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VIKING WORLD



# THE HOARDING VIKINGS

GITTE T. INGVARDBSON

# The Hoarding Vikings

This book investigates whether Viking hoards leave behind traces of the people who deposited them and the reasons for doing so. The focus is on the Viking-Age hoards of the Danish island of Bornholm in the Baltic Sea, a unique find group in both quantity and quality.

The large number of excavated Bornholm hoards enable the inclusion of the archaeological context on an unprecedented scale. This book explores how hoards fulfilled many different purposes and Bourdieu's theory on capital and field forms the theoretical frame for a multi-contextual analysis of the hoards' relation to the economic, social, cultural, and ritual fields. A fundamental principle of the methodical approach is that all parts of the hoards are equally important for interpretation. It is in the interaction between archaeological and numismatic data, between the objects' production and circulation data, and between the accumulation and deposition data, that the functions of the hoards appear. This holistic analytic model illuminates how and by whom the hoards were accumulated and deposited, theorising that the motivations for purpose of depositing different hoard types vary and that these motivations are reflected in the deposition contexts. Besides describing the acts and actors that influenced the accumulation and deposition of silver, the book also examines how hoards influenced Viking-Age people and society.

Demonstrating that the motivation behind the accumulation and deposition of hoards was multifaceted, *The Hoarding Vikings* is for researchers and students of Viking archaeology.

**Gitte Tarnow Ingvardson** is Curator of the Coin Cabinet at the Historical Museum, Lund University. As an interdisciplinary numismatist, her research and published works combine numismatics and archaeology, linguistics, museum history, urban history, marine archaeology, and natural sciences. This book is based on her doctoral thesis on the archaeological contexts of Viking-Age hoards.

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# **The Hoarding Vikings**

**Gitte T. Ingvardson**



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Designed cover image: End fitting for silver chain from the Smedegård NØ hoard deposited after 1152. The shores of Bornholm in the background.  
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# Contents

<i>List of figures</i>	<i>vi</i>
<i>Preface and acknowledgments</i>	<i>xv</i>
1 Bornholm: a treasure island	1
2 The multi-causal hoards	11
3 Identifying Bornholm's hoards: content, character, and chronology	31
4 Classification of production, circulation, and distribution data	73
5 Silver flows: analysis of production data	87
6 Stab, bend, and cut: analysis of circulation data	124
7 Containers, structures, and sites: analysis of deposition data	155
8 The hoards in local and regional contexts	211
9 The hoarding Vikings	236
<i>Catalogue</i>	<i>244</i>
<i>Appendix 1: divergent coins and closing coins</i>	<i>285</i>
<i>Appendix 2: traces of trade and crafts</i>	<i>294</i>
<i>References</i>	<i>299</i>
<i>Index</i>	<i>315</i>

# Figures

- 2.1 An interesting example of secondary treatment resulting in a modified coin is this Samanid dirham found at the Kobbegård site. The coin is broken, perforated along the fragmented edge, and stitched together with silver thread. The intention behind this is not immediately clear, for it does not enhance the economic potential of the coin (whether weighed or counted), and may instead represent a social or symbolic action which present-day scientists are unable to decode. Find no. BMR 3792x1. 14
- 3.1 Aerial photograph showing the distribution of the Blykobbegård hoard. It is clear that the distribution of the hoard has been influenced by agricultural activities. 37
- 3.2 Objects from the Ahlesminde hoard. The three gold coins are extremely rare and include (from the top) a denarius struck for Archbishop Anno II (1056–1075) of Cologne, and two dinars struck for the Fatimid Caliph al-Mustansir (1036–1094), one from Misr (Egypt) in 1038/1039, and one from al-Mahdiya (Tunisia) in 1060/1061. A solid gold ring and a silver belt buckle with a dragon head represent two personal objects deposited in the hoard. 40
- 3.3 Aerial photograph showing the distribution of the Dalegård hoard. Three gold objects (yellow circle) form a line, following the ploughing direction, and may have been ploughed out from the hoard's deposition area. Black star: deposition place, grey circle: silver coin, red rhomboid: silver object, yellow circle: gold object, blue triangle: weight, and green square: bronze object. 42
- 3.4 Baltic-Finnish bronze fire-steel with an iron edge. The fire-steel was found in the distribution area of the Gyldensgård SV hoard and was possibly deposited in the hoard. Find no. BMR 3194x215. 43
- 3.5 The distribution of silver, bronzes, and weights at the Kannikegærdet site. North of the hoard's distribution area, there are two fragments of a trefoil brooch of Bornholm type (see section 5.5), and to the south is a silver arm-ring. The objects are not interpreted as part of the hoard because of the large distance

- between the deposit area and jewellery. Black star: deposition place, grey circle: silver coin, red rhomboid: silver object, blue triangle: weight, and green square: bronze object. 44
- 3.6 Arm-ring and punch found at the Kannikegårdet site. The rosette motif of the punch is repeated on the bracelet, indicating that silversmithing took place at the site. Finds nos. BMR 2292x30 and x122. 45
- 3.7 Bronze pendant with traces of gilding. The jewellery was found in the distribution area of the Pæregård hoard and may be a rare example of bronze being deposited in the silver-dominated hoards. Find no. BMR 1083x13. 47
- 3.8 Four gold objects which were likely deposited in the Store Klintegård hoard. Top: Possibly fragments of the same decorative plate with a Christian motif. Bottom left: Fragmented Berlok bead. Bottom right: Fragment of gold ingot. Finds nos. BMR 2758x49–51 and x86. 49
- 3.9 Shield amulet found at Holmegård (BMR 3235) in Østermarie parish, Bornholm. The Kufic writing on the handle of the amulet reveals that it was transformed from an Islamic coin. Writing or other motifs are not visible on the shield. 57
- 3.10 Model illustrating the method used in this survey. The pie chart illustrates all objects deposited in the Bornholm hoards. The hoards marked with black circles represent different selections of objects deposited in individual hoards. The three hoards marked in the chart were deposited around the same time, shortly before or after the year 1000, but they display different characteristics. The Tyskegård hoard is made up of English coins only, while the Egenvang hoard contains a mixture of English and German coins and a significant jewellery component; the Rosmannegård SV hoard is different again, comprising ingots, scrap-silver, and Islamic coins. This diversity demonstrates that the hoards do not represent a random sample of the available silver, but the actions and individual choices of the hoarding Vikings. 59
- 3.11 The coin profile of the Bornholm hoards, in per cent (bottom) and in number (top). The most marked change is the shift from the dominance of Islamic coins to those of Western Europe. 64
- 3.12 The object profile of the Bornholm hoards, in per cent (bottom) and in number (top). Silver objects only are included in the charts. It is possible that some hoards were deposited with other object types such as gold, bronzes, and weights (see section 3.1.1). 65
- 3.13 Geographical distribution of the Bornholm hoards. Map 1: Blue: phase 1 (850–900). Green: phase 2 (900–990). Grey: phase 3 (990–1000/1005). Square: Central sites. Map 2: Yellow: phase 4

	(1000/1005–1020). Purple: phase 5 (1020–1040). Map 3: Turquoise: phase 6 (1040–1060). Orange: phase 7 (after 1060).	68
4.1	Melt of Slavic/Scandinavian type from the Nørremølle hoard. Find no. BMR 3419x214.	75
4.2	A selection of foil and mesh beads from the Nørremølle hoard. At the time of production, the beads were used in earrings or temple rings, but in their present state they may have functioned as silver beads in other contexts.	79
4.3	This Otto III coin struck in Cologne 983–1002 shows traces of several test actions. One action may be when the coin was bent, and pecks were applied along the edge. In addition, other scratches, single pecks, and notches are visible on the edge. It is difficult to establish how many actions the circulation traces rep- resent, but it is clear that the number of pecks is not equivalent to the number of actions. Find no. BMR 1831x82.	81
4.4	The Smedegård NØ II hoard included a bark bundle containing 18 silver ingots. Five additional silver ingots, a neck-ring, an arm-ring, two finger-rings, a large disc-shaped fibula, and a silver cross with chain were also part of the deposit (Grinder-Hansen <i>et</i> <i>al.</i> 2013, 154) (cf. figures 7.5–7.7).	85
5.1	The geographical distribution of the German coins in the Bornholm hoards. The extensive Otto-Adelheid pennies from the Harz area has a significant imprint in the material. First chart: German coins produced before 983 prior to Otto-Adelheid coinage. Included are coins with latest possible date of 983. Second chart: German coins minted 983–1040, i.e. in the primary production period of the Otto-Adelheid pennies. Third chart: German coins minted after 1040, when the Otto-Adelheid coinage was being phased out.	89
5.2	Four hoards deposited in the transitional phase 990–1000/1005 contain a small number of German coins. The composition of German coins in the four hoards differs markedly from that of the earlier Kongens Udmark hoard. The difference may not be purely chronological, as the four hoards also differ from the contemporary Södra Sandby and Graagaard hoards in Scania and on Zealand, respectively. The Bornholm hoards display an early presence of Otto-Adelheid pennies.	91
5.3	The geographical distribution of German coins deposited in the Bornholm hoards. The chart includes hoards with 20 or more German coins.	93
5.4	The geographical distribution of English coin types deposited in the Bornholm hoards. Southern English mints associated with Danegeld payments are indicated in shades of blue, while eastern English mints in the Danelaw are indicated in shades of red. There is a marked increase in the proportion of southern mints associated with the first major tribute payment in 991.	95

- 5.5 The distribution of English coin types in the Bornholm hoards. There is a clear tendency for early hoards to contain few English types, while later hoards have a greater variety. 96
- 5.6 The relation between English mints and coin types deposited in the Bornholm hoards. Mints of southern England associated with the great Danegeld payments are indicated in shades of blue, while the eastern English mints in the Danelaw area are indicated in shades of red. 98
- 5.7 The chronological profile of the Gyldensgård SV hoard (299 coins). Each coin is indicated with a line showing the chronological range of the coin. The chart illustrates the time of production, not the time of deposition. The two blue sections in the middle of the chart represent *Crux* and *Long Cross* pennies, respectively. Red: German, blue: English, green: Scandinavian, pink: Islamic, grey: continental and others. 100
- 5.8 The distribution of English coin types deposited on Zealand, Bornholm, and in Scania. The figures are based on von Heijne's 2004 catalogue. However, the Bornholm numbers have been updated. The distribution for Bornholm has changed significantly since von Heijne's publication in 2004. 101
- 5.9 The distribution of Islamic coins deposited in Bornholm hoards (per cent). The hoards are dominated by coins minted in the Abbasid Caliphate and above all in the later Samanid Caliphate. The chart includes data for 1,148 coins deposited in 42 hoards. 103
- 5.10 The chronological profile of Islamic coins deposited in Bornholm hoards. The chart includes data for 890 coins deposited in 41 hoards. Each coin is indicated with a line showing the chronological range of the coin. The individual lines cannot be separated due to the volume of coins. The chart illustrates the time of production, not the time of deposition. Turquoise: Umayyad, light purple: Abbasid, dark purple: Samanid, pink: other dirham types, including imitations. 107
- 5.11 Few dirhams struck after 950/960 found their way into the Bornholm hoards. The decrease in the number of dirhams can be linked to Samanid coins, since the proportion of Samanid coins decreases from 62 per cent to 45 per cent in just ten years. 110
- 5.12 Map showing links between hoards with overlapping Anglo-Scandinavian die-duplicates (coins struck from the same sets of dies), since these are most likely contemporaneous. The map illustrates the number of different die-combinations the hoards have in common. The number of die-identical coins is not indicated. 116
- 5.13 The distribution of types of jewellery according to production areas. 117
- 5.14 Fragments of neck-rings deposited in the Nørremølle hoard. The large fragment on the right and probably also the large

- fragment on the left at the bottom of the photograph are of Baltic type without a fastener. In the production area, the type was used as a neck-ring, but in the Scandinavian context it has been transformed into an arm-ring. At the top is a neck-ring fragment of a Scandinavian type with a fastener. 118
- 5.15 Trefoil brooch of Bornholm type from the Buddegård hoard. The brooch is now fragmentary (three pieces) but was probably complete when deposited. Fragments of a similar type of brooch have been found at Kannikegærdet and Dammegård. Find no. BMR 2306x18. 119
- 5.16 The distribution of Slavic jewellery in the Bornholm hoards. The number of pieces of jewellery in each hoard varies greatly. The coin-rich hoards from Munkegård I, Pæregård, and above all Nørremølle stand out with large Slavic jewellery components. 120
- 6.1 Percentage of fragmented and marked (pecks/nicks/notches) objects by find category. In addition, there are ten symbolic objects, four of which are fragmented, and one has notches. Modern breakages are not included in the analysis. In some cases, in which only a photograph was available, it has not been possible to record marks; thus, the empirical basis may vary within the same category. The numbers above the bars indicate the percentage; the empirical basis (fragmentation/marks) is provided after each find category. 125
- 6.2 The percentage of fragmented coins in the hoards. The hoards are organised by year of discovery (indicated in the bottom row). The proportion of fragmented coins cannot be linked to the year of discovery, suggesting that the degree of fragmentation in the hoards largely reflects the actual conditions. 127
- 6.3 The proportion of marked, bent, and fragmented coins varies within each coin group. The high fragmentation rate among Islamic, Islamic imitation, and Bohemian coins is striking, compared to German, English, and Polish coins. Equally striking is the low proportion of Islamic, Islamic imitation, and English coins with marks, compared with German, Scandinavian, and Polish coins, up to 90 per cent of which bear marks. Numbers indicate the total number of objects. 128
- 6.4 There are very few examples of complete jewellery in the Bornholm hoards. More than 80 per cent of the jewellery within the three main jewellery groups is fragmented. The proportion of marked jewellery varies within the categories. The low proportion of marked beads is probably due to their fragile nature, since it does not make practical sense to add marks to foil silver. 129
- 6.5 The circulation period for dirhams (503 coins) is calculated as the difference between the time of minting and the estimated time of

- deposition in the hoards. There is a clear tendency for the degree of fragmentation among dirhams to increase the longer the coin has been in circulation. However, the material displays large variations over time, which must be attributed to the ‘personal’ imprint of individual hoards. 130
- 6.6 The complementary weight distribution of coins and scrap-silver suggests that coins and scrap-silver were part of a shared weight system, in which coins were preferably not fragmented. Please note the large difference in the empirical basis: 7,587 coins and 462 pieces of scrap-silver are included in the chart. 132
- 6.7 The temple-ring from the Egenvang hoard is sprinkled with marks. This is perhaps partly because the temple-ring is produced of a solid silver rod. In contrast, the thin foil beads in Figure 4.2 are unmarked. Find no. BMR 3836x128. 133
- 6.8 Two sets of earrings are deposited in the Pæregård hoard. The sets were kept together, and they are complete and unmarked. This may reflect the intention to preserve the function of the earrings as jewellery. One earring has been deposited with an additional bead attached to the hoop. Thus, in its present state, it cannot be used as an earring. However, the bead can easily be removed again. Finds nos. National Museum Dnf 72–75/1993. 137
- 6.9 Thor’s hammer from the Nørre Sandegård hoard. The hammer appears to have received marks on three occasions: on the ring, the front, and the back. The scratches on the hammer are interpreted as modern. Find no. BMR 1853x188. 138
- 6.10 Pierced and suspended square silver plate from the Blykobbegård hoard (top). The plate may be an amulet, and is similar in shape and design to a runic example from the Englyst hoard (bottom), which can be interpreted as a maternity amulet. Find nos. BMR 3890x216, BMR 2320x17. 139
- 6.11 Three English *Crux* pennies of Æthelred II from the Store Frigård II hoard with three different types of bend. The hoard includes 36 coins which were bent at the edge, like the coin on the left, producing a distinct angle – a signature bend. Similarly, like the coin on the right, 11 coins have a perpendicular bend. Seven coins were folded like the coin in the centre. Finds nos. BMR 1711x360, x364, and x392. 142
- 6.12 The distribution of types of bends by production area among the coins in the Store Frigård II hoard. A selection of coins within each production area are bent with the special signature bend (‘edge bend’), folded, and perpendicular bend. 143
- 6.13 Fragment of arm- or neck-ring deposited in the Egenvang hoard. The folded fragment has numerous notches along the edge of the jewellery, suggesting that the object functioned as raw material

- and/or means of payment at the time of deposition. Find no. BMR 3836x13. 144
- 6.14 Examples of different types of scratches. Left: Abbasid dirham minted 804/805 in present-day Tehran for Harun al-Rashid deposited in the Skovvang hoard. A prominent scratch at the centre of the coin may have served the same function as nicks. Middle: English *Crux* penny deposited in the Egenvang hoard. Along the edge of the half coin is a deep scratch, which may have been applied in preparation for dividing the coin. Right: Anglo-Scandinavian imitation from the Egenvang hoard. The coin has been bent back and forth and has several very heavy scratches along the ridge. Both actions may represent preparation for division. However, silver testing or ritual destruction are alternative interpretations. Finds nos. BMR 2291x220, BMR 3836x50 and x68. 145
- 6.15 Hammered band-shaped ingot from the Egenvang hoard. The deep furrows along the fragmented edges were perhaps made with a chisel. The furrows may represent preparation for fragmentation like the deep scratches on coins (see Figure 6.14). Find no. BMR 3836x20. 146
- 6.16 German Otto-Adelheid penny from the Skovvang hoard. The coin is pierced, and a small piece of solid silver wire has been threaded through the hole. The silver wire may be preparation for a rivet, or the remains of a fragmented ring for suspension. The find is unusual, for in most cases the wire has been removed, leaving only the piercing. Find no. BMR 2291x221. 147
- 6.17 Examples of coins with two or three piercings which may reflect different functions and life biographies. Top: Samanid dirham, minted in Uzbekistan, from the Kannikegærdet hoard. The coin has two piercings close together, perhaps for attaching the coin to cloth. On a later occasion, one of the piercings was reused for a loop. Second from the top: Persian Sassanid drachma from the Skovsholm hoard. The coin is pierced and there are traces of a suspension loop. The first piercing (now fragmented) was placed so the portrait of King Khuzrau II was correct when the coin was worn. This was not a consideration for the second piercing. Third from the top: *Crux* penny of Æthelred II from the Englyst hoard. The coin has two diagonally placed piercings, suggesting that it was formerly part of a coin chain. Bottom: The Saffarid dirham minted in Shiraz from the Kannikegærdet hoard is one of the few coins with more than two holes. The two central holes appear to have been added simultaneously, perhaps with the intention of using the coin as a fitting, while the third hole at the edge was probably applied to convert the coin into jewellery. 147

- 6.18 Two *First Hand* pennies of Æthelred II from the Egenvang hoard are fitted with suspension rings. The *First Hand* pennies are relatively rare in the Bornholm hoards with only 42 examples in total. Although the coins from the Egenvang hoard are of the same type, suggesting some kind of connection, the rings are very different in design and expression. Finds nos. BMR 3836x28 and x29. 149
- 6.19 The only object with identified graffiti is this silver plate/ingot, on which an animal – perhaps a bird or a seal – is carved. Find no. BMR 3710x20. 152
- 7.1 The Blykobbegård hoard was divided into two depositions. The objects in one part lay as if deposited in a horn. 162
- 7.2 Composition of coin types in horn and bag, respectively, in the Blykobbegård hoard. 163
- 7.3 The distribution of objects within the different sections of the Nørremølle hoard. 164
- 7.4 Coins were deposited in the lower and SW parts of the Nørremølle hoard. The two columns to the left illustrate the distribution of coin types in the two sections. The two columns to the right illustrate the proportion of fragmented coins in the two sections. 165
- 7.5 Most of the non-numismatic objects from the Smedegård NØ deposit I. The objects include finds from both plough layers and soil-block. Melts and ingots deposited closely together at one end of the box are shown at the bottom right. The small fragments of wire and rods seen at the top left were probably placed at the bottom of the box, while the carrier ring immediately above the relic crosses was at the top of the box. 166
- 7.6 This filigree-decorated oval brooch with central cross motif was placed at the bottom of the Smedegård NØ deposit II. The brooch weighs 180.91 g. Worn edges indicate that the fragmentation is probably due to wear. The brooch was produced in the eleventh century (Pedersen *et al.* 2014, 223). 168
- 7.7 Complete neck-ring from Smedegård NØ deposit II. The ring weighs 206.72 g. The type is characteristic of the Viking Age, but it is very unusual to find complete rings deposited in hoards. 169
- 7.8 The connection between hoard compositions and settlements. 185
- 7.9 The four hoards with *tpqs* in the 1020s – Store Klintegård, Døvregård, Åbo, and Skovgård – are dominated by melts. However, there are differences in the types of melts in the hoards. This is true of the Store Klintegård hoard in particular, but Åbo and Skovgård also have a significant element of Slavic/Scandinavian melts, while the Døvregård hoard is dominated by irregular melts. 187
- 7.10 The weights from the Englyst site are of high quality. Two weights have symbols imitating the Kufic writing on dirhams (top).

- One has silver preserved on the flat poles. A third weight is decorated with horse's head, with a large eye with lashes and pellets for mane (middle). The last weight is decorated with a star (bottom). Finds nos. BMR 2320x21, 76–78. 197
- 7.11 Equestrian equipment in the form of harness fittings has been found in relatively large numbers at the Englyst site. These special objects also indicate the site's noteworthy connection with horses. Top: Miniature bronze horse, perhaps an amulet. Bottom: Gilded bronze ring decorated with a horse head? 202
- 7.12 Distribution map of the Dammegård site. Grey circle: silver coin, red rhomboid: silver object, yellow cross: gold object, blue triangle: weight, and green square: bronze object. 204
- 8.1 The cultural landscape of southern Bornholm showing the hoard sites (white text), early Christian cemeteries (cross), and what are possibly Bornholm's oldest churches, Aa Church and St Peders Church, and Grødbybro [bridge], where the Åker 1 runestone was found. 229

# Preface and acknowledgments

The idea for this book developed during my years as curator at the Royal Collection of Coins and Medals in Copenhagen (2006–2011). Thanks to the lenient Danish metal detector legislation, I was presented with exciting new coin finds every day. One area of Denmark – the island of Bornholm – stood out with an overwhelming concentration of amazing Viking-Age objects, just waiting to be catalogued and investigated. Thus, my first acknowledgment goes to the enthusiastic and dedicated metal detector archaeologists of Bornholm.

The investigation took form as a PhD project (2013–2019) generously funded by the Augustinus Foundation and Copenhagen University, and the study has benefited from fruitful discussions with my supervisors Henriette Lyngstrøm (Copenhagen University) and Christoph Kilger (Uppsala University, Campus Gotland). Part of the empirical base was compiled at the Bornholm Museum. It was a pleasure to visit the island, where my colleagues at the museum gave me a warm welcome. A special thanks to René Laursen, who has been an invaluable help in finding excavation reports, photographing objects, answering myriad questions, helping with the identification of objects, and together with Salwa Amzourou (National Museum of Denmark), identifying the Islamic coins. The registration of the extensive coin material took place at the National Museum of Denmark, which kindly provided workspace and full access to all coin finds. Current and former colleagues at the Royal Collection of Coins and Medals created a welcoming and fantastic research environment, where help was never far away.

I have been met with great interest and hospitality by colleagues around Europe, and have had the opportunity to present ideas and test hypotheses at conferences and in articles. The comments I have received from spectators, colleagues, editors, and peer reviewers have helped shape and develop the research questions in this book. A very special thanks to Lone Gebauer Thomsen (Copenhagen) and Line Bjerg (Copenhagen) for academic discussions, Lea Cunliffe (Rainford) for help with translations, and Jakob Schlein Andersen (Copenhagen) for preparation of distributions maps. It has been a pleasure to work with editorial assistant Sharma Heeranshi at Routledge, and I would like to thank Niel Price, Charlotte Hedenstierna-Jonson, and Ben Raffield, the series editors of *Routledge Archaeologies of the Viking World*, for including the book in the series.

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The survey includes more than 14,000 objects from 51 hoards from 48 archaeologically investigated sites. Summaries of the contents of the hoards are presented in the catalogue in conjunction with information about the archaeological contexts. Lists with detailed descriptions of objects, distribution maps, and charts describing the chronological profiles of hoards are available online via the online Support Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623)

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# 1 Bornholm

## A treasure island

The Viking-Age hoards from Bornholm have attracted the attention of researchers for several centuries and, as a field of research, it is relatively well trodden. However, Bornholm has produced a large group of relatively recently discovered, unpublished, and unanalysed hoards. This material indicates that the story of Bornholm's hoards – and the people behind them – is yet to be told.

The people that created and deposited the Viking-Age hoards of Bornholm are at the centre of this investigation. What were the cultural, ethnic, social, and religious backgrounds of the persons who assembled the hoards? Did the objects in the hoards travel the long distances from production place to Bornholm through trade, raid, emigration, marriage, or diplomacy? Were the hoards deposited because of danger and unrest, hidden before a planned journey, stashed away as savings or raw deposits, or do they represent cultural and ritual depositions? The underlying premise is that the actors and actions behind the hoards are mirrored in the deposits – or more specifically, in the composition and context of each hoard – and therefore form the focal point of this investigation.

The Bornholm hoard adventure started in 1989 when the Bornholm Museum initiated a targeted campaign to locate deposition sites for hoards which were found before the introduction of metal detectors in archaeology (Ingvardson & Nielsen 2015, 27–30). The starting point of the investigations was Georg Galster's publication from 1980 presenting coins from 31 hoards and burials, as well as 17 single finds (Galster 1980, 8–9). Most of the hoards in Galster's catalogue were found in the fifteenth, sixteenth, and seventeenth centuries. Thus, information on deposition locations and circumstances is often deficient, since this was either lost or never recorded. Experience from Gotland showed that metal detector surveys of 'old' hoard sites would significantly increase the number of objects (Östergren *et al.* 1986). Inspired by the results of their Swedish neighbours, the Bornholm Hoard project was initiated (see e.g. Nielsen 2000, 99–104; Watt 2000, 79–82 on detector-archaeology on Bornholm). The aim was to locate the 'old' hoard sites, and thereby rescue objects that were still in the field, and conduct a closer examination of the circumstances of deposition. The campaign was planned as a collaboration between the Bornholm Museum and private metal detectorists from the island, which at this early stage already constituted a well-organised and very active association. The Bornholm Museum was the directing partner, and the geographically

## 2 Bornholm

targeted metal detector surveys were based on the museum's archive surveys. If the detector surveys were successful, and a concentration of objects was located, this might result in an excavation by the museum assisted by a private metal detector archaeologist. The collaboration exceeded all expectations, and today 23 out of 31 hoards in Galster's publication have been located, as revealed by concentrations of silver objects with compositions that are similar to the original hoards (Ingvardson & Nielsen 2015, 27). Maybe it was too successful. In the years 1989–1999 the Bornholm Museum conducted 22 archaeological surveys of hoards sites. In 1995 alone, seven hoard sites were excavated. The massive quantity of finds and data led to an overwhelming workload, and judging from the quality of the excavation reports, it is often clear that financial support did not match the task at hand.

Detector archaeology is more popular than ever in Bornholm. Every year private metal detecting produces new finds, and today we know of more than 240 sites with one or more Viking coins (Horsnæs 2012, 49). The excellent collaboration between the Bornholm Museum and the private metal detector archaeologists, which was established for the 1989 campaign, is still ongoing, and the result is an impressive array of metal detector material. The scientific value lies not only in the number of finds but also in the quality of the finds, because documentation of find-spots and reports of settlement finds such as ceramics, wattle and daub, and bronze debris are also often reported to the museum – finds that do not result in financial compensation by the authorities. However, detector archaeology also brings challenges. The large quantity of finds presents the Bornholm Museum with several administrative challenges (Ingvardson & Nielsen 2015, 30–31). The find density indicates the presence of a hoard at more than 40 sites (Ingvardson & Nielsen 2015, fig. 1). However, based on experience from the 1990s, the Bornholm Museum only conducted one or two hoard excavations a year, and it remains logistically challenging to investigate more.

As in the past, the primary purpose of the excavations is to locate the deposition place of the hoard and to rescue what might remain *in situ* from further destruction. In cases in which the hoard has been ploughed repeatedly over the years, the objects are spread over a large area, thus making it difficult to single out a probable deposition area. Due to limited economic resources, the museum staff constantly faces the dilemma of which hoard to prioritise. Should it be the highly dispersed and ploughed-out hoard, which has been subjected to agricultural destruction for years, or the newly disturbed hoard with a well-defined distribution of silver? Bearing in mind the large quantity of material and the limited economic resources, the museum's strategy is to identify sites with the highest chances of locating the deposition place. The reasoning behind this strategy is that the less disturbed hoards hold the greatest cultural-historic value. Sadly, the downgrading of the highly disturbed hoards means that the archaeological context will be lost as it continues to be destroyed over the years (Ingvardson & Nielsen 2015, 31).

Despite these challenges, the Bornholm Viking hoards constitute a unique group of finds in both quantity and quality. If the more than 40 locations<sup>1</sup> with potential hoards are included, we know of more than 100 Viking-Age hoards deposited between c. 850–c. 1150<sup>2</sup> on the 588 km<sup>2</sup> island. For comparison, there are

around 75 hoards in Scania (11.303 km<sup>2</sup>) and 34 hoards on Zealand (7031 km<sup>2</sup>) (von Heijne 2004, catalogue; Moesgaard 2015, 2018a; Moesgaard & Hougaard 2015; Moesgaard & Langsted 2017; Amzourou 2018; Ilisch & Moesgaard 2019). The find density is surpassed only by Gotland, with more than 700 hoards deposited in an area of 3184 km<sup>2</sup> (Stenberger 1958, 14; Östergren 1989; Gruszczynski 2019, 25). What makes the Bornholm hoards unique is not just their number, but more specifically the degree of documentation connected to the finds. Archaeological excavations of a minimum of 200 m<sup>2</sup> have been conducted at no fewer than 34 hoard sites on Bornholm (catalogue).<sup>3</sup> For comparison, four Viking hoard sites have been excavated in Scania,<sup>4</sup> and six on Zealand.<sup>5</sup> On Gotland 34 locations have been examined, though here the excavated areas of the main part of hoard sites is very small, and only nine sites have an excavated area of more than 50 m<sup>2</sup> (Gruszczynski 2019, 40–41).

The extensive documentation of the Bornholm Viking-Age hoard sites contributes an extra dimension to the interpretation of the hoards. Earlier research focused on the content of the hoards, but the material from Bornholm allows for the archaeological context to be included in the interpretation to an unprecedented scale. The starting point of this study was to address the classic archaeological questions: What do the hoards consist of, how were they accumulated, and when, why, and how were they deposited? However, through processing the data, the unique character and immense potential of the hoards to reveal even *more* became increasingly clear. Nowhere in the world is there such a large collection of Viking hoards with an equally well-documented archaeological setting. It soon became evident that this material enables us to get extraordinarily close to the hoarding Vikings.

### 1.1 The hoarding Vikings detected

The structure and deposition context of the Viking hoards are influenced by people's choices and actions. This study will investigate whether these choices and actions are traceable when analysing the structure and deposition context of the hoards. In other words, *do the hoards reflect the people that accumulated, handled, and deposited them, and is it possible to identify the accumulation strategies of the hoards? Can we detect the hoarding Vikings themselves in this material?*

The Bornholm hoards stand out due to their unusually well-surveyed archaeological context. A significant aim of this survey is to develop methods to integrate all data concerning the hoard's structure, composition, and context in the interpretation of hoards. The pervasive focus in the choice of theoretical frameworks and methodological approaches is to create a nuanced and elucidated picture of the actors behind the hoards, and to develop a methodological toolbox to distinguish the different choices, intentions, and actions that led to the deposition of the hoards.

A fundamental principle in the methodological approach is that all parts of the hoards are equally important for interpretation. It is in the interaction between archaeological and numismatic data, between the objects' production and circulation data, and between the accumulation and deposition data, that the functions of the hoards appear. Thus, the survey will include an analysis of the production,

circulation, and deposition data of all types of objects in the hoards, as well as the archaeological context of the hoards. This holistic analytical model aims to illuminate how the hoards were accumulated and deposited, and perhaps even something about who assembled them.

It is theorised that different intentions motivated depositions of different hoard types, and that these motivations are reflected in the deposition contexts. The archaeologically well-documented hoards facilitate an unprecedented opportunity to include the deposition contexts in the interpretation of the hoards. *The survey aims to clarify whether the functions of the hoards are reflected in the archaeological contexts.*

In addition to describing the acts and actors that influenced the accumulation and deposition of silver, the survey examines how hoards influenced Viking-Age people and society. What opportunities came with owning a silver hoard, and in which aspects of life did hoards play a role? For example, were hoards used to create networks and alliances? Were hoards part of cultural and ritual events and actions? The hoards are seen as possible actors that influenced life not only from an economic standpoint, but also from social, cultural, and ritual perspectives. *An essential objective is to illuminate the hoards as actors in Viking-Age society.*

## 1.2 Defining time, space, and material

Bornholm is a well-defined geographical area. Despite the island's limited size (588 km<sup>2</sup>), more than 100 well-defined and potential hoards are known from Bornholm; of these, 35 hoards on 34 sites have been archaeologically investigated (catalogue).<sup>6</sup> The comprehensive and well-documented material provides the extra dimension necessary to fulfil the purpose of this investigation: to illuminate the acts and actors that formed the hoards. Thus, the excavated Bornholm hoard sites form the empirical starting point.<sup>7</sup>

The Bornholm hoards contain objects from England in the West to the Caliphate in the East. It is therefore interesting to follow their journey from production place to deposition place on Bornholm. Regarding the coin material, the focus will be on the four largest coin groups in Bornholm hoards: German, Islamic, English, and Scandinavian.

The chronological framework is defined by the chronology of the Bornholm Viking hoards. Thus, 'Viking Age' is defined as the 300 years between c. 850–c. 1150.

Silver hoards are not a phenomenon limited to the Viking Age. From Denmark, hoards with fragmented Roman denarii and fragmented Roman silver and gold objects were deposited in the Roman or Early Germanic Iron Age at sites around Gudme in Funen, Ribe in Jutland, and Lejre in Zealand. The largest hack-silver hoards were deposited in wetlands around AD 500 (Horsnæs 2018, 94–96). The silver flow of the Viking Age<sup>8</sup> is not unprecedented. Bornholm has produced the largest concentration of Roman denarii minted c. 64–194, outside the Roman Empire (Horsnæs 2018, 98). A special feature for Bornholm, and its neighbours in the Baltic Sea – Öland, Gotland, and northern Poland – are large quantities of fifth-century

Roman gold coins (Horsnæs 2018, 102). There is a break in coin imports to Bornholm from c. 500–800. The oldest and earliest Viking hoard, the dirham hoard found at Skovsholm (catalogue: 32), forms a very distinct chronological boundary in the Late Germanic Iron Age. The hoard was probably deposited around 855–900 (section 3.3), setting the chronological starting point to c. 850.

The Smedegård NØ hoard (catalogue: 38) deposited shortly after 1150, is interpreted as the latest hoard of Viking-Age character on Bornholm, because it contains a mixture of complete and fragmented coins, jewellery, and ingots. A further two hoards were deposited in the second half of the twelfth century. The Ladegård hoard, which was deposited after 1187, contains 17 coins from the second half of the twelfth century (12 Gotlandic, 3 Danish, and 2 Pomeranian), while, based on archival information, the now lost hoard from Rø cemetery has been identified as having comprised around 40 coins of the Danish King Knud VI (1182–1202) (Jensen *et al.* 1992, 302–303; Myrberg 2008, 265–266). The two hoards consist of coins only, differentiating them from the Smedegård NØ hoard with jewellery, ingots, and fragmented silver. Thus, the Ladegård and Rø cemetery hoards are not included in the analysis. The chronological framework of the investigation is therefore c. 850–c. 1150. This does not necessarily mean that the three hoards deposited in the second half of the twelfth century reflect a change from a Viking-Age weight economy to a medieval money economy. The empirical limitations do not allow such an interpretation, especially since hoards from the first half of the thirteenth century are absent in Bornholm. The numismatic sources as a whole are remarkably silent, since there is a marked decline in single finds from around 1100 to c. 1270 (Horsnæs *et al.* 2013, 10–11; Märcher 2017, 1144–1145).

### ***1.2.1 Iron Age, Middle Age, or Viking Age – defining the Viking Age on Bornholm***

Silver hoards are labelled ‘Viking hoards’ in this survey even though the proposed end-date, c. 1150, stretches into the Middle Ages, around 100 years later than most traditionally accepted chronological frameworks of the Viking Age.

Fredrik Svanberg criticises the Scandinavian research tradition for uncritically reinforcing what he calls the ‘systematised Viking Age’, which was created by giants such as Jens Asmussen Worsaae, Sophus Müller, and Oscar Montelius in the last half of the nineteenth century. He points out that the Viking Age was created in the nationalistic spirit, and by the end of the nineteenth century, and throughout the twentieth century, research was focused on three topics: 1) political history and state-building; 2) Viking raids and settlement; and 3) the Christianisation of the Nordic countries. The narrative of Viking culture was represented by the three nations of Denmark, Norway, and Sweden, which were regarded as prime actors. Regional variations, e.g. the Bornholm culture, were discussed, but always within the context of the Danish state (Svanberg 2003, 40–49).

Svanberg’s criticism of the one-sided focus on king, state, and church is justified. However, here the problem is not treated as ideologically motivated but rather as a methodological dilemma. The Viking Age leads to the Middle Ages, where there is

a relatively well-defined history-based narrative of the Nordic nation's characteristics and borders, and where the influence of the Christian church is undisputed. As a researcher in the period that leads up to the Middle Ages, one starts with the fact: This is how it ends! Thus, the starting point of the research perspective easily becomes: How did we get there? In many cases, an evolving notion relating to the process of nation-building and Christianisation forms an unconscious premise for Viking-Age research. An example is the focus on the monetisation process within numismatics. Ever since Henrik Klackenberg's introduction of the concept of monetisation in his dissertation *Moneta Nostra* in 1992, the question of when and how Scandinavia transformed from a Viking-Age weight economy to a medieval coin economy has been a central research focus (see e.g. Kilger 2000; Carelli 2001; von Heijne 2004; Ingvarðson 2010). The question is surveyed from different angles, and fluctuations and detours are integrated into the narrative, but the final destination is a monetised society, even though there are different opinions on when this occurs (see e.g. Ingvarðson 2016 with the subsequent critique by Moesgaard 2017).

