

Emporia, high-definition archaeology, and Ribe

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Emporia are transformational places. Across many junctures of world history, trading posts on coasts, islands, or inland routes have been places that facilitated encounters between human societies and opened new departures in their development. The Viking-age maritime expansion in Northern Europe is one such juncture. The widespread adoption of sail-powered navigation, which occurred among populations along Europe's northern coasts from the seventh century AD onwards, profoundly changed these populations' ability to interact and exchange across open seas. Emporia were places where sea traffic brought together communities and activities that had not previously been combined, and they are places where these changes can be studied in close detail.

Emporia first appeared in the North Sea and Baltic Sea region during the seventh and eighth centuries AD (Lebecq 2005; Skre 2008; Kleingärtner 2013; Naylor 2016; Malbos 2017; Tys 2020). Ribe, on the western coast of Denmark, was one of these places. Archaeology leaves little doubt that from the beginning, this was a special place. Few archaeological sites of this era have left excavators with such a bewildering mass of habitation and activity: things and materials brought from diverse sources; a streetscape of densely packed buildings, incessantly renewed and repaired; floors strewn with the vestiges of domestic life together with remains from more special occupations; and debris from craft workshops producing a wide variety of items such as leather shoes, dress ornaments, and metal utensils.

For more than a century, the emporia that accompanied the maritime expansion around Europe's Northern Seas have been focus points of archaeological exploration, historiographical debates, and theoretical arguments (Hodges 1982, 2012; Callmer 1994; Verhulst 1999; Theuws 2004; Hillerdal 2010; Kalmring 2016; Crabtree 2018; Sindbæk 2020). Compared to many ancient or medieval sites, the remnants of sites like Ribe, Birka, Hedeby, Kaupang, Staraja Ladoga, and Truso (Fig. 1.1) are relatively well preserved and unencumbered by later developments, and they therefore present a real opportunity to explore early developments. Yet the sheer size and complexity of these sites, and the challenges raised by large-scale excavations, have let much of this record lie fallow and left many questions unanswered.

This book presents an archaeological exploration of Ribe based on research that has aimed to disentangle the development of the site and its contact networks from c. AD 700 to 900. It issues from a comprehensive, stratigraphic excavation of settlement and workshop layers in one of the richest archaeological remains of any emporium in the North Sea and Baltic Sea region, and it aims to explore the evolution and dynamics of the emporium's community together with its interactions in the Viking-age maritime world. The approach presented here focuses on the communication and networks of this settlement and its role in contemporary historical developments. For this, the fine-grained resolution of archaeological stratigraphies is a vital resource, but one which previous



Figure 1.1. *Map of Northern Europe with major emporia. Graphics: Louise Hilmar.*

excavations have struggled to unlock (Raja & Sindbæk 2020). The research presented in this book, then, is a study which has applied and developed new fieldwork techniques to achieve a high-definition approach to context and chronology, placing developments in Ribe's early houses and streetscape within a chronological framework that is clear enough to enable actual correlation with historical trajectories.

Ribe's emporium

Now a small town on the western coast of Denmark, Ribe first emerged as part of a new growth of maritime networks that began to form at the threshold of the Viking Age. From the early eighth century, Ribe was a substantial emporium, the earliest such site in Scandinavia. Its emergence and history are inextricably linked to sailing. It was located on a navigable river at one of the few good natural harbour sites on the North Sea coast of Denmark. While the open sea was several kilometres downstream to the west – the exact coastline at the time remains unknown – the tides and occasional

storm surges meant that this was the lowest place on the riverbank where one could establish a firm, habitable landing site. At this point, a series of low plateaus eased passage across the river before giving way to a wider marshland, thus providing a traditional crossing point for inland traffic (Thamdrup 1998).

The archaeological traces of the oldest settlement of Ribe include burials, fortifications, buildings, workshops, and roads spread out across a large area (Søvsø 2020). Archaeological discoveries since 1972 have revealed a settlement marked out by a semi-circular earthwork, constructed when the settlement had already existed for some generations, and surrounded by a sprawling cemetery (Croix et al. 2019b; Croix 2020). The most extensive and well-preserved remains are concentrated over a stretch of some 200 m along the northern side of the Ribe Å. Here, traces of buildings and specialized activities can be found in a stratigraphy up to 2.5 m thick on each side of a market street, organized in a system of plots (or yards) laid out shortly after the beginning of activity at the site (Fevle 2006). Due to the thickness and good preservation of this stratigraphy,



Figure 1.2. Section through stratigraphy at SJM 3 Posthustorvet, looking SE. The microlaminated stratigraphy offers a rare high-definition archive of developments in the emporium.

large numbers of artefacts, traces of crafts, and other remains have been recovered (Feveile 2012).

