

BEADS AND THE URBAN NETWORKS OF THE VIKING AGE

Viking Age beads have been studied, following the work of J. Callmer¹, primarily as indicators of long-distance trade. This focus has been complemented especially at Ribe and Åhus with attention to the craftsmen who produced beads of glass², as well as in chronological studies of slightly earlier sets of beads from Bornholm³. International research has meanwhile focused on how beads either from individual sites or from national collections fit into the typologies and chronologies of Viking Age beads⁴, or on bringing these diverse chronologies and typologies into conversation⁵. This paper seeks to expand the role of beads in Viking Age research by exploring the roles that beads played among the urban networks that emerged during the Viking Age, connecting the peoples of Northern Europe to the wider world. For the purposes of bead researchers, this period may reasonably be expanded to begin with the development of new centers of bead production around AD 700 and end with the general abandonment of beads as a dress accessory around AD 1100.

The evidence of glass beads generally affirms the narrative developed through archaeological research over the past several decades, indicating that urban networks preceded and arguably precipitated the transformations of the Viking Age. Urban networks developed before Viking violence spread, and as S. Sindbæk has proposed, they should be seen as a possible cause of this violence⁶. This only makes sense if urban networks are understood as something in which northern societies were entangled before the Viking Age began and in which they continued to be bound throughout the Viking Age. Beads solidify this argument, providing a trace of the long-distance networks that connected the booming economies of the Near East through the markets of northern emporia to the graves of Viking Age elites and the sites of the Norse diaspora. These intensifying and commercializing networks moved alongside or superseded networks of elite gift exchange that had flourished during earlier periods⁷.

This paper begins with general comments on Viking Age beads and their use for the study of urban networks. It then proceeds thematically through specific areas of research, using beads to interrogate urban sites as places of production and exchange; the relationship between urban sites and central places; the emergence of urban identities; the development of urban hinterlands; the place of beads in systems of exchange; and shifts in directions of exchange during the period. Beads intersected with these multiple aspects of Viking Age urbanism and help reveal how urban centers developed during the Viking Age at the nexus of dynamic social networks.

GLASS BEADS AND VIKING AGE NETWORKS

Glass beads from the Viking Age generally survive from graves, settlements, and hoards. They were often worn by women in northwestern Europe strung between brooches⁸, whereas western fashions had begun to change in the 600s⁹. In rare cases such as grave ACQ at Køstrup on Funen (Denmark), Viking Age dresses survive through mineralization of the fabric on associated metalwork, giving researchers an idea of how bead necklaces served as integral parts of personal displays involving not only brooches, but also rich textiles, which rarely survive¹⁰.

Sometimes beads were meant to dominate female costume. Studies on Gotland show this was especially true for young girls buried between the ages of five and fifteen years old. Their necklaces might comprise hundreds of beads, while older adult women had necklaces with fewer beads¹¹. Smaller groups of beads are also sometimes found. At Birka, small numbers of beads have often been encountered in male graves¹². Studies from Gotland indicate color may have been an important consideration in the selection of beads for burial¹³. A recent case study of beads from Hedeby indicates that people there also selected beads on the basis of color, with blue beads dominating economic contexts and white, blue, and red beads dominant in burials¹⁴.

Beads were made from diverse materials. They could be made from local Baltic amber, but people in medieval Europe more often sought beads made from foreign things – faience from Egypt, glass from the Levant, carnelian from Iran, rock crystal from India, or cowry shells from the Red Sea. Despite this variety, the vast majority of beads were made of glass. In Johan Callmer's survey of 299 Viking Age necklace assemblages¹⁵, 88 % of beads were identified as glass. In my own surveys of beads from various settlement and cemetery contexts across Scandinavia and northern Germany, glass beads typically comprise 95 % of recovered collections.