Svanberg further highlights a justified critique of the focus on manuscripts rather than archaeological evidence within Viking-Age research (Svanberg 2003, 5). This focus may have been reasonable in the nineteenth century, because of limitations in the archaeological material, but today it seems unfortunate. There is, for example, only a handful of written sources referring to Viking-Age Bornholm, and these are often tendentious and/or written long after the time they describe (sections 7.3.5 and 8.4.1). In contrast, the archaeological evidence is made up of thousands of objects, among these the silver hoards. The Viking Age is, of course, like all other archaeological and historical periods, ages, and times: a modern construction, with the purpose of serving as a practical framework. The Viking Age is a historic construction of a period that lies between prehistoric and historic times. From a historic standpoint, the Viking Age is the beginning of the Middle Ages, the focus is on the historical sources, and the classic historical questions are those concerning king, state, and church. From an archaeological viewpoint, the Viking Age is the end of the Iron Age, and this opens other research questions and a differentiated Viking-Age narrative. The archaeological perspective is especially well suited to an area like Bornholm, where the written references are few, while the cultural material is plentiful.

Svanberg argues that Viking Age cannot serve as a common term for the period c. 800–1050 in Scandinavia. The reason for this lies in the different developments in the Scandinavian areas, and because defining phenomena, like Viking raids and Viking travels, continued in the East after 1050. Inspired by anthropology, Svanberg instead divides the research in Scandinavia into small units/areas which are surveyed based on their isolated characteristics (2003, 108–109). He focuses on differences in, for example, the Christianisation process and grave rites, which are emphasised as cultural markers (Svanberg 2003, 5–8). In contrast to Svanberg's approach, this survey uses the Viking Age as a common term. No doubt, Scandinavia displays regional differences, and the present borders of Denmark, Sweden, and Norway present artificial and misleading divisions for Viking-Age research, but there are several common cultural characteristics in Scandinavia that form a

linked culture. For example, this applies to longships with sails used in raids and other journeys, the weight economy, deposition of silver hoards, and the erection of runestones. These are all significant elements defining an all-encompassing Scandinavian culture, distinguished from both the previous Germanic Iron Age/Vendel/Merovingian time and the subsequent Middle Ages.

Instead of dismissing the Viking Age altogether, a more pragmatic approach is suggested, where the chronological time frame of the Viking Age is adapted to the study area. In this way, the term ‘Viking Age’ functions as a practical instrument to quickly define and describe a period with distinct cultural characteristics. In areas like Bornholm and Gotland, where several defining elements like the weight economy, runestones, and deposition of silver hoards continue to the middle of the twelfth century, the term Viking Age can be used after 1050 (Gustafsson 2013, 18–19). The transition from the late Germanic Iron Age to the Viking Age in Bornholm can be placed around 800 based on the chronological analysis of male and female graves on the island (Jørgensen & Jørgensen 1997, 29–39). Thus, the Viking Age in a Bornholm context covers the period c. 800–c. 1150.

### *1.2.2 The lost, excavated, and future hoards – defining the empirical base*

Around 100 Viking hoards from Bornholm have been identified (Ingvardson & Nielsen 2015). The hoards have different find histories, resulting in contrasting documentation standards. Some hoards are known exclusively from archival studies, and the information on content and find circumstances is often deficient, while other finds have been the focus of extensive metal detector surveys and archaeological excavations, and therefore offer far more information about content and context.

With this in mind, the hoards have been divided into five categories reflecting their research value: well-documented hoards, partly documented hoards, partly available hoards, lost hoards, and potential hoards. Hoards from the first three categories have been included in this survey and are described in the catalogue. The catalogue presents a summary of the content of the hoards, a classification of the container of the hoards, and a description of the archaeological contexts of the hoards. A total of 9,310 objects from well-documented and partly documented hoards were available for this study. Lists with identifications of production time and place, as well as secondary treatments, appear in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623). The objects from partly available hoards were not accessible for inclusion in this study but are described in detail in the catalogues compiled by Roar Skovmand (1942), Galster (1980), Jensen *et al.* (1992), and von Heijne (2004). Thus, the data recording is based on these catalogues. Because it has been possible to identify coin types from the catalogue descriptions, the coins from these hoards have been included in the analysis of production data in Chapter 5. Coin-lists with updated numismatic identifications are found in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).

**Well-documented hoards:** These hoards hold detailed information about both content and context. The category includes hoards found after 1989, where the deposition place has been subject to thorough metal detector surveys and archaeological excavation. Further, this category included hoards found in the eighteenth, nineteenth, and the early twentieth centuries, where the deposition place has been rediscovered by metal detector surveys and subsequently excavated (Chapter 1). The hoards meet the following criteria:

- The excavated area covers more than 200 m<sup>2</sup>.
- The deposition place of the hoard must be known, either because a part of the hoard was preserved *in situ*, or because a marked find concentration points to a likely deposition place.
- The find-spot of the main part of the site's silver, bronze, and gold objects, as well as weights, must be documented within a margin of a few metres.

Twenty-one sites with 22 hoards with a total of 6,625 objects meet these criteria (catalogue: 6, 7, 8, 12, 13, 15, 16, 17, 18, 25, 27, 29, 32, 34, 36, 37, 38, 39, 42, 44, and 48). The analysis includes production, circulation, and deposition data of these hoards. With few exceptions, the identification of production time and place, as well as circulation data, have been identified within the parameters of this survey. Recording of deposition data is based on observations and interpretations available in excavation reports and publications (catalogue).

**Partly documented hoards:** This category includes hoards for which the content was available during the survey, but the deposition place was not recorded. The reason may be that excavations were not yet initiated or that the deposition context was destroyed by agricultural activities. Sadly, deficient documentation in some excavation reports makes it impossible to create distribution maps including all finds. These hoards have also been categorised as partly documented. The problem often arises as different persons using different methods to document the objects' find-spots have surveyed the sites several times. In particular, for sites located before 2000, the cultural material has been recorded in three different groups. 1) Private metal detectorists locate a concentration of silver objects/find-spot, and the adjacent finds are usually recorded in a local coordinate system, tied to local landmarks; for example, a parallel line to the road or field boundaries. There is a clear tendency towards documented find-spots of silver and gold objects, while the degree of documentation for bronzes and weights is more varied. 2) During the follow-up excavations conducted by the Bornholm Museum the finds are also documented in a local coordinate system, which is often different from the one used by the private metal detectorist. 3) After the termination of the Bornholm Museum excavation new finds are documented by GPS. Unfortunately, it has proven to be very difficult to combine the three systems. Objects from all three groups can be presented in the same distribution map only if it is possible to geo-reference the local systems. Finally, this category includes newly discovered hoards with unfinished excavation reports.<sup>9</sup>

Considering these limitations, 12 sites with 13 hoards with a total of 2,685 objects are included in the category of partly documented hoards (catalogue: 1, 2, 9, 10, 20, 21, 23, 24, 26, 33, 40, and 41). The analysis includes production, circulation, and deposition data for these hoards. With few exceptions, identification of production time and place as well as circulation data have been identified within the parameters of this survey. Recording of deposition data is based on observations and interpretations available in excavation reports and publications.

**Partly available hoards:** The objects from these hoards have not been physically accessible for this survey. The category includes hoards with an older find date, which is completely or partly lost. Most hoards are not excavated. An exception is the Munkegård hoard, first recorded in 1864. The main part of the coin-rich hoard has been catalogued in the systematic collection of the Royal Collection of Coins and Medals in Copenhagen. Hence, the hoard has not been kept unified. The time-consuming task of reconstructing the hoard lies beyond the scope of this survey. There have been extensive excavations at the Munkegård site, and Munkegård is therefore included in the context analysis.

Sixteen hoards are included in this category. Circulation data are not recorded, since objects were not physically available (section 4.2). Thus, the hoards are not included in the charts for the analysis of circulation data in Chapter 6, but only referred to when relevant.

A total of 4,720 coins from the 16 partly available hoards have been included in the analysis (catalogue: 3, 4, 5, 11, 14, 19, 22, 28, 30, 31, 35, 40, 43, 45, 46, and 47). The production time and place of the published coins have been updated based on the newest literature. The jewellery from partly available hoards is not included in the analysis of production data in Chapter 5. Deposition data is recorded based on the catalogues noted earlier, and is included in the analysis of the immediate contexts<sup>10</sup> of the hoards in section 7.1.

**Lost hoards:** The category covers hoards found in the eighteenth, nineteenth, and the early twentieth centuries, for which information on find circumstances is scarce, and where the hoards are completely or partly lost (Chapter 1). The hoards are presented in Skovmand (1942), Galster (1980), Jensen *et al.* (1992), and von Heijne (2004). The lost hoards are not included in the analysis. It must be noted that two excavated hoard sites are categorised as lost hoards. In 1995, the Bornholm Museum conducted an archaeological excavation at Melsted/Krogegård (BMR 2153/2252) in Østerlars parish, because silver objects were located by metal detector surveys. Around 424 m<sup>2</sup> was uncovered but silver objects were spread across an area of c. 3,000 m<sup>2</sup>. It is difficult to interpret the findings. In addition to Viking coins, the site produced seven Roman denarii. Thus, it is not possible to reconstruct the content or context of the possible hoard. Despite the relatively large excavation area, the hoard/hoards are categorised as lost due to destruction by agricultural activities (von Heijne 2004, no. 5.124; Ingvardson & Nielsen 2015, table 1). Ybnastedgård (BMR 2154) in Østermarie parish presents a similar situation. Here the Bornholm Museum conducted an excavation in 1995, and 260m<sup>2</sup> was unearthed. Eight silver objects were found spread over an area of 80 m<sup>2</sup>. The excavation did not expose a silver concentration, but two ditches with wattle and daub and Baltic

Sea Ware were found. It cannot be determined whether the objects make up a hoard or are single finds (von Heijne 2004, no. 5.137).

**Potential hoards:** The future will no doubt bring more hoard discoveries to Bornholm. Sometimes hoards are found immediately after the first encounter with the plough, and here the dispersed silver objects are concentrated close to the original deposition place. In other cases, the initial detector surveys merely result in a few surface finds. Present experience shows that discoveries of five silver objects or more within an area of 15 x 15 m will most likely result in the discovery of a hoard if further investigations are undertaken (Ingvardson & Nielsen 2015, 27–31). However, if the sites are not archaeologically excavated it cannot be determined whether the objects represent part of a hoard or a series of single finds (see von Heijne 2004, 44–46 on series of single finds). Thus, these silver concentrations are categorised as potential hoards. The private metal detector results reveal silver concentrations and high find densities at 40–50 sites, suggesting the presence of a hoard at these sites. A record of potential hoards was published in 2015; here the number of potential hoards was 46 (Ingvardson & Nielsen 2015, note 5).<sup>11</sup> The potential hoards are not included in the survey since the sites have not been investigated, and therefore reflect an incomplete find picture.

## Notes

- 1 See Ingvardson & Nielsen 2015, note 5 for a list of potential hoards.
- 2 The chronological definition of the Viking Age is discussed in section 1.2.1.
- 3 This figure is accurate as of the start of 2019.
- 4 Based on von Heijne's catalogue from 2004 and includes 1.12 Bomhög, 1.13 Naffentorp, 1.34 Glimminge Klockarebacken, 1.134 Store Slågarp; further archaeological surveys were conducted near 1.42 Filborna, 1.145 Häljarp, 1.175 Östra Torp. Finally, three pit-houses were excavated at Löddeköpinge 1.106, 1.107, 1.108 and one at Hagestad 1.111, where two to three coins were found in each pit-house. The numbers refer to von Heijne's catalogue.
- 5 Based on von Heijne's catalogue from 2004 and includes 4.1 Kræmmergården, 4.13 Freerslev, 4.18 Jernedegård, 4.101 Grisebjerggård, 4.103 Neble, 4.133 Toftegård. The numbers refer to von Heijne's catalogue.
- 6 Catalogue updated to 2019.
- 7 See section 1.2.2 for a more detailed description of the selected hoard sites.
- 8 See section 2.2.
- 9 From before 01-09-2019.
- 10 The term 'immediate context' is defined in section 3.2.1.
- 11 The record has not been updated in connection with this survey.

## 2 The multi-causal hoards

Viking research is often characterised by promoting a single interpretational framework for hoard accumulations and depositions (see discussion in section 2.1). However, this study sees the motivation behind the accumulation and deposition of hoards as multifaceted. This calls for an alternative theoretical perspective on the functions of hoards. Pierre Bourdieu's broad-ranging conception of economic, cultural, social, and symbolic capital is therefore presented in section 2.2 as the theoretical starting point for the interpretation of multi-causal hoards.

### 2.1 Studies in Viking-Age hoards

Numerous researchers within the fields of archaeology, history, and numismatics have explored the phenomenon of Viking hoards, and it is necessary to narrow the subject with a particular focus when reflecting on previous research. Considering the geographical limits of this study (section 1.2), research pertaining to the Baltic region, especially previous work on the Viking hoards of Bornholm, is highlighted. The chapter that follows does not aim to present a traditional chronological review of the history of research on Viking hoards, but dives into selected discussions and interpretation models, chosen for their relevance to the questions in this survey. Further, it addresses and defines different terms, ideas, and methods that have played an important role in Viking hoard research.

#### 2.1.1 *Deposition, votive, offering, or hoard*

The anthology *Danefæ – skatte fra den danske muld* [*Treasure trove – treasures from the Danish soil*] (Andersen & Nielsen 2010) reflects two contrasting research traditions. Collections of valuable objects deposited in the Stone Age, Bronze Age, or early Iron Age are termed deposits, offerings, or votives, while valuables deposited in Viking-Age and medieval contexts are termed hoards (Forsgren 2012, 170–171). The distinction not only lies in the term but also reflects a fundamental research tradition, in which collections of valuables are interpreted as ritually motivated from a prehistoric perspective, and as economically motivated from a historical perspective (Forsgren 2012, 168–171). Following Worsaae's 1865 interpretation, which viewed Iron Age weapons deposits as religiously motivated, archaeologists

have interpreted collections of special and valuable objects found in bogs in the light of the ritual sphere. As such, they are termed votives or offerings (Worsaae 1865, 57; see e.g. Hedeager 1999). In contrast, the ritual perspectives have had little influence on numismatic research. This, for example, is clearly demonstrated in Keld Grønder-Hansen's dissertation from 2000, in which hoards found in wetlands are interpreted from a purely economic perspective. Arguing that it is difficult to retrieve hoards from wetlands, Grønder-Hansen interprets wetland deposits as random losses (2000, 170–172). Archaeologist Birgitta Hårdh distinguished between hoards, categorised as savings deposited with the intention of retrieval, and offerings deposited for the gods, without the intent of retrieval (1976, 7). Her categorisation followed Berta Stjernquist's line of reasoning, which regarded 'deposit' as a neutral term that covers both hoards and offerings (1963, 19–21). However, in 1897, Müller used the term 'deposit' to describe a collection of valuables placed in the earth with the intent of retrieval, while a collection of objects consigned to the ground without the intention of retrieval was termed 'offering' or 'votive' (1897, 380). All terms – deposit, votive, offering, or hoard – seem to involve a premeditated dimension to their creation and interpretation. In this survey, the term hoard or deposit is used to describe a collection of valuables deposited at the same time. Both hoards and deposits are perceived as neutral terms without interpretative connotations.

Cecilia von Heijne argues that a distinction between ritual and non-religious or 'profane' deposits cannot be determined based on the deposition contexts. She sees the traditional distinction between ritual deposits in wetland areas and by large stones, and functional deposits in settlement sites as invalid, because both contexts may include both ritual and profane depositions (von Heijne 2004, 60–61). Here the deposition context alone is not seen as a decisive interpretative factor, but the deposition context in combination with the hoard's internal structure and the secondary treatment of objects are vital elements in the interpretation of hoards.

### 2.1.2 *Cataloguing and contextualisation*

Early surveys of Viking-Age hoards were descriptive and focused on empirical presentations, e.g. Erik Person's (1935) *Svenska myntfynd från Vikingatiden*, Skovmand's (1942) *De danske skattefund*, and Mårten Stenberger's (1947–1958) *Die Schatzfunde Gotlands der Wikingerzeit*. This tradition was maintained, especially within numismatics, and the primary purpose of Galster's (1980) *Vikingetids møntfund på Bornholm*, and Jørgen Steen Jensen *et al.*'s (1992) *Danmarks Middelalderlige skattefund* was to catalogue and present the hoarded material with a particular focus on coin descriptions. The strong empirical numismatic tradition emphasising systematisation and classification has, according to Torun Zachrisson, hindered analysis of the role of silver from a broader cultural perspective (1998, 12–13). Zachrisson's criticism is justified to some extent, since numismatic literature is dominated by publications with the primary purpose of presenting a particular coin type, a mint, or coin finds from a specific geographical area. Presentations of collections are prioritised over contextualisation. It can be argued that the lack of

perspective means that these works in themselves do not contribute to new cultural perspectives. Conversely, this contextualising study would be impossible without this scientific basis.

Florent Audy criticises numismatic research for a lack of focus on the secondary treatment of coins (2018, 23–25). The example highlighted in his work is coin jewellery, which forms the empirical focus of his Ph.D. *Suspended Value* (2018). He argues that the focus on coins as a source of precise dating and economic perspectives has led to coin jewellery being overlooked or even ignored as an independent find category. He highlights examples in which suspensions were removed from coin jewellery for the numismatist to access the ‘important’ data (Audy 2018, 24). Fortunately, the 1960s practice of removing suspensions from coin jewellery does not apply today. This does not alter the fact that the numismatic focus still lies on the identification of a coin’s time and place of production. The reason is not only a **fossilised** research tradition, as suggested by Audy and Zachrisson, but a question of demand for the unique characteristics of coins concerning a precise identification of production time and place. Chronology is one of the foundational pillars of archaeology, and coins are one of the few archaeological find groups that may be dated within a few years.

For a diachronic study like this, in which hoards deposited over 300 years are analysed and viewed in the context of the surrounding society, the unique production data pertaining to each coin is crucial for virtually all parts of the analysis. A time-consuming and important part of the work has therefore been the classification of the 12,521 coins included in the hoards. Personally, this author cannot help but feel exasperated when, for example, only 57 out of 133 coins in the Rosmanegård SV hoard can be dated because of heavy fragmentation, or lament over lost information when a coin motif cannot be identified because of numerous pecks and bends. On the other hand, it is in this dimension, the secondary modification of objects, that the main characters of this analysis – the hoarding Vikings – come to life. The traces of circulation add an extra dimension of information reflecting the Vikings’ actions and perceptions of the objects, as pictured in Figure 2.1. The storytelling lies in the secondary modifications. Fleur Kemmers and Nanouschka Myrberg’s (2011, 89–95) four contextual stages of coins, reflecting the different phases of a coin’s biography, including the handling and deposition of coins by humans, is an important source of inspiration for the method applied here. Thus, the inclusion, analysis, and relation of production data, circulation data, and deposition data occupy key positions in the analysis.

### 2.1.3 *Archaeology and context*

The archaeological influence on what may be termed ‘contextualising numismatics’ is significant. Here, the context determines the interpretation of the coin finds. With her dissertation from 1989, *Mellan stengrund och stenhus: Gotlands vikingatida silverskatter som boplatsindikation*, Majvor Östergren stands as a pioneer in the genre. She demonstrated the presence of settlement remains at 13 of 16 excavated hoard sites (1989, 51, 54, fig. 40).<sup>1</sup> Based on excavation data, Östergren



*Figure 2.1* An interesting example of secondary treatment resulting in a modified coin is this Samanid dirham found at the Kobbegård site. The coin is broken, perforated along the fragmented edge, and stitched together with silver thread. The intention behind this is not immediately clear, for it does not enhance the economic potential of the coin (whether weighed or counted), and may instead represent a social or symbolic action which present-day scientists are unable to decode. Find no. BMR 3792x1.

*Photograph:* T. B. Christensen, National Museum of Denmark (CC-BY-SA).

distinguished several criteria used as settlement indicators; the presence of at least two of these criteria, in addition to a hoard, was used to indicate that the site contains a settlement (1989, 55–56, fig. 40). Self-executed metal detector surveys at 82 sites, of which 74 were confirmed hoard sites, led to the conclusion that 93 per cent of the hoards were deposited on settlement sites. Based on the results of excavations and metal detector surveys, Östergren concluded that the majority of hoards on Gotland were probably deposited under the floors of dwelling houses. She interprets the hoards as active hoards, from which the owner removed and returned objects before and after trading expeditions; the failure to retrieve a hoard is seen as due to traumatic events during the owner's journey abroad. Thus, Östergren rejected the view, which at that time was otherwise entrenched, that hoards were buried in the ground outside buildings, arguing instead that hoards were generally sited inside houses (1989, 248).

Östergren's method has subsequently been challenged. Through a detailed review of her data, Zachrisson and Gustaf Svedjemo have each shown that many of the sites categorised by Östergren as settlements do not meet her own criteria for this designation (Zachrisson 1998, 119–120 [11 sites]; Svedjemo 2014, 114 [21 sites]). Most recently, Jacek Gruszczynski has reexamined the Gotlandic hoards. He rejects further examples of links between hoards and settlements; among other things, it is highlighted that several of the hoards are deposited in grave contexts or at field boundaries, and that some of the recorded settlement indicators cannot be dated to the Viking Age/early Middle Ages, and therefore should not be related

to the deposited hoards. Gruszczynski states that a link between hoards and settlements can only be documented for half of Östergren's surveyed sites (2019, 26–28). The well-substantiated criticism does not alter the fact that Östergren demonstrated that analyses of the archaeological context can contribute to new interpretations, and even when taking this criticism into account, the analysis demonstrates that a significant proportion of the hoards can be linked to settlement activities. Von Heijne's corpus of work on South Scandinavian Viking-Age hoards argues that the hoards were not deposited in houses but at settlements adjacent to houses (2004, 58–59). Östergren's interpretation has been challenged because it sought an overly narrow, one-pronged interpretation for all hoards. The fact is that not all hoards, but a selection of hoards can be connected to settlements. Another criticism is that Östergren links the deposition of hoards to residential houses (1989, 248). Östergren's excavated sites make up about 1 per cent of the estimated Viking-Age sites on Gotland (Gruszczynski 2019, 26). In most cases, the relationship between settlement and hoards is based on surface finds. However, it is problematic to use surface finds as evidence that the hoards were deposited in a dwelling house. The finds may also be due to other settlement activities. Thus, the basis for linking hoards specifically to dwelling houses is questionable.

Building on the experiences from the Gotlandic hoard surveys, this survey will address several of the critical points outlined earlier concerning the context of hoards. The 34 excavated Bornholm hoard sites will serve as a starting point for a nuanced analysis of the context of hoards. The case study of six Bornholm hoards has previously suggested that hoard sites may be divided into three main categories: 1) hoards deposited centrally on settlements – often in a house; 2) hoards deposited at the periphery of settlements, perhaps in areas with production activities; and 3) hoards deposited in areas without other prehistoric remains. The thesis is that hoards within different categories display different structural features reflecting their status (Ingvardson 2019, 35). This is tested in section 7.2.4.

#### **2.1.4 *Single finds or hoards***

The rise of metal detector archaeology has turned archaeological data upside down in many ways. As stated previously, detector archaeology has changed the focus from hoards deposited in wetlands to hoards deposited in settlements. A prerequisite for detector archaeology is that the traces of prehistoric activities at detector sites are found only if the archaeological context is destroyed, most often by agricultural activities. Detector sites generate a mixture of finds from many different prehistoric and historical activities found together in the plough layer (Watt 2000, 92–96; Horsnæs *et al.* 2013, 3–7; Henriksen 2016, 69–72). On Bornholm, the extensive metal detector surveys have not only meant a sharp increase in the number of Viking-Age hoards, but it has also produced an explosive increase in the number of single finds from the Iron Age and Viking Age (Watt 1998, 205–207; Nielsen 2000, 99). Thus, to map the internal hoard structures, it is important to separate objects deposited in hoards from objects attributed to other site activities.

In her 2004 dissertation, von Heijne divides coin finds into single finds, series of single finds, and hoard finds. She defines a series of single finds as a collection of objects within a specific area that is not deposited or lost simultaneously (2004, 45). As von Heijne points out, it can be difficult to determine whether a group of objects found within a given area is lost or deposited individually or together. She highlights that the problem is particularly present at the many coin-rich sites on Bornholm, but argues that analyses of coin dates and distribution can determine whether the coins were deposited as a series of single finds or in a hoard (von Heijne 2004, 45). The defining criteria for von Heijne's find categories in the catalogue are unclear. A similar challenge applies to this analysis. The hoard sites often show a clear concentration of silver objects as well as one or more objects for which it is difficult to decide if they should be included or excluded in the hoard.<sup>2</sup> The issue of single finds versus hoard finds is discussed in Helle Horsnæs's, Michael Märcher's, and Michael Vennersdorf's diachronic analysis of coin finds from Bornholm's Vester Herred [Western parish] (2013). The authors implement a multi-pronged method when interpreting whether coins and other objects should be included in hoard contexts and identify the following criteria as decisive (2013, 15):

- find distribution, including the internal distribution of silver objects as well as how the silver finds and other find types at a site relate to one another
- combination of find types
- the relationship between the number of coins and other objects potentially included in the hoard in relation to the number of other objects at the site
- similarities or differences in the condition of preservation of objects

These criteria are integrated into the analysis of the Bornholm hoards, except for the condition of preservation, since this has not been recorded systematically. The method does not build on well-defined measurable parameters but strongly relies on individual assessments. Thus, it is imperative to present the underlying motivation for the interpretations (see discussion in section 3.1).

### *2.1.5 War and trade*

Over the last 150 years, the role of silver in society has been analysed from different research perspectives. Two of the most dominant interpretation models are war-generated silver depositions and trade-generated silver accumulations. In 1926, Sture Bolin presented his thesis that an increase in hoard depositions reflects times of war and unrest (Bolin 1926, 209). The idea was founded on the enormous number of hoards deposited during the seventeenth-century wars between Denmark and Sweden (see also Jonsson 2011). The bloody encounters between Denmark and Sweden undoubtedly led to a huge number of hoard depositions, and in this aspect, Bolin's argumentation is convincing. What may be questioned is whether Bolin's interpretation is valid as a general model for hoard depositions. Following the thesis of this survey, some hoards represent fortunes hidden away

out of fear, while other hoards were deposited for other reasons. The aim is to distinguish hoard characteristics that reflect different motivations.

Gert Hatz was one among many followers of Bolin's war thesis. He sees unrest as the dominating motivation for hoard depositions and trade as the most important factor for accumulation (1974, 143–150). An interesting aspect of G. Hatz's work is the theorising reflexions on the different phases of hoards. He argues for a distinction between the motivations behind hoard accumulation (*Schatzbildung*) and hoard deposition (*Schatzvergrabung*). Thus, the hoard biography is integral to its interpretation. Inspired by G. Hatz, the analysis of the Bornholm hoards is divided into the accumulation phase and deposition event for each hoard (section 3.2.1).

Trade and economy were the dominating factors in interpretations during the twentieth century. As early as 1897 Hans Hildebrand stated that the large number of hoards deposited in the tenth and eleventh centuries reflected increased trade. Likewise, Stenberger, Östergren, and Gruszczynski argue that the majority of silver deposits on Gotland entered the island via trade (Stenberger 1958, 307–319; Östergren 1989, 244; Gruszczynski 2019, 247–250). They highlight Gotland's strategic position on one of the main East-West trade routes across the Baltic Sea as a decisive factor for the large number of deposits on the island in the Viking Age, which – as for Bornholm – also stretches to the middle of the twelfth century (Gustafsson 2013, 18). Peter Sawyer, on the other hand, stressed piracy as the main source of Gotland's silver, while Mark Blackburn and Kenneth Jonsson concluded that the Gotlandic silver hoards were the result of both trade and raid (Blackburn & Jonsson 1981, 161–184; Sawyer 1982, 144–147). Bornholm, like Gotland, lies in the middle of the Baltic Sea, and an essential question is whether this geographical position influenced the import and deposition of silver on the island, and if so, when and how? Were the Bornholm Vikings an integrated part of the contact network of the Baltic Sea, or was Bornholm an isolated enclave? Von Heijne's comprehensive analysis of hoards deposited c. 800–1130 clearly shows that Bornholm should not be seen in relation to the areas representing present-day Denmark, but instead in relation to the Baltic Sea region (von Heijne 2004, 153–160). Thus, the analysis will include a comparison to Bornholm's 'neighbours' in the Baltic Sea.

Skovmand's dissertation from 1942 makes up the first collected publication and analysis of Danish Viking-Age hoards. Gotland had until then been the primary study area within the Scandinavian hoard research, but with Skovmand's dissertation, the Danish material, and thus that from Bornholm, was highlighted. Skovmand was a strong supporter of Bolin's war thesis, and he framed his work in the mono-causal interpretation, i.e. that hoards were mainly accumulated as war loot and deposited in times of war (1942, 183–198). Skovmand included coins, jewellery, and ingots in his analysis, and together with his regard for the secondary modifications of objects, he displayed great foresight with a modern and holistic methodological approach. He distinguishes between complete jewellery of high quality, interpreted as war loot, and fragmented jewellery, interpreted as currency accumulated via trade (1942, 200). Based on the fragmented jewellery, Skovmand places Bornholm in a trade zone between Scania, Pomerania, and Lolland-Falster (the southern islands of Denmark), thus highlighting the importance of Bornholm's

geographical position (1942, 216–217). This survey follows Skovmand's main thesis in that it relates different characteristics in hoard structures (complete versus fragmented objects) to differences in hoard functions. However, his relatively one-sided emphasis on war as the motivation for silver accumulation and deposition stands miles away from the underlying thesis behind this survey: that is, that hoards were integrated with economic, social, cultural, as well as symbolic actions (Chapter 1).

### *2.1.6 Complete and fragmented*

In general, the Viking hoards are often composed of several different find groups as complete and/or fragmented coins, jewellery, and ingots. From a research perspective, coins have occupied a dominant role in literature. The reason may be that coins add an extra dimension, because they are objects provided with a text. Thus, they might be regarded as both an archaeological and historical source, often connected to a specific place, time, and sometimes person. The unique characteristics of coins are in line with the focus on trade, economy, king, and war, which has left its mark on Viking hoard research. While Skovmand appreciated the significance of non-numismatic silver, most scholars have not given it much attention, except for archaeologists who have shown a research interest in jewellery and ingots (see e.g. Stenberger 1947–1958). However, it was with Hårdh's dissertation *Wiking-erzeitliche Depotfunde aus Südschweden* (1976) that the importance of jewellery was, for the first time, integrated into hoard interpretations. Hårdh's analysis demonstrated that all find groups play a crucial part in the interpretation of hoards. In addition to highlighting the role of jewellery, her dissertation was ground-breaking in demonstrating that the secondary modifications of objects were essential to the analysis.<sup>3</sup> For the first time, observations about the treatment of silver objects were integrated into the interpretation of Scandinavian Viking hoards. Like previous studies, Hårdh's work focused on economic aspects, but presented new interpretations through metrological perspectives pertaining to the fragmentation of objects in hoards. Her clearly defined purpose has been to reveal how silver was used as a currency in different regions (Hårdh 1996, 14). Specifically, Hårdh argues that the weight and degree of fragmentation of an object, as well as the ratio between minted and non-minted silver in hoards, reflect the role and function of silver in the Viking Age. Differences in hoard composition (deposition of neck-rings versus deposition of fragmented silver) indicate different economic systems (1996, 84). Her later regional study demonstrated that the fragmented silver circulated as currency in well-defined weight standards within different regions (Hårdh 1996, 94–130). Scania, Blekinge, Bornholm, and the Slavic area are identified as a homogeneous economic region, where the degree of fragmentation in hoards culminated around 1000, and fell after 1020 (1996, 104–111).

Hårdh mentions the possibility that some hoards may be ritual deposits. However, detailed documentation of find circumstances is assumed to be a prerequisite for ritual interpretations, so this line of inquiry is only followed sporadically (Hårdh 1996, 94–130). One may argue that it is also necessary to know the find

circumstances to interpret hoards from an economic perspective. In this survey, it will be explored whether a hoard containing hack-silver per definition should be interpreted as savings, deposited with the intent of retrieval. The documentation of the archaeological contexts of the Bornholm hoards, which is often detailed, facilitates a differentiated analysis of the motivations leading to hoard deposition. To investigate alternative interpretations of hack-silver hoards, a differentiated view of fragmented objects is used in Chapter 6, and the results of this new methodological approach to fragmented silver are discussed in Chapter 7 in relation to deposition data.

Marek Jankowiak also connects the fragmentation of coins to transactions, but in opposition to Hårdh, he connects the degree of fragmentation to the import phase. According to Jankowiak, the fragmentation reflects the distance between the place of production and place of import – not measured in miles, but in the number of times the coin has changed hands. Fragmentation is interpreted as a way to seal a deal, corresponding to Christoph Kilger’s interpretation of pecks (Kilger 2006, 464; Jankowiak 2019, 27–28). In contrast to Hårdh, who interprets fragmentation as a reflection of trade in the area of deposition, Jankowiak argues that the coins were fragmented before they reached the area of deposition (2019, 21–23). The argument is based on an analysis of the fragmentation of Islamic coins, in which a low degree of fragmentation, according to Jankowiak, shows that dirhams arrived in Estonia and Gotland via few transactions. From here the coins were transported further around the Baltic Sea to mainland Sweden, further to the western Baltic Sea region (Scania and eastern Denmark including Bornholm), and finally to the southern part of the Baltic Sea region (Poland), where the average degree of fragmentation is highest (Jankowiak 2019, 21–24). Jankowiak suggests that the Islamic coins were not fragmented in the area of deposition, since dirhams with long circulation times are not more fragmented than dirhams with short circulation times (Jankowiak 2019, 24–25). He states that fragmented coins disappear from the hoards at the beginning of the eleventh century, and he relates this development to the general change from Islamic coins to western European coins in hoards deposited in the early eleventh century, reflecting a reorganisation of trade (Jankowiak 2019, 28–29). It weakens Jankowiak’s argumentation that he bases his survey exclusively on Islamic coins. He does not include the degree of fragmentation of other find groups; as demonstrated by Hårdh, the degree of fragmentation culminates in Bornholm hoards precisely in the first decades of the eleventh century, at the time when western European coins begin to dominate the coin material (1996, 104–111). Jankowiak is aware of these methodological limitations, and concludes his paper with a call to integrate other find groups in a similar survey. This challenge will be addressed in section 6.1.1, presenting a fragmentation analysis of all find groups present in the Bornholm hoards.

### **2.1.7 Christianity**

In the early twentieth century, the religious aspect held a prominent place in the discussion of what motivated hoard depositions, and the cause of their abandonment.

Hoard depositions were interpreted as the result of ‘Odin’s Law’, described in the *Ynglinga Saga* and *Egils Saga*, with hidden fortunes intended for retrieval in the afterlife when their owner entered Valhalla after an honourable death on the battlefield (see e.g. Almgren 1899, 229–232; Lindqvist 1920, 77–80). The ritual-motivated theory did not find many followers, and above all Bolin’s war thesis from 1926 moved the focus of research in another direction (1926, 209).

The ritual and symbolic aspects of hoard deposition have gained ground within recent decades. For example, Lena Thunmark-Nylén revitalised the religious aspect in 1986. Taking as her starting point the 70 Gotlandic hoards recorded as deposited by a stone, under a stone, or by/in wetland areas in Stenberger’s catalogue (1947–1958), Thunmark-Nylén states that older hoards were deposited under smaller stones, while more recent hoards were deposited by larger stones (1986). She connects this difference in deposition practice to the introduction of Christianity. Thunmark-Nylén argues that the idea of needing earthly goods in the afterlife disappears with Christianity. She interprets the ‘heathen hoards’ as personal hoards, deposited with the intent of retrieval in the afterlife (Odin’s Law). These hoards are described as ‘passive’, because they were not intended for retrieval (until the afterlife); thus, making a visual marker at the deposition place unnecessary (Thunmark-Nylén 1986, 24). This is why they were deposited under smaller stones. Thunmark-Nylén interprets the ‘Christian hoards’ as family savings, and argues that they were ‘active’ hoards, where the owner could add or reduce the content according to need. As the descendants also needed to be able to retrieve the hoard, it was necessary to mark the deposition place clearly, e.g. by placing it near a large stone (Thunmark-Nylén 1986, 24). Regarding the personal hoards, Thunmark-Nylén states:

If the time of deposit can be calculated to a maximum of about half the age of man after the *tpq*, this will mean that he at earliest was an active importer as a mature youth and at latest as a middle-aged man carried out the deposition. Calculating about 30 years after the *tpq* as the deposition event, one then concludes that pagan private hoard deposits ceased sometime towards the end of the tenth century. The wealthy social group, which was able to put silver in storage for the afterlife, had then apparently become Christian.

(1986, 26, translation by the author)<sup>4</sup>

The ritual aspect in deposition practices is a relevant and welcome addition to the literature which is otherwise fixated on economic aspects of Viking hoards, but Thunmark-Nylén’s argumentation builds on an oversimplified view of both deposition practices and Christianisation. Her statement that hoards were deposited around 30 years after the *tpq* is unsubstantiated. As discussed in Chapter 5, some silver objects were deposited shortly after accumulation, while others were deposited long after accumulation. Further, the use of Christianisation as a starting point requires a more nuanced discussion of the process. Changes in grave rites demonstrate that the introduction of Christianity led to an altered perception of material wealth in the afterlife. However, the Christianisation process is multifaceted, with

marked regional differences, as demonstrated by archaeologist Cecilia Ljung's analysis of early Christian grave monuments and runestones. A consistent feature is that Christianisation was a protracted process. In Uppland and on Öland, the old 'heathen' grave-sites are used as a burial ground for Christians during the eleventh and beginning of the twelfth centuries, and on Gotland persons with personal grave goods are buried in Christian churchyards (Ljung 2016, 170–171). In Bornholm, the burial sites at Slamrebjerg, Runegård, and Munkegård were constructed at the end of the tenth century, and continued in use in the eleventh century, while Nordre Grødbygård was used during the second half of the eleventh century, revealing a similar situation (Svanberg 2003, 125–126; Naum 2008, 207–208). Here a mixture of pagan and Christian elements reflects a gradual implementation of Christian impulses in grave rites (Lihammer 2007, 247–250) (see section 8.4.2). Thus, a swift and comprehensive change in religion, as suggested by Thunmark-Nylén, cannot be documented, and the observed difference in deposition context for hoards deposited around the eleventh century does not appear to be connected to the introduction of Christianity.