What makes Ribe unique among the early northern emporia is its finely sequenced stratigraphy, which offers the possibility of following developments decade-by-decade (Fig. 1.2). Whereas the remains from other North Sea emporia have been extensively destroyed, the archaeology of early Ribe is in places exceptionally well preserved, with a substantial concentration of evidence related to long-distance sea-trade and specialized crafts. There are few other places – if any – where we can follow the history of early North Sea trade in such detail. Ribe's stratigraphy has become one of the most important reference points for archaeological chronology, as well as for knowledge of material culture, including beads, coins, metal ornaments, and bone and antler objects originating from places like North Norway and Central Europe in the period c. AD 700-850 (e.g. Feveile & Jensen 2000; Feveile 2008; Feveile et al. 2010; Sindbæk 2012; Ashby et al. 2015, Baug et al. 2019).

Ribe is named in a small number of Viking-age sources and was an important port and city in the High Middle

Ages (Skovgaard-Petersen 1981). Viking-age remains had therefore been keenly anticipated for decades when major remains were first encountered in 1972. They did not, however, appear where they had been expected, within the area around the medieval cathedral. Rather, they were found on the north bank of the Ribe Å, the river that skirts the historic city (Fig. 1.3; Bencard & Jørgensen 1990, 25). The discovery led to the first major series of research excavations, directed in 1973-1976 by Mogens Bencard at several sites in the centre of the settlement. The excavations at Ribe Art Museum (ASR 6M73 Kunstmuseets Kælder and ASR 4M75 Kunstmuseets Have) and nearby at Dommerhaven (ASR 5M74) showed well-preserved stratigraphy with favourable organic preservation. To the surprise of the excavators, they also revealed finds that were significantly older than the Viking Age, with coins dating to the first half of the eighth century (Bendixen 1981).

The early excavations uncovered comparatively large areas, as much as 400 m² for the largest one at ASR 4M75 Kunstmuseets Have. However, the methods applied were aimed at revealing large-scale structures, and limited attention could be paid to the detailed stratigraphy. In



Figure 1.3. Aerial photo of Ribe, looking W. The cathedral and surrounding medieval town are seen in the centre, while the emporium emerged to the north of the Ribe Å, on the lower right-hand side of the picture.

some cases, the upper parts of the stratigraphy were simply removed using mechanical excavators. Elsewhere, they were cleared by shovel in 10-cm spits and with limited use of sieving (Bencard & Jørgensen 1990, 86). As can be seen in comparison to later work, the excavations mostly extended into areas away from the core of the settlement, with the exception of ASR 6M73 Kunstmuseets Kælder, the excavation of which was carried out under difficult circumstances in a basement.

The 1970s excavations successfully revealed the unexpected chronological span of the settlement and brought attention to the extraordinary remains from craft production (Bencard 1979). In common with the excavation methods, however, the comparative basis for assessing the results was still at a formative stage. The excavators struggled to determine if the remains represented a long-lasting settlement or accumulations from episodic markets, and they were reluctant to identify the nature of the site beyond being a 'settlement with an associated market place' (Bencard 1988; Bencard & Jørgensen 1990,

144). Few, if any, definite traces of buildings had been identified in the excavations. Large accumulations of dung-like organic matter gave rise to the idea that great, recurrent markets for cattle export had been a key activity (Bencard & Jørgensen 1990, 67). Initial suggestions, following diffusionist models developed for Hedeby and Birka, pictured Ribe as a trading colony founded by Frisian merchants (Olsen 1975, 249).

A new series of excavations, initiated in 1985 by Stig Jensen and Lene B. Frandsen, and continued by Claus Feveile, demonstrated the possibilities of the detailed stratigraphy and made very significant advances regarding the understanding of the site (Feveile 2006). The work was conducted using consistent stratigraphic principles of excavation and recording, and with systematic wet sieving of all excavated sediment. The most comprehensive work was accomplished in 1990-1991 at the Ribe post office (ASR 9 Posthuset), the largest stratigraphic excavation conducted in the area of the Viking-age emporium prior to the Northern Emporium project.