At some sites in northern Europe, particularly Ribe and Åhus – along with more limited evidence at later sites such as Birka, Hedeby, and Kaupang – beads have been found alongside evidence of bead production¹⁶. Raw materials might include glass cullet or shards, tesserae produced for or reclaimed from mosaics, or glass canes prepared for tracing decorations and sometimes used as bead bodies. Glass canes appear both as simple and twisted stringers for tracing decorations, and also as murrina (pl. murrine or murrini) or mosaic glass. Publications on Viking Age beads often describe this glass as millefiori glass («thousand flowers»), although bead researchers elsewhere typically use this term specifically for glass produced in floral patterns¹⁷. Production waste might also include chips, splinters, drops, fragmented rods, and slagged lumps¹⁸. Remains of glassworking furnaces have been identified, particularly at Ribe and Hedeby, and occasionally iron rods identified as mandrels for beadmaking, as at Paviken, Helgö, and Ribe¹⁹.

Problems arise, however, when trying to connect raw materials to bead production. Many tesserae retain gold-leaf on one side, raising the question of whether glassworkers incorporated the gold-leaf in secondary products, whether they developed a means of removing the gold-leaf, or whether they imported tesserae in bulk and discarded tesserae with gold-leaf. Furthermore, there appears to be no one-to-one relationship between raw materials and finished beads. A sample of 50 tesserae from the Ribe Gasværksgrunden site dating to the 700s (ASR 1085 x2) yielded an average weight of 0.85 g. From a sample of 22 wound beads from the nearby Posthuset site, however, the average bead weighed 0.35 g, less than half the weight of a glass tessera. Glass shards appear in even greater diversity. Among 19 shards examined from Hedeby (selected from the glass bead exhibition), the smallest weighed 0.33 g, the largest weighed 19.35 g, and the average weight was 4.34 g. A selection of 441 wound beads (from the same exhibition) had an average weight of 1.04 g with a broad standard deviation of 0.76 g. The divergent figures between raw glass and final product indicate that the beadmakers of northern emporia needed to develop methods for selecting and mixing glass materials to prevent fragmentation during cooling.

Many beads were also made by drawing the glass into tubes and then cutting the tubes into beads. These beads were reworked into a variety of styles using techniques not practiced in Northern Europe, and they frequently appear alongside particular types of mosaic beads. These beads are believed to have originated in the Near East²⁰. Beads of certain exotic materials have also been found, which should probably be provenanced to the Near East or from elsewhere along the eastern trade routes. Foremost among these are rock crystal and carnelian beads that proliferated during the mid-Viking Age²¹, as well as cowrie shell beads, which appeared in large numbers on Gotland and occasionally in Birka but rarely circulated further²².

Phase	Date	Ribe Beads (local)	Wasp Beads (local)	Metal-Foil Segmented (import)	Blue Segmented (import)	Green Tubes (import)	Drawn Cut (import)	Total Beads	Total Tesserae
B	705-725	•						xxxxxx	xxxxxx
C	725-760	••••						xxx	xxxxxx
D	760-780								xx
E	780-790		••••••••	•				xxxxxx	xxxx
F	790-800		•	••••	•	••••		xxxxxx	x
G	800-820			••	•	•	•	x	
H/I	820-850						••	x	

Tab. 1 Ribe Posthuset Bead Deposition. – • = 1 loss/year; x = 5 losses/year. – (After Feveile/Jensen 2006).

The locations of production and intermediary exchange, however, continue to elude modern researchers. Although the regions of primary glass production have been identified, and in some cases excavated²³, beads are rarely recovered from early medieval sites in the Near East. Nevertheless, a Middle Eastern location for bead production is suggested by the appearance of similar beads from the caliphate's other frontiers²⁴. Beads therefore allow researchers to examine how networks operated at different levels, with one set of links joining the emporia of Northern Europe to the production centers of the Near East, and another set of links joining emporia to local and regional networks of distribution and consumption.

Viewing beads as part of these networks takes up the challenge posed by S. Sindbæk for researchers to think about artifacts as nodes in social networks²⁵. By examining patterns of distribution and association, it is possible to reconstruct the relationships that moved these things, discern the circuits that held networks together, and identify moments of change in mode, course, and intensity. Across the links and nodes of Viking Age networks, beads allow for investigations of processes of craft production, material exchange, and conspicuous consumption. By examining these many facets of Viking Age beads, a more nuanced history of urbanism and urban networks can be told.