Zachrisson uses the foundation fresco at Fjenneslev church as an illustration of how Christianity influenced the hoarding practice. The fresco shows a nobleman, probably Asser Rig, giving God a church, while Inge, his wife, presents a twisted gold ring. Zachrisson argues that the introduction of Christianity meant that economic surplus was no longer deposited in hoards, but instead directed into church buildings and church donations (1998, 215–216). The scene at the Fjenneslev fresco depicts members of Denmark's highest elite, the house of Hvide, and the scene does not necessarily reflect the realities of Bornholm.

Jörg Widmaier and Janina Dieckmann present a similar interpretation drawing on an empirically based analysis of hoard depositions and church buildings on Gotland. Widmaier and Dieckmann analyse the Christian influence on hoard depositions from a cultural sociological view. The social practice of channelling resource surplus into deposited hoards changed with the introduction of Christianity. Instead, the surplus was directed into church buildings and church donations (Widmaier & Dieckmann 2016; see also Wienberg 2004, 286–288). The argument is convincing, and a marked fall in hoard deposition during the twelfth century on Gotland coincides with the initiation of church buildings in the same period.

Svein Gullbekk also connects the introduction of Christianity to changes in deposition practices. Gullbekk emphasises that Christianity led to a conceptual change, affecting the practice of deposition. While valuables according to Odin's Law could be used in the afterlife, Christianity argues for a clear distinction between earthly wealth and spiritual salvation. Material wealth was without significance in the journey through purgatory and in entering the heavenly kingdom (Gullbekk 2019, 91–94). Gullbekk speaks of the establishment of a 'spiritual economy' in connection with Christianisation, and he sees the widespread practice of offerings in churches as an important actor and force in the introduction of the coin economy in the Middle Ages (Gullbekk 2019, 94–100).

Based on case studies drawing on six Bornholm hoards, the present author has argued that Viking hoards should not be viewed as a uniform phenomenon. Thus,

a uniform deposition practice cannot be applied to all hoards (Ingvardson 2019, 40–54). While Christianity may be related to the termination of the hoarding practice, the religious perspective does not seem to provide an adequate interpretive framework for deposition practices in pre-Christian societies.

### 2.1.8 *Gender and social glue*

For a century, Viking-Age women were invisible in the field of Viking hoard research, but this changed in the 1990s when Birgit Arrhenius highlighted how a large part of a woman's morning gift and dowry would have consisted of precious metals. Thus, Arrhenius potentially connected some of the hoards to women (1992). Søren Sindbæk discusses silver as 'social glue' and highlights death and marriage as two social events at which wealth was exchanged. Sindbæk suggests that in marriage the woman's family paid a dowry and that the man/the man's family paid a bridal price. With reference to examples in early medieval Icelandic, Norwegian, and Swedish laws, he argues that these valuables may have been the woman's property, constituting judicial security in case of divorce (Sindbæk 2011, 46, 54–55).<sup>5</sup> Thus, the hoards functioned as a medium for the establishment of social networks as well as economic security.

A special type of Scandinavian hoard has particularly strong parallels with the inventory of female Viking graves. The hoards often consist of female-related jewellery, and are characterised by a central brooch, giving the hoard-type its name: *central brooch deposits* [*midtspændedepot*]. The central brooch comes in different designs, e.g. trefoil, round, or elongated, and is typically accompanied by beads, arm-rings, and coins. The latter are often reworked into jewellery (Kilger 2008b, 325–334; Myrberg 2008, 130–132, 2009b, 133–138). The Norwegian Hoen gold hoard can be highlighted as the most spectacular example of the hoard-type. In Hoen, a Frankish trefoil brooch is the central piece, and it is accompanied by neck-rings, arm-rings, pendants, suspended coins, and beads (Fuglesang & Wilson 2006). Geographical and chronological differences in hoard compositions seem to be closely connected to geographical and chronological differences in grave material. In female graves, the design of central brooches changes from trefoil to round during the first half of the tenth century (Brøndsted 1936). This change is also seen in the central brooch deposits. On Gotland, the female dress differs from the rest of Scandinavia, and here grave inventory, as well as central brooch deposits, are characterised by bracteates, filigree beads, ring-pins, and locally produced bronze pendants; in cases with central brooches, they consist of disc-on-bow brooches or box-shaped brooches (Kilger 2008b, 325–334). The link between these special female hoards (central brooch deposits) and the grave inventory in female graves is convincing (Kilger 2008b, 325–334; Myrberg 2008, 130–132, 2009b, 133–138). It is unclear why these find-combinations are sometimes deposited in grave contexts, and sometimes in hoard contexts. Are the grave goods a social construction in connection with the burials? Are the hoards a social construction in connection with the depositions? Are central brooch deposits examples of women's morning gifts and their possessions in life as well as in death? The link between grave inventory

and hoards illustrates that hoards with specific combinations of objects (thematic hoards) may reflect the social identity of the people handling them. Myrberg and Kilger suggest that it may be possible to segregate other thematic hoards (Kilger 2008b, 334–335; Myrberg 2009b, 142–143). These questions will be investigated based on the Bornholm hoards. Is it possible to make a connection between the structures/contexts of hoards, and the functions/users of hoards?

Referring to Gotland's restrictive inheritance laws in the eighteenth, nineteenth, and twentieth centuries, Mats Burström argues that a bridal price system regulated the land ownership in Viking-Age Gotland (1993, 34–35). M. Burström draws parallels to inheritance laws in modern times under which farms were not divided between several persons by succession. The purpose was to preserve a profitable farm size, necessitated by the limited farmland on the island. The legacy policy caused a relatively high average marriage age in Gotland in the eighteenth, nineteenth, and twentieth centuries, since marriages were not entered before the farms were inherited. In addition, the policy limited the birth rate, since there was only one heir to the farm, and the other children were compensated in a dowry system (M. Burström 1993, 34).

M. Burström suggests that regulation of the marriage age was also necessary in the Viking Age so that the child who inherited the farm waited to marry until the takeover. To regulate the marriage age, M. Burström suggests a system in which the older men controlled the distribution of precious metals. Young men were forced to serve the old men, e.g. by working on their ships, until the young men had earned a suitable bridal price (1993, 35–37). M. Burström refers to calculations indicating that six hoards were deposited on each Gotlandic farm between 900–1100 (A. Carlsson 1983, 36). This resulted in a hoard being deposited every c. 33 years, or one hoard per generation, according to M. Burström. Based on these calculations, M. Burström argues that a new hoard was deposited every time a couple was married and that the marriage age on Gotland was 30–35 years. According to M. Burström, this also explains why hoards were not retrieved; when the marriage was consummated, the hoards had fulfilled their purpose and stayed deposited on the bride's family farm (1993, 36–37). Alongside the modern parallels, M. Burström bases his model on Östergren's argumentation that Viking hoards were deposited on farms. However, as mentioned, Östergren's results must be revised and reduced, which weakens M. Burström's reasoning.

A further argument against M. Burström's model is archaeologist Susanne Thedéen's analysis of grave inventories of female graves on Gotland. Based on changes in inventory, Thedéen identifies three social ages in the development from girls to women in the Viking Age (800–1050). Girls in the age range of 0–5 years were buried with a few beads; from the ages 5–15 years they were buried with a large number of beads (100–250); and, from the age of 15–20 years, the number of beads drops to fewer than 50 in women's graves (Thedéen 2008, 85–91). A marked difference is also that white beads were reserved for girls between 5–15/20 years. Thus, the number and composition of beads seem to reflect social age rather than economic status. The age 5–15/20 can be regarded as a middle stage between childhood and adulthood. Thedéen suggests that the white beads had a symbolic

meaning connected to virginity. When a girl entered the next phase in life, as a sexually mature woman, the white beads lost their symbolic meaning and were removed (Thedéen 2008, 85–91). It is unknown if the change around the age of 15–20 should be related to social or biological changes such as menstruation, marriage, the first child, or entering adulthood, but it is worth noting that it is not possible to trace any changes in social identity at the age 30–35. Thus, Thedéen’s analysis contradicts the idea that Gotlandic women in the Viking Age entered marriage at this point, as suggested by M. Burström.

Kilger’s view is partly in line with M. Burström. Referring to *Guta Lagen*, the Gotlandic law from the beginning of the thirteenth century, Kilger argues that women could not inherit land. A married woman was perceived as a guest in her husband’s house (2019, 134). In *Guta Lagen*, *Haimfylgi* is described as the possessions the wife brought with her in marriage. If the husband died, these possessions should be returned to the woman’s birthplace. Thus, *Haimfylgi* can be interpreted as valuables deposited at marriage, symbolising the alliance between two farms. As long as the alliance existed, the valuables stayed deposited. This presents a possible explanation for the large number of deposited hoards on Gotland (Kilger 2019, 134–135). An essential difference between the two systems suggested by Sindbæk and Kilger respectively is that the silver in Sindbæk’s interpretation was owned by the women, while the silver in Kilger’s interpretation was owned by the farm/family. The difference is possibly real, since there is a clear difference in the formulation in Danish and Norwegian law texts, describing women’s and men’s common property, which is not the case in *Guta Lagen* (Kilger 2019, 134).

M. Burström’s and Kilger’s interpretations presuppose that the family structure of the Viking Age resembles the family structure of the Middle Ages. However, we do not know if this was the case. It is a reasonable idea that the introduction of Christianity led to changes in the social structure, and that the patriarchal monogamous ideal of Christianity did not necessarily relate to the Viking Age. Thus, using legislation from the Middle Ages and post-Middle Ages as an interpretive framework for Viking-Age hoards is not straightforward, and must be approached with caution.

The interpretations presented here are connected to women as facilitators of alliances, and the women are presented as inactive in both the accumulation and distribution of valuables. Thus, men are exclusively interpreted as accumulators, distributors, and depositors of silver. Kilger’s and Myrberg’s analyses of *central brooch deposits* are an exception to this restricted interpretative framework for women as actors. *Central brooch deposits* are, by their connection to female graves, connected to women.

There is either a conscious or an unconscious tendency to interpret the hoard as gender-specific. Other archaeological find groups are generally interpreted as gender-specific. For example, weapons are related to men, while spindle weights are connected to women. The interpretation of archaeological material is influenced by history’s patriarchal worldview. No one would question that Birka grave Bj 581 furnished with a sword, axe, spear, knife, two shields, two horses, and game pieces was a high-status warrior grave if the skeleton were a man. It is a cause

for concern that it was only when osteological and DNA analysis indicated that the buried individual was a woman that the status of the buried was questioned (Hedenstierna-Jonson *et al.* 2017; Westen 2017). The Birka grave demonstrates that the gender perspective should be approached with caution. As a general rule, Viking hoards are interpreted as gender-neutral in this survey; from the outset, it assumes that silver in the Viking Age had the potential to be an agent for both men and women. The gender issue is interesting in the investigation of who handled and deposited silver, and the gender perspective will be discussed in the analysis.

### **2.1.9 Landowner markers and ritual**

In her analysis of the relation between hoards and the surrounding landscape in Uppland and Gästrikland, Zachrisson suggests that, like runestones, some hoards are placed at landscape borders as landowner marks. According to Zachrisson, the hoards functioned as a type of protection and/or markers of farmland (1998, 112–117, 201–204). As pointed out by Zachrisson, the empirical foundation in her investigation is insufficient to support her thesis because of the limited documentation of the archaeological context of the hoards included in her survey.

Gruszczynski also investigates whether hoards were deposited with or without the intent of retrieval (2019). In his contextual topographical analysis of hoards from Mälaren area, Gotland, and Pomerania, he argues that small hoards were deposited without containers more often than large hoards, and that the absence of containers reflects that the hoard was deposited without the intent of retrieval. The definition of small hoards varies within the different areas of Gruszczynski's analysis. On Gotland, hoards of less than 600 g are more often deposited without containers than larger hoards. In Pomerania, a similar distinction between hoards with and without containers is seen at 250 g. In the Mälaren area the picture is unclear, but according to Gruszczynski, there is a preponderance of hoards without containers among hoards that are less than 400 g (2019, 73–74, 134–136, 186–188). He seeks the reason for the deposition of small hoards without containers in the cultural/ritual sphere and argues that ownership of/sacrifice to newly cultivated land was a prevalent ritual deposition praxis (Gruszczynski 2019, 253–255). As also stated by Gruszczynski, the methodological approach is not without problems, because it partly builds on negative evidence in the form of the missing containers. Gruszczynski's interpretations are strengthened when the influence of soil types on the condition of preservation is included (2019, 57–65, 126–132, 175–182). Based on a detailed contextual analysis of hoard depositions from excavated sites on Bornholm, this survey will discuss Gruszczynski's results and interpretations in section 7.2.

This chapter has already touched upon the idea that the all-consuming economic focus of twentieth-century hoard research should be challenged and nuanced. However, to interpret all the different kinds of Viking-Age depositions as ritual, as archaeologist Anders Carlsson suggests, is to take the challenge too far. A. Carlsson attributes ritual power to coins, jewellery, silver/bronze scrap, iron bars, weights, and balance weights. Silver hoards, as well as craft debris deposited in or

near settlements, at harbour sites, and in areas with craft activities are interpreted as deliberate ritual deposits without the intent of retrieval (2015, 229–244). Both approaches, i.e. a unilateral focus on the ritual aspects and a unilateral focus on the economic dimension, stand in opposition to the multi-causal theoretical framework of this survey.

The main part of the research discussed shows a tendency to encapsulate the hoards in a single interpretative framework. The thesis presented in this survey is that each hoard has its unique history closely connected to the person(s) who collected, handled, and deposited it. Thus, a multi-causal interpretative approach is needed. In section 2.2 it is argued that Bourdieu's notion of capital can provide inspiration and a helpful framework for a multi-causal interpretation of the Bornholm Viking hoards.

## **2.2 Economic, cultural, social, and symbolic capital – the multi-causal hoards**

The analytical point of departure is the idea that the structure and context of hoards reflect the relation and function between the people who collected, possessed, and deposited them. Thus, the focus will be on the relationship between hoards and their owners, between objects and humans. Hoards are created through people's more or less deliberate choices: marriages, raids, or trade journeys could result in the accumulation of objects deposited in hoards. Conversely, hoards could affect the lives of people, as illustrated by the Veda runestone in Uppsala. The stone tells about Ärinmund, who bought a farm from wealth accumulated in the East (Zachrisson 1994, 225, 2017, 126). The wealth – potentially silver – influenced the everyday life and social position of Ärinmund, since it facilitated the attainment of a farm. Inspired by actor-network theory (ANT), both humans and objects, owners, and hoards are seen as actors in a network of relations (Latour 2008). One may discuss whether people and objects are equivalent agents. An essential question asks whether the agent consciously influences its surroundings, and whether both humans and objects have agency (Bille & Sørensen 2012, 62–63). The wealth of Ärinmund was passive until he decided to buy a farm. However, wealth (silver) influenced Ärinmund, because he would not have been able to act without it.

An interesting phenomenon related to the question of agency is the numismatic concept of silver flow, referring to the huge number of Islamic dirhams produced in the Caliphate, and imported into Scandinavia during the tenth century. In the mind's eye, you see a stream of silver flowing from the Caliphate to Scandinavia without the influence of people. Some researchers even talk about several waves of Islamic coins that hit Scandinavia (see e.g. Jensen 2004, 460–461; Sindbæk 2005, 217; Kilger 2008a, 221; Moesgaard 2018c, 132–142). Silver is rhetorically given agency. Naturally, silver did not flow to Scandinavia on its own, and people undoubtedly played a vital role in its transport. But, the precondition for an influx of Samanid dirhams in the Baltic Sea area at the beginning of the tenth century was the discovery of large amounts of silver in Central Asia, giving the Samanid emir Isma'il ibn Ahmad (892–907) the ability to initiate massive coinages in the year

279 AH (892/893 AD) (Noonan 2001, 135; Kilger 2008a, 235). Thus, because the silver mines affected the emir's course of action, this potentially affected the social structure in Scandinavia, since wealth accumulated in the East could mean the difference between owning land or not, as illustrated by the Veda runestone.

When following the definition of anthropologist Alfred Gell, an agent is what affects its surroundings (1998, 20–21). According to Gell, the influence is not necessarily motivated by a conscious act. Thus, people and objects can enter a mutual relationship affecting each other (1998, 21–23).

Hoards and the people behind hoards are perceived as agents affecting each other and their surroundings, and vice versa. Consequently, relation(s) between hoards and the people collecting, handling, and depositing them are conditioned by the agency of people as well as objects. This relates to the thesis that the Bornholm Viking hoards are not a uniform phenomenon. The differences in hoard structures and depositions reflect differences in hoard functions. Thus, by analysing the structures and depositions of hoards it is possible to decode the relationships between hoards and the people that accumulated, handled, and deposited them (section 1.1). Bourdieu's notion of capital and field offers an inspiring framework for the necessary multi-causal contextual interpretive framework.

According to Bourdieu, a field is an arena where agents fight for the control of capital in the specified field. Bourdieu describes four different types of capital: economic, social, cultural, and symbolic. Economic capital provides dominance in the economic field, social capital in the social field, cultural capital in the cultural field and symbolic capital gives the owner control and power in the religious field (Bourdieu & Wacquant 2009, 29, 84–89).

A species of capital is what is efficacious in a given field, both as a weapon and as a stake of struggle. . . . In empirical work, it is one and the same thing to determine what the field is, where its limits lie, etc. . . . (We see here how the notions of capital and field are tightly interconnected).

(Bourdieu & Wacquant 1992, 98–99)

Bourdieu's different types of capital are part of a superior power field, where economic and political resources function as 'trump cards'. The owner of economic and political resources has the power to influence the rules in all fields.

A good number of struggles within the field of power are of this type, notably those aimed at seizing power over the state, this is, over the economic and political resources that enable the state to wield a power over all games and over the rules that regulate them.

(Bourdieu & Wacquant 1992, 99–100)

The focal point of this survey is the idea that different hoard types had different functions, and that the same hoard potentially had multiple relations to the people who accumulated, handled, and deposited them. Inspired by Bourdieu, this may transform into the following concrete questions: Did hoards influence economic,

cultural, social, and symbolic capitals? And did hoards impart economic, cultural, social, and/or symbolic capital to human agents? In this way, the hoards are seen as potential agents not only in terms of their economic function, but also in cultural, social, and symbolic fields.

Hoards as elements in Bourdieu's system of capital will be investigated in the analysis of hoard structures in relation to the archaeological context. As stated by Bourdieu, it is in the interaction between theory and observation that discoveries are made (Bourdieu & Wacquant 2009, 23–24). For example, it is only through personal examination of the Store Frigård II hoard that a special form of bending relating to one person's special way of handling silver in transactions was detected (section 4.2.3). In practice, the relation between theory and empiricism is difficult to interpret. To illustrate how Bourdieu's notion of capital will inspire the investigation of the relations between Viking hoards and humans, the four scenarios outlined next have been constructed. The examples are based on concrete hoards and take inspiration from the interpretative framework discussed in section 2.1. The examples have been designed to illustrate how the interpretation of silver hoards may be related to many types of capital, and thereby fulfil many types of relations. The clear-cut distinction between different types of capital should not be perceived as sharply as presented here. Instead, the examples serve as a model for how the hoard structure and deposition may be related to different types of capital. A hoard may increase the capital for one or several persons and within one or several fields. As presented in the analysis (Chapter 4), these hoard examples are related to several types of capital; in other words, they have several different functions and relations. However, to visualise the interaction between structure, deposition, and capital, the examples only highlight one aspect of the hoard's multi-causal functions.

**Economic capital:** Around 340 complete and fragmented coins, ingots, jewellery, and melts were accumulated in the Gyldensgård SV hoard deposited in the northern part of a three-aisled house, interpreted as a dwelling house (catalogue: 15). Large parts of objects bear test-marks and/or are bent.<sup>6</sup> It is possible that the hoard was accumulated through repeated trade journeys and deposited in the dwelling house of the owner(s). The hoard may be interpreted as an active hoard, defined as a collection of valuables deposited with the intent of partial reinvestment, for example in future trade journeys. Thus, the hoard may have been accumulated and deposited to strengthen the owner's economic capital (Ingvarsson 2019, 42–53). The owner could achieve economic capital in the sense of Bourdieu, if s/he utilised the hoard within the economic field, for example, to build ships or to hire crew potentially generating more economic capital. This, in turn, would have affected the owner's economic status.

**Cultural capital:** The grave find from Rabækkegård is an example of how a hoard can express cultural capital. The grave was unearthed in 1874, when 15 dirhams, 2 bronze pendants, and 29 beads were found in a stone chest covered by a mound (Galster 1980, 30–33; Horsnæs *et al.* 2013, 24). It included pendants, beads, and one coin with a suspension loop, probably forming a woman's jewellery set, while the remaining 14 coins are here interpreted as the oldest Samanid hoard deposited on Bornholm (section 5.3). The distribution of the earliest Samanid

dirhams in the Baltic Sea region builds on personal contacts rather than organised trade networks (Kilger 2008a, 236–237). The jewellery and Samanid coins display the owner's extensive network and/or high level of knowledge, since the person knew foreign cultures and 'the world outside'. Perhaps the jewellery and the coin hoard were accumulated to display the owner's network and knowledge in life, and deposited to demonstrate the cultural capital of the deceased in the afterlife. Thus, the investment of material surplus in the grave could increase the cultural capital for the deceased as well as her relatives.

**Social capital:** Social capital is not exemplified by one single hoard, but by a specific coin type present in many Bornholm hoards. Several hoards deposited in the first half of the eleventh century contain groups of die-identical Anglo-Scandinavian imitations, probably acquired outside Bornholm and imported to Bornholm *en masse*. The die-identical coins are distributed across several Bornholm hoards, and they illustrate the internal relationship between and among different Bornholm hoards (section 5.4). The coins reflect a complex system in which the exchange and acquisition of silver strengthened the relations between different parts of the Bornholm society. The exchange created or reinforced the social ties between persons and families. Thus, silver possessed agency in Bourdieu's social field and strengthened the social capital of the persons included in the exchange system.

**Symbolic capital:** The Buddegård hoard is categorised as a *central brooch deposit* related to the female sphere, because it contains a trefoil brooch, a fragment of an arm-ring, and 45 Islamic coins, of which many are complete and reworked into jewellery (section 2.1). The hoard was deposited in a depression near a stream in an area without settlement traces (catalogue: 6). The trefoil brooch is folded, and around half the coins are bent a single time. This reflects a potentially deliberate 'destruction' of the objects before deposition (section 6.2). Supported by the deposition in an area without settlement traces, the hoard deposition may be interpreted as a ritual action, perhaps a sacrifice to the gods, to strengthen the woman's symbolic capital. As illustrated by this example, ritual practices are included in the symbolic field in this survey.

The perception of social reality is subject to structural constraints. Agents with different backgrounds – or habitus – have different systems of awareness and understanding (Bourdieu 1990, 131). An object, for example an Islamic dirham, demonstrates economic capital in the region where it was produced and used as a coin, but if reworked into jewellery and deposited in a Scandinavian grave context, the coin changes function and demonstrates cultural capital. The Bornholm Viking hoards consist of many different types of objects produced in many different areas. The perception and understanding of an object change over time and space, influenced by the constructed social reality in which it is present – both in the past and in the present. For example, the Nordre Stensebygård hoard was probably deposited in a pit filled with objects related to the work of a silversmith. Thus, the perception of the social capital of a Viking-Age silversmith will influence the interpretation of the hoard. Were silversmiths travelling specialists, farmers, or slaves? What was the position of the silversmith in the social hierarchy of the Viking Age?

Based on Bourdieu's theory on the influence of capital and structures on agents' perception of material culture, the following premise is set out: *the structure and contexts of hoards reflect their relation to and influence on the people who collected, handled, and deposited them*. This centres the people behind the hoards – the hoarding Vikings. In literature, few attempts have been made to uncover the people behind the hoards. An inspiring exception is Myrberg, who argues that the interpretation of the motivation for hoard depositions must be based on social categories or gender (Myrberg 2009a). The approach in the present survey may seem fixated on agents or individuals, but in line with Bourdieu, the agents/individuals are seen in relation to the system/society (Bourdieu & Wacquant 2009, 23). Bourdieu does not use the concept of society but operates with reference to 'fields'. Hoards had agency in, and were influenced by, the economic, cultural, social, and symbolic fields. The analysis of the hoard's relation to the economic, cultural, social, and symbolic capital will form the starting point for a discussion of the society in which the hoards were accumulated and deposited.

## Notes

- 1 Gruszczynski 2019, 26–27 notes a discrepancy between Östergren's text, which states that 14 sites have been excavated, and the actual number of excavated sites shown in figure 40.
- 2 Distributions maps are available in online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).
- 3 Hårdh cites Ryszard Kiersnowski's (1956) weight analyses for 133 Pomeranian hoards deposited 850–1200 as the primary source of inspiration.
- 4 '... kan depositionstillfället beräknas till högst omkring en halv mansålder efter tpq, det vill säga att han tidigast som mogen ungdom varit aktiv importör och senast i övre medelåldern utfört deponeringen. Med ett tal som ca 30 år efter tpq som depositionstillfälle kommer man då till slutsatsen, att hedniska privatskattedepositioner upphör någon gång mot slutet av 900-talet. Den förmögna socialgrupp, som kan lägga silver i depå inför livet efter detta, har då tydligen blivit kristen' (Thunmark-Nylén 1986, 26).
- 5 Sindbæk refers to the Icelandic law *Grágás*, the Swedish law *Äldre Västergötalagen*, and the Norwegian law *Gutatingslov*.
- 6 See Chapter 6 for discussions on secondary treatment of objects.

### 3 Identifying Bornholm's hoards

#### Content, character, and chronology

Due to Denmark's very liberal metal detector legislation, the museum-initiated and museum-directed collaboration between private metal detector archaeologists and the Bornholm Museum that started in 1989 has developed into a corporation which is largely dictated by the private detectorist. Metal detector surveys are often determined by the detectorist's personal preferences and ability to make agreements with landowners. Of course, it is more attractive to conduct detector surveys if you find something. Therefore, there is a natural tendency among detectorists to conduct surveys on sites with high success rates. On Bornholm, it is often possible to observe Viking-Age settlement remains on the field surface in the form of concentrations of charcoal, wattle and daub, and/or ceramics. Private metal detectorists favour these types of sites, because there is a higher probability of discovering interesting finds here. This means that hoards found in the central parts of settlement areas are likely to be over-represented. Following the theory that a hoard's function is reflected in its circumstances of deposition, this practice influences the analysis of the hoard's function; thus, the same type of hoard is found most often.

The thematic hoard from Buddegård, interpreted as a *central brooch deposit* (catalogue: 6 and section 2.2), is a good example of how a break with this practice might increase the variety of hoard types. Buddegård was found in an area where no previous archaeological finds had been made, and with what might be called 'atypical topographical conditions' for metal detector surveys on Bornholm. The Egenvang hoard is another example. This hoard was found by Nicklas, who was only fifteen years old when he searched a small field belonging to his parents with his newly purchased metal detector (Ingvardson & Laursen 2016). More experienced detectorists had previously conducted surveys in the area, but they had concentrated their efforts just a few hundred metres away, since concentrations of burnt wattle and daub and pottery in the area suggested the presence of a Viking-Age house. Egenvang differs markedly from Bornholm's other Viking-Age hoards because it consists primarily of jewellery fragments (section 3.3). The find suggests that the widespread metal detector practice of preferring settlement sites may influence the general profile of the hoards.

The archaeological context of the hoards plays an important role in the interpretation of their function. To include the archaeological context, it is essential to locate the deposition place for each hoard. Hoards found after 1980 have all been

located by metal detector surveys because the closed context of the hoard was disturbed by agricultural work which redeposited objects in the plough layer. Typically, a concentration of silver objects is found in the plough layer and the centre of the concentration indicates an approximate deposition place of the hoard. The precise location of the deposit is then investigated by the mechanical removal of the topsoil in thin layers. Between each stripped layer, the area is searched with a metal detector, and each find is logged. If a part of the hoard has been preserved *in situ*, the precise location of the deposit can be determined. If the entire hoard is scattered in the plough layer, it cannot be determined with certainty exactly where the hoard was deposited. In this survey, the premise is that a clear concentration of finds indicates a deposition area. For example, if the distribution analysis shows a clear concentration of finds over house remains, the house is interpreted as the likely deposition place. Stratigraphic observations must be included in the distribution analysis. This is illustrated, for example, by the Skovsholm location (catalogue: 33), where a clear concentration of silver was found in the plough layer. However, excavations revealed that the concentration did not indicate the site of deposition, since older Islamic coins were found in the upper parts of the plough layer, while a Danish coin from the twelfth or thirteenth century was found in the lower parts. Thus, the find situation reflects the relocation of all or part of a hoard in recent times. At Skovsholm, this has likely happened through the sinking of a well.

If the hoard is found shortly after the disturbance of the closed context, the objects are often found close together, but if the destruction has taken place over a longer period, the objects may be scattered over a large area. This is the case, for example, with the Store Frigård II hoard (catalogue: 40), where it has not been possible to identify a deposition area. The Munkegård site (catalogue: 22) is an illustrative example of the methodological problems this entails. The area contains a tenth-century hoard found in 1864. A precise description of the original site made it possible to rediscover the original deposition place in 1993, since a concentration of coins was located on the site. Subsequent detector surveys of the area suggest that the area around Munkegård probably contains one or perhaps two later hoards deposited in the eleventh century. Seven coins and two pieces of silver were found in a lump of earth south of Munkegård in 2009. Subsequent excavations showed that the lump must have been moved in recent times as a result of agricultural activities. The distribution of the silver objects in the field is so great that it is extremely difficult to determine which coins belong to which hoard and whether some of the coins should be interpreted as single finds (Ingvardson 2016, 136; catalogue: 22). Further excavations may clarify these questions.

Hoards deposited on settlement sites pose a methodological problem. At settlement sites it can be difficult to determine whether an object found in the plough layer is attributed to the hoard or to other settlement activities (von Heijne 2004, 41–46). The Pæregård and Gyldensgård SV sites both contain coins in secure archaeological contexts outside the hoard (Thorsen 2003\*;<sup>1</sup> Vennersdorf 2004\*). This demonstrates that coins were used in other contexts at settlement sites. The distribution of detector-found objects at e.g. Slamrebjerg illustrates another methodological challenge. Silver objects are scattered in an area that also contains

bronzes, gold objects, and weights.<sup>2</sup> Silver objects are undoubtedly the most common object group in Viking-Age hoards, but, for example, the Borgeby hoard from Scania and the Västra Skällö hoard from Blekinge contain lead, glass, iron, amber, and bronze objects as well as weights and scales (von Heijne 2004, 127). The compositions of the Borgeby and Västra Skällö hoards can likely be related to graves (von Heijne 2004, 127), and as such, they can be seen as thematic hoards in line with *central brooch deposits* (section 2.1). Thus, determining whether other types of objects were included in a hoard is essential to interpreting its relationship to economic, social, cultural, and symbolic capital.

The interpretation of the content of hoards depends on an assessment of the distribution and composition of the objects. This has a self-reinforcing tendency to confirm the already established interpretations of deposition practices. If an object deviates from the 'norm' it is interpreted as a single find; see for example the discussion of the discovery of Sweyn Estridsson (1047–c. 1074) coins at Øster Rosendalegård, Tyskegård/Kannikegård, and Munkegård (Bjerg 2016, 160–161). The remarkable Smedegård NØ deposit I illustrates the risk of this approach. The hoard was deposited after 1150 and contains coins, jewellery, and ingots dated to the Middle Ages, but the hoard also contains Viking-Age coins, jewellery, and ingots (Grinder-Hansen *et al.* 2013, 142–154). Had the artefacts not been found *in situ* but scattered in the plough layer, Smedegård NØ deposit I would probably have been interpreted as two hoards: a medieval hoard and a Viking-Age hoard. The composition and dating of the Bornholm hoards are discussed in section 3.1. The discussion includes an assessment of whether objects found in the plough layer should be interpreted as single finds or included in the hoards.

### 3.1 Single find or hoard?

A large proportion of the objects attributed to hoards have been found outside a closed context. Thus, the content of the hoards depends on an interpretation of which objects are attributed to the hoard and which objects are related to other activities in the deposition area. The interpretation is often driven by assumptions: silver objects are included in the hoard, while bronzes, glass beads, and other types of objects are excluded. A similar tendency is seen in a chronological perspective, where later coins in particular, found at the same location, are interpreted as single finds.

This chapter aims to discuss and, if possible, answer two questions:

- 1) Is it likely that the Bornholm hoard contained objects other than those made of silver, such as bronzes, gold objects, and weights/balance scales?
- 2) Is it likely that some hoards include a 'chronological gap' early and/or late in the accumulation horizon?<sup>3</sup>

To answer these questions, an empirically based analysis of the distribution of objects is necessary. When objects are found in closed contexts, it can be determined with certainty that they were deposited together. The moment an object is

removed from the closed context, its association with the hoard depends on an interpretation. The discussion will therefore focus on hoards of which all or part has been found *in situ* in a closed context (hereafter, *in situ* hoards).

Three types of objects have been selected for the composition analysis: bronzes, gold objects, and weights/balance scales (primarily scale arms). The three object-groups are known from Viking-Age hoards from other parts of Scandinavia (Chapter 3). Furthermore, there are several examples among the Bornholm hoard locations where bronze and gold objects are scattered in the same area as the silver objects. Concerning weights, it has previously been shown that there is a correlation between weights of the 'Viking-type' (spherical with flat poles and polyhedral) and hoard sites on Bornholm (Aarsleff 2010, 342–343; Ingvardson 2014, 333–334; Naum 2015, 72–74). Parts of balance scales are also included, and are considered to be closely related to 'Viking-type' weights (Ingvardson 2014, 330–332 with further references). Finally, bronzes, gold objects, and weights/balance scales yield results in metal detector surveys, unlike, for example, glass beads. Thus, it is to be expected that bronzes, gold objects, and weights/balance scales are recorded in a way that is similar to that of silver objects at the surveyed hoard locations.

Gold objects are rarely deposited in Viking-Age hoards. Several researchers have argued that gold hoards were more often deposited in wetlands than silver hoards, and as such should be regarded as ritual hoards with no intent of retrieval (Hårdh 1996, 134; Zachrisson 1998, 117–118; Kershaw 2019, 229 with further references to hoards deposited in England). According to Jane Kershaw, gold should in some cases be interpreted as a currency. She refers to studies documenting that gold rings, like silver rings, follow weight standards indicating that gold had a dual use as both jewellery and currency (2019, 229–232). Furthermore, Kershaw argues that the presence of fragmented gold objects such as jewellery, rods, and ingots show that gold in rare cases was part of a weight economy system. The argument is supported by the fact that gold objects also bear nicks and notches (2019, 232–244). Kershaw highlights the fact that fragmented gold is rarely found in Viking-Age hoards (2019, 232). It is of great importance to determine whether gold objects can be related to the hoards, because this influences the interpretation of the function of the individual hoard.

The only surveyed hoard found in a closed undisturbed context is Smedegård NØ deposit II (catalogue: 38). Thus, this is the only hoard that can be interpreted with certainty as complete. The Bolbygård, Kongens Udmark, Munkegård I, Skærpingegård, Store Frigård I, and Tornegård hoards were also found in closed contexts in the nineteenth or early twentieth centuries. However, the absence of modern research methods and a selective collection policy at the time means that it is not possible to determine whether the entire contents of the hoards are known today. At the six locations, the findings consist of a group of silver objects which are most likely part of the hoard and which are here interpreted as objects found *in situ*. Thus, among the coins in the hoards, it will be possible to confirm or reject whether there are examples of chronological gaps in the accumulation horizon. According to the old records and descriptions, it was exclusively silver that was found in the hoards. However, it is impossible to state whether this reflects the

actual find situation, or whether it is because non-precious metal objects were excluded from the registration. Because the documentation is likely partial, and the ratio of fragmented coins is unknown, the hoards are omitted from the fragmentation analysis (section 6.1.1).

Excavated locations with hoards that are preserved partly *in situ*, and a high degree of documentation of other object types, are ideal starting points for distribution analyses. The hoards were preserved partly *in situ* at 13 excavated locations (catalogue: 1, 2, 7, 9, 15, 18, 22, 25, 27, 34, 38, 39, and 48). At these sites, a group of objects can be attributed to the hoards (*in situ* objects) with certainty, while a group of objects may be attributed to the hoards (plough-layer objects). The Lillegærde hoard was located with a metal detector in 1989 and immediately after recorded at the Bornholm Museum (catalogue: 21). The area around the deposited hoard has been surveyed with metal detectors but has not been archaeologically investigated. Hence, it is likely that the location contains a significant group of unidentified objects that were originally deposited in the hoard. Even though the documentation is patchy, the *in situ* objects from Lillegærde are included in the analysis of hoard structures and chronology.

The latest coin in the hoard (closing coin) is a crucial element in the dating of the hoards (section 3.2.1). Sometimes hoard sites display one or more coins that are markedly younger (or more recent) than the rest of the coins. It is essential to establish whether these younger coins should be included in or excluded from the hoards. The earliest possible production time will be emphasised in the dating of hoards.

Following these preliminary, source-critical considerations, a structure analysis will be presented in section 3.1.1 and a chronological analysis in section 3.1.2. The structure analysis is based on objects which were found *in situ*, and investigates the types of objects which have been found in closed contexts. A distribution analysis of the investigated locations is then carried out, with the aim of revealing distribution patterns for the object groups: silver objects, bronzes, gold objects, and weights/balance scales. The analysis concludes with an interpretation of whether the hoards contain objects other than those made of silver.

