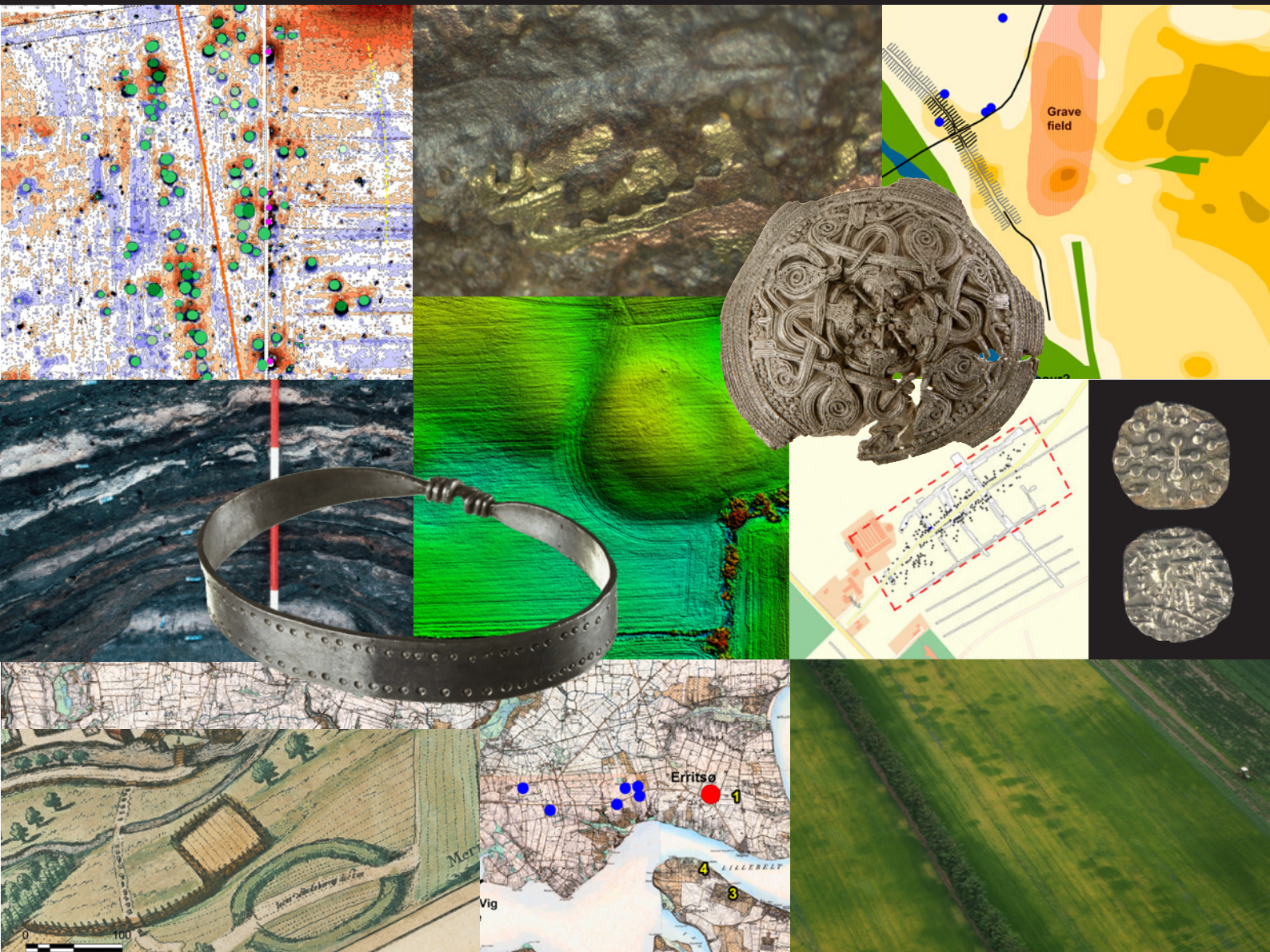


THE FORTIFIED VIKING AGE

36th INTERDISCIPLINARY VIKING SYMPOSIUM

Edited by Jesper Hansen & Mette Bruus



THE FORTIFIED VIKING AGE

36th INTERDISCIPLINARY VIKING SYMPOSIUM
in Odense, May 17th, 2017

Published by:

Research Center Centrum
Odense City Museums
University Press of Southern Denmark

ISBN 978 87 408 3212 9

© The scientific editors and the authors

Scientific editors: Jesper Hansen & Mette Bruus

Graphical design: Rikke Reimann

Distributed by:

Odense City Museums
Overgade 48
DK-5000 Odense C
museum@odense.dk
www.museum.odense.dk

University Press of Southern Denmark
Campusvej 55
DK-5230 Odense M
press@forlag.sdu.dk
www.universitypress.dk

THE FORTIFIED VIKING AGE

36th INTERDISCIPLINARY VIKING SYMPOSIUM
in Odense, May 17th, 2017

*Edited by
Jesper Hansen & Mette Bruus*

Kulturhistoriske studier i centralitet
Archaeological & Historical Studies in Centrality,
vol. 3 2018

Research Centre Centrum
Odense Bys Museer/Odense City Museums
Syddansk Universitetsforlag/University Press of Southern Denmark

PROGRAMME – 17 May 2017

Mette Bruus & Jesper Hansen

Welcome and introduction

Lene B. Frandsen

Henne Kirkeby, a fortified settlement on the west coast of Denmark.

Christian Juel & Mads Ravn

Erritsø – A fortified Early Viking Age manor near Lillebælt.
New investigations and research perspectives

Simon Nygaard

...nú knáttu Óðin sjá: The Function of Hall-Based, Ritualised Performances
of Old Norse Poetry in Pre-Christian Scandinavian Religion

Jens-Bjørn Riis Andresen

Trælborg – temporary camp or safety retreat?

Arjen Heijnis

Early Viking camps in Scandinavia and abroad

Mads Runge

New archaeological investigations at Nonnebakken

Nanna Holm

Borgring - the fifth, the first or somewhere in between?

Frauke Witte & Astrid Tummuscheit

The Danewerk in the light of the recent excavations

Morten Søvsø

Emporia and town walls, ring fortresses and Christian mission
– how the Jelling dynasty won all of Denmark

Content

Contributors	6
PREFACE / THE FORTIFIED VIKING AGE 36th Interdisciplinary Viking Symposium – 17 May 2017	7
Mette Bruus & Jesper Hansen	
Henne Kirkeby Vest, a fortified settlement on the West coast of Denmark	8
Lene B. Frandsen	
Erritsø – A fortified Early Viking Age manor near Lillebælt. New investigations and research perspectives	16
Christian Juel & Mads Ravn	
...nú knáttu Óðin sjá: The Function of Hall-Based, Ritualised Performances of Old Norse Poetry in Pre-Christian Nordic Religion	26
Simon Nygaard	
Early Viking camps in Scandinavia and abroad	35
Arjen Heijnis	
New archaeological investigations at Nonnebakken, a Viking Age fortress in Odense	44
Mads Runge	
The Borgring Project 2016–2018	60
Jonas Christensen, Nanna Holm, Maja K. Schultz, Søren M. Sindbæk & Jens Ulriksen	
The Danevirke in the light of recent excavations	69
Astrid Tummuscheit & Frauke Witte	
Emporia, sceattas and kingship in 8 th C. “Denmark”	75
Morten Søvsø	

Contributors

Mette Bruus
University Library of Southern Denmark
Campusvej 55
DK-5230 Odense M
metteb@bib.sdu.dk

Jonas Christensen
Museum Southeast Denmark
Algade 97
DK-4760 Vordingborg
jc@museerne.dk

Lene B. Frandsen
ArkVest, Varde Museums
Lundvej 4
DK-6800 Varde
lbf@arkvest.dk

Jesper Hansen
Odense City Museums
Overgade 48
DK-5000 Odense C
Jesha@odense.dk

Arjen Heijnis
Aarhus University
Moesgård Allé 20
DK-8270 Højbjerg
arjenh@cas.au.dk

Nanna Holm
Museum Southeast Denmark
Algade 97
DK-4760 Vordingborg
nh@museerne.dk

Christian Juel
Vejle Museums
Spinderigade 11E
DK-7100 Vejle
chjue@vejle.dk

Simon Nygaard
Aarhus University
Jens Chr. Skous Vej 3
DK-8000 Aarhus C
sn@cas.au.dk

Mads Ravn
Vejle Museums
Spinderigade 11E
DK-7100 Vejle
marav@vejle.dk

Mads Runge
Odense City Museums
Overgade 48
DK-5000 Odense C
mtr@odense.dk

Maja K. Schultz
Museum Southeast Denmark
Algade 97
DK-4760 Vordingborg
mks@museerne.dk

Søren M. Sindbæk
Aarhus University
Moesgård Allé 20
DK-8270 Højbjerg
farksms@cas.au.dk

Morten Søvsø
Museum of Southwest Jutland
Tangevej 6B
DK-6760 Ribe
mosvs@sydvestjyskemuseer.dk

Astrid Tummuscheit
Archäologisches Landesamt Schleswig-Holstein
Brockdorff-Rantzau-Straße 70
24837 Schleswig, Germany
Astrid.Tummuscheit@alsh.landsh.de

Jens Ulriksen
Museum Southeast Denmark
Algade 97
DK-4760 Vordingborg
ju@museerne.dk

Frauke Witte
Museum Sønderjylland
Dalgade 7
DK-6100 Haderslev
frwi@msj.dk

The fortified Viking Age

36th Interdisciplinary Viking Symposium
– 17 May 2017

Mette Bruus & Jesper Hansen

The theme of the symposium was *The Fortified Viking Age*. Ever since the days of Saxo and the story of Thyra Dannebod as the builder of the Dannewerk, fortification has been seen as an integrated historical narrative when we describe the centuries of the Viking age. Nowadays, we are not only addressing large externally oriented structures when we research Viking Age fortifications, but also internal structures which are likely to belong in local contexts. Besides regular fortresses and large farms, the fortified facilities include strategic structures oriented towards transport corridors both on land and at sea.

Research has long been focussing on the eventful decades of Harald Bluetooth's reign in the late 900s. However, new studies dealing with the basic settlement development in Viking Age society, as well as (new) studies in a number of specific structures, have provided a new data basis for looking at the genealogy and context of the fortified Viking Age in a broader perspective. This symposium invited presentations which explore these and other themes in Viking Age research. The theme encompasses all periods, genres and disciplines.

We hope you will enjoy reading!

On behalf of the Interdisciplinary Viking Symposium

Mette Bruus and Jesper Hansen
(organisers)

Henne Kirkeby Vest, a fortified settlement on the West coast of Denmark

Lene B. Frandsen

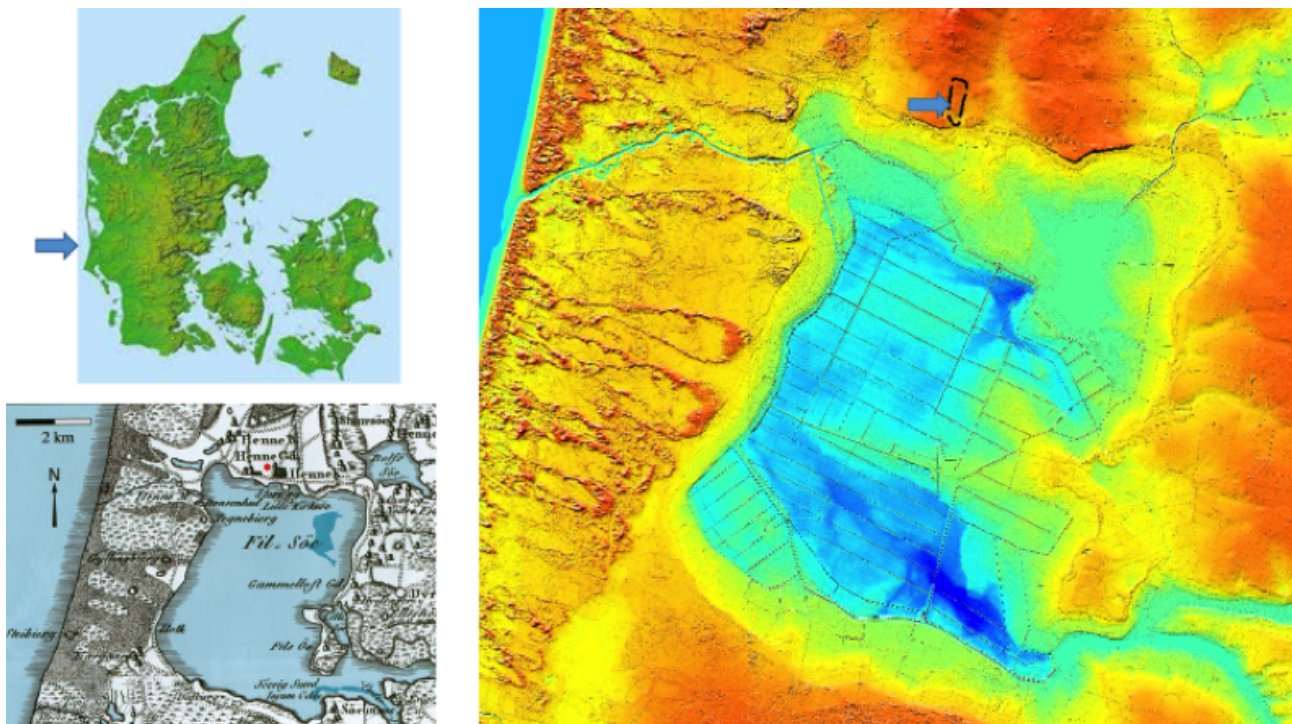


Figure 1. Henne Kirkeby Vest is situated at the northern shore of the Lake Filsø. Bottom left: Videnskabernes Selskabs Map, around 1800. Bottom right: modern Lidar Scan.

Abstract

The Viking Age settlement known as Henne Kirkeby Vest was from the beginning organized along an old road, probably from the Bronze Age. The road leads to Filsø, a huge lake which was connected to the North Sea in the Viking Age. The finds indicate trading connections to the continent and other Scandinavian countries, but also various handicrafts, especially weaving. On both sides of the road, there were 300-400 pit houses in all and an unknown number of longhouses. It seems that the settlement was initially fenced in by a huge palisade. After some time, the space was presumably getting too small for the activity, and longhouses were now built crossing

the fence. It is very interesting that some of the houses were erected like a new “fence”, with no gap between them.

Location

Henne Kirkeby Vest was situated about 4-5 km inland from the West coast of Jutland on the northern shore of the big lake Filsø. In the Viking Age it was probably possible to sail quite close to the settlement, because Filsø was connected to the sea. We don't know exactly where, but it could have been where Henne Å (river) is situated today (Figure 1). During

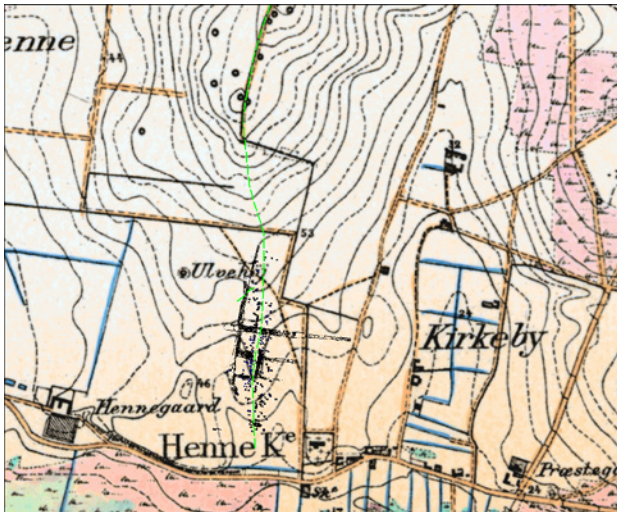


Figure 2. The old road: green line. To the North it is still visible between a row of old gravemounds. In the excavation area further south, it was discerned as wheel tracks or area avoided by the houses.

the Neolithic and Early Bronze Age, Filsø was in some periods connected to the Sea and was at that time more salty, but in the early medieval it seems to have attained its biggest size as a fresh water lake (Aaby 2017, 30).

The settlement was situated on both sides of an old road, probably from the Bronze Age. North of the settlement there are still several large grave mounds visible (Figure 2). There is no doubt that the road led to the shore of Filsø. From the excavation, we have knowledge of traces of wheel tracks, and the road was clearly avoided by the buildings. The part of the settlement we have excavated so far seem to date to the early Viking Age, 700-950, with little interference from older or younger periods. However, it is worth mentioning that the settlement is situated between a medieval church and the manor house Hennegaard, which we know from written sources were built before 1145 (Plough, Jepsen & Frandsen 2012, 39), so settlement in the area has been continuous. Today Henne Kirkeby Vest is a very small village with a few houses and farms and most famous for its inn, Henne Kirkeby Kro

Discovering the site

The settlement was discovered in 2003 in connection with construction of a pipeline going east-west (Frandsen 2005). In the trial trench, we found a lot of postholes and presumably some pit houses. At that time, we did not get the chance to make a total excavation, because it was decided to plough down the pipeline so then it would only disturb half a metre,

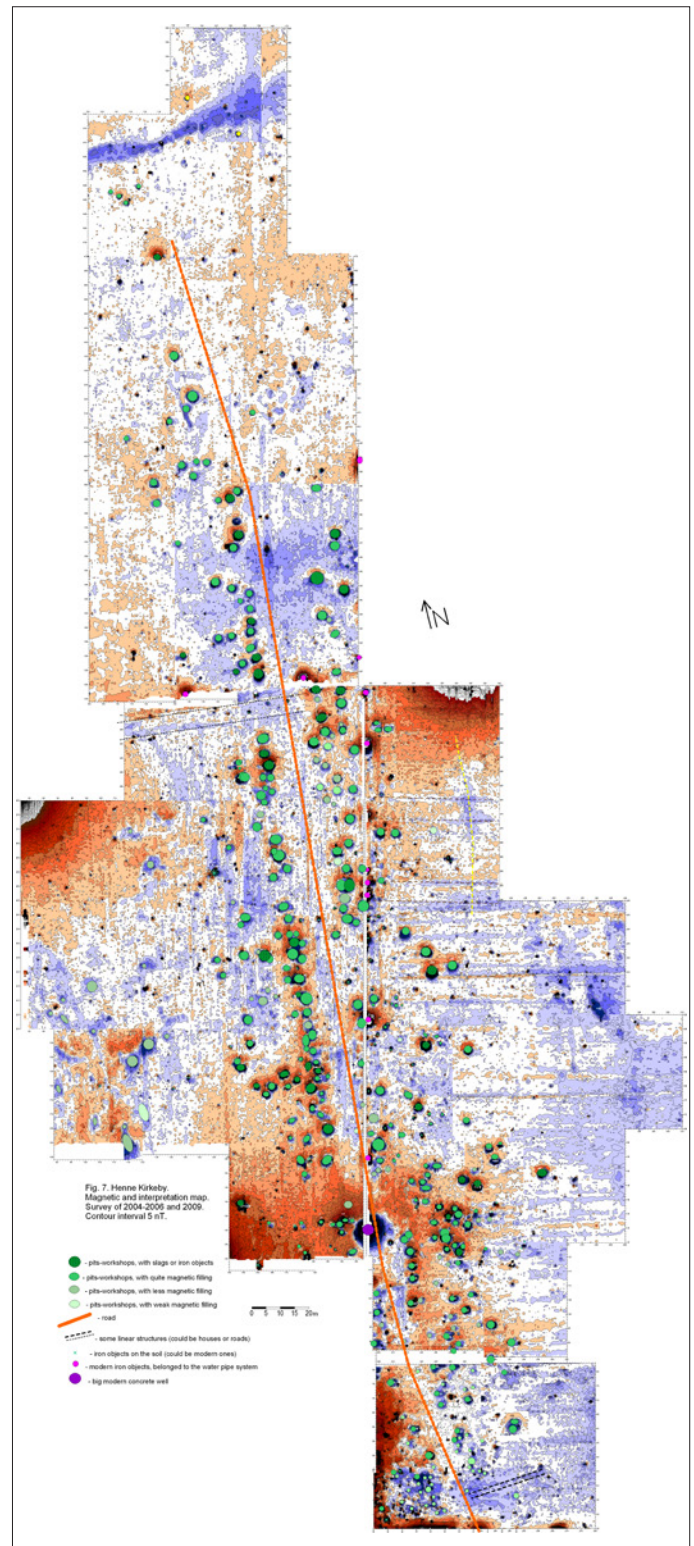


Figure 3. Magnetic mapping of Henne Kirkeby Vest by Tatyana Smekalova.

which made it difficult for us to argue for a full excavation of six metres' width. However, from the finds in the top layers we got a quite good dating from potsherds and a bronze pin – clearly Viking Age.



Figure 4. Air photo: Lene B. Frandsen. Field seen from the North-East. The pit houses are seen as darker green cropmarks.

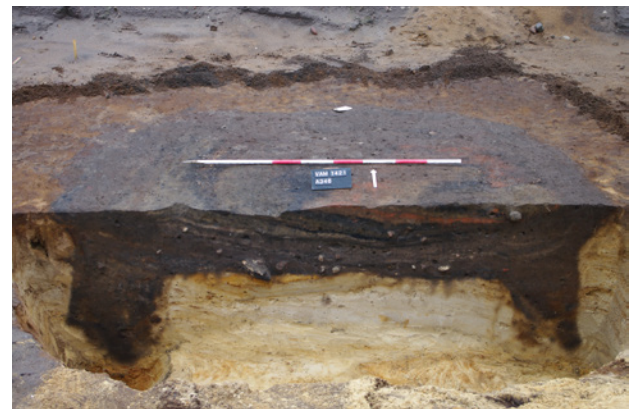
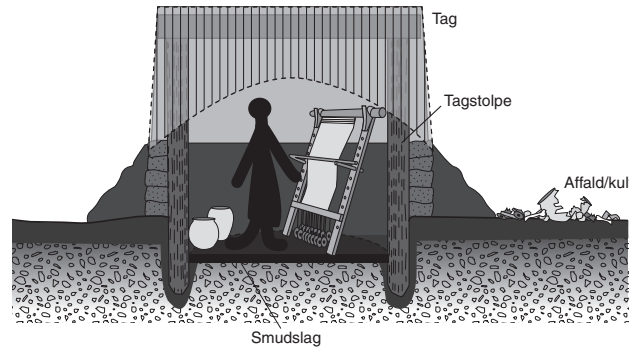


Figure 6. Top: Schematic drawing of a pithouse. Drawing: Louise Hilmar (Roesdal et al. 2014). Bottom: Profile trough one of the pit houses at Henne Kirkeby Vest.

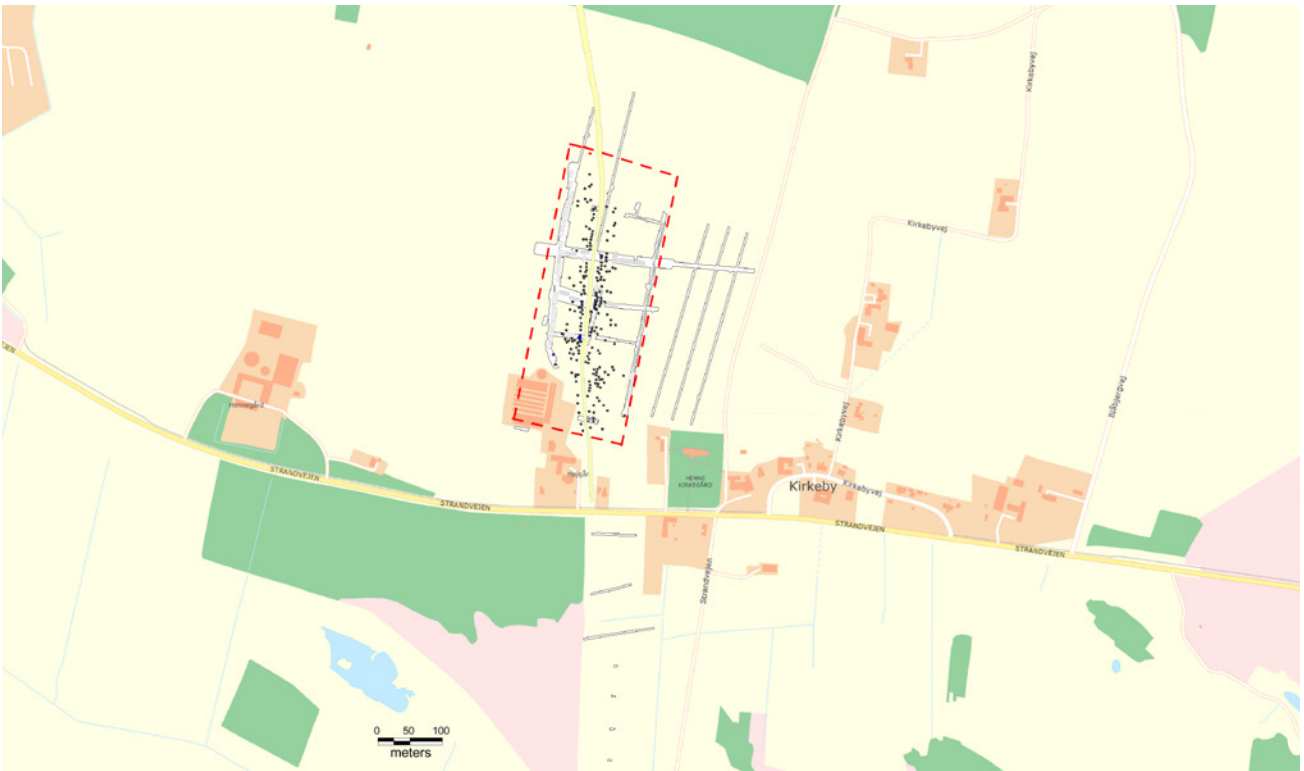


Figure 5. Henne Kirkeby Vest, trial trenches and long-houses marked in gray, the small dots are pit houses, and the estimated area of the Viking Age settlement is marked in red.



Figure 7. The large pit house, profile and beneath bottom layer, where tiny postholes show the wall. These have been marked with small sticks.

The following year, Olfert Voss and Tatiana Smekalova visited the site. Their main target was to investigate Iron Age furnaces in the Varde river system by magnetic measurement (Smekalova 2005, 34), but as a favour to us, they also made a magnetic survey of the Henne field with very good results. The resulting map clearly shows a great number of anomalies which could be prehistoric, and among them 375 were interpreted as pit houses, see figure 3 (Frandsen 2005; Plough et al. 2012, 29).

Based on the magnetic map, we planned a larger trial excavation that covered the area of the anomalies interpreted as pit houses, as well as some empty spots. This first real excavation showed that the anomalies were indeed pit houses, and the empty area along the old road covered some longhouses oriented North-South, the same direction as the road (Frandsen 2005, 9).

Further investigation

The following years from 2005-2012, we made more magnetic mapping, air photos (Figure 4), metal detecting and also more trial trenches, and the picture became more and more clear (Frandsen 2011). We had found a huge Viking Age settlement covering around seven ha. (Figure 5). The outstanding thing is the large number of pit houses. Most of them we only know from air photos or magnetic mapping, but a few have been unearthed in the trial trenches. So far, we have only excavated seven of the estimated 375 pit houses.

Buildings – pit houses and longhouses

The pit houses we have excavated all have the typical construction with roof-bearing postholes in both ends. They also typically have traces of weaving activities, such as loom weights or spinning wheels in the bottom layer (Figure 6). In one of the larger pit houses, we also have traces of smithery. This house was five meters long and covered more than 20 square meter, with three floor layers separated by sand (Fig. 7). In the middle floor layer we found some broken soapstone sherds with holes. In same layer, we found waste from the smithy: charcoal, slag and some iron objects. Maybe the soapstone vessels had been taken to the blacksmith for repair.

The conditions for observation and sieving the fill from the pit houses are quite good in the sandy soil of western Jutland. In the bottom layers it was possible to discern small markings showing that the inner wall was made out of wattle (Figure 7). A soil sample from the bottom layer of the largest pit house revealed animal hair¹, so maybe animal hides had been lying on the floor or hanging on the walls.

The longhouses were all constructed with double roof-bearing posts, the walls are typically slightly curved and the gable walls straight. Most of the houses are only partly uncovered, so it is not possible to describe them in detail, but the length and width clearly differ a great deal. The orientation obviously depends on the function of the house and the overall layout of the settlement. It seems that the smaller longhouses, which were placed between the pit houses, were oriented North-South, in the same direction as the road. Maybe they were used as workshops or store houses. The larger houses were situated behind



Figure 8. Various finds from the excavation at Henne Kirkeby Vest, from the first years of excavating. On display at Nymindegab Museum.

the row of pit houses and oriented both East-West and North-South. The longhouses along the edge of the settlement, especially to the West, were mostly oriented North-South.

Finds

The finds (Figure 8) represent various handicrafts. Weaving seems to have been the main activity in

the pit houses. There were also traces of amber manufacturing. Nails and rivets suggest that there could also have been some repair or perhaps building of ships. Among the metal finds are some amulets, which could represent Thor's Hammer. The long-distance trade is documented by beads of mountain crystal, fragments of querns made of Rhenish basalt and the soapstone from Norway mentioned above. Excavation of the site has been done mainly by trial



Figure 9. Detector find from Henne Kirkeby Vest: a key for a chest, shaped like a bird. Maybe one of Odin's ravens. Photo: Lars Chr. Bentsen.

trenches, and the main target of the investigation so far has been to uncover the structure of the settlement. Even where an area has been unearthed, we have not excavated all postholes and pits to the bottom, which means that the find material so far has been limited.

So it was a very nice help when a detector gathering of very skilled people was arranged in 2011 (Frandsen 2011). They searched the fields around Henne Kirkeby Vest and the nearby location Kløv-gårde. The result was impressive, and now we can add dirhems, silver ingots, and several types of brooches to the metal finds. Of special interest is a very beautiful key shaped like a bird (Figure 9). The finds from the plough soil dated to the Viking Age and early Middle Ages. Probably some of the mediaeval and late Viking Age finds have a connection to the medieval church or the nearby manor house, Hen-negård.

Detector people still regularly search in Henne, and new finds are popping up all the time, so the study of the metal finds is still in progress.

Dating of the site

The dating of the site is based mainly on house typology and the find material from the excavation. In a well with two construction phases we found preserved wood, which could be dated by dendrochronology. It seems that the first well was made around 850 and the youngest just before 900.

All the longhouses we have seen so far are of the early Viking Age type with straight gables and curved walls. We have not seen any Trelleborg houses with sloping posts, so the settlement is dated mainly before the middle of the 10th century. This corresponds nicely with the find material, such as



Figure 10. Drawing of the central part of Henne Kirkeby Vest. The blue dots outside the excavated areas are pit houses, also seen on the magnetic mapping or air photo. To the West and East is the fragmented palisade ditch, marked in red.

the locally made pottery hemispherical pots with inwards turned rims and the swallows' nest vessels.

A well-planned site

The layout of the settlement is quite interesting. In the middle, we have all the pithouses and some smaller longhouse aligned along the road (Figure 10). This is interpreted as the main workshop and storage area, conveniently located for loading products on wagons and transporting them the short distance to the lakeshore, where the Viking ships could bring the goods further out into the world (Frandsen 2013). Behind the row of pit houses we have dwelling houses and different types of economy building.

Of special interest is the demarcation of the site, which changed over time. Initially, it would seem that a palisade fenced the area. Both to the East and the West there is a clearly marked ditch. The width of the ditch changed with local preservation conditions, and in some places, it had been ploughed down and later activities have blurred the traces. Where the preservation was best, it was around three metres wide. We have only made one profile through the ditch, and the construction is not quite clear. There may have been two rows of posts and an outer ditch, but we are not sure. We can follow the eastern ditch for 300 meters where it turns a sharp corner to the West at the North end (Figure 11). In the other direction, we do not know how far it continues, because we have not tried to follow it further South. The

Figure 11. Drawing and photo of the palisade ditch which demarcate the site to the East.

fenced area covered an area about 300 x 150 meters – 45.000 m². It is not unusual that farmsteads or whole villages from the Scandinavian Iron Age or Viking Age are fenced. The reasons may have been many; keeping animals in or out or asserting control over a given area. From the gates and openings in the palisade it was possible to control the traffic of people and goods coming and going.

It seems that the site grew, and later houses were built over the palisade ditch, while the boundary was kept intact. The houses in the West side of the settlement were placed North-South, gable to gable, so close together that it was difficult to enter the settlement. There was only a small gap in one place where it was possible to get in or out (Figure 10, the red arrow). The length of the connected row of longhouses was nearly 400 metres. It must have been quite an impressive sight – coming from West and seeing this wall of houses rising up. The question is, who were in charge of the place from the beginning. So far, we have not been able to identify any house which could be interpreted as a chieftain's manor. The reason for this could of course be that we have not excavated the area where it was located. Remember, so far, we have uncovered less than 10% of the estimated area. Or maybe we are looking for the wrong construction. For a chieftain's manor, we have been expecting a hall-type construction with one very big central room and smaller rooms near the gables, such as K3 at Toftum Næs (Jessen & Terkildsen 2016) or something like the main houses at for example Up-påkra, Lejre or Tissø. These are all huge hall-type houses with some extraordinary finds that may be related to cultic activities, which could support the interpretation that they were inhabited and ruled by men of great importance. Tom Christensen has argued that what he calls gable-room-houses or three-room-houses were developed in the eastern part of Denmark in the late Iron Age, and only later, during the Viking Age they start to appear in Jutland (Christensen 2016, 120). So maybe this house type was not yet common in Western Jutland at the time of the establishment of the Henne settlement.

Conclusions

As evidenced by this very preliminary presentation of Henne Kirkeby Vest, where just a small part has been unearthed and even less excavated, the settle-



ment was quite unique. It seems to have been very well-organized right from the beginning. Initially, a palisade bordered the settlement, and later it was shielded by the houses oriented along the outer edge of the site. There must have been something of value hidden in the many houses, which made it necessary to protect the site. We have signs of long-distance trading: quern stones and soapstone vessels, beads of glass and mountain crystal, a few imported pieces of silver such as ingots and dirhems, so there is no doubt that foreigners have visited the site.

From the local surroundings, wool and amber were probably never-failing resources. From the many looms in the pit houses a lot of textiles must have been produced, maybe even for sails. The site was perfectly located for distribution of products, both from home and abroad. There is no doubt that the bordering of the site makes it special. There is no other known settlement exactly like Henne Kirkeby, but a few other sites in Denmark from the Viking Age are also protected by palisades, ditches or ramparts. Most spectacular are of course all the trelleborgs and the early urban sites as Hedeby, Aarhus and Ribe. There are also great manor sites at Jelling and Erritsø. I don't think we can equate Henne with these because Henne did not develop into a town-like or important military structure. It was more rural and dependent on local products for the huge production going on in its many pit houses. There are indications of long-distance trade, and one of the main purposes of the site must have been to guarantee the safety of the traders and maybe provide storage room for their products.

Only a very small part of the site has been excavated so far. The settlement is seriously threatened by modern agriculture: every year, inch by inch, the tops of postholes, pits and ditches are disappearing. The pit houses will probably last for many years, but all the small features which are so important for the understanding and interpretation of the site are disappearing at an alarming pace. I really hope that it will be possible to do further excavation at Henne in the coming years in order to dig deeper into the development of the settlement and the house chronology. There are overlaps between houses and fences, and some of the houses seem to have two phases. Luckily there is no interference from other periods in the main area, so we have a "clean" late Iron Age – Early Viking Age site with two or perhaps three phases, so it would not be an impossible task to work out interpretations of the site after further excavations.

Bibliography

- Christensen, T. 2016. *Lejre bag Myten*. ROMU/Jysk Arkæologisk Selskab.
- Frandsen, L. B. 2005. "Vikingetiden i Henne". *Mark og Montre*. Årbog for Ribe Amts museer: 5-14.
- Frandsen, L. B. 2011. Detektortræf, fantastiske fund fra tre vikingetidslokaliteter. Opdatering 2011, Årbog for Museet for Varde By og Omegn & Ringkøbing Museum: 182-187.
- Frandsen, L. B. 2013. "Hvad var vikingerne i Henne bange for". In: H. Lyngstrøm & L. G. Thomsen (eds): *Vikingetid i Danmark. Arkæologi på Saxo-instituttet 2013*: 165-188.
- Jessen, M. Dengsø & Fiedler Terkildsen, K. 2016. "Towering above – an interpretation of the late Iron Age architecture at Toftum Næs, Denmark". *Danish Journal of Archaeology*.
- Ploug, M., P. Uhd Jepsen & Frandsen, L. B. 2012. *Henne*. Museet for Varde By og Omegn.
- Roesdal, E., Sindbæk, S.M. & Pedersen, A. 2014. *Aggersborg i Vikingetiden – bebyggelsen og borgeren*. Jysk arkæologisk Selskab.
- Smekalova, T. 2006. "Magnetic survey of iron smelting sites with slag pits". *En Hilsen til Olfert*. Saint Petersburg: Publishing House of Polytechnic University.
- Aaby, B. 2017. Filsøområdet's vegetationsudvikling i forhistorisk tid. Report.

