The Hedeby Coinage

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This article deals with the early Nordic pictorial coinage, in all probability struck in Hedeby in the first half of the 9th century. The focus is on the interpretation of its role in societal strategies, since some of the coins reproduce the coins of the Carolingian empire while others expose an iconographic universe of Nordic symbolism. One of these symbols, which is examined somewhat closer, is the ship.

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INTRODUCTION

This article deals with a numismatic source material, partly determined by a wish to locate some contextual factors that could be considered relevant to the understanding of the iconographical universe of Nordic Viking Age coinage.

The comprehension of the archaeological record is dependent upon several factors, where the specialized empirical knowledge of the specific area of source material is one. Another is the contextual outlook and the level at which the concept of society is recognized. A third and often an underrated point, is the theoretical standpoint, whether it is conscious or not.

The theoretical standpoint which is advocated here is that of the meaningladen material culture. This sweeping expression could doubtlessly be adopted to include several rather different opinions, but of particular interest in this case is the intentionality of manufacture. The material culture, of which the archaeological record is a part, is seen as actively participating in societal strategies. Although this may have been proposed many times before, stating it serves to reformulate the aim of research. Compared to much of traditional archaeology and numismatics, where a great deal of effort has been put into describing and systematizing materials, the focus of research is sought elsewhere. There is no contradiction between the demand for empirical thoroughness and theoretical insight. Instead, it is time to take thorough and competent documentation for granted, and not regard it as the ultimate goal of the scholarly effort.

We will eventually come to the question of definitions, to define the meaning of "research", or maybe even "scientific research". There will always be a need to answer certain source-critically related questions which are extremely time-consuming to penetrate. This, however, is not an argument for the old positivist ideals of value-free documentation. Instead, it calls for theoretical consciousness on behalf of the user since it affects both content and presentation. In spite of the fact that they themselves have refrained from further analysis, empiricists have often produced valuable material exposées, quite suitable for further interpretations. This is not because there exists a "total" documentation, but because sometimes, though certainly not always, older data-recording concepts coincide with the need of other questions. At the extreme opposite end, it has been proposed that the archaeological material is not usable for any other questions than those formulated by the excavator (Johansen 1983:224). That thesis can be considered refuted by now.

BACKGROUND

The so-called "Birka coins" or "Hedeby coins" is a source-material that has attracted the attention of, among many others, maritime archaeologists and historians for a long time. This is due to the fact that approximately 15 of these Nordic coins depict ships, in a more or less conventionalized manner.

The present study can be seen as an effort to demonstrate the interpretative capability of older documentation of archaeological material. It was originally presented as a part of a more extensive work (Varenius 1992), but since that consisted of several case-studies, of which this was one, it seems possible to treat this material separately. The underlying aim at that time was to reach a deeper understanding of the cultural convention "ship" during the Viking Age, and how that convention was repeatedly used in different societal strategies. It has been transformed into several rather different kinds of media, ideologically determined by the need in varying contexts. Other examples than coins are Gotlandic picture-stones, rune stones, scaldic poems, "grafitti" etc.

The ambiguous geographical name for the coin, Birka/Hedeby, is due to a long discussion, with occasional nationalistic tendencies, concerning the location of the mintingcentre. Swedish scholars tended to take the discovery of altogether about 30 early Nordic coins at Stolpe's Birka-excavations in the 1870s as proof that Birka was the centre of production (cf. Lindqvist 1926). An important argument was the conviction that there existed a flourishing commercial trade in the Baltic during the Viking Age and that Birka had a leading administrative position in it.

Already at the turn of the century, Hauberg, a Danish numismatist, pointed out that apart from the Birka finds, most Nordic coins were concentrated to southern Scandinavia, especially Denmark (Hauberg 1900). He suggested that the mint had been situated in Lund, but did not rule out the possibility that it could have been in Hedeby (in southern Jutland). For a long time, alternately Birka and Hedeby were discussed as possible candidates, until eventually Brita Malmer, with convincing logic, argued that Hedeby was the most probable place for the early Nordic minting (Malmer 1966:182f).