The chronological analysis is also based on the objects found *in situ*. It is examined whether there are examples of coins with diverging dates among the *in situ* coins. The results lead to an analysis of chronological gaps among plough-layer coins. The distribution patterns of the coins play a crucial role in the interpretation, and the analysis is initially carried out at sites where the precise deposition place of the hoard is known, and then at locations where the deposition place of the hoard is more uncertain. In addition to the distribution of the coins, the accumulation horizon of the hoards is taken into account in the interpretation of whether a chronologically 'anomalous' coin is attributed to the hoard or interpreted as a single find.

The analysis culminates in an interpretation of closing coins, and a discussion of the deposition horizon for each hoard (section 3.2). Section 3.3 presents the chronological development of the Bornholm Viking-Age hoards, as well as a table with the deposition horizons of the hoards (Table 3.3).

### 3.1.1 *Bronzes, gold, weights, and scales*

Silver objects undoubtedly dominate the hoards, but other types of objects should not automatically be excluded. This analysis will show that, in rare cases, other object types were probably included in hoards, and that these objects provide insights into the people who accumulated and deposited the hoards at a more personal level.

All *in situ* objects are of silver, with the exception of a gold finger-ring deposited in the Smedegård NØ hoards. All categories (ingot, coin, personal object, scrap-silver, melt, jewellery and symbolic object) are represented among the *in situ* objects. This does not prove that bronzes, gold objects, and weights/scales were not originally deposited in the Bornholm hoards. However, it can be concluded that silver objects were the most common object-group deposited in hoards.

The distance to the deposition place is prioritised in the interpretation of whether an object should be included in a hoard. The precise deposition place can be established if part of the hoard was found *in situ*; if not, a deposition area must be estimated from the distribution of objects. The distance to the deposition place or area alone cannot be used as an indication of whether an object should be included or excluded from the hoard. Hoarded objects may be scattered over large distances. The distribution patterns change from site to site depending on, for example, cultivation methods and ploughing directions. Thus, the inclusion of artefacts in the hoard depends on an individual assessment of the site.

The Blykobbegård hoard provides an illustrative example of the agricultural impact on find distribution. Aerial photographs show how silver and other artefacts have been dispersed in a loop from the deposition area (Figure 3.1). The Englyst site demonstrates that it is crucial to conduct a retrospective evaluation of the influence of agricultural activities on distribution patterns. At this site, the ploughing direction changed after 1999. This challenges the interpretation of the hoard, because objects have been ploughed in both an east/west direction and a north-northeast/south-southwest direction.

Silver objects are the most common group of objects in the hoards and will thus serve as a starting point for the distribution analysis. The analysis is framed by the premise that the distribution of silver objects indicates the likely distribution area of the hoard. In other words, if bronzes, gold objects, and weights/scales are found in the same area as the silver objects, it is possible that they were originally deposited in the hoard.

The expected distribution areas of the hoards have been estimated by the distribution of the silver objects.<sup>4</sup> If bronzes, gold objects, and weights/scales were found in the same area as the dispersed silver they may potentially originate from the hoard. Table 3.1 illustrates these considerations. The table shows the distribution of bronzes, gold objects, and weights/scales in relation to the distribution areas of the hoards at both well-documented hoard sites and a selection of partly documented hoard sites on Bornholm. The analysis includes all gold and silver objects, bronzes, weights, and scales found and documented at the sites. Thus, objects from many different phases may be represented. The level

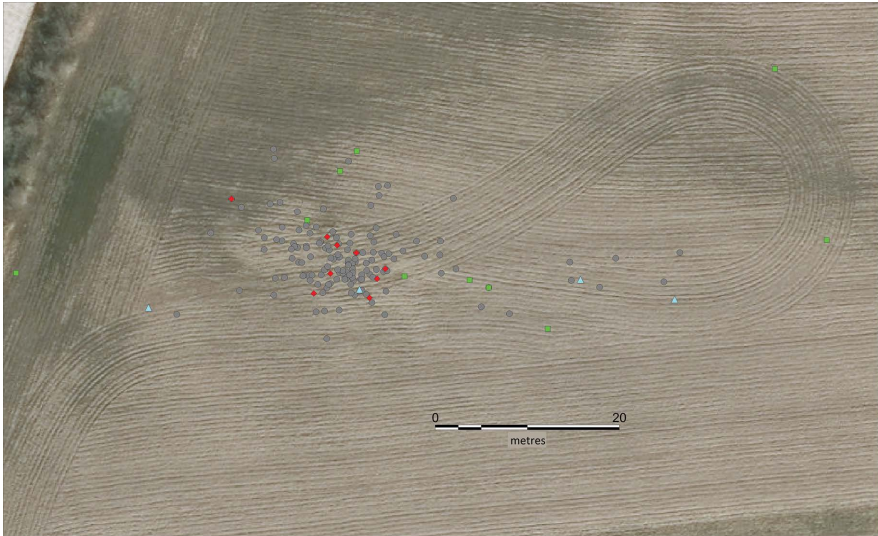


Figure 3.1 Aerial photograph showing the distribution of the Blykobbegård hoard. It is clear that the distribution of the hoard has been influenced by agricultural activities.

Map: J. S. Andersen.

of documentation varies at the surveyed locations. Obviously, if the objects are not recorded, they cannot be included in the analysis. This is particularly true for bronzes and weights at some sites.

Bronzes and weights/scales have clearly been found in the plough layer at most sites. Gold objects are less common but have been found in the plough layer at eight sites (Table 3.1). In the Smedegård NØ hoard, a gold finger-ring was found among the *in situ* objects (section 7.1.1). At 21 sites bronzes, gold objects, and/or weights/scales have been found in the hoard's distribution area, and perhaps the non-silver objects at these sites should be included in the hoards.

However, the distribution cannot stand alone as evidence of a connection between such objects and hoards. Two additional criteria are suggested: 1) the objects must have a character that makes it likely that they were specially selected and deposited in a hoard consisting primarily of silver objects; 2) the objects must have a probable contemporaneity with the hoards. It should be stressed that both criteria depend on personal evaluations and are therefore commented on in the following.

All hoards represent a collection of values within one or more fields. Thus, the deposited objects are presumed to be of special value or significance to the person or persons who collected and deposited them. Value in this context is not used from a purely economic perspective. The fact that an object was valuable may equally be linked to its social, cultural, and/or symbolic capital. Gold objects were valuable by virtue of their metal alone, and they are considered as potential parts of the hoards.

Table 3.1 Bronzes, gold objects, and weights/scales found in the plough layer of well-documented sites and a selection of partly documented sites.

<i>Site</i>	<i>tpq</i>	<i>Bronzes</i>	<i>Gold objects</i>	<i>Weights/scales</i>
Ahlesminde	1070	x	x	(x)
Blykobbegård	1018	x		x
Buddegård	947			(x)
Dalegård	1009	x	x	x
Dammegård	983	(x)	(x)	(x)
Døvregård	1028	?		?
Englyst	997	x		x
Frostegård	1042	x		x
Gyldensgård SV	1035	x		(x)
Kannikegærdet	996	x		x
Kannikegård/Tyskegård	1014	x		x
Kobbegård	1056	x		?
Munkerup	1046	x		x
Nordre Stensebygård	1047	x		x
Nørremølle	1035	x		x
Pæregård	1047	x		x
Rosmannegård S	1002	x		x
Rosmannegård SV	997			x
Skovgård	1029	(x)	(x)	(x)
Skovvang	1035	(x)		(x)
Skørrebro	939		x	x
Slamrebjerg	1035	x	(x)	(x)
Smedegård NØ	1152	x		
Smørbygård	1042	(x)		(x)
Store Gadegård area 3	1037	?	x	?
Store Klintegård	1023	x	x	(x)
Tyskegård	997			
Åbo	1029	x		

*Note:* X: In the distribution area of the hoard. (X): Outside the distribution area of the hoard. ?: Not recorded.

Bronze also constituted a value. Bronze, typically in the form of tools, jewellery, and unidentified bronze fragments, is frequently present at Viking-Age sites on Bornholm (Table 3.1). Bronzes, on the other hand, are not among the *in situ* objects found in Bornholm Viking-Age hoards. This illustrates that bronzes were not common in silver hoards and that bronze as raw material was not deposited

together with silver in the hoards. However, there is a possibility that particularly valuable bronzes could be deposited in the hoards. These bronzes could consist of jewellery or other personal or symbolic objects that had a special significance for the person(s) who accumulated and deposited the hoards.

Weights and balance scales are the final object type to be examined. Bronze weights (including bronze weights with iron cores), and scales have been found in graves at Birka and Kaupang (Kyhllberg 1980, 298–305; Pedersen 2008, 136–140). The weights are found in both male and female graves, and there are often traces of careful wrapping of the objects, indicating that weights were treated with special care (Kyhllberg 1980, 212; Pedersen 2008, 140). Weights and scales can be interpreted as social and cultural markers of individuals who were involved in interregional networks of exchange of goods. This group of objects was thus sometimes selected to be part of the grave goods, which indicates that scales and weights were assigned special value.

When interpreting an object's association with a hoard, a simultaneity with the silver objects of the hoards is important. The coined objects in a hoard may span hundreds of years.<sup>5</sup> Thus, the fact that an item is much older than the hoard's deposition time need not be an exclusionary factor. Further, it must be considered that particularly significant/valuable objects may have a potentially long life. That the Vikings attached particular importance to historical objects is supported by the Scandinavian grave material, where jewellery transformed from Roman denarii, gold Berlok beads, and gold bracteates are part of the personal ornaments (Audy 2018, 172–173).

The interpretation of whether an object is likely to be included or excluded from the hoard should include an interpretation of the other activities of the site. If, as is the case at Slamreberg, the location contains a burial ground with graves dating from the Roman to Germanic Iron Age (Wagnkilde 1999), it is likely that brooches dated to the Roman or Germanic Iron Age should be attributed to the graves and not the hoard. This is the case despite the fact that a Germanic Iron Age brooch may meet the criteria for a specially selected object deposited in a Viking-Age hoard.

Table 3.1 summarises the interpretation of all the bronzes, gold objects, and weights/scales found in the distribution areas of the hoards.<sup>6</sup> The nature and dating of the objects, as well as evidence of other activities at the sites, are included in the analysis. At 18 locations bronzes, gold objects, and/or weights/scales have been located in the distribution area of the hoards. A detailed description of activities at the sites is presented in the catalogue, while the results focus on objects which are interpreted as a potential part of the hoards.

*Ahlesminde – gold finger-ring and gold coins (catalogue: 1)*

Part of the hoard was found *in situ*. The hoard is deposited in an area with traces of intense settlement activities, dating from the Germanic Iron Age to the early Middle Ages. This is reflected, for example, in the jewellery comprising beak, bow, and Urnes-style fibulas, as well as tortoise brooches. Twenty-two bronzes and four gold objects were found in the distribution area of the hoard.



*Figure 3.2* Objects from the Ahlesminde hoard. The three gold coins are extremely rare and include (from the top) a denarius struck for Archbishop Anno II (1056–1075) of Cologne, and two dinars struck for the Fatimid Caliph al-Mustansir (1036–1094), one from Misr (Egypt) in 1038/1039, and one from al-Mahdiya (Tunisia) in 1060/1061. A solid gold ring and a silver belt buckle with a dragon head represent two personal objects deposited in the hoard.

*Photographs:* R. Laursen, the Bornholm Museum.

**Gold:** A gold finger-ring and three gold coins were found near the hoard deposit and are most likely part of the hoard. The finger-ring and a silver belt buckle decorated with niello in a mixture of Ringerike and Urnes style are interpreted as two personal objects deposited in a hoard otherwise consisting of coins (Figure 3.2).

*Blykobbegård – weight set? (catalogue: 2)*

The hoard was preserved partly *in situ* and was deposited in a settlement area. The settlement type has not been further analysed, since the excavation report was not complete during the investigation. Six bronzes and four weights were found in the distribution area of the hoard.

**Bronzes:** Among the bronzes is a gilded pendant dating to the second half of the 900s. Like the other bronzes, the pendant appears worn and fragmented. The distribution pattern of the silver objects indicates that the Blykobbegård hoard was found immediately after the closed context of the hoard was disturbed by agricultural activities (Figure 3.1). Thus, the objects deposited in the hoard have not

been moved by the plough on multiple occasions over a long period, and it is to be expected that their present appearance is broadly similar to when they were deposited. Given the simple appearance of the bronzes and their worn and fragmented nature, they are most likely associated with other settlement activities, and were not deposited in the hoard.

**Weights:** The four weights may form part of a set with a small square tablet-shaped bronze weight of 2.7 g, and three spherical bronze weights with flat poles of 12.3 g, 28.3 g, and 30.6 g, respectively. If the weights form a set, it is likely that they were originally deposited together. The weights may be contemporaneous with the hoard, thus providing a possible deposition place, or alternatively, the weights may have been deposited in association with the settlement.

*Kannikegård/Tyskegård – weight set? (catalogue: 17)*

The hoard is completely dispersed by ploughing. House remains have been found north of the probable deposition area of the hoard. Five bronzes and three weights have been found in the deposition area of the hoard.

**Bronzes:** Two brooches and a belt buckle can be dated to the Viking Age, and may thus be contemporary with the hoard, which contains coins from the entire tenth century, and was deposited after 1014. The objects may be related to the house, since they are found close to the house remains. The strap buckle is complete but is relatively simple in design. The two brooches are fragmented and worn. The bronzes are not attributed to the hoard.

**Weights:** The weights are of the same type: spherical bronze weights with flat poles. They were found close together, indicating one depositional event. The weights are found at the edge of the distribution area of the hoard. They were found by the house remains, suggesting a deposit inside the house. The house had been cleared and then burned; this would seem to argue against a deposit in the house, since other objects of value were apparently removed before burning (catalogue: 17). The weights are therefore cautiously interpreted as part of the hoard.

*Dalegård – fragmented gold and weight set? (catalogue: 7)*

Three bronzes and two weights were found in the distribution area of the hoard. The bronzes are all small fragments of brooches and are not attributed to the hoard. The two spherical bronze weights with flat poles were found close together. One is unusually small, measuring just 1 cm in diameter (weight not given), and has a dotted design on the poles. The other weighs 27.6 g. It is fractured and cannot be described. The weights may form a set of weights, or parts of one, and are interpreted as a possible part of the hoard. However, they may also have been deposited in the house where the hoard was deposited. Three pieces of gold have been found at Dalegård. The gold pieces were found scattered in a line from the deposition area of the hoard in the ploughing direction (Figure 3.3). The gold consists of a small fragment of a thin gold rod, a flat rod folded twice, and a flat ribbon-shaped gold ingot shaped like an eye with the ends fused together. The gold may be part of the



*Figure 3.3* Aerial photograph showing the distribution of the Dalegård hoard. Three gold objects (yellow circle) form a line, following the ploughing direction, and may have been ploughed out from the hoard's deposition area. Black star: deposition place, grey circle: silver coin, red rhomboid: silver object, yellow circle: gold object, blue triangle: weight, and green square: bronze object.

*Map:* J. S. Andersen.

hoard, or it may constitute a separate small deposit, possibly in association with the unusually small weight lying in line with the gold pieces (Figure 3.3). Unn Pedersen suggests, based on the Kaupang material, that specially decorated weights were used for weighing silver as well as gold (2008, 168–170).

*Englyst (catalogue: 12)*

The find distribution at the Englyst location is influenced by the fact that the field has been ploughed in both an east/west direction and a north-northeast/south-southeast direction. This makes it difficult to define the distribution area of the hoard. Many bronzes are situated to the west of the excavation area and the primary distribution area of the hoard. Settlement traces have been found in the area, including pottery, and burnt wattle and daub. It is therefore likely that the bronzes are associated with these activities. A bronze fragment, presumably not deposited in the hoard, was also found in the excavation area. Many high-quality weights were found at the site (section 7.3). The weights were located in approximately the same area as the bronzes and are also interpreted as associated with settlement activity.

*Frostegård – weight? (catalogue: 13)*

Four worn fragmented bronzes and a weight were found in the distribution area of the hoard. The weight is spherical with flat poles and is decorated with circular

impressions on the poles. No house remains have been excavated in the hoard's distribution area, and it is possible that the weight should be attributed to the hoard.

*Gyldensgård SV – fire-steel (catalogue: 15)*

The bronzes in the distribution area of the hoard consist mainly of uncharacteristic pieces, but a fire-steel and a knife-sheath-fitting stand out. The knife-sheath-fitting is of Claus Feveile type C2, which is commonly found at settlement and detector sites throughout the Baltic Sea area (2017, 51–61). Thus, it is likely that the knife-sheath-fitting can be linked to settlement activities around the hoard deposit. The situation is different with the fire-steel, which is of a Baltic-Finnish type (Figure 3.4). The type with two horsemen was probably produced in the southwestern part of Finland but is also significantly present in the northern part of Russia (Gustin 2017, 218–219; Roslund 2017, 183). In addition, single specimens have been found in Hedeby, Norway, Estonia, and Latvia, while six specimens have been deposited in graves in Uppland dating to the late 900s and 1000s (Gustin 2017, 218–219; Roslund 2017, 183). Thus, the fire-steel is highly unusual in Scandinavian settlement contexts. Apart from a small damaged area, the fire-steel is intact, and in combination with the rare occurrence of the type on settlements and the proximity to the deposition place of the hoard, it is likely that the fire-steel was deposited in the hoard.

*Kannikegårderdet (catalogue: 16)*

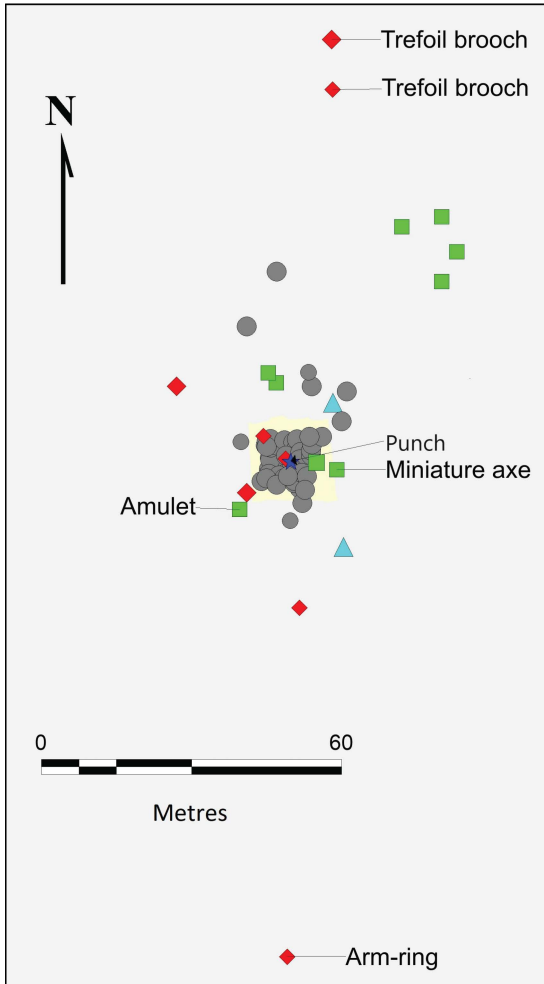
The hoard has a very concentrated distribution, although a few silver objects have been moved slightly to the north and south by ploughing. In these areas, there are also a few uncharacteristic bronze fragments and two spherical bronze weights with flat poles. An ornamented miniature axe and a bronze amulet with



*Figure 3.4* Baltic-Finnish bronze fire-steel with an iron edge. The fire-steel was found in the distribution area of the Gyldensgård SV hoard and was possibly deposited in the hoard. Find no. BMR 3194x215.

*Photograph:* A. Mikkelsen, National Museum of Denmark (CC-BY-SA).

an unidentified motif are found immediately west and southeast of the distribution area (Figure 3.5). A matrix with rosette motifs was found in the very centre of the hoard's distribution. The motifs correspond to the ornamentation on an arm-ring found 95 m south of the distribution area of the hoard, and two fragments of the same trefoil brooch were found about 75 m to the



*Figure 3.5* The distribution of silver, bronzes, and weights at the Kannikegærdet site. North of the hoard's distribution area, there are two fragments of a trefoil brooch of Bornholm type (see section 5.5), and to the south is a silver arm-ring. The objects are not interpreted as part of the hoard because of the large distance between the deposit area and jewellery. Black star: deposition place, grey circle: silver coin, red rhomboid: silver object, blue triangle: weight, and green square: bronze object.

*Map:* J. S. Andersen.



Figure 3.6 Arm-ring and punch found at the Kannikegærde site. The rosette motif of the punch is repeated on the bracelet, indicating that silversmithing took place at the site. Finds nos. BMR 2292x30 and x122.

Photographs: R. Laursen, the Bornholm Museum.

north (Figure 3.6). The silver jewellery is not interpreted as part of the hoard because of the large distance between the bracelet and brooch, and the distribution area.

The bronze amulets may represent specially selected objects deposited in a hoard, but their location immediately outside the hoard's distribution area suggests that they are not part of the hoard. The same applies to the weights. Thus, the amulets, weights, and matrix are interpreted as traces of craft activities at the site (see also section 7.3.1).

#### *Kobbegård (catalogue: 18)*

The majority of the bronzes at the location are found east of the distribution area of the hoard. All bronzes found within the excavation areas consist of small uncharacteristic fragments and are not attributed to the hoard.

#### *Munkerup (catalogue: 23)*

Many of the objects found at Munkerup are poorly documented. It has therefore only been possible to allocate a limited number of finds which were discovered before and during excavation. Six bronzes, including three uncharacteristic fragments, have been recorded in the distribution area of the hoard. The remaining

bronzes consist of jewellery. A small 3.4 cm long rectangular plate brooch, found in the middle of the silver concentration, is decorated with a simple serpentine ornament surrounded by a double frame. The brooch type dates from the seventh century (Jørgensen & Jørgensen 1997, 29), and it seems unlikely that it was part of the Munkerup hoard deposited 1046–1060. However, the brooch has been converted into a pendant by adding two holes, suggesting that it was in use for a long time. The remaining two bronzes in the distribution area are a gilded melon-shaped bronze bead and a gilded circular pendant. The pendant is worn and the motif cannot be identified. Based on the present records, it is difficult to determine whether the jewellery was part of the hoard or not.

*Nordre Stensebygård (catalogue: 24)*

Two bronzes, a small needle with a ring and a brooch fragment, were found in the distribution area of the hoard, but because of their simple character are not attributed to the hoard. Further, three weights have been found. One is a spherical bronze weight with flat poles decorated with circular stampings. The weight was found in a cultural layer or pit, where pottery, a pair of iron pins, and a fragment of a loom-weight were also found (Nielsen 1994c\*). Thus, the weight is most likely to be attributed to other activities in the area. The other weights are a small tablet-shaped bronze weight and an angular lead weight. The differences in weight types imply that they do not constitute a set. The weights are interpreted as connected to craft activities in the area.

*Nørremølle (catalogue: 25)*

A bronze needle and five bronze fragments have been found within the distribution area of the hoard. Due to their simple nature, the bronzes are not considered to be part of the hoard. In addition, a lead weight and a spherical bronze weight with flat poles were found at either end of the elongated distribution area of the hoard, clearly reflecting the ploughing direction. It is difficult to determine whether these weights are part of the hoard.

*Pæregård – Gilded bronze pendant and weight set? (catalogue: 27)*

Many bronzes and four weights were found in the distribution area of the hoard. All the weights are spherical bronze weights with flat poles, and they have been found close together. Thus, they probably form a set of weights which may have been deposited in the hoard. The hoard was deposited in an area with several phases of settlement. Thus, the weights may have been deposited in remains of one of uncovered houses.

The majority of the bronzes consist of small uncharacteristic fragments and are probably connected to extensive settlement activity at the location. However,



*Figure 3.7* Bronze pendant with traces of gilding. The jewellery was found in the distribution area of the Pæregård hoard and may be a rare example of bronze being deposited in the silver-dominated hoards. Find no. BMR 1083x13.

*Photograph:* R. Laursen, the Bornholm Museum.

a complete gilded pendant of Terslev type stands out from the other bronzes (Figure 3.7). The pendant can be dated to the second half of the 900s (Ulriksen 2018, 123). Gold was relatively rare and valuable in the late Viking Age (Blackburn 2007; Kershaw 2019, 228–229). Wearing a gilded bronze jewel may have been associated with social and economic prestige.

The analysis of the circulation data of the Pæregård hoard shows that there are two complete sets of earrings without marks in the hoard, indicating that they were deposited as jewellery (section 6.1.3). In this context, a whole, gilded bronze pendant would fit into the hoard's composition. The pendant was found just 4 m from the deposition place of the hoard, which can be precisely identified, because part of the hoard was preserved *in situ* in a clay vessel at the time of discovery (section 7.1). The proximity of the pendant to the deposit supports its connection to the hoard. However, the pendant is between 50 and 100 years older than the hoard's deposition horizon of 1047–1060. If it were deposited in the hoard, it was an heirloom. However, a large proportion of coins also have a possible production time starting in the second half of the tenth century.

Disc-shaped pendants of Terslev type are very common at Danish detector sites (Ulriksen 2018, 13). Hence, the occurrence of this type of jewellery at a site with intensive settlement traces is not unusual. The hoard's proximity to the house remains makes it difficult to determine whether the pendant was deposited in a hoard or settlement context. Despite these reservations, the pendant is interpreted as part of the Pæregård hoard. The interpretation emphasises that the pendant is complete and gilded, that it is found very close to the hoard's deposition place, and that the hoard contains other complete jewellery.

## 48 *Identifying Bornholm's hoards*

### *Skørrebro – gold disc (catalogue: 36)*

At Skørrebro only two bronzes (needle and fragmented fitting) with unrecorded find-spot were found. After excavation, a small gold disc (8 mm diameter) was found in the distribution area of the hoard. Because the area was stripped from the topsoil during excavation and refilled after excavation, the context has been further disturbed. However, the disc may have been deposited within the limits of the excavation area, which roughly corresponds to the distribution area of the hoard. There is therefore a possibility that the gold disc was originally deposited in the hoard.

### *Slamrebjerg (catalogue: 37)*

The hoard was deposited in or near a house. In addition to the settlement, the site contains a burial ground with graves from the Roman to Germanic Iron Age (Wagnkilde 1999b\*). A large number of bronzes are dispersed in the distribution area of the hoard. The bronzes consist of brooch fragments, bronze foil, and uncharacteristic fragments. Among other finds, many Roman Iron Age and early Germanic Iron Age brooch fragments should probably be attributed to the graves. Three spherical bronze weights with flat poles and a lead weight have been found to the west and south of the excavation area, on the edge of the distribution area of the hoard. It is difficult to determine whether they are part of the hoard. East of the excavation area, immediately outside the hoard's distribution area, a spherical bronze weight with flat poles, a disc-shaped bronze weight, and an arm from a balance scale have been found close together, probably forming a set. However, it is unlikely that the weight set belongs to the hoard, since it was found outside the hoard's distribution area.

### *Smedegård NØ (catalogue: 38)*

Several bronzes were found in the distribution area of this hoard. The bronzes consist of simple fragmented buckles, melt, and fittings, and do not possess a character suggesting they were deposited in the silver hoard.

### *Store Gadegård, area 3 – gold fragment (catalogue: 41)*

The settlement traces are prolific at the Store Gadegård site, with an overwhelming number of bronzes and weights. Unfortunately, the find recording results are inconsistent and incomplete, with missing deposition data for many of the bronzes and weights found at the site. Consequently, bronzes and weights/scales are not included in the distribution maps, and these find groups are therefore excluded from the analysis. The hoard(s) is completely dispersed by the plough and it is difficult to determine whether it is one or more deposits. From the distribution map, it appears that there are two concentrations dispersed over the

excavation areas. Perhaps, this reflects more intensive search activities in these areas. There are two gold fragments in the eastern concentration that may be part of the hoard.

*Store Klintegård – gold objects (catalogue: 42)*

Two bronzes and four gold objects were found in the distribution area of the hoard. South of the hoard, a small concentration of silver, a bronze, and a weight were found. There is a significant blank area between the hoard's distribution area and the smaller concentration. This indicates two deposits. Thus, the smaller concentration represents a potential hoard and is not considered further in the analysis. The two bronzes in the distribution area of the Store Klintegård hoard consist of two small uncharacteristic fragments not attributed to the hoard. The gold objects consist of two fragments of relief-ornamented plate, a fragment of a gold ingot and a fragmented Berlok bead (Figure 3.8). One plate is decorated with a person holding a stick, but the head is missing. The excavation report states that the piece was probably placed on a processional cross from the Rhine area. A parallel has not been identified but the motif is most likely Christian. The second plate is possibly from the same object. It is decorated with leaf ornamentation and possibly the hair of a person. The straight edges of the fragment reveal a deliberate fragmentation and reflect that the piece in its present form functioned as payment in gold or raw material, like the gold ingot.



*Figure 3.8* Four gold objects which were likely deposited in the Store Klintegård hoard. Top: Possibly fragments of the same decorative plate with a Christian motif. Bottom left: Fragmented Berlok bead. Bottom right: Fragment of gold ingot. Finds nos. BMR 2758x49–51 and x86.

*Photographs:* R. Laursen, the Bornholm Museum.

The Berlok bead dates from the 100s and is thus approximately 900 years older than the Store Klintegård hoard, deposited 1023–1040. Finds of Roman denarii in Bornholm hoard show that objects from the Roman Iron Age can appear in a Viking-Age context (section 3.1.2). That the Berlok bead may have been deposited in a Viking-Age context in the Store Klintegård hoard is supported by the fact that a similar Berlok bead was found in Birka grave 606, dating to the early 900s (Audy 2018, 173).

At first glance, the gold pieces are very different in character, but together they appear as fragmented gold that may have been deposited as currency and/or raw material. The proximity of the gold pieces to the deposition area of the hoard suggests that the gold was deposited in the hoard. The Store Klintegård hoard is thus associated with a very small group of Viking-Age silver hoards with fragmented gold objects (Kershaw 2019, 232).

#### *Åbo (catalogue: 48)*

Four bronzes were located near the deposit area of the hoard. According to the excavation report, three of these are likely to be associated with other archaeological structures and thus do not belong to the hoard (Nielsen 2019\*). The fourth bronze is a small fragment of a gilded bronze brooch decorated in animal style. The fragmented nature of the piece does not suggest that it was deposited in the hoard; it should probably be connected to other activities at the locality.

#### 3.1.1.1 PERSONAL OBJECTS – CONCLUSION

The fact that bronzes are found in large numbers at the sites but have not been found in secure contexts in the hoards demonstrates that bronzes were not commonly deposited in the hoards. However, specially selected bronzes may have been deposited with the silver. The special character and appearance of these bronzes, as well as their location in the distribution area of the hoards, indicate that selected bronzes in special cases were deposited in the silver-dominated hoards. Possible examples are the Baltic-Finnish fire-steel from Gyldensgård SV, and the gilded pendant from Pæregård.

The Baltic-Finnish fire-steel in the Gyldensgård SV hoard may have been acquired either by travel to Birka, since there is a concentration of the type in graves in the Mälaren area, or perhaps to the east at Staraya Ladoga, near the area where fire-steels of this type were produced. The strong association with graves reflects that fire-steels were an important part of the personal equipment. Fire was a vital source of heat and light, and lighting fires was an important part of daily life both at home and on journeys. The special nature of the Gyldensgård SV fire-steel may have added an extra dimension to the action, because the unusual and beautiful fire-steel signalled that the owner had contacts in remote regions.

The gilded pendant in the Pæregård hoard may be an heirloom handed down over generations. It thereby possessed special significance – just as heirlooms

today have sentimental value because they contain the memory of previous generations.

There is a marked coincidence between bronze weights (including bronze weights with iron cores) and the distribution areas of the hoards. Possible sets of weights have been found in the distribution areas of the hoards at Blykobbegård, Kannikegård/Tyskegård, Dalegård, and Pæregård. As argued, the weight sets may represent deposits, and it is possible that the hoards were the depositional contexts for the weight sets. The majority of hoards were deposited and then later distributed in areas with settlement remains. Thus, it cannot be ruled out that the weight sets were deposited in a settlement context. No traces of houses have been found in the distribution area of the Frostegård hoard. The hoard thus seems to be the likely deposition context for the bronze weight with flat poles found in the distribution area of the Frostegård hoard. Finally, it has been discussed whether the Buddegård hoard could be the depositional context for a bronze weight with flat poles, found about 70 m west of the hoard in the ploughing direction.

Like the Gyldensgård SV fire-steel and the Pæregård heirloom, bronze weights can be linked to the personal sphere. As mentioned earlier, they have been interpreted as social and cultural markers for people involved in the exchange of goods in interregional networks. Thus, weights should not be seen merely as a working tool; they may represent a symbol of the person's role in relation to a particular social group.

The personal imprint is evident in the Ahlesminde hoard, where both the gold finger-ring and the niello-decorated silver belt buckle differ markedly from the rest of the hoard, which consists solely of coins and two possible coin blanks. Together with the three extremely rare gold coins in the hoard, these luxury objects signal that the owner of the Ahlesminde hoard belonged to the upper echelons of society. Their presence in the hoard also indicates that the objects were not worn on a daily basis, but were hidden away and probably only used on special occasions.

Gold may have been deposited in four hoards. Two small fragments of gold ingots have been located at Store Gadegård, area 3. However, the wide distribution of the hoard and the concentration of settlement traces in the area make it difficult to determine whether the gold was deposited in the hoard. At Skørrebø, a small gold disc was located in the centre of the distribution area of the hoard. Unfortunately, the find was made after the excavation was completed, and it is likely that the area was disturbed and the gold may have been brought in from another area when the excavation area was covered again. At Dalegård, three small gold ingots appear to form a deposit, and the Dalegård hoard may have formed the context. An alternative possibility is that it represents a separate small gold deposit, possibly together with a particular small weight with flat poles. At Store Klintegård, the coincidence between the distribution area of the hoard and the dispersal of four gold objects seems to reflect that the gold was deposited in the hoard. While the objects are very different in character (two fragments of an ornamented plate with a Christian motif, a fragment of a gold ingot, and a fragmented Berlok bead), they all

seem to represent currency or raw material. The gold in the Store Klintegård hoard thus reflects a completely different function from the gold in the Ahlesminde hoard, which is linked to the personal sphere.

### 3.1.2 *Divergent coins – a source-critical discussion on the dating of hoards*

When was the hoard deposited? This seemingly simple question often does not have a simple answer. The dating of hoards is traditionally linked to the latest coin of the hoard – the closing coin (section 3.2.1). The problem is that many coins have been dispersed, and it can therefore be difficult to establish which coin should be interpreted as the closing coin of the hoard. It is common for the coin material at hoard sites to consist of a chronologically unified group of coins, as well as one or more either much older and/or more recent coins; the phenomenon is here referred to as a ‘chronological gap’. The question is whether these much older and/or younger (most recent) coins should be included in the hoards, or whether they should be considered as single finds or part of other deposits. The aim of this chapter is to identify the coins that belong to the hoards. This is crucial both for the *tpq*-dating of the hoards and for the further interpretation of the chronological profile of the hoards (section 3.2).

The starting point of the analysis focuses on objects found *in situ* to investigate whether coins found in secure hoard contexts can reveal conclusive examples of chronological gaps. An assessment is then made of whether coins that represent chronological gaps at the hoard sites should be included in the hoards. Inspired by the methodological reflections offered by Horsnæs *et al.* 2013 (section 2.1), chronologically divergent coins are interpreted against the following questions:

**Distance to the deposition place/area of the hoard.** Is the divergent coin close to or far from the deposition place/area?

**Chronological distance to the other coins in the hoard.** Is the chronological gap large or small?

**Chronological profile of the hoard.** Is there anything in the chronological composition of the hoard or other hoards that suggests that the divergent coin should be either included or excluded?

**The character of the coins.** How does the chronologically divergent coin relate to the other coins in the hoard?

The distance to the deposition place/area is an important parameter when interpreting whether a coin should be included or excluded from a hoard. Locations with *in situ* hoards provide the best basis for the analysis, since the exact deposition place is known. Appendix 1 provides a discussion and interpretation of each chronologically divergent coin found at hoard sites included in the survey.

The analysis of the *in situ* coins shows that a chronological gap early in the accumulation horizon is common among the Bornholm hoards. Fourteen of the *in situ* hoards have chronological gaps early in the accumulation horizon, and nine of these are among the *in situ* coins (Table 3.2).

Table 3.2 Hoards with coins found *in situ*. The table presents the oldest and most recent (youngest) coin to be found *in situ*, and on the site, per hoard.

Location	In situ		Total		Chronological gap	
	Oldest coin	Youngest coin	Oldest coin	Youngest coin	Start (in situ)	End (in situ)
Ahlesminde	936–962	1059–1062	714–715	1070–1074	x	
Blykobbegård	816–817	1010–1020	816–817	1018–1034	(x)	
Bolbygård	814–840	1042–1047			(x)	
Dalegård	919–936	1009–1017	912–920	1009–1017		
Døvregård	944–945	1018–1026	902–903	1028–1039	x	x
Gyldensgård SV	962–983	1005–1015	936–980	1035–1045	x	
Kongens Udmark	98–117	967/68			(x)	
Lillegærde	983–1002	1047–1074	336–323 BC	1078–1085	x	x
Munkegård I	892–907	1002–1014			(x)	
Nørremølle	750–800	1018–1026	661–749	1035–1045	(x)	
Pæregård	780–785	1039–1042	772–773	1047–1074	(x)	x
Skovvang	762–763	1035–1045	762–763	1035–1045, (1050–1100)	(x)	
Skærpingegård	892–907	962–973				
Smedegård NØ	1035–1045	1152–1190	1035–1045	1152–1155/1190		
Smørbygård	929–972	990–995	865–869	1075–1125	x	x
Store Frigård I	117–138	1106–1123			(x)	
Tornegård	904–905	1047–1074			(x)	
Åbo	805–806	1027–1039	790–810	1029–1035	(x)	

Note: X: Chronological gap. (X): Chronological gap among the *in situ* coins.