Notes

- 1 Letter from Annine Moltsen, NOK

Erritsø – A fortified Early Viking Age manor near Lillebælt. New investigations and research perspectives

Christian Juel & Mads Ravn

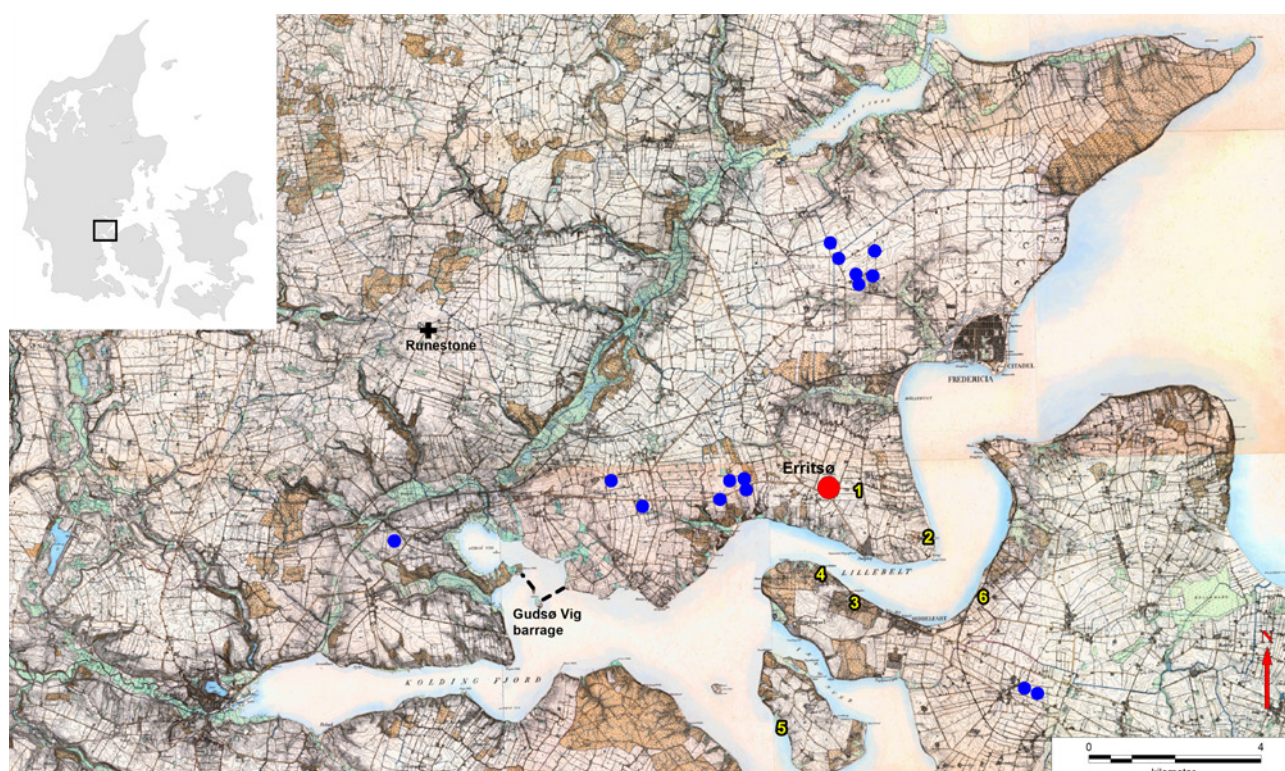


Figure 1. Location of the *Erritsø* site in South East Jutland. The topographical background map from 1842-99 shows the general topography of the area before major commercial development and road construction began in the 20th century. Excavated settlements from the Late Germanic Iron Age and Viking Age are shown with blue dots. The *Gudstø Vig* sea barrages are marked in black. Yellow numbers show important hoards and single finds from the Viking Age described in the text: 1: *Erritsø* silver hoard from ca. 800-900 AD. 2: Gold ring. 3: Silver ring. 4: Buckles for horse mounting. 5: Moulds for Bronze casting. 6: Cult place. Sites on Funen and *Fænø* adapted from Henriksen 2015.

Abstract

In this paper, we present results from recent investigations of the Early Viking Age fortified manor at Erritsø, South-East Jutland. The Erritsø manor is surrounded by a moat with an inner palisade measuring 110 x 110 m. The fortified manor was partly excavated in 2006-7, but a narrow time frame for the site was not established. A small excavation conducted in 2016 was primarily aimed at providing a more precise dating of the moat and palisade, but samples

from the earlier excavation of the main hall were also dated. In addition, a metal detector survey and a Frequency Domain Electromagnetic Induction Survey were conducted covering an area of 18,500 m². Based on the new investigations, the dating of the Erritsø site can now be narrowed down to the 8th and 9th century. The location of a fortified manor (with its best parallels found at the East Danish and Scanian aristocratic sites Tissø, Lejre and Järrestad) begs

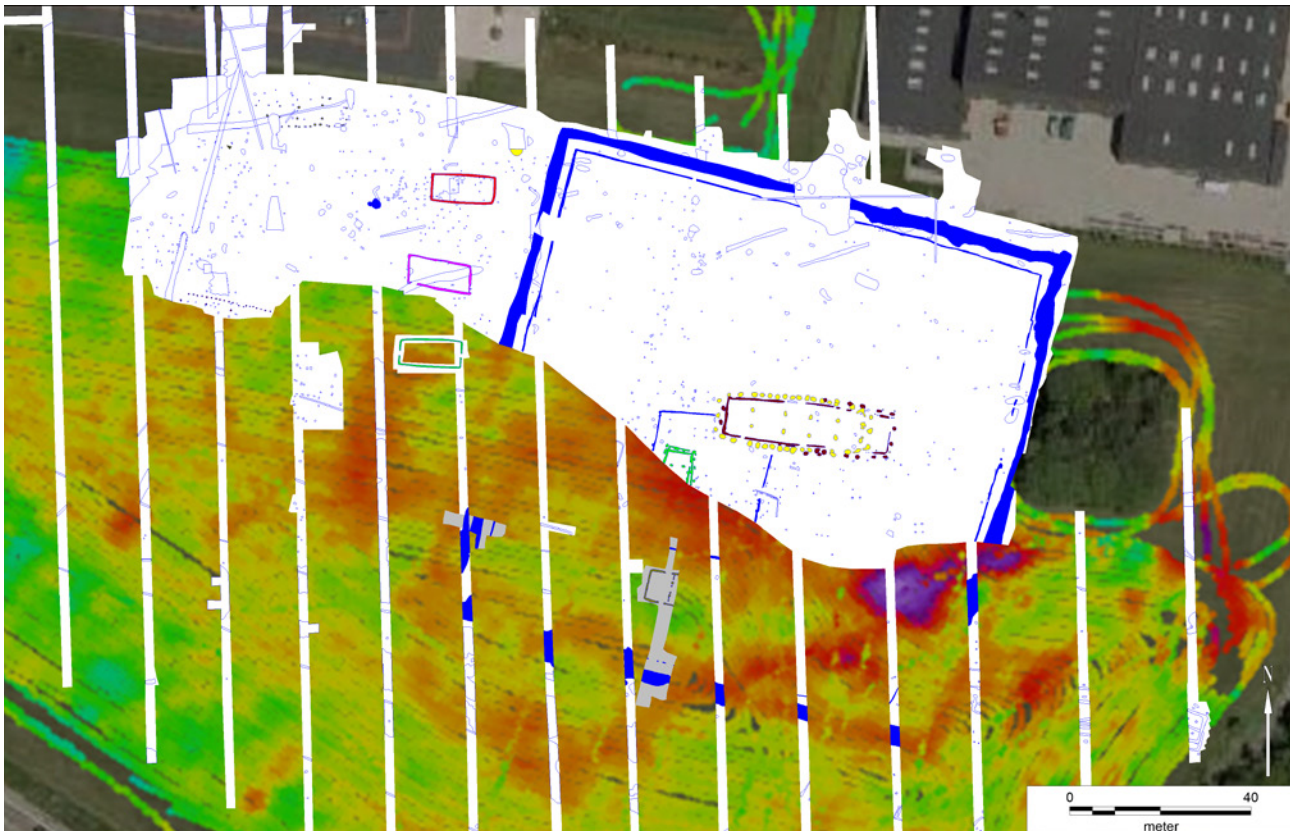


Figure 2. Plan of the excavation in 2006 and 2007 (*white background*) and the small investigations in 2016 (*grey background*). The central house is marked in yellow (phase 1) and brown (phase 2). The moat and palisade are marked in blue. The North-South lying building associated with the hall is marked in green. The background outside the excavated area indicates further features based on data from a so-called Frequency Domain Electromagnetic Induction Survey in 2015. The DUALEM-421 is a single-frequency, multiple-coil EM instrument, optimized for detailed mapping of the electrical conductivity of the near subsurface to a depth of approx. 6 meters. It clearly shows where to expect the rest of the moat.

the question of which role - culturally, strategically, politically and administratively - the Lillebælt area played in the early Viking Age. A just as interesting question is the relation between Erritsø and the 10th century royal residence of Jelling, situated just 30 kilometers to the northwest. The fortified manor is situated with an optimal overview of the narrowing waterway of the Lillebælt and of the main East-West land route to one of the historical crossing points of the Lillebælt. Place-names suggesting the presence of centrality, power and armies, also indicate the importance of the area in the Viking Age.

The Erritsø Early Viking Age manor

In 2006, remains of an extraordinary Viking Age settlement came to light during a rescue excavation only few hundred meters from the present older Lillebælt bridge connecting the Jutland peninsular with the island of Funen (P. M. Christensen 2008, 2009) (Figure 1). The settlement is situated at one of the

highest points of the *Elbo Herred (Shire)* with a good view to the North towards the ‘funnel’ of the waterway in the northern end of the *Lillebælt*. Visible to the South is the opening of the *Kolding Fiord*, which leads to the shallow bay of *Gudsø Vig* – a perfect natural harbour.

Among the main features were an impressive hall building, constructed with two rows of roof-supporting posts and slightly curved walls (Figure 2). The walls and gables were supported on the outside by slightly inclining posts. Three entrances could be identified, two opposite each other in the eastern part of the building and one in the South-West wall. Low levels of phosphate in the layout of the structure indicate that it had no stable section (P. M. Christensen 2009). The main hall had at least two phases. In the oldest phase, the building was 34 metres long and 12 metres wide at the centre. In the second phase, there was an extension to the east end by 5 metres, where postholes from the older phase were largely reused. The postholes for the roof-supporting posts

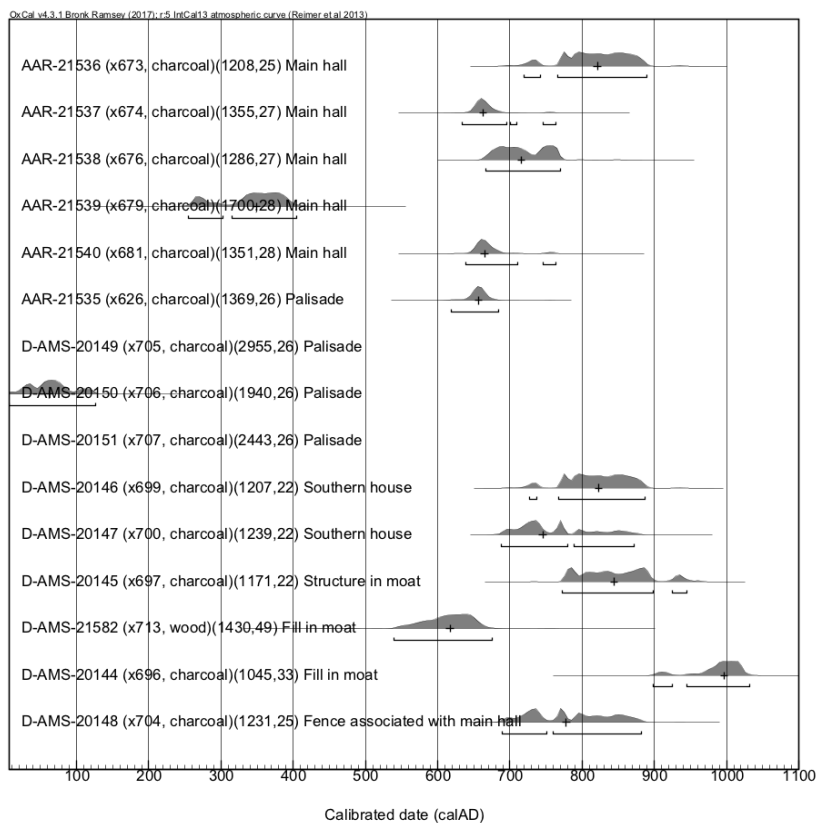


Figure 3. AMS dates from *Erritsø*. All dates are calibrated in OxCal v. 4.2.4 Bronk Ramsey (2013): r:5 IntCal13 atmospheric curve Reimer et al. 2013. For each date are noted lab. ID, lab. No., find number, sample material, uncalibrated date BP and archaeological feature. Captions under each calibration plot shows the 95.4% range probability, + marks the median value.

measured between 0.60 metres and 1.00 metres in depth and were packed with stones, indicating that the building had robust long-lasting posts and possibly a considerable roof-height.

To the South-West of the hall, a rectangular fence extended towards the South. Within this “inner court”, the northern part of a smaller North-South oriented building in two phases was partly uncovered. The described layout closely resembles the layout of the aristocratic sites *Lejre*, *Tissø* and *Järrestad*, especially phase 1 and 2 in *Tissø* (*Fugledøgård*), phase 2 in *Lejre* (*Mysselhøjgård*) and phase 2a and 2b in *Järrestad*. These phases in *Tissø*, *Lejre* and *Järrestad* are dated to the 8th and 9th centuries (L. Jørgensen 2009, 342; T. Christensen 2015, 136-137; Söderberg 2005, 78). As something unique in Viking Age Denmark, the central hall area at *Erritsø* was surrounded by a V-shaped moat measuring up to 1.60 metres in depth and forming a square of 110 x 110 metres in plan. On the inner side of the moat at a distance of 1.50 metres was a palisade trench. Sections of the trench showed that the palisade was constructed from closely placed rectangular planks with a larger post for each 5 metres.

Due to the extent of commercial development, the settlement outside the moat was only partly excavated in 2006-7. West of the moat three frame houses were uncovered. The function of these houses is

unknown but in their layout west of the main hall they closely mirror the row of smaller buildings at *Tissø* phase 3 (L. Jørgensen 2009, 341). In *Tissø*, the plough soil around these buildings contained several finds related to metal working, possibly jewelry manufacture (iron bars, melts, small hammer, matrices) (Croix 2012, 88). In *Erritsø*, a large pit inside the northernmost frame house contained slag and heavily burned clay, again suggesting activities related to metalworking. In addition, several buildings with roof-supporting post were partly excavated, as well as two pit houses. Based on house typology, the site was given a preliminary dating to the Late Germanic Iron Age and Early Viking Age, c. 650-900 AD.

Recent investigations

In 2015, a Frequency Domain Electromagnetic Induction Survey was conducted over an area of 18,500 m² in order to assess whether expected and new structures could be traced from the surface. The survey was conducted by courtesy of the Rambøll engineering company¹. It clearly showed the remaining parts of the moat that have not so far been excavated (Figure 2). It also suggests some activity within in the inner court just south of the central house. Moreover, it suggests that there is more to find in the western part, where the first excavation revealed Viking

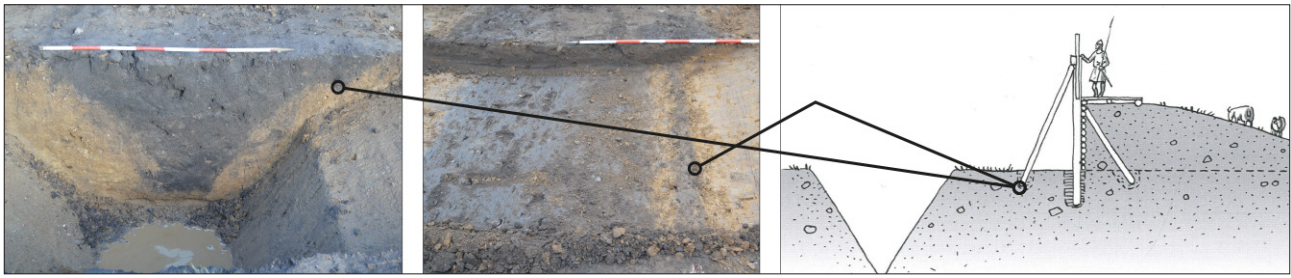


Figure 4. *Left*: Section of the moat showing the characteristic V-shape. *Center*: The moat after removal of c. 20 cm of fill with a machine. The small inner trench is clearly visible in plan against the lighter subsoil to the right. *Right*: Reconstruction of the *Kovirke* fortification, dated to the 10th century. Although the date and scale of the *Kovirke* fortification are different from *Erritsø*, it clearly illustrates the building elements of the moat and palisade as well as the possible supporting posts between the moat and palisade. Drawing after Andres Kvåle Rue.

Age frame houses as well as Late Germanic Iron Age farms. Red areas on the survey map west and south of the moat correspond well with observations from the trenches made in 2006, and show the approximate extension of culture layers outside of the enclosure.

Also in 2015, five charcoal samples from the 2007 excavation of the main hall were submitted for AMS dating. The AMS results grouped around 700-850 AD (Figure 3). Because most postholes of the hall were reused in the second phase and therefore difficult to separate from the first building phase, this time span should be regarded as the general time span of the hall sequence. Typologically, the best parallels to the halls at *Erritsø* are the hall sequence at *Lejre* consisting of Houses III and IVab. As at *Erritsø*, sections of the postholes of the *Lejre* halls reveal that they have been reused to a large extent, and indeed the six ¹⁴C-dates from the *Lejre* halls fall within the time span 650-900 AD (T. Christensen 2015, 359-361). Another sample of charcoal from the *Erritsø* palisade falls between 618-684 AD², which is slightly earlier than the dates from the hall. Since the charcoal is from oak with an unknown own age, the result could be biased. Furthermore, samples of oak timber from a well just north of the fortified manor were submitted for dendrochronological analysis. The felling year of the timber was estimated to be around 745 AD³. In this area, the level of ground water is very high due to natural springs. These springs were used as a water supply as late as the middle of the 20th century and may have served as an important source of fresh water in the Viking Age. They must therefore have been used during occupation of the manor.

In order to get a higher resolution of dates and a better understanding of the site and its function, we conducted new investigations in October 2016. The

darker shade of grey in Figure 2 shows the extent of the additional small-scale excavations. We concentrated the effort on the moat and palisade with the objective of getting dates that are more precise. Nine samples from the new excavation were submitted for AMS dating. Despite the collection of a large amount of soil samples from the palisade trench, a surprisingly small amount of organic material was available for dating. The results of three AMS dates from the palisade ditch clearly show a contamination from older material, as results are scattered in the Bronze Age or early Iron Age.

A section of the moat revealed, as also observed during earlier excavations, that the moat had a distinct V-shape in section and traces of having been dug at least twice. The layers show clearly that the moat was dry. In addition, a smaller trench on the inner side of the moat was identified in both section and plan (Fig. 4). This feature can also be identified on photos from the early excavation, but it was not recognized as a construction detail at that time. Charcoal from this trench was dated to the late 8th and early 9th centuries. The moat and palisade at *Erritsø* thus has a close resemblance to the *Kovirke* defense, though on a smaller scale (Andersen 1998, 168). In the interpretation of the *Kovirke* defense, the palisade is reconstructed with rows of inclining posts between the moat and palisade, acting as support for the vertical palisade front and counteracting the pressure from the earthworks on the inner side. The small trench on the inner side of the moat at *Erritsø* may be the remains of such a row of supporting posts. There are, however, other interpretations of the trench, ranging from a wooden construction preventing the steep inner side of the moat from collapsing, or a second smaller palisade making it more difficult to pass the moat. No remains of earthworks can be documented in *Erritsø*, but it seems likely

that dug-up fill from the moat served a purpose in the fortification. Most likely, this soil was placed on the inner side of the palisade, creating an advantage of elevation for the defenders.

Another AMS date from the inner fence associated with the main hall falls within the 8th and 9th centuries, which is within the lifetime of the hall. Also in the 2016 excavation, the West end of a larger three-aisled building with wall trenches was uncovered. Two dates place this building within the 8th and 9th centuries as well. The function of this building is unknown. In size, it cannot be compared to the hall, but similar smaller buildings contemporary with the halls are known from both *Tissø* and *Lejre*. The last two dates are from an uncarbonized twig and a piece of charcoal from the fill of the bottom of the moat. One date falls within the second half of the 6th century or first half of the 7th century and another in the second half of the 10th century or early 11th century. These dates clearly illustrate the fact that the moat was re-dug several times and that material was re-deposited. However, the youngest date may reflect the abandonment of the settlement and the filling of the moat. This, of course, needs to be confirmed by more samples in the future.

Finds

Very few datable finds were recovered during the early excavations. Metal detector surveys conducted in and around the excavation area after the discovery of the site in 2006 include a square brooch with animal style B2 found in 2007 (Figure 5) and a bird-shaped brooch found in 2014. Volunteer metal detectorists participated in the 2016 excavation, screening systematically both the top soil and the exposed surface excavated by machine. They also screened the top soil in the eastern part of the area. Metal finds were surprisingly few but consisted of lead weights, one broken piece of smelted bronze waste and some pieces of iron slag. In addition, one round piece is quite likely from a Button-on-Bow brooch. The metal objects found so far date within the Germanic Iron Age and early Viking Age.

Indications of power from topography, place-names and older finds

The site is located at one of the highest point of the *Erritsø* parish. A view-shed analysis (Figure 6) demonstrates that the site was placed at the most strategic point for monitoring all passage into the nar-



Figure 5. Square brooch with animal style B2 found with metal detector in 2007.

row part of the *Lillebælt* (*Snævringen*), dividing the peninsular of Jutland from the eastern islands of Funen and Zealand. A preliminary study of pollen species preserved in the *Erritsø* moat shows that the surrounding landscape was largely devoid of trees around the time of occupation, creating an optimal view to and from the site⁴. Complementary future studies of pollen may shed more light on the vegetation development both before, during, and after the occupation.

As well as being located close to an important sea-route, the site is at the historical East-West road corridor leading from the interior of the Jutland peninsula to one of the natural crossing points of the *Lillebælt*. The landscape in the immediate surrounding falls towards the South and East, where a relatively steep cliff marks the beginning of the waterway of the *Lillebælt* that is very deep. It is not clear if there were any landing facilities close by. However, towards the South, around seven kilometers from the *Erritsø* settlement, lies *Gudsø Vig*, a shallow bay and a perfect natural harbor (Rieck 1992). The view-shed analysis clearly demonstrates that all access to the *Kolding Fiord/Gudsø Vig* by sea can be monitored from *Erritsø*. Rows of posts blocking the entrance to the *Gudsø Vig* have previously been radiocarbon-dated to the 8th and 9th centuries AD (Nørgård Jørgensen 2009, 86; Crumlin-Pedersen 2010, 135-136). These dates lie within the time frame of the occupation of the *Erritsø* settlement. From the *Gudsø Vig*, the deep and narrow *Elbo* valley runs north and effectively creates a natural separation of the *Elbo Herred* from the rest of the Jutland peninsula.

A significant discovery in 1871 of a silver hoard of four Permian rings and six other silver rings 700 metres east of the *Erritsø* settlement may emphasize the significance of the *Erritsø* site as also having a

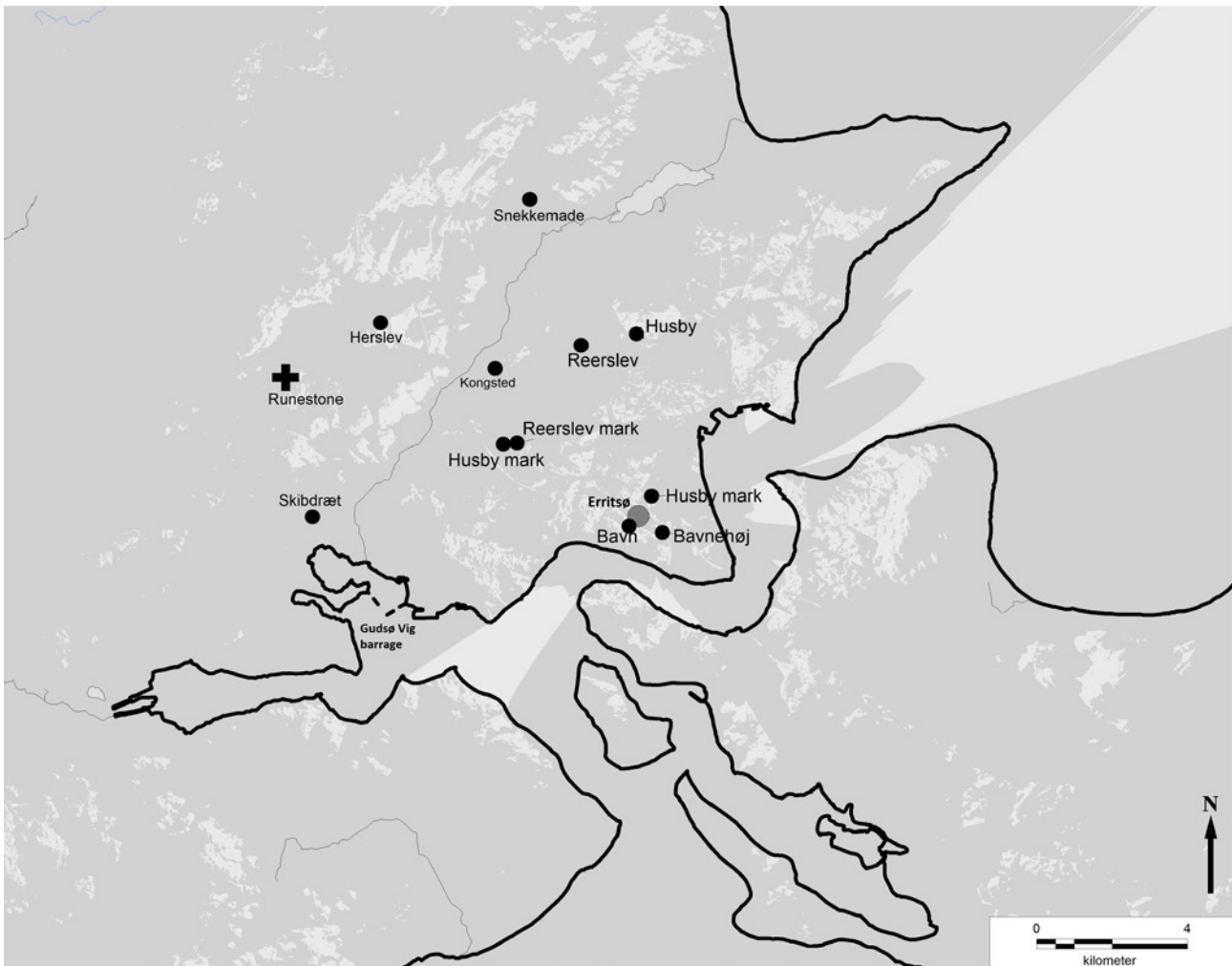


Figure 6. View-shed analysis of the site of *Erritsø* based on the 2008 LIDAR scan, with line of sight calculated from the *Erritsø* hall 2 metres above ground surface. White areas indicate areas visible. Significant place-names relating to power, armies, and ships are added on the map. It shows that given the trees were not too tall, it was possible to spot enemies and friends from afar in good time towards the North and South. The earthworks constructed for the present Lillebælt bridges (1935 N-S and 1972 E-W), make the view towards the North East and East less obvious on the viewshed than it actually was in the past (Courtesy of Lisbeth Eilersgaard Christensen (2015) and the IT department of Moesgaard Museum and Aarhus University).

special ritual status. The silver rings date to between 800 and 900 AD⁵. In addition, on the other side of the belt, finds of silver mounts and a silver ring, dating to the Viking Age (Henriksen 2015, 209), indicate that an aristocratic environment was present near the fortified settlement in the Viking Age (Figure 1).

Place-names suggesting the presence of centrality, power, and armies also indicate that this shire was not just any shire in the Viking Age (Christensen 2015 & Christensen forthcoming). About five kilometers to the north of the fortified *Erritsø* settlement, we have the present village of *Kongsted* (literally King's place). In this area, we have rich detector finds from the Late Germanic Iron Age as well as an abandoned medieval church (Engberg 2002).

This name and other names such as *Herslev* (literally the army's place) eight kilometers to the North West point to a network of power in this region in the Germanic Iron Age and most likely in the Viking Age.

In addition, place-names of the *Husby* type are recorded four kilometers north of the *Erritsø* settlement. Judging by the nature of *Husby* sites and their interpretation elsewhere in Scandinavia, the *Husby* name near *Erritsø* indicates that this area had significant meaning in terms of power and kingship. L. E. Christensen (2016, 63) has presented a hypothesis that the *Erritsø* settlement could have been part of a larger *Husby* demesne. This means that the *Erritsø* manor is a predecessor for the later *Husby* settlement that may have separated off from it. In

that case, *Erritsø* may have functioned as the center of a network of power and control, both towards the land and the sea, with a hinterland of supportive (and possibly dependent) settlements. A better dating of the surrounding *Husby* locality, by means of detector finds or by archaeological excavations, may clarify in the future, whether the sites were contemporary or which one followed from the other. Th. Lemm (2015) suggests from his investigations in the Angeln area to the south that the *Husby* sites are a late Viking Age phenomenon (Lemm 2015, 71-72).

There are also a number of maritime names worth noting (Christensen 2015 & Christensen forthcoming). The place-name *Skibdræt* (literally places where ships are dragged) at the bottom of the Gudsø Vig as well as *Snekkemade* (literally ship meadow) in the central part of the *Elbo* valley may indicate that at least part of the *Elbo* valley was navigable for ships in the Viking Age, but this remains to be investigated further.

Rescue excavations carried out by Vejle Museum in the area over the last decades have resulted in a number of known settlements from the Late Germanic Iron Age and Viking Age. Especially the contemporary *Henneberg Ladegård* with several large, early Viking Age farms and *Rugballegård* with a large number of pit houses should be emphasized here, because they are located just two kilometers west of *Erritsø*.

Discussion

The discovery of a highly unusual settlement type in this part of Denmark begs the question as to which role - culturally, strategically, politically and administratively - *Lillebælt* played in the period between 700 and 1000 AD in general, and this fortified site in particular. We know from archaeology and the few written sources in this period that the balance of power of Danish society changed several times (Näsman 2006; Roesdahl 2016). Furthermore, written sources reveal that there was substantial competition between several royal dynasties in what the Frankish sources call 'Denmark', especially in the 8th and 9th centuries (Myhre 2015, 148). A question that is pertinent is whether *Lillebælt* was a barrier or bridge between the areas of present-day Denmark. According to recent research, there were deeply rooted regional differences between eastern and western (present-day) Denmark before King Harald Bluetooth 'won all of Denmark for himself'⁶ and erected the famous rune stone in Jelling around 965

AD (Holst 2010; Holst et al. 2013). Exactly how these local and cultural differences should be interpreted remains to be assessed in a larger perspective⁷.

Excavations have clearly shown that *Erritsø* is a key site for understanding not only the importance of the *Lillebælt* area, but also the development of elite power in the early Viking Age. However, more research is needed before the full potential of the site can be explored. Fieldwork in 2016 aiming at extracting a higher resolution of dates from the site has provided a chronological frame for the fortified manor within the 8th and 9th centuries AD. The settlement therefore clearly predates King Harald Bluetooth's extraordinary complex in Jelling from the 10th century by 50 to 150 years. Moreover, the date of the late filling of the moat at *Erritsø* coincides with the consolidation of the royal complex at Jelling (Holst et al. 2013). With more dates, it may be possible to validate the so far unsubstantiated hypothesis that the *Erritsø* fortified settlement was phased out when the Jelling complex phased in. In addition, the micro-chronological relationship between the hall, moat, palisade, and surrounding settlement needs to be established further, as does the extent and character of the production on the site. Here, a focus on the similarities with *Tissø* and *Lejre* are obvious. So far, the most obvious similarities are the similar typological details as regards the hall, the inner court, and the inner building. However, the differences should also be considered. One significant difference that stands out is the noteworthy military aspect demonstrated by the presence of a substantial moat and a large palisade. Additionally, the poverty of metal finds stands out here in comparison to *Lejre*, *Tissø* and *Järrestad*. One reason for this may be that the area around the *Erritsø* site has not been cultivated during the last ten years. Nor have metal detectorists systematically surveyed the entire area. In addition, the lack of a large compiled group of ritual stones and the lacking remains of craft production in general are striking.

A stronger focus on systematic metal detector surveys and further excavations south and east of the site might potentially clarify whether this lack of similarity is because the site has not been investigated for the last 10 years, or whether it is indeed different. Another feature worth considering is the fact that a moat has not been found in either *Lejre*, *Tissø*, or *Järrestad*. V-shaped moats are known from *Danevirke*, especially the *Kovirke* wall which, however, judging by C14-dates and the evident similarity with the *Trelleborg* fortresses, was most likely built in the

late 10th century (Andersen 1998, 168). In *Danevirke*, the moat is clearly meant for defensive purposes. No similar moat around a hall has so far been found in Denmark. In contrast, there are numerous examples of fences or palisades, among them the 10th century palisade at *Jelling*. Strikingly, the palisade ditch around the *Erritsø* settlement is as deep as that in *Jelling*, around 0.70 metres, both suggesting that the palisades had substantial height, at *Jelling* possibly even a superstructure (Jessen et al. 2014).

So far, the place names mentioned cannot be dated, but independent indications strongly suggest an area of aristocratic power. Only future explorations can confirm the hypothesis of centrality of the *Erritsø* manor as a potential royal seat of control of the region and *Lillebælt*. Certainly, the topography of *Lillebælt* substantiates such a hypothesis, and fits well with the later medieval transport node of *Middelfart* (literally the middle transfer point) on the Funen side, which gained importance as the main passing point of the belt by boat during the Middle Ages (Christensen 2015, Christensen forthcoming).

It could have been from the *Erritsø* manor that one could monitor the passage east and west between the lands of Jutland and Funen, and north and south along one of the major sea routes through the Danish Islands, a route joining *Kaupang* in present southern Norway with *Hedeby* in present Germany. By having a number of satellite outposts from the landside, one could be warned in good time. As D. Skre (2015) points out, the west coast of Norway had a string of nodules of sea-bound royal farms that controlled the seafaring at key points, while the more important aristocratic seats were safely placed within the inner fjords. In western Norway, he claims that a sea king (*sjókonung*) was present; he suggests further that:

'The land of the Danes has many of the same characteristics as the Scandinavian west-coast. To move about between Jylland, the islands and Skåne one has to go by sea, so here too the lord of the sea is the lord of the land' (Skre 2015, 245).

Skre's hypothesis is strong if compiled with all the other circumstantial evidence. However, one also has to consider that the Norwegian West coast is quite different from the inner sea of the Danish isles. In this light, an early written account of the tradesman *Ottar* gains renewed actuality (Englert 2007). *Ottar* travelled around 890 AD from *Kaupang* in Southern Norway to *Hedeby* in present-day Northern Germany, and it is likely that he chose the passage through *Lillebælt*. As noted by Skre (2015, 244) *Kaupang*

dates from between 830 and 930 AD. *Kaupang* was at times within the zone of royal Danish interests, at least between 700 and 850 AD, and again in the 10th century⁸, a period where the early phase corresponds with the dates that we have reached so far from the recent investigations at *Erritsø*. To this, we should add that the *Skagerrak* is, to some writers, the '*mare nostrum*' of the Danish Kings between at least c. 900-1035 AD (Sigurdsson 2015; Pedersen & Sindbæk 2015). Control at access routes such as *Lillebælt* would be highly desirable.

Future questions to be answered is whether the *Erritsø* manor formed part of a string of special defensible sites covering sea routes from *Kaupang* via the Kanhave channel in the island of Samsø, *Erritsø* in *Lillebælt* along to *Hedeby*, along which the travel could be monitored, protected and controlled as outlined for the coastal region of Western Norway by Skre (2015). Certainly, the contemporary dates so far point in that direction.

Bibliography

- Andersen, H. H. 1998. *Danevirke og Kovirke. Arkæologiske undersøgelser 1861-1993*. Højbjerg: Jysk Arkæologisk Selskabs Skrifter.
- Christensen, L. E. 2015. "Stednavne og arkæologi omkring Jelling i Østjylland". In: Eggert, B. & Olesen, R.S. (eds): *Navne og skel – Skellet mellem navne*, 59-80. Uppsala: NORNA-rapporter 91/2.
- Christensen, L. E. 2016. "Husebyer in Denmark – *Husby* in Grejs parish, Nørvang hundred, and *Husby* in Ullerup parish, Elbo hundred". In: Christensen, L. E., T. Lemm, and A. Pedersen (eds): *Husebyer – status quo, open questions and perspectives. Papers from a workshop at the National Museum, Copenhagen 19-20 March 2014*, 55-70. Publications from the National Museum. *Studies in Archaeology & History* 20:3. Copenhagen: Jelling Series.
- Christensen, L. E., forthcoming: "Places and place names". In: A. Pedersen et al (eds): *Jelling – Monuments and Landscape*. PNM Publications from the National Museum.
- Christensen, P. M. 2008. "Erritsø – en storgård med voldgrav fra den tidlige middelalder". *Fredericiabogen* 2008: 1-12.
- Christensen, P. M. 2009. "Erritsø". *Skalk* 2009(4): 9-15.
- Christensen, T. 2015. *Lejre bag myten. De arkæologiske udgravninger*. Højbjerg: Jysk Arkæologisk Selskabs Skrifter 87.