Malmer's method meant that coinsides were classified, divided into three main categories. Her idea of not treating the coin as a whole was motivated by the frequent hybrids, i.e. normally not occurring obverses and reverses (ibid:44). In a later phase of the analysis, different pictures were put together in so-called combination groups, where the ship pictures occur in combination group 3-4. Malmer dated these to approx. 825 AD (ibid:209).

Some of the Hedeby coins are obviously copied from Carolingian types. This is shown by the texts CAROLVS and DORSTAT, which in varying degree of degeneration occur on some of the Nordic coins. It has also been assumed that certain motifs, primarily the "Ray-face" (*Strålans*) and the "Deer" (*Hjort*) (Malmer combination groups 5-6), have been borrowed from Friesland via so-called X-group sceattas (Wodan/Monstertype) (op den Velde, de Boone, Pol 1984:138). Metcalf has suggested, however, that X-sceattas might have been minted in Denmark as well as in Friesland (Metcalf 1984:163f).

The ship pictures have also been connected with the Carolingian minting. There is, for example, a ship on a denar struck in Dorestad during Charlemagne's reign as well as on some of Louis's denars struck in both Dorestad and Ouentovic (Skaare 1976:46) (Fig 1). Exacly how the Carolingian and the Nordic ship-coins relate to each other is difficult to decide, but chronologically they seem quite close. Callmer has questioned the order of Malmer's typologi combination groups 3-6 (pictorial types) as well as their dating to 825-860, and he suggests that the striking of the Wodan/Monster "imitations" began already about 795. He proposes that the ship picture in combination group 4 should be dated to the first or second decade of the 9th century (Callmer 1984:27ff). Should this be accepted, the Nordic ship-pictures would be wholly comtemporaneous with the Carolingian types, which Malmer, after van Gelder (1961), dates to 800-821 (Malmer 1966:63). Callmer, however, speaks of the Nordic shipcoins as "derivates": "A further argument for the possible minting of Scandinavian derivate coins before A.D. 825 may be provided by the important hoard find from Kislaia, district of Smolensk... which dates from the first third of the ninth century. A circulated derivate coin of the boat A1/deer A... was discovered among 673 oriental coins" (Callmer 1984:28).

The societal role of the early coins has been discussed in the literature, but, compared to description and classification, in a rather limited scale. The sceattas, dated to the 8th century (Bendixen 1981:96f), have usually been seen as part of the economic system in long-distance trade (Bendixen 1984:155, Callmer 1984:58). Metcalf goes even further when stating, "that sceattas were freely in use in Denmark as money is no longer controversial" (1984:162). This opinion contrasts strongly with that of Grierson, who saw the Viking society as "a society in which coined money did not even exist and money and the concept of mercantile profit were alike in an embryonic stage" (Grierson 1979:127). It must be remembered, however, that a lot of coin finds have been made since 1959, when Grierson's article was published for the first time.

In polemic with Bendixen (1981) and Galster (1974), Callmer has preferred to view the Nordic coins in the same way as the sceattas, i.e. from a trade perspective: "there can be no doubt that the coinage of North-west European Barbaricum in this period is connected with trading organisation and not with geographically-restricted power" (1984:23). The polemic with the other scholars seems somewhat strange, though, since both have largely the same standpoint as Callmer himself. Bendixen rather stresses that the Danish minter "certainly realized that minting coins could enrich him as well as be useful för trade" (1981:76). However, neither Callmer, Galster nor Bendixen can satisfactorily explain why, and how, the take-over of the *shape* of sceattas necessarily meant the transmitting of meaning-*content*. Even if such a transmitting had taken place on *one* level, how is the further distribution of that knowledge to be understood?

Concerning sceattas, Bendixen has assumed that "certain circles" have been part of an economy using coined money, especially in early Ribe and Hedeby (Bendixen 1981: 77). If the Nordic coins functioned in the same way, one would expect the archaeological context to be more or less the same, but it is not. A majority of the Hedeby coins have been found in hoards or graves and most of them are perforated or equipped with loops in order to be used as pendants. With the help of a Harris-matrix, the 1986 excavation in Ribe has demonstrated the sceatta's obvious link to cultural layers, especially those with evidence of crafts (Frandsen 1989:38).