The results obtained in the 1980s and 90s are all the more remarkable considering that the excavations had to proceed as rescue excavations prompted by imminent construction work, and they were sometimes significantly restricted by inadequate budgets. The size and position of the trenches were limited to the areas affected by developers. While road areas in particular were well exposed, only small parts of the plot areas were uncovered. This impeded interpretation of the patterns. As a result of these excavations, the chronology of the site was increasingly well understood, and made it possible to put forward an outline of developments between c. 700 and c. 850, at which time, it was suggested, the site was abandoned (Feveile & Jensen 2000). Yet conundrums that had beset excavations since the 1970s, such as the ubiquitous 'dung layers', or the presence of houses and buildings, continued to linger. Considerable questions remained over the spatial organization and use of the area. Had early Ribe been a seasonal camp, or a year-round settlement? Did the many craft activities take place in the open, or within buildings?

Meanwhile, interpretations of early Ribe were drawn towards a new theoretical focus on social evolution (Jensen 1979; Hodges 1982). This inspired researchers to suggest that the emergence of the emporium reflected new forms of political rulership, and they sought expressly for evidence of top-down organization (Frandsen & Jensen 1988, 189; Olsen 1988). Comparison of the excavations across the settlement area duly led to the discovery of a regular system of plots (Frandsen & Jensen 1988, 178-179; Bencard & Jørgensen 1990, 140-148). This was widely accepted as evidence of a concerted foundation by a ruler aiming to organize and control trade (Ambrosiani & Clarke 1991; Jensen 1993). The absence of evidence for houses in the early phases was suggested to reflect an evolution from a seasonal market site to a permanent urban settlement (Näsman 2000). In this framework, Ribe stood out in the 1990s and early 2000s as a model case of politically driven urbanization.

Since 2000, few excavations have touched the centre of Ribe's emporium, in part because work was required elsewhere in the medieval town. From 2008 to 2012, large-scale excavations in the area of the cathedral revealed the presence of a number of graves dating from the ninth-eleventh centuries in what was almost certainly an early Christian cemetery (Søvsø 2014; 2020). This provided a new dimension for the topography of the

emporium, and an archaeological corollary for the testimony of written sources to a ninth-century missionary church. In 2011-2012, road maintenance in the area of the emporium revealed the top of the Viking-age stratigraphy and allowed further glimpses of the plot system. Only very limited excavations continued into this stratigraphy, but a series of radiocarbon dates from the youngest sediments gave enticing tenth-century dates, suggesting that the settlement had continued longer than previously assumed (Jensen 2013).

In the meantime, questions were raised on the alleged evidence for top-down organization at Ribe and other emporia, and calls were made for attention to be paid to bottom-up agency and networks (Gustin 2004; Sindbæk 2007; Skre 2008). Ribe's evolution from market place to town was equally called into question, as renewed analysis of the excavations indicated that the centre of the emporium had seen permanent habitation even in the first quarter of the eighth century (Croix 2015). Efforts to use the excavated materials for detailed chronological analyses showed that the site almost certainly had potential for even more fine-grained results than had been explored in previous excavations (Ashby et al. 2015). These analyses posed new questions for which the previously excavated materials could not provide adequate answers, pointing the way towards new excavations and research.

Between the 1970s and the 2010s, excavations and analyses revealed Ribe to be a key emporium in early medieval Northern Europe. They outlined a site with a chronological range that began well before the maritime expansion in Scandinavia took off, and that continued well into the Viking Age. Its significance is heightened by a detailed stratigraphy that allows for a high chronological resolution, as well as by an extraordinary abundance of find materials reflecting the activities and contacts of the place. Moreover, as a site where the evidence of early centuries is not buried in metres of later stratigraphy and has been only moderately affected by modern development, Ribe presents a case of early urban development that it has rarely been possible to explore so well. Nonetheless, the limitations of the rescue excavations are clear when compared to the major research initiatives conducted in places such as York, Hedeby, Birka, or Kaupang. This has left much of Ribe's potential unfulfilled, in particular those parts that might inform on aspects other than the traditional urban focus on planning and institutions, and that might instead lead into the realms of networks and interaction.