- Croix, S. 2012. *Work and space in rural settlements in Viking-Age Scandinavia – gender perspectives*. PhD Thesis, University of Aarhus.
- Crumlin-Pedersen, O. 2010. *Archaeology and the Sea in Scandinavia and Britain. A personal account. Maritime Culture of the North 3*. Roskilde.
- Engberg, N. 2002. "Ullerup og Kongsted ødekirker". *Fredericiabogen 2002*: 30-47.
- Englert, A. 2007. "Ohthere's voyages: a late 9th-century account of voyages along the coasts of Norway and Denmark and its cultural context". In: Bately, J., and A. Englert (eds): *Maritime Culture of the North 1*, 51-58. Roskilde.
- Henriksen, M. B. 2015. "Kystens kultpladser – vikingernes rituelle aktiviteter ved havet". *Fynske Minder 2015*: 201-217. Odense.
- Holst, M. Kähler. 2010. "Inconstancy and stability – Large and small farmsteads in the village of Nørre Snede (central Jutland) in the first millennium AD". *Siedlungs- und Küstenforschung im südlichen Nordseegebiet 33*: 155-179.
- Holst, M. Kähler. 2014. "Warrior Aristocracy and Village Community: Two fundamental forms of social organization in the Late Iron Age and Viking Age". In: Stidsing, E., K. Høilund Nielsen, and R. Fiedel (eds): *Wealth & Complexity. Economically specialised sites in later Iron Age Denmark*. Aarhus: *East Jutland Museum Publications 1*, 179-197.
- Holst, M. Kähler, M. Dingsø Jessen, S. Wulff Andersen, and A. Pedersen. 2013. "The Late Viking-Age Royal Constructions at Jelling, Central Jutland, Denmark. Recent investigations and a suggestion for an interpretative revision". *Præhistorische Zeitschrift 87(2)*: 474-504.
- Jessen, M. Dingsø, M. Kähler Holst, C. Lindblom, N. Bonde, and A. Pedersen. 2014. "A Palisade fit for a King - ideal architecture in King Harald Bluetooth's Jelling". *Norwegian Archaeological Review 2014*: 42-64.
- Jørgensen, L. 2002. "Kongsgård – kultsted – marked. Overvejelser omkring Tissøkompleksets struktur og funktion". In: Jennbert, K., A. Andrén, and C. Raudvere (eds): *Plats och praxis. Studier av nordisk förkristen ritual*, 215-247. Vägar til Midgård 2. Lund.
- Jørgensen, L. 2003. "Manor and Market at Lake Tissø in the Sixth to Eleventh Centuries: The Danish 'Productive' sites". In: Pestell, T., and K. Ulmschneider (eds): *Markets in Early Medieval Europe. Trading and 'Productive' Sites, 650-850*, 175-207. Bollington.
- Jørgensen, L. 2009. "Pre-Christian cult at aristocratic residences and settlement complexes in southern Scandinavia in the 3rd to 10th centuries AD". In: von Freeden, U., H. Friesinger, and E. Wamers (eds): *Glaube, Kult und Herrschaft. Phänomene des Religiösen im 1. Jahrtausend n. Chr. in Mittel- und Nordeuropa*, 329-354. Bonn.
- Jørgensen, L. 2010. "Gudme and Tissø. Two magnate's complexes in Denmark from the 3rd to 11th Cent. AD". In: Ludowici, B. (ed.): *Trade and Communication Networks of the First Millennium AD in the northern part of Central Europe: Central Places, Beach Markets, Landing Places and Trading Centres. Neue Studien zur Sachsenforschung*, Band 1: 273-286. Hannover.
- Myhre, B. 2015. *Før Viken Ble Norge. Borregravfeltet som religiøs og politisk arena*. Norske Oldfunn XXXI. Oslo.
- Lemm, T. 2016. "Excavations and surveys – Husby in Glanshammar, Huseby in Tjølling, Huseby in Varend and Husby in Anglia". In: Christensen, Lisbeth Eilersgaard, Thorsten Lemm, and Anne Pedersen (eds): *Husebyer – status quo, open questions and perspectives. Papers from a workshop at the National Museum, Copenhagen 19-20 March 2014*, 71-90. Publications from the National Museum. *Studies in Archaeology & History 20:3*. Copenhagen: Jelling Series.
- Näsman, U. 2006. "Danerne og det danske kongeriges opkomst. Om forskningsprogrammet 'Fra Stamme til Stat i Danmark'". *KUML 2006*: 205-241.
- Nørgård Jørgensen, A. 2009. "Danish naval complexes in the Late Iron Age and Viking Age". In: Olausson, L. H., and M. Olausson (eds): *The Martial Society. Aspects of warriors, fortifications and social changes in Scandinavia. Theses and Papers in Archaeology B*: 11, 79-92. Stockholm.
- Rieck, F. 1992. "Gudsø Vig – en vikingetidig samlingshavn". In: Fellows-Jensen, G., and N. Lund (eds): *Beretning fra ellefte tværfaglige vikingesymposium*, 38-44. Roskilde.

- Roesdahl, E. 2016. "The Unification Process of the Danish Kingdom – and the Danish Husebyer and Their Owners". In: Christensen, L. E., T. Lemm, and A. Pedersen (eds): *Husebyer - Status Quo, Open Questions and Perspectives*. Papers from a workshop at the National Museum Copenhagen 19-20 March 2014, 175-182. Publications from the National Museum. *Studies in Archaeology & History* Vol. 20:3 Jelling Series. Odense.
- Sigurðsson, J. Viðar. 2015. "Jyllandshavet ca. 870-1035: de danske kongenes mare nostrum". In: Pedersen, A., and S. M. Sindbæk (eds): *Et fælles hav. Skagerrak og Kattegat i Vikingetiden*. Seminar på Nationalmuseet, København, 19-20 september 2012, 24-36. Nordlige Verdener.
- Sindbæk, S. M. 2008a. "Kulturelle forskelle, sociale netværk og regionalitet i vikingetidens arkæologi". *Hikuin* 35: 63-84.
- Sindbæk, S. M. 2008b. "Tætte bånd og fjerne forbindelser - kommunikation og sociale netværk i vikingetidens Skandinavien". *Beretning fra II. tværfaglige Vikingsymposium*, 43-65. Højbjerg.
- Skre, D. 2015. "From Kaupang and Avaldsnes to the Irish Sea". In: Purcell, E., P. MacCotter, J. Nyhan, and J. Sheehan (eds): *Clerics, kings and Vikings. Essays on medieval Ireland in honour of Donnchadh Ó Corráin*, 237-246. Dublin: Four Courts Press.
- Söderberg, B. 2005. "Aristokratiskt rum och gränsöverskridande: Järrestad och sydöstra Skåne mellan region och rike 600-1100". *Riksantikvarieämbetet Arkeologiska undersökningar Skrifter nr. 62*. Lund.

Notes

- 1 Thanks to Peter Thomsen at Rambøll, who kindly provided and processed the data.
- 2 95.4% probability, see Figure 3.
- 3 Dendro.dk Report no. 34, 2017.
- 4 Moesgaard Museum, Report no. 17, 2017
- 5 C. Hedenstjerne, personal communication.
- 6 As to the interpretation of the word 'won' see Roesdahl 2015 with references.
- 7 See however Sindbæk 2008a and 2008b who suggests an east-west divide line in the Great Belt.
- 8 For a discussion of this see Myhre 2015, 153-155.

...nú knáttu Óðin sjá: The Function of Hall-Based, Ritualised Performances of Old Norse Poetry in Pre-Christian Nordic Religion¹

Simon Nygaard

Old Norse poetry and the society that generated the earliest examples thereof (roughly the Northern Germanic speaking area from c. 800 CE onwards²) can generally be viewed as oral in nature, and recently the idea of the performance aspect of the Old Norse poems has been re-actualised by Terry Gunnell (1995, 2011, 2012, 2013b, 2016, forthcoming).³ What I propose to examine in this paper is the possible ritual framework behind these oral performances, which consisted of both the ritual space of a Viking Age hall and the ritual content of the performed Old Norse poems. By utilising archaeological material – mainly helmet-masks and halls – and applying Roy A. Rappaport’s ritual theory (1999) to the poems *Grímnismál* (‘Grimnir’s Sayings’) and *Eiríksmál* (‘Words about Eiríkr’), I will argue that not only were the poems meant for oral performance, likely in a hall, but that they may also contain ritualised *performatives* (Rappaport 1999, 114-19) and produce *high-order meaning* (Rappaport 1999, 71-72) creating social and moral obligation towards the group through the transformative performativity of ritual performance and participation. These transformative ritual features may be crucial to the creation and maintenance of group coherence in and the transmission of pre-Christian Nordic religion.

Theoretical Approach

In order to substantiate these claims, I will employ an interdisciplinary theoretical framework, based on Memory Studies, Performance Studies and Ritual Studies. Jan Assmann’s memory theories⁴ provide a theoretical framework for understanding how religion may have functioned and been transmitted in an oral society, as religion can be seen as a primary constituent of what Assmann calls *cultural memory* – especially in oral societies (Assmann 2006, 2010, 2011; see also Nygaard and Schjødt 2018). Perfor-

mance Studies (Gunnell 1995, 2012, 2013b, 2016, cf. Schechner 2006) allows us to view instances of cultural memory, such as Old Norse poems, in a ritual context by viewing them as performed pieces of oral poetry.⁵ This gives us the possibility of analysing the poems using ritual theory (Rappaport 1999) to see how they may have functioned in pre-Christian Nordic religion.

Since Old Norse society was oral, we need some knowledge about how religion in oral societies functions to understand the characteristics of the specific type of religion (see Nygaard 2014, 2015). Here we can utilise various typologies of religion. A very useful typology is Gro Steinsland’s distinction between *folkreligion* (ethnic religion) and *universalreligion* (universal religion) (2005, 31-34; indebted to the work of James Russell (1996)), which is comparable to Jan Assmann’s distinction between primary and secondary religions (2006, 122-125; inspired by Theo Sundermeier (1987)). Pre-Christian Nordic religion can be classified as an ethnic or primary religion, which means that we can expect various characteristics to be present: most importantly, it is primarily orally transmitted and firmly grounded in cult or ritual. As noted, religion and cultural memory are intrinsically connected, especially in primary religions, and, following Assmann, memory in oral societies can be classified as either individual or collective. Assmann speaks of both communicative and cultural memory as being collective (2010; also 2006, 2011), but it is cultural memory which is most relevant when working with religion. This cultural memory is transmitted to the group through ritual reconstruction, which is the chief means of transmitting cultural memory in an oral society (Assmann 2006, 39-40). Among other things, this oral transmission is aided by poetic qualities which are specific to the oral tradition in question. These poetic rules govern the form of the oral poetry which is transmitted, and simultaneously

function as mnemonic tools that help the performer, or ritual specialist, remember and compose the oral poetry and reconstruct the oral cultural memory in ritual performance (see Rubin 1995, 2009 on memory in oral traditions). In this way, the latent, embodied cultural memory of the ritual specialist's individual memory is transmitted to the group making it manifest and mediated in the ritual reconstruction. Such poetic rules naturally also exist in the case of Old Norse poetry and these specific poetic rules will be treated briefly below. By combining Memory studies with Ritual and Performance Studies we can examine this ritual reconstruction through the ritual framework behind the Old Norse poetry in question.

Rappaport stresses the importance of performance in ritual, and one of the functions of ritual is the creation of social and moral obligation between the participants in a given ritual, which is created through ritual performativity. Through what Rappaport calls *auto-communication* each individual communicates this obligation to himself by participating in the ritual, while all the participants communicate their obligation to each other through *allo-communication* via their collective participation in the ritual. This participation creates commitment and solidarity between the participants, and exacts from the ritual specialist and the remaining participants a conformity and an acceptance of the performed ritual act as real. Ultimately, this can create what Rappaport calls *high-order meaning* – a sense of unity in the collective of people who have taken part in the ritual. Ritual performativity exacts this obligation through the utterances Rappaport (following Austin 1962; cf. Searle 1969, 2011) termed *performatives*. These ritual utterances “transform ourselves or the conditions surrounding us” – that is, if the rituals are properly performed by authorised, trained specialists, then the performatives in the rituals will come into being (Rappaport 1999, 114-119). This capacity of change inherent in the ritual is essentially what I understand to be ritual performativity.

Combining these considerations with Gunnell's theories of the dramatic performance of Old Norse poetry, I will argue that the functions described above can be found in the ritual framework behind the performance of the poems *Grímnismál* and *Eiríksmál*.

Old Norse poems as transformative rituals

As Gunnell has argued (2004), many of the Old Norse poems may have been performed in a ritualised hall setting, where the construction of the hall may have represented a microcosm of the mythological landscape, transforming the hall into a ritual space. Additionally, a ritual specialist could have used ritual props to become Óðinn in the ritual moment, aiding his transformation along with the function of Rappaport's performatives. These transformations would affect and potentially transform the audience as well, aiding the ritual reconstruction of cultural memory and transmission of pre-Christian Nordic religion. I will explore and further argue for this in the following.

As examples of poems with possible ritual frameworks, I will use the eddic poem *Grímnismál* and the skaldic poem *Eiríksmál*. Both poems are composed in the metre called *ljóðaháttir* ('metre of incantation'), although the metre *málháttir* ('speech metre') does occur (see, for instance, Fulk 2016 on the metres of eddic poetry). Poems in *ljóðaháttir*, like any poem stemming from an oral tradition (Foley 2002), are composed in accordance with specific poetic rules, as noted above: Old Norse poetry in general, and *ljóðaháttir* poetry specifically, is stanzaic. Each stanza is made up of six verses with (ideally) four-six syllables, or metric positions, though this often varies in practice. Alliteration on the stressed syllables link the various verses together so that verse 1-2 and 4-5 are connected, while verses 3 and 6 stand alone and contain internal alliteration. The content is also specific to the metre and the *ljóðaháttir* poetry predominantly treats mythological and religious content. Such are the poetic rules that need to be followed and which are used in the process of oral transmission by the ritual specialist. To illustrate these poetic rules, a stanza from *Grímnismál* is quoted below:

9. Mjök er **auðkennt** (4)
 þeim er til **Óðins koma** (7)
 salkynni at sjá: (5)
skoptum er rann rept, (5)
skjöldum er salr þakiðr, (6)
 brynjum um **bekki strát** (6)

(It is very recognisable for those who come to Óðinn the features of his hall to see: spearshafts the hall has for rafters, with shields the hall is thatched, mail-coats are strewn on the

benches). My emphasis on the alliterations; numbers indicate syllable count.

As can be seen, the poetic rules of the *ljóðaháttr* metre are followed and the content focusses on Óðinn's hall and its mythological, martial properties hinting at Óðinn's connection with warfare. The poems in *ljóðaháttr* metre furthermore seem particularly well suited for ritualised, oral performance and, as Gunnell has argued (e.g. 1995, 2016), contain several performance markers. The poems in the *ljóðaháttr* metre seem to make past and present appear at the same time. This happens by the ritual specialist(s) performing the roles of the poems' gods and heroes in the first person, which brings them into the audience's presence, thereby making them seem real to the participants in the ritual. Sound patterns in the stanzas are utilised to create aural sense impressions to underpin the poem's narrative content for instance hard consonants such as þ, b and m to mark loud sounds (Gunnell 2016, 94-96). The wording helps stress that the poems actually take place inside the ritual space of a hall using words such as *hér* and *inn*, which are key in the transformation of the physical ritual space.

In *Grímnismál*, Óðinn, disguised as an old man called Grímnir (lit. 'the helmeted or masked one'), visits the king Geirrøðr and stages a sort of wisdom monologue.⁶ His alias in the poem could also hint at the use of a mask, like the Sutton Hoo helmet-mask, in the ritual performance, which I will elaborate on below. Gunnell (2016) has noted the ritual transformation of space in stanzas 2 and 45 and the aural sense impressions of growling wolves in stanza 19 as important performance markers revealing the oral performance context of the poem:

2. *Átta nætr*
sat ek milli elda **hér**, [...]'
(Eight nights I sat between these fires **here**).
My emphasis.

45. [...] *øllum ásum*
þat skal inn koma
Ægis bekkis á, [...]
([...] to all the Æsir, who shall come **in here**
on Ægir's benches [...] [i.e. in the hall]).
My emphasis.

19. *Gera ok Freka*
seðr gunntamiðr,
hroðigr Herjaføðr, [...]

(Geri and Freki, the battle-seasoned, glorious Army-father satiates [...]). My emphasis.

I propose that we elaborate on this and read *Grímnismál* as being a performative oral poem involving cultural memory that aimed to allow the ritual specialist to become Óðinn in the ritual moment. This may be what lies behind the st. 3, 24, 46-51, and 53-54, which seem to represent a process of identity revelation, where Grímnir gradually reveals himself as Óðinn – a process by which the ritual specialist also reveals himself to be Óðinn. For the purpose of this paper, I will focus on the latter part of the poem.

In st. 46-50, Grímnir, using the past tense, relates his names in the past, several of which are used by Óðinn throughout the Old Norse textual corpus (e.g. *Bolverkr* in *Skaldskápmál* (Faulkes 1998, 4-5) and *Fjölfnir* and *Hnikarr* both in *Reginismál* 19-20 (Jónas Kristjánsson and Vésteinn Ólason 2014)), culminating in the second half of st. 53 and the first half of st. 54, where Grímnir at last reveals himself to be Óðinn in the present tense – and whereby the ritual specialist also is revealed as Óðinn. This can be substantiated by the st. 46-50 and 54 which contain a number of emphatic, formulaic 'I's (*ek*), seemingly reminiscent of cultic utterances. These emphatic 'I's might be a form of aretalogy, a self-praising 'recitation' of a god's attributes (here names) by a ritual specialist traditionally found in Egyptian and Iranian contexts (Sundqvist 2007, 205-09 on the runic appallative *erilaR* and aretalogy; also Nygaard forthcoming). An example of this can be found in st. 54. The aretalogic, emphatic 'I's (*ek*) are in bold.

54. *Yggr ek aðan hét,*
hétumk þundr fyrir þat [...]
(Yggr **I** was called before, **I** was called þundr
before that [...]) My emphasis.

The ritual specialist uses these 'I's to tell Geirrøðr and the audience that *he* was Grímr and Gangleri, and lastly he reveals himself as being Óðinn. If we view *Grímnismál* as involving cultural memory consisting of cosmogonic, cosmological, and eschatological religious knowledge disseminated by a ritual specialist for an audience of bearers of pre-Christian Nordic religion, then the self-predications 'Hétumk Grímr, hétumk Gangleri' (I was called Grímr, I was called Gangleri (st. 46)) and the words 'nú knáttu Óðin sjá [...] Óðinn ek nú heiti' (now you can see Óðinn [...] Óðinn I am now called (st. 53-54)), along with the gradual revelations of identity mentioned

above, would have had an important function. The utterances listed above would transform the ritual specialist into Óðinn in the ritual moment because they function as *performatives* (Rappaport 1999, 114-119) that make what is said really real to the participants in the ritual, who accept its reality through their participation. By stating that now he is called Óðinn, the ritual specialist *is* Óðinn, and this is accepted by the participants.⁸

Furthermore, this is accentuated by the transformation of space, mentioned earlier, that such a performance entails (Gunnell 2004, 2006, 2011): we start in a Viking Age hall and gradually we are taken into a mythological, ritual, liminal space. The hall as a ritual space seems to have played a major role in pre-Christian Nordic religion (Gunnell 2004; Herschend 1993, 1997; Sundqvist 2014; Jørgensen 2009; Murphy 2016), and different types of externalised memory in the form of ritual props or decorations could have been part of these ritual activities. Specifically, and with the meaning of the name Grímnir mentioned above in mind, we shall look closer at helmet-masks as possible ritual props. Such objects, like the helmet-mask from Valsgärde grave 7 in Uppland, Sweden (fig. 1) and the famous helmet-mask from Sutton Hoo Mound 1 in England (fig. 2 and 3), may have been created in part for such a ritual purpose.⁹ Building on the work of Neil Price and Paul Mortimer (2014), Gunnell writes about the Sutton Hoo helmet-mask:

When worn in a darkened firelit hall, this helmet not only changes your voice, making it sound more hollow; it also has the form of a human mask in which the ruby set lines around only one eye [the proper right eye] will light up (as a result of the gold foil behind them), the real eyes of the wearer inside remaining totally dark (Gunnell 2013a, 167-68).

As Price and Mortimer have argued, the ocular motif is repeated on the Valsgärde 7 helmet-mask. The garnet which is set as the proper left eye of the animal head in the *walu*-crest is much darker than the right one. In addition, the left, darker garnet of the Valsgärde 7 helmet-mask is not set on gold foil, thus in certain situations making it seem that the animal has only one eye. This is similar to the Sutton Hoo helmet-mask, where the proper left eye is also not set on gold foil, making it appear darker than the other one (as can be seen on fig. 3). If one imagines the ritual specialist wearing such a mask and performing for



Fig. 1. Reconstruction of the Valsgärde grave 7 helmet by Dave Huggins, courtesy of owner Matt Bunker, both of the Wulfheodenas living history group.

instance *Grímnismál*, the Sutton Hoo helmet-mask, at least, would change his voice. If the Sutton Hoo helmet-mask were worn during a performance in a dark hall with fire as the only source of light, then the right eye (decorated with garnets on gold foil) would light up while the left would not, thus suggesting Óðinn's one-eyedness. The Valsgärde 7 helmet-mask's *walu*-crest garnets would have a similar effect (Price and Mortimer 2014). Again, this would likely aid the transformation of the ritual specialist.

The hall itself, transformed into a ritual space, most probably provided a mythological microcosm, as Gunnell has argued (Gunnell 2004): the World Tree Yggdrasill (i.e. *Völuspá* 19, *Grímnismál* 29-30; both in Jónas Kristjánsson and Vésteinn Ólason 2014)) represented by the high-seat pillars; a well (Urðarbrunnr (*Völuspá* 19, *Hávamál* 111; both in Jónas Kristjánsson and Vésteinn Ólason 2014)) or Mímisbrunnr (*Völuspá* 28; in Jónas Kristjánsson and Vésteinn Ólason 2014) represented by the kettle on the hearth; a primeval fire reminiscent of Muspellsheimr (e.g. *Gylfaginning* 5 (Faulkes 2005, 10)); and “*dvergar*” who held the roof (fig. 4) representing the sky (*Gylfaginning* 8 (Faulkes 2005, 12)), were all



Fig. 2. Reconstruction of the Sutton Hoo helmet by Dave Roper of the Wulfheodenas living history group. Photo by Lindsey Kerr. Courtesy of owner Paul Mortimer of the Wulfheodenas living history group.



Fig. 3. Detail of reconstruction of the Sutton Hoo helmet by Dave Roper of the Wulfheodenas living history group. Photo by Lindsey Kerr. Courtesy of owner Paul Mortimer, Wulfheodenas living history group.

known elements from the mythological landscape (see Drobin 1991). For instance, most of these elements can be found in the stanzas of *Grimnismál*: the World Tree (called both Yggdrasil and Lærðr in this poem) is the subject of a large number of stanzas (25-26 and 29-35); a well or a body of water is mentioned in stanza 26 along with a kettle in stanza 42; and fire is mentioned in stanzas 1-2 and again in stanza 42. The ritual specialist – possibly wearing a ritual helmet-mask while performing, for instance, an oral version of *Grimnismál* – may then have been situated in front of the “well” on the high seat, reminiscent of Óðinn on his high-seat *hliðskjálf* (see also Sundqvist 2014). This would create an image of a ritual specialist who has taken on the identity of the god in the ritual performance in the ritual space of the hall, which then represents Valhöll or at least an otherworldly, liminal space (Gunnell 2013a, 167-69; Price and Mortimer 2014). Both the temporal and spatial liminality (see Turner 1967 and Schjødt 2008, 22-48 and *passim* on liminality) of such performances likely played a large part in the transmission, under-

standing and function of pre-Christian Nordic religion (see Murphy 2016). The liminal time and space of ritual is where the gods appear, where personalities change, where religious knowledge is communicated and cultural memory is reconstructed.

A transformation of space certainly also seems to take place in the skaldic poem *Eiríksmál*¹⁰ (composed about Eiríkr blóðøx after his death in c. 954). This can be seen in the use of *hér* throughout the poem, most prominently in st. 4 and 8. In the edition and translation of R. D. Fulk (2012, 1003-13)¹¹ it reads as follows:

4. [...] es **hér** mun **inn** koma
jǫfurr í **Óðins sali**.

([...] who must be coming **in here**, a prince **into Óðinn's residence**.¹² (my emphasis; following Gunnell forthcoming))

8. Heill þú nú, Eiríkr; vel skalt þú **hér** kominn,
ok **gakk í höll** horskr.

(Good fortune to you now, Eiríkr; you will be

welcome **here**, and go, wise, **into the hall**. (my emphasis; following Gunnell forthcoming))

The poem also uses aural performance markers when referring to the din of battle in st. 3 by using hard, often alliterating consonants adding an element of living sound to the stanza.

3. Hvat þrymr þar, sem þúsund bifisk
eða mengi til mikit?
Braka qll **bekkpili**, sem myni **Baldr** koma
eptir í Óðins sali.

(What is making a din there, as if a thousand were in motion, or an exceedingly great throng? All the bench-planks creak, as if Baldr were coming back into Óðinn's residence (my emphasis; following Gunnell forthcoming)).

These are all indicators of the oral performance of *Eiríksmál*, as Gunnell has argued (forthcoming). The poem might have been performed at the court of Haraldr blátǫnn in Denmark, where Eiríkr's wife Gunnhildr konungamóðir, who commissioned the poem, fled to after her husband's death.¹³ Seeing the poem as a form of *erfíkvæði* ('funeral poem') for Eiríkr, as Joseph Harris proposes (2006, 269-70), perhaps also involving ritual drama, would provide a ritual occasion for the performance of *Eiríksmál*.

As early as the first stanza of *Eiríksmál*, we may be witnessing more a transformation of the ritual participants – likely a group of Viking Age warriors – than that of the ritual specialist, as witnessed in *Grímnismál*. In *Eiríksmál*, Eiríkr and his dead warriors arrive in Valhöll, and when the physical hall occupied by the audience is thus transformed into Valhöll, the warriors in turn are mentally transformed into Óðinn's *einherjar* (Gunnell 2016). They sit and watch Eiríkr and his dead army arrive to meet gods and legendary heroes in Óðinn, Bragi, Sigmundur and Sinfjötli, and be allocated places of honour in Óðinn's hall. Therefore, the ritual framework behind the performance of the poem could have given the warrior-audience an idea of what would happen to them should they die in battle – they would go to Valhöll.

Concluding Remarks

Ultimately, these reconstructed ritual performances of Old Norse poetry could have produced the form of unity Rappaport terms *high-order meaning* (Rappaport 1999, 72): this is what creates the social and



Fig. 4. Construction of a Viking Age hall from Gunnell (2004). By Karen Bek-Pedersen. Courtesy of Terry Gunnell.

moral obligation towards the group. This high-order meaning entails a participation in the sacred, which is key to the formation and upholding of the group, which now also counts the gods and heroes of the performed poems. Through auto and allo-communication, all the ritual participants signal a conformity towards themselves and each other, that they form this group together and that they accept the rituals as real and meaningful simply by their participation: the ritual specialist is Óðinn in *Grímnismál*, and the warriors *will* go to Valhöll as Eiríkr and his warriors do in *Eiríksmál*. At the heart of these reconstructed ritual performances of Old Norse poetry seems to be the transformative qualities of ritual performativity. At least for the duration of the ritual both the ritual participants and the ritual specialist are potentially transformed – or at least affected – by the performatives in the poem with lasting consequences for all participants (Schechner 2006). This was aided by the use of ritual props like helmet-masks, and not least by the spatial liminality of the ritual produced by the construction of the Viking Age hall, which may have turned it into a ritually- and mythologically-charged space. This in turn may have prompted the warrior-audience into feeling themselves as *einherjar*. The transformative qualities of ritual performativity seem to have been essential for the ritual reconstruction and thus transmission of the cultural memory of pre-Christian Nordic religion and for the maintenance of the group coherence for the bearers of this cultural tradition.

Bibliography

- Assmann, J. 2006. *Religion and Cultural Memory: Ten Studies*. Translated by Rodney Livingstone. Stanford: Stanford University Press.
- Assmann, J. 2010. "Communicative and Cultural Memory." In: A. Erll and A. Nünning (eds): *A Companion to Cultural Memory Studies*, 109-118. Berlin & New York: de Gruyter.
- Assmann, J. 2011. *Cultural Memory and Early Civilization: Writing, Remembrance, and Political Imagination*. Cambridge: Cambridge University Press.
- Austin, J. L. 1962. *How to do Thing with Words*. Oxford: Oxford University Press.
- Bjarni Aðalbjarnarson, ed. 1979. *Snorri Sturluson: Heimskringla I*. Íslenzk fornrit, 26. Reykjavík: Hið Íslenzka fornritafélag. 1979.
- Bjarni Einarsson, ed. 1984. *Ágrip af Nóregskonungasögum: Fagrskinna: Nóregs konunga tal*. Reykjavík: Hið íslenzka fornritafélag.
- Brink, S. 1996. "Political and Social Structures in Early Scandinavia: A Settlement-Historical Pre-Study of the Central Place." *Tor* 28: 235-81.
- Carruthers, M. J. 1990. *The Book of Memory: A Study of Memory in Medieval Culture*. Cambridge: Cambridge University Press.
- Carruthers, M. J. 1998. *The Craft of Thought: Meditation, Rhetoric, and the Making of Images, 400-1200*. Cambridge: Cambridge University Press.
- Drobin, U. 1991. "Mjödöt och offersymboliken i fornnordisk religion." In: L. Bäckman *et al* (eds): *Studier i religionshistoria tillägnade Åke Hultkrantz professor emeritus den 1 juli 1986*, 97-141. Löberöd: Bokförlaget Plus Ultra.
- Erll, A. and A. Rigney. 2009. "Introduction: Cultural Memory and Its Dynamics." *Mediation, Remediation, and the Dynamics of Cultural Memory*, 1-11. Berlin & New York: de Gruyter.
- Faulkes, A., ed. 1998. *Snorri Sturluson: Edda: Skáldskaparmál I*. London: Viking Society for Northern Research.
- Faulkes, A., ed. 2005. *Snorri Sturluson: Edda: Gylfaginning*. London: Viking Society for Northern Research.
- Foley, J. M. 2002. *How to Read an Oral Poem*. Urbana and Chicago: University of Illinois Press.
- Fulk, R. D., ed. and trans. 2012. "Eiríksmál." In: D. Whaley (ed.): *Skaldic Poetry of the Scandinavian Middle Ages, Volume 1: Poetry of the Kings' Sagas 1: Part 2*, 1003-13. Turnhout: Brepols.
- Fulk, R. D. 2016. "Eddic Metres." In C. Larrington, J. Quinn, and B. Schorn (eds), *A Handbook to Eddic Poetry: Myths and Legends of Early Scandinavia*, 252-70. Cambridge: Cambridge University Press.
- Glauser, J., P. Hermann, and S. A. Mitchell, eds. 2018. *Handbook of Pre-Modern Nordic Memory Studies: Interdisciplinary Approaches*. Berlin & New York: de Gruyter.
- Gunnell, T. 1995. *The Origins of Drama in Scandinavia*. Cambridge: D. S. Brewer.
- Gunnell, T. 2004. "Hof, Halls, Goðar and Dwarves: An Examination of the Ritual Space in the Pagan Icelandic Hall." *Cosmos* 17: 3-36.
- Gunnell, T. 2006. "Narratives, Space and Drama: Essential Spatial Aspects Involved in the Performance and Reception of Oral Narrative." *Folklore: Electronic Journal of Folklore* 33: 7-26.
- Gunnell, T. 2011. "The Drama of the Poetic Edda: Performance as a Means of Transformation." In: A. Dąbrowski (ed.): *Progranicza teatralności: Poezja, poetyka, praktyka*, 13-40. *Studia Staropolskie*, Series Nova. Warsaw: Instytut Badań Literackich Pan Wydawnictwo.
- Gunnell, T. 2012. "The Performance of the Poetic Edda." In: S. Brink and N. Price (eds): *The Viking World.*, 299-303. London and New York: Routledge.
- Gunnell, T. 2013a. "From One High-One to Another: The Acceptance of Óðinn as Preparation for the Acceptance of God." In: L. Słupecki and R. Simek (eds): *Conversions: Looking for Ideological Change in the Early Middle Ages*, 153-178. *Studia Mediaevalia Septentrionalia* 23. Vienna: Fassbaender.
- Gunnell, T. 2013b. "Völuspá in Performance." In: A. Lassen and T. Gunnell (eds): *The Nordic Apocalypse: Approaches to Völuspá and Nordic Days of Judgement*, 63-77. *Acta Scandinavica* 2. Turnhout: Brepols.
- Gunnell, T. 2016. "Eddic Performances and Eddic Audiences." In: C. Larrington, J. Quinn, and B. Schorn (eds): *A Handbook to Eddic Poetry: Myths and Legends of Early Scandinavia*, 92-113. Cambridge: Cambridge University Press.
- Gunnell, T. Forthcoming. "Performance Archaeology, Eiríksmál, Hákonarmál, and the Study of Old Nordic Religions."
- Harris, J. 2006. "Erfikvæði myth, ritual, elegy." In: A. Andrén, K. Jennbert, and C. Raudvere (eds): *Old Norse Religion in Long-Term Perspectives:*

- Origins, Changes, and Interactions*, 251-55. Lund: Nordic Academic Press.
- Herschend, F. 1993. "The Origin of the Hall in Southern Scandinavia." *Tor* 25: 175-99.
- Herschend, F. 1997. *Livet i hallen: Tre fallstudier i yngre järnålderns aristokrati*. OPIA 14. Uppsala: Uppsala universitet.
- Jónas Kristjánsson and Vésteinn Ólason, eds. 2014. *Eddukvæði 1-2*. 2 vols. Íslensk fornrit. Reykjavík: Hið íslenska fornritafélag.
- Jørgensen, L. 2009. "Pre-Christian Cult at Aristocratic Residences and Settlement Complexes in Southern Scandinavia in the 3rd – 10th centuries AD." In: U. von Freeden, H. Friesinger, and E. Wamers (eds): *Glaube, Kult und Herrschaft: Phänomene des Religiösen im 1. Jahrtausend n. chr. in mittel- und nordeuropa: Akten des 59. Internationalen Sachsensymposiums und der Grundprobleme der frühgeschichtlichen Entwicklung im Mitteldonauraum*, 329-354. Bonn: Habelt.
- Millward, A. 2014. "Skaldic Slam: Performance Poetry in the Norwegian Royal Court." Master's thesis, University of Iceland.
- Murphy, L. J. 2016. "Continuity and Change: Forms of Liminality in the Sacred Social Spaces of the Pre-Christian Nordic World." *Viking and Medieval Scandinavia* 12: 137-72.
- Nygaard, S. 2014. "Religion og sakrale herskere i det førkristne Norden: Religionstypologisering, kulturrevolution, komparation og høvdingedømmereigion." Master's thesis, Aarhus University.
- Nygaard, S. 2015. "Religion and Sacral Rulers in Pre-Christian Scandinavia: Typologisation of Religion, Cultural Evolution, Comparison and Chiefdom Religion." *RMN Newsletter* 9: 143-45.
- Nygaard, S. Forthcoming. "Being Óðinn Bursson: The Creation of Social and Moral Obligation in Viking Age Warrior Bands through the Ritualised Performance of Poetry." In: J. Morawiec, A. Jochymek, and G. Bartusik (eds): *Defining and Applying Social Norms in Medieval Scandinavia: Proceedings from the First Jónsborg Conference, Wolin, 20th-22nd April, 2017*. Beyond Medieval Europe. Kalamazoo: ARC Humanities Press.
- Nygaard, S. and J. P. Schjødt. 2018. "History of Religion." In: J. Glauser, P. Hermann and S. A. Mitchell (eds): *Handbook of Pre-Modern Nordic Memory Studies: Interdisciplinary Approaches*, 70-78. Berlin & New York: de Gruyter.
- Phillipotts, B. 1920. *The Elder Edda and Ancient Scandinavian Drama*. Cambridge: Cambridge University Press.
- Price, N. & P. Mortimer. 2014. "An Eye for Odin? Divine Role-Playing in the Age of Sutton Hoo." *European Journal of Archaeology* 17(3): 517-38.
- Rappaport, R. A. 1999. *Ritual and Religion in the Making of Humanity*. Cambridge: Cambridge University Press.
- Rubin, D. C. 1995. *Memory in Oral Traditions: The Cognitive Psychology of Epics, Ballads, and Counting Out Rhymes*. Oxford & New York: Oxford University Press.
- Rubin, D. C. 2009. "Oral Traditions as Collective Memories: Implications for a General Theory of Individual and Collective Memory." In: P. Boyer and J. V. Wertsch (eds): *Memory in Mind and Culture*, 273-87. Cambridge: Cambridge University Press.
- Russell, J. C. 1996. *The Germanization of Early Medieval Christianity: A Sociohistorical Approach to Religious Transformation*. New York & Oxford: Oxford University Press.
- Searle, J. R. 1969. *Speech Acts*. Cambridge: Cambridge University Press.
- Searle, J. R. 2011. *Making the Social World: The Structure of Human Civilization*. Oxford: Oxford University Press.
- Schechner, R. 2006. *Performance Studies: An Introduction*. 2nd ed. London and New York: Routledge.
- Schjødt, J. P. 2008. *Initiation between Two Worlds: Structure and Symbolism in Pre-Christian Scandinavian Religion*. *The Viking Collection* 17. Odense: The University of Southern Denmark Press.
- Steinsland, G. 2005. *Norrøn religion: Myte, rite, samfunn*. Oslo: Pax forlag A/S.
- Sundermeier, T. 1987. "Religion, Religionen." In: K. Müller and T. Sundermeier (eds): *Lexikon missionstheologischer Grundbegriffe*, 411-23. Berlin: Reimer.
- Sundqvist, O. 2007. *Kultledare i fornskandinavisk religion*. OPIA 41. Uppsala: Uppsala universitet.
2014. "Religious and Ideological Aspects of Hall Interiors in the Late Iron Age." In: M. Olausson (ed.) *Runsa borg – Representative Life on a Migration Age Hilltop Site*, 111-45. Östersund: Jengel förlag.
- Turner, V. 1967. *The Forest of Symbols: Aspects of Ndembu Ritual*. Ithaca, N.Y.: Cornell University Press.