DISCUSSION OF SHIP-TYPES

Maritime archaeologists, with their special interests, have exploited the iconographical qualities of the "ship coins" primarily as a comparative source when trying to reconstruct shipwrecks, etc. The connection between ships depicted on Nordic coins and ships on the Frankish denars is regularly put forward (Crumlin-Pedersen 1965:122; Ellmers 1979:11; 1985a:192-3; Unger 1980:79). (The latter group is sometimes referred to in the literature as "Frisian coins".) (Fig 1). The most explicit scholar in this respect is probably Ellmers: "When people of Hedeby imitated the coins of Dorestad but changed the type of ship depicted on them from hulc to cog, the hulc obviously played no role in the traffic from the Rhine esturary to Hedeby" (1985:192). Here it is understood not only

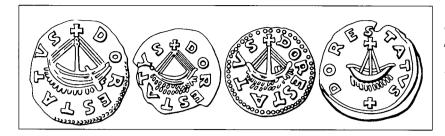


Fig. 1. Frankish denars with ship pictures, struck in Dorestad. Reproduced after Unger 1980.

that the Hedeby coins are copied from the Carolingian coins, but also that these pictures have the same meaning and that they reflect contemporary activities in a realistic way.

There is no consensus, though, on how the pictures should be interpreted. The most difficult issue seems to be the straight-stemmed ship in Malmers types A1 and A2 (Malmer 1966, pl 1)(Fig 3). Malmer has explicitly defined her ship-types: A1 is a ship (boat) with sail and a fish below the keel (bottom); type A2 is a ship with sail and certain "arcs" below the keel; and type B is a ship without sail but with "arcs" below the keel (ibid:47). However, this "objective recording of the typological elements" (my transl.) (ibid:43) has brought together ships of completely different appearances as type A1. Here we find a round-stemmed vessel of indisputable Nordic origin, as well as a straight-stemmed ship with a sharp angle between keel and stems. In Malmer's type A2 there are no ships with markedly round stems.

To Ellmers, all pictures of straight-stemmed ships seem to be cogs and the decisive traits are thus: "a very shallow but broad keel at which stem- and sternpost meet with definite angles" (Ellmers 1985a:188). Crumlin-Pedersen has proposed that there are both Nordic and Frisian ships among the straightstemmed ships (1965:122). Christensen thinks that the Nordic coins depict Nordic ships, generally (1964a:84ff). Haasum rejects the possibility that this could be determined at all from coins, because of their rather stylised character (1974:50). The question is, however, if that is such a hindrance, since most scholars would probably agree that the pictures are symbolical representations; and from a symbolic point of view, it is rather an advantage for the message if the depiction is straight forward and stylised. It is another matter altogether, that it would be easier to extract ship-technological information from the pictures if they were more detailed.

Christensen has convincingly demonstrated that the straight-stemmed ships could very well be of Nordic origin, since Nordic ships with straight as well as round stems occur on loose pieces of wood in the Oseberg find (Christensen 1964a:82f). Straightstemmed ships are portrayed in several media during the later Iron Age, including not only coins and pieces of wood but rune stones, picture stones, everyday utensils like whetstones, etc. In the summer of 1991 an animal bone engraved with a straight-stemmed ship was found in Viking Age cultural layers on Adelsö, Lake Mälaren (Sjösvärd 1991). The iconographical context of the Hedeby coinage indicates that all its ship pictures, A and B, concern Nordic ship-types. Such straight stems are hardly seen in German or Frisian material until the 13th century, some 400 years later.

VIKING AGE COINAGE AS SOCIETAL PHENOMENON

From a Viking Age societal perspective, it is an unjustified limitation to regard the contemporary coins simply as currency for trade purposes (c.f. Hårdh 1978, Thurborg 1989). That is probably one of the least important aspects in an understanding of the Nordic coinage in the 9th century, as well as in the latter part of the Viking Age. In a discussion of a commercial market coinage, a number of concepts concerning power must be introduced, like confidence, guarantee, control and sanctions, all of which presume territorial and personal dominance. Such circumstances may have been at hand in 10th-century England, where minting was a royal prerogative, surrounded by considerable regulation in both striking and exchange (Jonsson 1987: 180f). This deserves special attention since there is reason to believe that if the striking of coins was a royal matter, minting became politically interesting as a way of legitimating, or demanding, power.