The early chronological gaps are often attributed to a group of significantly older Islamic coins, than the rest of coins in the hoard.<sup>7</sup> In addition to older Islamic coins, a Roman denarius is present in both the Kongens Udmark and Store Frigård I hoards. It may seem extreme that the hoards contained coins that were approximately 600–850 years older than the second oldest coin. The Roman denarii in Kongens Udmark and Store Frigård I can be attributed to the hoards with great certainty, and thus prove the phenomenon exists on Bornholm. Roman denarii in a Viking-Age context have been documented in Poland (Zapolska 2007) and on Gotland (Östergren 1989). Roman coins appear relatively seldom alongside Viking-Age coins (Horsnæs 2013, fig. 8). However, there are a further eight locations on Bornholm with Viking-Age hoards that contain a total of 12 Roman denarii.<sup>8</sup> The denarii bear relatively few secondary traces, and it is unlikely that the coins were in circulation for many hundreds of years. One possible explanation for the presence of Roman denarii in the Viking-Age hoards is that they were deposited during the Roman Iron Age, when a large number of Roman denarii were imported to Bornholm (Horsnæs 2013). They were rediscovered in the Viking Age, either by chance or by looting graves, and then added to the hoards as a silver resource, a means of payment, an amulet, or a curiosity (Bogucki *et al.* 2020). On Gotland, Östergren sees a link between an expansion of settlement at the transition to the Viking Age and the presence of Roman coins in hoards deposited around the same time. Östergren suggests that the Roman coins were found by chance more often in this period, as people settled in areas with traces of earlier Iron Age activity (1989).

An Alexander the Great drachma minted between 325 and 310 BC (posthumous), found at the Lillegærde site, must reflect a different course of events, since Greek coins are not found in archaeological contexts in the Nordic countries. The coin probably came to Bornholm as an antique, perhaps together with Islamic coins. Many notches along the rim of the coin make it likely that the coin was handled in the Viking Age. Three of the Islamic coins on the site were found a maximum of 4 m from the hoard deposit. They likely constitute an older phase of the hoard, together with the other Islamic coins. There is a possibility that the Alexander the Great coin was acquired along with the Islamic coins in the hoard. Unfortunately, the find-spot of the coin was not recorded, and it cannot be determined with certainty whether it was originally deposited in the Lillegærde hoard.

None of the coins found *in situ* document examples of late chronological gaps (Table 3.2). Coins constituting a late chronological gap are located at Døvreård, Lillegærde, Pæregård and Smørbygård, where partly *in situ* hoards have been found. Because none of the late chronological gaps were among the surviving coins found *in situ*, the interpretation of the closing coins of these hoards depends on a detailed analysis of the coin distribution. The complete analysis of the dating of the coins at the individual sites is presented in Appendix 1. The methodological chronological considerations on the dating of the four hoards is presented in the following.

Only nine out of 100 coins from the Smørbygård location were preserved in the *in situ* context of the hoard. Except for a much later coin, located more than 350 m from the deposition place, the coins at Smørbygård have a relatively unified

chronological profile. Towards the end of the accumulation horizon is a distinct group of 13 German coins with a *tpq* of 995/6 (11 Otto-Adelheid, Hatz 1961, type IV minted 995–1035, Otto III, Deventer minted 996–1002, Otto III, Dortmund minted 996–1002).<sup>9</sup> All 13 coins have been located in the central distribution area no more than 16 m from the hoard's deposition place; of these, six coins are found within 4 m. The coins most likely belong to the hoard. A small group of two German coins (Otto-Adelheid, Hatz 1961, type V, minted 1025–1060)<sup>10</sup> and an English coin (Edward the Confessor, minted 1042–1044)<sup>11</sup> form a chronological gap in relation to this group. Two of these have been found close to the deposition place of the hoard in the same central find concentration as the 14 coins with a *tpq* 995/6, while the third is found north of the hoard.<sup>12</sup> The Skovvang hoard presents an interesting parallel. Skovvang contains 840 coins of which 675 were found *in situ*. The *in situ* coins are spread in time over the long accumulation horizon of the hoard. The horizon ends with a later phase of a small group of later coins, some of which have also been found *in situ*. Supported by the example from the *in situ* coins in the Skovvang hoard, and compared with the proximity to the deposition place, the two late coins close to the Smørbygård's distribution place are interpreted as part of the hoard. Thus, the Edward the Confessor coin is interpreted as the closing coin of the hoard.

At the Pæregård site, the latest coin found *in situ* is a German Henry III from Regensburg minted 1039–1042, while the latest coins from the site are two Danish Sweyn Estridsson coins.<sup>13</sup> The type is minted in Lund 1046/1047–1060 (Becker 1981, 138–157; Ingvarsson 2016, fig. 7). During the archaeological excavation of the Pæregård site, it was documented that some silver objects were deposited in a different context to the hoard, including one of the Sweyn Estridsson coins. The other Sweyn Estridsson coin, on the other hand, was found in the middle of the distribution area of the silver, c. 6 m north of the deposition place.<sup>14</sup> The chronological distance to the Regensburg coin is limited. Supported by the proximity to the distribution area, the Sweyn Estridsson coin is therefore interpreted as the closing coin of the Pæregård hoard.

The chronological profile of the coins at Døvregerd probably reflects several accumulation phases. None of the *in situ* coins are from the latest phase. This may be because the latest coins were placed in the upper part of the container holding the hoard. If so, the latest coins would be scattered by the plough. Among the latest coins, a chronological gap is seen between three Duke Henry V coins from Regensburg and Salzburg dated to 1018–1026 and an Archbishop Poppo and Henry III coin struck in Trier dated 1028–1039. Due to the proximity of the coins to the deposit place, the relatively limited chronological distance between the Regensburg and Trier coins, and the fact that all the latest coins are found in the same area in the top soil, the Trier coin from 1028–1039 is interpreted as the closing coin.

The analysis of coins found *in situ* demonstrates that hoards may contain an early accumulation phase often consisting of Islamic coins minted long before the other coins in the hoard. Furthermore, it is likely that chronological gaps among the hoard's latest coins may occur. However, this is not as common as chronological gaps early in the accumulation horizon. The late chronological gaps are also

less pronounced. Only in a few special cases, such as at Smørbygård, can longer chronological gaps late in the accumulation horizon be argued. A further discussion of chronological gaps at the individual sites is presented in Appendix 1. Here, all sites with chronological gaps among the coin material have been analysed, and an interpretation is offered as to which coins are considered the closing coins in each individual hoard.

### **3.2 The biography of objects and hoards**

The premise of the analysis is that the structure of a hoard in interaction with its archaeological context reflects the hoard's relationship to the individual/person who collected, handled, and deposited it. In other words, the silversmith's deposit of raw materials has a composition and deposition context that is different from the ritual deposit or the savings of the merchant. Thus, a method is needed that supports a multi-causal interpretation and which acts as a link between Bourdieu's concept of capital and the hoards of the Viking Age; it also needs to uncover the structure of the hoards, and to focus on their contexts.

Grinder-Hansen's interpretive model operates precisely with a differentiated economic interpretation of the hoards based on their structure and in interaction with their context. Grinder-Hansen lists a number of hoard types with different compositional features (2000, 170–174). The model includes elements such as the structure of age, origin, and material, and it is assumed that the elements reflect the function of the hoards at the time of deposition. Grinder-Hansen operates with four categories: 1) ritual deposits, with no intention of retrieval; 2) savings, which contain coins collected over a long period, thus showing a wide chronological range; 3) acutely deposited hoards are assumed to be subject to less deliberate selection than savings and are characterised by a more concentrated age structure and a more random sample of denominations; 4) accidental losses refer to unintentional losses, e.g. a lost purse. The conclusion is that coins in categories 1 and 2 are carefully selected and thus are poor evidence for coin circulation, while coins in categories 3 and 4 are randomly selected and therefore provide a good insight into coin circulation. Grinder-Hansen stresses the importance of context for interpretation and emphasises that the hoards must be seen in relation to the overall find picture (2000, 170–174). An acutely deposited hoard from the 1000s will therefore have different characteristics from an acutely buried hoard from the 1500s.

Grinder-Hansen's purpose is purely economic, and the categorisation of the hoards serves exclusively as a means to investigate coin circulation. According to Grinder-Hansen, ritual deposits have little value since they do not contribute to an understanding of coin circulation. The theoretical starting point for this survey is that hoards potentially add not only economic but also cultural, social, and symbolic capital to their owners (section 2.2). Thus, a significant limitation in Grinder-Hansen's work in relation to the purpose of this survey is that the agency of hoards in relation to Bourdieu's concept of social, cultural, and symbolic capital is not included in the interpretive model. However, Grinder-Hansen's method can serve as an inspiration, since it applies a multi-causal method to his mono-causal

economic perspective: hoards have different functions (e.g. savings), and the functions are reflected in the hoard structures (e.g. large chronological diffusion and high nominals). Grinder-Hansen's conceptual framework contains some of the elements needed in this analysis. The structure of the hoards is revealed through age, origin, and material analysis, and the context is emphasised as essential for the interpretations of hoards.

Another limitation of Grinder-Hansen's method in relation to the purpose of this survey is the unilateral focus on the moment of deposition. However, the actions that preceded the deposit of the hoard are equally important when the hoards are interpreted as elements of economic, cultural, social, and symbolic capital. An object is not only created at the moment of production but experiences a dynamic life-cycle linked to human activities such as exchange, use, and consumption (Miller 1987, 116–126). In this survey, both humans and silver are seen as agents, and Daniel Miller's dialectical perspective encapsulates the dynamic interaction between humans and objects. The reciprocal and continuous interaction between humans and silver materialises in the circulation traces of the objects, here defined as the modifications, and changes an object 'experiences' between production and deposit. An example of the human–silver interaction is when coins are transformed into amulets. Several factors indicate that coin pendants functioned as protective amulets (Audy 2018, 197–198). The human transforms the coin into an amulet, while the amulet protects the human wearing it with its power (Figure 3.9).

Related to Bourdieu's concept of capital, the transformation of the coin to an amulet strengthens the symbolic capital of the owner. Several examples are known of coins transformed into shield-shaped pendants (Trotzig 2004, 200–201). Shield pendants, along with other forms of miniature weapons, can be seen as protective amulets. The coin may have been used as a raw material for practical reasons, since it already has the round shield shape, but it is also possible that the coin itself was attributed supernatural powers (Audy 2018, 198–199).



*Figure 3.9* Shield amulet found at Holmegård (BMR 3235) in Østermarie parish, Bornholm. The Kufic writing on the handle of the amulet reveals that it was transformed from an Islamic coin. Writing or other motifs are not visible on the shield.

*Photograph:* R. Laursen, the Bornholm Museum.

*The Social Life of Things* discusses the relationship between objects and humans in a social context (Appadurai 1986). As illustrated in the example of the coin-amulet, an object's function is reflected in its form and use. That is, a change in form and use reflects a change in function (Appadurai 1986, 5). The six gilded coin pendants (transformed from dirhams) in the jewellery deposit from Vårby, about 15 km southwest of Stockholm, changed status from means of payment to social markers, as a result of their gilding (Audy 2018, 216–217, 336). By virtue of the coins' modified appearance and their use in a spectacular jewellery set, they changed function from means of payment and an element of the owner's economic capital to personal decoration and an element of the owner's social capital, demonstrating her knowledge of and contact with the outside world.

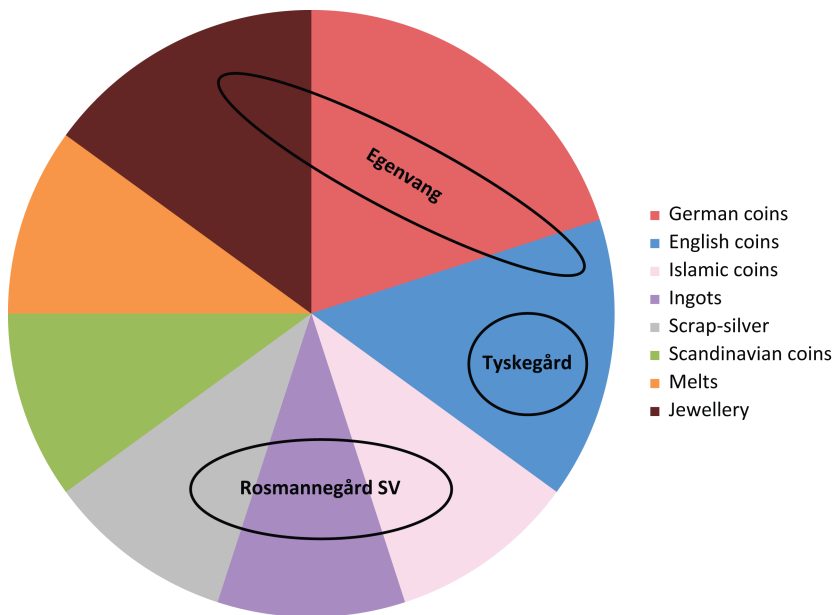
The highlighted examples demonstrate that the form and function of silver are not static. As illustrated by Giorgio Riello, the interpretation depends on the narrative in which the object is interpreted; in other words, the part of the object's life biography the researcher focuses on (2013). Riello uses a stomacher as a case study. A stomacher is a piece of triangular textile placed over the chest and stomach in eighteenth-century dresses. The analysed textile was from a fragment of a corset, the stomacher was found wrapped in a piece of newspaper from 1752, hidden by a chimney in a house under renovation. The textile is interpreted as a house sacrifice – part of a common Northern European ritual practice of embedding textiles at openings in buildings (Riello 2013, 26–29). The interpretation thus links to the part of the textile's biography in which it is used in ritual practice. Riello points out that if the researcher focuses on a different part of the textile's biography, the narrative of the textile changes. The stomacher could be used in a narrative about fashion in the eighteenth century. The original form of the textile was a corset, which could be the starting point for a narrative about body ideals. Since the whalebones in the corset's stiffeners through DNA analysis were found to originate from an as yet undiscovered whale species, the textile could also be used in a narrative about biodiversity (2013, 30–31).

The hoard analysis is divided into three parts in order to highlight and analyse the dynamic interaction between humans and silver. The division is inspired by Riello's case, and the three parts are linked to different phases in the objects' biographies. In part one, the objects are analysed in a narrative of origin – i.e. the production data of the objects. Part two concentrates on modifications that have changed the form and function of the objects in a narrative of use and consumption – i.e. the circulation data of the objects. The third and final part focuses on the deposition data of the objects in an archaeological contextual narrative.

Kemmers's and Myrberg's work on object biography serves as a valuable inspiration. Kemmers and Myrberg have also addressed the issue of object biography from a numismatic viewpoint. Their analytical focus is not limited to the time of deposit of a coin but encompasses the entire biography of the coin. Kemmers and Myrberg suggest that the life of a coin can be divided into four contextual stages: the primary context includes the production phase; the secondary context concerns the use of the coin; the tertiary context is related to the loss or deposition of the

coin and the integration of the coin into the archaeological context; and finally, they operate with the quaternary context, wherein the coin is recovered and treated scientifically (Myrberg 2009b, 157–159; Kemmers & Myrberg 2011, 89–95). The method was developed with numismatic material in mind, but can equally be applied to other object groups (Ingvarðson 2012, 2019). Inspired by the contextual considerations advocated by Kemmers and Myrberg, the analysis is divided into production data, circulation data, and deposition data reflecting the main stages of the biography of an object.

In addition to working with the biography of individual objects, the biographical approach may be applied to object assemblages (N. M. Burström 2014; Näver-sköld 2016). A method for mapping and visualising hoard biographies will here be introduced. The analysis includes 13,869 objects. The vast majority were produced outside Bornholm, and all were deposited on Bornholm during the Viking Age. The



*Figure 3.10* Model illustrating the method used in this survey. The pie chart illustrates all objects deposited in the Bornholm hoards. The hoards marked with black circles represent different selections of objects deposited in individual hoards. The three hoards marked in the chart were deposited around the same time, shortly before or after the year 1000, but they display different characteristics. The Tyskegård hoard is made up of English coins only, while the Egenvang hoard contains a mixture of English and German coins and a significant jewellery component; the Rosmannegård SV hoard is different again, comprising ingots, scrap-silver, and Islamic coins. This diversity demonstrates that the hoards do not represent a random sample of the available silver, but the actions and individual choices of the hoarding Vikings.

total biographical imprint of the objects reflects the number of objects which were imported to, and circulated on, Bornholm. When deposited, a selection of these objects was encapsulated, and the sum of this selection forms the biography of each hoard. The biographies of the hoards can be seen as individual life-histories, linked to the people who collected, handled, and deposited the silver (Ingvarðson 2019, 33–35). These life-histories are encapsulated and contextualised through the method used. Thus, the analysis changes in a methodological perspective between analysing all the objects as a whole without regard to their deposit in a hoard and analysing the objects as a deposited selection of the silver that was available to the individual actor. General trends can thus be related to the unique and specific biography of each hoard (Figure 3.10).

In summary, hoards consist of a collection of objects, each with its own biography, which can be described through the production data, circulation data, and deposition data of the objects, while the sum of the data of the objects constitutes the biography of the hoard. The hoard is not exclusively described in the moment of its deposit, because the actors and events that influenced its creation are included in the analysis. Therefore, it is necessary to extend the analytical concepts surrounding the chronology of the hoards to include both the accumulation and the deposition of the hoards.

### 3.2.1 *Biographical chronology*

The purpose of the chronological and distributional analyses of the hoards is to establish a framework for when the hoard was deposited and to elucidate how and in which period the hoard was accumulated (Ingvarðson 2019, 33–35). The analysis therefore operates with the three general concepts of deposition horizon, accumulation horizon, and deposition event. These are defined as follows:

*Deposition horizon*: the period when the hoard was likely deposited.

*Accumulation horizon*: the period during which the hoard was accumulated.

*Deposition event*: the actual act of deposition.

Chronological analyses of hoards usually focus on identifying the time of deposition. The most common way of dating hoards among archaeologists, historians, and numismatists alike is *tpq* (*terminus post quem*) dating. It is generally accepted that *tpq* dating does not necessarily indicate the time of deposition, since coins could circulate for a long time. The hoard may also be deposited long after it was accumulated. The dating of the latest coin provides an important backdrop to the earliest possible date of deposit. This survey operates with deposition horizons, because the exact date of the hoard's deposition cannot be established. The deposition horizon is defined as the period when the hoard was likely deposited. Within numismatics, in order to narrow down the deposition horizon, the *tpq* date is sometimes combined with what can be labelled the method of exclusion. Here it is assumed that because the hoard does not contain a particular coin type, it was likely deposited before a certain date. This method is used, for example, in *Danmarks*

*middelalderlige skattefund* [Denmark's medieval hoards] (Jensen *et al.* 1992). In the dating of the Enegård hoard from Bornholm it states:

It would therefore be reasonable to assume that the hoard was deposited during the reign of Harthacnut, 1035–42, also based on the fact that it does not contain coins from the reign of Magnus the Good, 1042–47.

(Jensen *et al.* 1992, 189 [translation by the author])

The method can be problematic because it is often based on a purely economic perspective and presupposes that hoards of certain periods contain certain coins/objects. The method is therefore especially valid in areas and periods with highly regulated coin circulation, but in a Viking-Age perspective and in an area such as Bornholm, the method should be used with caution. With reference to the presented example, it may be pointed out that out of 12,551 coins recorded in this survey, only 22 coins of Magnus the Good have been deposited in the Bornholm hoards. Thus, it is problematic to date a hoard based on the lack of Magnus the Good coins. It is crucial for the exclusion method to consider the actual conditions in a specific area within a given period. The hoards on Zealand reflect economic developments that are different from those affecting the hoards on Bornholm. Thus, what may be chronologically defining for a hoard deposited in eleventh-century Zealand is not applicable to a contemporary hoard deposited on Bornholm. A striking example would be to use the presence of foreign coins in the hoards as a defining factor. On Zealand, foreign coins disappear from the hoards during the first half of the eleventh century, while the Bornholm hoards continue to be dominated by foreign coinage well into the twelfth century (von Heijne 2004, figure 6.23; Ingvarðson 2016, 141–143). In order to establish a deposition horizon for the Bornholm hoards, the individual hoard will therefore be analysed against the development of the local circulation pool.

Coins occupy a key position in the dating of hoards because of their often very precisely defined date of production. This also stands in this survey, in which the chronological analysis is based on the often precisely dated coins. However, all parts of the hoards are equally important for the interpretation. In the description of the overall chronological trends within the Bornholm hoards, jewellery, ingots, other personal objects, and scrap-silver are included in the interpretation of how hoard structure changes over time. As demonstrated in section 3.3, uncoined silver can in some cases constitute defining chronological points of reference.

In summary, the combined evidence of the closing coin, the composition of coins, as well as the combination of object types will establish the deposition horizon for each hoard. Deposition horizon rather than deposition date is used, since the existing methods do not provide a secure platform for stating the deposition date. However, in some cases, *tpq* dates will be used for practical reasons, for example in charts.

Because the focus of the survey is not exclusively on the deposition horizon of the hoard, but on the total biography of the hoard, it is necessary to extend the chronological approach and elucidate the accumulation horizon of the hoards. The

aim is to analyse and illustrate how the hoard was accumulated and, if possible, to describe the various actions and events that led to the composition of the hoards at the time of deposition.

Bornholm's most coin-rich hoard, Nørremølle, has been the starting point for the development of a new type of chronological chart with a biographical perspective that illustrates the accumulation horizon (Ingvardson 2012, 7–8). The chart type specifies and compiles the chronological framework for each coin in the hoard. The sum of the coin dates provides a visual representation of the accumulated horizon of the hoard. The dates are also linked to the production place of the coin. This provides a nuanced picture of the hoard's biography.<sup>15</sup> The method makes it possible to distinguish different accumulation phases. An accumulation phase consists of a group of coins with a uniform chronology and possibly also a uniform production profile. A hoard like Nørremølle can contain several different accumulation phases within the accumulation horizon. For example, the Nørremølle hoard, probably deposited 1035–1040, contains an older accumulation phase consisting of Islamic coins minted c. 750–830 (Ingvardson 2012, figure 6.4).

By revealing different phases of accumulation, the chronology of a hoard changes from static and linked to its deposition horizon to dynamic and linked to the total biography of the hoard. The aim of the method is to focus on whether, and if so how, the objects have provided the owner with an agency in different fields over time. Both production time and place as well as secondary treatment are included in the analysis of accumulation phases. Circulation data reflects whether objects deposited in the hoards have changed form, and thus function, before or during accumulation. The division of the accumulation horizon into different phases is sometimes based on groupings within chronology, distribution, and/or traces of use. An illustrative example is the Dalegård hoard, in which the English coins of *Crux* type show many circulation traces in the form of marks and bends, while the slightly later *Long Cross* types appear newly minted with almost identical traces of use: a slight bend with a single peck at the bent rim. This difference suggests that the *Crux* types and the *Long Cross* types, respectively, were accumulated at different times and by different actions.

In addition to an accumulation and deposition horizon, the biography of a hoard contains a deposition event. While the accumulation and deposition horizons are analysed based on the production and circulation data of the objects, the deposition event of the hoard is reflected in the archaeological context (deposition data).

The deposition data are divided into different levels relating to and reflecting the deposition event in different ways. The immediate context includes the possible container of the hoard, the feature context includes the structure the hoard was deposited in or by, for example in a pit or by a stone, and the site context includes the location where the hoard was deposited. The archaeological context (deposition data) can potentially illuminate the reason and purpose of the hoard deposition, as well as the environment in which the hoard was deposited. Chapter 4 provides an in-depth discussion of the methodological and source-critical considerations surrounding the definition and use of production data, circulation data, and deposition data.

### 3.3 The Bornholm Viking hoards – an overview

Based on the methodological considerations and the results of the analysis of the material composition of the hoards in section 3.1.1 and the chronological profile in section 3.1.2, it is now possible to present an overview of the content and chronology of the Bornholm Viking-Age hoards in a diachronic perspective.

The *tpq* dates will not stand alone (section 3.2), and the deposition horizons of the hoards will be discussed based on an overall review and assessment of the hoard compositions. The coin profiles and overall object profiles of the hoards are illustrated in Figures 3.11 and 3.12, in which the hoards are ordered according to the interpreted *tpq* dates. Several clear chronological trends can be distinguished and will serve as a foundation for the discussion of the deposition horizons of the hoards.

Until the turn of the millennium, the hoards consisted mainly of coins. The Skovsholm hoard with *tpq* of 855 is the only hoard dominated by Abbasid dirhams. From the beginning of the 900s until around 980, Samanid dirhams dominated the hoards. Small numbers of Abbasid dirhams were deposited in the hoards until about 1070.

From 990 there is a marked increase in the number of hoards deposited; at the same time, there is a clear change in the composition of the coins, since the dominant Samanid dirhams are replaced by English and German coins (Figure 3.11). The period from 990–1000/1005 appears to be transitional, with some hoards dominated by Islamic dirhams, others by English coins, and others again by German coins. It is also in the 990s that scrap-silver and ingots become a typical element in the hoards, which until then consisted almost exclusively of coins and jewellery (Figure 3.12). The only hoard with a *tpq* before the 990s containing scrap-silver is the Dammegård hoard. Given the hoard's uncertain *tpq* date (section 3.1.2, Appendix 1), as well as the presence of scrap-silver combined with the dominance of Samanid dirhams, it is likely that the Dammegård hoard was deposited in the 990s. The portion of Islamic coins in the hoards reduces markedly immediately after 1000. The shift seems to occur in the first years of the 1000s. Thus, the Brandsgård hoard with *tpq* 1001 completes this transitional phase and is the only Bornholm hoard with a significant proportion of Hedeby coins minted 950–990.

For a period after this, the composition of the coin component in hoards is relatively uniform until c. 1040. The majority of coins are German, but English and Scandinavian coins also make up significant proportions. In contrast to the coins, the uncoined silver shows clear chronological differences. The period c. 1000–1030 is characterised by the predominance of types of objects other than coins in some of the hoards. The oldest hoard of which coins do not constitute the largest object group is Egenvang, about 60 per cent of which is fragmented jewellery.

From around 1020, lumps of melted silver (melts) are a significant element in the hoards. This coincides with the introduction of Slavic/Scandinavian melts in hoards with a *tpq* of 1010. The proportion of silver ingots decreases at the same

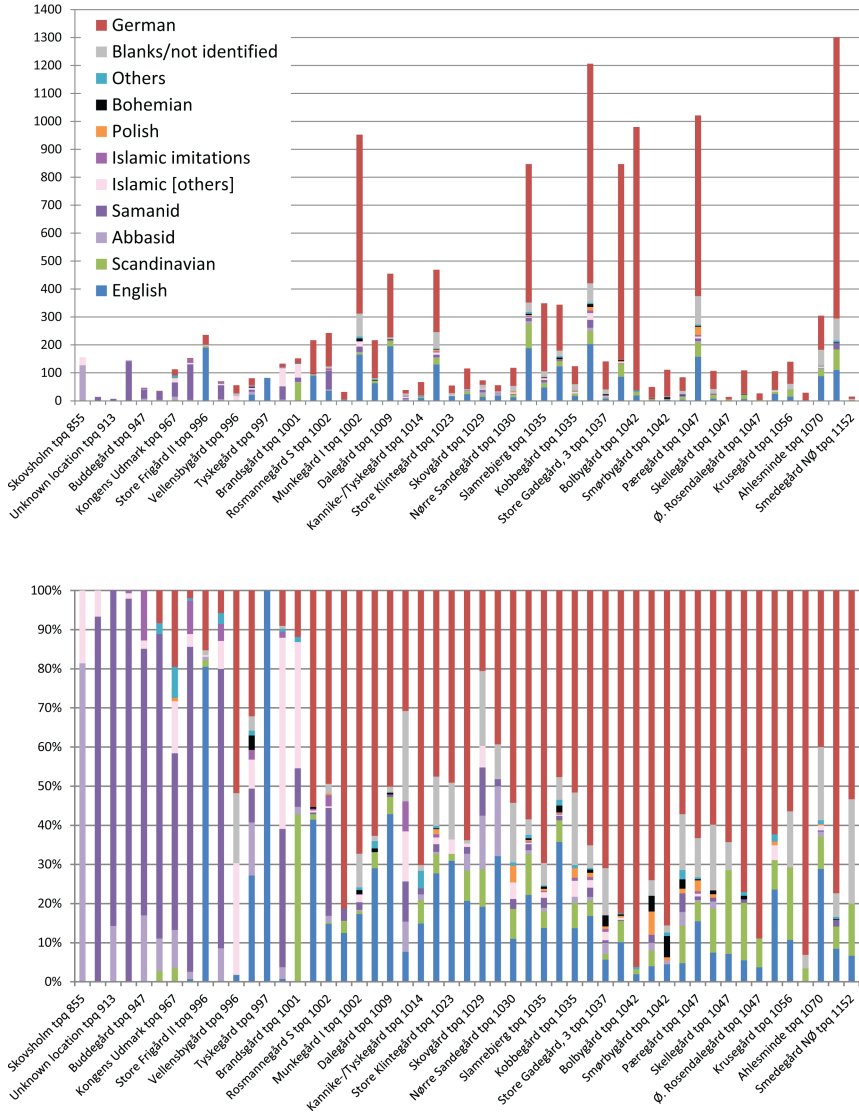


Figure 3.11 The coin profile of the Bornholm hoards, in per cent (bottom) and in number (top). The most marked change is the shift from the dominance of Islamic coins to those of Western Europe.

time. The development is so significant that it can be considered a defining chronological factor. Thus, the presence of Slavic/Scandinavian melts dates hoards to after 1010, and a high proportion of melts would indicate that hoards were deposited after 1020.

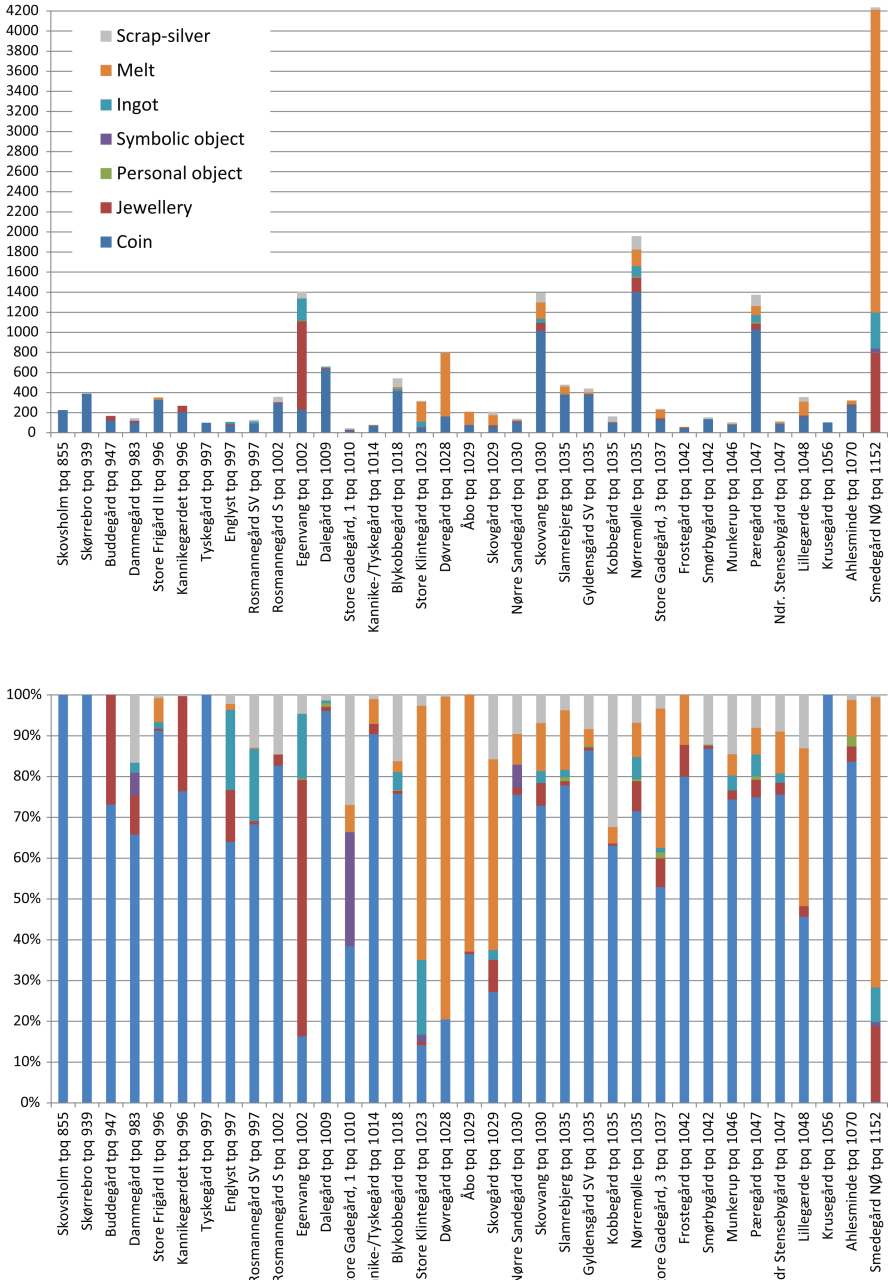


Figure 3.12 The object profile of the Bornholm hoards, in per cent (bottom) and in number (top). Silver objects only are included in the charts. It is possible that some hoards were deposited with other object types such as gold, bronzes, and weights (see section 3.1.1).

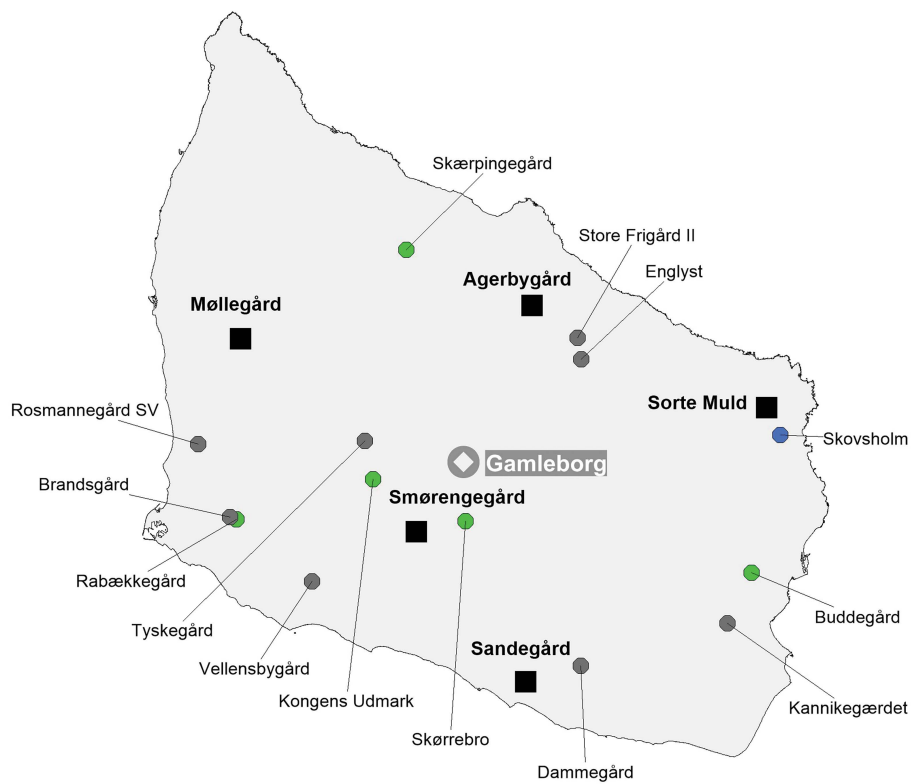
Table 3.3 Phasing of the deposition horizon of the Bornholm hoards.