Notes

- 1 An expanded version, although with less focus on the archaeological context, is under preparation for publication as Nygaard (forthcoming).
- 2 Cf. the Rök stone, Östergötland, Sweden, the inscription on which is thought to be in eddic metre.
- 3 Pioneering work in this field was done by Bertha Phillpotts (1920), who, inspired by the Cambridge Myth-and-Ritual School, saw much of the eddic poetry as actual ritual dramas. Much criticised and methodologically outdated by modern standards – and some would argue also by her own contemporary standards – Phillpotts was perhaps too certain in her assumptions. See further Gunnell (1995); Nygaard (forthcoming).
- 4 Other theories of memory may prove useful to the approach described in this paper. Works by scholars such as Mary J. Carruthers (1990, 1998) and Astrid Erll and Ann Rigney (e.g. 2009) are among these. For a survey of and introduction to memory studies in the pre-modern North, see the articles and introduction (pp. 1-38) in Glauser, Hermann, and Mitchell (2018).
- 5 Inspired by the late scholar of oral poetry John Miles Foley, we may benefit from thinking of many Old Norse poems as what he calls “Voices from the Past” (2002, 45-50) – that is, textual forms of poetry stemming from a long-gone oral tradition, “leaving us with textual shards of a once-living work of verbal art.” (2006, 45). This will be an underlying assumption in the following.
- 6 As opposed to the wisdom contests known from other eddic poems such as *Vafþrúðnismál* (in Jónas Kristjánsson and Vésteinn Ólason 2014).
- 7 All quotes from *Grímnismál* are from Jónas Kristjánsson and Vésteinn Ólason’s 2014 Íslensk fornrit edition of the *Poetic Edda*. Translations are my own unless stated otherwise.
- 8 For suggestions of who the ritual specialist performing *Grímnismál* might have been and which kind of ritual may have been performed, see Nygaard (forthcoming).
- 9 Other examples are the Hellvi-mask, an Uppåkra-helmet fragment, the Vendel 12 shield grip and more (see Price and Mortimer 2014).
- 10 The performance context of skaldic poems was no doubt different from that of the eddic poems, mainly by the skaldic poems being intended as one-time performances. See, for instance, Millward (2014) on this difference.
- 11 All quotations and translations of *Eiríksmál* are from Fulck’s edition (2012).
- 12 Following Stefan Brink’s analyses (1996, 255-58), the Old Norse word *salr*, here translated as residence, may also be rendered as hall – specifically with religious or ritual connotations. This fits very well with the idea of the hall as a ritual space.
- 13 As in related in *Fagrskinna* ch. 8 (Bjarni Einarsson 1984) and *Hákonar saga góða* ch. 10 (Bjarni Aðalbjarnarson 1979).

Early Viking camps in Scandinavia and abroad

Arjen Heijnis

A paradox exists between narrative textual sources describing extensive fortification of Vikings in Christian western Europe on the one hand (Williams 2008, 198; Halsall 2003, 222-223), and an absence of such a tradition in the archaeology on the other (Ó Flainn 1998; Olausson 2009; Hedenstierna-Johnson, Holmquist, Olausson 2013, Raffield 2013). Recent archaeological research has emphasized the existence of several late Viking Age fortifications as a counter-point to this absence, primarily the Trelleborg-style fortresses, constructed in the late 10th century. This can be complemented with the fortifications of the proto-urban centers of Ribe (Feveile 2009) and Aarhus, also featuring ditches and earthen walls from the 10th century onward. This still leaves the earlier part of the Viking age (the 9th century) unfortified, and hence the 10th-century fortifications without a local tradition. A notable exception in terms of ditched sites should be made for Erritsø, recently proposed as military encampment of the 9th century (Mohr Christensen 2009; Ravn & Juel 2018). Considering the centrality of the multi-phased monumental hall building, this site should rather be regarded in the tradition of aristocratic residences leading up to Jelling than the army camps of Trelleborg.

Recent research at Trælborg near Aarhus and Gammelborg near Nyborg may have resolved this paradox. These new discoveries can be compared to earlier known sites from Denmark and abroad, such as Sankt Alberts on Ærø (Skaarup 1997), Asselt in the Netherlands (Holwerda 1929), or Repton in England (Biddle & Kjølbye-Biddle 1992). Their size is highly variable. The absence of archaeologically attested internal dug features (i.e. constructions, houses) has on the one hand confirmed a similarity with comparable contemporary army camps from abroad, and explains their relative archaeological invisibility, which is only to be detected through modern

techniques (such as metal detecting or geophysical prospection). What sets the sites apart, however, is the consistent construction with a massive earthen bank and external ditch, and the shape of the fortification, always semi-circular or D-shaped.

In this paper, it is suggested that these sites represent a specific type, fundamentally different from later defensive structures (i.e. the early castles). While the (scientific and typological) dates of individual fortifications leaves room for speculation, it does not contradict a dating of these fortifications to the 9th century. These army camps, for which I would suggest the adoption of the literary name '*longphort*' (Sheehan 2008), represent a consistent, yet rare type of site which sheds light on the success of the early Viking expeditions.

It might be useful to stress similarities on the functional and technical level, rather than differences in the size and shape, between these types of sites across north-western Europe. There is the occasional re-use of older structures, which could be used as temporary shelters in the initial stages of construction. This hints at a significant degree of pragmatism behind the choice of location for these types of structures. Investigations into the significance of these structures to their local social landscape, as well as evaluations of which sites can be included in this category, their place in defensive technology over time, and the monumental/symbolic aspects of these sites, are all aspects of future investigations that need to follow a recognition of these kinds of sites as a coherent functional category (Adams and Adams 1991, 214-223).

Social context

Apart from a short and geographically constricted spurt of fortification in east-central Sweden (Olausson 2009), the period from the 5th to the 10th centu-

ry in northern Europe has a remarkable absence of fortifications. This is true for both the Continental area of Francia (Jaubert 2010) and Saxony, where aristocratic centres are consistently unfortified, Britain (with the exception of a re-occupation of Pre-Roman Iron Age crannochs and promontory forts in the Irish Sea area), and Southern Scandinavia. A 'tradition' of refuge forts for local populations seems to be entirely absent (contra Roesdahl 1998, 129).

This changes around the year 700. The Franks under Charles Martel initiate increasing activity on their northern frontier, leading to organized fort-construction towards the Saxons (Ettel 2013, 263). In parallel, English unification under Mercia leads to a new period of construction of fortifications. These changes should be seen rather as state-formation processes internal to the respective areas than expansions of one state into another, and they set in motion a number of processes during the 8th century. It is during the 9th century, however, that there is a clear change. Fort-construction in Saxony spreads first through Charlemagne's conquests (Lemm 2013; Henning 2005; Henning 1992, 322) and subsequently rapidly across the northern European plain (Ettel in Baker 2013, 263), as indicated by recent dendro-chronological dating of these structures (Henning 2005, 29-33)

Beyond the sites discussed in this text there are also a number of morphologically different fortified sites in Scandinavia, such as for example Birka 'garrison' (Hedenstierna-Johnson et al. 2013, 290-291), Hedeby Hochburg (Kalmring 2014), and the Tinnumburg (Segschneider 2009, 103). These sites might also have similarities to other contemporary locations abroad (Tys, Deckers & Wouters 2016), and the sites presented in this paper do not represent the full extent of fortress construction in the 9th century.

Viking camps in Christian western Europe

The body of supposed Viking camps in western Europe is very diverse and has a long history of research into semi-mythical or folkloristic associations (for example Mestdagh 1989, Williams 2008 or Raffield 2013). In contrast, archaeological work has made it possible to associate only a small number of sites with physical remains of 9th century activity. It is these few archaeologically known sites which will be used as a reference baseline in this paper, with the acknowledgement that beyond these few sites, there

might exist a larger body of comparable, but poorly investigated sites.

In the Frankish world, **Asselt** is selected as a Viking site. Besides the contemporary historical references (see below), the find material from this location is typical for the 9th century, consisting of Badorf ceramics.

On the British side, only lowland sites are selected, and not the stone-built structures of the rocky Scottish and Irish Sea coastline, many multi-phased and generally poorly investigated (Cunliffe 2001, 364; Ralston 2004; Harding 2012). The selected sites are **Repton** and **Woodstown**. These sites are indisputably from the Viking Age, but the extent to which they are representative for an entire site category is disputed (Raffield 2013, Sheehan 2008). Whether or not these sites are more widespread or whether a multitude of sites might be grouped together with them is beyond the scope of this paper. What is, however, useful is the observation that these three sites share a number of similarities and differences.

Asselt

Asselt is located on the Meuse. During restoration of the present church, older brickwork was found. The possibility that this were the foundations of a Carolingian building led to the excavation of the surrounding area. This revealed the existence of stonework (partly removed) and a large trench. Though the excavations were concentrated on the extent of these walls and ditches, a number of further exploratory trenches towards the interior did not reveal traces of additional activity. A date to the Viking Age is confirmed through the presence of Badorf-type ceramics in the fill of the palisade ditch (Holwerda 1936, 145-147).

The excavations extended eastward from the present church. In the extensions of the foundations under the church further stonework, partly removed, was recovered. The line of stonework does not continue over the full extent of the excavated terrain, but turns sharply southward. In the eastward extension, however, the stone wall is continued in the form of a 'palisade ditch', which Holwerda presumes would have held a wooden continuation of an earlier Frankish curtis-curticula system in parallel to the one found at Dorestad. The exact dimensions of this ditch are not recorded, but based on a photograph (Holwerda 1936, fig. 37), they seem to be far too substantial merely to support a palisade and should rather be seen as a ditch in their own right, with a

sharp V-shaped profile and a depth of at least 1 meter. Over all, the complex seems to have consisted of a large rectangular shape, dimensions 140x65 m, with a stone-built structure in the western end and an enclosed space with wooden buildings to the West, possibly with an entrance on the western end (Holwerda 1936, 147-148).

A further surprise was the existence of a 5-m wide flat-bottomed ditch to the exterior and in parallel to the 'palisade ditch'. The depth of this ditch is further unrecorded but appears to be at least man-deep. No artefacts were recovered from the fill. Holwerda presumes that the fill of this ditch would have formed a rampart on its exterior, and sees this preserved in section at the river shore, where it is still raised one meter above the present surface (Holwerda 151-152). The exterior dimensions of this outer rampart can be presumed to form a rectangle measuring 180x90m.

Verhart recently (2017) published a critical review of the excavations at Asselt, in which Holwerda's interpretations are severely questioned. Because this publication was not available at the time of the 36th Viking Symposium (June 2017), it is not included in the main argument of this text. Verhart argues that the evidence for a stone-built Frankish estate is insufficient, but the arguments against the extensive ditch systems are less convincing. An alternative suggestion for these ditches as representing an Early Modern defensive system is equally lacking in evidence, and the main argument against them forming an enclosure of the riverside elevation are, paradoxically, an uncritical acceptance of Holwerda's argument that the bank was situated externally to the ditch. Furthermore, despite the presence of finds of both earlier (Roman) and later (medieval) ceramics on the site, the relatively large amount of Badorf-style ceramics does indicate an exceptional phase of activity in the 9th century. Therefore, a hypothetical interpretation of the site as Viking camp is maintained in this text.

Repton

The site at Repton and its connection with a historical Viking army is less controversial, partly through the extensive excavations with spectacular results from the site (Biddle & Kjølbye-Biddle 2001). The pre-Viking activity at Repton consists of a church with connections to Anglo-Saxon royalty. In the late ninth century (probably in connection with the winter camp of 873 AD as described in the Anglo-Saxon Chronicle), a moat and rampart were constructed, in-

corporating the church, possibly as a gate-house. The ditch ran in a rectangular course curving towards the river Trent, forming a rectangle 90 m. long and 60 m. wide (Biddle & Kjølbye-Biddle 2001, 57-59). The ditch was V-shaped in profile with a depth of 4 meters and a width of 8 meters, with the foot of the bank on its North side of comparable width and therefore presumably also height (Biddle & Kjølbye-Biddle 2001, fig. 4.8). The sequence of graves lying both over and under the ditch provided a stratigraphical date. Artefacts from the ditch fill included both York- and proto-Stamfordware as well as Roman and younger material (Biddle & Kjølbye-Biddle 2001, 58), possibly brought up by the extensive digging at this location in connection with the graveyard.

The construction of a tumulus over an existing crypt filled with dead Vikings are further archaeological features from this phase of activity (Biddle & Kjølbye-Biddle 2001, 60-74). The concentration of 10th-century graves at this site indicates continued use of the location after the ditch had been filled in (Biddle & Kjølbye-Biddle 2001, 85). The relation between the churchyard and a nearby cremation cemetery do not form the focus of the present article.

Biddle and Kjølbye-Biddle place great emphasis on the relation between the Viking activity and the religious complex, but do not elaborate on the non-sacrilegious activity that these Vikings would have performed at this site during their stay. The artefactual evidence, consisting of weapons and carved stonework, all seems to be related to burial activity, and there is no indication of craft activity or architecture at the site, though this might have taphonomic or researchhistorical reasons (i.e. the presence of the cemetery).

Woodstown

The site of Woodstown (Russell & Hurley 2014) consists primarily of an enclosure of moat and rampart along the river Suir in south-west Ireland.

The find material at the site indicates a long period of activity from the Late Iron Age to the early 11th century, with most artefacts deriving from disturbed plough-soil. The ditches, consisting of two arches, each with two parallel cuts and multiple fillings, are therefore the defining structures at this site. Earlier site reports (O'Brien 2005; Russell et al. 2007, presumed on the basis of radiocarbon dates from the ditch fill that their initial construction pre-dates the Viking presence, but more recent work (Russell 2007; Russell 2014), accepts the interpretation that

the entire ditch system was dug in the Viking period. The inner ditch is shallower and partly overlaid by the bank. Post-holes in this ditch indicate the presence of a wooden bank enforcement, possibly a palisade. The outer ditch is more substantial, with a depth up to 2 meters and a width of 4 meters. The base of the outer ditch seems to have been filled in shortly after its construction, with several much shallower re-cuts in the upper fill. A great range of artefacts typical of Viking settlement was recovered at Woodstown, including a large amount of silver, comparable to sites like Torksey. Extensive metal detecting during the excavations resulted in a large amount of metalwork. As at Torksey, ceramics seem to be underrepresented compared to what is seen at regular contemporary settlements such as Hedeby.

Whether Woodstown was a 'longphort' in the narrow sense (Sheehan 2008), or a type of proto-urban settlement (Russell & Hurley 2014) is not relevant to this discussion. What matters is that Woodstown is a site with defences constructed by Vikings, and therefore represents the type of structures that were current at the time.

Viking camps in literature

To understand the purpose of fortifications, we need to go back to the source of Viking identity: literary sources. Our primary interest is the description of fortifications in these texts. Do they correspond to our archaeological material, and if so, can they help us clarify how these sites might have been used?

In 882 the Vikings are besieged in a fort at **Ascloa** (possibly Asselt, described above). The two versions of the Annals of Fulda (Mainz and Bavarian) disagree on the exact course of events, due to varying monastic preferences for participating courtiers. Both versions agree on a number of events: Vikings had established a strong fortification near the confluence of the Rhine and the Meuse, in a self-made fortification, where they awaited the Eastern Frankish Emperor who had assembled armies from all corners of the realm to expel the Vikings from his land. Both versions agree that the emperor besieged the fort over a long period. The accounts subsequently diverge. In (according to Meginhard of the Mainzer version) a typically treasonous act, the Vikings make peace and invite the besiegers into their camp. Once the Franks enter the fort, however, the Vikings close the gate and kill their guests (Kurze 1891, 98). This defeat is the end of the siege, and the Emperor subsequently accepts the baptism and vassalage of the Vi-

king leader, who victoriously departs with a fleet of treasures and slaves. Whether this episode truly happened is dubious, but the active role of fortifications and the threat of being enclosed inside is illustrated.

An alternative version of events is presented by the Bavarian continuation (Rau 130-131). Here, the Emperor with his forces besieges the stronghold for 12 days, after which a miraculous hail-storm creates a breach in the 'civitas' which the Normans have occupied, but which remains protected by the surrounding rampart ('vallum'). But the long siege and the number of rotting corpses had spread disease, so both parties were forced to reach a negotiated agreement. In this version, the fraternization between the Emperor and the Viking kings takes place in a spirit of equal strength rather than treachery and cowardice.

If the fortification described in these texts is the same as the ditch discovered in Asselt by Holwerda, it seems hard to believe that a structure of this size was sufficient to withstand the entire force of the East Frankish Empire, and that its siege determined who had the control over the entire Rhine delta. These same Vikings in the same year also destroyed multiple urban centres, including Trier and Deventer. The ramparts of Asselt only enclose a space of two hectares (90x180 m.), while we are dealing with armies numbering several thousand at least (Halsall 2003, 119-133). However, the enclosure of Asselt is still three times the size of that of Repton. The size of those armies, and their enclosures, might thus be of the same order of magnitude, indicating that even very large (for the period) armies might have been contained in relatively modest enclosures.

A history illustrating the use and purpose of Viking fortifications is found in the description of Rollo's campaign along the **Seine** during the 870's (Dudo's *Gesta Normannorum*, chapter 11). In the text, the chronicler describes how the Vikings, in preparation for Frankish attack, construct a round fortress of earth by the riverbank with a wide opening serving as a gate. Instead of defending the walls, however, the Vikings hide within the fortress, staging an ambush for the curious Frankish vanguard.

While the text may very well be halfway between literary invention and propagandistic embellishment of the Norman dynasty, the construction and use of such a fortress (which the author notes is still visible at the time of writing, two generations later) provides a plausible illustration of the purpose of Viking fortresses. Rather than passive walls from behind

which a siege can be waited out (as in Ascloa), the fortress here functions as a prepared battleground.

The *Annales Fuldensis* describe the Viking expeditions in Lotharingia in the later part of the 9th century. According to the chronicler, in 891 the Northmen (who are later specifically mentioned as Danes) make camp at the Dyle river, at the modern town of **Leuven** ‘(...) within an enclosure in their manner, with encased ramparts.’ (*sepibus more eorum municione septa securi consederunt*, Kurze 1891, 120-121). What is meant by the ‘enclosed ramparts’ which are said to be the ‘Danish custom’ becomes clear from the archaeology: timber-enforced constructions filled with earth. The construction of this fortress is so effective that it forces the Frankish cavalry to dismount and fight, thereby removing the opportunity for retreat and forcing the Franks to commit fully to a decisive battle. According to the chronicler, the Franks win due to the virtue of their leader and the grace of Christ, but the severity of the battle and the effect of the unfavourable battlefield terrain because of the presence of the fortification can still be felt in the text.

What these texts have in common is the active and effective use of these fortifications in pitched battle. The fortification is described in purely military terms, without reference to symbolic or administrative functions. The occupation of the fortifications does not seem to last for long, and there are no indications of the use of these fortresses for long-term occupation. Apart from the brief moments of contact with the enemy. In this, these fortifications clearly differ from other contemporary fortifications, such as walled towns or estates, or even the later (and contemporary) ring-fortresses and castles.

Comparable sites in Denmark before the 10th century

With these archaeological sites and literary descriptions, we can now form an idea of the kind of sites we should be looking for if we are interested in ‘Viking camps’. But Vikings are famously Scandinavian, so what kind of sites can we find in the far North that correspond to these foreign constructions?

Trælborg (Tiset s.)

Trælborg was identified as a semicircular cropmark through air photography and subsequently subjected to trial excavations by Aarhus University and Moesgård Museum in 1992 and 2009. The ditch of Træl-

borg has a shallow U-shaped profile, ca. 1 m. deep and 3 m. wide (Andresen 2016, fig. 13). The base of a turf-built rampart was found inside, parallel to the ditch. The original dimensions of this rampart may no longer be visible, but its original width can be reconstructed by a four-meter long line of posts (A25), possibly representing a tunneled gate. The site has been dated by radiocarbon on a piece of hazel twig found preserved under the rampart, yielding a date to 805-904 calAD (Andresen 2016, 7). Despite metal-detecting and several trial trenches, no archaeological finds were recovered from the interior of the structure.

Gammelborg (Nyborg)

The recently discovered structure of Gammelborg, west of the town of Nyborg on the East side of Fyn, has seen minimal archaeological investigation. A cropmark indicating a possible archaeological negative feature (a ditch closing off a bend in the Vindinge Å river) was already visible in 1982. A new trial excavation in 2013 (Feveile 2013) has revealed a semicircular ditch, with an irregular width between 3,5 m. and 1 m. with several openings. In cross-section, this ditch was preserved to a depth of between 40-50 cm. to 1 m., with a U-shaped profile. In one trial trench, a parallel row of post-holes was found at a distance of 3 m. inwards from the ditch. This row of post-holes was quite shallow, and hence it is not surprising that it has been found only sporadically in other search trenches and not across the whole length of the ditch. Radiocarbon samples of charred bark from these post-holes revealed a date from the 5th-6th century AD (Feveile 2014), but the low number of samples (4) and the uncertain nature of the dated material (charred tree rather than construction material) makes these dates only an indication, and not proof, for construction in this early period.

No earthen rampart was found in this location. The significant distance (2,25-3,5m.) between the row of postholes and the ditch leaves some space for a hypothetical earthen bank or berm, of which agricultural activity on the location might have erased any trace. The symmetrical fill of the ditch, however, does not indicate a ‘slump’ of a bank from any one side. The absence of an earthen rampart thus distinguishes this site from both Trælborg and Skt Alberts.

Despite the extension of several trial trenches towards the interior of the enclosed space, no significant culture layer or constructions were found. The limited number of features with no further finds

of a possibly prehistoric character (pits and a possible post-hole) are reflections of the expected 'background noise' of activity in the region, and do not need to be contemporary with the ditch. However, the presence of general archaeological features contradicts the erasure of other possible archaeological features through taphonomic activity (i.e. erosion and ploughing), and the archaeological absence of contemporary activity can thus be assumed to reflect a prehistoric situation.

Skt Alberts (Ærø)

The smallest of the Danish semicircular enclosures is Skt Alberts on the Southern Danish island of Ærø. In contrast to the other sites, this location is not situated on a river, but faces a steep sea cliff directly. The enclosure is characterized by a deep (2,5-3 m.) and wide (5,5-6 m.) v-shaped ditch (Skaarup 1997, 54). On the inner side of the ditch, the 7 m. base of an earthen rampart covering the old soil surface was recovered, in some parts preserved to a height of 0,5 m. In the interior of the rampart, an additional shallow (0,45 m.) ditch may have contained an interior

support, similar to the wooden enforcements of the Trelleborg-type enclosures. No traces of a palisade were recovered.

No entrance through either the ditch or the rampart was indicated, but the ditch had an outward extension in the south-western part of the structure. This might represent an additional enforcement of a weak place in the fortification, possibly a bridge across the ditch or a similar unpreserved construction.

The published dating of the fortification is based on two radiocarbon dates of preserved animal bone from the bottom of the ditch, which could not be distinguished stratigraphically: part of a cow skull dated to the early 8th century, and a horse vertebra dated to the 10th century (Skaarup 1997, 60). Skaarup interprets these as reflecting the initial construction and continued use of the fortification, but the limited number of dated samples and indirect association with the construction itself leaves room for debate.

The interior of the structure is devoid of constructions besides the late medieval church and churchyard, including a large amount of inhumation graves. Similarly, the recovered artefacts largely



represent the medieval phase of the structure's use, during which the ditch was not entirely filled up and preserved a depth of up to one meter, indicated by bricks found in the upper part of its fill. Ceramics and metalwork also reflect activity in the interior for the earliest medieval period, including Slavic-style ceramics, but some dirhem silver and a single trefoil fibula (Skaarup 1997, 58) type P10 dated 850-950 AD are consistent with one of the radiocarbon dates.

Discussion

If the results of the comparison between Viking sites, literary descriptions, and sites in Denmark can be summed up, is the conclusion that there is considerable variation within these categories. While most sites are entirely or nearly devoid of artefacts, Woodstown has some of the richest concentrations of Viking metalwork. Dimensions of the ditch and bank systems vary from sharply V-shaped (Asselt, Repton, Skt. Alberts) to gently U-shaped (Wood-

stown, Trælborg, Gammelborg), and from deep and substantial (Repton, Skt Alberts, Woodstown) to modest (Asselt, Trælborg, Gammelborg). All sites, however, show evidence for either an earthen rampart, a wooden palisade, or both. With the exception of Gammelborg, all sites date to the 9th century.

In terms of size of the enclosure, there is a similarly large variation between the archaeological sites. But it should be noted that this variation is equally big within the group of sites representing Viking activity outside of Scandinavia and the sites in Denmark. The locations of the sites are more uniform. All sites (with the exception of Skt Alberts) are located in close proximity to major roads, and all are located directly on rivers (again with the exception of Skt Alberts, which is on the sea).

A further note should be made of the association between churches and fortifications, as seen at Asselt and Repton. At Skt Alberts, the church strictly post-dates the enclosure. This link between strong

	Size	Ditch depth	Wall	Artefacts	Date
Sites abroad					
Asselt	180x90m	ca. 1,5m	Possible wall	few ceramics	Ca. 800-850 (typology)
Repton	60x90m	4m, 8m wide	8m wide wall	few (grave goods)	873-874 (Anglo-Saxon Chronicle)
Woodstown	450x160m	2,5x2,5	wall with palisade	5000+, including houseplans and a grave	middle-late 9th to early 10th century
Literature					
Ascloa			double wall		881-882 Annals of Fulda
Seine			wall of dug earth		884 Gesta Normannorum
Leuven			enclosed wall		891 Annals of Fulda
Danish sites					
Trælborg	125x150m	ca. 1m	Wall	No	784-950 calAD
Gammelborg	300x200m	1-2m	Palisade	no (despite metal detecting)	430-570, 576-645, or 662-764 calAD
Skt Alberts	50x75m	2,5-3m	7m wide wall	Few	675-785 or 895-1010 calAD, or ca. 850-950 (typology)

physical reminders of violence and religious architecture has been underdeveloped and might be subject of future research.

There are strong differences between the sites selected for this paper. No single site forms a complete 'match' with any other to form a definite type. However, taken as a whole, the variation between the sites in Denmark falls within the pattern of variation in Viking sites abroad. Particularly the similarities in technical traits (ditch and wall construction) speaks for a common architectural vision, in line with the 'type' of Viking forts presented in the literature. The specific use of this architecture might differ, but this difference can be explained for site-specific, historical, or local reasons rather than a difference in use across European regions.

Conclusion

This paper set out to present the archaeological data for Viking forts in Scandinavia from the perspective of Viking activity in the Frankish area and the British Isles. It appears that while there are certain similarities in style and technique between the two groups of archaeological monuments, their differences are not insignificant. These differences might be explained through the fundamentally different nature of Viking activity in Scandinavia and abroad. Rather than seeing the Viking raids as simply Scandinavian culture 'transplanted' into a new environment, it might help to see a Viking expedition as having a situational and specific culture (in the broadest sense) in itself, created in part through its interaction with its environment. Thus, the different environments that a Scandinavian warrior would find himself in would lead to different material cultural needs. For example, the hyper-monetary economy visible on Viking camps like Torksey, with a distribution of metalwork (particularly silver) unparalleled in Scandinavia itself, leads to different attitudes towards property and, consequently, mobility and defence than the 'gift-based' prestige economy of Scandinavia. Similarly, the monetized world of trading-places like Ribe, Hedeby, or proto-urban places like York had minimal impact on the distribution of cultural practices from these places into rural Scandinavia itself, despite the constant movement of individuals between those varying milieus/environments.

In this sense, the absence/presence of fortifications tells us something about the context-specific functions of the fortifications themselves. The (qualified) negative result of a search for 'the Scandina-

vian model' for Viking forts abroad should thus not be a discouragement or seen as a failure, but rather as an addition to our knowledge of both Scandinavian society and the function of forts in this period as a whole.

Bibliography

- Adams, W. Y., Adams, E. W. 1991. *Archaeological typology and practical reality: a dialectical approach to artifact classification and sorting*. Cambridge.
- Andresen, J. 2016. *FHM 5201 Trælborg, Tiset Sogn, Ning Herred, tidligere Århus amt, Sted nr. 15.04.09 Sb.nr. 10*. Unpublished excavation report.
- Biddle, M. & Kjølbye-Biddle, B. 1992. "Repton and the Vikings". *Antiquity* 66: 36-51.
- Cunliffe, B. 2001. *Facing the ocean*.
- Dudo of St. Quentin, *Gesta Normannorum Ducum*, ed. F. Liffshitz 1996.
- Ettel, P. 2013. "Frankish and Slavic Fortifications in Germany from the Seventh to the Eleventh Centuries". In: Baker, J., S. Brooks, A. Reynolds (eds): *Landscapes of Defence in Early Medieval Europe (Studies in the Early Middle Ages 26)*, 261-284.
- Feveile, C. 2009. "The Fortifications of Viking Age Ribe". In: Martin Segschneider (ed.): *Ringwälle und verwandte Strukturen des ersten Jahrtausends n. Chr. an Nord- und Ostsee*.
- Feveile, C. 2013. *OBM 5557 Gammelborg, Vindinge sogn, Vindinge herred, tidl. Svendborg amt. Sted nr. 09.06.17. Sb.nr. 90*. Unpublished excavation report.
- Halsall, G. 2003. *Warfare and society in the Barbarian West 450-900*.
- Harding, D. 2012. *Iron Age Hillforts in Britain and beyond*. Oxford University Press.
- Hedenstierna-Johnson, C., L. Holmquist, M. Olausson. 2013. "The Viking Age paradox: Continuity and discontinuity of fortifications and defence works in Eastern Scandinavia". In: Baker, J., S. Brooks, A. Reynolds (eds): *Landscapes of defence in Early Medieval Europe (Studies in the Early Middle Ages 28)*, 285-301.
- Henning, J. 2005. "Civilization versus Barbarians? Fortification Techniques and Politics in Carolingian and Ottonian Borderlands". In: Curta, F. (ed.): *Borders, Barriers, and Ethnogenesis. Frontiers in Late Antiquity and the Middle Ages (Studies in the Early Middle Ages 12)*, 23-34. Turnhout: Brepols.

- Holwerda, J.H. 1929. "Ascloa". In: *Dorestad en onze vroegste Middeleeuwen*, 135-153. Leiden.
- Jaubert, A.N. 2010. "Late antique and early medieval high-status sites in France". *Settlement and coastal research in the Southern North Sea Region* 33: 255-273.
- Kaltring, S. 2014. "Die vergessene Hochburg und das frühe Haithabu". *Arch. Nachr. Schleswig-Holstein* 20: 2-65.
- Kurze, F. 1891. *Annales Fuldenses*. Hannover.
- Lemm, T. 2013. *Die frühmittelalterlichen Ringwälle im westlichen und mittleren Holstein*. Hamburg.
- Mestdagh, M. 1989. *De Vikingen bij ons. Het Grote Leger (879-892) in België en Frankrijk*. Gent: Mens & Cultuur.
- Mohr Christensen, P. 2009. "Erritsø". *Skalk* 2009(4): 9-15.
- Ó Floinn, R. 1998. "The archaeology of the Early Viking Age in Ireland". In: Clarke, H.B. et al. (eds): *Scandinavia and Ireland in the Early Viking Age*, 131-165. Dublin.
- Olausson, M. 2009. "At peace with walls - Fortifications and their significance AD 400-1100". In: Olausson, M. (ed.): *The Martial Society*, 35-70.
- Raffield, B. 2013. "Antiquarians, Archaeologists and Viking Fortifications". *Journal of the North Atlantic* 20: 1-29.
- Ralston, I. 2004. *The Hill-forts of Pictland since 'The Problem of the Picts'*. Rosemarkie: Groam House Museum.
- Rau, R. (ed.). 1960. *Annales Fuldenses, Quellen zur karolingischen Reichsgeschichte III*, 19-177. Darmstadt.
- Ravn, M. & C. Juel 2018. "Stormandsgården ved Erritsø". *Skalk* 2018(2).
- Roesdahl, E. 1998. *The Vikings*. Penguin press.
- Russell, I. R., Harrison, S.H., Nicholls, J., Kinsella, J., McNamara, S., O'Hare, M. 2007. "Woodstown 6 Supplementary Research Project". County Louth: ACS.
- Russell, I. R. and Hurley, M. (eds). 2014. *Woodstown: a Viking Age settlement in Co. Waterford*. Dublin: Four Courts Press.
- Segschneider, M. 2009. "Die Ringwälle auf den nordfriesischen Inseln". In: Martin Segschneider (ed.): *Ringwälle und verwandte Strukturen des ersten Jahrtausends n. Chr. an Nord- und Ostsee*, 99-112.
- Sheehan, J. 2008. The Longphort in Viking Age Ireland. *Acta Archaeologica* 79: 282-295.
- Skaarup, J. 1997. Ærøs Sankt Alberts - kirke og fæstning. Rudkøbing: Langelands Museum, Marstal Søfartsmuseum & Ærø Museum.
- Tys, D., P. Deckers & B. Wouters. 2016. "Circular, D-Shaped and Other Fortifications in 9th- and 10th-Century Flanders and Zeeland as Markers of the Territorialisation of Power(s)". In N. Christie & H. Herold (eds): *Fortified Settlements in Early Medieval Europe*. Oxbow.
- Verhart, L. 2017. *De opgravingen rond het kerkje van Asselt door J.H. Holwerda in de jaren 1928-1929: een kritische analyse*. Published online: <https://independent.academia.edu/LVerhart>
- Williams, G. 2008. "Raiding and warfare". In: Brink, S. (ed.): *The Viking World*, 193-203.

New archaeological investigations at Nonnebakken, a Viking Age fortress in Odense

Mads Runge

Abstract

This paper presents the results of research excavations undertaken at the ring fortress of Nonnebakken in Odense in 2015 and 2017. Nonnebakken has been known from historical maps and excavations for centuries. Nevertheless, up until 2015, it was somewhat insecurely classified as a largely destroyed “possible ring fortress of Trelleborg type”. The recent excavations therefore searched for some of the missing characteristics of the Trelleborg-type ring fortresses to discover whether Nonnebakken actually fell into this category or was “just” a ring fortress with a function as for example a refuge camp. The investigations showed that Nonnebakken possesses most of the features of the Trelleborg-type ring fortresses and should therefore be included in this group. They also indicated that the fortress has had a longer and more complex history than previously thought. These findings fit well with new analyses of the other Trelleborg-type ring fortresses. In conclusion, the paper touches upon the possibilities for presenting Nonnebakken to the public in a new and more prominent and compelling way.

The ring fortress of Nonnebakken appears on several historical maps, including the oldest map of Odense, Braun’s prospectus from AD 1593, where it is illustrated as two semi-circular ramparts (figure 1). On illustrations up until the end of the 19th century, the rampart is still shown standing to a height of several metres (figure 2). In 1909, a developer’s construction team removed much of the northern part of the rampart with the aim of using the soil to fill in part of the river, Odense Å. The area today is evident as a marked elevation extending towards the low-lying area near the river (figure 3). In the centre of this higher ground stands the mansion of the Odd Fellow Guild, while to the North-East there is a school, Gi-



Figure 1: Part of Braun’s prospectus from AD 1593 with Nonnebakken in the foreground. After Füssel (2008: 184).



Figure 2: Coloured prospectus. A view towards Odense from the South (from Hunderupvej) with Nonnebakken to the right, c. 1837-1840. Drawing: R.N. Nielsen sculp.

ersings Realskole, and to the South some residential houses and gardens (figure 4). From the 18th century onwards, several Viking Age artefacts from Nonnebakken were submitted to the National Museum and the local museum and some small excavations were undertaken in the area (figure 5).

The ring fortress has therefore been quite well known for a long time. Nevertheless, up until 2015 it was rather insecurely classified as a largely destroyed “possible ring fortress of Trelleborg type”.¹ On the one hand, it was obvious that Nonnebakken had several similarities with Harald Bluetooth’s ring fortresses of Trelleborg type, including its circular

shape, overall dimensions, the form and dimensions of its ditch and rampart and its location in the landscape. Dendrochronological dates for stray finds of a piece of wood, lacking sapwood, and a wooden spade, both from the ditch, of after AD 967 and c. AD 900 respectively, support this interpretation to some extent, even though the connection between these wooden finds and the fortress’ period of construction and use is uncertain (Jensen & Sørensen 1990, 329; Lundø 2012, 53; Roesdahl & Sindbæk 2014a, 253f.; Runge & Henriksen 2018). The same is true of the narrowly datable artefacts from the site, which clearly point to the late 10th century (Roesdahl 1977,



Figure 3: The northern part of Nonnebakken in present-day Odense, seen from the West with the Odd Fellow mansion and other buildings placed on it. The trench from the archaeological excavation in 2017 is seen to the North. The excavation in 2015 was undertaken in the grassy area in front of the mansion’s main entrance, corresponding to the north-western part of the fortress. Drone photo: Kim Allan Kristensen, Odense Municipality.



Figure 4: The outline of Nonnebakken in relation to present-day Odense. The outermost ring represents the ditch and the inner one marks the rampart. To the West Hunderupvej, which continues on to Klaregade to the North (outside the figure). Background map: © Danish Geodata Agency.