The English Ethelred-coinage, around the year 1000, has served as model in the Nordic countries, not only for Olof Skötkonung's mint in Sigtuna, but for other copying as well (Blackburn 1981, Dolley 1981, Dolley and Jonsson 1981, Malmer 1968:156). An awareness of minting as a regalia is in all probability an important prerequisite for, as well as the reason for, maintaining such an issuing. The criterion for regalia is that they are exclusive royal rights, and with the use of false logic the exerciser of regal rights could claim royal dignity (Kings strike coins -I strike coins - I am king). To explain the Nordic pre- or proto-state coinage in terms of "the Vikings... had every reason to produce imitations which were sufficiantly 'coinlike' to be acceptable in trade" (Blackburn 1981: 34) is to severely underestimate the symbolic dimension of minting. Malmer has also questioned whether there was a "real need" (my transl.) for Olof's mint (Malmer 1968: 157f).

Analysis of the large amount of silver that has been found does not support the "trade coin-theory" either. Both coins and other silver have from time to time been pecked and fragmented (Sawyer 1985:159ff). Such measures could rather indicate an "anarchistic" economy without central control. It seems also rather accepted among scholars that the Islamic, German, and English coins encountered in Scandinavia have functioned together with hack-silver (Östergren 1989: 24). Instead of being valued nominally the silver has been weighed, something which corresponds to the balances and weights that have been found in Viking Age settlements (Östergren and Varenius 1985:9). Against this background, it is difficult to understand why copies of these foreign coins should have been regarded as "trade-coins" if the originals were not.

Although not in a constant flow, minted silver was brought into Scandinavia throughout the Viking Age. To judge from what has been found in graves, Islamic coins might have been "imported" since the late 8th century (Linder-Welin 1974:28), around the year 800 at the latest (Callmer 1977:182). Thus, there was obviously contact with coined silver; a "domestic" minting had taken place since about 800, yet there are no convincing arguments that these coins, imported or not, should have been a nominally valued part of a market economy. To this one might add that the majority of Nordic coins with pictures (Sw. *bildrika mynt*) at least temporarily had been taken out of circulation by being used as pendants. In this respect they are similar to other early coins, e.g. the Byzantine coins, which also to a large extent have been equipped with loops and holes (Hammarberg, Malmer, Zachrisson 1989:pl 1-37b).

COINS AND COINAGE AS ACTIVE SYMBOLISM

If we assume that the early Nordic coins primarily have been intended, not for commercial trade and/or exchange purposes but as symbols of power, a closer look at their context and pictorial language should be rewarding. The political situation was tense around the Danish-Frankish border just after 800. The Danish king, Godfred, was actively involved in this situation, mentioned in *Annales Regni Francorum* 808, in connection with an assault on the Abodrites, who

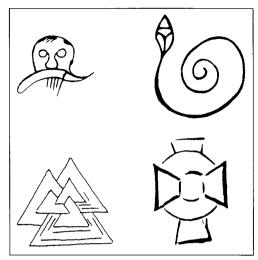


Fig. 2. This interesting set of icons is carved on the tent-stand found in the Oseberg ship. Several of the icons occur on the Nordic coins. Reproduced after Schetelig 1917.

were allies of Charlemagne. Reric (Alt-Lübeck?) was also ransacked, and the merchants were removed and probably brought to Hedeby.

After the assassination of Godfred in 810. the domestic situation seems to have been even more complicated, with internal fights between different pretendents to the throne. In 815 a Frankish force entered Danish soil (Jutland) for a short time, according to the Annales in an attempt to support Harald Klak, one of the rivalling parties. He recognized Louis the Pious as the emperor after Charlemagne's death in 814. Harald was forced to leave his territorial base of power in southern Jutland and seek protection at Louis's court (823 and 826). Here he received the county of Rüstringen in Friesland as a fief, given to him by the emperor (Odelberg 1986:85).