<i>Deposition horizons</i>		
Phase 1: 850–900	Abbasid dirhams.	Skovsholm (BMR 3709), <i>tpq</i> 855
Phase 2: 900–990	Exclusively coins. Samanid dirhams. Coins and jewellery dominate.	Rabækkegård, <i>tpq</i> 913 Unknown location, <i>tpq</i> 913 Skørrebro (BMR 3337), <i>tpq</i> 939 Buddegård (BMR 2306), <i>tpq</i> 947 Rømersdal, c. 960–970 Skærpingegård, <i>tpq</i> 962 Kongens Udmark, <i>tpq</i> 967
Phase 3: 990–1000/1005	Transitional phase. Hoards can be dominated by either Islamic, German, or English coins. Scrap-silver and ingots begin to appear. The number of deposited hoards rises.	Dammegård 1 (BMR 2000), <i>tpq</i> 983 Store Frigård II (BMR 1711), <i>tpq</i> 996 Kannikegærdet (BMR 2292), <i>tpq</i> 996 Vellensbygård (BMR 2361), <i>tpq</i> 996 Englyst (BMR 2320), <i>tpq</i> 997 Tyskegård (BMR 2150), <i>tpq</i> 997 Rosmannegård SV (BMR 3494), <i>tpq</i> 997 Brandsgård, <i>tpq</i> 1001
Phase 4: 1000/1005–1020	German coins dominate. Significant presence of English and Scandinavian coins. Slavic/Scandinavian melts are introduced around 1010, while the number of ingots is reduced.	Rosmannegård S (BMR 3494), <i>tpq</i> 1002 Egenvang (BMR 3836), <i>tpq</i> 1002 Munkegård I (BMR 2212), <i>tpq</i> 1002 Bondegård, <i>tpq</i> 1002 Holsegård, <i>tpq</i> 1004 Dalegård (BMR 1754), <i>tpq</i> 1009 Store Gadegård area 1 (BMR 1978), <i>tpq</i> 1010 Kannikegård/Tyskegård (BMR 2174), <i>tpq</i> 1014 Blykobbegård (BMR 3890), <i>tpq</i> 1018

*(Continued)*

Table 3.3 (Continued)

<i>Deposition horizons</i>		
Phase 5: 1020–1040	Continued dominance of German coins and significant presence of English and Scandinavian coins. Melts become a substantial element in hoards with <i>tpq</i> in the 1020s.	<p>Store Klintegård (BMR 2758), <i>tpq</i> 1023</p> <p>Døvregård (BMR 2588), <i>tpq</i> 1028</p> <p>Skovgård (BMR 3360), <i>tpq</i> 1029</p> <p>Åbo (BMR 1831), <i>tpq</i> 1029</p> <p>Nørre Sandegård (BMR 1853), <i>tpq</i> 1030</p> <p>Skovvang (BMR 2291), <i>tpq</i> 1030</p> <p>Slamrebjerg (BMR 1508), <i>tpq</i> 1035</p> <p>Gyldensgård SV (BMR 3194), <i>tpq</i> 1035</p> <p>Kobbegård (BMR 2114), <i>tpq</i> 1035</p> <p>Nørremølle (BMR 3419), <i>tpq</i> 1035</p> <p>Store Gadegård area 3 (BMR 1978), <i>tpq</i> 1037</p>
Phase 6: 1040–1060	Increase in German and Scandinavian coin components. Decrease in English and Islamic coins.	<p>Enegård, <i>tpq</i> 1040</p> <p>Bolbygård, <i>tpq</i> 1042</p> <p>Frostegård (BMR 1229), <i>tpq</i> 1042</p> <p>Smørbygård (BMR 1491), <i>tpq</i> 1042</p> <p>Munkerup (BMR 2255), <i>tpq</i> 1046</p> <p>Pæregård (BMR 1083), <i>tpq</i> 1047</p> <p>Nordre Stensebygård (BMR 2151), <i>tpq</i> 1047</p> <p>Skellegård, <i>tpq</i> 1047</p> <p>Tornegård, <i>tpq</i> 1047</p> <p>Øster Rosendalegård, <i>tpq</i> 1047</p> <p>Lillegærde (BMR 3759), <i>tpq</i> 1048</p> <p>Krusegård (BMR 2158), <i>tpq</i> 1056</p>
Phase 7: after 1060	Few deposited hoards. German coins dominate. Melts and ingots are dominant elements.	<p>Simlegård, <i>tpq</i> 1065</p> <p>Ahlesminde (BMR 3767), <i>tpq</i> 1070</p> <p>Store Frigård I, <i>tpq</i> 1106</p> <p>Smedegård NØ (BMR 3710), <i>tpq</i> 1152</p>



*Figure 3.13* Geographical distribution of the Bornholm hoards. Map 1: Blue: phase 1 (850–900). Green: phase 2 (900–990). Grey: phase 3 (990–1000/1005). Square: Central sites.

*Maps:* J. S. Andersen.

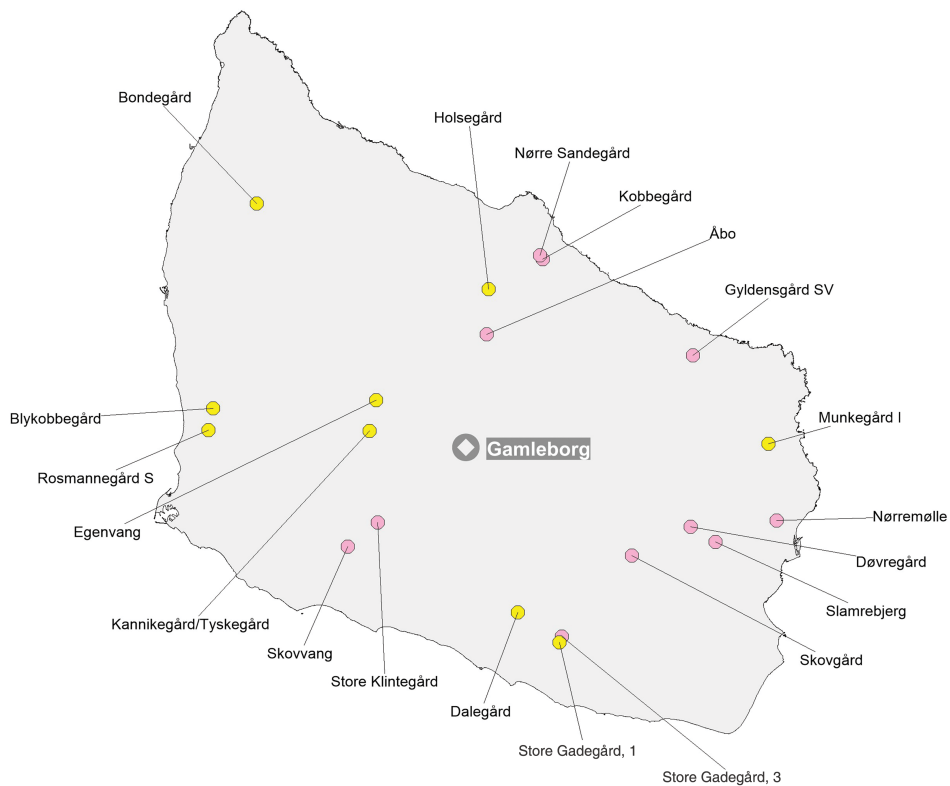


Figure 3.13 (Continued) Map 2: Yellow: phase 4 (1000/1005–1020). Purple: phase 5 (1020–1040).

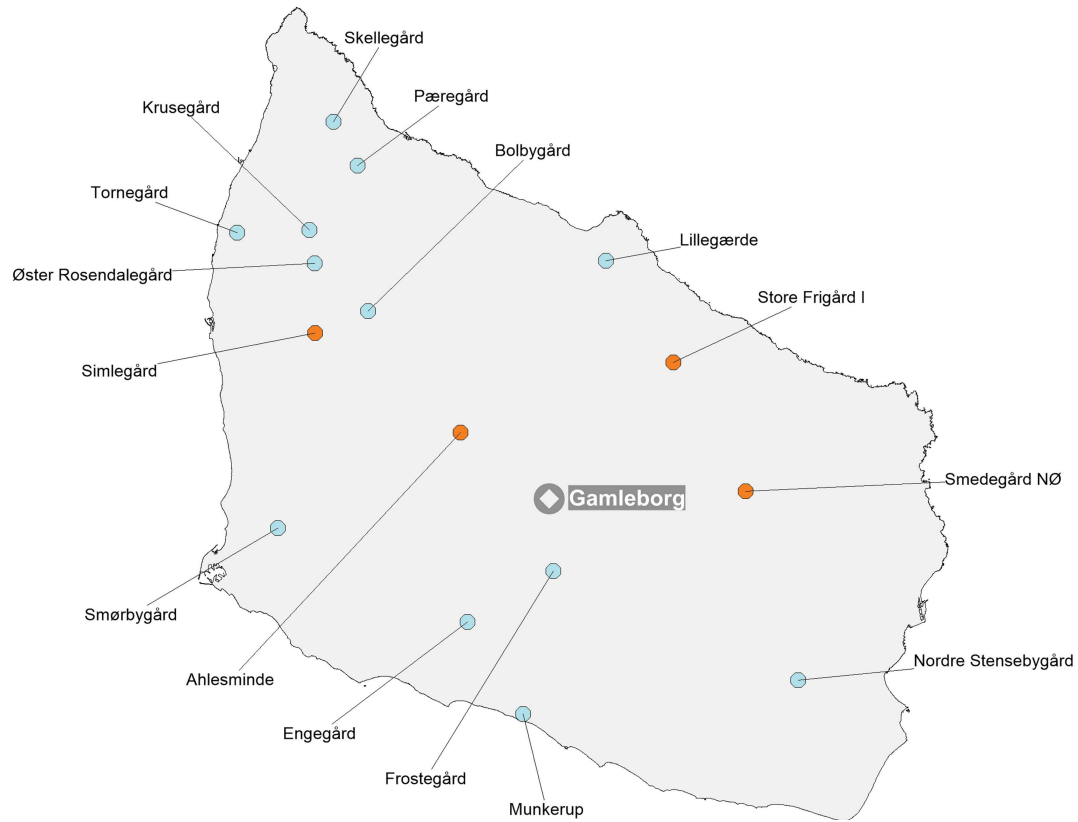


Figure 3.13 (Continued) Map 3: Turquoise: phase 6 (1040–1060). Orange: phase 7 (after 1060).

During the 1040s the proportion of German coins increased. There is a slight tendency for hoards with a *tpq* of 1040 until around 1060 to have a smaller proportion of English coins; the proportion of Islamic coins is also further reduced. However, the proportion of Scandinavian coins increases in the same period. The latest hoard in this phase is Krusegård with a *tpq* of 1056.

After c. 1060 the number of hoards deposited decreases significantly and it is difficult to highlight chronological trends, however the dominance of German coins continues. Finally, the Smedegård NØ deposits must be considered exceptional by all parameters. It is without parallel Bornholm's largest hoard but contains only 15 coins. The hoard consists mainly of melts, complete jewellery of Viking-Age type, and two relic crosses (section 7.1.1).

The clear chronological trends, illustrated by the different structures of the hoards in Figures 3.11 and 3.12 and by the previous summary, form the basis for a classification of the hoards into seven main deposition horizons (Table 3.3). The geographical locations of the hoards are illustrated in Figure 3.13.

## Notes

- 1 \* Marks an unpublished report.
- 2 Distribution maps are available in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).
- 3 Accumulation horizon is defined as the period when the hoard was accumulated (section 3.2.1).
- 4 Distribution maps for well-documented locations, and a selection of partially documented ones, are available in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623). Each map is followed by an explanatory note which addresses the preconditions for the maps and the methodological issues pertaining to each site. The ploughing directions of the sites are also indicated.
- 5 Charts illustrating the accumulation horizons of each hoard are available in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).
- 6 Individual distribution maps are presented in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).
- 7 This is the case with Blykobbegård, Bondegård, Brandsgård, Buddegård, Dalegård, Dammegård, Døvregård, Egenvang, Enegård, Englyst, Frostegård, Gyldensgård SV, Kannikegærde, Kongens Udmark, Lillegærde, Munkegård I, Munkerup, Nordre Stensebygård, Nørre Sandegård, Nørremølle, Pæregård, Rosmannde S, Rosmanne SV, Skovgård, Skovvang, Slamrebjerg, Store Frigård I, Store Gadegård area 3, Tornegård and Åbo.
- 8 Kannikegærde: Vespasian minted 72, Antonius Pius minted 131–161; Kannikegård/Tyskegård: Commodus minted 184–185, Faustina the Younger minted 141–181; Kongens Udmark: Trajan minted 98; Kobbegård: Trajan minted 112–114; Store Frigård I: Hadrian minted 117; St. Gadegård: Hadrian minted 117–138, Commodus minted 187–188; Dammegård: Hadrian minted 117–138, Marcus Aurelius minted 161–162; Nørre Sandegård: Marcus Aurelius minted 161–180.
- 9 Find nos. 9, 23–24, 31, 40–42, 54, 58, 67, 73, 77, 80.
- 10 Find nos. 35, 177.
- 11 Find no. 145.

72 *Identifying Bornholm's hoards*

- 12 Distribution map is presented in online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).
- 13 Type reference: Hauberg (1900) Svend Estridsen [Sweyn Estridsson] no. 6.
- 14 Distribution map is presented in online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).
- 15 Charts illustrating the accumulation horizons of the well-documented, partly documented, and partly available hoards are presented in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).

## 4 Classification of production, circulation, and distribution data

Humans and their actions materialise in the object's journey from the production place, through the circulation area, to the deposition site. The path from production to deposition may have been short or long in time and space, may involve few or many hands, and an object may have preserved its form and function, or may have changed form and function several times. The 82 Æthelred II *Long Cross* coins in the Tyskegård hoard with few circulation traces appear to have been newly minted and probably passed through few hands before being deposited shortly after acquisition (sections 4.2 and 5.2). An example of an object with a long and complicated biography is the Umayyad dirham from the Rabækkegård grave. It is the only coin in the grave with a suspension mount, and it is much older than the rest of the jewellery and other coins in this grave. This suggests that the coin travelled far in both time and space, changing form and function from coin to jewellery (section 5.3).

This chapter examines two essential methodological questions. How can the numerous and very different objects which have potentially changed meaning and function several times on their journey from production to deposition be classified and recorded? How are data from different stages of the biography of objects and hoards analysed and related?

### 4.1 Coins, jewellery, ingots, or scrap-silver? classification of production data

Hoards often consist of a mixture of different types of objects with coins, jewellery, ingots, and melts being the most common. Since different categories of objects have different characteristics, it is necessary to adapt the analysis and method of recording for each category. The researcher's perception of the function of the object is reflected in the classification. If a suspended coin is recorded as a coin, it signals that the object is perceived as a means of payment; if it is recorded as a piece of jewellery, it signals that it is perceived as a personal ornament (see Audy's discussion on publications of coin-jewellery: 2018, 23–25). In the registration phase, the researcher is strongly influenced by research tradition, which affects the analysis and ultimately the conclusions drawn (see Audy's criticism of the treatment of coins transformed into jewellery by numismatists: 2018, 23–25; see also discussion in section 2.1). The criticism is partly justified. By focusing on the coin

and its numismatic data, the transformation from currency to jewellery has been overlooked or neglected. Audy analyses coins in grave contexts, and in that setting it often makes sense to view the reworked coins as jewellery. In this survey, hoards from various contexts are analysed, and a coin with piercings and/or suspensions cannot automatically be interpreted as jewellery; usage as currency or raw material may be equally valid and need not be mutually exclusive. The interpretation depends on the context.

The analysis is based on a large and diverse body of material. In order to compare different groups of objects and types of hoards it is essential to record features in a consistent and uniform way. In order to do so, the objects have been categorised according to their production data. However, great emphasis has also been placed on recording the circulation data of the objects. This means that a coin with piercing is categorised as a coin, but whether the coin is pierced or has a suspension is included in the interpretation. This approach may have particular implications for the large number of fragmented objects traditionally recorded under the unifying category of hack-silver. The traditional classification of objects in Viking hoards is divided into complete and fragmented objects. Complete ornaments are classified as jewellery, complete ingots are classified as ingots, and so on, whereas the large quantity of fragmented and/or otherwise destroyed objects are described collectively as hack-silver, with the exception of fragmented coins, which are classified as coins. A premise for this survey is that all objects (whether complete, fragmented, and/or bent) potentially had agency in Bourdieu's economic, social, cultural, and/or symbolic concept of capital: for example as a means of payment, raw material, social marker, and/or ritual mediator. An object could change function one or several times in the course of its biography, as well as possess multiple functions at the same time. When choosing the production data of the objects as a starting point, the method of documentation is as neutral as possible. The interpretation depends on an overall assessment of the production data, circulation data, and deposition data of the object and of the hoard as a whole.

The large number of fragmented silver pieces in Viking hoards is traditionally linked to the use of silver as a means of payment by weight (cf. section 2.1). In particular, Hårdh's work on the uncoined hoarded silver has highlighted the role of fragmented silver as currency. In this analysis, this often automatic interpretation is rejected in favour of a differentiated approach to fragmented silver. The differentiated approach is based on the notion that a fragmented silver-foil bead was not necessarily treated and used in the same way as a fragmented silver ingot in the Viking Age, just as a well-minted English penny was not necessarily treated and used in the same way as an anonymous poorly minted German penny (Ingvardson 2019, 32–35). A differentiated approach to silver is supported by categorising according to the production data of the objects, while carefully documenting the circulation data of the objects.

Based on these considerations, the objects are divided into the following main categories: coins, jewellery, other personal objects (e.g. weapon parts), ingots, and melts (which includes melts and drops). When possible, fragmented objects are classified within each category. Thus, a fragmented piece of jewellery is categorised



Figure 4.1 Melt of Slavic/Scandinavian type from the Nørremølle hoard. Find no. BMR 3419x214.

Photograph: J. Lee, National Museum of Denmark (CC-BY-SA).

as jewellery and not as hack-silver. Objects that cannot be categorised within one of the main groups are categorised as scrap-silver, e.g. silver wires, silver rods, and silver foil.

The melt category includes the subgroup ‘Slavic/Scandinavian melt’ (Ingvarsson 2019, 32–35). The type consists of a group of melts with a very uniform shape, with a flat rough underside and a shiny rounded upper side. Hårdh has pointed out that this type is characteristic of at least some hoards in the West Slavic area (northern Poland), on Bornholm, and in eastern Sweden, indicating that the type was produced in these areas (2011, 289). Given the very uniform, almost standardised design, Hårdh argues that the type should perhaps be viewed as ingots (1976, 90–92, 2013, 530) (Figure 4.1). Hårdh has suggested that Slavic/Scandinavian melts were produced by pouring melted silver onto a rough surface, for example a stone, on which the silver solidified (2013, 529–530). Another and more convincing interpretation is that Slavic/Scandinavian melts are the result of a cupellation process in which silver was refined in bone-ash-lined hearths (Gustafsson 2013, 97). The process is archaeologically documented at the forging workshop Fröjel on Gotland, where a cupellation hearth has been excavated (Gustafsson & Söderberg 2005, 14–17; Söderberg & Gustafsson 2006, 29–31). Slavic/Scandinavian melts are distinguished from irregular melts in order to clarify possible differences in distribution and use.

#### 4.2 ‘The broken objects’ – classification of circulation data

A large number of mostly smaller pieces, from the same princes, some erroneous minted and barbarous, some worn out. These together, weighing  $16\frac{1}{4}$  lod [ $1/32$  pound], were set aside to be melted down.

(The Royal Cabinet of Coins and Medals in Copenhagen, protocol no. 224, year 1861, p. 114, translated by author)

The Kongens Udmark hoard was found in 1861 on Bornholm and this quotation forms the concluding remarks in the description of the hoard in the find protocols of the Royal Cabinet of Coins and Medals in Copenhagen.

Unfortunately, this is not a unique example. Until the Coin Cabinet became part of the National Museum in 1892, it was customary to return the ‘uninteresting’ coins to the Royal Mint, where they were melted down (Galster 1980, 15; Jensen *et al.* 1992, 18–19). Well-preserved coins were seen as of greater research value than fragmented and damaged coins. The approach was of course founded in the numismatic research interest of the time, which concentrated on coin types and typology.

Although the practice of remelting ugly and fragmented coins changed, the focus remained on coin types. Today, special (often well-preserved and complete) coin types may still be separated from hoards and stored separately in the systematic collection at the Royal Collection of Coins and Medals, rather than remaining with the rest of the hoard. Beginning in the 1970s there has been an increased awareness of the secondary treatment of coins. The series *Corpus nummorum saeculorum IX–XI qui in Suecia reperti sunt* (hereafter CNS), with the first volume published in 1975, had a decisive impact on the numismatic approach to secondary treatment. The aim of the series was, and still is, to publish all finds of Viking-Age coins from Sweden. As such, it is a classic numismatic publication with cataloguing as its primary purpose. Essential for CNS is to make all data available, both primary data (weight, diameter, and die-combination) and secondary data (Malmer 1985, 49). Fragmentation, number of marks, bending, and piercing/suspensions are carefully recorded and presented, but, in line with the publication’s purpose, without further reflection on their significance. Hårdh’s fragmentation analyses from 1976 are, as mentioned, the first publication to put secondary treatment at the centre of the interpretation of Scandinavian Viking-Age hoards. In numismatic research, it is only within the last ten to fifteen years that the value of circulation traces on coins has been seriously recognised, and a number of researchers have included fragmentation, marks, piercings, and more as central elements in the interpretation of hoards (see e.g. Bornholdt Collins 2003, ch. 6.4, 2010, 32–34, 2024; Myrberg 2009b; Ingvardson 2012; Moesgaard *et al.* 2015; Audy 2018).

The circulation data of the objects will play an important role in the interpretation of the Bornholm hoards. The aim of the analysis is to uncover the role of objects in the economic, cultural, social, and/or symbolic capital of their owners. Thus, the focus will be on deliberate actions related to the use of the objects and/or the actions that led to the objects changing form/appearance and thus potentially function. Circulation traces are defined as a deliberate modification of an object after it left its place of production. Based on this definition fragmentation (including weight), fragmentation by chisel/shears/knife, piercing/suspension, pecks, nicks, notches, graffiti/scratches, chisel marks, and bending have been recorded. If possible, these secondary elements have been recorded on all the objects included in the analysis. Wear and edge cracks on coins as well as slight bending caused by minting fall outside the definition.

The recording of circulation data is somewhat subjective; if another researcher analysed the same material the outcome may not be identical. It has therefore

been the author's priority to record everything firsthand. Circulation traces of 9,349 objects have been recorded. Further discussion concerns the methodological choices required to ensure a consistent dataset that can be used for analysis and comparisons.

#### **4.2.1 Fragmentation**

An object may be fragmented during handling or transport in the Viking Age, during the deposition in the ground, and/or during handling in the present. Of these scenarios, only handling in the Viking Age is relevant to the analysis. It can be difficult to establish which event led to the fragmentation. The appearance of fractures has been evaluated in order to eliminate fragmentation in the ground and in the present. New fractures are shinier and sharper on the surface than old fractures, which are darker and softer on the surface. The assessment is largely based on personal judgment. Only in a few cases can it be determined with certainty that the fragmentation was a deliberate act, for example if the object was fragmented with scissors, a chisel, or with a knife, or by bending back and forth. Hårdh's analyses establish that the fragmentation of objects was a widespread phenomenon in the Viking Age (1976, 1996). Hence, all objects with old fractures are included in the analysis, even though some of the fragments may not have been made deliberately.

The time of discovery and the method used to collect the hoard influences the degree of fragmentation. An obvious source-critical problem is that fragmented objects were re-smelted in the nineteenth century and much of the twentieth century (section 4.2). Thus, these hoards are not included in the analysis of circulation data. However, even among the detected and excavated sites, the time of discovery and the methodology have an impact on the degree of fragmentation of the hoards. Metal detectors are becoming more sensitive, and the very small fragments found in detector surveys today did not appear in the early 1980s (Moesgaard 2018b, 196–197). Moreover, the experience of the detector archaeologist obviously plays a role (Ingvardson & Laursen 2016; Laursen 2016). Complementary surveys of the Mózgowo hoard, originally found in 1868 in northern Poland, illustrate the methodological challenges of fragmentation analysis (Bogucki 2019). The location was rediscovered and surveyed with metal detectors by a private detector association in 2010, and subsequently excavated by the Muzeum Warmii in Mazur, Olsztyn in northeast Poland. The topsoil was cleared in thin layers and detected between each clearance, similar to the follow-up excavations conducted by the Bornholm Museum. In contrast to common practice at the Bornholm Museum excavations, the detector surveys were carried out with specially adjusted metal detectors tuned in to give a signal at the smallest anomaly. This meant that extremely small silver objects were located. These fragments normally would not be found, because the signal resembles a small piece of iron (Bogucki 2019, 62–67). The difference in the methods used at the Mózgowo site generated a significant difference in the fragmentation degree of the objects. Among coins found in 1868, whole coins dominate; coin fragments under 0.5 g represent 19 per cent, while coin fragments under 1 g represent 45 per cent. Among coins found by the private detector association

in 2010, coin fragments between 0.1–0.2 g dominate (30.65 per cent), while coin fragments below 0.1 g represent 16.47 per cent. Among coins recovered with the adjusted metal detectors used during the museum's excavation, more than 50 per cent of the coin fragments weigh less than 0.1 g, 87.61 per cent less than 0.5 g, and 93.33 per cent less than 1 g (Bogucki 2019, 65). Thus, it is to be expected that very small fragments of silver are underrepresented in the hoards. This applies to eleventh-century hoards, of which fragmented silver is a particularly significant element (Hårdh 1996, 104–111).

In numismatic literature, fragmented coins with a straight edge are referred to as clipped coins. This should be considered a consensus term that does not necessarily consider the actual method used to cut the coin. It is equally likely that the coins were divided using a chisel or perhaps cut with a knife. On thicker objects, such as melts and ingots, it is clear that fragmentation was by chisel. The tools mentioned – scissors, chisel, and knife – would leave different wear-marks on the fragmented object. It would likely be possible to determine which method was used by analysing the wear-marks under a microscope. This type of analysis has not been prioritised, since it is not essential to the interpretation of the purpose of the fragmentation. Fragmentation by scissors, chisel, and knife are all straightforward processes that do not require special knowledge or skills, and for people in the Viking Age there was probably no visual or functional difference between objects cut up using one tool rather than another.

While it is relatively straightforward to determine whether a coin is fragmented, the other categories present some methodological difficulties that need to be addressed. A large portion of the jewellery in the Bornholm Viking-Age hoards comprises Slavic jewellery, including silver beads (Wagnkilde 2000, 95–98; Czonstke 2010). The beads often appear as elements in elaborate earrings in the production area (Figure 4.2). Besides being deposited in hoards, Slavic silver beads appear as the most common burial gift in eleventh-century female graves on Bornholm. The beads are placed by the neck or the head of the buried person, suggesting that the beads had been transformed from components of earrings to solitary beads (Naum 2008, 228). Should a bead be seen as a fragment of an earring or as a complete piece of jewellery? In this study, whole beads are recorded as unfragmented jewellery. One might argue that this contradicts the methodological starting point: that the objects are categorised based on the original production data, because the bead was originally intended as part of an earring. However, it can be argued that the bead is the original form and that the addition to an earring is a secondary element. For practical reasons, and simplicity's sake, beads are recorded as an independent object group and not as part of an earring, since the aim is to analyse the beads as an independent find group.

#### *4.2.2 Marks: pecks, nicks, and notches*

Many coins, jewellery, and ingots bear traces of being deliberately stabbed, scratched, or scraped with a sharp object. The phenomenon is well known and particularly discussed in numismatics, where the typology around it has evolved.



Figure 4.2 A selection of foil and mesh beads from the Nørremølle hoard. At the time of production, the beads were used in earrings or temple rings, but in their present state they may have functioned as silver beads in other contexts.

Photograph: J. Lee, National Museum of Denmark (CC-BY-SA).

Three types of defined marks are characterised by different geographical and chronological distributions.

Pecks are defined as small stabs with a knife on the surface of a coin (Malmer & Lagerqvist 1987, XVIII; Kilger 2003, 3–12, 2006, 449–465). Pecking is traditionally associated with the mixed hoards of the late tenth and eleventh centuries in Scandinavia, where pecks are common on European coins (Malmer & Lagerqvist 1987, XVIII). Pecking probably originated in the Viking-dominated areas of England around 890–925, and analysis of the Grisebjerggård hoard from Zealand suggests that the phenomenon spread rapidly to Scandinavia (Moesgaard 2011, 297–308). Nicks are defined as small scratches on the surface towards the edge of the coin made with a knife (or another sharp object) (Malmer & Lagerqvist 1987, XVIII). Nicks are mainly found on Islamic and Byzantine coins in Scandinavian hoards deposited in the first half of the ninth century. However, there are examples of tenth-century coins with nicks. The phenomenon is widespread in Scandinavia but has also been documented in the Caucasus (Rispling 2004, 3). Notches are defined as small cuts in the edge, and they are seen in the numismatic material mainly on Islamic coins from the mid-ninth century to the tenth century (Rispling 2004, 4f type C). As this survey will demonstrate, notches also occur with some frequency on other object categories.

Pecks, nicks, and notches are collectively known as test-marks, which reflects the most common interpretation of their purpose: that is, to test the quality of silver in weight-economy transactions (Moesgaard 2011, 297–298 with further references). Few scholars go beyond the strict economic perspective. However, it has been suggested that the marks represent a ritualised act in transactions, as a form of sealing the deal like a handshake (Duczko 2002, 193–208; Kilger 2006, 464; Bogucki 2011, 145; Jankowiak 2019, 27–29). Finally, the marks have been interpreted as ritual acts in which they were supposed to drive out the evil spirits of silver (Duczko 2002, 193–208). The cultic aspect is inspired by Iron Age numismatics, in which chopped Roman and Celtic coins are found at sanctuaries and thus associated with sacrifices of destroyed objects, in line with, for example, the ritual destruction of weapons in the great sacrificial bog-finds (Wigg-Wolf 2018, 16–23 with further references). Again, it must be stressed that the interpretation of pecks, nicks, and notches depends on the context. Hence, the neutral term ‘marks’ is used (instead of test-marks), since it does not carry a predetermined interpretation of the secondary treatment.

The presentation of Viking-Age coins in the CNS series provides the exact number of marks on the obverse and reverse of each coin. The number of marks is interpreted as an indication of how many times a coin changed hands. The more marks, the more transactions (see e.g. Svensson 1986). It has been debated whether the recording of marks should be quantitative (like the CNS method) or qualitative (Malmer 2000, 2003; Kilger 2003, 2006). Sometimes it is clear that several marks were applied at the same event. This is most obvious in cases in which the coin is bent and marks are applied in a line down the bent edge (Figure 4.3). Hence, the number of marks does not equal the number of transactions. Kilger has suggested that it is not the number of marks that is interesting, but rather the number of actions. Thus, a bent coin with six pecks along the edge should be counted as one action and not as seven actions (six marks and one bend) (Kilger 2006, 462–465). If the purpose is to record the number of actions, this is undoubtedly the correct method. However, it has proven to be practically impossible to implement systematically on the large and diverse material that constitutes the empirical basis of this survey. In some cases, it is clear that a single series of marks were applied in one action, but more often the picture is far from clear-cut, and then what? Since the number of marks does not necessarily reflect the number of actions, it does not make sense to count the number of marks meticulously. Therefore, the number of marks is recorded in three categories: one mark, two to five marks, or more than five marks. This gives a picture of the appearance of the object, and it has been possible to carry out the categorisation within the available time frame – counting marks is a very time-consuming process. In terms of interpreting the function of hoards, the idea of marks as ritual actions related to transactions is interesting. The practice of marks along a bent edge might be an example of a ritual act. This phenomenon has therefore been included in the registration.

Research on pecks, nicks, and notches has concentrated on coins and their circulation patterns. In contrast, marks on jewellery and ingots have attracted very



*Figure 4.3* This Otto III coin struck in Cologne 983–1002 shows traces of several test actions. One action may be when the coin was bent, and pecks were applied along the edge. In addition, other scratches, single pecks, and notches are visible on the edge. It is difficult to establish how many actions the circulation traces represent, but it is clear that the number of pecks is not equivalent to the number of actions. Find no. BMR 1831x82.

*Photograph:* R. Laursen, the Bornholm Museum.

little attention (however, see Hårdh 2013, 536–538). Marks are found to an equal extent on jewellery, ingots, and other types of objects in the hoards, and thus they constitute an essential element in uncovering and interpreting the biography and functions of objects. Therefore, the same method of registration has been applied to coins, as well as to all other objects.

#### **4.2.3 Bending**

Bending of coins is a phenomenon that arises simultaneously with pecks, and it occurs mainly on European coins in hoards from the late 900s and 1000s. Like pecking, bending has traditionally been interpreted as an economic action, with the purpose of testing the silver quality and/or the coin's authenticity, and/or to create an edge where pecks could be applied (G. Hatz 1974, 99; Malmer 2000, 24; Kilger 2006). It is difficult to make an objective record of bending. A single or two bends are of course relatively straightforward, but some objects (especially coins) are bent back and forth many times and probably also straightened out many times, giving them a slightly irregular surface, even if they do not appear bent. Therefore, general categories describing the appearance of the object are used, and bends are recorded in three groups: one bend, two bends, and three or more bends. Straightened out bends are also recorded.

Bends are often irregular and difficult to categorise (Kilger 2003, 254). Hence, the degree of bending is not recorded. However, there are some examples by which particular types of bending can be distinguished. One is perpendicular bends, i.e. at a 90° angle, and the other is folded objects. The Tyskegård hoard with 82 *Long Cross* pennies shows very few traces of secondary treatment. Jens Christian Moesgaard notes that 18 bent coins are bent in the same way at a 90° angle, leading Moesgaard to suggest that this was done on the same occasion and by the same person (Moesgaard 2006, 408). One may imagine the scene: the defeated English nobleman stands at one side of the table, the brutal Viking stands at the other side. Between them lies a pile of freshly minted English coins, representing the protection money (Danegeld) the English are forced to pay. To ensure the quality of the silver, or to seal the deal, a Viking takes a selection of coins and bends them across the table. Based on the structure and deposition context of the Tyskegård hoard, it has previously been suggested that the Tyskegård hoard was deposited for ritual/symbolic reasons (Ingvarðson 2019, 48–54). Perhaps, the bending of the 18 coins was part of the deposition ritual.

Rituals associated with folding coins have been documented in medieval contexts, when the very act of folding the coin was thought to have a healing effect or to be conducive to fulfilling a prayer (Kelleher 2018, 69–71). Of course, nothing similar is documented in the Viking Age, since written sources are absent. This survey investigates whether some bending is related to the symbolic field. Perpendicular bends and folded objects may be specific ritualised actions and are thus recorded.

Rolled coins can have a function as jewellery and/or amulets in line with suspended coins. This is seen in the Scanian hoard Krapperup containing an arm-ring with seven small rings, of which four have attached a rolled dirham (Hårdh 1976, cat:taf:22:II). At the Bornholm grave-field, Nordre Grødbygård, a rolled coin was part of the grave goods in five graves (Wagnkilde 2000, 96). The rolled coins were placed together with other types of beads beside the neck of the deceased, suggesting use as an amulet and/or jewellery. Rolled coins are recorded together with bent coins.

It is possible to make a relatively precise record of the number of bends on a coin. However, this is difficult for other object categories. Objects made of silver foil may be mashed together, but the fragile material makes it difficult to determine whether this was a deliberate action in the Viking Age. It may also be the result of many years in the earth. Similarly, it is difficult to describe in numbers how many times a coiled thread is bent. Therefore, the documentation of bend marks of the uncoined silver is more descriptive.

#### *4.2.4 Chisel marks, graffiti, and scratches*

Chisels were used to fragment slightly larger and more massive objects such as ingots, melts, and rods. On these objects, we also find chisel marks, i.e. a clear imprint of a chisel but without the chisel having cut the object in two. The purpose of the chisel marks is unclear. Two scenarios are likely. The

chisel marks may be an accidental action, i.e. a wrong hit with the chisel, or a score-mark, preparing the object to ease later fragmentation without the use of tools (Figure 4.1).

Graffiti on Viking-Age coins is an interesting form of secondary treatment. Graffiti is mainly found on Islamic coins and seems to disappear towards the last half of the 900s (Hammerberg & Rispling 1985, 63–70). In Ulla Welin's classification of graffiti on coins, six groups are distinguished: 1) test marks, i.e. pecks, nicks, and notches; 2) marks produced by fragmentation processes; 3) fragmentation lines; 4) owners' marks; 5) religious or magical motifs; and 6) lines without recognisable motif (1956, 141–150). Here, graffiti is defined as a personal, individual message from the sender (the carver). This applies whether the recipient is in the secular or the ritual sphere and whether the message is hidden in the pocket or visible to all. Groups 1–3 differ markedly from this, since they are uniform in expression, while groups 4–6 are unique and thus personal. In line with Igor Georgievič Dobrovolskij's classification strategy, motifs and messages are emphasised (Dobrovolskij *et al.* 1981). Thus, groups 1–3 are not considered as graffiti.

Graffiti can be grouped into inscriptions (in Arabic script or runes), depictions of objects (e.g. ships and weapons), and religious motifs (e.g. Thor's hammers and crosses). Finally, there is a large group in which the carved motifs cannot be deciphered (Hammerberg & Rispling 1985, 63–78). Thor's hammers and crosses on Islamic coins have been interpreted as religious statements against Islam, while other forms of graffiti on Islamic coins have been interpreted as a conversion to Islam (Duczko 1998; Mikkelsen 1998; Williams 2007, 190). The vast majority of runic inscriptions also relate to the ritual sphere, with GOD or KUTH being the most frequent inscription. In contrast, carvings of single runes are interpreted as owners' marks (Hammerberg & Rispling 1985, 66–67). Graffiti on coins contains three possible functions: amuletisation/spell, owner's mark, or decoration. Graffiti has been recorded on very few objects (section 6.5). The carvings are often faint and difficult to recognise to the naked eye (Hammerberg & Rispling 1985, 66–67). It is possible that the number of objects with recorded graffiti would increase if the objects were re-examined using a microscope.

Scratches are a very diffuse secondary element, in opposition to, for example, motifs like ships and Thor's hammers, which are easier to relate to and interpret. At first, it can be difficult to determine whether the scratches are deliberate or accidental. Some deep scratches are clearly deliberate modifications. These scratches may form a preparation to fragmentation (Welin's group 3), a quality test, ritual destruction, an unrecognised motif, or random lines applied in sheer boredom. It has also been recorded if the scratches are deep, and the significance of the scratches will be discussed in section 6.3.

#### **4.2.5 Piercing/suspension**

It can be difficult to establish if fragmentation is deliberate or accidental. In contrast, all piercings with and without suspensions likely represent deliberate actions

in the Viking Age. The purpose of piercing may be to transport the object on a string/chain or to attach the object, e.g. to textile. The purpose may be for practical reasons, as decoration, or as part of ritual practices.

Audy's thesis on coin jewellery presents a comprehensive typology of holes and suspensions. Holes are classified as round, three-sided, four-sided, or other shapes. Pendants are divided into two main categories: sandwich loops and rings. Each main category comprises a number of subtypes (2018, 92–96). Audy demonstrates that the piercing of coins was achieved using just one method: by piercing the coin with a sharp object. Thus, differences in the hole shape depend on the tool, not the method. Audy does not attribute a functional or aesthetic significance to the shape of the holes. He states that round holes are found in all areas, while triangular ones may be a northern phenomenon (2018, 103). If the coin is suspended, it reflects a more complex process, facilitating the study of regional and chronological differences (2018, 103–111).

Most of the recording was completed prior to Audy's typology. Thus, piercings are divided into round, triangular (knife), and irregular holes. The division builds on the assumption that the care taken may reflect the purpose of the piercing. Regular circular holes are seen as expressing greater care than an irregular hole or a triangular hole made with a knife. The triangular holes are often more irregularly shaped. When adding suspension the process becomes more complicated and the physical appearance is significantly altered. Round holes are in some cases preparatory work for suspension. This is documented in the Kannekægærde hoard, where a suspension (sandwich loop) was probably separated from a coin after deposition<sup>1</sup>(section 6.4). If a coin has multiple piercings, the design(s) of the holes can be used as an indicator of whether the holes were added to the coin on one occasion or multiple events.