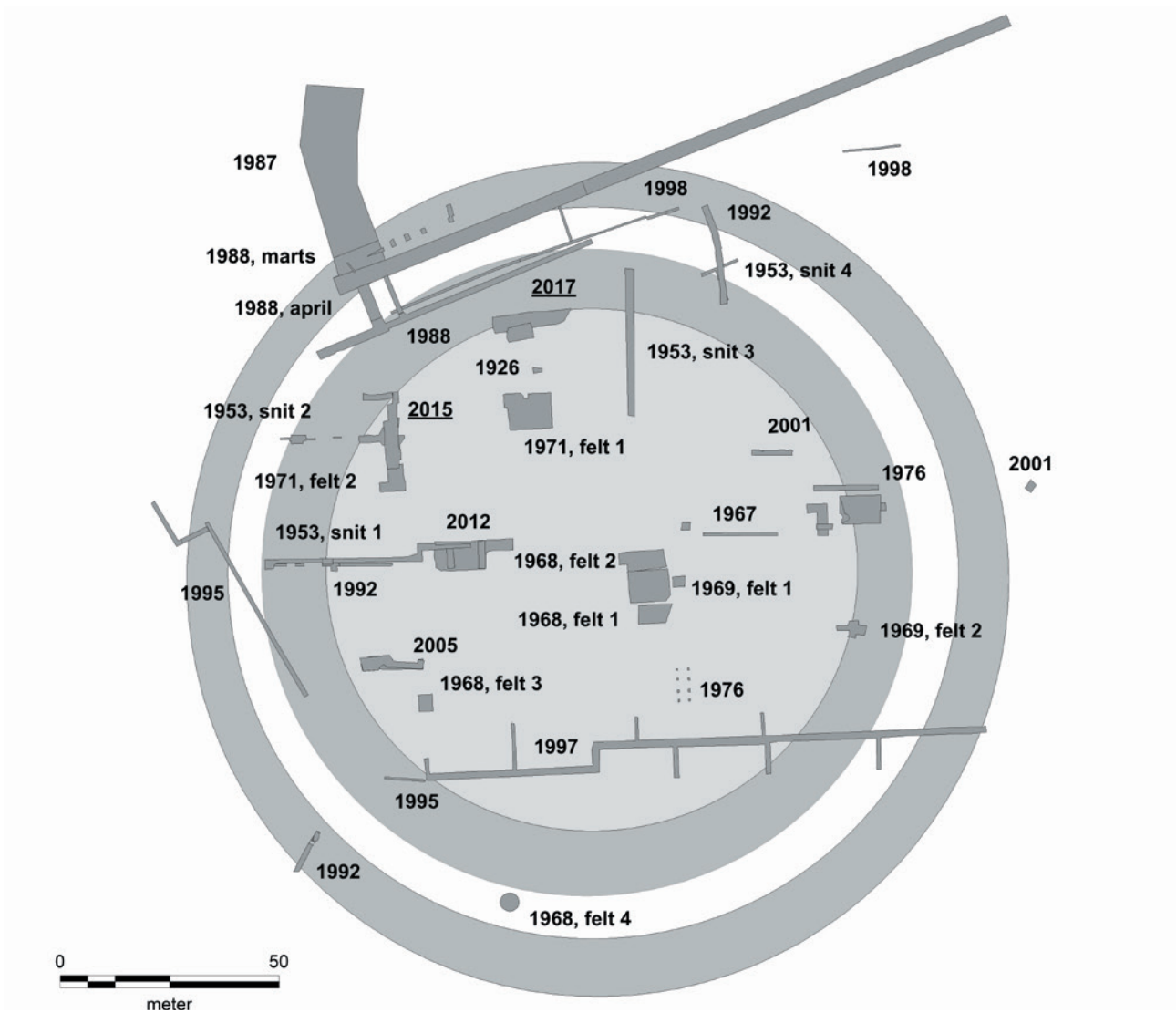


Figure 5: Map indicating the location of the excavation trenches (dark grey) at Nonnebakken with year of investigation. In 1953, 1967 and 1968-71, the excavations were undertaken by the National Museum of Denmark, while subsequent investigations were carried out by Odense City Museums. Dark grey: Ditch. Lighter grey: Rampart. Lightest grey: The internal of the fortress. Drawing: Mads Runge.

167f.; Roesdahl & Sindbæk 2014a: 253ff.). On the other hand, elements such as the internal “squares” with blocks of buildings, a ring road and gates were not in evidence. It was also assumed that Nonnebakken’s location in a modern city, with houses, roads and parks on and near the site, had over time resulted in severe damage to the fortress structure.

In August 2015 and October 2017, in connection with Odense City Museums’ research project “The origins of Odense – New aspects of early urbanisation in southern Scandinavia” (Runge & Henriksen 2018) and the museum’s general focus on the earliest history of Odense (Runge 2017b), there was occasion to carry out new excavations at Nonnebakken.² The aim was, through a targeted search for some of the missing characteristics of the Trelleborg fortress

type, to discover whether Nonnebakken actually was a ring fortress of Trelleborg type or “just” a ring fortress with a function as for example a refuge camp.

Topography and terrain regulation

Nonnebakken was built on an even, clayey promontory, which to the North, West and East was bordered by the looped course of the river, Odense Å, and the wetland areas bordering it; i.e. a topographical position which corresponds to that of the other ring fortresses of Trelleborg type. The fortress is located at the easiest, and presumably original, passage across Odense Å, by the route now marked by Klaregade and Hunderupvej (see figure 4). Another promontory extends towards the river on its northern side,



Figure 6: A cross-section through the rampart at Nonnebakken. Lowermost, the yellow subsoil (light grey) can be seen and above this an old, darker soil layer. On top of the soil is an orange layer of solid clay (light grey) and then a turf-built rampart. Uppermost is a fill layer from modern times.
Photo: Mads Runge. Drawing: The periodical *Skalk*.



Figure 7: A cross-section through the wall trench and an obliquely placed post on the inner side of the rampart.
Photo: Mads Runge.

and it was here that some of Odense's earliest urban-like structures, in the form of pithouses, were located (Bjerregaard & Runge 2017, 8).

In the 2015 excavation, it was established that some ground levelling, involving the addition of soil, had been undertaken prior to construction of the fortress. The original ground surface had had a very marked downward slope from East to West.

Construction of the rampart had also begun with extensive ground-levelling works involving removal of the upper part of the contemporaneous topsoil. A 10cm thick, compact layer of clay was laid out in a shallow depression and over the surface, thereby creating a solid level basis for the rampart (figure 6).

Outer features

The fortress was surrounded by a c. 14.5 m. wide rampart built of grass turves. On top of and between these turves, granite stones, some of them fire-cracked, were apparently laid out, presumably to provide extra stability. This is indicated by stones of this type being found during the 2015 excavation on the inner side of the rampart, as if they had slipped down. The same phenomenon is evident at the ring fortress Fyrkat, where the stones are larger, however (Olsen 1977, 63). The 2015 excavation touched upon the inner side of the rampart, which at this spot was preserved to a height of c. 1 m. (cf. figure 6). Its original height is unknown, but at Fyrkat and Trelleborg, heights of respectively 3.5 and more than 5 m. have been suggested (Nørlund 1948, 46f.; Olsen 1977, 53). The rampart had a wooden façade on both its inner and outer face, and in the 2015 excavation a c. 30 cm wide and 50 cm deep ditch was recorded with large closely-spaced posts making up a vertical inner wall (figure 7). To support this wall, a row of obliquely-set smaller posts, with a diameter of c. 5-10 cm, had been placed on its inner side. A similar construction is evident at Trelleborg (Nørlund 1948, 48ff.).

Outside the rampart there was a flat c. 8.5 m broad section, the so-called berm, followed by a ditch with a v-shaped cross-section, a minimum width of 9 m. and a maximum depth of 4 m.

The classical ring fortresses of Trelleborg type have four covered gates in the rampart, orientated towards the points of the compass. The two fortresses in Jutland, Aggersborg and Fyrkat, have a minor rotation of the gates to the West, while the two fortresses on Zealand, Trelleborg and Borgring, have a corresponding rotation to the East.

No gates had so far been demonstrated archaeologically at Nonnebakken, but on Braun's prospectus the ring fortress has two openings, one to the North-East, the other to the South-West. The fact that only two openings are shown on the prospectus can perhaps be explained by the fortress being 600 years old at the time, it may therefore have seen many changes over the years. A similar situation is evident on drawings of Trelleborg from the 19th century, where one or three openings can be seen (Nørlund 1948, 13ff.).

The excavation in 2017 had the specific aim of searching for the northern gate of the fortress. In the light of the openings shown on Braun's prospectus, it seemed most likely that Nonnebakken's gates, like those of the Jutland ring fortresses, had a minor rotation to the West. Based on the findings from Borgring, a rotation of 11° was assumed. With the resulting position of its centre, a c. 4 m. wide trench was opened up on the inner side of the presumed course of the rampart across the presumed location of the gate, i.e. running East-West, at the place where the sturdy posts of the gate's corners would be expected.

The state of preservation here was good and postholes and other features stood out very clearly against the light subsoil, which was revealed c. 50 cm below the present-day surface (figure 8). The rampart itself had been removed and the disturbance which took place in 1909 could be located precisely for the first time. The construction workers basically followed the edge of the rampart and dug a minimum of 1 m below its base, thereby removing all traces of it, together with the underlying features. Along the inner margin of the disturbance, which as mentioned corresponds with the inner edge of the rampart, a row of small posts could be seen. These mark the position where the ring road was fixed on the inner side of the rampart. The course of a row of double posts, which fixed the ring road towards the interior of the fortress, could also be documented.

The gate itself was therefore no longer to be found here. But two sets of large postholes were recorded in the middle of the excavated area within the course of the rampart (figure 9). In three cases, the



Figure 8: Parts of the excavation trench from 2017. To the North (to the left in the picture), the 1909 removal of the rampart that lay beneath it can be seen as a large, dark feature. Photo: Mads Runge.

postholes were identical in depth and width, and all three contained preserved traces of their post. The fourth posthole had the same dimensions at the top but showed a minor deviation in its vertical section. The four posts could potentially mark the point of contact between the axial road and the gate; the positioning of such large posts here is also seen at Aggersborg. Incidentally, the four posts were placed at a 90° angle to the central point in the eastern and western openings shown on the historical map from 1785 (figure 10). The distance from East to West between the posts was 3.1-3.2 m., which would concur with the widths of the gates at the other ring fortresses of Trelleborg type (Nørlund 1948, 56; Olsen 1977, 64ff.; Sindbæk 2014b). The exception is Borgring, where the distance was, respectively, c. 4.4-5 m., internally, in the middle of the gate, and externally (Goodchild et al. 2017, 1037f.).

The hypothetical positioning of the gate was tested via a series of AMS dates. The results of

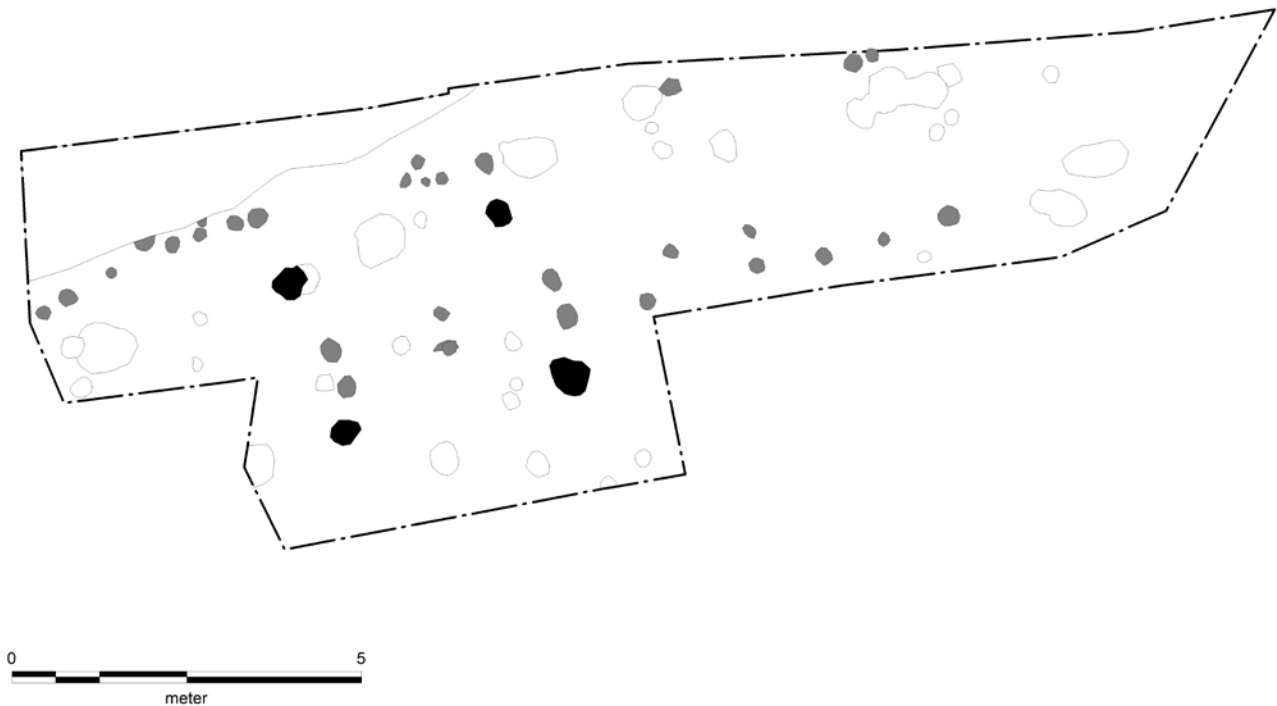


Figure 9: All the features in the excavation trench from 2017. The ring road (grey) and the four large posts (black) that could potentially mark the position of the gate are shown. Drawing: Mads Runge.

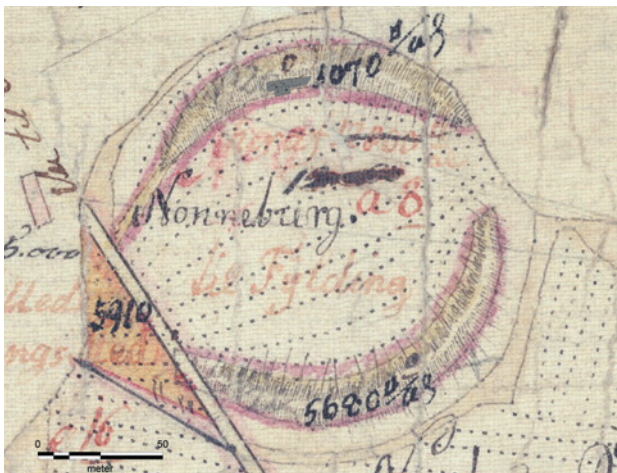


Figure 10: Historical map from 1785 showing openings to the East and West. The position of the excavation from 2017 (grey) is also shown. Drawing: Mads Runge. Background map: © Geodatastyrelsen.

these however did not, as will be seen, support the interpretation of the posts being part of the Viking Age fortress. As conclusion we might say that the location of the northern gate – and the other gates – at Nonnebakken still needs to be established archaeologically.

Internal features

Another characteristic of the ring fortresses of Trelleborg type is their internal features, consisting of axial roads running between the four gates, a ring road running around the inner side of the rampart and the aforementioned four “squares” with blocks of buildings. One of the aims of the excavation in 2015 was to undertake a specific search for these blocks of buildings, and the excavation did actually reveal several postholes and pits on the internal surface of the fortress, including some which formed a kind of linear structure or row. But as in the earlier excavations, it did not prove possible to locate the blocks of buildings and the axial roads in 2015 (figure 11). The limited size of the excavation trench (only 35 m²) may be part of the explanation for this, but given the number of excavations undertaken at Nonnebakken over the years, the collective archaeological findings at the present state of knowledge suggest that these structures never existed in the fortress. This conclusion receives further support from the fact that blocks of buildings and axial roads have not, as yet, been found at the newly excavated Borgring fortress either, and they are also missing from the fortresses in Scania (Svanberg & Söderberg 1999, 48; Jacobsen 2003; Goodchild et al. 2017, 1038).



Figure 11: The archaeological excavation at Nonnebakken in 2015 (trench marked in thick black line) and earlier campaigns (thin red line). The ring road is marked in green. Drawing: Mads Runge.

In the 2015 excavation, it was, however, possible for the first time to record traces of the ring road along the inner side of the rampart. As mentioned, the ring road also was recorded in the 2017 excavation. Only the postholes associated with the road construction were preserved, whereas no parts of the actual road surface were found. It seems most likely that the latter consisted of horizontally-laid planks (Nørlund 1948, 30ff., 49; Olsen 1977, 81f.) attached to a row of relatively modest, vertical posts placed immediately inside the inner supporting wall of the rampart. Towards the interior of the fortress, the horizontally-laid planks were attached to larger vertical posts. By each of these posts, about 20 cm further towards the fortress interior, there was another post. In a couple of instances, it could be seen that the innermost post was placed obliquely and sloped towards the vertical post, presumably to support a railing or lean-to, or perhaps even a roof over the ring road, as

has been suggested at Fyrkat. The ring road at Nonnebakken had a width of c. 1.6 m., i.e. corresponding roughly to that at Fyrkat (Olsen 1977, 81f.).

Artefacts

The most striking artefacts found at Nonnebakken comprise a series of fine silver objects, which have been submitted to the National Museum and the local museum over a period of almost 250 years, and which can be assigned to a total of five hoards³.

Hoard no. 1 is from 1775 and consists of a circular filigree brooch and a band-like arm ring, the so-called “Odin’s ring”, because of the connection between Odense and Odin. These objects must have been buried at some time after c. AD 970 (Skovmand 1942, no. 30; Thrane 1973; Henriksen 2016) (figure 12a+b).

Hoard no. 2 is from 1889 and consists of a circular filigree brooch, three pieces of hack silver and nine coins. The hoard is dated to the end of the 10th cen-



Figure 12: Hoard no. 1. Circular filigree brooch and band-like arm ring, the so-called "Odin's ring", found in 1775. Photo: Søren Greve, National Museum of Denmark.

ture, but according to Jens Christian Moesgaard it is earlier than c. AD 975/988. (Skovmand 1942, no. 28; Moesgaard 2015, 157; Henriksen 2016) (figure 13a-c).

Hoard no. 3 was found prior to 1901 and consists of a third circular filigree brooch with primitive cross symbols on its reverse (Skovmand 1942, no. 28; Thrane 1982; Henriksen 2016) (figure 14).

Hoard no. 4 is from 1909 and consists of 25 (perhaps 26, cf. Moesgaard 2015, 158f.) silver coins, the latest being from AD 973, and two pieces of hack silver (Skovmand 1942, no. 28a; Moesgaard 2015, 158f.; Henriksen 2016) (figure 15).

Hoard no. 5 was discovered during the excavation in 2015. It had been placed in a small pit found inside the fortress next to a row of postholes. It consists of a sheet-silver bead, a quarter dirham and a *Sachsenpfennig*. The bead is dated to the 10th century, while the dirham fragment is dated to the period after AD



Figure 13: Hoard no. 2. Circular filigree brooch (diameter 6.2 cm), three pieces of hack silver and nine coins deposited together as a hoard and found at Nonnebakken in 1889. The circular filigree brooch has been worn with the ring pointing downwards. Photo, coins: John Lee, National Museum of Denmark. Photo, hack silver: Søren Greve, National Museum of Denmark. Photo, filigree brooch: Nermin Hasic.



Figure 14: Hoard no. 3. Circular filigree brooch from Nonnebakken, found before 1901. Photo: Jørgen Nielsen.

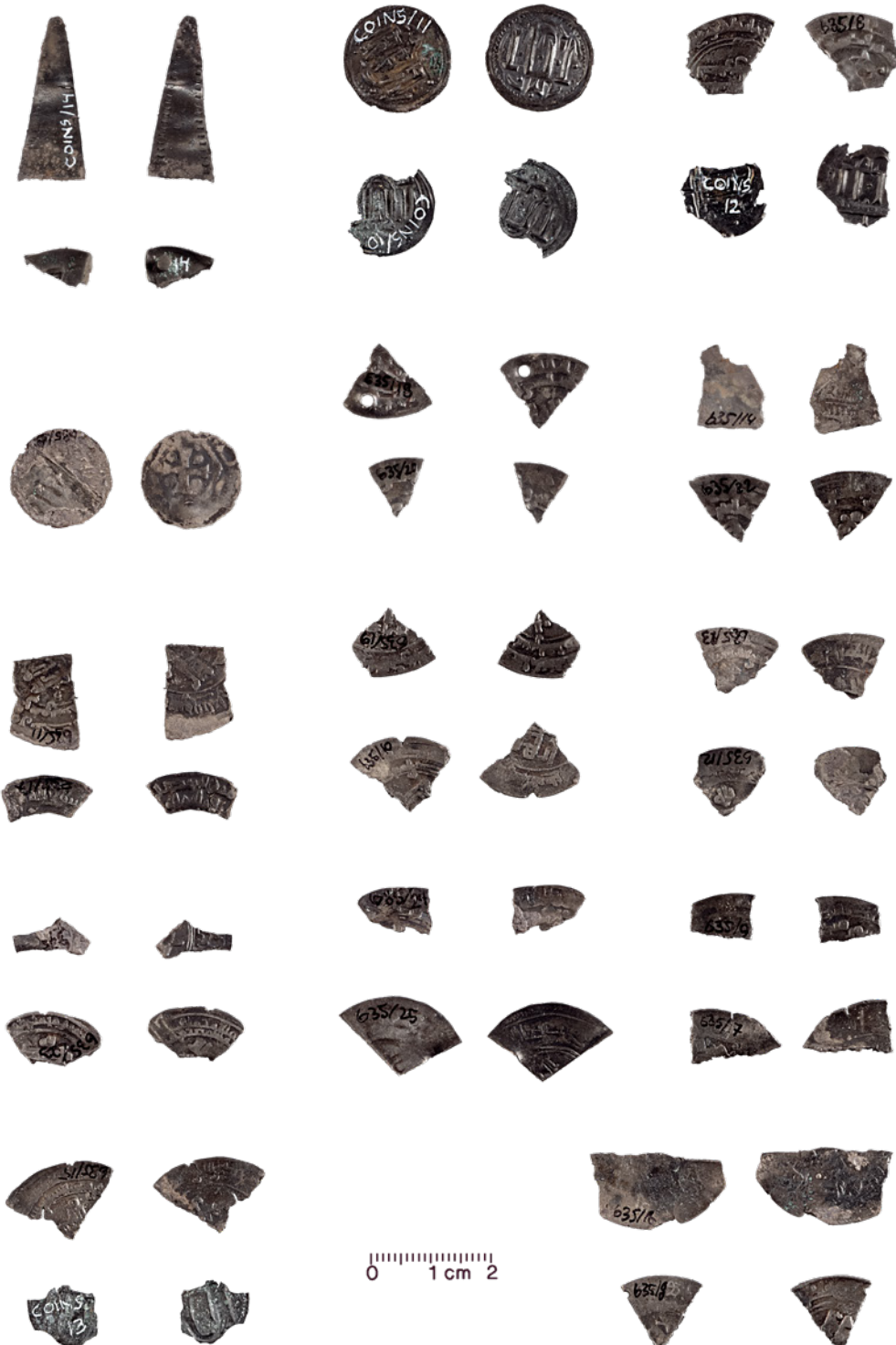


Figure 15: Hoard no. 4. Twenty-five silver coins and two pieces of hack silver (top left corner) deposited together as a hoard and found at Nonnebakken in 1909. Photo: Nermin Hasic.



Figure 16: Hoard no. 5. Sheet-silver bead, cut fragment of a dirham and *Sachsenpfennig*. Photos: Nermin Hasic.

815.⁴ The *pfennig* is difficult to identify precisely to type, but comes closest to types CNP 324 and 354, which are subtypes of, respectively, KN 1 and KN 3. These are often perceived as two developmental phases in the same coin production at Magdeburg (c. AD 940-985). Given this interpretation, the Nonnebakken coin lies at the transition between the two types, or early in the period when KN 3 was produced, probably in the AD 970s. A secure, precise date within the maximum dating interval of AD 940-985 is, however, not possible. The coin is not worn and therefore still has minting burrs round its edge: This means that it could only have been in circulation for a short time (figure 16a-c) (Henriksen 2016; Runge *et al.* 2016, 6f.).⁵

In conclusion, Else Roesdahl assigns the silver hoards found between 1775 and 1909 to the time around AD 975-90, and most certainly no later than AD 1000 (Roesdahl 1977, 167f.; Roesdahl & Sindbæk 2014a, 253f.). Recent analyses of the coins have not altered this picture (Haupt 2006; Moesgaard 2015, 157ff.), and the dating of the hoard found in 2015 is also seen as being consistent with this.

In addition to the five hoards, the objects found and submitted over the years include a good handful of glass beads, three iron axes, a wooden spade, an unornamented band-shaped piece of hack silver, a bronze ring-headed pin with a smooth ring and loop head and a double-shelled tortoise brooch, all of which are dated to the Viking Age. A spindle whorl made of finely-tempered clay and parts of one or more crucibles, together with iron slag and a tablet-shaped lead weight, are artefacts which show that craft and possibly trade activities have taken place at Nonnebakken, but these cannot be securely ascribed to the Viking Age (Henriksen 2016).

During the 2017 excavation a hilt from a sword was found in a posthole on the fortress surface (figure 17a-c). The hilt is curved in the length and made of iron. Thin layers of brass and copper are laid on the broad sides. The small hole in the middle indicates that the hilt is probably an upper hilt from a sword of the special type 7 as described by Jan Peter-

sen. According to Petersen, the type should be dated to the first half of the 9th century (Petersen 1919, p. 89).⁶ This date contradicts an AMS date of the posthole to 652-768 AD; a date which obviously might be affected by wood age or other factors.

Also worth mentioning is a Valkyrie brooch that was found by metal detector in soil excavated by machine from a level immediately above the fortress surface (figure 18). It is dated to the 9th century, and

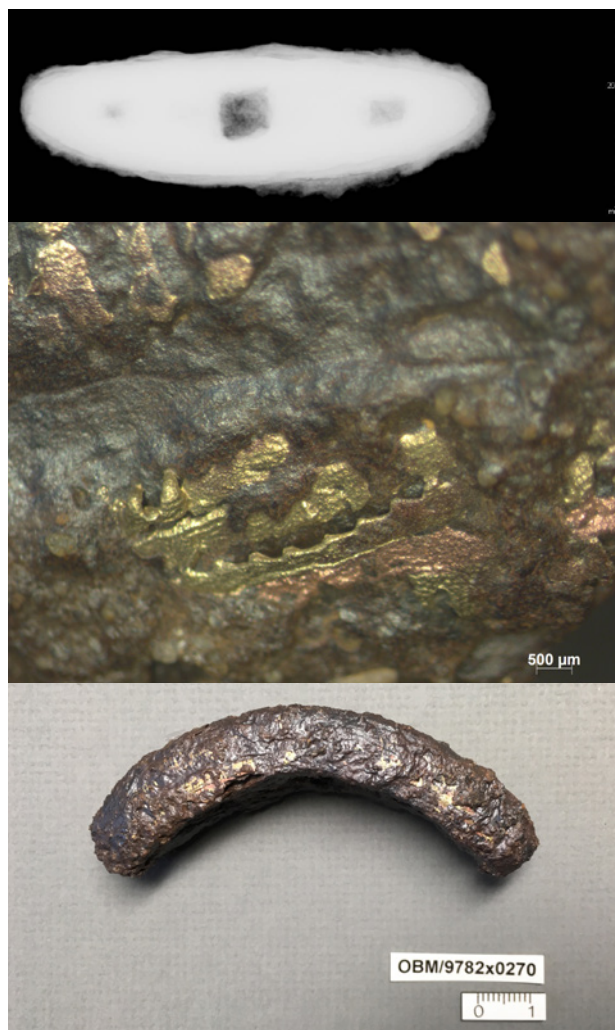


Figure 17: Hilt seen from the side and top from a sword. Nonnebakken. X-ray (a), detail photo (b) and regular photo (c). Photos: Jannie Amsgaard Ebsen.



Figure 18: Valkyrie brooch from Nonnebakken. On the front, a standing shield maiden can be seen to the right and a Valkyrie mounted on a horse to the left. Below the horse is a rectangular tapestry woven from the intestines of fallen warriors. Photo: Nermin Hasic.

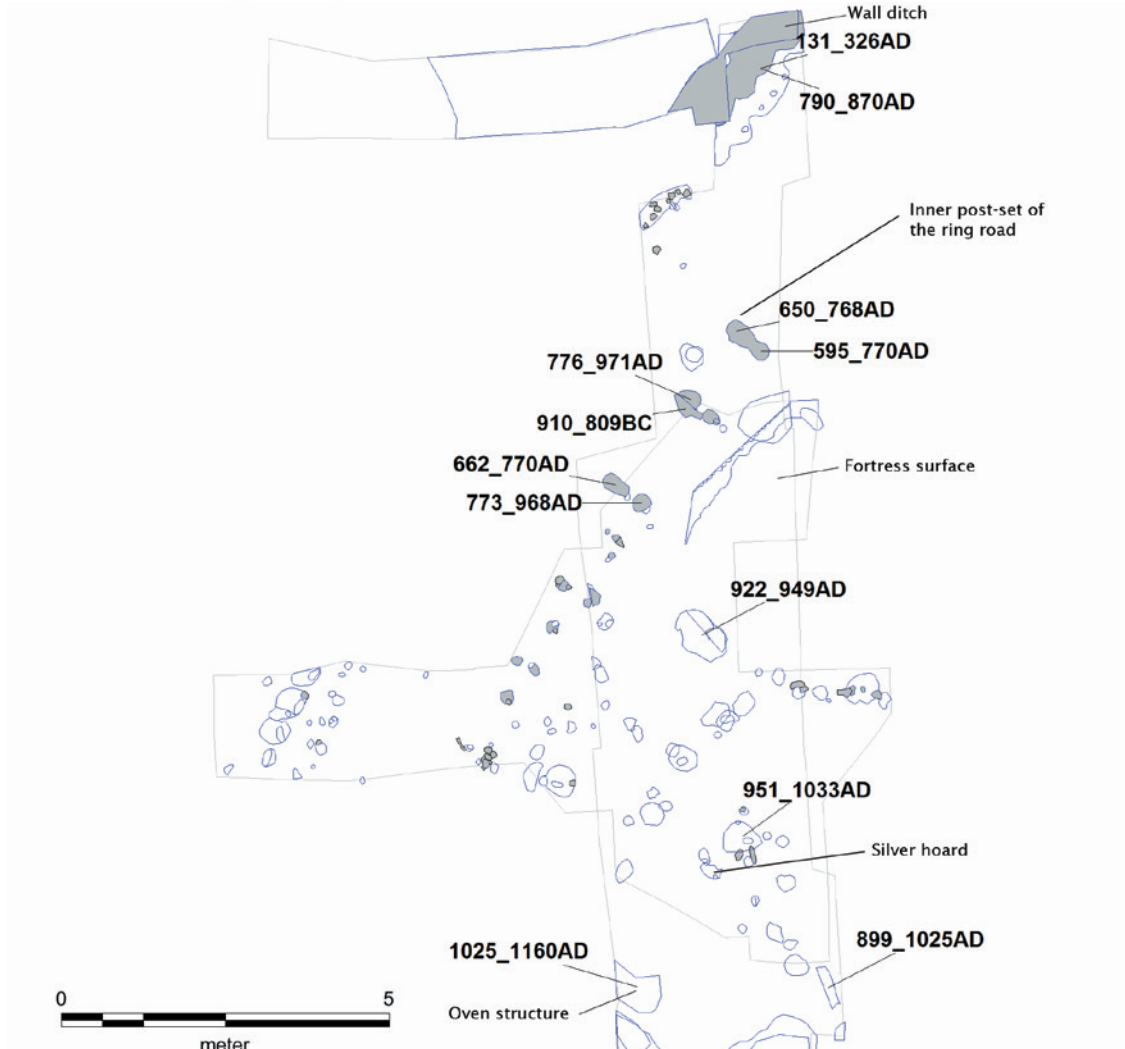


Figure 19: Distribution of AMS dates from the 2015 excavation at Nonnebakken. Grey: Stones and structures associated with the ring road and inner foot of the rampart. Broken grey line: Trench boundaries. Solid grey line: Other features and structures. Cf. figure 11 for separation of 2015 campaign and earlier campaigns. Drawing: Mads Runge.

at least a further two examples are known from Funen: A fragment of a similar brooch was recovered from a metal-rich locality at Engløkken, near the southeastern shore of Odense Fjord, while an intact example was found in the village of Rynkeby (“the warrior village”) in central Funen. This brooch type is relatively rare in Denmark and it is generally associated with localities that are thought to have had some degree of significance at the time (Petersen 2005, 76ff., 2010; Henriksen & Petersen 2013; Han-

sen 2017).

AMS dates

In conjunction with the investigations at Nonnebakken, a series of AMS dates were obtained.⁷ From the 2015 excavation, five dates from the ring road and a date from the wall ditch for the inner rampart base fall within the period AD 595-971, with a clear concentration in the earlier part, in addition to a date

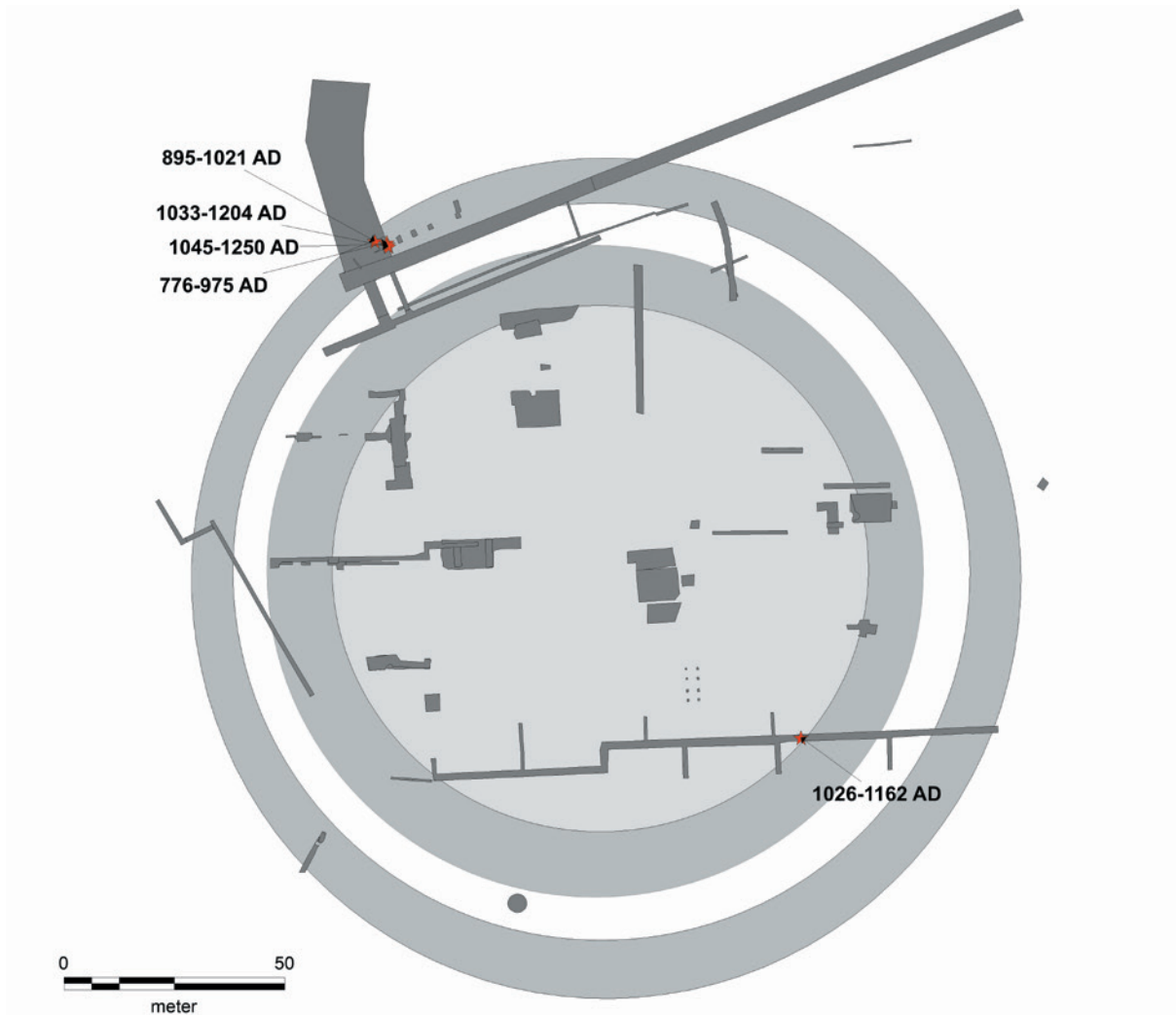


Figure 20: Distribution of AMS dates from earlier excavations at Nonnebakken. Drawing: Mads Runge.

of AD 790-870 from the inner rampart base. If the five dates from the ring road are combined, the most likely date for this structure is AD 760-780 (figure 19).⁸

Other AMS dates are associated with postholes in the fortress surface and fall within the period c. AD 898-1025, thereby revealing activity immediately before, during or after the late 10th century. One date for an oven structure falls within the period AD 1025-1160 and might, especially when allowance is made for a certain wood age of the dated material, demonstrate a link with the Benedictine convent that stood on the site during the second half of the 12th century, and which has given its name to the locality (Madsen 1988, 106f.).

Also, five new dates were obtained in 2016 for material recovered during previous excavations (figure 20). A sample from a drainage layer to the South was dated to AD 1026-1162, while four dates from the lower layers in the northern part of the ditch fall within the period AD 776-1250. These dates pro-

bably reflect general activities at the site during this time span, but do not provide a precise age for the individual structures. The filling-in of the ditch could have taken place over a longer period and episodes of clearing-out of sediment may have muddied the picture.

From the 2017 excavation 10 dates were obtained (figure 21). Dates from the four posts that may mark the northern gate fall in four instances within the period AD 1475-1943, one posthole is dated to 39636-36380 BC and the last postholes are dated to AD 652-768. Four dates are from the ring road. One of these is dated to older than BC 45.000, the three others are dated to AD 695-891, AD 777-896 and AD 887-1013.