High-definition archaeology

Excavation methods determine the nature of the data that archaeology has to offer. It is almost impossible to excavate in emporia without being confronted with evidence of connectivity and interaction. Yet studying networks and interactions in the past is not merely a question of tracing movement. In order to understand what networks meant to emporia, we need research to define the timing, scale, impact, dynamics, and reception of flows. The fact that wide-ranging trade networks converged in emporia is amply testified. But how effective were these networks in absorbing and responding to external developments and changes? To what extent could communities search, control, or manipulate networks to their ends?

It is difficult to engage with such questions, given the limited nature of our current evidence. The key to addressing them, however, lies in establishing the pace and scale of flows and in identifying the responses that they engendered. It is rarely sufficient to reconsider existing data from a new perspective. Instead, it requires us to improve the means by which archaeology studies developments across sites and regions.

Field methods have changed markedly since the earliest archaeological work in emporia. Hjalmar Stolpe's excavations in Birka in the 1870s were the first in Scandinavia to uncover and excavate a northern emporium, using trenches to expose sections and noting the relative depth of objects found (Stolpe 1876). In the 1930s, a growing interest in the social and cultural character of early urban sites led Herbert Jankuhn to adopt a different strategy in Hedeby. He uncovered large surfaces (*Flachengrabung*) in order to assess the spatial layout of the settlement (Jankuhn 1937, 64; Schietzel 2014, 44-45).

A more contextual approach to urban excavation was developed after the Second World War, as large urban excavations became more frequent. A focus on artefacts and ecofacts as evidence of environment and social conditions created a need to link the content of deposits with constructions and site phases. In response, excavations in Winchester and London adopted an approach in which individual layers were separated and excavated 'in the reverse order to that in which they were laid down' (Harris 1979, 113), leading – in principle – to full stratigraphic control of the finds and features (Carver 2016, 21).

This model of 'single-context' excavation and recording was gradually adopted as a recording protocol in

Scandinavian archaeology, where stratigraphic methods were also being developed. It was first attempted in Ribe in 1985-1986 for the excavation ASR7 Sct. Nicolaj Gade (Frandsen & Jensen 1988), and it became the methodology selected for the subsequent excavations at ASR 9 Posthuset (Feveile & Jensen 2006). The shift towards strict stratigraphic procedures was facilitated by another, more gradual but equally profound change: the implementation of digital (and increasingly automated) field recording techniques and the processing and storage of data in a GIS-environment as a standard for field recording. Both innovations largely occurred after 2000 in Scandinavian excavations (cf. Pilø 2007; Thomasson 2011, 68f).

In response to the abundance of finds noted in previous excavations in Viking-age Ribe, and to the chronological debates they had raised, the excavations at ASR 9 Posthuset also adopted wet sieving of all excavated soil; this procedure had hitherto not been attempted in this comprehensive way in urban excavations in Scandinavia. The combined results of tight stratigraphic control, clearly documented features, and an unprecedented volume of finds – including large numbers of otherwise rare finds such as glass tesserae and sceatta coins – widely demonstrated the success of the strategy. For similar reasons, extensive sieving was adopted for excavations in Birka, Kaupang, and Hedeby (Ambrosiani & Clarke 1992; Pilø 2007; Ambrosiani 2013; Carnap-Bornheim et al. 2014, 243).

Since the 1970s, urban excavations increasingly incorporated the investigation of environmental evidence and other forms of scientific methods into the research design (e.g. Jankuhn 1984; Jansen 1988; Kenward & Hall 1995; Geraghty 1996; Hjerminde et al. 2005). Experience from numerous excavations highlighted not only the major potential of this type of research strategy, but also the considerable practical problems raised by implementing the elaborate sampling procedure into the workflow of the excavation.

The Kaupang excavations in 2000-2002 provide the most recent and pertinent model of a major research excavation in a Scandinavian emporium. Thanks to a specific research agenda that sought to widen the focus from strict topographical or chronological problems to a broader investigation of the urban character of the site, or more precisely its community of residents (cf. Skre 2007a), this project took a new step. Skre and his

colleagues designed an integrated programme of interdisciplinary investigations, included among them initial site surveys using geophysical methods, metal detecting, and field prospecting; hinterland investigations including targeted excavations; and a programme of research that sought to integrate micromorphology and other geoarchaeological methods in order to understand the detailed development of habitation in the main site.