URBAN PRODUCTION AND EXCHANGE

Ribe provides the best opportunity to examine how these networks formed. I rely here on the work of C. Feveile and S. Jensen in their analysis of the Posthuset site²⁶, which they divided into phases spanning 705 to 850. Glass beads and tesserae from this site allow us to identify five basic phases of activity (**tab. 1**).

Phase 1 – Before Ribe, 630-705

Before the occupation of Ribe, regional patterns of beads are best known through the chronology of beads from burials on Bornholm²⁷, with parallels apparent in the chronology of beads from Frisian sites as well²⁸. A Migration-Period phase with red and orange beads was replaced by a blue and white phase around 630. This adoption of a new set of beads seems to have preceded the occupation of Ribe, suggesting that the craftworkers who established themselves at Ribe did so in part as a response to an elite demand for newly made beads.

Phase 2 – Early Production, 705-760

During the earliest phases in Ribe between 705 and 760, an initial period of local bead production escalated into large-scale work. Åhus in southern Sweden shows a similar pattern²⁹. Groß Strömkendorf/Reric in northern Germany, Paviken on Gotland, and Helgö in central Sweden should also be counted as places of early bead production, though not on the same scale³⁰. By comparison, western emporia have yielded few beads. Only Dorestad has produced more than twenty³¹.

Nonetheless, even Dorestad pales in comparison to Ribe. From the earliest phase of the Ribe Posthuset site (Phase B, c. 705-725), excavators recovered 486 beads from a trench measuring 70 m². A similar density of finds across the 47 ha of the Dorestad site would have resulted in millions of beads. In fact, excavators have recovered a modest 395 beads. In part, this disparity results from the rapid excavations of Dorestad and incomplete cataloguing of early finds, contrasted against the more recent and thorough excavations at Ribe. However, even in the recent excavations of the Veilingterrein area of Dorestad, where beads were carefully collected and catalogued, 30 beads were registered from an area of 1.7 ha³². This density of 0.002 beads per square meter pales in comparison with the seven beads per square meter excavated from the earliest phases of Ribe. Traders from Dorestad who traveled to Ribe would have encountered people who had adopted materially different ways of presenting themselves, and who secured these material markers of difference by fostering exchange that were ultimately reaching toward the Mediterranean or Middle Eastern sources of glass.

Phase 3 – Production and Exchange Decline, 760-780

Following this initial period of booming production, Ribe – or at least the area of the Posthuset site – experienced a temporary decline. Between 760 and 780, artifacts of most types were lost less frequently than in earlier periods, and tesserae and beads became especially scarce.

Phase 4 – Production Revives, 780-790

In the 780s, tesserae began to appear again, and local bead production revived. The so-called Ribe beads, which dominated earlier phases, disappeared, suggesting that many early bead makers had moved on or passed away. Wasp beads, however, became common. A small number of these beads had appeared during earlier phases, suggesting that at least one bead maker had remained active throughout the period of decline. Meanwhile, the first imported beads began to arrive.

Phase 5 – Exchange Links East, 790-800

In the 790s, imported beads began to arrive in substantial numbers, while wasp beads and tesserae went into decline. This evidence indicates that the people of Ribe could still access glass to make beads, but they opted to import finished beads instead. In comparison, imported segmented beads had begun to appear on Bornholm earlier around 775³³. The earlier appearance of segmented beads on Bornholm suggests that the community at Ribe was again responding to elite demand, following changing elite preferences rather than preceding them. J. Callmer, in a study that included blue segmented beads from this period, plotted

Period	Hypothetical Dating	Wound	Segmented	Drawn Cut	Rock Crystal/ Carnelian	Other/ Unknown
BP I	790-820	85 %	2 %	0 %	0 %	13 %
BP II	820-845	37 %	43 %	1 %	2 %	17 %
BP III	845-860	12 %	10 %	71 %	1 %	6 %
BP IV	860-885	39 %	2 %	7 %	39 %	13 %
BP VII	885-915	71 %	5 %	4 %	0 %	20 %
BP VIII	915-950	52 %	2 %	0 %	26 %	20 %
BP VI	950-960	4 %	10 %	78 %	2 %	6 %
BP IX	960-980	12 %	52 %	1 %	21 %	14 %
BP XII	980-1000	64 %	6 %	0 %	10 %	20 %
Average	790-1000	35 %	15 %	26 %	11 %	9 %

Tab. 2 Callmer Bead Periods. – (After Callmer 1977).

their course northward along the Danube, suggesting that many other early imports arrived via this route as well³⁴. In earlier periods, gift exchange had moved beads along these routes³⁵. The relationship between the Ribe and Bornholm chronologies deserves further studies before any conclusions may be made, but at present, it appears that urban networks were developing to tap into networks already established through elite gift exchange.