If we look at all the AMS dates from Nonnebakken, some general trends become visible. Firstly there are two marked groups of dates, one in the period AD 600-800 and another in the period AD 780-1030. The first group of dates relates primarily to the ring road, whereas the second group relates to both the ring road, the features in the fortress surface and the

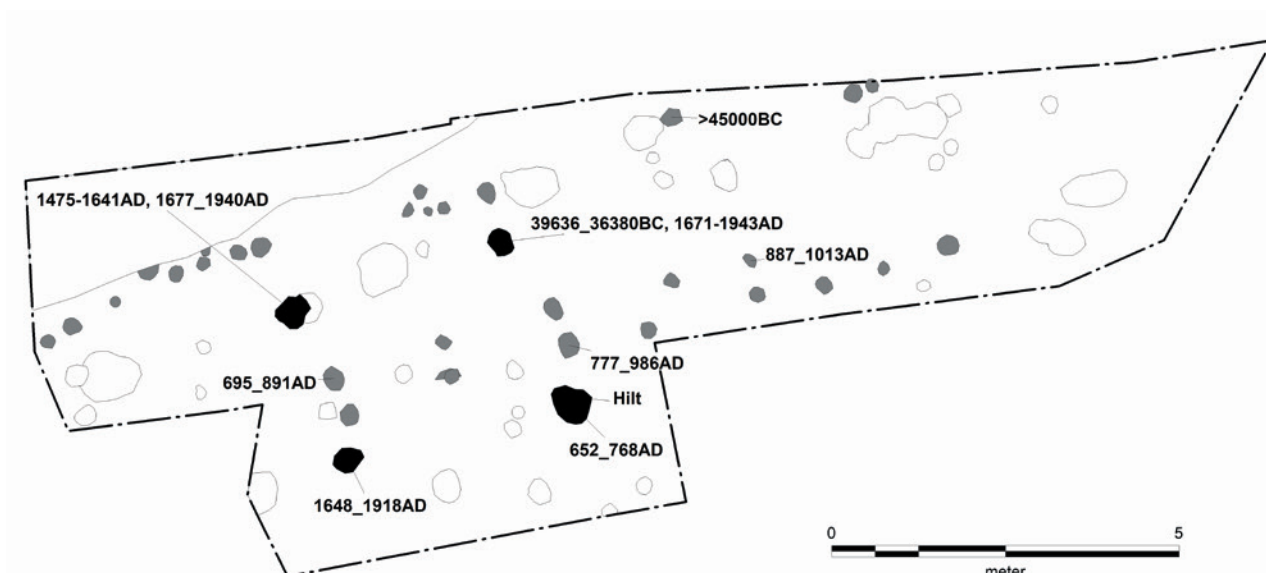


Figure 21: Distribution of AMS dates from the 2017 excavation at Nonnebakken. Grey: Structures associated with the ring road. Black: The four large posts marking the position of the gate. Broken grey line: Trench boundaries. Solid grey line: Other features and structures. Drawing: Mads Runge.

lower layers of the ditch. Beside these main phases there are, as we have seen, also dates from the convent period. Apart from these groups of dates, there are a number of odd dates, ranging from BC 58.000 to AD 1950. These dates indicate that caution must be applied to the use of AMS dates from Nonnebakken in general⁹.

The group of dates from AD 780-1030 may reflect activities related to the Trelleborg type ring fortress phase. The group of dates from AD 600-800, on the other hand, may relate to an earlier phase of the fortress. It is also possible that these dates indicate the location of the legendary Odins Vi (Odin's shrine) – a heathen cult centre – at Nonnebakken. This interpretation receives further support from the presence of a cultural layer containing numerous fire-brittled stones on the low-lying area to the North of Nonnebakken (Jensen & Sørensen 1990, 326ff.). The layer may derive from a *hörögar* (altar), as seen for example at Lejre (Christensen, T. 2015, 173ff.; Runge & Henriksen 2018). The theory that the Trelleborg-type ring fortresses were sited at or near earlier heathen cult sites is not new (Nørlund 1948, 243ff.; Olsen 1977, 35; Jørgensen 2009; Dobat 2014, 54ff.; Jørgensen *et al.* 2014).

Nonnebakken as a ring fortress of Trelleborg type

The dimensions and construction of Nonnebakken, as well as the finds recovered from the site and a

group of AMS dates, indicate that it was a ring fortress of Trelleborg type. However, the excavations carried out to date indicate that blocks of buildings and axial roads are absent; but there may be at least two explanations for this. First and foremost, it is generally assumed that the ring fortresses of Trelleborg type had a relatively short period of use, perhaps only 10-15 years (Roesdahl & Sindbæk 2014a, 255; Sindbæk 2014a, 236ff.). This means that they were possibly not all fully completed before their function in society had changed. Another possibility is that Nonnebakken, the only ring fortress of Trelleborg type in present-day Denmark to be located in conjunction with an existing, larger settlement (Runge 2017a; Runge & Henriksen 2018), did not have the same requirements for dwellings/accommodation on the fortress surface.

Furthermore, the AMS dates obtained in connection with the excavations in 2015 and 2017 indicate that the locality has a longer and more complex history than previously believed. The archaeological remains extend chronologically from stray finds and a few AMS dates in the Neolithic, Bronze Age and Early Iron Age, to more extensive activities in the Late Iron Age and Viking Age and the presence of a Benedictine convent in the second half of the 12th century. The convent was probably located here due to the area continuing to be royal property after the time of the Trelleborg-type ring fortress. According to early maps, the area was probably covered by fields and grassland after the convent period, up

until its partial destruction in the early 20th century. During World War II, the mansion at Nonnebakken housed first the Germans and then the British, and in the 2015 excavation a large refuse pit was found containing material from this period.

In the current context, however, it is activities during the Late Iron Age and Viking Age that are in focus. The indications of activities in the period just prior to the phase represented by the Trelleborg-type ring fortress phase, in the form of an older fortress, an Odins Vi or perhaps something else, suggests that the site might also have been of central significance at this time. This central position must, to a large degree, be due to its strategically favourable location, well-suited to controlling large parts of Funen. Nonnebakken and Odense occupy an ideal situation in relation to the control of land traffic and, at the same time, the sea was within fairly easy reach. Due to the meandering course of Odense Å, it was not possible to sail a large Viking ship all the way in to Nonnebakken. It was necessary to offload to smaller vessels closer to the fjord (Runge & Henriksen 2018). The fact that a large, semi-circular area, within a radius of c. 1 km to the south of Nonnebakken, is almost without traces from the Viking Age, should perhaps be seen in relation to the intention to control an extensive area. Perhaps this area was even intentionally cleared (Runge & Henriksen 2018)? Nonnebakken's central position in relation to land traffic and its proximity to the sea are properties that it shares with the other Trelleborg-type ring fortresses (Roesdahl & Sindbæk 2014b, 438).

The complex history of Nonnebakken concurs with the results of new analyses of the other Trelleborg-type ring fortresses, which indicate that these fortresses were not constructed quite so stringently as previously believed, and a number of minor differences are evident between them (Roesdahl & Sindbæk 2014b, 442; Ödman 2014). But there is probably no real difference between these structures in terms of the function they had at the end of the 10th century, because they all played a part in Harald Bluetooth's unified plan in relation to domestic and foreign policy.

The future of Nonnebakken

The story about how a developer's construction workers removed large parts of the fortress in 1909, together with the many buildings, roads etc. that have been built on and around the site during recent centuries, has meant that until recently, Nonnebakken

was considered almost completely destroyed and that it was, in consequence, difficult to investigate further and challenging to present to the public.

The excavations in 2015 and 2017 have in many ways turned this view upside down. The excavations showed that large parts of the fortress have survived. This is true of both the rampart and the features on the fortress' inner surface. It could be said that, in some ways, the later roads, parking places and lawns have formed a protective layer over the archaeological features and structures. It appears that the fortress was only really destroyed where buildings with cellars were constructed and in the areas where the 1909 destruction of the rampart took place. This means that Nonnebakken still has a huge research potential. At the same time, the largest current land owners of the fortress area have expressed an interest in further presentation of the fortress and its story.

In the coming years, Odense City Museums will therefore expand its presentation of the Viking Age fortress as part of the museum's current concept of research and communication: *Knuds Odense – vikingernes by* (Canute's Odense – city of the Vikings). The concept incorporates excavations, exhibitions, publications and presentation on location. A further important element is that Nonnebakken is included in a serial nomination of the Danish Trelleborg-type ring fortresses as UNESCO World Heritage Sites (Runge 2017b, 2017c). Whether this nomination will be successful is uncertain, but there is no doubt that the outcome will be of huge importance for work on and at Nonnebakken in the future. The Viking Age fortress of Nonnebakken has survived and, as the largest and perhaps most important archaeological monument in Odense, it has enormous potential.

Bibliography

- Arentoft, E. 1993. "I vikingernes vold". *Fynske Minde*: 117-141.
- Bjerregaard, M.M. & M. Runge 2017: "En by bliver til – hovedtræk af Odenses udvikling i vikingetid og middelalder". In: M. Runge & J. Hansen (eds): *Knuds Odense – vikingernes by*, 6-21.
- Christensen, T. 2015. *Lejre bag myten. De arkæologiske udgravninger*. Aarhus: Jysk Arkæologisk Selskabs Skrifter 87.
- Dobat, A.S. 2014. Lokalteternes forhistorie og oplandet. In: Dobat, A.S. *Kongens Borge. Rapport over undersøgelserne 2007-2010*, 53-56. Aarhus: *Jysk Arkæologisk Selskabs Skrifter* 76.
- Füßel, S. 2008 (ed.). *Georg Braun and Franz Ho-*

- genberg. *Cities of the World. Complete Edition of the colour plates of 1572-1617*. Köln: Taschen.
- Goodchild, H., N. Holm & S.M. Sindbæk. 2017. "Borgring: the discovery of a Viking Age ring fortress". *Antiquity* 91(358):1027-1042.
- Hansen, J. 2017: "Fynske landsbyer fra arilds tid". In: Plechinger, H., Lorentzen, A., Toftgaard, J. & Schultz, M. (eds): *Museumsleder, forsker og netværksskaber. Torben Grøngaard Jeppesen. 40 år ved Odense Bys Museer*, 168-179.
- Haupt, N. 2006. "Nye bestemmelser af gamle fund – de kufiske mønter fra de to skattefund fra Nonnebakken i Odense". *Nordisk Numismatisk Unions Medlemsblad* 2006(2): 51-56.
- Henriksen, M.B. 2016. *Odenses opståen. En gennemgang af udvalgte jordfundne genstandsgrupper fra Odense købstad med henblik på at eftervise spor af aktiviteter i sen jernalder og vikingetid*. Arkæologisk Rapport nr. 527. Odense Bys Museer.
- Henriksen, M.B. and Petersen, P.V. 2013. "Valkyriefund". *Skalk* 2013(2): 3-10.
- Jacobsson, B. 2003. "Trelleborg and the Southern Plain during the Iron Age. A Study of a Coastal Area in South-West Scania, Sweden". In: Larsson, L. and Hårdh, B. (eds): *Centrality – Regionality. The Social Structure of Southern Sweden during the Iron Age*, 191-221. Lund: *Uppåkrastudier* 7.
- Jensen, N.M. & J. Sørensen 1990: "Nonnebakkeanlægget i Odense. En ny brik til udforskningen". *KUML* 1988/89: 325-333.
- Jørgensen, L., Albris, S.L., Bican, J.F., Frei, K.M., Gotfredsen, A.B., Henriksen, P.S., Holst, S. and Primeau, C. 2014. "Førkristne kultpladser – ritualer og tro i yngre jernalder og vikingetid". *Nationalmuseets Arbejdsmark* 2014, 186-199.
- Lundø, L.B. 2012. *At være eller ikke være ... En trelleborg? En bearbejdning af samtlige udgravningskampagner ved Nonnebakken på Fyn*. Bind 1 og 2. (Unpublished master's thesis). Københavns Universitet, Saxo-institutet.
- Lundø, L.B. 2013. "Nonnebakken – en ringborg i Odense". In: Lyngstrøm, H. and Thomsen, L.G. (eds): *Vikingetid i Danmark*, 203-206. København.
- Madsen, P.K. 1988. "De gejstlige institutioner i og ved Odense". In: Christensen, A.S. *Middelalderbyen Odense*, 97-118.
- Moegård, J.C. 2015. *King Harold's Cross Coinage. Christian Coins for the Merchants of Haithabu and the King's Soldiers*. Gylling: *Publications from the National Museum. Studies in Archaeology & History* Vol. 20:2. Jelling Series.
- Nørlund, P. 1948. *Trelleborg. Nordiske Fortidsminder* Bind IV, 1. Hefte. København: Det Kgl. Nordiske Oldskriftselskab.
- Olesen, M.B. 2000. "Trelleborg eller ej? – om den skånske trelleborgs tilknytning til de danske ringborge". *KUML* 2000: 91-111.
- Olsen, O. 1977. "Borgen". In: Olsen, O. and Schmidt, H. *Fyrkat. En jysk vikingeborg. I. Borgen og bebyggelsen*, 9-104. København.
- Petersen, J. 1919. *De norske vikingesverd. En typologisk-kronologisk studie over vikingetidens vaaben*. Kristiania: *Videnskapselskabet's Skrifter* II. Hist. Filos. Klasse 1919. No. 1.
- Petersen, P.V. 2005. "Odins fugle, valkyrier og bersærker – billeder fra nordisk mytologi fundet med metaldetektor". In: Capelle, T. and Fischer, C. (eds): *Ragnarok. Odins Verden*, 57-86. Silkeborg.
- Petersen, P.V. 2010. "Valkyrier og bersærker. Mytologien i smykkekunsten". In: Andersen, M. and Nielsen, P.O. (eds): *Danefæ. Skatte fra den danske muld. Til Hendes Majestæt Dronning Margrethe 2*, 134-138. København.
- Roesdahl, E. 1977. *Fyrkat. En jysk vikingeborg. II. Oldsagerne og gravpladsen*. København.
- Roesdahl, E. and S.M. Sindbæk 2014a. "Aggersborgs datering". In: Roesdahl, E., Sindbæk, S.M. & Pedersen, A. (eds): *Aggersborg i vikingetiden. Bebyggelsen og borgen*, 251-260. Aarhus: *Jysk Arkæologisk Selskabs Skrifter* 81.
- Roesdahl, E. and S.M. Sindbæk 2014b. "Borgens formål". In: Roesdahl, E., Sindbæk, S.M. and Pedersen, A. (eds): *Aggersborg i vikingetiden. Bebyggelsen og borgen*, 435-464. Aarhus: *Jysk Arkæologisk Selskabs Skrifter* 81.
- Runge, M. 2017a: "Det tidligste Odense". In: M. Runge & J. Hansen (eds): *Knuds Odense – vikingernes by*, 42-55.
- Runge, M. 2017b: *Knuds Odense – vikingernes by. Odense Bys Museer* 2017, 28-47.
- Runge, M. 2017c: "Nonnebakken – Odenses skjulte vikingeborg og dens potentiale som verdensarv". In: M. Runge & J. Hansen (eds): *Knuds Odense – vikingernes by*, 56-63.
- Runge, M., Hansen, J. and Lundø, L.B. 2016. "Nye undersøgelser på Nonnebakken i Odense". *Skalk* 2016(6): 3-9.
- Runge, M. & M.B. Henriksen. 2018. "The origins

of Odense – New aspects of early urbanisation in southern Scandinavia”. *Danish Journal of Archaeology*, vol. 7, 2018, issue 1. 2-68.

Sindbæk, S.M. 2008. “Kulturelle forskelle, sociale netværk og regionalitet i vikingetidens arkæologi”. *Hikuin* 35: 63-84.

Sindbæk, S.M. 2014a. ”Aggersborg og andre borge”. In: Roesdahl, E., Sindbæk, S.M. and Pedersen, A. (eds): *Aggersborg i vikingetiden. Bebyggelsen og borgen*, 233-250. Aarhus: *Jysk Arkæologisk Selskabs Skrifter* 81.

Sindbæk, S.M. 2014b. ”De fire porte”. In: Roesdahl, E., Sindbæk, S.M. and Pedersen, A. (eds): *Aggersborg i vikingetiden. Bebyggelsen og borgen*, 203-209. Aarhus: *Jysk Arkæologisk Selskabs Skrifter* 81.

Skovmand, R. 1942. ”De danske Skattefund fra Vikingetiden og den ældste Middelalder indtil omkring 1150”. *Aarbøger for Nordisk Oldkyndighed og Historie* 1942.

Svanberg, F. and Söderberg, B. 1999. *Den vikingatida borgen i Borgeby*. Lund: *Arkeologiska studier kring Borgeby och Löddeköpinge* 1.

Thrane, H. 1973: “Odins ring”. *Skalk* 1973(1): 32.

Thrane, H. 1982. ”Quadrilobe”. *Fynske Minder* 1981, 28-34.

Thrane, H. 1985: *Nonnebakken. Odenses forsvundne vikingeborg*. Odense: *Fyns Stiftsmuseums arkæologiske vejvisere* nr. 2.

Ödman, A. 2014. “The Trelleborg constructors”. In: Larsson, L., Ekengren, F., Helgesson, B. and Söderberg, B. (eds): *Small Things – Wide Horizons. Studies in Honour of Birgitta Hårdh*, 267-272. Oxford: Archaeopress Archaeology.

Notes

- 1 The description of Nonnebakken in this article is based on the most recent publications on the site: Lundø 2012, Lundø 2013, Henriksen 2016, Runge & Henriksen 2018, Runge *et al.* 2016, Runge 2017b, 38ff. and Runge 2017c. These publications build on earlier publications, such as Thrane 1985, Arentoft 1993 and Jensen & Sørensen 1990.
- 2 The most recent excavation was consequently carried out after the Viking symposium and the results was therefore not included in the lecture given there. They do, however, form part of this article.
- 3 Hoard number 2 can be ascribed to Allégade 63 in the Southeastern part of the fortress. Hoard number 5 is fixed in the 2015-excavation in the Northwestern part of the fortress. Hoard 1, 3 and 4 can with variations of certainty be ascribed to the fortress in a broad sense. Due to these circumstances the hoards most probably must be ascribed to five separate depositions, although no certain conclusion can be made (Henriksen 2016:30 f.).
- 4 Identification of the dirham fragment was undertaken by René Laursen, Bornholm Museum, and Tobias Bondesson, Malmö, Sweden.
- 5 Information on the *pfennig* kindly provided by Jens Christian Moesgaard of the National Museum of Denmark. See also: http://www.sachsenpfennig.de/tpk_kn.html (accessed 02.01.17).
- 6 As these lines are written, the conservation is still going on. Hence, the determination of the ornamentation type is not known. The classification is made on the basis of observations of the hilt in this state of conservation and with important input from Anne Pedersen, The Danish National Museum. Anne Pedersen has only seen the x-ray photos of the hilt.
- 7 All AMS dates were obtained for material of limited wood age and are cited at 2σ (95.4% probability). A thorough description of the AMS dates is given in Runge & Henriksen 2018. Laboratory numbers Poz-78622-78630, 78632, 79881-79882, 80425-80428, 83167, 83214, 83283-83285, 98125-98128, 98130, 98380, 98381, 98383.
- 8 Calculation undertaken by Tomasz Goslar, Poznań Radiocarbon Laboratory, Poland.
- 9 The extremely old AMS-dates are easily detectable as ”odd”. In relation to the other AMS-dates it is more difficult. This raises the question whether the AMS-dates from Nonnebakken is reliable at all. In my view most of the AMS-dates fall within well-defined groups, which all are supported by dating of artefacts or historical sources. It therefor seems reasonable to use the AMS-dates for a *general* description of the chronological frame of the locality.

The Borgring Project 2016–2018

*Jonas Christensen, Nanna Holm, Maja K. Schultz,
Søren M. Sindbæk & Jens Ulriksen*



1. The location of Borgring is marked by a red dot. Copyright: Geodatastyrelsen.

The Borgring Project 2016–2018: Investigating the 5th geometrical Viking-age ring fortress in Denmark¹

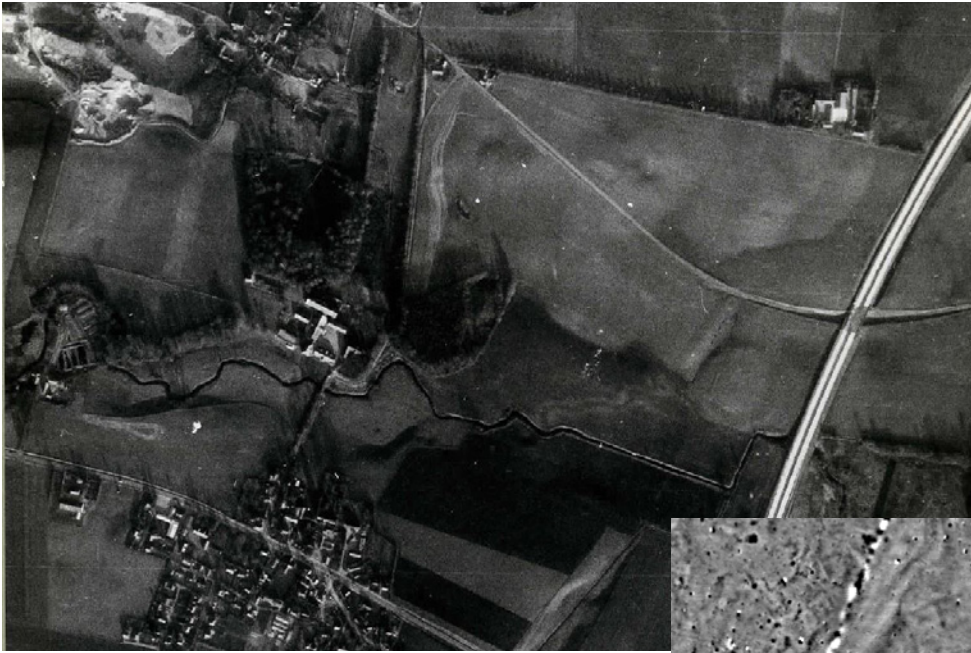
Abstract

After Borgring had been established as a geometrical ring fortress through geophysical survey and trial excavation, a research project was launched covering three excavation campaigns from 2016 to 2018. This article introduces the archaeological research project and the preliminary results from the first year of excavation.

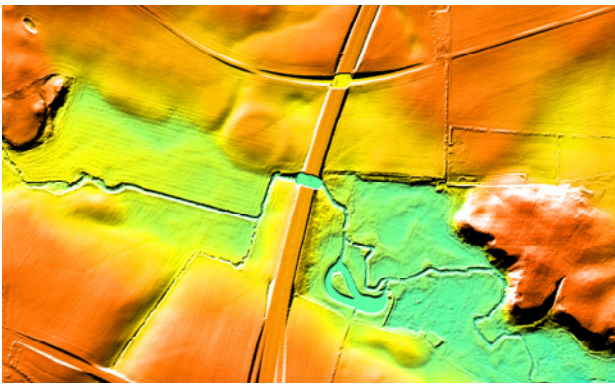
Introduction

Since the beginning of the 1970s, it has been known from aerial photographs that a circular rampart was visible in a field on the northern side of the Køge

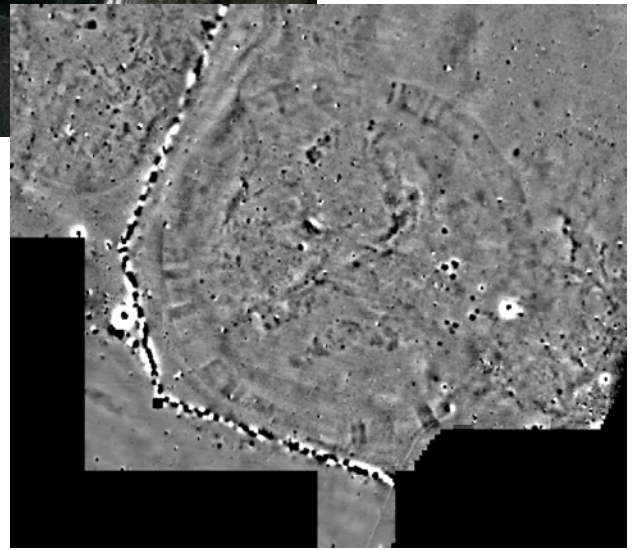
River valley, some kilometres west of the medieval town of Køge, Zealand (Tornbjerg 1990, 19; 1994, 88; Rasmussen 2001, 23) (Fig. 1). In 1970, Chief of Staff P.B. Nissen of the Royal Danish Air Force presented an aerial photograph to the National Museum of Denmark in Copenhagen (Fig. 2), which showed a dark circle on the surface of the field which had been spotted by Senior Sergeant V. Ryhl during a routine check of aerial photographs of eastern Zealand. Ryhl suggested that it could be a monument similar to the famous Viking-age ring fortress Trelleborg near Slagelse.² Subsequently, the National Museum of Denmark made a small-scale test excavation in the north-western part of the circle in 1970–72. The excavation demonstrated the existence of a rampart made of earth and turfs of grass, but there was no moat in front of it, nor any signs of construction inside the rampart. Instead, an area with dark soil, charcoal, scorched stones and pottery from the Ro-



2. The aerial photograph presented to the National Museum by the Royal Danish Airforce.



3. The LIDAR map reflecting the circular monument in the terrain to the North of the river valley. Copyright: Geodatastyrelsen.



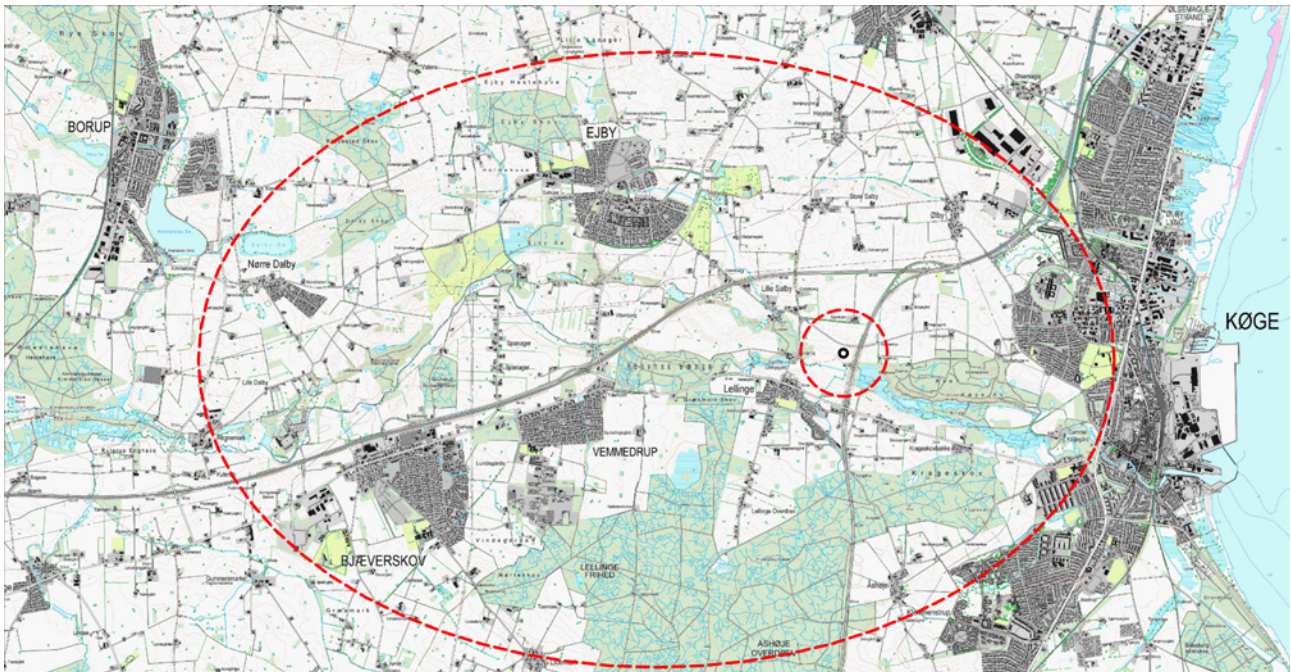
4. The edited measurements of the fluxgate gradiometer by Helen Goodchild, University of York.

man Iron Age was registered, together with flint flakes and artefacts from the Neolithic period. The conclusion was that the rampart belonged to a ‘hill-fort’ from the Iron Age.³ This was the status until 2013, when the site attracted renewed interest from Aarhus University and Museum Southeast Denmark.

A new eye in the sky

The excavation of Trelleborg ended in the early 1940s, and within a decade, Aggersborg, Nonnebakken and Fyrkat were identified as similar constructions. Their geographical distribution triggered speculations about the existence of further ring fortresses, and, based on their mutual distances and the topography of the surrounding landscape, researchers tried to locate hidden monuments (Bredsdorff 1973, 54ff; Roesdahl & Sindbæk 2014).

Recently, the focus has been on the Suså River in southern Zealand and the Køge River in eastern Zealand (Goodchild, Holm & Sindbæk 2017) (Fig. 3). On a newly released LIDAR map of the area, the perfectly circular monument first spotted by Ryhl by Køge River once again caught the eye, and a subsequent geophysical survey using fluxgate gradiometry, performed by the University of York, was initiated (Fig. 4). The result indicated that the perfect circle consisted of two concentric rings with radial arrangements between them (Goodchild, Holm & Sindbæk 2017, 1031f). The inner diameter of the rampart was *c.* 123 m., more or less the same size as the geometrical ring fortresses Fyrkat in Jutland and Nonnebakken in Odense. The width of the rampart was *c.* 10.5 m., which was the same as the rampart at Fyrkat. Utterly intrigued, Museum Southeast Denmark, in collaboration with Aarhus University, instigated a



5. The principle of the investigation strategy on a map. Borgring is marked with a black circle. Around it is the area of trial excavations of the immediate surroundings. The largest circle illustrates the area investigated as the hinterland of Borgring. Copyright: Geodatastyrelsen.

trial excavation in 2014. The point of departure was the clearest reflection of the radial arrangements in the northern part of the rampart, not far from the excavation area from 1972. When the ploughing layer was removed, charred horizontal timber came to light immediately, and the radial features were identified as vertical posts in two rows with *c.* 4.5 m. between them. There was no doubt that the northern gate in the rampart had been found. The strictly geometrical lay-out of the monument was demonstrated when the East gate was located by staking out an angle of 90 degrees from the North gate (Goodchild, Holm & Sindbæk 2017, 1038). A further trench in the southern part of the rampart established with certainty that this was a geometrical ring fortress. At this point, no objects had been found to support a dating of the ring fortress to the Viking Age, and just as in 1972, the artefacts retrieved were from the Roman Iron Age. However, samples from two pieces of charred oak and elm timber from the north gate were sent for 14C dating. The results revealed that the wood samples belonged to the 10th century, most likely to its second half (Goodchild, Holm & Sindbæk 2017, 1038ff).

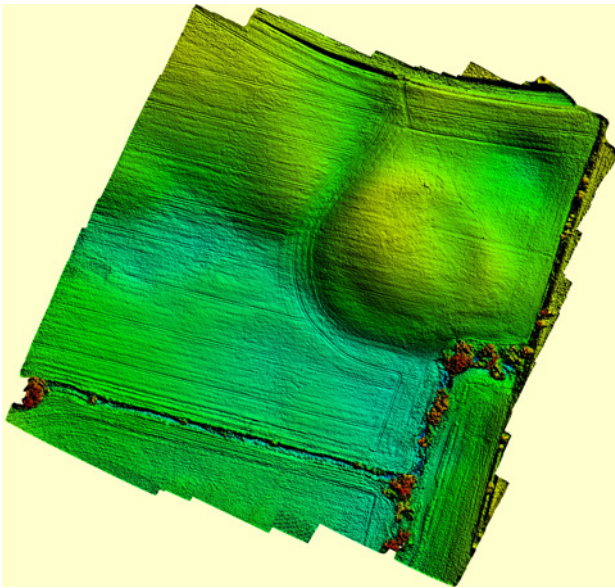
The Borgring Project 2016–18

The preliminary results prepared the way for the *Borgring Project 2016–2018* funded by A.P. Møller

Fonden and Køge Municipality. The research project offers an opportunity to excavate inside a geometrical ring fortress for the first time in 25 years, albeit without disturbing large parts of the monument. Prior to initiating targeted excavations, the research project used non-destructive measures such as geophysical surveying, geochemical sampling, coring and metal detecting. The last has concentrated on parts of the gateways, fractions of the rampart and parts of the inside of the fortress, in the search for details on the construction, chronology, date and development of the fire and, ultimately, the destruction of the ring fortress. Overall, less than 25 % of the monument will have had the top-soil removed for registration of the underlying features, and less than 10 % will have been comprehensively excavated during the research project.

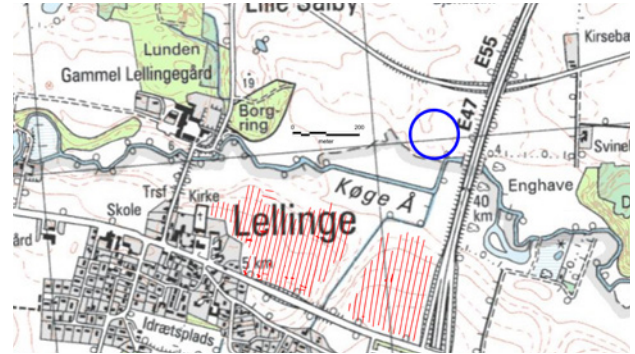
Outside the fortress, the excavation focuses on the surrounding landscape, and *c.* 30 ha. will be covered by trial trenches to find out if there are earlier, contemporary, or later burials, houses, farms or villages, sunken roads etc. in the vicinity. Furthermore, the question of navigability of Køge River from the Bay of Køge to Borgring will be settled in collaboration with the National Museum of Denmark, who will also be responsible for a reconstruction of the Viking-age landscape together with Dept. of Geoscience at Aarhus University.

Additionally, a part of the project focuses on get-



6. The 3D-model of Borgring before excavation. Map: Esben Schlosser Mauritsen.

7. Trial trenches on the South side of the river valley are coloured red. The blue circle marks the outer perimeter of the ring fortress. Copyright: Geodatastyrelsen.



ting a “helicopter perspective” of the hinterland of Borgring (Fig. 5). The ring fortress was originally a demonstration of power and must have had an impact on people living in the area. The region was not desolate, and it is plausible that Borgring has disrupted the local and regional power bases. The question is whether it is possible to detect an impact of the ring fortress on the settlements and the landscape surrounding it. To explore this, a number of leads are followed in order to map changes in the settlements from the 8th to the 11th century. Some locations are recorded already, while place-name evidence and the mapping of high concentrations of phosphate in the top-soil may reveal lost settlements. Both methods are considered indicative, and metal-detecting is subsequently applied in order to confirm the hypotheses. If the results are affirmative, a trial excavation may be launched to get further information about the structure and chronology of the settlement.

The non-destructive investigations

As the LIDAR map proved helpful in the process of rediscovering the ring fortress, a high-resolution elevation model was made with a Ground Sample Distance of 2.4 cm., to get further information about the monument (Mauritsen 2015). The model depicts the full diameter of the rampart, now 15–30 m. wide due to ploughing. The uneven surface of the courtyard is also visible (Fig. 6)

An integrated part of the Borgring Project is applying geophysical and geochemical methods in the course of the archaeological investigations. This work is run by the Dept. of Geoscience at Aar-

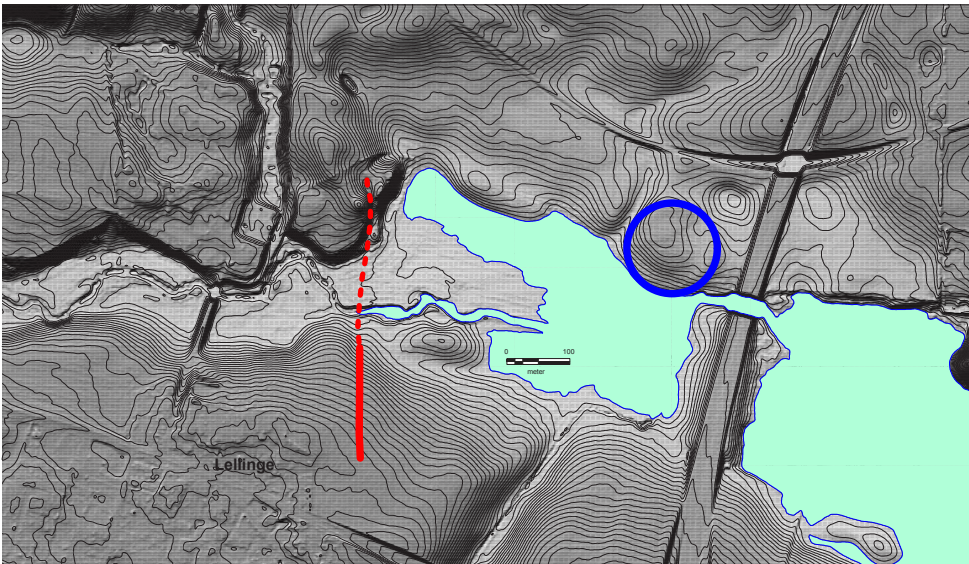
hus University. An electromagnetic method called Ground Conductivity Meters (DualEM421 system) was used to survey several hectares of land, including the ring fortress itself, parts of the surrounding fields and the river valley, measuring the electric conductivity in the ground down to 4–5 m. below the surface. In this way, the borders of peat basins and possible prehistoric lake-shores were mapped. The results will also be used, together with data from coring and gradiometry, for creating a detailed 3-D model of the geology in the survey area.

The basis of the geochemical testing is 300 soil samples collected in a grid covering the ring fortress and its immediate surroundings. The analyses are still in progress.

Before the excavation commenced, a team of 13 metal detectorists swept across Borgring. Divided into four groups, they covered an area of c. 12,000 m² inside the fortress and the area east of Borgring, where excavations would take place during the following summer. Not a single piece retrieved from the top-soil with the metal detectors could be attributed to the Viking Age, and there were no objects from the Iron Age or the medieval period either.

