

of approximately 2200 square metres could be removed by pumps. Thousands of postholes, piles, loose timbers and planks were found. Nearly 260 structural wooden components were subsequently dated by dendrochronology. A very large, rich and varied amount of artefacts was also collected.

Kalmring has digitalized this immense material and patiently pieced together the patchwork of harbour remnants: searching for regularities, reassembling the groups of piles, postholes and timbers including jetty beams into structures, and dividing them into chronological phases. Using computerized geographical information technology he reconstructs in detail how the harbour facilities expanded in various stages. Jetties were attached to jetties that expanded as shipping demands increased. Finally, a 1500 square metres large, U-shaped platform on piles extended out into the shallow water.

His presentation is systematic, highly detailed, and takes due account of the problems of working with thirty years old excavation material. The text is accompanied by a richly illustrative body of figures and images— all of high technical quality.

Kalmring has made a comprehensive review of all other field investigations that to a greater or lesser extent – and using various methods – have touched upon Hedeby's harbour. This forms the background to his study of the material. He also reviews the historical sources and other available evidence. He reports on older and recent studies of the basin using various types of geophysical and other technical exploratory techniques. Many anomalies have thus been detected but are difficult to interpret in their own right. Diving is called for, but because visibility is almost zero, the difficulties are enormous – it is simply impossible to obtain an overview.

According to the author, some previous scholars have made rather far-reaching conclusions that are difficult to wed with the latest observations. For example, jetties and wharves had often been deemed unnecessary for the Vikings, who pulled their boats up onto the beach as depicted on the Bayeux tapestry. Also, the piles discovered during investigations in Hedeby's harbour in the nineteen-fifties were, prematurely, interpreted as a counterpart to the semi-circular land ramparts.

Kalmring's reinterpretation, which also is the main conclusion of his thesis, is that the jetty-platform served not only as a docking site for boats and ships to load and unload, but was also the town's marketplace. There is no indication of built-on sheds or warehouses.

The marketplace suggestion is supported by the fact that no market square seems to have been in the urban area which was densely built-up and heavily populated. Instead, the author argues, the market was probably originally held on the beach and later moved out onto this lake platform.

Outside the inner harbour area two pile constructions existed, 220 and 200 metres long respectively. The harbour was well sheltered, and no breakwaters were needed, according to the author. Thus he suggests that these were piers or administrative boundaries. Perhaps

Sven Kalmring, **Der Hafen von Haithabu**. Die Ausgrabungen in Haithabu. Volume XIV. Publisher Wachholz, Neumünster 2010. 668 pages, with numerous photos, drawings, tables, plans, and maps.

Sven Kalmring's monograph is a revised and expanded version of his doctoral dissertation, submitted in Kiel in 2008, which after examination achieved the highest possible grade. It is a gigantic and comprehensive work. In this review, I will briefly summarize and discuss its main contents, draw attention to some issues and finally offer a few observations.

Kalmring's research is based on the documentation of the 1979–1980 archaeological research excavations directed by Kurt Schitzel in the harbour area of Hedeby, adjacent to today's shoreline. The main purpose of the excavation was to retrieve a previously located Viking Age shipwreck (»Hedeby 1«), but when this was successfully completed the excavation area was somewhat extended. The whole effort was possible thanks to the construction of a cofferdam behind which influent water from an area

one may imagine that they served as a combination of many features.

The 1979–1980 surveys included a section of the border zone between land and sea, and produced evidence of shore reinforcements consisting of hammered-down stakes and of wattle fences. Any existence of previous plot divisions with trenches – as in the case of Ribe – has, according to the author, not yet been affirmed.

Kalmring reinterprets the »Hedeby I« ship, salvaged in 1979–1980. First, he questions whether fire was set on it in order to destroy the town's defences, as previously proposed. Then he establishes that the harbour jetties continued to expand during the eleventh century, even after the ship was sunk (in about 990–1010?). The chronological gap between the abandonment of Hedeby and the foundation of nearby Slesvig has consequently shrunk further.

Kalmring's results are extremely interesting for the urban archaeology of northern Europe in general. Hedeby continues, so to speak, into the lake! This is spectacular news. Maybe there are parallels, not yet noticed, in other early urban sites?

The question is, in my opinion, to what degree the conditions on other sites are comparable. Hedeby was situated on the shore of a lagoon, where high waves do not form. At other contemporary port sites, conditions were quite different. Some had for example to cope with considerable tides; others lay fully exposed on large wind-swept bays; ice conditions must have varied considerably. Hedeby was subject to modest land-sea transgression, while other places suffered the opposite, and faced substantial post-glacial land uplift as well.