As Klavs Randsborg has pointed out, it is hardly a coincidence that it is in this turmoil we see the start of "Nordic" coinage (Randsborg 1980:166). The coins that Malmer has classified as the oldest are combination groups 1 and 2, which she sees as struck within the Carolingian empire (1966:68, 207). Group 1 contains regular CAROLVS/DOR-STAT-coins before 793. Interestingly enough, in spite of group 2 being technically and chronologically (and geographically?) close imitations of these, the text-bands are literally confused. A conclusion of this might be that the coin-master was illiterate but tried hard to strike coins that resembled group 1 in weight, size and appearance. It is just as probable that these coins have been struck in southern Jutland as within the empire. As just stated, there were different political fractions in the area, with opposite attitudes towards the emperor. From a politico-historical point of view, it is very tempting to ascribe combination group 2 to the group around Harald Klak. In that case, these coins should primarily be regarded as a manifestation of the affinity between the Danes and the Franks and also, as a sign of submission to the emperor.

Against this background, the pictorial types become even more interesting to examine since they express a totally different iconographic dimension. Bendixen has proposed that they may have been struck by Godfred himself, but from a chronological point of view that idea seems less likely. A more plausible assumption might be that they were struck by his sons. They were Harald's opponents and, as such, in need of other, internal Nordic "prototypes" for their coinage. They do not seek resemblance with the chronologically close, Carolingian types, but rather expose an active, Nordic symbolism. The four-legged "deer", as well as the antithetically paired birds and the sailing ships greatly resemble the motifs on the Gotlandic picture stones, especially the older ones, Lindqvist's types A and B (1941). There are also male faces with moustaches, triquetra and snake spirals as accessory motifs on the coins (Sawyer sees the snake spiral on Canute's coins around 1030 as a `national` motif (1988b: 317). The same icons are also known from the Oseberg find (Schetelig 1917a:327) (Fig 2).

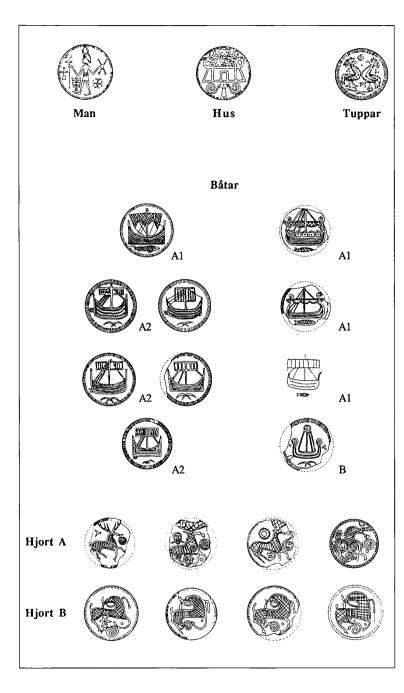


Fig. 3. Nordic pictorial coins from the early 9th century. Classifications and pictures after Malmer 1966. Not reproduced in scale.

important with regards to the meaningcontent of the motifs and the active use of symbolism. It is even possible that it was in this tense situation that the "popular" ship picture with exposed shields was codified for the first time. (This hypothesis fits chronologically with the dating of certain Gotlandic picture stone ships, discussed in Varenius 1992.) It is notable that the oldest ship pictures, and these would be on the coins, (Malmers type A1), are sometimes depicted fairly detailed regarding the rig, and interestingly enough, there are no traces of the extensively discussed sheetnet seen on the picture stones. Instead there are so-called

In 813, the Annales tells us that Godfred's sons, and other leading Danes, were back after being refugees in Sweden (Albrectsen 1976). Their visit there may have been "heflaskurdur", ropes for lifting the sail (Falk 1912:68). This would coincide with the author's opinion that the "sheet-nets" on picture stones are a local, Gotlandic pictorial tradition.

