Ribe Å 1984–2000*. Ribe Studier 1.1–1.2. Højbjerg: Jysk Arkæologisk Selskab.
- Franklin, S. & J. Shepard 1996. *The Emergence of Rus 750–1200*. London–New York, NY: Longman.
- Hennius, A. 2018. Viking age tar production and outland exploitation. *Antiquity* 92, 1349–1361.
- Hodges, R. 1981. *The Hamwic Pottery: The Local and Imported Wares from 30 Years' Excavations at Middle Saxon Southampton and Their European Context*. CBA Research Reports 37. London: Council of British Archaeology.
- Hodges, R. 1982. *Dark Age Economics. The origins of towns and trade*. London: Duckworth.
- Hodges, R. 1991. The 8th-century pottery industry at La Londe, near Rouen, and its implications for cross-channel trade with Hamwic, Anglo-Saxon Southampton. *Antiquity* 65(249), 882–887.
- Hodges, R. 2012. *Dark Age Economics. A new audit*. London: Bloomsbury Academic.
- Hodges, R. & D. Whitehouse 1983. *Mohammed, Charlemagne & the Origins of Europe: Archaeology and the Pirenne Thesis*. Ithaca, NY: Cornell University Press.
- Jankowiak, M. 2020. Dirham flows into northern and eastern Europe and the rhythms of the slave trade with the Islamic world. In: J. Gruszczynski, M. Jankowiak & J. Shepard, eds. *Viking-Age Trade. Silver, Slaves and Gotland*. New York, NY: Routledge, 105–131.
- Jankuhn, H. 1953. Der fränkisch-friesische Handel zur Ostsee im frühen Mittelalter. *Vierteljahrschrift für Sozial- und Wirtschaftsgeschichte* 40(3), 193–243.
- Jennings, J. 2010. *Globalizations and the ancient world*. Cambridge: Cambridge University Press.
- Jennings, J. 2016. *Killing civilization. A reassessment of early urbanism and its consequences*. Albuquerque, NM: University of New Mexico Press.
- Keller, C. 2004. Pottery Production in Badorf and Walberberg during the Carolingian Period. In: R. Simek & U. Engel, eds. *Vikings on the Rhine: Recent research on early medieval relations between the Rhinelands and Scandinavia*. Wien: Fassbaender, 155–165.
- Kilger, C. 2008. Kaupang from Afar: Aspects of the Interpretation of Dirham Finds in Northern and Eastern Europe between the Late 8th and Early 10th Centuries. In: D. Skre, ed. *Means of Exchange*. Kaupang Excavation Project Publications Series 2. Aarhus: Aarhus University Press, 199–252.
- Kleingärtner, S. 2013. *Die frühe Phase der Urbanisierung an der südlichen Ostseeküste im Frühmittelalter*. Neumünster: Wachholtz.
- McCormick, M. 2001. *Origins of the European economy. Communications and commerce, AD 300–900*. Cambridge: Cambridge University Press.
- Näsman, U. 2000. Exchange and politics: the eighth–early ninth century in Denmark. In: C. Wickham & I. Lyse Hansen, eds. *The long eighth century. Production, distribution and demand*. The transformation of the Roman World 11. Leiden: Brill, 35–68.
- Naylor, J. 2016. Emporia and Their Hinterlands in the 7th to 9th Centuries AD: Some Comments and Observations from England. In: I. Leroy & L. Verslype, eds. *Les cultures des littoraux au haut Moyen Âge. Cadres et modes de vie dans l'espace maritime Manche-mer du Nord du III^e au X^e s*. Villeneuve d'Ascq: Revue Du Nord, 59–67.
- Noonan, T.S. 1980. When and how dirhams first reached Russia: A numismatic critique of the Pirenne theory. *Cahiers du monde russe et soviétique* 21(3), 401–469.
- Philippsen, B. & J. Olsen 2022. Radiocarbon chronology. In: S.M. Sindbæk, ed. *Northern Emporium I. The making of Viking-age Ribe*. Aarhus: Aarhus University Press, 341–362.
- Raja, R. & S.M. Sindbæk 2020. Urban Networks and High-Definition Narratives Rethinking the Archaeology of Urbanism. *Journal of Urban Archaeology* 2, 173–186.
- Sawyer, P.H. 1985. Birka, the Baltic and beyond. In: S. Lindquist, ed. *Society and trade in the Baltic during the Viking Age*. Visby: Gotlands Fornsal, 165–170.
- Schietzel, K. 2014. *Spurensuche Haithabu: Archäologische Spurensuche in der frühmittelalterlichen Ansiedlung Haithabu: Dokumentation und Chronik 1963–2013*. Neumünster: Wachholtz.
- Schück, A. 1926. *Studier rörande det svenska stadsväsendets uppkomst och äldsta utveckling*. Uppsala: Appelbergs Boktryckeri.