Phase 6 – Exchange Dominates, 800-850

After about 800, bead production slowed in Ribe, and almost all beads were eastern imports. Beads from other sites reinforce the impression that the role of emporia shifted from production to exchange around 800, accompanied by a shift in locations: Helgö was superseded by Birka, Åhus faded as new settlements appeared across the Baltic at Wolin and Truso, Groß Strömkendorf/Reric was superseded by Hedeby, and a new community took shape at Kaupang in Vestfold. While the early emporia had been sites of bead production, the new emporia were dominated by beads imported from the east³⁶.

Phase 7 – Mixed Regimes, 850-1100

The later chronology of beads is more difficult to establish. For Ribe and other urban sites, layers dating from the Viking Age have typically been truncated by agriculture or other activities, and an anticipated volume on Birka's later stratigraphy remains in preparation. Nevertheless, Heimdalsjordet near Kaupang, Fröjel on Gotland, and Sigtuna near Stockholm all provide examples of late Viking Age emporia where bead production did not occur on a large scale. Of these sites, Sigtuna provides a rare example of a site where beads might have been produced, notably at the same location as the minting of money³⁷.

Callmer has shown that burials can offer a bead chronology for these periods where stratified finds are rare³⁸. Among the 299 burials in his catalog, an interesting mirror image appears (**tab. 2**). The dates presented in this table are Callmer's hypothetical dates developed for the catalogued assemblages, although Callmer also conducted a broader survey of Viking Age necklaces and suggested a set of revised dates

Period	TPQ	Hypothetical Dating	Revised Dating
BP I		790-820	before 820
BP II	ca. 805	820-845	820-845
BP III	814	845-860	845-875
BP IV	871	860-885	875-905
BP VII	913	885-915	905-935
BP VIII	913	915-950	935-955
BP VI	925/926	950-960	955-965
BP IX	951-954	960-980	965-990
BP XII	991	980-1000	990-1000

Tab. 3 Callmer's Bead Chronologies. – (After Callmer 1977, 76-77. 167-173).

(**tab. 3**). This revised chronology pushes many of the dates in the later Viking Age back by about a decade, based primarily on the assumption that because more necklaces could be associated with earlier periods, those periods must have lasted longer. The revised dates, however, suggest that necklaces were buried at a fairly constant rate until furnished burial abruptly stopped around the year 1000. The hypothetical dates might be preferable for suggesting that furnished burial was instead gradually abandoned over the course of the later Viking Age.

Regardless of the precise dates, however, it is clear that Near Eastern imports dominated buried necklaces throughout the Viking Age. Segmented and cut beads appeared somewhat later in graves than in towns and on Bornholm. These were replaced by rock crystal and carnelian, indicating an eastward shift in exchange toward the sources of rock crystal and carnelian in Iran and India. This was followed by a return to segmented and cut beads, and finally wound beads, before beads and grave goods were finally abandoned. It is certainly possible that other crafts, industries and commodities could tell different stories about the shifting balance between exchange and production at urban sites, but beads provide a starting point. There is an abundance of evidence for bead making at certain times and places, such as in early Ribe, but at other times and places, such as in 9th century Kaupang, imported beads appeared in large numbers while bead making does not appear to have been a prominent craft³⁹.

Norway provides a particularly interesting case. With regard to beads, the emporium of Kaupang fell into apparent decline in the late 800s, with only about 200 of 4000 excavated beads datable to the 900s⁴⁰. Nevertheless, new bead styles continued to be imported into or made in Norway, some of which have few if any parallels elsewhere in Scandinavia. Callmer types with distinctly Norwegian distributions during the later Viking Age include types B066 (predominantly BP VII and VIII), F020 (BP VI only), and F040 (BP VI only). The appearance of these beads in Norway even as Kaupang fell into decline suggests that urban networks sometimes complemented or perhaps competed with non-urban networks of production and exchange.