An initial excavation in the surroundings of Borgring

The opening excavation in the Borgring Project took place in the late autumn of 2015. The present-day village of Lellinge is situated close to the place where the river valley changes from a narrow gorge to a wide basin continuing eastward beyond Borgring. The name ‘Lellinge’ includes a suffix originating



8. The sunken road is marked with a full red line, while the hypothetical continuation across the Køge River has a dashed line. The 4,5 m. contour line in the river valley is highlighted. This does not mean that there was open water below 4,5 m., but it illustrates an area potentially more wet than where the ford was. Map: Museum Southeast Denmark.

in the Iron Age, but no archaeological object from either this period or later had been registered at the beginning of the excavation. The trial trenches covered an area of about 12 ha of high ground above the river valley to the North (Fig. 7) Of relevance to the question of Viking-age activities are pits with Baltic Ware from the 10th or 11th century, found close to Lellinge, and postholes from a somewhat irregular three-aisled house from the Viking Age. A sunken road was registered on the slope of the river valley. The only datable objects were roof tiles from the 16th century or later, found in the wheel-tracks, but the 1 m. deep road itself is older. On the opposite side of Køge River, there is a sunken road cut deep into the small hill, which serves as a by-pass around the soggy basin in the river valley (Fig. 8). Taking the esker running east-west and the generally steep North side of the river valley into consideration, there are reasons to believe that the natural conditions for crossing the river valley were most advantageous at this very spot at Lellinge, and that Borgring was located less than 500 m. away for this very reason.

The rampart

The rampart of Borgring forms a perfect geometrical circle with an outer diameter of *c.* 144 m. and an inner diameter of *c.* 123 m. The outside perimeter is *c.* 452 m. long, including the gates – each about 4.6 m. wide. The front of the rampart was covered with planks of wood which are only detectable today as a shallowly dug trench or separate postholes (Fig. 9). Sometimes, there was not even a posthole but only a light-grey redox imprint in the sub-soil, from the decomposed organic material of the post. The inside of



9. The excavation of the rampart and the East gate. The front of the rampart and the walls of the gate are in red. The line of the inner side of the rampart are the rose-coloured 'paths'. Map: Museum Southeast Denmark.

the rampart was even more insubstantial but detectable in the cross-sections (Fig. 10). The width of the rampart must have been 10.5–11 m., while the original height is very difficult to estimate. In the South-East section, the horizon of turf and soil was 0.8–0.9 m. high, but around the East gate, it was no more than half of that. The building materials consisted of mixed turf and soil. In some parts, the turfs had been laid out with some care, while the impression of other sections of the rampart was that loads of material had been more or less randomly tipped off on the site. Despite much effort, the search for postholes



10. A section through the inner side of the rampart in the north-eastern part. Under the ploughing layer, there are turf and soil from the rampart. Below this is the Viking Age surface. The arrow marks a disturbance of the latter where the inner side of rampart has been. Photo: Museum Southeast Denmark.

and other traces of a wooden construction inside the rampart was in vain during the excavation in 2016. Altogether, these observations point towards a rampart that was probably no more than 2–2.5 m. high.

Studying a section through the rampart next to the southern gate presented a surprising feature, yet one that is well known from other ring fortresses. Before bringing in the turf and soil to build the rampart, hundreds of cubic metres of clay had been laid out in the river valley. Obviously, the purpose was to enlarge the building ground to make space for the desired dimension of the ring fortress. The constructor did not compromise on size; the diameter was not negotiable. This is an exact parallel to the building of both Trelleborg and Fyrkat, where large areas in the south-western parts of the two fortresses were levelled out with clay before the building of the ramparts (Nørlund 1948, 21; Olsen & Schmidt 1977, 48ff).

The gates

During the trial excavation in 2014, it was established that the North gate had been affected by fire (Goodchild, Holm & Sindbæk 2017, 1037f). The observations in the trial excavation trench suggested that the preservation of the East gate was poor due to years of ploughing. Therefore, it was decided that the East gate would be comprehensively excavated during the research project, while investigations of the gates to the South and the North would leave parts *in situ*, and only minor areas in the West gate would be affected.

Excavating the East gate in 2016 changed our perspective immediately. While removing the top-soil, charred planks and posts came to light, primarily on



11. The East gateway. Just below the topsoil lay charred planks from the construction. Photo: Museum Southeast Denmark.

the northern side of the gate construction, which had not been unearthed previously. Inside the gateway, further charred planks were visible just below the top-soil, indicating that a fire had taken place there (Fig. 11). Checking the actual opening of the gate showed that the corner post had not been burned. Therefore, the fire must have started inside the gateway. In order to learn more about fires, the National Forensic Service of the Danish National Police was contacted. The fire investigation specialists took this as an opportunity to test their methods on a very cold case. The analysis is still underway. It is clear, however, that after the fire, the gateway must have been standing for some time before its walls and roof collapsed. During this intermediate phase, a layer of clayey soil was used to cover the floor of the gate, and traces of an open fireplace suggest that some-



12. The water-gate of Borgring is facing South at the end of the sloping terrain where the crew, wearing yellow hard hats, are gathered. Photo: Museum Southeast Denmark.

one stayed there for a while. Around the fireplace, scattered sherds of Stamford-like Early Glazed Ware were found, as well as a deposited wooden chest with iron bars, tools and the like. However, there were no clear traces of traffic in and out the gateway, neither when it was built nor after the fire.

The water-gate of Borgring, of course, faced the river valley (Fig. 12). Maps from the 19th century depict the Køge River as having its course just in front of the rampart and South gate, and the geophysical analyses indicate that the fortress protruded into the river valley. As mentioned above, the latter was documented in the section through the South rampart, and there were high hopes of water-locked conditions preserving timber from the gate for dendrochronology. Unfortunately, the high hopes withered when it became clear that the 19th-century watercourse had eroded the front of the rampart and the gate, and a large drain-pipe, which had been dug into the monument, had spoiled the preserving environment during the 20th century. Only deep down, at the bottom of a couple of postholes in the walls of the gate, were there miserable ends of oak posts with growth rings insufficient in number for dendrochronological analysis. There were no traces of fire in this gateway.

Inside and outside the fortress

When the National Museum of Denmark carried out its test excavation in 1971, neither a moat nor hous-

es inside the fortress were found, and the same goes for a circular street along the inside of the rampart, a feature known from the other ring fortresses. Instead, the excavation team found rubbish pits and black earth with scorched stones, animal bones and pottery dating from the Roman Iron Age. The trial excavation in 2014 was a *déjà vu* in this respect: no houses and no streets, and the few artefacts retrieved dated from the Roman Iron Age (Goodchild, Holm & Sindbæk 2017, 1034).

In 2016, an area of *c.* 550 m² was unearthed inside the East gate, in the search for houses and streets, none of which were found (Fig. 13). Instead, there were scattered rubbish pits with pottery dating from the centuries around the birth of Christ.

A *c.* 900 m² excavation area was unearthed outside the eastern part of the fortress, in the search for a moat, a road, buildings, burials and traces of older or younger settlements, elements that had been found at one or more of the other ring fortresses (Fig. 14). A three-aisled house, probably dating from the Migration Period, was found, partly outside and partly under the rampart, and metal detectorists picked up a fragment of a cruciform brooch from the same era when the excavator removed the top-soil. But the moat and the road were missing, even though the test trenches were extended as far east as they could get before the motorway blocked further excavation.



13. An area of c. 550 m² was excavated inside the fortress in 2016. The photograph is taken from the East gate looking west. Photo: Museum Southeast Denmark.



14. The excavation outside the East gate. Two test trenches reaching the bank of the Motorway E47 are already covered. Seen from the West. Photo: The National Forensic Services of the National Danish Police.

Conclusion after season 1

The first trial excavation in the 1970s concluded that even though the rampart was present, the absence of a moat more or less disqualified the fortress as another of the geometric-symmetrical ring fortresses of the Viking Age. Furthermore, the fact that the only artefacts retrieved during the excavation dated from the Neolithic and the Roman Iron Age did not instil in anyone the picture of an iconic Viking-age monument on the bank of the Køge River.

The second trial excavation more or less reproduced the archaeological evidence of the first excavation, but the LIDAR elevation model and the very persuasive measurements of the gradiometer pushed the investigation forward. The finding of the North gate and the subsequent pinpointing of the East gate were decisive moments, and the 14C datings of timbers, dating the North gate to the 10th century, established Borgring as the fifth ring fortress in Denmark to fulfil the basic principle of construction for ring fortresses: a perfect circle divided into four exact quadrants, by similar gates placed in the North, the East, the South and the West. The strict geometry is underlined by the symmetry of the lay-out. Obviously, Borgring was constructed according to this scheme, and furthermore, it has dimensions equivalent to those of Nonnebakken and Fyrkat.

Bibliography

- Bredsdorff, P. 1973: *Kortlægning og Historiske Studier: Et Værktøj? Udarbejdet for Kunstakademiets Arkitektskoles Institut for By- og Landskabsplanlægning*. Copenhagen: University of Copenhagen, Dept. of History.
- Goodchild, H., N. Holm & S.M. Sindbæk 2017: Borgring: The discovery of a Viking Age ring fortress. *Antiquity Access* 91:358: 1027–1042.
- Mauritsen, E.S. 2015: *Rapport for Terrænanalyse af Lokal Højdemodel Optaget vha. af Drone + SfM ved Borgring*. Unpublished report by the Borgring Project.
- Nørlund, P. 1948: *Trelleborg. Nordiske Fortidsmin-der IV:1*. København: Nordisk Forlag.
- Olsen, O. & H. Schmidt. 1977: *Fyrkat: En Jysk Vikingeborg*. In: *Borgen og Bebyggelsen*. København: Det kgl. nordiske Oldskriftselskab.
- Rasmussen, U.F. 2001: Voldsteder på Køgeegnen. *Køge Museum. Årbog for Køge Museum* 2000: 19–40.
- Roesdahl, E. & S.M. Sindbæk. 2014: 8. Borgens formål. In: E. Roesdahl, S.M. Sindbæk & A. Pedersen (eds): *Aggersborg i Vikingetiden: Bebyggelsen og Borgen*. Højbjerg & Copenhagen: Jysk Arkæologisk Selskab.
- Tornbjerg, S.Å. 1990: Jernalderbebyggelser ved Køge. *Køge Museum 1989. Årbog for Køge Museum* 1989: 17–36.
- Tornbjerg, S.Å. 1994: Danefæ. *Køge Museum 1993. Årbog for Køge Museum* 1993: 85–96.

Notes

- 1 This paper was presented at the *Tverrfaglige Vikingsymposier* seminar in Odense in May 2017. The article deals solely with investigations conducted in and around Borgring in 2015 and 2016. The geophysical survey of 2013 and the subsequent trial excavation in 2014 have been published in Goodchild, Holm & Sindbæk 2017.
- 2 National Museum of Denmark, Beretningsarkiv inv. no. 544/70.
- 3 National Museum of Denmark, Beretningsarkiv inv. no. 1130/75.

The Danevirke in the light of recent excavations

Astrid Tummuscheit & Frauke Witte

Excavations

In 2010 and 11 the Archäologisches Landesamt Schleswig-Holstein carried out excavations at the Danevirke, which were joined by the Museum Sønderjylland – Arkæologi Haderslev in 2013 and 2014. These transnational excavations have led to important new discoveries. This article presents some preliminary results of the ongoing research project.

The site is located in the north of Germany, about 5 km south-west of the town of Schleswig. Here the main rampart (Hauptwall/Hovedvolden) of the Danevirke is crossed by the ancient Hærvej (the Army Road) or Ochsenweg. The Danevirke has a total length of about 35 km and was constructed in several phases across the neck of the Cimbrian peninsula. It stretches from the low-lying wetlands in the West of the peninsula to the East, where the narrow inlet of the Schlei reaches inland as far as the town of Schleswig, thus constricting the North-South passage to the only 6 km wide *Isthmus of Schleswig*.

The Danevirke consists of several different parts which form a whole system of earthworks, palisades

and stone walls (Fig. 1). During its history, which reaches roughly from the time around 500 AD to 1250 AD, the structure was enhanced, reinforced and rebuilt several times to adapt it to new political and military requirements.

Although archaeological research since the 1860s (i.e. Hamann 1861; Müller and Neergaard 1903; Haseloff 1937; Jankuhn 1937; Andersen 1998) has expanded our knowledge of the monument considerably, it still is an extremely large and complex site or perhaps rather a ‘system of sites’, whose precise chronology is still - at least in places - poorly understood. One of the main aims of the excavation and the current post-excavation work is therefore to gain a better understanding of the Danevirke’s chronology, since only from this basis it will be possible to relate the site’s history and development to specific historical situations.

The rampart is today crossed by a modern road, which bears the name of ‘Ochsenweg’. To the South, the road probably follows the track of the historic route fairly well, whereas to the North the bypass of



Fig. 1 The Danevirke has a total length of about 35 km and was constructed in several phases across the neck of the Cimbrian peninsula. The site of the gate is located about 5 km southwest of the town of Schleswig.



Fig. 2 A large section through the early Danevirke rampart north of the Fieldstone wall.

the village was built only in 1983. Although it could be expected in this area, excavations which were carried out in advance of these road works showed no signs whatsoever of a gap or gateway at this particular spot (Kramer 1984). Hærvejen/The Army Road is a very ancient route dating back at least to the Bronze Age, but probably even further.

When we started excavating in 2010 only about 30 metres to the west of the 1980s excavation site, we found a 5 to 6 m wide gap in the 8th century stone wall, which has later proved to be the remains of the opening where *Hærvejen* originally crossed the Danevirke.

During the following years, our focus has been on the investigation of gate and passageway. We also examined a large section through the entire rampart which included its earliest building phases, and we excavated a large area which lies south of and in front of the rampart and gate.

The oldest phases

So far, there has been a common agreement that the oldest rampart has three building phases, a result derived mainly from excavations by G. Haseloff in the 1930s (Haseloff 1937) and H.H. Andersen in the 1990s (Andersen 1998). Our excavation has shown, however, that this rampart was probably constructed more or less in one phase.

It was not possible to extend our excavation field to the area where the gateway crosses the oldest earthen phase, because it is on private ground. But here the rampart might be considerably lower than it is a few hundred meters to the West, and that might be an indication of some sort of disruption of the earthworks in this area. The second phase, the turf wall, definitely has a disruption in the shape of a semi-circular ending.

The oldest wall consists of sandy layers upon a cultural layer, the original surface of which is missing (Fig 2). It was dug away almost over the entire

excavated area, probably to be used for the stabilization of the top of the wall. In the cultural layer there were postholes and plough marks. No material suitable for radiocarbon dating was available in that wall/rampart or cultural layer. Right in front of the wall was the ditch belonging to this phase. It was about 2,8 m wide and only about 0,5 m deep.

The following turf wall is the second phase of the rampart. It was placed in front of the oldest earthwork and on top of the earliest ditch. This rampart was later dug into to make room for the construction of the stone wall. As this second fortification is made of heather turf, 5 samples were taken to get radiocarbon datings (see Tummuscheit and Witte 2013, 146-166). The datings concentrate on the 5th and 6th centuries. Two 6th century datings may hint at the foot of the wall being made higher some time after the building of the wall. There have been discussions about an early dating among colleagues before (i.e. Harck 1998; Madsen 2008, 40), but until our C14-datings there was no positive evidence for it. That means we now have to re-think the Danevirke and especially the context in which the Danevirke was first established fundamentally. Both the archaeological and the written sources give hints on the interaction between the Jutes or Danes and the Angles, which might have led to the building of the first rampart. Due to lack of material suitable for radiocarbon dating from the first rampart, based on stratigraphy observations, we assume that this has been built in the late 5th century.

Why would there be an interest in building a 5 km long earthwork close to or around 500? On the basis of archeological observations like house typology and gravesite changes, the older ramparts Olgerdige and Æ Vold, finds from moor-offerings and other things, one can imagine the following: In the time around year 1 the Angles pressed to the North in the course of founding an early state ('tidlig rigsdannelse'; Ethelberg 2012). They build two ramparts facing



Fig. 3 The Fieldstone wall west of the gate as seen from the north. Here the stone wall is comparatively poorly preserved, as it was used as a quarry to gain stones for the foundation of the Walde-marsmauer.

north (Olgerdige at 31 AD and Æ Vold at around 150 AD), forcing the people in this area to move further north. Finally, these people stroke back, pressing the Angles to the South, and eventually they erected the main rampart of the Danevirke (Witte 2017, 5). Whether it was the group we know from the written sources of the 6th century as ‘Jutes’, ‘Varines’ or ‘Danes’, we can’t be sure (Ethelberg 2017).

The 8th century rampart

The phase following the turf rampart, traditionally termed Phase 5, is represented by the fieldstone wall. Originally the wall was 3 m high, 3 m wide and up to 4 km long. Here, west of the gate, the stone wall is comparatively poorly preserved, as it was used as a quarry to gain stones for the foundation of the Walde-marsmauer in the late 11th century (Fig. 3). The wall sits partly on the remains of the turf rampart and the underlying fill of an earlier ditch. The stones were laid repeatedly in a herringbone pattern. At the backside, the wall was always covered with earth, and it had an additional support made of clean yellow clay. It is therefore evident that the herringbone pattern was not applied for aesthetical reasons, but for better stability.

For the last decades, it has been widely agreed that the wall was part of a huge construction project from around the late 730s AD (Kramer 1984), which included the reinforcement of the main rampart (Hauptwall/Hovedvolden), the erection of the northern rampart (Nordwall/Nordvolden), the wooden

offshore work at Reesholm (Scheisperrwerk/Stegsvig) and the eastern rampart (Osterwall/Østervolden) (Kramer 1992; Kramer 1995). A characteristic row of substantial postholes (one approximately every 2 metres) under the basis of the fieldstone wall was interpreted as a structural element belonging to the monument itself. Dendrochronological datings of wooden remains in some of these post-holes were therefore thought to be evidence for the dating of the wall to around 740 AD (Kramer 1984). Since the early 1980s it has been a matter of debate between W. Kramer and H. H. Andersen whether the posts actually belonged to the Fieldstone Wall or whether they were part of some other slightly younger building phase (Kramer 1984; Andersen 1985; Andersen 1998, 171 ff.)

Although we couldn’t excavate the wall in order to preserve the remains in the best possible way, we used a couple of opportunities to carry out a kind of minimally invasive operations to get a closer look at details of its construction.

In at least three different locations it became clear that the lower rows of stones did not quite fit into the direction of the stone body on top. In some places the stones stuck out, whereas in others they were clearly set back from the stones above. Additionally, the lower stones hadn’t been dressed, as it was the case with many of the stones on top, and the mortar the stones were set in was clearly different: while it was yellow clay in the wall still standing, it was grey clay between the stones beneath.



Fig. 4 The remains of one of many roads, which has survived as a 3,5 m wide sandy trackway.

Scientific analysis carried out by K. L. Rasmussen showed a clear difference between the two types of clay which is caused by the different origins of the material. That has so far led to the hypothesis that there might have been two building phases for the fieldstone wall (Rasmussen 2013:188ff).

Remains of a comparable layer of stones were found in 1971 by H. Andersen and H. J. Madsen while excavating the so called Nordwall or northern rampart. Additionally, during his excavation at the Nordwall in 1933, H. Jankuhn found stones in a similar position which he described as ‘of unknown purpose’ (Jankuhn 1937, 168).

This feature of the Nordwall was also linked to the same type of 8th century postholes as in the fieldstone wall of the main rampart, thus indicating that there may have been some sort of connection between them. However, on the whole there is reason to believe that these stones may represent an independent building phase and that they may even belong to some sort of precursor of the fieldstone wall. Mainly, but not solely, based on these observations, there is more and more reason to doubt that the Fieldstone wall was actually built in or around 740 AD and we think that it seems much more plausible that it was added a few decades later, as it was suggested by H. Andersen (Andersen 1998, 183), perhaps in the second half of the 8th century; and that it may even be associated with the Danevirke of king Godfred which is mentioned in the Frankish Annals from the early 9th century.

No matter what the exact dates are, there is proof that the Danevirke was reinforced heavily during the 8th century, including the construction of a massive fieldstone wall. These substantial extensions are a clear and early indicator of a strong ruler north of the Danevirke marking the border of his territory, thus not only creating a physical obstacle to keep out unwanted visitors, but also demonstrating his ability and authority to have a wall of monumental size and strength built.

The gateway

The second proof of Viking Age activity which came up during our excavation dates to the 10th century and is directly connected to the gate and the passageway. Already in 2010 it had become clear that there was a 5 or 6 m wide gap in the fieldstone wall. After the removal of the 13th century fill we found a 3,5 m wide sandy trackway, which proved to be the remains of one of many layers of the road which must have run through the Danevirke since the establishment of the gate.

It consists of thin layers of eroded sand, which show marks of cart tracks (Fig. 4) (Schovsbo 2013, 206). These layers are remains of a sunken road, and a deposit of charcoal on top of these sediments has provided a couple of radiocarbon dates to the second half of the 10th century. At the same time, the ‘Verbindungswall’ (Forbindelsesvolden) was built, connecting the Semicircular rampart of Hedeby with the Danevirke, thus incorporating the settlement into the

Fig. 5 The area south of the Danevirke gate during the excavation in 2014 as seen from the east. Visible are ditches and remains of ways.



defensive system for the first time. The straight line of the Kovirke (Kograben) followed less than two decades later, forming an additional protection for Hedeby.

Both construction projects - Verbindungswall (Forbindelsesvolden) and Kovirke (Kograben) - may again be understood as a general display of royal power, but also in particular as a strong claim to Hedeby, as the settlement was apparently no longer supposed to lie south of the Danevirke – no doubt for protective reasons, but possibly because of legal implications, too.

At present, we think that this passage through the Danevirke had been in use since at least the erection of the turf wall, perhaps even earlier, and that it ceased to be used some time during the 13th century. The passage was therefore open for at least 700 years - probably more - and had cut itself deep into the glacial sand forming a hollow way. The surface of this sunken road lay more than 1 m below the basis of the stone wall.

The medieval rampart

Already in 2010, the starting point of the 12th century brick wall, the Waldemarsmauer, was identified, although only a tiny bit of this mighty brick wall has survived within the limits of our excavation. From the foundation of the Waldemarsmauer, we could define to the nearest inch the point where the construction of the wall was begun in the late 12th century. This point lies about 10 m to the west of the newly

found gateway. On the eastern side of the gate there were no traces of the brick wall whatsoever.

The medieval road

The area south of the Danevirke gate with the ditches and remains of several ways was also excavated (Fig. 5). There were both sandy layers and layers of cobblestones whose stratigraphy is not completely clear so far. All these features run parallel with the rampart on the eastern side of the gate and head into the direction of the gate, although they are not preserved there. Connected to what is probably the youngest phase of pathways we found remains of more than 30 wooden posts, which were dendro-dated to around 1200 AD. Additionally, a shard of highly decorated earthenware, pieces of a wooden drinking cup and other finds from the same period show that the gate was not closed by that time (of the death of Waldemar I. in 1182), and the rampart and road were still in use.

Some of the results presented in this article still have a preliminary character and are subjects of an ongoing research-project. It is, however, already certain that the new excavations have led to results with far-reaching consequences, especially concerning the datings of the earliest and the latest Danevirke, which have already changed our view of the Danevirke and its role in history fundamentally.

Bibliography

- Andersen, H. H. 1985. "Zum neuen Schnitt am Hauptwall des Danewerks". *Archäologisches Korrespondenzblatt* 15: 525-529.
- Andersen, H. H. 1998. "Danevirke und Kovirke. Arkæologiske undersøgelser 1861-1993". Jysk Arkæologisk Selskab (ed.).
- Ethelberg, P. 2012. "Den tidlige rigsdannelse i Slesvig (150-450 AD)". In: L. N. Henningsen, L. S. Madsen., O. Madsen (eds), *Det Sønderjyske Landbrugs historie. Jernalder, vikingetid og middelalder*, 2nd edition, 272-300. Haderslev: Museum Sønderjylland – Arkæologi Haderslev og Historisk Samfund for Sønderjylland.
- Ethelberg, P. 2017. "Anglerriget storhed og fald". *Skalk* 2017(3): 15-27.
- Hamann, G. F. 1861. "Danevirke" (unpublished report, National Museum Copenhagen).
- Harck, O. 1998. "Anmerkungen zum Primärwall des Danewerkes". In: Anke Wesse (ed.), *Studien zur Archäologie des Ostseeraums: Festschrift für Michael Müller-Wille*, 127-134. Neumünster: Wachholtz Verlag.
- Haseloff, G. 1937. "Die Ausgrabungen am Danewerk und ihre Ergebnisse". *Offa* 2: 111-167.
- Jankuhn, H. 1937. *Die Wehranlagen der Wikingerzeit zwischen Schlei und Treene*. Neumünster: Karl Wachholz Verlag.
- Kramer, W. 1984. "Die Datierung der Feldsteinmauer des Danewerks – Vorbericht einer neuen Ausgrabung am Hauptwall". *Archäologisches Korrespondenzblatt* 14: 343-350.
- Kramer, W. 1992. "Ein hölzernes Sperrwerk in der Großen Breite der Schlei als Teil des Danewerk-Baues von 737 n. Chr. Geb". *Archäologische Nachrichten aus Schleswig-Holstein* 3: 82-96.
- Kramer, W. 1995. "Das Seesperrwerk bei Reesholm in der Schlei". *Archäologische Nachrichten aus Schleswig-Holstein* 6: 42-53.
- Madsen, O. 2008. "Forhistorien indtil 700". In: Hans Schultz Hansen, Lars N. Henningsen and Carsten Porskrog Rasmussen (eds), *Sønderjyllands historie* 1, 11-40. Aabenraa: Historisk Samfund for Sønderjylland.
- Müller, S. and C. Neergaard. 1903. "Danevirke. Arkæologisk undersøgt, beskrevet og tydet". *Nordiske fortidsminder*, Vol. 1. København: Kongelige Nordiske Oldskriftselskab.
- Rasmussen, K. Lund. 2013. "Danevirke-1. Data and interpretations". Unpublished report.
- Schovsbo, P. O. 2013. "Besigtigelse 8. oktober 2013 Dannevirke Kr. SF LA 85". Unpublished report.
- Tummuscheit, A. 2011. "Das neu entdeckte Tor im Danewerk – Einer der geschichtsträchtigsten Orte Schleswig-Holsteins". *Archäologische Nachrichten aus Schleswig-Holstein* 17: 84-87.
- Tummuscheit, A. and F. Witte. 2013. "Bericht über die Ausgrabung 2013 in Dannewerk LA 85, Kr. Schleswig-Flensburg". Unpublished report.
- Tummuscheit, A. and F. Witte, 2014: "Bericht über die Ausgrabung 2014 in Dannewerk LA 85, Kr. Schleswig-Flensburg". Unpublished report.
- Tummuscheit, A. and F. Witte. 2014. "Der einzige Weg durchs Danewerk. Zu den Ausgrabungen am Danewerk im Jahr 2013". *Archäologie in Schleswig/Arkæologi i Slesvig* 15: 153-162.
- Witte, F. 2017. "Porten i Danevirke". *Skalk* 2017(1): 3-9.

Emporia, sceattas and kingship in 8th C. “Denmark”

Morten Søvsø

Introduction

The discovery of 8th C. Ribe in 1972 was the starting point for a series of excavations that proved the existence of a very detailed stratigraphy underneath today's Sct. Nicolaj Gade north of the small Ribe River. The sequence covered the time span from c. AD 700 and into the Viking Age (fig. 1). Stratigraphic excavation techniques used since 1985 have allowed fine chronologies in some phases based on dendrochronology. From the very find-rich layers thousands of well-dated artefacts have been recovered including 218 (2016 count) sceattas, small silver coins used in North West Europe during the late 7th and 8th C. Subsequent excavations and research has shown that early Ribe belongs to a small group of large international trading places, emporia, that marks the introduction of urbanism into Scandinavia.

In this paper, the revitalization of Northern Europe's trading networks in the form of emporia during the 7th and 8th Cc is seen in connection with climate studies indicating the existence of a severe cooling period between AD 536 and c. AD 660 caused by volcanic eruptions. The North Sea emporia themselves were distinct cultural phenomena, trading places with coin economies run by kings, and it is argued that the same must have been the case for the three known sites of this character in Southern Scandinavia: Ribe, Reric and Åhus. The emporia and their coin systems support the existence of powerful Danish kingship from no later than the early 8th C. The emporia roughly follow the borders of the realm. At the centre is Lejre, home of the legendary Skjoldunge Dynasty.

Climate studies and the AD 536 dust veil

The advances in the study of ice cores in the course of the 20th C. made it possible to reconstruct past

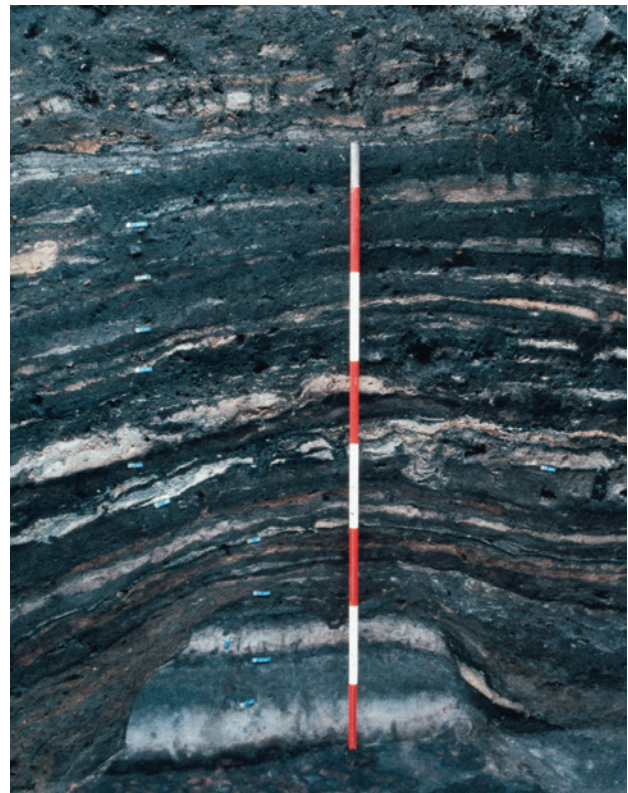


Fig. 1. Cultural layers covering the time span c. AD 700-c. AD 850. ASR 9 Post Office Excavation 1990-1991. Photo: Museum of Southwest Jutland.

climates with much greater precision. This does not only apply to distant Ice Age cycles. When it comes to the most recent millennia, dendrochronology is available and can be used to correlate the data, allowing changes to be tracked year by year (Larsen et al. 2008). The integration and application of these data in archaeology is still underway, and one phenomenon in particular has been debated, the *536 dust veil*. This phrase covers a set of simultaneous climate phenomena in the northern hemisphere recorded in written sources from various cultures which mention extreme weather events like an absence of summer, snow in the summer time, and floods leading to fam-

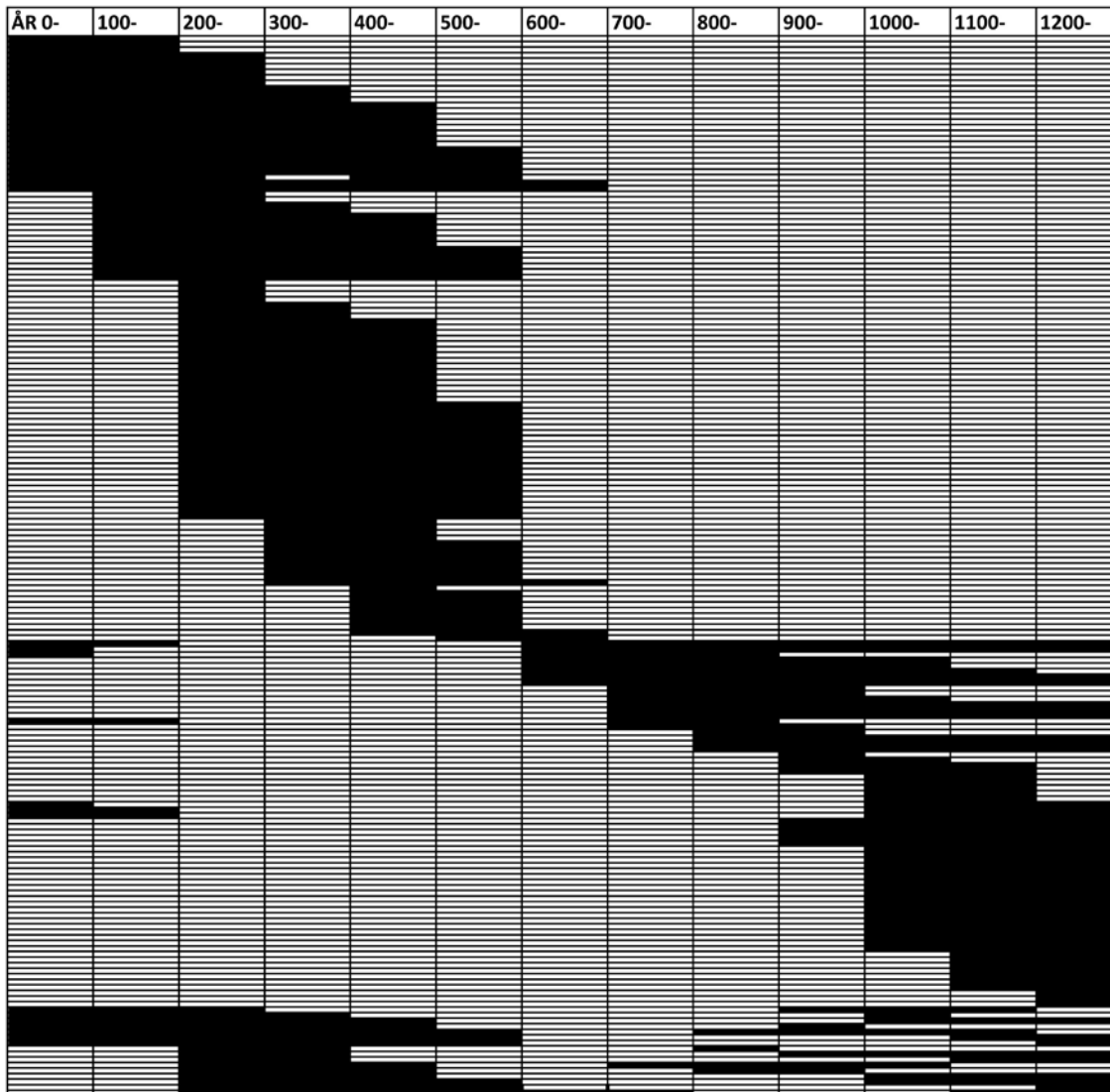


Fig. 2. Each line in the diagram represents one settlement. The 7th C. marks a radical change. From Hansen 2015, 73.

ine and other sorts of hardship (Gunn ed. 2000). In a recent *Nature* study, Eurasian summer temperatures in the last two millennia are reconstructed (Büntgen et al. 2016). The researchers conclude that a series of volcanic eruptions in AD 536, 540 and 547 in combination with low solar activity caused a severe cooling period in the northern hemisphere, termed the Late Antique Little Ice Age, *LALIA*. The model suggests that the years between AD 536 and AD 660 were the coldest in the two first millennia.

The volcanic dust veil in the atmosphere and the cooling period caused by it have been suggested as the catalyzing factor behind the abundance of gold offerings in the mid-6th C. (Axboe 1999; 2001) and the historic background for the Old Norse legends of the Fimbulwinter and the Ragnarök (Gräslund 2007). More recently, a comparison of different archaeological data sets from Middle Sweden with climate data leads to the conclusion that climate change

did in fact have a profound effect on Scandinavian societies (Gräslund & Price 2012).

So far, this line of thought has not been applied systematically to Danish material. For a long time, the 7th C. has been seen as a truly Dark Age in Danish archaeology with both finds and archaeological features being more or less absent (Näsman 1991). With the massive rise in the extent of archaeological fieldwork following the Museum Act of 2002, the source material has been multiplied several times over. However, with a few exceptions, the period c. AD 550-700 remains elusive in the archaeological record.

A recent Ph.D. study focused on a large number of excavated settlements on Funen. It was evident that a major break in the settlement structure occurred in the 7th C. (fig. 2) (Hansen 2015). In addition, other data sets from excavations point in the same direction. In a large random sample of dendrochronological dates from excavations in Denmark, the 7th



Fig. 3. 8th C. emporia and kingdoms/cultural groups around the North Sea. Map: M. Søvsø.

C. stands out as a major hiatus (Daly 2017). These results are well in line with the Swedish study mentioned above.

Perhaps contradicting the idea of a major decline after AD 536 are the finds from metal detecting, where types with a 6th and 7th C. date are quite common: so-called small equal-arm brooches, beak brooches and bird brooches. There is no easy way of telling whether these metal finds represent destroyed graves, ritual offerings or accidental losses on a farmstead (Hansen 2015, 51ff; Søvsø 2018). For now, the apparent contradiction between the absence of well-dated 7th C. settlement and the presence of 7th C. metal finds must be left unresolved.

In conclusion, I think there is reason to believe that there was indeed a cooling period between AD 536 and c. AD 660, and that it resulted in a major ecological crisis in Scandinavia, leading to a decline in population. As the climate improved from the late 7th C., population growth and increased cultural interaction were likely effects.

The emergence of emporia

A distinctive cultural phenomenon associated with the decline of the Roman Empire was the near or total collapse of urbanism in the Romanized parts of

Northern Europe. In *the Dark Ages*, the Early Medieval Period (c. AD 500-1000), Roman towns were either abandoned or reduced to scattered farmsteads situated in the ruins of a Roman town. Churches, monasteries or aristocrats may have been present, but their archaeological footprint is at best sketchy (Verhuulst 1999, 1ff; Wickham 2005, 681ff; Theuvs 2017).

When urbanism reappeared from the second half of the 7th C. it was in the shape of the so-called *emporia*, riverine or coastal trading places situated in the border zones of the cultural groupings/early kingdoms/polities of the time (Hodges 1989; 2012). They have been the subject of intense study with Richard Hodges' *Dark Age Economics* (1982, 2nd ed. 1989) as the classic text coining the term emporium for this phenomenon. In the sources of the time, different names were associated with them, *vicus* and *portus* being the most frequent (Wickham 2005, 682).