- Scott, J.C. 2017. *Against the grain. A deep history of the earliest states*. New Haven, CT: Yale University Press.
- Sindbæk, S.M. 2007a. Networks and nodal points: The emergence of towns in early Viking Age Scandinavia. *Antiquity* 81(311), 119–132.
- Sindbæk, S.M. 2007b. The small world of the Vikings: Networks in early medieval communication and exchange. *Norwegian Archaeological Review* 40(1), 59–74.
- Sindbæk, S.M. 2012. Urban Crafts and Oval Brooches: Style, Innovation and Social Networks in Viking Age Towns. In: S. Sigmundsson, ed. *Viking Settlements and Viking Society: Papers from the Proceedings of the 16th Viking Congress*. Reykjavik: University of Iceland Press, 409–423.
- Sindbæk, S.M. 2013. Broken links and black boxes: Material affiliations and contextual network synthesis in the Viking world. In: C. Knappett, ed. *Network analysis in archaeology: New approaches to regional interaction*. Oxford: Oxford University Press, 71–94.
- Sindbæk, S.M. 2020. Communities on the Edge: Retracing the Northern Emporia. In: A. Gautier & L. Malbos, eds. *Communautés maritimes et insulaires du premier Moyen Âge*. Haut Moyen Âge 38. Turnholt: Brepols, 127–141.
- Sindbæk, S. M. 2022. Weak Ties and Strange Attractors: Anomalocivitas and the Archaeology of Urban Origins. *Journal of Urban Archaeology*, 5, 19–32.
- Skre, D. 2007a. Exploring Skiringssal 1771–1999. In: D. Skre, ed. *Kaupang in Skiringssal*. Kaupang Excavation Project Publication Series 1. Aarhus: Aarhus University Press, 27–42.
- Skre D. 2007b. Towns and markets, kings and central places in south-western Scandinavia. In: D. Skre, ed. *Kaupang in Skiringssal*. Kaupang Excavation Project Publication Series 1. Aarhus: Aarhus University Press, 445–469.
- Skre, D. 2008. Post-substantivist towns and trade. In: D. Skre, ed. *Means of Exchange*. Kaupang Excavation Project Publications Series 2. Aarhus: Aarhus University Press, 327–342.
- Skre, D. 2011a. The inhabitants: Activities. In: D. Skre, ed. *Things from the Town. Artefacts and Inhabitants in Viking-Age Kaupang*. Kaupang Excavation Project Publication Series 3. Aarhus: Aarhus University Press, 395–416.
- Skre, D. 2011b. The inhabitants: Origins and trading connections. In: D. Skre, ed. *Things from the Town. Artefacts and Inhabitants in Viking-Age Kaupang*. Kaupang Excavation Project Publication Series 3. Aarhus: Aarhus University Press, 417–442.
- Skre, D. ed. 2008. *Means of Exchange*. Kaupang Excavation Project Publications Series 2. Aarhus: Aarhus University Press.
- Skre, D. ed. 2011. *Things from the Town. Artefacts and Inhabitants in Viking-Age Kaupang*. Kaupang Excavation Project Publication Series 3. Aarhus: Aarhus University Press.
- Smith, M.L. 2019. *Cities. The First 6,000 Years*. New York, NY: Viking.
- Søvsø, M. 2020. *Ribe 700–1050. From Emporium to Civitas in Southern Scandinavia*. Højbjerg: Jutland Archaeological Society.
- Stene, K. & V. Wangen 2017. The uplands: The deepest of forests and the highest of mountains: Resource exploitation and landscape management in the Viking Age and early Middle Ages in southern Norway. In: Z.T. Glørstad & K. Loftsgarden, eds. *Viking-Age Transformations: Trade, Craft and Resources in Western Scandinavia*. Routledge, London, 160–190.
- Taylor, P.J. 2012. Extraordinary Cities: Early ‘City-ness’ and the Origins of Agriculture and States. *International Journal of Urban and Regional Research* 36(3), 415–447.
- Tys, D. 2020. Maritime and River Traders, Landing Places, and Emporia Ports in the Merovingian Period in and Around the Low Countries. In: B. Effros & I. Moreira, eds. *The Oxford Handbook of the Merovingian World*. Oxford, Oxford University Press, 765–798.
- Wickham, C. 2005. *Framing the early Middle Ages. Europe and the Mediterranean, 400–800*. Oxford: Oxford University Press.
- Willemsen, A. 2010. Welcome to Dorestad. A History of Searching and Finding ‘the Dutch Troy’. In: A. Willemsen & H. Kik, eds. *Dorestad in an international Framework: New Research on Centres of Trade and Coinage in Carolingian Times*. Turnhout: Brepols, 7–16.
- Woolf, G. 2020. *The Life and Death of Ancient Cities: A Natural History*. New York: Oxford University Press.