As an archaeological site, Hedeby is highly favoured because occupational layers on both land and lagoon bottom have been largely untouched by humans since when the site had been abandoned. Elsewhere, waste layers in the waterbed may exist, but this possibility has been largely overlooked. Some contemporary deposits have recently, and rather unexpectedly, been discovered at Birka, a site often interrelated with Hedeby.

Kalmring points out that nearly all (97%) of the harbour area in the strict sense, for example the waters of Haddeby Noor immediately outside the semi-circular Hedeby wall, still remain to be investigated. Thus, despite the author's Herculean, admirable and exemplary efforts, much archaeological work remains to be done, even in quantitative terms, in Hedeby's harbour.

I venture to raise some questions on certain aspects. When reading the book I was struck by its strong emphasis on trade and commerce. The town's emergence and existence is constantly emphasized as standing and falling with long-distance trading.

The concept of trade and commerce is no doubt popular with everyone – except perhaps when referring to slave-trade. Written sources, such as Rimbert's *Vita Ansarii*, provide snapshots of the slave market in Hedeby, maybe on quite a large scale. Kalmring mentions that iron fetters, clearly designed for humans, were found in the harbour. Similar fetters have recently been identified

in the old find material from Birka. Thus now, a basis in the material culture allows asking new questions about the Viking Age slave trade, and the manner in which the wealth that it created was invested.

Throughout the book, Kalmring strives to be comprehensive. But notwithstanding his deep knowledge of Hedeby, in my view, this is largely from a topographical-functional-systems perspective. Hedeby is said to have had an excellent trading position. Trade is attested by all the finds, which in turn prove the site's good trading position. So we are back where we started.

I was curious about which standpoint the author would take in the discussion concerning the organization of traffic across the Jutland peninsula. This route is, as is well known, often described as a main transit for trade between the Frankish realm and the Baltic region. Did traders haul their boats and ships over land, or only their cargo, and if so, how was this organized in practice? However, Kalmring limits himself to his reference to various scholars and their conflicting views. The issue is still open, in my opinion. The concept of »portage« borrowed from North America, in this instance as well as in many other similar cases, lacks concrete archaeological support.

Seafaring is not only about long-distance trading or even commerce. An urban area with thousands of inhabitants, who are engaged in handicrafts or other work except food production, requires a constant supply of food, fodder and fuel. Unlike long-distance trading (whose existence certainly can be detected archaeologically, but whose scale is quite impossible to calculate) the extent of a population's need for life's necessities can be fairly accurately estimated. In a footnote (no. 210, page 448) the author mentions that questions concerning the provision of Hedeby's needs cannot be fully answered. It is a pity that this issue is downplayed, because this aspect could provide some alternative suggestions of the way interpreting the harbour facilities. The author's calculations of the mooring of boats and ships of different sizes in various stages at Hedeby's jetties creates a rather formalistic impression, only counting traders and men-of-war of different size-classes based on known findings of clinker-built ships. The bulk of the traffic may have consisted of boats of all varieties and sizes; that plied back and forth between the city and its hinterland all year round, except when barred by ice, with food, hay, firewood, and the like.

Kalmring regards Hedeby as a bridge or hub in the border country between the various cultural spheres: Scandinavian, Saxon, Friesian, and Slav. As far as I can see, this approach is typical of to-day's Hedeby research in general, and also of the information material targeted at the site's visitors and tourists. Peace between peoples (in this case, in the previously long-disputed Danish-German border provinces) is certainly the number one issue today.

However, Danevirke, which physically connects with the Hedeby ramparts, is absolutely lacking in peaceful associations. It is an ancient monument, loaded so to

speak with live cartridges. For over a thousand years it was the disputed border post for the Danish realm (the origin of which was perhaps bankrolled by slave-trade). The earliest mention of the place in the written sources, dated 804, denotes it as a Danish military base. »Hedeby I« is probably a Danish, royal warship. The runestone environment at Hedeby is of course purely Scandinavian.

This book is important and very well, even brilliantly, compiled and written. But will it be widely read in Scandinavia? I think not, more's the pity. The younger generation of archaeologists cannot read the German language. To this deplorable problem I unfortunately see no solution, because, as far as the arts and humanities are concerned, one writes best in one's mother tongue, as Kalmring has done. As a result the book's English summary is very welcome.

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