URBAN SITES AND CENTRAL PLACES

Debates about the conceptualization and classification of the new Viking Age urban networks are complicated by uncertainties about what happened to the networks that preceded the Viking Age⁴¹. At least initially, the urban networks of Northern Europe competed with or complemented other networks, probably based on gift exchange and using central places as their hubs⁴². At many of these sites, plowing has

removed Viking Age layers, leaving questions about what happened to them as the urban networks began to develop. Beads from the plow soil can nonetheless help us address at least three aspects of these central places: the duration of occupation, the areas of use, and the activities that occurred.

Among these sites, I have conducted preliminary work analyzing the beads of Sorte Muld on Bornholm and Uppåkra in southern Sweden. It is possible to map where beads have been found, and in some cases, these beads indicate general periods of use. With further analysis of how distributions changed over time, it should be possible to plot which areas of the site were used most intensely during different periods.

Overall, it appears that at least these two sites were rarely if ever used as locations for glass working and bead production. Throughout their long periods of use, they accumulated exotic imports, and this continued on a modest scale into the Viking Age. I interpret this as evidence that central places only gradually lost their role in the networks of long-distance exchange as emporia took shape over the course of the 700s. Through the later Viking Age, as beads continued to appear sporadically, these sites, insofar as they survived, came to depend increasingly on emporia as their sources of material culture and exotic wealth.

URBAN IDENTITIES

The question of whom these sites were servicing is an important one, and beads help provide an answer. As mentioned before, northern emporia were sites for bead production and import, whereas beads were generally absent among Western European sites. This lack of beads is not surprising. During the 600s, women in the west had adopted new dresses that clasped in the middle of the chest, rather than at the shoulders. As they abandoned shoulder brooches, they abandoned necklaces as well. Thus, women no longer wore beads as emblems of their status or identity, and if they wanted to wear something like a necklace, they wore a Byzantine-style collar instead, sometimes embellished with religious pendants⁴³.

Women in Northern Europe, meanwhile, continued to wear brooches and beads⁴⁴. Since there is no evidence for bead making at any western site, the beads found at Ribe and the Baltic emporia indicate that the seasonal workers who made them were not western-based.

By the 900s, bead making began to spread again into Western Europe in the areas that fell under Norse control. At York in northern England, for example, there is minor evidence for glasswork, and a fair amount of evidence for beadwork in amber⁴⁵. York is known to have been a center for Norse activity in the Danelaw, and these finds give the impression that beads – whether produced in or acquired through urban networks – continued to serve as markers of Norse identity. This suggests in turn that material manifestations of Norse identity implied a degree of attachment to the urban networks that linked Northern Europeans with the East.

URBAN HINTERLANDS

If beads help show how Norse material culture was entangled with urban networks, they also help show how far these networks reached. Elite burials which included beads, whether within settlement walls or far from an emporium site, depended on emporia for their glass beads. Beads in these contexts allow consideration of the far reach of early urban networks and the kinds of people that they joined together. Sindbæk has previously illustrated these connections with the example of a woman buried at Ytre Kvarøy in Nordland (Norway) during the late 700s⁴⁶. A second, later case reveals similar connections during the later Viking Age. Around 960, a woman laid to rest in a small cemetery on Hagbartholmen in northern Norway, a short

trip away from the old central place of Borg in Lofoten, near the northernmost edge of where wheat can grow. Nevertheless, she was accompanied by artifacts representing a rich economic life: tools for weaving and reaping, objects crafted from local materials, and traces of long-distance exchange. Among local products, her grave goods included a soapstone vessel, an antler comb, a whalebone weaving sword, and a whetstone of slate. Among long-distance imports, her grave goods included over one thousand beads of glass made in the Near East⁴⁷.