### **4.3 Pots and pits, horns, and houses – classification of deposition data**

Deposition data relates to the last phase of the hoard's biography, if rediscovery in the present is excluded. While production and circulation data shed light on the accumulation of the hoard, deposition data reveal the deposition event of the hoard.

The archaeological context is divided into three levels which form the deposition profile of the hoard: the immediate context, the feature context, and the site context.

**The immediate context** concerns the container(s), if any. Is the hoard deposited in one or more containers, and if so, what type(s) of container(s)? Was the hoard deposited in a leather purse, a simple ceramic vessel, a wooden chest, etc., or are there no traces of a container? As discussed in section 2.1, the question of container may be related to whether the hoard was deposited with the intent of retrieval. Thus, the nature of the container is an important element in the interpretation of the functions of the hoard.



*Figure 4.4* The Smedegård NØ II hoard included a bark bundle containing 18 silver ingots. Five additional silver ingots, a neck-ring, an arm-ring, two finger-rings, a large disc-shaped fibula, and a silver cross with chain were also part of the deposit (Grinder-Hansen *et al.* 2013, 154) (cf. figures 7.5–7.7).

*Photograph:* S. Nygaard, National Museum of Denmark (CC-BY-SA).

The nature of the container may also reflect the reason for the deposit. Deposition in a plain ceramic vessel may indicate that the hoard was hidden in a container near at hand without special care or consideration. In Grinder-Hansen's terminology, an acute hoard deposit is motivated by an imminent danger (2000, 171). In opposition, a different more planned and thorough deposition event is indicated if a selection of objects is carefully wrapped in bark and placed in another bark bundle, as is the case with the Smedegård NØ hoard (Figure 4.4).

**The feature context** covers the place of deposition. Was the hoard deposited in a structure, and if so what type of structure? For example, was the hoard deposited between the roof-bearing posts of a dwelling house, like the Pæregård hoard (catalogue: 27), near a rock, like the Tyskegård hoard (catalogue: 44), or in a pit with traces of silversmithing, like the Nordre Stensebygård hoard (catalogue: 24)? The deposition place analysis will include an interpretation of whether the hoard was deposited in the centre of a settlement, on the outskirts of a settlement, or outside a settlement (section 2.1).

**The site context** includes the wider surroundings of the hoard. Excavated hoard locations form the primary empirical basis of the analysis. This enables the inclusion of site characteristics in the interpretation of hoards on an unprecedented scale (section 1.2.2). The purpose of including the site context is to draw a profile of the site where the hoard was deposited. This potentially provides an insight into the function of the hoard, the owner of the hoard, and his/her position in society. This level includes other finds and structures relevant to the site. Are there other structures in the area, and if so, what are they? Are there other objects in the area, and if so, which ones? Can structures and objects be linked to specific types of activity such as ritual, agriculture, trade, or craft activities?

Finally, an analysis is made of the relationship between the hoard composition and the deposition profile. The aim is to distinguish whether particular compositional characteristics of the hoards can be linked to specific deposition profiles. This leads to a discussion on the function(s) and relation(s) of the hoards to the economic, social, cultural, and symbolic fields.

**Note**

1 The Bornholm Museum reference: BMR 2292x64 and x59.

## 5 Silver flows

### Analysis of production data

More than twenty different kingdoms and dynasties are represented among the recorded coins. From England in the West to the kingdom of Kiev in the East, and from Scandinavia in the North to Byzantium and the Caliphate in the South. Boundaries of countries and dynasties shift over time. References to modern geographical areas are from a practical rather than a political or historical perspective. The defined areas are intended to provide an idea of where the objects were produced. The numismatic tradition in classification of geographical areas is broadly followed, since coins form the primary empirical basis for an analysis of chronology and distribution (section 3.2.1).

The theoretical premise for the analysis is that the compositions of hoards display the people and events that led to the accumulations (section 3.2). Decoding these people and events requires a high level of detail in the recording. For example, a detailed record of production place and types of English coins represented supports the interpretation that the owner of the Store Frigård II deposit participated in a Viking raid on England in the 990s, and that the owner of the Tyskegård hoard participated in the 1002 raid (Whitelock 1979, 235–240). German and English coins constitute the largest coin groups in the Bornholm hoards. In order to ensure that important nuances are discerned, the overall geographical areas of Germany and England are subdivided into smaller units. Germany is divided into Friesland-Utrecht, Saxony, Lower Lorraine, Thuringia-Meissen, Franconia, Upper Lorraine, Swabia, and Bavaria. The English regions are the Northwest, Yorkshire-Humber, East Midlands, West Midlands, the East, London and surroundings, the Southwest, and the Southeast. The Scandinavian coins are recorded according to the individual mints, since very few mints were active in Scandinavia during the investigated period. The Islamic coins are divided by dynasties. The geographical extent of the dynasties varies greatly over time. Hence, the Islamic coins are also recorded according to the individual mints.

German, English, Islamic, and Scandinavian coins form the four largest groups represented in the hoards, while only two Carolingian and one Kiev coin have been identified. Polish coins represent less than one per cent of the geographically identified coins. The actual number is probably higher. The Polish coins include imitations of both English and German coins, which makes identification difficult. Excluded from the analysis due to their uncertain status are seven coins which

have been recorded as ‘Scandinavian or Polish’ and eleven which are recorded as ‘German or Polish’. However, the largest number of unidentified Polish coins are undoubtedly among the 252 coins broadly recorded as Continental, or among the 359 unidentified German coins in Galster’s (1980) inventories of the Bornholm hoards included in this survey. A large proportion of the Continental and unidentified German coins should probably be attributed to the West Slavic or Pomeranian area, since Polish coins are often difficult to identify.

### 5.1 German coins

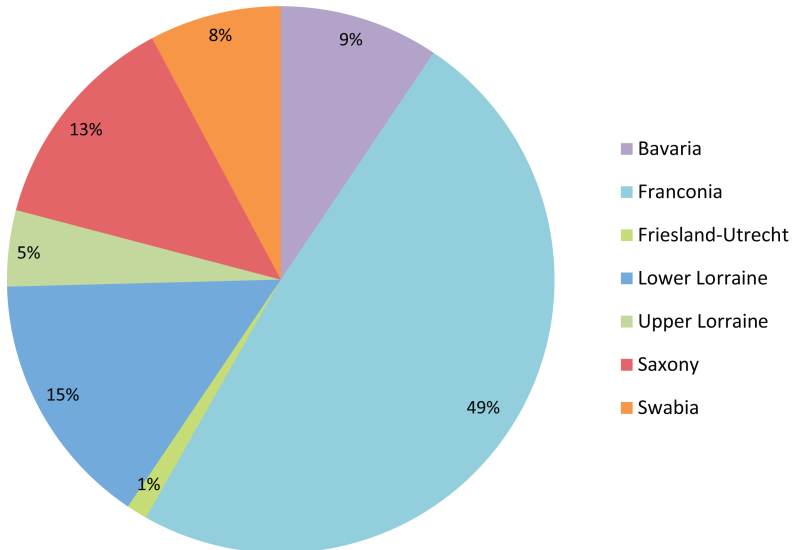
Of the 7,642 German coins, 7,154 can be identified as from one of the seven German regions Friesland-Utrecht (9 per cent), Saxony (50 per cent), Lower Lorraine (13 per cent), Thuringia-Meissen (1 per cent), Franconia (14 per cent), Upper Lorraine (4 per cent), Swabia (5 per cent), and Bavaria (4 per cent). Half of the coins are minted in Saxony. Otto-Adelheid pennies minted in the Harz region account for 34 per cent of all identified German coins. The sharp increase in the number of German coins at the turn of the millennium (Figure 3.11) is linked to the discovery of large silver mines in the Harz mountains in the second half of the 900s. The discovery led to the subsequent establishment of large-scale coin production of Otto-Adelheid pennies from 983. These influenced the coin circulation on a supra-regional scale (Kilger 2000, 100; von Heijne 2004, 112). This is generally reflected in Scandinavian hoards deposited from the early 1000s (Hatz *et al.* 1991, 16–20; von Heijne 2004, 110; Ingvardson 2012, 13). Most German coins in the Bornholm hoards were minted in the decades before and after 1000, and most are from Saxony. Also conspicuously present are older German coins, mainly from the western and southern regions of Germany (Figure 5.1). Of German coins minted before 983, types from the mints of Mainz, Speyer, and Worms in western Franconia account for 48 per cent, while types from Lower and Upper Lorraine make up 16 per cent and 4 per cent, respectively. Coins from Cologne in Lower Lorraine are significantly present (36 coins). The number of Cologne coins may actually be higher, since the so-called Santa Colonia types minted in Cologne can be difficult to date precisely. Thus, a group of 85 Santa Colonia types dated 936–1002 is not included in the graph because of the broad chronological range. All of the 32 coins from Saxony are of the same type (Dbg. 334, Häv. 64), which Peter Ilisch assigns to the western part of Saxony (1990, 143). Towards the south, in Bavaria, it is mainly coins from Regensburg (21 coins) that stand out in the Bornholm material. Jonsson (1990) has analysed early German coins, i.e. types struck before the Otto-Adelheid pennies, found in Scandinavian hoards with a *tpq* before c. 990. He concludes that an early import of German coins occurs in Jutland, Scania, and Blekinge as well as on Bornholm and Zealand, but not on Öland or Gotland, and in Central Sweden (1990, 140–141). Jonsson further compares the situation with northwestern Poland, and observes a difference in the composition of German coins in the hoard finds. Specifically, Jonsson highlights Södra Sandby (*tpq* 995) and Baldringe (*tpq* 983) in Scania, Graagaard (*tpq* 995) in Jutland and Terslev (*tpq* 940) on Zealand. In these hoards, German coins are dominated by coinage from

Cologne in Lower Lorraine, Saxony pennies (also called Rand pfennige) and coins minted in Mainz, Speyer, or Worms in Franconia. In contrast, German coins deposited in hoards in the West Slavic area are dominated by coins minted in Bavaria and Swabia. The difference probably reflects two import routes.

In the Bornholm hoard, Kongens Udmark (*tpq* 967), most of the German coins were struck in Bavaria and Swabia (Jonsson 1990, 141–142). This suggests that the coins came to Bornholm via the West Slavic area. Four Bornholm hoards deposited in the transitional phase 990–1000/1005 contain German coins (Table 3.3 and Figure 3.11). They have a markedly different composition than the older Kongens Udmark hoard (Figure 5.2). The difference may not be due to chronological differences alone, since the hoards also differ from contemporary hoards like Södra Sandby in Scania and Graagaard in Jutland. Already at this early stage, the Otto-Adelheid pennies from the Harz region clearly form a significant part of the German coins in the Bornholm hoards – in contrast to the Södra Sandby and Graagaard hoards. Another striking difference is that few Cologne coins are deposited in

### German coins minted before 983

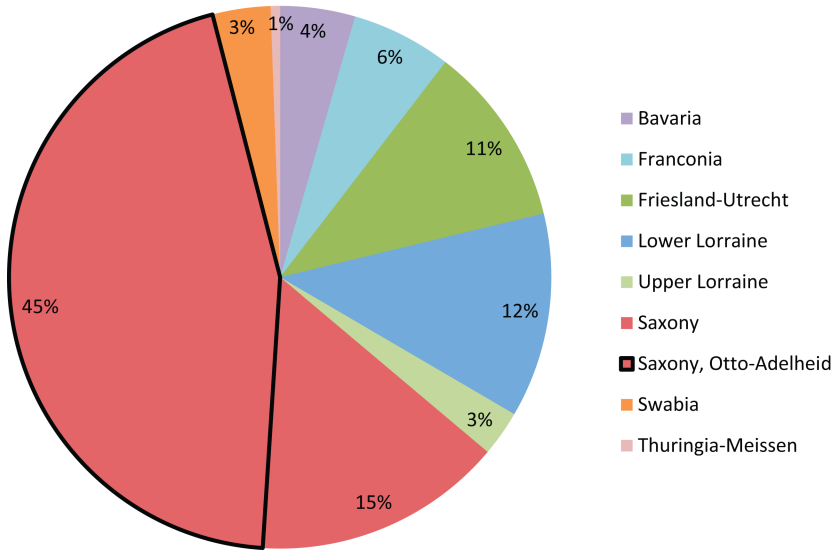
244 coins from 34 hoards



*Figure 5.1* The geographical distribution of the German coins in the Bornholm hoards. The extensive Otto-Adelheid pennies from the Harz area has a significant imprint in the material. First chart: German coins produced before 983 prior to Otto-Adelheid coinage. Included are coins with latest possible date of 983. Second chart: German coins minted 983–1040, i.e. in the primary production period of the Otto-Adelheid pennies. Third chart: German coins minted after 1040, when the Otto-Adelheid coinage was being phased out.

**German coins minted 983-1040**

4782 coins from 43 hoards



**German coins minted after 1040**

324 coins from 13 hoards

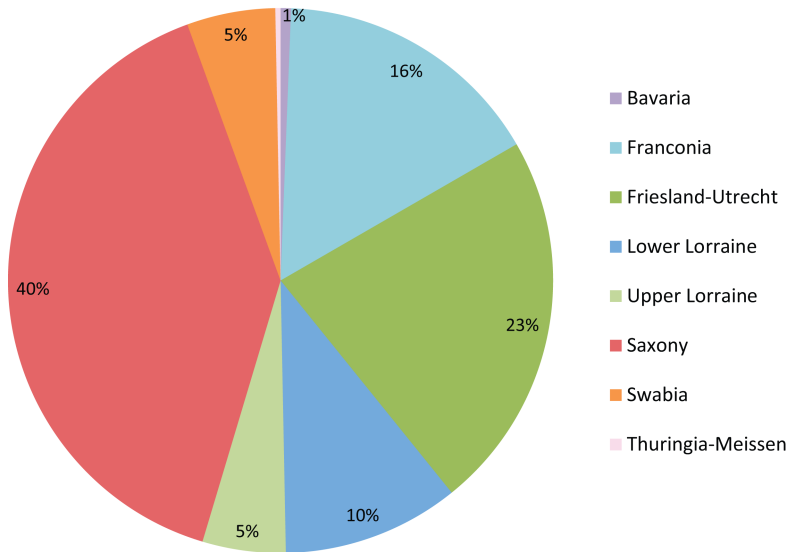
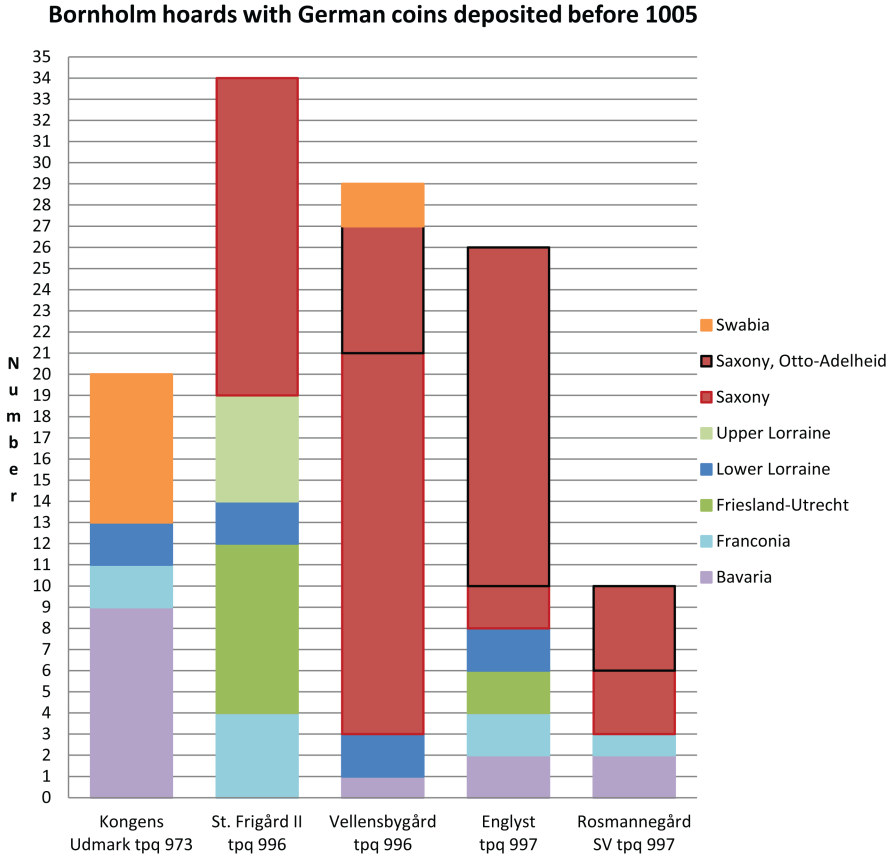


Figure 5.1 (Continued)



*Figure 5.2* Four hoards deposited in the transitional phase 990–1000/1005 contain a small number of German coins. The composition of German coins in the four hoards differs markedly from that of the earlier Kongens Udmark hoard. The difference may not be purely chronological, as the four hoards also differ from the contemporary Södra Sandby and Graagaard hoards in Scania and on Zealand, respectively. The Bornholm hoards display an early presence of Otto-Adelheid pennies.

the early Bornholm hoards, while Cologne coins form a significant feature in early hoards in Jutland and Scania, and on Zealand (Jonsson 1990, 141–142). The analysis of the production data of coins shows an import to Bornholm of German coin minted in the decades before and after 950 in western mints such as Mainz, Speyer, and Worms in western Franconia, in western Saxony, and in mints in Lower and Upper Lorraine. However, the imported coins are primarily deposited in hoards with later deposition horizons, i.e. in the large eleventh-century hoards such as Gyldensgård SV, Nørremølle, Pæregård, and Skovvang.

The early Cologne coins were in circulation long before they were deposited on the island. It is of course not possible to determine whether the coins circulated on Bornholm, but the find picture suggests a situation similar to that of Samanid dirhams in the Volga-Bulgarian area. Here Samanid dirhams were imported to Volga-Bulgaria shortly after production, and either quickly deposited or sent on to the Baltic Sea area, where they circulated for a long time (section 5.3). Jutland, Zealand, and/or Scania may similarly have acted as intermediaries in the exchange between Cologne and Bornholm. Thus, Cologne coins were imported soon after production and either deposited or sent on to Bornholm, where they circulated for an extended period.

The latest major Otto-Adelheid coinage, Hatz 1961, type IV, was minted up to c. 1035 (Ilisch 2005; Rundberg 2000). This is immediately reflected in the Bornholm hoards, and during the 1040s the dominance of Otto-Adelheid pennies declined in the hoards (Figure 5.3). Saxony coins still constitute the largest group (40 per cent) of German coins minted after 1040 on Bornholm. However, the proportion of coins minted in the Friesland-Utrecht area, Franconia, and Lower Lorraine increases (Figure 5.1).

Coins minted in the Friesland-Utrecht area are a particularly striking late feature. Frisian coins predominate in Baltic and Russian hoards from the late eleventh and early twelfth centuries. This is not the case in Scania, or on Gotland, Öland, and Zealand (Jonsson 2002; von Heijne 2004, 113). The early influx of coins from the Friesland-Utrecht area is apparently linked to the importation of coins from Saxony (Figures 5.1 and 5.2). On Bornholm, most of the coins from the Friesland-Utrecht area are minted 990–1020. In the second half of the eleventh century the proportion of Frisian coins increases in the Bornholm hoards. This is due to a decrease in the number of coins from Saxony. Thus, the number of Frisian coins imported does not increase. The find picture does not reflect changes in network relations, but changes in the coinage conditions in the area of origin. The discontinuation of the Otto-Adelheid coinage influenced the composition of German coins in the Bornholm hoards. Further, there may be a connection between the end of the Otto-Adelheid coinage and a marked decrease in the number of coins in hoards deposited during the 1040s and the rest of the eleventh century. Only the Pæregård and Store Frigård I hoards stand out as coin-rich hoards from this period (Figure 3.11). Instead, melts are the most prominent find category in the Lillegærde hoard, and especially in the two Smedegård NØ deposits (Figure 3.12).

## 5.2 English coins

More than 80 per cent of the 2,178 English coins were minted during the reign of Æthelred II (978–c. 1017). An Edward the Martyr *Small Cross* type struck 975–978 is the only English coin minted before the coinage of Æthelred II. The Viking raids on the coasts of Britain and Ireland in the ninth century, movements of the Great Army, and subsequent settlement/occupation of the Danelaw (878–954) did not leave any traces in Bornholm's hoards in the form of English coins. This is clear from both the minting and deposition dates of the coins (Figure 3.11). This is a

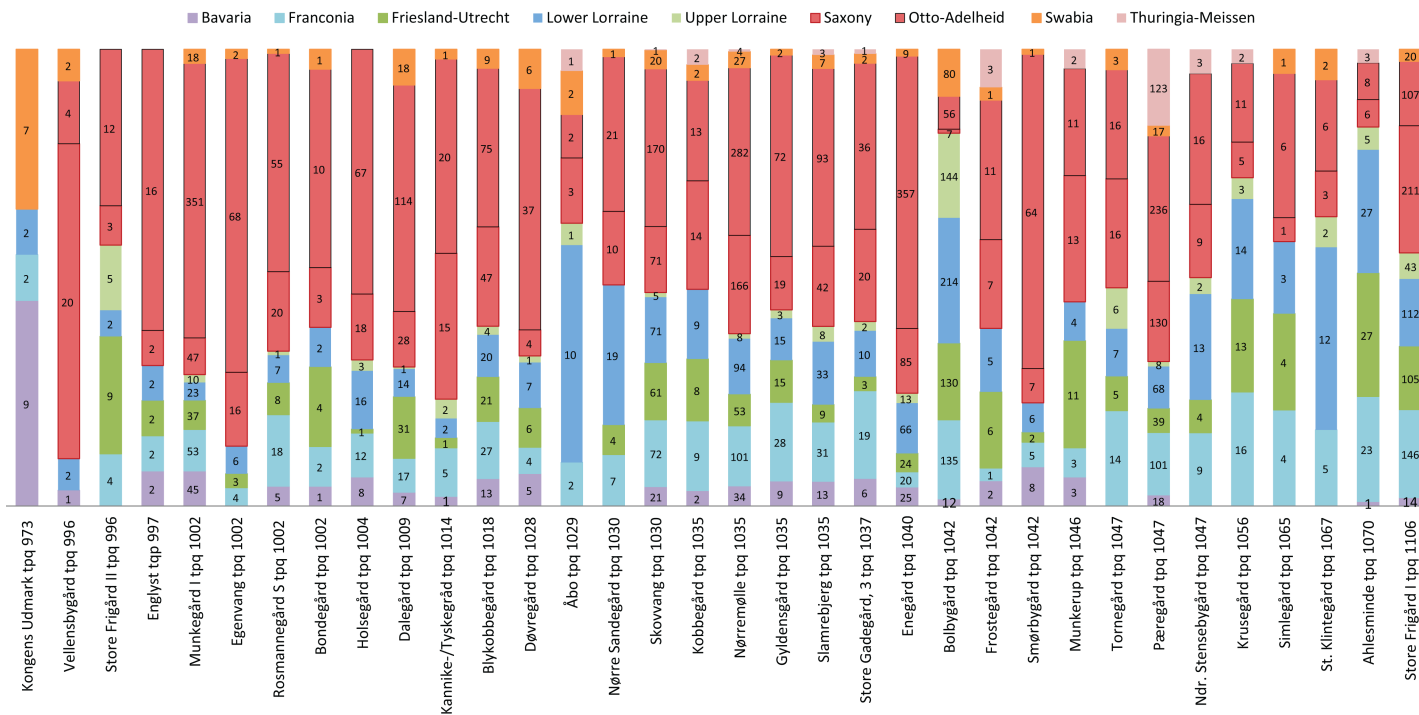
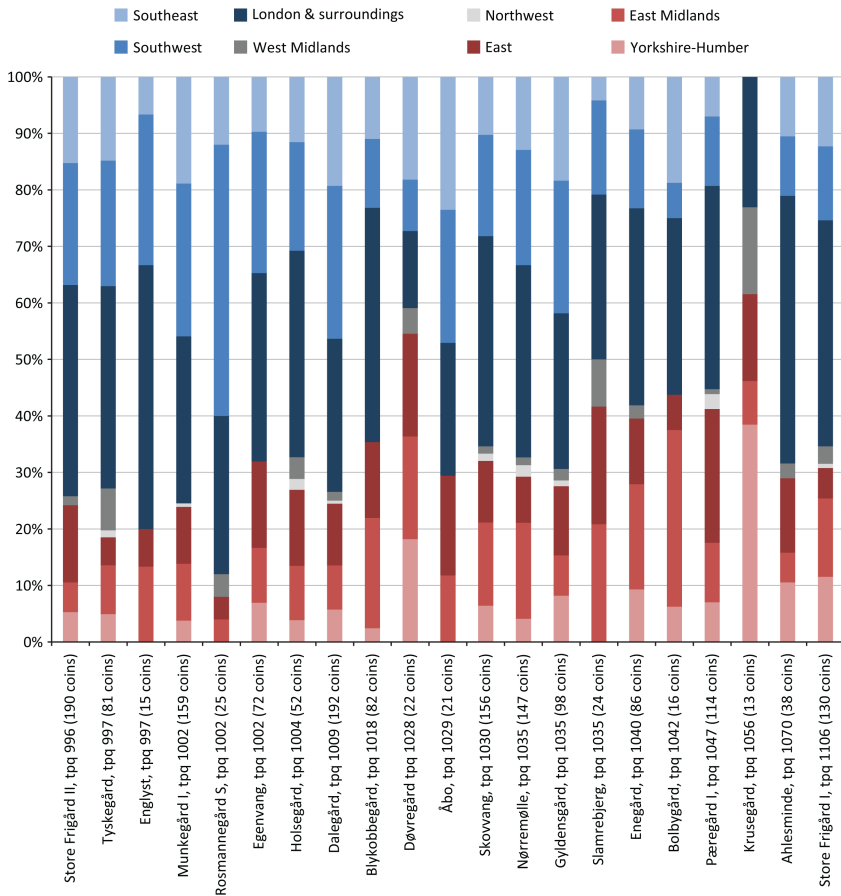


Figure 5.3 The geographical distribution of German coins deposited in the Bornholm hoards. The chart includes hoards with 20 or more German coins.

common feature throughout Scandinavia (Jonsson 1993, 207; von Heijne 2004, 103–104). While the early raids are not reflected in the coinage, it will be argued that the marked presence of *Crux* and *Long Cross* coins in the Bornholm hoards should probably be linked to the large Danegeld payments in the decades before and after 1000. The *Anglo-Saxon Chronicle* states that a sum of 10,000 pounds was paid in Danegeld in 991 (Whitelock 1979, 235). This marks the beginning of decades of attacks, threats, and tribute payments, culminating in 1012 when the English king paid 48,000 pounds to a Danish army led by Thorkild the Tall, and in 1018 when Canute the Great with his army acquired 82,500 pounds (Whitelock 1979, 245–246, 251). It is perhaps doubtful whether the *Anglo-Saxon Chronicle*'s amounts correspond to the actual size of the tribute. Also, it is likely that some of the payments were made in kind, for example as food to supply the large armies (Metcalf 1990; Jonsson 1993, 212). However, the detailed analysis of the Bornholm hoards will show that Danegeld was probably paid in coin, and some of the English coins in the Bornholm hoards were most likely accumulated via raids in England.

The English coins are recorded by region: the Northwest, Yorkshire-Humber, East Midlands, West Midlands, the East, London and surroundings, the Southwest, and the Southeast. A marked change in the composition of English coins on Bornholm in relation to mints is seen with Æthelred II's *Second Hand* type (985–991). At this point, there is a significant increase in the number of coins minted in the southern English mints at the expense of eastern English mints (Figure 5.4). The change coincides with the first major tribute in 991 mentioned in the *Anglo-Saxon Chronicle*. Michael Metcalf (1990) has argued, with reference to Scandinavian hoards, that the relationship between southern and eastern mints reflects whether the coins were acquired by trade or tribute. A high proportion of coins from the Danelaw, i.e. the eastern regions of England (the East, East Midlands, and Yorkshire-Humber), reflect trade with the Scandinavian-influenced areas, while a marked predominance of southern English mints, with the London mint in the lead, reflects royal payment of Danegeld (Metcalf 1980, 33; von Heijne 2004, 106). Metcalf specifically points to a shift in composition among the *Second Hand* type, and suggests that the 991 tribute was paid in a combination of *Crux* and *Second Hand*, or exclusively *Second Hand* types (1990, 218–222). The clear shift in composition between *First* and *Second Hand* in the Bornholm material seems to confirm that the 991 tribute was paid wholly or partly in *Second Hand* rather than *First Hand* coins. However, *Second Hand* types form a negligible part of the English coins in the Bornholm hoards (Figure 5.5).

The Store Frigård II and Tyskegård hoards differ from the other Bornholm hoards because they consist almost exclusively of English coins (Figure 3.11). Store Frigård II is dominated by *Crux* coins, while Tyskegård consists exclusively of *Long Cross* pennies (Figure 5.5). The analysis of traces of use in the hoards shows that the coins in the two hoards probably represent a direct import event. Hence, they did not change hands many times on their way from England to Bornholm. The total contents of the Tyskegård hoard are interpreted as Danegeld, while the analysis of, among other things, the bent coins of the Store Frigård II hoard



*Figure 5.4* The geographical distribution of English coin types deposited in the Bornholm hoards. Southern English mints associated with Danegeld payments are indicated in shades of blue, while eastern English mints in the Danelaw are indicated in shades of red. There is a marked increase in the proportion of southern mints associated with the first major tribute payment in 991.

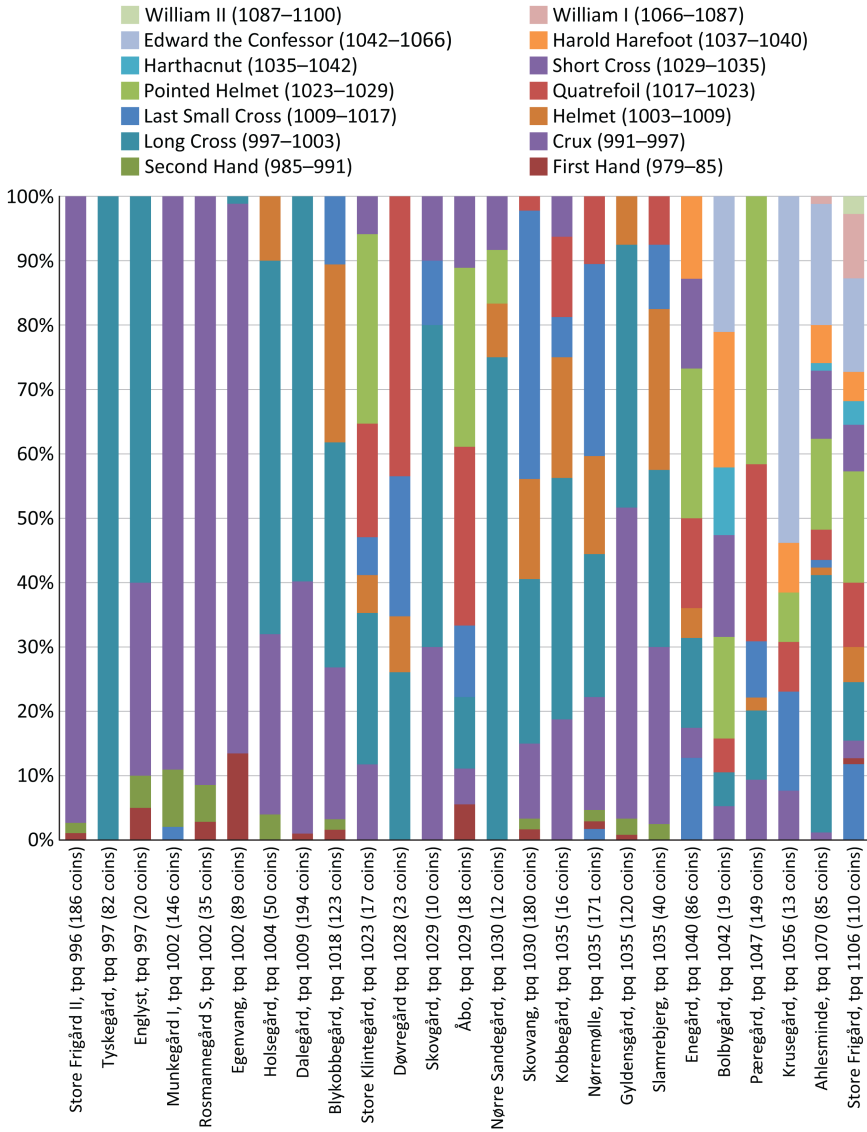


Figure 5.5 The distribution of English coin types in the Bornholm hoards. There is a clear tendency for early hoards to contain few English types, while later hoards have a greater variety.

suggests that it was collected partly as Danegeld, as well as through transactions in the former Danelaw area and in Friesland (sections 6.1.2 and 6.2).

More than 70 per cent of the coins in Store Frigård II and the Tyskegård hoards are struck at southern English mints (Figure 5.4). Combined with the very clear distribution of *Crux* and *Long Cross* coins, respectively, one might even suggest that the owner of Store Frigård II took part in a raid in the early 990s, and the owner of Tyskegård took part in the 1002 raid; both raids are mentioned in the *Anglo-Saxon Chronicle* (Whitelock 1979, 235–240). The three hoards Munkegård, Rosmanegård S, and Egenvang, were all deposited after 1002, and show an equally clear dominance of the *Crux* type among the English coins (Figure 5.5). This raises the question of whether the coins in these hoards can be linked to one and the same raid. Further, Rosmanegård S and Munkegård have a very similar composition of German mints (Figure 5.4). The question of a connection among the three hoards is discussed in section 8.2.

The *Crux* and *Long Cross* types are clearly dominant among English coins in hoards deposited in the decades before and after 1000. There is a very clear change in the composition of the hoards around 1020. Hoards with a *tpq* before 1020 consist almost exclusively of *Crux* or *Long Cross* coins, or a mixture of these, while hoards deposited after 1020 include a greater variety of English coin types (Figure 5.5). The coincidence between this and the last major tribute to Canute the Great in 1018 is striking (Whitelock 1979, 251). This suggests that English coins in Bornholm hoards deposited up to c. 1020 were accumulated primarily by raids in England. Jonsson has previously rejected a connection between Danegeld and English coins in Scandinavian hoards (1993, 207–212). He bases his argument on the fact that there is no correlation between the number of coins within the English coin types and the size of the Danegeld. Since the size of Danegeld increases over time, Jonsson argues that the number of coins within each coin type should also increase proportionally. He highlights in particular the discrepancy between the small number of Æthelred II's *Helmet*-type (minted 1003–1009) in the Scandinavian finds and the statement in the *Anglo-Saxon Chronicle*, which lists a Danegeld payment of 36,000 pounds in 1007 (Whitelock 1979, 242). Both the number of single finds and the number of known dies show that the coinage size of Æthelred II's *Helmet* type was small compared to the earlier *Crux* and *Long Cross* types, for example (Metcalf 1980, 26–27, 1990, 174). Thus, one cannot equate the English coinage numbers with the Danegeld payments, since Danegeld payments may have been paid in pre-existing coin (Metcalf 1990, 218–222). The huge coinage of the *Crux* and *Long Cross* types may have been established to meet the new demands for Danegeld payments, while the subsequent Danegeld payments may have been paid from pre-existing coinage.

Among English coins in Bornholm hoards, there is a slight tendency for the proportion of coins from the eastern English mints to increase in the first decade of the eleventh century. The tendency is far from clear-cut, and with few exceptions, the English coins in Bornholm hoards are dominated by southern English mints (Figure 5.4). The trend is reinforced during the late coinage of Æthelred II, with eastern mints accounting for 37 per cent of the *Helmet*-type and 45 per cent of the

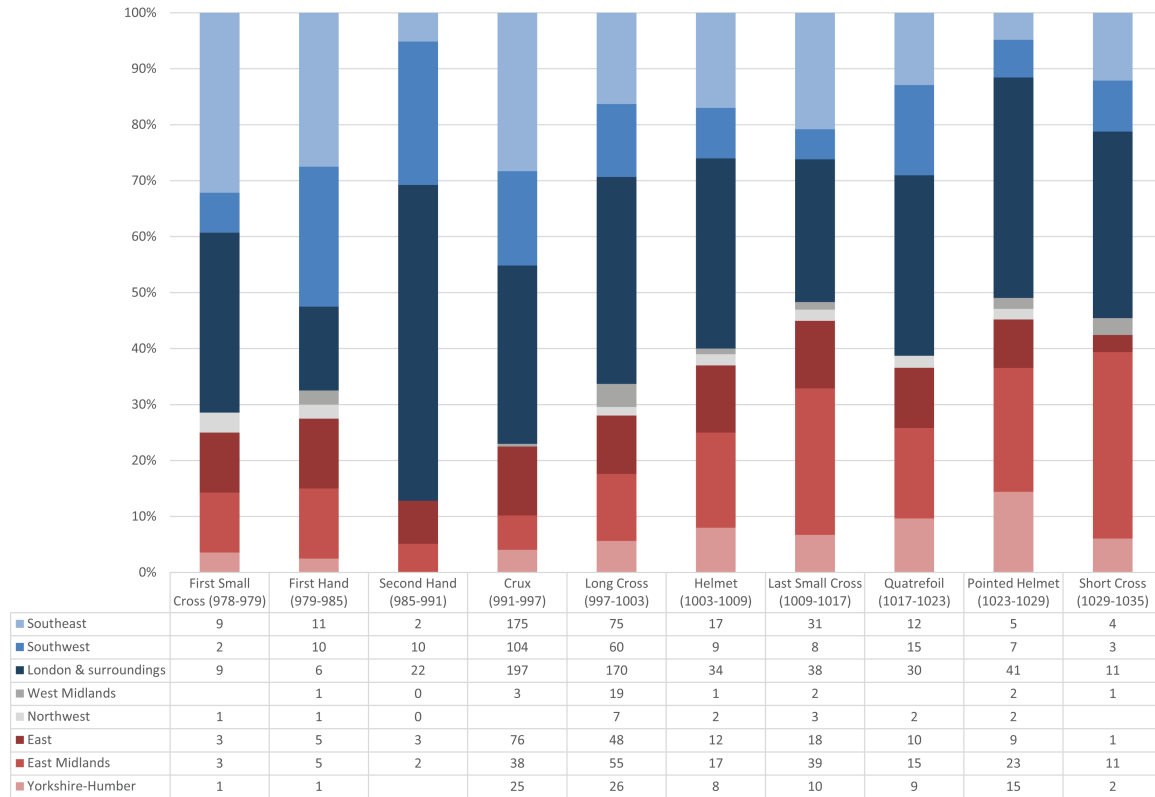
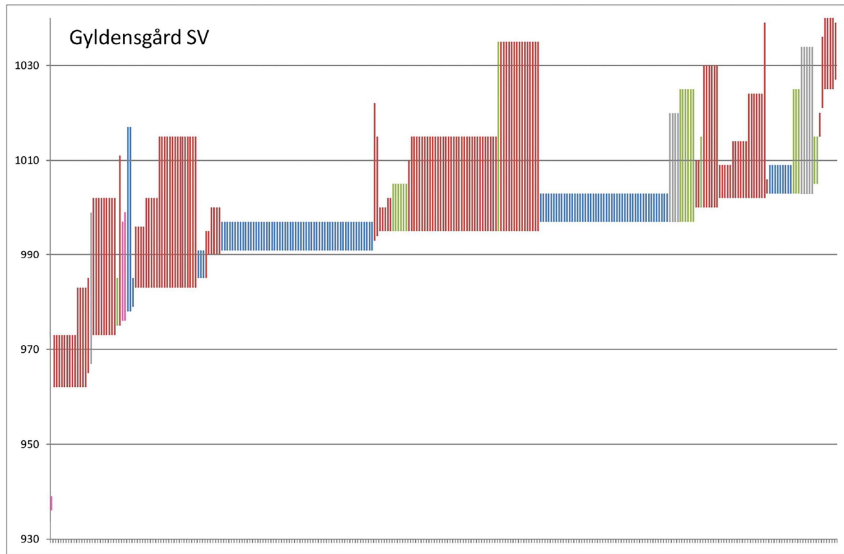


Figure 5.6 The relation between English mints and coin types deposited in the Bornholm hoards. Mints of southern England associated with the great Danegeld payments are indicated in shades of blue, while the eastern English mints in the Danelaw area are indicated in shades of red.