At a conceptual level, the excavations at Birka in 1990-1995 and at Kaupang in 2000-2002 remained initially on more familiar ground. The Birka excavations, beyond the basic aim of refining the chronological and topographic frames of the emporium's development, were explicitly designed to characterize the site in relation to medieval urbanization, political power, and the regional hinterland (Ambrosiani 1990, 1). The Kaupang excavation project broadened the scholarly frames of inquiry by aiming to understand the emporium as a community. However, the initial priority for the excavations was to define Kaupang's political framework: 'the relationship between towns and the power structures of the old society and of the new emerging kingdoms' (Skre 2007b, 47). Thus even while the Kaupang team increasingly turned its attention towards social groups and relations (e.g. Skre 2011a, 2011b; Pedersen 2016), both fieldwork projects arose from questions of organizational and institutional aspects of urbanism.

In order to define a new approach to emporia from a perspective of networks, the key challenge today is to establish datasets that engage at least three forms of evidence more fully: the increasingly precise identification of materials and their origin; a tight, absolute chronology of finds and features; and the specific context of these finds' use and deposition. These dimensions, which are too easily separated in the archaeological record, call for those undertaking fieldwork to prioritize the characterization of contexts alongside intensive sampling and analysis. This may allow us to trace and analyse the dynamics of urban networks once reference points are established in terms of contextual, chronological, and chorological data.

In recent years, urban archaeology has seen new changes in tandem with the unfolding of what has been referred to as the 'Third Science Revolution' in archaeology – the appearance of techniques for investigating materials at the level of isotopic and biomolecular composition (Kristiansen 2014). 'Third Science' techniques have

made a particular impact in improving the characterization and provenance of materials and artefacts (e.g. von Holstein et al. 2016; Merkel 2016; Pedersen et al. 2016; Star et al. 2017; Henniuss et al. 2018; Baug et al. 2019). These developments have turned materials like bone fragments or metalworking debris, which once had limited value for research, into key evidence for processes and interactions.

Even so, knowing the character and origin of materials has only limited interpretative value unless these can also be related to a firm chronological and contextual framework. An analytical advance of equal importance is marked, therefore, by improvements in methods for refining archaeological chronologies. These updated chronologies were obtained through the application of Bayesian statistical methods to radiocarbon dates and, more recently, with the adoption of high-resolution calibration curves (Bayliss 2009; Dee & Pope 2016).

As the identification of objects and materials is refined through isotopic analysis, proteomics, and aDNA, the buried record of urban sites has thus become a resource for new forms of data. The shift in focus is notable in the scale at which archaeology is able to operate. If the aim of stratigraphic excavation was once simply to establish the relative sequence of major constructional events, the application of elemental and biomolecular analysis of remains on a still smaller scale means that well-stratified micro-deposits have now also become an important resource (Mallol & Mentzer 2017; Weiner 2010). In order to relate effectively to finds and to bear on the analysis of networks, sampling needs to be integrated contextually with data acquisition during fieldwork. In this context, the application of detailed, geoarchaeological techniques, including soil and sediment micromorphology, has become another key development (Walkington 2010; Wouters et al. 2017).

Regardless of the precision of individual dates or the exact definition of the individual context, only an integrated, contextually secure excavated sequence can define time and activities on a scale that is meaningful to inquiries into network flows. Improvements in spatial recording are thus a further key dimension of growing significance to our capacity to construct chronologies and to understand find distributions. Archaeological excavations have seen a gradual evolution of spatial control, from course-grained grids and spits to hand-drawn context plans and then on to flexible GIS archives

based on digital data. The next significant turn, now in progress, is the adoption of laser scanning, which offers the possibility of recording and analysing ‘big data’ point clouds in full 3D environments (Berggren et al. 2015; Kimball 2016). The application of dynamic digital methods, and the possibilities and limitations they pose, for example in relation to on-site management of big data, have become evident in excavations in recent years (e.g. Kråling 2014).