This is the largest assemblage of beads recorded in Callmer's catalogue of 299 Viking Age graves, and it is certainly one of the most exceptional⁴⁸. It falls thirteen standard deviations beyond Callmer's average assemblage size of 50 beads ($\sigma=87.6$). For this burial, Callmer recorded only one or two beads that might have been local products, but he recorded five rock crystal beads, 91 drawn segmented beads, and 1108 drawn cut beads that derived from the Islamic world. All these beads were imported, and the nearest hub of exchange through which these beads would likely have passed is Hedeby in northern Germany, which by the late Viking Age had developed into a focal point for communities across the North Atlantic⁴⁹. This woman's grave provides an example of an elite woman in the northernmost reaches of Norway placing herself within the hinterlands of Hedeby, which provided her with a point of contact for exchanging products from the North Atlantic for those of the Near East.

MEANS OF EXCHANGE

Beads were, therefore, pervasive items during the Viking Age. They were products, they were imports, they were markers of Norse identity, and they were objects that tied networks together. But how did they actually move, and how were they exchanged? Researchers typically treat beads as dress ornaments, although they occasionally consider them as ritual objects as well. Nevertheless, experts on both beads and exchange have raised the possibility that beads might have also functioned as a means of exchange and as a store of wealth⁵⁰.

Before considering the role of beads as a potential means of exchange, it is useful first to consider the ways in which coins were used – while keeping in mind that Northern Europeans only developed into a coin economy over the course of the Viking Age⁵¹. I discern three basic uses of coins. First, coins were used as jewelry and worn as pendants, meaning that sometimes their display value was more important than their monetary value. Second, northern traders often hacked coins into bits, meaning that they valued coins for their weight in silver rather than for their status as minted coins. And third, they melted some coins in order to make coins of their own, suggesting that, at least sometimes, coins were used as part of a monetary economy.

Beads served similar roles. They were certainly worn as jewelry, sometimes together with coins or pendants made from coins. They also appear in contexts where coins are more typically expected, such as in hoards. Furthermore, approximately 600 beads were found in what appears to have been a purse which also contained seven coins, and which fell into Hedeby harbor around 830⁵². The repeated occurrence of beads together with coins suggests that both were treated similarly and functioned similarly over the course of the Viking Age.

The exchange of beads in fact preceded and may have anticipated the hack silver economy of the later Viking Age. Segmented beads began to arrive in bulk in the 790s. Many of these beads had the appearance of precious metals, and a large number could never have been worn. At Kaupang, for example, 61 of 269 intact metal-foil beads (23 %) had faulty perforations, which in many cases would have prevented their use in necklaces (e. g. KHM C52516, C52517, C52519). These segmented beads appear in urban stratigraphic layers over thirty years before their proliferation in graves (Callmer Phase II, c. 820-845; **tab. 2**), suggest-

ing – perhaps with the exception of the southern Baltic, discussed under Phase 5, above – segmented beads were initially imported for uses other than elite consumption and display. These beads could be broken apart at their narrow waists, or they could be reused as sources of glass, after splitting them into pieces, making them useful as a commodity money in instances of small-value exchange. Fragments of both kinds proliferate at emporia sites, suggesting that these beads were in fact used like hack silver well before hack silver came into use. At Kaupang, for example, segmented beads first appeared in Site in Period I, c. 805/810, while hack silver first appears later during Site Phase II, c. 820-840/850⁵³.

Beads therefore exemplify imports treated both as stores of value and as objects of display. They flourished as common objects of exchange before silver became a dominant means of exchange in the mid-Viking Age; and they facilitated practices of hacking exchange items apart and measuring them by weight, preparing the way for hack silver to become a common means of exchange among later generations.

DIRECTIONS OF EXCHANGE

If beads were a common means of exchange that passed through urban nodes and into urban hinterlands, they also help us reconstruct directions of exchange. This is true both for imported beads and for ones made locally from imported glass. Beads, and especially glass beads, are evidence of the furthest reaches of northern exchange networks, with at least one glass bead reaching the North American site of L'Anse aux Meadows⁵⁴, and their distributions also allow study of the routes they used to reach the north. These relationships have been explored most deeply by J. Callmer, although his observations must be contextualized by parallel and subsequent work⁵⁵.