One question has been whether they should be considered urban at all, since they lack the administrative and religious institutions that were integrated parts of both the older Roman and the later High Medieval towns (Wickham 2005, 591ff; Hodges 2012, 91ff). Instead, the emporia were markets driven by trade and craft production, and the sheer scale



Fig. 4. Sceattas found in and around Ribe. On the left a Series E sceatta “porcupine” ASR951x36. In the middle a Series D sceatta “continental runic” NM DK1002 from Dankirke near Ribe and to the right a Series X sceatta “wotan/monster” ASR9x526. 2:1.

and geographical reach of these activities leave little doubt that they were of great economic importance for those who controlled them and equally important centres of cultural exchange.

Excavations in them bring to light an extremely rich archaeological record with an abundance of finds reflecting trade and industrial-scale craftsmanship, including more sophisticated industries like glass bead production and metal casting. The finds reveal a vivid network of both local, regional and inter-regional trade connections, normally in grave contrast to the finds from the rural hinterlands.

Another important characteristic is that the number of emporia is quite limited (fig. 3). Despite intense archaeological activity and debate in the research communities, the number of 8th C. North Sea emporia remains largely unchanged (Sindbæk 2007). A lot of smaller landing sites or local trading places are known, but the activities here are on a smaller scale, far from the magnitude of the emporia.

Their outstanding size, the scale of activities and their geographical location underpinned by numismatics and (few) written sources overall support an understanding of emporia as trading towns controlled by *Reges*, the kings/petty kings/tribal leaders of the later 7th and 8th C. (Wickham 2005, 681ff; Hodges 2012). In return for tolls/levies/taxes, the king secured peace for the traders (Middleton 2005).

The largest and most important emporium was *Dorestad* on the Kromme Rijn near Utrecht, situated in the border zone between Francia and Frisia connecting the Rhineland with the North Sea World (van Es & Verwers 1980; Coupland 2010; Hodges 2012, 91ff). *Quentovic* in Northern France and *Domburg* on the island of Walcheren in the Dutch province of Zeeland were other important Merovingian/Frankish emporia of which we know less, due to limited investigation and destruction by erosion (Hill et al. 1990).

In Anglo-Saxon England, *Hamwic* underneath present day Southampton, *Lundenwic* just west of Roman Londinium, *Gipeswic* (Ipswich) and to a

lesser degree *Eoforwic* (York) all bear the archaeological footprint of the emporia. Although not much is known about their early history, there is a striking, almost 1:1 connection between the emporia and the Anglo-Saxon kingdoms of the 8th C. Hamwic belonged to Wessex, Lundenwic was contested but became part of Mercia, Gipeswic served East Anglia and Eoforwic belonged to Northumbria.

Despite a general shortness of silver in 8th C. Europe, different sceatta-type coins were used in the emporia. The coins are small, only 10-12 mm across and weighing little more than one gram (fig. 4). Signs of testing, breaking or piercing is generally absent, indicating use in a controlled coin economy where coins had a fixed symbolic value guaranteed by the issuer, in quite the same way as money today (Metcalf 1993; Metcalf 2014).

The mostly anonymous coins pose serious numismatic challenges, but some types have been associated with various emporia. The Series H sceatta was used in Hamwic, the Series R sceatta in Gipeswic while the Series Y types were minted by the kings of Northumbria and associated with Eoforwic (Metcalf 1993; Hodges 2012, 107 with ref.). On the continent, the most common of all types was the Series E, “Porcupine” sceatta, associated with Dorestad followed by the Series D sceatta, “continental runic” whose association with Domburg is less certain (Metcalf 1993, 174ff; Metcalf 2014; Op den Velde 2015). In Frisia and Anglo-Saxon England, sceattas were not restricted to the emporia but widely circulated. Millions of coins were struck and they circulated and were used in what seems to have been every single village (Metcalf 2014).

Therefore, from the mid-7th C., urbanism reappeared in Northwest Europe in the shape of a few large-scale trading places associated with minting and coin use. The emporia boosted maritime networks and rose to prominence under the patronage of the early kingdoms of the time. An improving climate could be one factor which pushed this development. Keeping this set of observations about conti-



Fig. 5. Reconstruction of the structural layout of Ribe in the 8th C. Blue dots are 8th C. wells. Map: M. Søvsø.

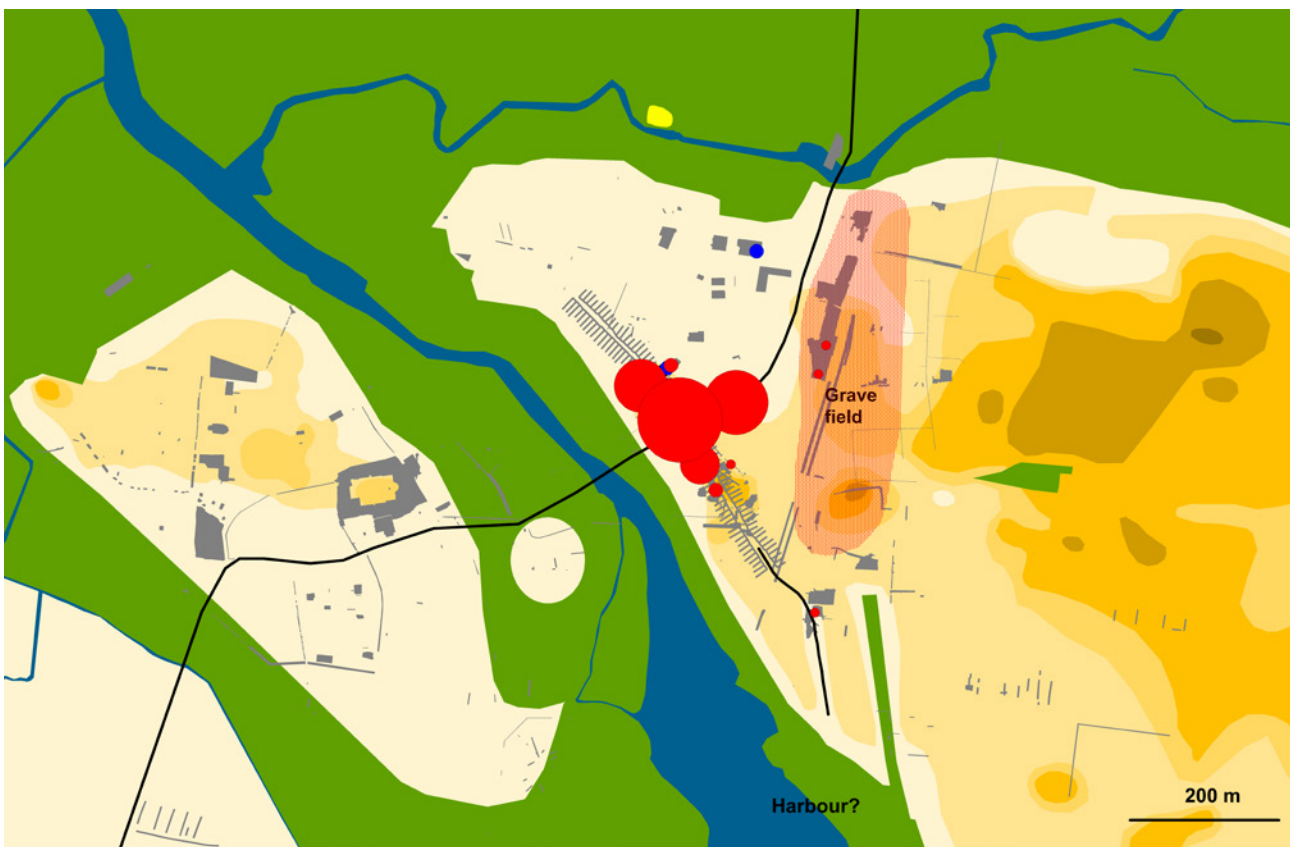


Fig. 6. The distribution and find density of the (so far) 218 sceattas from Ribe indicated by circle size, reflecting the number of coins from different excavations. Excavation areas are in grey. Map: M. Søvsø.

Selected categories of finds from 8th-9th C. Ribe	n
Casting moulds for copper alloy artefacts	10616
Glass bead production waste	14189
Antler waste from comb making	17960
Badorf-ware pottery	863
Tating-ware pottery	273
Sceatta-type coins	218

Table 1: Different categories of finds from 8th-9th C. Ribe. 2016 count.

mental and Anglo-Saxon emporia in mind, we turn to Southern Scandinavia and the West Baltic area where three 8th C. emporia are known: Ribe, Reric and Åhus.

Ribe

At the crossing between the main road of Western Jutland and the small Ribe river, a trading place was established c. AD 700 in the border zone between the Frisian and Danish areas. The cultural divide is based on later, medieval sources. The first mentioning of Ribe or *Ripa* is in *Vita Anskarii*, The life of the missionary Ansgar, written by his successor Rimbert in c. 870. In the text, the young Danish king Haarik (II) granted the missionary a plot in Ribe intended for the construction of a church. This confirms that the Danish king controlled Ribe by this time. The place name is Latin and means river-bank. It is one of very few non-Nordic place names from Denmark.

From the very beginning of the 8th C., glass beads and antler combs were produced in Ribe, and from the early 8th C. large wells were constructed, some by using reused wine barrels from the Mainz region (Daly 2007, 159f). The same type of wine barrels went into the ground as well linings in Dorestad (Eckstein 1978). Before AD 720, a plot structure was established/established itself along an only two-meter wide street for pedestrians running parallel to the riverbank (fig. 5). This Dark Age “High Street” had on both sides 6-8 m wide plots that housed a variety of different traders and artisans. Their activities left a fine stratigraphy with thousands of finds, in the best preserved parts even partially water-logged, from which we have a large number of dendrochronological datings within the time range c. 705 to after 855 (Feveile ed. 2006).

Both the activities on the plots and the layout of the site as an “Einstrassenanlage” (Ellmers 1984, 176ff) has clear parallels in the other North Sea

emporia, particularly Dorestad. However, no other known site has a stratigraphy comparable to Ribe’s, allowing archaeologists a very detailed insight into the activities in the 8th and 9th Cc (fig. 1; tbl. 1).

Since its discovery through Mogens Bencard’s ground-breaking excavations in the 1970’s, a number of other excavations have been done (Bencard et al. eds. 1981-2010; Feveile ed. 2006). All of these were rescue excavations prior to construction works, or narrow trenches.

One of the more sensational finds coming out of the 1970’s campaign was a number of sceatta-type coins. So far 218 (2016 count) have been found in Ribe, all as single finds. The find spots leave little doubt about their use in trade transactions on the plots and show that they represent lost coins (Feveile 2008; Coupland 2010, 100) (fig. 6).

Using the phasing made possible in the stratigraphic excavations, some distinct developments in the coin use appear. In Ribe’s first years of existence, sceattas of several different types were present, indicating a trade system where traders used the coins they brought with them. This changed c. 725 and from then on one type, the so-called wodan/monster or Series X sceatta, dominated the coin circulation and maintained this role until c. 800 when it was replaced by a larger, thinner coin in the denarius format but with a similar motif: the so-called KG 5/6 (Malmer 1966) (Tbl. 2).

This distinct distribution of various coin types in the stratigraphy has been found in all stratigraphic excavations so far, and leaves little doubt that what we are seeing is the introduction of a controlled currency based on a monopoly coin: the wodan/monster sceatta (Metcalf 1993, 275ff).

- c. 700-725: Sceattas of different types
- ca. 725-800: Monopoly coin: wodan/monster sceatta
- ca. 800-850: Monopoly coin: KG 5/6 denarius.

Phase	Dating	Wodan/monster	Porcupine	Continental Runic	BMC 37 Series J	Unique	Sceat	Pennies KG 5-6	Dirhems	Roman
Uden fase										
J	12.-13. cent.									
H / I	820-850							7		
G	800-820	2	1							
F	790-800	5								
E	780-790	6			1				4 - 7	
D	760-780	6	2	1			1			
C	725-760	17								1
B	705-725	4		3	3	1	1			
A										

Table 2: The distribution of coins in various phases of the ASR 9 Post Office excavation. In the earliest phase B, c. 705-725, ranges of different sceattas were used. From phase C through F, c. 725-800, the wodan/monster or Series X dominate the coin circulation. The same pattern is visible in the excavations ASR 7, Sct. Nicolaj Gade 8 (1986-87) and ASR 1077, Sct. Nicolaj Gade 14 (1993). After Feveile 2008.

A monopoly coin reflects the power of one issuer to enforce the use of his coin and exclude the use of others. Through exchange rates, the issuer could generate a surplus, and the archaeological evidence for the existence of this sceatta-based system in Ribe for c. 75 years in itself proves its success.

Based on the coin distribution in Ribe's stratigraphy compared with the overall geographic distribution of the wodan/monster sceatta, it has been suggested that this coin was issued by a Danish king and minted in Ribe (Metcalf 1986; 1993; Feveile 2008), though the matter remains debated (Jonsson & Malmer 1986; Williams 2007).

Reric

North of the Hanseatic town of Wismar at a village called Gross Strömkendorf, excavations in the 1990's exposed a coastal trading site identified as *Reric*, a place mentioned in the Royal Frankish Annals (RFA) in 808 (Pöche 2005; Tummuscheit 2010; Kleingärtner 2014, 303ff; Gerds 2015). It is situated in an area which from c. AD 800 was associated with the Slavic tribe/*Stammesverband*, the Obodrites. The town arose in the first half of the 8th C., for which no sources describe the ethno-cultural groupings in the area; and with due caution the geographical setting fits the general cultural border zone model between Obodrites, Saxons and Danes.

The 808 entry in the RFA informs that Reric was a Danish name and that the Danish King Godfred sacked the place this year and transferred the merchants to Schleswig, thereby laying the foundation

for what was to become the largest emporium in Scandinavia, Haithabu. It also states that Reric had earlier been of great importance to the Danish king because of the taxes it paid.

Coastal erosion and ploughing has damaged the site, and only earth-dug structures survive. About 100 pit houses have been excavated (fig. 7). They seem to form a north-south band and are mostly evenly distributed, indicating the existence of some sort of no longer preserved plot structure. In the same area, the majority of the 30 excavated wells with dendrochronological dates between AD 735 and 811 have been found. The majority of the pit houses are of a Saxon square type with a fireplace in one corner, allowing a domestic use rather than being just a temporary workshop.

Finds are plentiful and dominated by specialized crafts using amber, antler, glass and metal as raw materials. The trade connections point towards Francia, Scandinavia, and the Baltic Sea region. In recent years, the site has been metal detected with great success. By 2014, 34 sceattas had been found as single finds, of which 24 were of the wodan/monster type.¹

The nature and scale of the activities leave no doubt that Reric was an emporium which started out in the 730s and indeed did shut almost completely down after being sacked by Godfred in 808 and moved to Haithabu. The sceattas indicate a partial coin economy parallel to the system in Ribe. In addition, the name being Danish and Reric's former role as a source of income for the Danish king underline

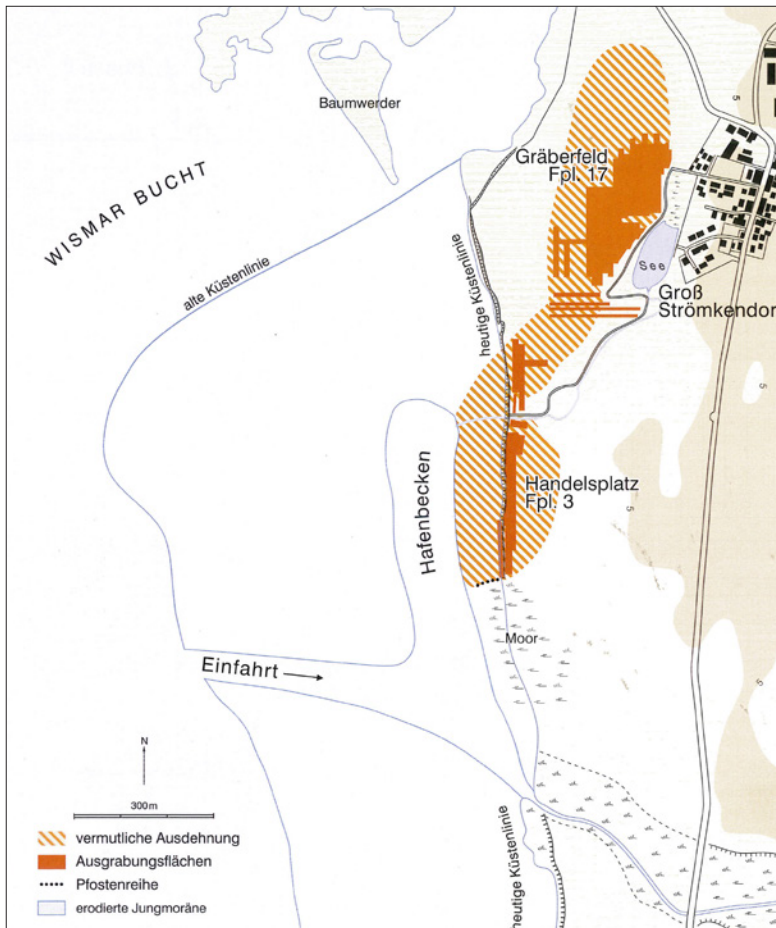


Fig. 7. Reric. The trading place with the pit houses is to the south, Fpl. 3, and the grave field to the north, Fpl. 17. From Kleingärtner 2014.

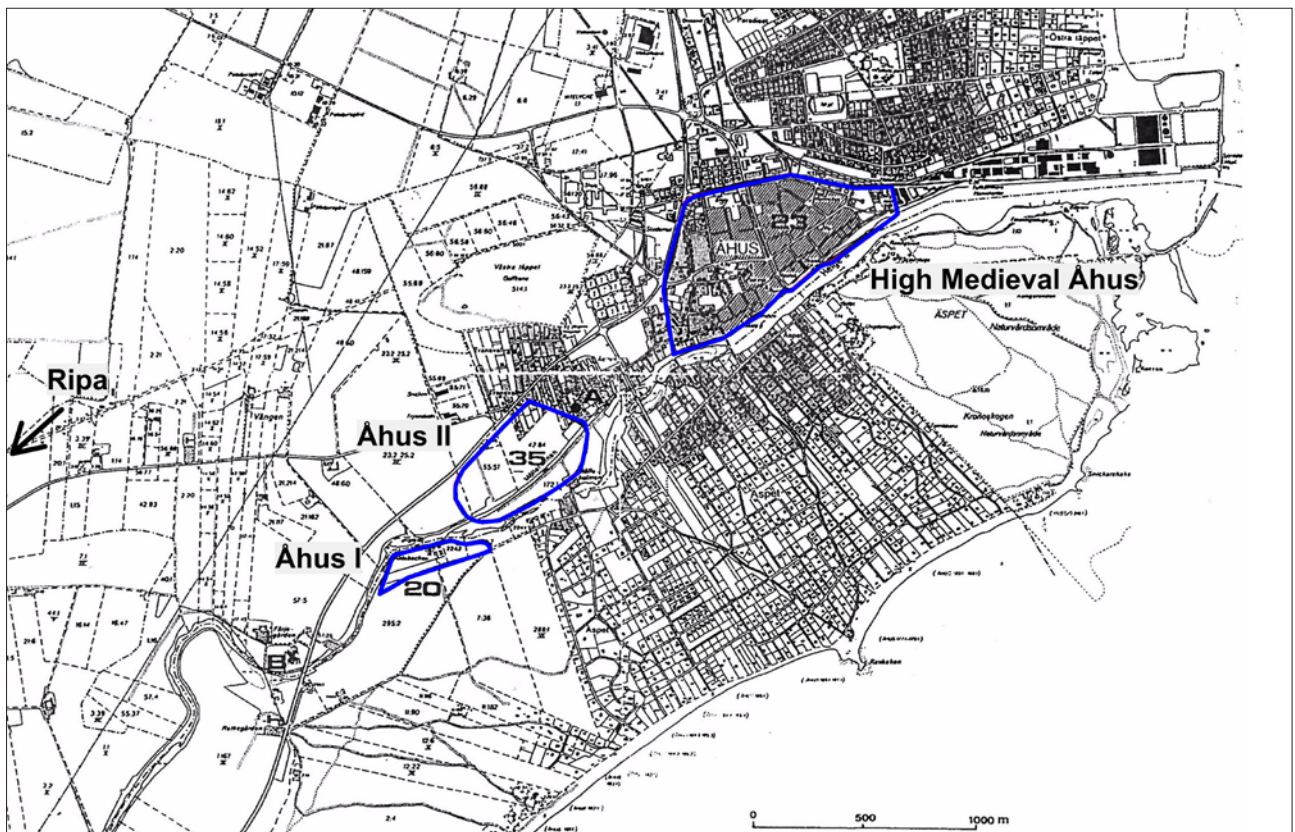


Fig. 8. Åhus in Scania. The village called Ripa is just outside the map. After Callmer 2002 with additions by the author.

the very close connections to the North. The coins and the written evidence suggest partial Danish control of Reric. Whether this also means that the founder was a Danish king remains open. Control may have shifted between Danes and Obodrites. This was the case in Dorestad, where power shifted between Frisia and Francia several times between 670 and 720 (Wickham 2005, 685).

Åhus

In Northeastern Scania close to the mouth of the Helgeå, a trading site from the 8th and 9th Cc has been under excavation since 1979 (Callmer 1984; 1991; 2002). Helgeå means holy river, while Åhus means river mouth. Since medieval times the neighboring village has had the name Ripa, a very unusual place name in Scandinavia, indicating Ripa as one likely name for the trading place and underlining its close connections to an international trade network.² By the time of Wulfstan's travel in the late 9th C., Scania was Danish while Blekinge belonged to the Svear. When King Hemming made peace with Charlemagne in 811 at Denmark's southern border, twelve men accompanied him including one "Asfred of Scania," indicating this landscape may have been regarded as a part of Denmark at the time (A. E. Christensen 1969, 27). No information is available for the 8th C., but nevertheless it is not unsubstantiated to assume that Åhus is situated in the border zone between Danes and the inhabitants of the Blekinge area, probably Svear.

The excavator, Johan Callmer, divided the site into Åhus I south of the river (c. AD 700-750) and Åhus II north of the river (c. AD 750-850) (fig. 8). More than 3 hectares with 149 pit houses have been excavated, resulting in a very large collection of finds resembling the finds from the activities that went on in Ribe and Reric: specialized crafts using glass, copper-alloy, amber, and antler as raw materials.

Lacking dendrochronological datings, the beginning of the site is placed in the first half of the 8th C. based on typological dating of artefacts. Three sceattas have been found, all of the wodan/monster type.

Emporia, sceattas and kingship in 8th C. "Denmark"

The archaeology of the three emporia described above places them in a category of their own. No other known site in the Southern Scandinavian and

the Western Baltic region had trade transactions and specialized crafts production on this scale. This does not mean these activities were restricted to the emporia. On a smaller scale, they went on at many local trading places or landing places reflecting the sailing routes of the merchants (Ulriksen 1998). In addition, land-based centres like magnate farms/elite residences/central places were visited by both traders and artisans, but the scale of trade and craft on these sites were, judging from the archaeological record, only a fraction of what went on in the emporia (Jørgensen 2003; Sindbæk 2007).

The location of Ribe, Reric and Åhus corresponds well with the ethnic/cultural border zone model (Hodges 1989, 52f). Ribe between Frisians and Danes, Reric between Saxons, Obodrites and Danes, and Åhus between Svear and Danes (fig. 9).

The numismatic evidence from Ribe's fine-mesh stratigraphy has revealed a coin economy (at least partially) from the very beginning around AD 700 using various sceattas, which was succeeded in c. AD 725 by a controlled currency based on the wodan/monster sceatta. The 34 (2014 count) unstratified sceatta finds from Reric points in the same direction, and so do the three wodan/monster sceattas from the quite limited excavations at Åhus I. Despite the boom in metal detecting in recent years, sceattas remain very rare in Scandinavia and the Baltic Sea region. The Ribe area, Reric and even Åhus with its only three coins are still the top three find spots in Scandinavia and the Baltic for this type of coin (Näsman 2006, 215; Feveile 2008, 58ff).

The coin finds leave no real doubt that Ribe, Reric and probably Åhus were controlled by a coin issuer minting wodan/monster sceattas in the 8th C. In Ribe, due to the fortunate survival of the stratigraphy, this system can be documented for about 75 years (!). The wodan/monster or Series X sceatta is a challenging coin type with a generally rare but widespread distribution in the North Sea Region including Anglo-Saxon England (Metcalf 1993, 275ff). There is also a distinct Anglo-Saxon/insular type, showing that it was minted in more than one place. The finds from Ribe, Reric and Åhus strongly suggest that one of these places was in Southern Scandinavia. Keeping in mind the distribution of the wodan/monster sceattas and the contemporary coin system in the North Sea region, the only likely issuer is a Danish king.

The location of Ribe, Reric and Åhus in the ethnic/cultural border zones around what later became



Fig. 9. Southern Scandinavia in the 8th C. A dotted line marks the Danevirke. The Kanhave channel on Samsø is marked by a star.

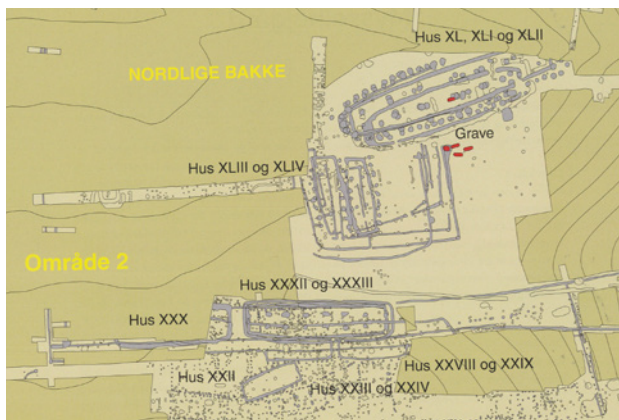


Fig. 10. The partially excavated hall complex at Lejre with Hall buildings XL, XLI and XLII with an associated fenced-off area with special buildings XLIII and XLIV. The combination of a monumental hall building and a fenced-off area containing a smaller building is typical of aristocratic sites in Southern Scandinavia. After T. Christensen 2015.

Denmark seems to outline the existence of this realm already in the 8th C. In the middle we find Lejre, a famous pagan centre mentioned by both Thietmar of Merseburg and Adam of Bremen in the 11th C. (Skovgaard-Petersen 1977, 36ff). In later medieval chronicles, Lejre was renowned as the legendary seat of the Danish Royal Skjoldunge Dynasty. On the site, minor excavations have revealed a sequence of hall buildings of up to 61 m in length – the largest known buildings of this type in Scandinavia and dated to the 8th C. (fig. 10) (T. Christensen 2015, 59ff).

Adam of Bremen also reported that Gamla Uppsala was a pagan centre for the Svear and the scene

for sacrificial offerings as in Lejre. Historians saw this as indicating a lost common source for the information about cultic activities on both sites (Skovgaard-Petersen 1977, 37). However, later excavations in Lejre and Gamla Uppsala have exposed massive hall buildings and rich evidence of pagan rituals (T. Christensen 2015; Ljungkvist & Frölund 2015).

Hall buildings and traces of pagan rituals are known from a range of other aristocratic sites in Scandinavia. These phenomena were widespread and integrated parts of Scandinavia's pagan societies (Jørgensen 2014).

The dendrochronological datings of the Kanhave

channel on Samsø to AD 726 and one very substantial phase of the Danevirke to AD 737 point towards the existence of a strong royal power from the early 8th C. (Wickham 2005, 364ff; Näsman 2006, 221). However, one problem with this model was that the indicators of central power – defences (Danevirke) and urbanism (Ribe/Hedeby) – were clustered in Southern Jutland. This pointed towards this area as the central part of early “Denmark”, but the region has neither historical evidence nor archaeological sites associated with the high aristocracy before the mid-10th C., when Jelling became a royal centre (Wickham 2005; 364ff; Näsman 2006, 226).

When the border-zone emporia and the numismatic evidence are added to the argument, it seems more probable that the kingdom of the Danes also included Scania and perhaps at times even parts of the southern Baltic coast already in the 8th C. Lejre lies at heart of this realm, and the huge hall buildings suggest that the association of the Skjoldunge Dynasty with this site was perhaps not as doubtful as most 20th C. historians have suggested (Skovgaard-Petersen 1977, 36ff).

If these considerations are correct, they shed a new light on the failed attempts of the kings Gorm the Old and Harold Bluetooth to establish a new royal centre in Jelling from the mid-10th C. (Holst et al. 2012). Despite huge investments it all failed, and before the year 1000, the centre of the kingdom was back in Eastern Denmark where it used to be and has been ever since.

Bibliography

- Axboe, M. 1999. “The year 536 and the Scandinavian gold hoards”. *Medieval Archaeology* 43: 186-188.
- Axboe, M. 2001. ”Året 536”. *Skalk* 2001(4): 28-32.
- Bencard, M. et al. eds. 1981-2010. *Ribe Excavations 1970-76*, vol. 1-6.
- Büntgen, U. et al. 2016. “Cooling and societal change during the Late Antique Little Ice Age from 536 to around 660”. *Nature Geoscience* 2016.
- Callmer, J. 1984. “Recent work at Åhus: Problems and Observations”. *Offa* 41: 1984, 63-75.
- Callmer, J. 1991. ”Platser med anknytning til handel og hantverk i yngre jernalder”. In: P. Mortensen & B. M. Rasmussen (eds): *Fra Stamme til Stat i Danmark 2*, 29-47.
- Callmer, J. 2002. “North-European trading centres and the Early Medieval craftsman. Craftsmen at Åhus, north-eastern Scania, Sweden ca. AD 750-850+”. In: B. Hårdh & L. Larsson (eds): *Central Places in the Migration and the Merovingian Periods, Uppåkrastudier* 6, 125-157.
- Christensen, A. E. 1969. *Vikingetidens Danmark*.
- Christensen, T. 2015: *Lejre bag myten*.
- Coupland, S. 2010. “Boom and Bust at 9th C. Dorestad”. In: A. Willemsen & H. Kirk (eds): *Dorestad in an International Framework*. Turnhout, Belgium, 95-103.
- Daly, A. 2007. *Timber, Trade and Tree-rings. A dendrochronological analysis of structural oak timber in Northern Europe, c. AD 1000 to c. AD 1650*. Ph.D. thesis, University of Southern Denmark.
- Daly, A. 2017. “Timber-regionality and temporality in Northern Europe’s shipbuilding resource. In: Ships and Maritime Landscapes”. In: J. Gawronski et al. (eds): *Proceedings of the Thirteenth International Symposium on Boat and Ship Archaeology*. Amsterdam, 334-338.
- Eckstein, D. 1978. “Dendrochronologisch onderzoek naar ouderdom en herkomst van het hout uit waterputten”. [Dendrochronological studies on the age and provenance of the timber from the wooden barrel wells of Dorestad/The Netherlands.] *Spiegel Historiae* 13: 308-312.
- Ellmers, D. 1984. *Frümittelalterliche Handelsschiffahrt in Mittel- und Nordeuropa (Offa Bücher 28)* 2nd ed. Neumünster.
- van Es, W. A. og J. H. Verwers. 1980: *Excavations at Dorestad 1*. The Harbour: Hoogstraat I. Amersfort.
- Feveile, C. (ed.) 2006: ”Det ældste Ribe”. *Ribe Studier* vol. 1.1 & 1.2. Højbjerg.
- Feveile, C. 2008: “Series X and Coin Circulation in Ribe”. In: T. Abramson (ed.): *Studies in Early Medieval Coinage*, vol. 1. *Two Decades of Discovery*, 53-67.
- Gerds, M. 2015: *Das Gräberfeld des frühmittelalterlichen Seehandelsplatzes von Groß Strömken-dorf, Lkr. Nordwestmecklenburg*.
- Gräslund, B. 2007: ”Fimbulvintern, Ragnarök och klimatkrisen år 536-537 e.Kr”. *Saga & Sed*: 93-123.
- Gräslund, B. & N. Price. 2012. “Twilight of the gods? The ‘dust veil event’ of AD 536 in critical perspective”. *Antiquity* 86: 428-443.
- Gunn, J. D. (ed.). 2000. “The Years Without Summer. Tracing A.D. 536 and its Aftermath”. *British Archaeological Reports International*. Archaeopress.

- Hansen, J. 2015. *Landsbydannelse og bebyggelsesstruktur i det 1. årtusinde – et bebyggelsehistorisk regionalstudie*. Ph.d. dissertation, Syddansk Universitet.
- Hill, D. et al. 1990. "Quentovic defined". *Antiquity* 64(242): 51-58.
- Hodges, R. 1989. *Dark Age Economics*. 2nd edition. London.
- Hodges, R. 2012. *Dark Age Economics. A new Audit*. London.
- Holst, M. K., M. D. Jessen, S. W. Andersen & A. Pedersen. 2012. "The Late Viking-Age Royal Constructions at Jelling, central Jutland, Denmark". *Praehistorische Zeitschrift* 87(2): 474-504.
- Jonsson, K. & B. Malmer 1986. "Sceattas och den äldsta nordiske myntningen". *Nordisk Numismatisk Unions Medlemsblad* 1: 66-71.
- Jørgensen, L. 2003. "Manor and Market at Lake Tissø in the Sixth to Eleventh centuries: The Danish 'Productive' Sites". In: T. Pestell & K. Ulmschneider (eds), *Markets in Early Medieval Europe. Trading and 'Productive' Sites, 650-850*. Windgather Press, 175-207.
- Jørgensen, L. 2014. "Norse Religion and Ritual Sites in Scandinavia in the 6th-11th century". In: H.C. Gulløv (ed.) *Northern Worlds – Landscapes, Interaction and Dynamics – Proceedings of the the Northern Worlds Conference, Copenhagen 28-30 November 2012*, 129-150.
- Kleingärtner, S. 2014. *Die frühe Phase der Urbanisierung an der südlichen Ostseeküste im ersten nachchristlichen Jahrtausend*. Wachholtz 2014.
- Larsen, L.B. et al. 2008. "New ice core evidence for a volcanic cause of the A.D. 536 dust veil". *GEO-PHYSICAL RESEARCH LETTERS*, VOL. 35, L04708, doi:10.1029/2007GL032450, Res. Lett., 35, L04708, doi:10.1029/2007GL032450
- Ljungkvist, J & P. Frölund 2015. "Gamla Uppsala – the emergence of a centre and a magnate complex". *Journal of Archaeology and Ancient History* (F. Herschend et al. eds.): 16.
- Malmer, B. 1966. *Nordiska mynt före år 1000*. Lund 1966.
- Metcalf, M. 1986. "Nyt om sceattas af typen wodan/monster". *Nordisk Numismatisk Unions Medlemsblad* 6: 110-120.
- Metcalf, M. 1993. *Thrymsas and Sceattas in the Ashmolean Museum Oxford*.
- Metcalf, M. 2014. "Thrymsas and Sceattas and the Balance of Payments". In: R. Naismith et. al. (eds), *Early Medieval Monetary History. Studies in Memory of Mark Blackburn*. Farnham, 243-256.
- Middleton, N. 2005. "Early medieval port customs, tolls and control on foreign trade". *Early Medieval Europe* 2005 13(4): 313-358.
- Näsman, U. 1991. "Det syvende århundrede – et mørkt tidsrum i ny belysning". In: P. Mortensen & B. M. Rasmussen (eds): *Fra Stamme til Stat i Danmark* 2, 165-176.
- Näsman, U. 2006. "Daneerne og det danske riges opkomst". *Kuml* 2006: 205-241.
- Op den Velde, W. 2015: "The Cothen hoard as witness of the international circulation of sceattas". In: A. Willemsen & H. Kik (eds): *Golden Middle Ages in Europe*, Turnhout, 64-69.
- Pöche, A. 2005. *Perlen, Trichtergläser, Tesserae. Spuren des Glashandels und Glashandwerks auf dem frühgeschichtlichen Handelsplatz von Groß Strömkendorf, Landkreis Nordwestmecklenburg*.
- Sindbæk, S. M. 2007. "Networks and nodal points: the emergence of towns in early Viking Age Scandinavia". *Antiquity* 81(2007): 119-132.
- Skovgaard-Petersen, I. 1977. "Oldtid og Vikingetid". In: *Danmarks Historie, Bind 1: Tiden indtil 1340*, 15-209.
- Søvsø, M. 2018. "Detektorfund og bebyggelsesarkæologi – på markerne vest for Gl. Hviding kirke ved Ribe". In: V. Hilberg & T. Lemm (eds): *Viele Funde – große Bedeutung?* Bericht des 33. Tvervfaglige Vikingsymposium. Kiel, 67-80.
- Theuws, F. 2017. "The archaeology and history of the Saint-Servatius complex in Maasstricht (up to c. 1050) contexts, questions, perspectives and problems". In: F. Theuws & M. Kars (eds): *The Saint-Servatius complex in Maastricht. The Vrijthof excavations (1969-70)*. Bonn, 10-47.
- Tummuscheit, A. 2010. *Die Baubefunde des frühmittelalterlichen Seehandelsplatzes von Groß Strömkendorf, Lkr. Nordwestmecklenburg*.
- Ulriksen, J. 1998. *Anløbspladser. Besejling og bebyggelse i Danmark mellem 200 og 1100 e. Kr.*
- Verhuulst, A. 1999. *The Rise of Cities in North-West Europe*. Cambridge.
- Wickham, C. 2005. *Framing the Early Middle Ages*. Oxford.
- Williams, G. 2007. "Kingship, Christianity and Coinage. Monetary and Political Perspectives on Silver Economy in the Viking Age". *Silver*, 177-214.

Notes

- 1 Pers. Comm. Dr. Ralf Wiechmann, Hamburg.
- 2 Pers. Comm. Dr. Peder Gammeltoft, Bergen.