Developing a ‘high-definition’ archaeological approach to the urban networks of the past has been a key focus for the Danish National Research Foundation’s Centre for Urban Network Evolution at Aarhus University, Denmark. One of the sites targeted for this work was the Northern Emporium Project excavation at Ribe. The excavation presented in this book is a demonstration of this development. The aim has ultimately been to gain data that are sufficiently robust to allow us to test, challenge, and revise the trajectories of urban sites, thereby potentially tipping the balance of cause and effect in grand narratives. This requires us to understand ‘the nature of contexts and finds and identify the pace of changes in site histories well enough to assess and compare their potential causes’ (Raja & Sindbæk 2018, 16).

This methodological change is not a simple evolution, and it is far from simply a question of adding further methods and procedures to existing ones. In important ways, the aims of a ‘high-definition’ archaeology go against the grain of established ‘single-context’ excavation protocols. Block sampling, the basis for much geoarchaeological analysis, for example, is incompatible with strict stratigraphic procedures. Moreover, the depositional history revealed by detailed, geoarchaeological analysis often shows that the discontinuous, closed depositional contexts that are assumed to be the fundamental units of ‘single-context’ theory are a special case among more continuously formed and reworked contexts. They reveal a need to approach contextual relations within a broader site ‘meta-context’ (Croix et al. 2019a).

The archaeology of emporia has thus developed in a hermeneutic dialogue between assumptions about historical dynamics and the design of excavations that were established to investigate them. For a generation at least, the most determined efforts have been directed towards revealing social organization and political embedment, reflecting a view of urbanism and exchange as corollaries of political evolution. In order to explore the work-

ings of networks and interactions, new forms of data are needed and therefore new excavation designs are required. The exploration of flows and communications call for a ‘high-definition’ archaeology, using a combination of multiple methods and approaches to characterize sites and societies, and to integrate content, contexts, and chronology at a more detailed level.

The Northern Emporium project

It is against this background, as part of a broader research effort to explore the evolution and dynamics of the earliest urban network in Scandinavia and the transition to a maritime-based network society in the Viking Age (Sindbæk 2018), that the Northern Emporium project was initiated. Funded by the Carlsberg Foundation, the project was established with the aim of carrying out a comprehensive stratigraphic excavation of settlement and workshop layers in a central part of Ribe’s early settlement in order to resolve the many still-outstanding questions regarding the site’s interpretation. The project was carried out in collaboration between the Danish National Research Foundation’s *Centre for Urban Network Evolutions* (UrbNet) at Aarhus University and Museum of Southwest Jutland.

The overall aim of the project was to understand the development of Ribe’s specialized production and maritime contacts in a historical perspective: which actors, institutions, and processes were active in the network? To what extent did urban networks catalyse processes of change? A key aim of the excavation was thus to understand the anatomy of the stratigraphy – to determine how this archive had formed and to date the individual strata so firmly that we might achieve a true dialogue with both written evidence and with developments in other regions without falling back on circular arguments.

As a strategy to address these questions, the project pursued an approach based on a combination of consistent stratigraphic excavation and high-definition field methods. The research design was developed to integrate methods such as geochemical analysis and micromorphology in order to establish the context of finds and observations. It would take advantage of the recent development of 3D laser scanning to save a detailed digital record of the surfaces uncovered. It would incorporate a range of scientific dating techniques and Bayesian modelling to build a refined chronology of the site history.

Lastly, it would include an extensive programme of analysis in order to scrutinize artefacts and ecofacts using a broad range of material science techniques.

The general aim of the project was to explore urbanization as a network phenomenon through the lens of high-definition archaeology, which would clarify the development and connections of the site together with any possible underlying dynamics. This goal was congruent with the objectives of the UrbNet centre, and it reflected the anchoring of the project as one of UrbNet's main field-archaeological foci. The core investigative issues can be summed up via questions focusing on the inter-relationship between urbanization and globalization: which actors, institutions, and processes were active in the networks? And how, and to what extent, did global dynamics catalyse change and crises, e.g. timing/response to changes in commodity flows?

Based on these core issues, five specific questions were outlined for the project to answer in relation to the early urban development in Ribe. On one level, these were basic, factual questions, which one would ask in attempting to understand any place in history. Yet each also concerned salient points that have been debated in the context of previous results but that could in principle only be resolved through new evidence. These questions were to guide the excavations and the research undertaken in this project.