In the 700s, most beads were made from imported glass. It is difficult to tell whether this glass was obtained from Dorestad and Francia, or from Groß Strömkendorf/Reric and the Danube. Just before 800, imported beads began to arrive, and at least blue segmented beads traveled through Central Europe⁵⁶. Later styles arrived along routes from further east, suggesting that the long-distance networks of the first northern emporia had been connected to many routes pointing south, but by about 800, these routes constricted toward a single eastern trunk. At the same time, the locations of the emporia were repositioned to accommodate the routes of eastern exchange.

During the 860s, beads indicate a major expansion of this trade, as new rock crystal and carnelian beads began to arrive. This shift from glass beads to beads of carnelian and rock crystal responded to a fragmentation of the Abbasid caliphate that made glass difficult for northern traders to obtain. The Samanid emirs in Persia, it seems, took the initiative to seize control of the northern trade, supplying rock crystal and carnelian beads drawn from Iran and India. This helped open routes between Northern Europe and Central Asia, where old coin stock from the 700s had continued in circulation and now began to move north. These old coins probably began to appear in Scandinavia in the mid-800s, as C. Kilger has shown⁵⁷, and they were supplemented by new silver coins being minted in the Islamic east. Beads seem to verify Kilger's analysis of the numismatic evidence.

During the later Viking Age, beads became more diverse, suggesting that they had lost their role as a primary means of exchange. This was instead the period of the silver fever, as W. Duczko has called it⁵⁸. By the late 800s, therefore, glass beads no longer served as bulk goods useful for tracing the routes of long-distance exchange that connected urban networks in the north to production centers in the Near East. Their appearance gradually rarified and styles became more diverse as beads began to arrive more commonly singly or in small batches. By 1100, beads had fallen out of use across much of Scandinavia, with the women of Gotland providing the most notable exception.

CONCLUSION

In sum, this analysis of glass beads shows that there was no such thing as a »rural viking«. Beads complement more local resources like antler to reveal how urban networks saturated northern societies with eastern materials beginning in the 700s⁵⁹. These networks expanded and intensified to provide eastern goods to the communities responsible for the first Viking raids in the 790s, and the beads that arrived through the urban networks of northern Europe spread with the Norse diaspora that began with the Viking camps of the 830s and 840s. Urban networks were further elaborated to accommodate increased traffic in the 860s, as Viking activity became large scale with the landfall of the Great Heathen Army in England.

Beads, in general, help contextualize much of the work seen elsewhere in this volume. J. Barrett, in a recent paper⁶⁰, noted that the activities that shaped this period generated an interdependence of war, trade, and identity, and that they created a dialectic between local identities and long-range connections. Beads exemplify how a single group of objects might be entangled with each of these key aspects of the Viking Age, and their close connection to the urban networks of the Viking Age reinforces the impression that these networks underlay the key developments of this period.

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Notes

- 1) Callmer 1977; 1991; 1995; 1997; 2003; 2018.
- 2) Callmer/Henderson 1991. – Sode 2004. – Andersen/Sode 2010. – Sode/Feveile/Schnell 2010.
- 3) Høiland Nielsen 1987; 1997. – Jørgensen/Nørgård Jørgensen 1997, 24-35.
- 4) Hreiðarsdóttir 2005. – Ambrosiani 2013, 58-63. 226-232. – O’Sullivan 2013. – Hickey 2014.
- 5) Friedrich 2016, 92-95. – Delvaux 2017.
- 6) Barrett 2008, 678. – Sindbæk 2011, 57-59. – Ashby 2015, 90-91.
- 7) Curta 2007.
- 8) Jørgensen/Nørgård Jørgensen 1997. – Ewing 2006. – Manering 2017.
- 9) Vallet 1996. – Zeller 1996. – Owen-Crocker 2004. – Walton Rogers 2007.
- 10) Lindblom 1993. – Rasmussen/Lønborg 1993.
- 11) Thedéen 2008.
- 12) Staecker 2009.
- 13) Callmer 2006.
- 14) Delvaux 2018.
- 15) Callmer 1977.
- 16) Callmer/Henderson 1991. – Sode 2004.
- 17) Råhlander 2017, 4.
- 18) Callmer/Henderson 1991, 145. – Steppuhn 1998, 91-92.
- 19) Sode 2004, 84-86. – Kronz et al. 2015. – Råhlander 2017, 4.
- 20) Andrae 1973. – Sode 2004, 95-99. – Wiker 2007. – Sode/Feveile/Schnell 2010.
- 21) Hepp 2007.
- 22) Trotzig 1988. – Johansson 1997.
- 23) Freestone/Greenwood/Gorin-Rosen 2002. – Whitehouse 2003. – Degryse et al. 2014. – Degryse 2017.
- 24) Robertshaw et al. 2009. – Cissé et al. 2013.
- 25) Sindbæk 2013.
- 26) Feveile/Jensen 2006.
- 27) Høiland Nielsen 1987; 1997.
- 28) Majchczack/Kronz, this volume.
- 29) Callmer/Henderson 1991.
- 30) A. Lundström 1981. – P. Lundström 1981. – Pöche 2005.
- 31) Dijkstra 2012, 318-328. – Isings 2015. – Langbroek 2021.
- 32) Dijkstra 2012, 318-328.
- 33) Høiland Nielsen 1987; 1997.
- 34) Callmer 1991.