The quantitatively largest group of pictorial Nordic coins (Deer B and Rayface) has obvious similarities with the X-sceattas (Wodan/Monster), a group of motifs that should not have been understood as "Carolingian". Besides, both the deer and the face can be seen in a specific "Nordic" iconographic perspective, as well as together with the more "internationally" distributed sceattas. If the latter have connoted any special meaning, it should have been possible to adjust that to a Nordic world of mental templates. Deer B/Rayface makes altogether 76% of the 109 picture-*sides* of the Nordic

pictorial coins (Malmer 1966:67). Malmer argues that these may have been struck for some time, possibly the second quarter of the 9th century - which makes sense - but that production ceased thereafter for approximately 50 years (ibid:214ff). The reason for this temporary halting may not necessarily have been "general stagnation", but rather that the need for forceful, symbolic manifestations against the empire were no longer felt. On the contrary, it was the Frankish emperors that had to defend *their* land and people against the "barbarians from the North".

English revised by Laura Wrang.

REFERENCES

Albrectsen, E. 1976. Vikingerne i Franken. Odense.

- Bendixen, K 1981. Sceattas and other coin finds. In: *Ribe Excavations 1970-76, vol 1* (Ed M Bencard). Esbjerg.
- Bendixen, K. 1984. Finds of sceattas from Scandinavia. In: Sceattas in England and the Continent. The Seventh Oxford Symposium on Coinage and Monetary History (Eds D Hill and DM Metcalf). BAR British Series 128. Oxford.
- Blackburn, M. 1981. An Imitative Workshop Active during Æthelred II's Long Cross Issue. In: Studies in Northern Coinages of the Eleventh Century, pp 89-111 (Ed CJ Becker). Det Kongelige Danske Videnskabernes Selskab, Historisk-filosofiske Skrifter 9:4. Kbn.
- Callmer, J. 1977. Oriental Coins and the Beginning of the Viking Period. *Fornvännen*, pp 175-185. Stockholm.
- Callmer, J. 1984. Sceatta problems in the light of the finds from Åhus. Scripta Minora 1983-1984. Kungl. Humanistiska Vetenskapssamfundet i Lund. Åhus.
- Christensen, A.E. 1964. Birka-Hedebymyntene som kilde til skipets historie på 800-tallet. Norsk Sjöfartsmuseum 1914-1964. Norsk Sjöfartsmueums skrift 41. Oslo.
- Crumlin-Pedersen, O. 1965. Cog-Kogge-Kaag, træk av en frisisk skibstypes historie. *Handels*og Söfartsmuseet på Kronborg. Årbog 1965, pp 81-144. Helsingör.

- Dolley, M. 1981. Imitation and Imitation of Imitation:Some Problems Posed by the non-English Helmet Pennies with the Name of Æthelred II.
 In: Studies in Northern Coinages of the Eleventh Century, pp 89-111 (Ed CJ Becker). Det Kongelige Danske Videnskabernes Selskab, Historisk-filosofiske Skrifter 9:4. Kbn
- Dolley, M. and Jonsson, K. 1981. Imitative Anticipation: Yet another Dimension to the Problem of Scandinavian Imitation of Anglo-Saxon Coins. In: *Studies in Northern Coinages of the Eleventh Century*, pp 89-111 (Ed CJ Becker). Det Kongelige Danske Videnskabernes Selskab, Historisk-filosofiske Skrifter 9:4. Kbn.
- Ellmers, D. 1979. The Cog of Bremen and related boats. In: Archaeology of Medieval Ships and Harbours in Northern Europe, pp 1-15. BAR International Series 66 (Ed S McGrail). Greenwich.
- Ellmers, D. 1985. The Bremen Cog and Related Finds. In: 5th International Congress of Maritime Museums. Proceedings 1984, pp 188-197. (Ed J Haarman). Hamburg, Lübeck & Bremerhaven.
- Falk, H. 1912. *Altnordisches Seewesen*. Wörter und Sachen IV. Heidelberg.
- Frandsen, L.B. 1989. Trade, Coins and Foreign Influences During pre-Viking and Viking Age Ribe. In: Coins and Archaeology. *Medieval* Archaeology Research Group: pp 37-42.