1. *How did Ribe emerge?* Previous research had indicated an activity phase prior to the allotment of plots; however, the duration and the nature of this phase remained unknown. Micromorphology, soil-chemical, and environmental-archaeological investigations were therefore employed to reveal whether the earliest activity layers showed signs of seasonal activity or permanent settlement, as well as how long it took for the place to be characterized by urban-like settlement.
2. *Was the earliest phase of Ribe characterized by high-density housing?* Previous research had suggested an open, market-like space of small, temporary buildings; however, a reanalysis of older excavations argued for high-density housing in the area (Croix 2015). Open-area excavation of plots and parts of the adjoining main street were to show which type of buildings and space characterized the earliest phases.
3. *Who inhabited Ribe in its early phases?* Contextual analysis of activity traces, e.g. the relationships between household and craft, and between various specialized crafts, were to show which cultural and economic relations characterized the settlement. This question also pertained to many other aspects of identity, e.g. the relationships between foreigners and locals, or between free and unfree actors.
4. *Which events had an impact on Ribe's development?* The potential of the stratigraphy should be tapped in order to yield a coherent analysis of changes in the deposits (e.g. fire and destruction layers, growth layers, back-fill), as well as the finds (varying frequency of trades and new patterns of import, e.g. the arrival of beads from the Islamic world immediately prior to AD 800). The results should be detailed enough to allow comparison with trajectories reflected in historical records, or in the archaeology of other sites and regions.
5. *How long did Ribe survive as an emporium?* Did activity in Ribe's emporium cease in the second half of the ninth century (Feveile 2012, 120), or did it continue for a significantly longer period (Jensen 2013, 22)? Dendrochronology and Bayesian-modelled radiocarbon dating would be exploited to offer an improved chronology of changes in Ribe after the mid-800s.

The prerequisite to answering these questions was to be a methodology that could decode the morphology and syntax of the layer sequence and clarify its formation and transformation processes, in particular the interplay between the depositional processes (e.g. buildings and constructions, accumulation, and levelling) and post-depositional processes (e.g. degradation, compression, and bioturbation). As a strategy to resolve these questions, data acquisition and analysis within the project aimed to integrate a multi-proxy analysis of the stratigraphy based on the comparison of results obtained through a variety of methods, among them characterization of soil chemistry and micromorphology, as well as microbiological analysis and characterization of ecofacts and artefacts.

Although Ribe's extraordinary archaeological potential has been known for decades, there has been limited opportunity to explore its record. To a degree, this is an effect of the same dearth of modern development that

has luckily preserved substantial parts of the site for the present. For the history of early networks and emporia in the North Sea world, it is clear that Ribe held a special place; what has long remained unclear is what, precisely, this place was. The Northern Emporium project was designed to give new and better answers to this question.

Outlook

Questions concerning the impact of globalizing resource networks – and the dynamics and incentives that drive the growth of commercial exchange – abound in the contemporary world. Scientific and societal debates routinely make assumptions about the history of these phenomena, whether they are assumed to be central or marginal to past societies and whether the European historical trajectory is seen as relatively passive or progressive in this regard. Ribe is a unique site where detailed archaeological research can provide anchor points for such discussions.

The Northern Emporium project was initiated in 2016, and the results of the fieldwork will be published in two volumes, of which this is the first. The aims, organization, and methodology of the excavation are described more fully in Chapter 2. Chapter 3 provides an overview of the excavation results, organized into 18 main phases. Contributions by ten specialists detail particular aspects of the analytical work of the project: the use of 3D recording and analysis, micromorphology, site formation, soil geochemistry, pedology and soil formation, dendrochronology, radiocarbon chronology, zooarchaeology, entomology, and archaeobotany. A final chapter offers a synthetic essay on Ribe's history in relation to the early medieval emporia. The subsequent volume will present studies on the artefact finds and craft workshops.

The exploration of the Northern Emporium project does not amount to a systematic analysis of emporia and the Viking-age maritime expansion. Even for Ribe's emporium, the excavation presents but a sounding of the archaeology. Nonetheless, it represents a body of research designed to obtain new data and new forms of data, one that is targeted to reveal more about how the dynamics of networks shaped the history of this place and of the world in which it formed a small but transformational node. As such, it may also aspire to make a small contribution to new directions of archaeological research into urban networks and their role in global history.

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