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Zusammenfassung

Diese Studie untermauert die Ansicht, dass städtische Netzwerke den Entwicklungen der Wikingerzeit vorausgingen, sie begünstigten und ein wesentlicher Bestandteil waren. Ausgehend von Perlen aus Ribe wird in diesem Beitrag die Entstehung städtischer Netzwerke vor der Wikingerzeit untersucht. Die Perlen deuten darauf hin, dass sich Ribe im 8. Jahrhundert in Reaktion auf die Nachfrage der ländlichen Eliten zu einem Zentrum kunsthandwerklicher Produktion entwickelte. Nach einem Rückgang der Perlenproduktion dominierten ab 790 die Importe aus dem Osten, wodurch die nördlichen Reichsstädte eine neue Rolle als Zentren für den Fernhandel übernahmen, während gleichzeitig erste Berichte über gewaltsame Auseinandersetzungen mit den Wikingern im Westen aufkamen. Anhand der Perlen aus der Wikingerzeit lässt sich zeigen, wie diese urbanen Tauschnetzwerke frühere, um zentrale Orte herum aufgebaute Netzwerke, die erst allmählich an Bedeutung verloren, ergänzten oder mit ihnen konkurrierten. Die Perlen, die durch die städtischen Netzwerke zirkulierten, wurden indes zu Kennzeichen sozialer Verbindungen in Skandinavien und zwischen den Gemeinschaften der nordischen Diaspora. Perlen spielten in den Städten auch eine wirtschaftliche Rolle, wobei die Perlen aus dem Osten offenbar die spätere Verwendung von Hacksilber als Tauschmittel vorwegnahmen. Perlen können ebenso wie Silber dazu herangezogen werden, die sich verändernden und diversifizierenden Austauschströme aus dem Osten zu rekonstruieren. Perlen unterstreichen somit die Bedeutung städtischer Netzwerke während der gesamten Wikingerzeit und zeigen, dass es so etwas wie einen »ländlichen Wikinger« (»rural viking«) nicht gab.

Summary

This study reinforces the view that urban networks preceded, precipitated, and were integral to the developments of the Viking Age. Beginning with a focus on beads from Ribe, this paper examines the rise of urban networks before the Viking Age. Beads indicate that Ribe developed in the 700s as a center for craft production in response to demand from rural elites. Following a downturn in bead production, eastern imports dominate from 790, marking a new role for northern emporia as centers for long-distance exchange simultaneous to the first records of viking violence in the west. Beads from the Viking Age show how these urban exchange networks complemented or competed with earlier networks built around central places, which only gradually diminished in importance. The beads which flowed through urban networks meanwhile became a signal of social connections in Scandinavia and among the communities of the Norse diaspora. Beads also served an economic role in urban centers, with eastern beads apparently anticipating the later uses of hack silver as a means of exchange. Beads might also be used like silver to help researchers reconstruct the shifting and diversifying flows of exchange from the east. Beads thus underline the significance of urban networks throughout the Viking Age and indicate that there was no such thing as a »rural viking«.