Proceedings of the first meeting at Isegran, Norway 1988. (Eds H Clarke and E Schia). BAR, International reports 556. Oxford.

- Galster, G. 1974. Kong Godfred. Nordisk numismatisk unions medlemsblad. Januari 1974. Stockholm.
- Grierson, P. 1979 (1959). Commerce in the Dark Ages: a critique of the evidence. In: *Dark Age Numismatics*, selected studies. London.
- Haasum, S. 1974. Vikingatidens segling och navigation. Theses and papers in North European Archaeology 4. Stockholm. Diss.
- Hammarberg, I., Malmer, B., Zachrisson, T. 1989. Byzantine coins, found in Sweden. Commentationes de Nummis Saeculorum IX-XI. In: Suecia Repertis. Nova Series 2. Kungl. Vitterhets Historie och Antikvitets Akademien. London.
- Hauberg, P. 1900. Myntforhold og Udmyntninger i Danmark indtil 1146. Det Kongelige Danske Vidensk. Selskabs Skrifter 6. Kbn.
- Johansen, A.B. 1983. Arkeologiens teori og data. Fornvännen, pp 212-225.
- Jonsson, K. 1987. The New Era. The reformation of the late Anglo-Saxon coinage. Commentationes de nummis saeculorum IX-XI. In: Suecia repertis, Nova series 1. Kungl. Myntkabinettet, Kungl Vitterhets Historie och Antikvitets Akademien. Stockholm. Diss.
- Linder Welin, U.S. 1974. The First Arrival of Oriental Coins in Scandinavia and the Inception of the Viking Age in Sweden. *Fornvännen*, pp 22-29. Stockholm.
- Lindqvist, S. 1926. Birkamynten. Fornvännen, pp 307-334.
- Malmer, B. 1966. Nordiska mynt före år 1000. Acta Archaeologica Lundensia. Series in 8[°], nr 4. Diss.
- Malmer, B. 1968. Mynt och människor. Vikingatidens skatter berättar. Stockholm.
- Metcalf, D.M. 1984. Sceattas as a measure of in-

ternational trade. In: *Sceattas in England and the Continent*. The Seventh Oxford Symposium on Coinage and Monetary History (Eds D Hill and DM Metcalf). BAR British Series 128. Oxford.

- Odelberg, E. 1986. Övers. av Rimberts Vita Anskarii (Anskars liv). Stockholm.
- Randsborg, K. 1980. The Viking Age in Denmark. The Formation of a State. London.
- Sawyer, P. 1985. Kungar och vikingar. Norden och Europa 700-1100. Stockholm.
- Sawyer, P. 1988. Da Danmark blev Danmark. Fra ca år 700 till ca 1050. Gyldendal og Politikens Danmarkshistorie, Bind 3 (Ed O Olsen). Kbn.
- Schetelig, H. 1917. Skipet. In: *Osebergsfunnet I*, pp. 283-366 (Ed AW Brögger). Kristiania.
- Sjösvärd, L. 1991. Grävningar på Adelsö.*Gjallarhornet*. Svenska Arkeologiska Samfundet. Stockholm.
- Skaare, K. 1976. Coins and coinage in Viking Age Norway. Oslo - Bergen - Tromsö.
- Unger, R.W. 1980. The Ship in the Medieval Economy 600-1600. Montreal.
- Varenius, B. 1992. Det nordiska skeppet. Teknologi och samhällsstrategi i vikingatid och medeltid. Stockholm Studies in Archaeology 10. Diss.
- op den Velde W., de Boone W.J., Pol A 1984. Sceatta finds from the Low Countries. In: Sceattas in England and the Continent. The Seventh Oxford Symposium on Coinage and Monetary History (Eds. Hill and D M Metcalf). BAR British Series 128. Oxford.
- Östergren, M. 1989. Mellan stengrund och stenhus. Gotlands vikingatida silverskatter som boplatsindikation. Theses and papers in archaeology 2. Visby. Diss.
- Östergren, M., Varenius, B. 1985. Den vikingatida hamnen i Burs. Meddelanden från Marinarkeologiska Sällskapet 1985:1, pp 8-11. Stockholm.