*Last Small Cross*-type (Figure 5.6). This broadly corresponds to the proportion of eastern-struck coins among the later English coin types, from Harold Harefoot (1035–1042) to William II (1087–1100). This supports the interpretation that the *Helmet* type was not struck to meet a Danegeld payment. Thus, the composition of the Bornholm hoards seems to reflect that a large proportion of the English coins, represented by the *Crux* and *Long Cross* types, were accumulated via Danegeld payments. However, other batches of English coins may have been acquired by other means, for example through trade. Metcalf has argued for a resumed link between Scandinavia and the Danelaw area from the mid-1000s. This is based on an increase of coins minted in, for example, Lincoln (East Midlands), deposited in Scandinavian hoards (1981, 53–55). In the hoards from Bornholm, the increase seems to occur by the end of the reign of Æthelred II (978–c. 1017).

The composition of English coins in the Gyldensgård SV hoard deposited after 1035 is particularly interesting when investigated from the perspective of whether the biography of a hoard reflects the biography of its owner (section 3.2.1). The English coins in the Gyldensgård SV hoard are clearly dominated by *Crux* and *Long Cross* types, and many of these are minted in the southern English mints (Figures 5.5 and 5.6). Thus, with regard to the composition of English coins, Gyldensgård SV corresponds to hoards deposited some 30 years earlier. As argued earlier, hoards with this structure may reflect participation in the Viking raids on England from c. 990. The English *Crux* and *Long Cross* coins in Gyldensgård SV represent two early phases in a hoard accumulated over a long period (Figure 5.7). The English coins in the hoard may represent savings acquired c. 30 years before the hoard was deposited. Hence, Gyldensgård SV is an example of a hoard that exhibits different accumulation phases that can be related to different life events (more on this in section 8.2). Clear batches of English coins that may have been accumulated in raids in England also appear in the Ahlesminde, Blykobbegård, Dalegård, and Egenvang hoards.<sup>1</sup>

English coins have a different chronological focus in Zealand/Jutland and Scania, respectively (von Heijne 2004, 104–106). Among the Æthelred II coin types, *Long Cross* dominates on Zealand, while in Scania, as on Bornholm, the earlier *Crux* type is most frequent (Figure 5.8). On Zealand, Canute the Great's *Quatrefoil* and *Pointed Helmet* are the most numerous types among all English coins, while in Scania and Bornholm it is Æthelred II's *Crux* and *Long Cross* types. After Canute the Great came to power, there is an increase in the number of English coins in hoards from Scania and Zealand compared to the number of late *Helmet* and *Last Small Cross* coins of Æthelred II. On this point Bornholm differs from both Zealand and Scania, since there is a decrease in the number of English coins on Bornholm. In Jonsson's contention that the English coins were not accumulated via Danegeld, he emphasises that there is a continued import after 1018, when the last Danegeld is paid (1993, 207–212). The observations from the Bornholm hoards demonstrate that the influx of English coins to the island have a different character during the reign of Canute the Great compared to during the reign of Æthelred II. The relatively high proportion of Canute's English coinage in Scania and on Zealand is probably due to the close connection between England and Denmark,



*Figure 5.7* The chronological profile of the Gyldensgård SV hoard (299 coins). Each coin is indicated with a line showing the chronological range of the coin. The chart illustrates the time of production, not the time of deposition. The two blue sections in the middle of the chart represent *Crux* and *Long Cross* pennies, respectively. Red: German, blue: English, green: Scandinavian, pink: Islamic, grey: continental and others.

since both areas were ruled by Canute the Great. In contrast, the general decline in English coinage and the small proportion of Canute the Great coins on Bornholm may indicate that Bornholm was not an integral part of Canute's empire.

Jonsson dismisses the idea of a direct import of coins from England to Scandinavia in the form of Danegeld. Instead, he suggests that the English coins came to Scandinavia via Germany. Jonsson argues that the Scandinavian hoards have a standardised composition of coin types, and he explains the standardisation by the fact that the coins were already mixed before they reached Scandinavia. Jonsson believes that all coin types were accumulated in the same area. Since the majority of coins in the hoards are Otto-Adelheid pennies, the accumulation must, according to Jonsson, have taken place in the Harz region, where the Otto-Adelheid types were produced. Jonsson further argues that English traders were drawn to the area because of the increased trade generated by the Harz mines. This brought English coins into circulation, which were then exported to Scandinavia along with German coins (1993, 217–221). The hoards of Bornholm have a heterogeneous composition, especially in the period c. 990–1020/30 (Figure 3.11). Furthermore, several hoards reflect different accumulation phases, probably demonstrating that the hoards were accumulated at different times or events and by different means, as exemplified by the Gyldensgård SV hoard (Figure 5.7). As

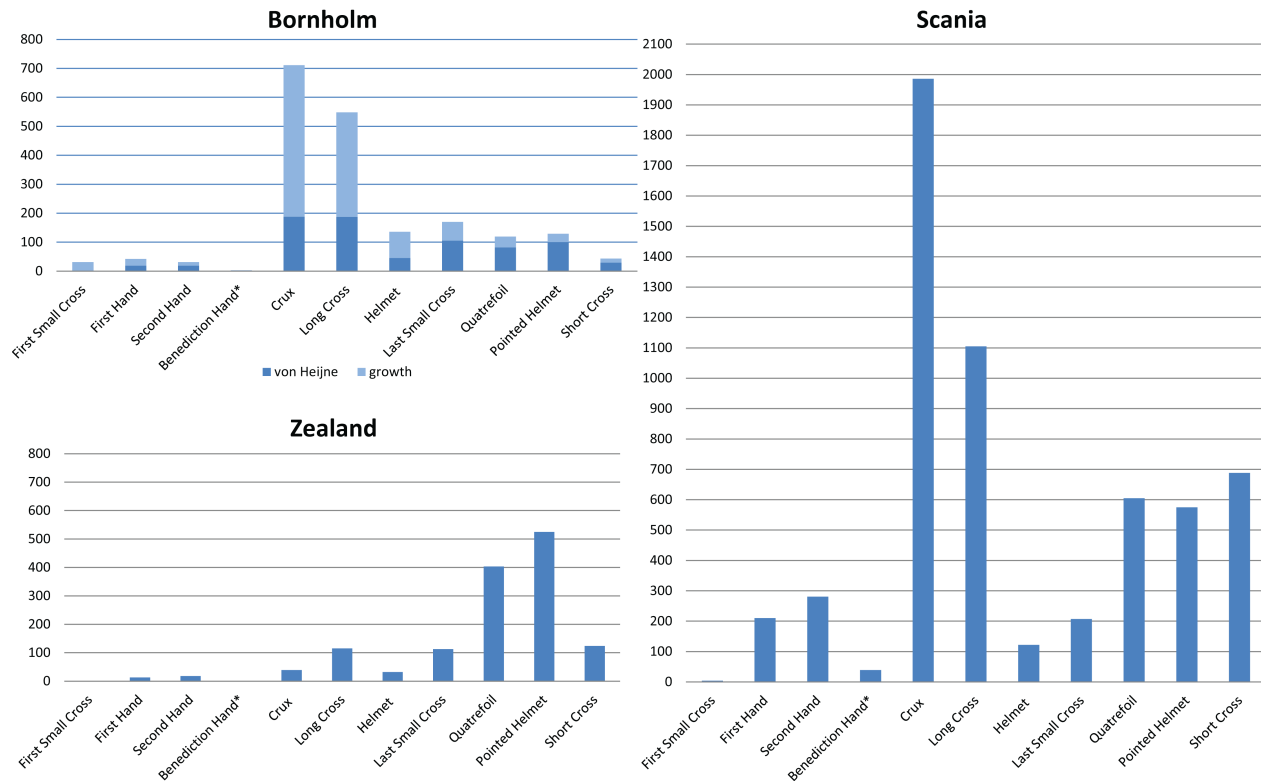


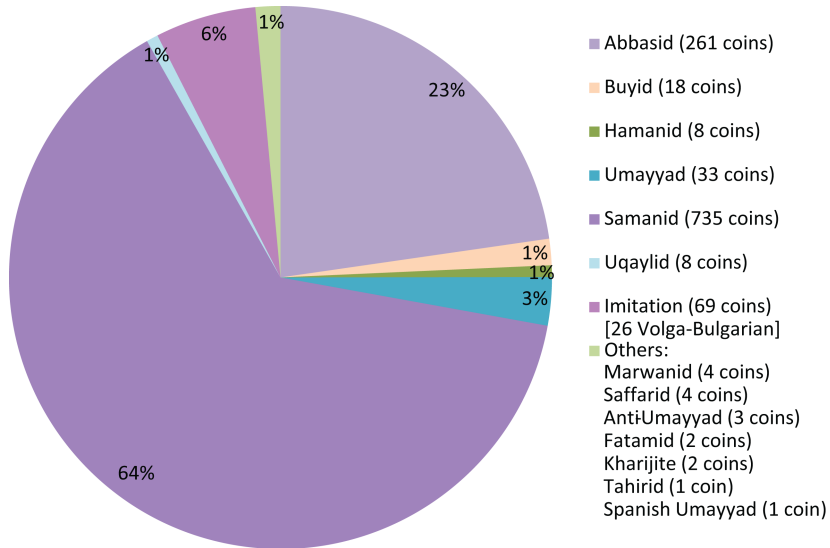
Figure 5.8 The distribution of English coin types deposited on Zeeland, Bornholm, and in Scania. The figures are based on von Heijne's 2004 catalogue. However, the Bornholm numbers have been updated. The distribution for Bornholm has changed significantly since von Heijne's publication in 2004.

also stated by Metcalf (1994, 209–213), Jonsson’s argument presupposes that English coins would also appear in hoards deposited in the Harz area. However, this is not the case as presented by Jonsson (1993, 222–223). Jonsson argues that the very few hoards with a small number of English coins reflects a regulated coin economy in the Harz region. The regulation affected how foreign coins were either traded and exported or melted and used for local coinage. In the light of the Bornholm hoards, and with reference to the foregoing argument that the majority of *Crux* and *Long Cross* types in the Bornholm hoards were accumulated via Danegeld, a more obvious interpretation is that the absence of English coins in the Harz area reflects a real absence. Thus, it is highly probable that English and German coins deposited in the Bornholm hoards were acquired separately, and in different ways.

### 5.3 Islamic coins

A total of 1,397 dirhams have been recorded from Bornholm hoards, of which 1,149 can be linked to 14 areas/dynasties (Figure 5.9). In addition, the Ahlesminde hoard contains two Fatimid gold dinars (Figure 3.2), while the Skovsholm hoard contains the only two secure examples of Persian Sassanid drachms found on Bornholm (Figure 6.17). The distribution of Islamic dynasties is almost identical to that of Swedish dirham hoards, which, with Gotland in the forefront, constitute the largest concentration in Northern Europe (Kilger 2008a, 204, figure 7.4). Samanid and Abbasid dirhams dominate the Islamic coins in the Bornholm hoards, while dirham imitations are the third-largest group, making up 6 per cent. More than half of the dirham imitations can be identified as Volga-Bulgarian. Umayyad dirhams follow with 3 per cent, while the other dynasties are represented by 1 per cent or less (Figure 5.9).

The dirhams show several distinct older phases that coincide with some general trends in the Baltic region, even though the oldest dirham hoard on Bornholm was not deposited until after 855. Umayyad coins minted in the first half of the 700s are the oldest dirhams deposited in Bornholm hoards (Figures 5.9 and 5.28). All Umayyad dirhams were deposited at least 200 years after their minting date – just over half (23 out of 34) in the Skovsholm hoard. Abbasid dirhams follow Umayyad coins, with the oldest accurately dated Abbasid dirham minted 750–751. There is an increase around 775 in the number of coins struck under Caliph al-Mahdí (775–785), and the trend continues from 786 during the rule of Caliph Harun al-Rashid (786–809). This continues until c. 825, after which there is a break in the chronological sequence of dirhams in the Bornholm hoards. The fluctuating intensity of dirhams in the Bornholm hoards thus reflects the ebb and flow of coin production in the Caliphate. Here large numbers of coined silver were produced during the reign of al-Mahdí and Harun al-Rashid, while coin numbers decline due to internal conflicts in the Caliphate after the death of Harun al-Rashid in 809 and reach a low point around 825. The tendency may be reinforced by the fact that dirhams after 825 are poorly minted and therefore difficult to identify (Kilger 2008a, figure 7.12).



*Figure 5.9* The distribution of Islamic coins deposited in Bornholm hoards (per cent). The hoards are dominated by coins minted in the Abbasid Caliphate and above all in the later Samanid Caliphate. The chart includes data for 1,148 coins deposited in 42 hoards.

The first major influx of Islamic coins into Europe is seen in hoards deposited c. 790–825 (Noonan 1984, 159–160; Kilger 2008a, 214–217). There is a marked increase in hoard deposits at this time, both on Gotland and in the West Slavic area, especially at the mouths of the rivers Vistula and Oder. Hoards deposited c. 790–825 are characterised by a high content of Abbasid dirhams coined after 769 in Iraq/Iran and North Africa (Noonan 1984, 145–146; Kilger 2008a, 215). The proportion of North African dirhams varies according to the area of deposition. In the West Slavic area, North African dirhams account for 3 per cent, while in other parts of Eastern Europe the proportion is around 50 per cent. On Gotland, hoards contain about 15 per cent North African coins (Kilger 2008a, 215). The increase in the number of dirhams dated 775–825 on Bornholm thus coincides with this depositional horizon. As in the rest of the Baltic Sea area, coins minted in Iraq/Iran form the largest coin group. Dirhams from the North African area account for 7 per cent, and thus occupy an intermediate position compared to Gotland and the West Slavic area. This may reflect a situation in which dirhams struck c. 790–825 were imported to Bornholm via contacts with both Gotland and the West Slavic area, while the proportion of North African dirhams on Bornholm circulated and were mixed with the other coinage and later deposited on Bornholm. It is difficult to determine when the importation took place. The coins may have been imported in the first half of the ninth century and simply not deposited until much later. Hence, the production data of the coins reflect close parallels with the other areas

of the Baltic Sea, even though no hoard has yet been found on Bornholm from this period. The oldest Viking-Age hoard on Bornholm, the Skovsholm hoard deposited after 855, is a good example of how a single new hoard can change the find picture.

The limited presence of Sassanid and Arab-Sassanid drachms in the Bornholm hoards argues against a dirham import in the first half of the ninth century. Persian Sassanid drachms and Arab-Sassanid drachms<sup>2</sup> form an early eastern import phase on Gotland and in central Sweden (Kovalev 2015, 70–73). They are found, for example, in dirham hoards from the 800s such as the Hammarby hoard in Uppland, deposited after 832/833, and in the Stora Tollby II hoard on Gotland with a *tpq* 832–842 (Zachrisson 1998, 284–292; Kilger 2008a, 224–227). On Bornholm, two Persian Sassanid drachms and one Tabaristan drachma are known from the Skovmand hoard, two possible Arab-Sassanid drachms are found in the Englyst<sup>3</sup> and Nørremølle<sup>4</sup> hoards, respectively, and a total of four drachms are from the potential hoards Egebjerg SSØ, Skovgård Øst, and Krogegård II. Sassanid or Arab-Sassanid drachms have also been found as single finds at the Bornholm sites Sandegård Øst, Ferskenøen, Rytterbakken, Nordre Mulebygård II Øst, and Sorte Muld (Horsnæs 2023). The limited number of drachms found on Bornholm suggests that Bornholm was not part of an early import phase, and that dirhams minted c. 790–825 were imported much later than their production date. To date, the Skovsholm hoard must be considered the earliest example of the import of dirhams to Bornholm.

The low minting output of the Caliphate in the 820s–840s means that dirham hoards deposited in the first half of the 900s are dominated by older coins from the productive years. Thomas Noonan describes the decline as a pause in the inflow of dirhams, which had little impact on the supply of dirhams to Russia and the Baltic region (Noonan 1985, 41–42). This is also reflected in the Bornholm material, because a new concentration of Abbasid dirhams is seen as early as 835 until c. 855. There is a clear difference in the chronological profile of European dirham hoards deposited before and after 850, respectively. In hoards deposited before 850, dirhams coined between 815 and 850 account for about 4 per cent, while the proportion is 18–20 per cent in hoards deposited after 850 (Kilger 2008a, 222–223). The same applies in the Skovsholm hoard, in which dirhams struck between 815 and 850 make up 18 per cent of the deposit. The situation seems to indicate that these late Abbasid dirhams arrived in Europe shortly before 850.

Several scholars have argued for an actual silver crisis in the second half of the ninth century (Malmer 1966, 212–218; Randsborg 1980, 152–153; Noonan 1985, 45–48). Klavs Randsborg and Brita Malmer highlight the absence of dirhams minted 850–890 in the graves at the important trading site Birka, in Sweden. Malmer points to a general slowdown of the economy, also reflected in contacts with the Carolingian Empire, and she relates this stagnation to a halt in production of the early coinage of Ribe/Hedeby in Denmark (Malmer 1966, 213–217). It is problematic to use the Birka grave coins as an argument for a general shortage of silver in Scandinavia. As pointed out by Kilger, the argument assumes that the coins were deposited in the graves shortly after their minting (Kilger 2008a, 230). This does not seem to be a valid premise, because grave coins converted into jewellery are generally difficult to use as a basis for dating (Audy 2018, 55–57). Only

seven Carolingian coins have been identified among the 12,521 coins in the hoards from Bornholm analysed here. Thus, at no time was there close contact between Bornholm and the Carolingian Empire, and a decline in dealings with the Carolingian Empire did not affect Bornholm.

Noonan bases his argument on the composition of hoards in the Baltic region and in Russia (1985, 45–49). Hoards deposited after 850 contain an increasingly higher proportion of newly minted coins, while the trend reverses in hoards deposited after 875, when the number of newly minted coins decreases. Noonan thus dates the silver crisis to c. 875–900. Based on hoards deposited in the Caliphate, he concludes that the interruption was not due to a decline in dirham production, as was the case in the 820s–840s. Instead he argues for a break in contact that was not restored until the 900s, with the establishment of new trade links between Europe and the Samanid Caliphate in Central Asia (Noonan 1985, 45–49). Noonan's interpretation is supported by the import of oriental beads to Scandinavia showing a marked decline, or perhaps even a pause, in the second half of the 800s. This generated an increase in the development and production of Scandinavian beads (Callmer 1997, 199).

In the Scandinavian Baltic Sea area, there is a marked increase in hoards with *tpq* dates in the 860s (Kilger 2008a, figure 7.7). This contrasts to the minting dates of the deposited coins, which, as mentioned earlier, has led to the view that the Baltic region experienced a silver crisis at this time. Kilger uses the increase to argue the opposite. He agrees in part with Noonan's argument, that there was a break in contact between the Caliphate and Eastern Europe after 875, but he believes that the increase in deposited hoards in the 860s points to an increase in the import of Abbasid dirhams. Kilger attributes the apparent lack of dirhams coined in the decades before 900 to methodological challenges, since older dirhams may have been imported and circulated in the Baltic region for a longer period (Kilger 2008a, 230–233).

Looking at the Bornholm material, remarkably few dirhams can be dated to c. 855–890. Further, all of these were deposited at least ninety years after their production date, by the mid-tenth century, at the earliest (Table 5.1). Thus, a decline in imports and a long period of circulation are confirmed. This supports Noonan's observations: few dirhams coined between c. 860/870–990 reached Russia and the Baltic Sea region.

It is difficult to establish the deposition time of the Skovsholm hoard with a *tpq* 855 because few coins minted in the last half of the 800s were imported to Bornholm (section 3.3). The hoard does not contain Samanid dirhams, which are overwhelmingly present in other hoards with production dates from 892 (Figure 5.10). Deposition of Samanid dirhams is not documented on Bornholm until well into the 900s. The oldest known examples of Bornholm hoards with Samanid dirhams are from the Rabækkegård, 'Unknown location' (grave finds), and Skørrebro hoards, with *tpqs* 913, 913, and 939, respectively (Figure 3.12). The depositional horizon of the Skovsholm hoard therefore ranges between 855 and c. 900. Based on the broad deposition horizon of the Skovsholm hoard, it is reasonable to suggest that the increase in the number of deposited hoards with a *tpq* in the 860s in the

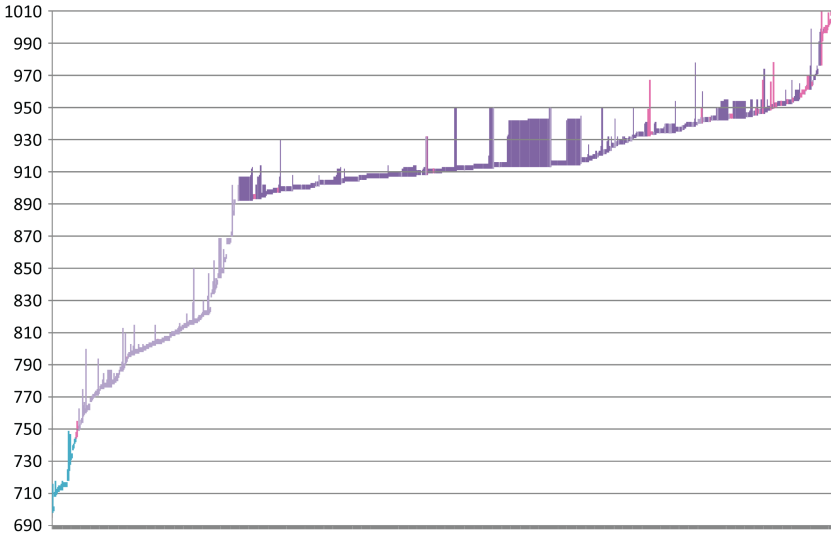
Table 5.1 Dirhams minted 855–890 in hoards from Bornholm.

<i>Site</i>	<i>Tpq</i>	<i>Type</i>	<i>Start date</i>	<i>End date</i>
Buddegård	947	Abbasid	856	857
Buddegård	947	Imitation	883	903
Kongens Udmark	967	Abbasid	866	867
Kongens Udmark	967	Abbasid	870	871
Kongens Udmark	967	Abbasid	890	891
Dammegård	997	Volga-Bulgarian imitation	883	903
Dammegård	997	Volga-Bulgarian imitation	883	903
Dammegård	997	Volga-Bulgarian imitation	883	903
Dammegård	997	Volga-Bulgarian imitation	883	903
Englyst	997	Abbasid	865	869
Rosmannegård S	1002	Abbasid	883	893
Åbo	1029	Abbasid	883	884
St. Gadegård	1037	Abbasid	865	869
St. Gadegård	1037	Abbasid	865	869
Smørbygård	1042	Abbasid	865	869
Munkerup	1046	Abbasid	870	902

Baltic area also reflects the fact that coins circulated for a long time, and new coins were not accumulated. There seems little doubt that few dirhams struck c. 875–890 reached the Baltic region. The marked increase in hoards with a *tpq* in the 860s may therefore cover hoards deposited in subsequent decades, since few newly minted coins entered circulation. Hoards with a *tpq* in the 860s, like the Skovsholm hoard, thus have broad dating horizons, and may just as well have been deposited in subsequent decades. A more even distribution of hoards deposited up to the 900s is therefore possible.

A similar phenomenon appears in the early 800s. Here there is a significant increase in hoards with *tpq* dates in the 810s (Kilger 2008a, figure 7.7). This contrasts with the minting volume of the Caliphate, which decreases after the death of Harun al-Rashid in 809 (Kilger 2008a, figure 7.12). Thus, the increase may cover hoards deposited after 810 and the following decades, because few coins with production dates in the 820s–840s circulated in Europe. In summary, dirhams probably continued to circulate in the Baltic Sea region in the second half of the ninth century, but the coinage was dominated by older Abbasid dirhams. It must be stressed that the Bornholm material is weak, both in terms of deposited hoards and coins struck in the second half of the ninth century. This contrasts with Gotland, which is the only area in the Baltic Sea region where Islamic coins continue to be imported, and where hoards are deposited in the decades after 875, demonstrating stable contacts (Kilger 2008a, 236).

With the plentiful coinage of the Samanid dynasty from 892 there is a significant increase in the number of dirhams deposited in Bornholm hoards. Of the 890 dirhams that can be dated within a 40-year span, 54 per cent were minted during the reigns of the Samanid caliphs Isma'il ibn Ahmad (892–907), Ahmad ibn Isma'il (907–914), and Nasr II (914–943) (Figure 5.10). The import is not directly reflected



*Figure 5.10* The chronological profile of Islamic coins deposited in Bornholm hoards. The chart includes data for 890 coins deposited in 41 hoards. Each coin is indicated with a line showing the chronological range of the coin. The individual lines cannot be separated due to the volume of coins. The chart illustrates the time of production, not the time of deposition. Turquoise: Umayyad, light purple: Abbasid, dark purple: Samanid, pink: other dirham types, including imitations.

in the depositional horizon of the hoards, because only three dirham hoards are deposited in the first half of the 900s. Significantly, 61 per cent of the 890 dated dirhams were deposited after 950 (Figure 3.11). This reflects an increase in the importation of dirhams minted in the first half of the 900s, and a long circulation period for the majority of Samanid dirhams on Bornholm. The observations are consistent with studies by Roman Kovalev. Based on hoards deposited in Eastern Europe (mainly Russia) and in the Baltic Sea region (mainly Sweden), Kovalev examined the circulation period of dirhams struck at the two largest mints of the Samanid dynasty, Samarkand and Taskjent, in the first half of the 900s (Kovalev forthcoming). For the Baltic Sea region, the older the coins, the longer the circulation period. Whereas in Eastern Europe a relatively short circulation period is seen for most of the first half of the 900s, the picture reverses with coins struck in 950/951 (Kovalev forthcoming, 9–12). Since very few Samanid dirhams struck between c. 892–950 are deposited in the Islamic area, Kovalev argues that the huge coinages of Isma'il ibn Ahmad (892–907), Ahmad ibn Isma'il (907–914), and Nasr II (914–943) were struck for the purpose of export (Kovalev forthcoming, 7–8).

Volga-Bulgarian dirham imitations began to appear in Scandinavian hoards at the same time as the wave of Samanid dirhams imported in the 900s. This is also seen on Bornholm. There is an element of dirham imitations (mainly from Volga-Bulgaria) in all Samanid-dominated hoards, with the exception of the

dirham hoard deposited in the Rabækkegård grave (Figure 3.11). This reveals that Samanid dirhams came to the Baltic Sea area via the Volga-Bulgarian Empire, thus confirming Islamic and Persian written sources that describe Volga-Bulgaria as an intermediate station in the trade between the northern regions and the Caliphate (Kovalev forthcoming, 9). Kovalev's research shows that Samanid dirhams were either deposited relatively quickly in Volga-Bulgaria or transported further north. This means that the coins were imported into the Baltic region relatively soon after production and circulated there for a long time. The new wave of dirham imports can once again be traced in the bead material, since oriental beads from the end of the 800s and the first half of the 900s begin to reappear in Scandinavian contexts (Callmer 1997, 199). A link between dirham imports and imports of oriental beads is also present at the trading node Straraja Ladoga, where more than 7,000 oriental beads have been found (Sindbæk 2005, 219–220).

Perhaps as a result of the relatively sparse presence of Abbasid dirhams, the transition to Samanid dirhams on Bornholm appears very sharp. Bornholm's oldest Samanid hoard, Rabækkegård, is deposited in a grave (catalogue: 28). Among the grave goods were 14 Samanid dirhams, probably struck in the first two decades of the 900s, and an Umayyad dirham struck in 712/713. The early Umayyad dirham was pierced and looped, and it is therefore plausible to include the transformed coin in a jewellery set consisting of 27 beads and two bronze pendants that were also found in the grave. The 14 Samanid dirhams do not have mounts, and the group has therefore been interpreted as a pure Samanid hoard with a relatively unified chronological profile in the first two decades of the 900s deposited in grave context. The dirhams deposited in the grave with 'Unknown location' (catalogue: 45) have a similar composition, with an Abbasid dirham minted 754–775 and six later Samanid dirhams with *tpqs* 892, 902, 907, and 913 (Galster 1980, 31–32). However, the coins differ from the coins deposited in the Rabækkegård grave, because they were pierced and/or suspended with loops. Thus, it is likely that the coins were part of a jewellery set which also included nine silver beads, six gilded bronze pendants, and a gilded trefoil bronze brooch.

The earliest hoards in the Baltic region reflecting a significant influx of Samanid dirhams are found on Gotland, where hoards with a *tpq* in the first decade of the 900s contain between 20 and 78 per cent Samanid coins (Kilger 2008a, 236). Thus, dirhams were imported to Gotland continuously at the transition between Abbasid and Samanid dirhams. Based on hoards with a marked presence of Samanid dirhams and with a *tpq* in the first 20 years of the 900s, Kilger argues that Samanid dirhams reached Gotland shortly after their minting. From Gotland they were dispersed westwards to Ireland with Jutland (Over Randlev I hoard, *tpq* 913) as an 'intermediate stop' (Kilger 2008a, 236–237). The atypical distribution probably reflects personal contact networks rather than organised trade networks. Kilger does not include the Rabækkegård hoard on Bornholm, since it is a grave find. However, as argued earlier, the Samanid coins in the Rabækkegård grave could be interpreted as a hoard deposited in a grave context, and it is likely that this distinctive and early inclusion of Samanid dirhams can also be interpreted as an 'intermediate station' in the distribution of Samanid coins from Gotland to Ireland along the lines of the

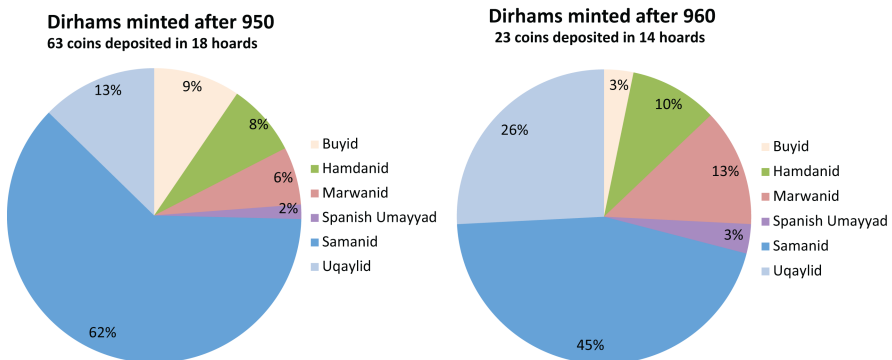
Over Randlev hoard. The potentially long period of circulation of the early Samanid dirhams makes it problematic to date the grave solely based on the *tpq* of the Samanid hoard. The other grave goods (pendants and beads) may contribute to the dating. Based on combination analyses of beads from 296 graves, Johan Callmer divides Viking-Age bead production into 12 phases lasting 20 to 35 years (1977, 77–93). The Rabækkegård grave is included in the analysis and dated to phase VII 895–915 (1977, 20 no. 112, 61). Parallels with the two circular bronze pendants are found in the Brunnby hoard with a *tpq* 925 from Scania and in the Terslev hoard with a *tpq* 940 from Zealand (Brøndsted 1936, 210; Hårdh 1976, no. 40, taf. 26:1; Sørensen 1989, no. 6). Taken together the pendants, beads, and coins point to a dating of the grave to the first half of the 900s. It cannot be ruled out that the grave is later, but given the steady influx of coins dated to c. 950 (Figure 5.10), a date after 950 seems unlikely. Thus, Svanberg's (2003, 327–328) dating of the grave to 950–1050 can be rejected. Therefore, the Rabækkegård hoard may reflect a connection between the buried person, who received the hoard in the grave together with jewellery, and Gotland, in an exchange system of early Samanid dirhams. It is possible that the pierced and/or suspended Samanid dirhams deposited in the grave of 'Unknown location' were also imported to Bornholm via the same network.

The unusual chronological profile of the Skørrebro hoard adds an extra dimension to the interpretation of the Rabækkegård hoard. Of the 146 relatively narrowly dated coins in the hoard, all but two can be dated within the range 892–918. The Skørrebro hoard was probably not deposited until after 939, since two later coins are also attributed to the hoard: a dirham struck in Samarkand in 927–932 and a dirham struck in Taskjent in 938/939. None of the coins in the Skørrebro hoard have been found *in situ*, and it is therefore not possible to determine with certainty whether these later coins are part of the hoard. However, they have been found within the primary distribution area of the coins, and are therefore considered part of the hoard. The composition of the Skørrebro hoard confirms Kovalev's observations of a generally long circulation period for early Samanid dirhams in the Baltic Sea area. Except for the two later coins, the very narrow chronological profile suggests that the two earliest Samanid hoards on Bornholm, Rabækkegård and Skørrebro, may reflect the same import horizon. Some coins were deposited in grave contexts on southwestern Bornholm relatively soon after being imported, while some coins were deposited some thirty years later in settlement contexts on central Bornholm (Figure 3.13). The Buddegård hoard with a *tpq* 1047 may reflect elements of the same import horizon, since most of the coins are Samanid dirhams struck before 920. A possible connection between the Rabækkegård, Skørrebro, and Buddegård hoards will be discussed in section 8.1.

The Bornholm material shows a marked decline in the number of dirhams minted after 950/960 (Figure 5.10). This is a general trend seen throughout the Baltic Sea area, and which is followed by a decline in deposited hoards in the 950s and 960s (Noonan 1994, 232–234). The decline in imported and deposited dirhams has been linked to a decline in the silver content of dirhams from the Samanid Caliphate, the assumption being that dirhams with a lower silver content were not in demand among the Vikings (Noonan 1989, 300). The decline in dirhams after 950/960 on

Bornholm is linked to coinage of the Samanid Caliphate, because the proportion of Samanid dirhams to the total number of dirhams falls from 62 per cent to 45 per cent over ten years (Figure 5.11). A halt in the oriental bead import to Scandinavia is also seen from the mid-tenth century (Callmer 1997, 200). Since the break in imports applies to both beads and dirhams, the break does not seem to be linked to a lower demand for coins, because the import of beads could have continued without regard to the quality of the coins. This suggests that the break in imports is due to reasons other than the silver content of the coins. In Eastern Europe (Russia), imports continue after 950 (Noonan 1989, 300, 1990, 254–256). The same applies in the Volga-Bulgarian area, where imports continue until 980/990, but after 950 the coins are no longer exported further to the Baltic Sea area (Kovalev forthcoming, 12). This probably explains why Samanid dirhams minted 950/951 had a longer circulation period in Eastern Europe than earlier dirhams, since they were not traded on to the Baltic region (Kovalev forthcoming, 8–12). Kovalev links the decline of dirhams in the Baltic region to a major reorganisation of the trade and tax system in Russia, initiated by Grand Princess Olga from the mid-tenth century. The strengthening of new trade routes and increased control and taxation of trading hubs meant that dirhams were not exported further to the Baltic region, but largely remained in Russia (Kovalev forthcoming, 12–20). It was not the demand that stopped, but the supply that diminished.

Considering the relatively limited number of hoards with a large proportion of Samanid coins on Bornholm, it is remarkable that the Skærpingegård hoard was deposited between 962–990, at a time when Samanid coins no longer reached the Baltic Sea area. The Skærpingegård hoard has a composition that is different from the slightly older Buddegård, Rabækkegård, and Skørrebro hoards, since it contains a significant proportion of dirhams struck 930–950. It seems to reflect contact with the Volga-Bulgarian area up to 950, but not after 950. The *tpq* of the hoard in



*Figure 5.11* Few dirhams struck after 950/960 found their way into the Bornholm hoards. The decrease in the number of dirhams can be linked to Samanid coins, since the proportion of Samanid coins decreases from 62 per cent to 45 per cent in just ten years.

the 960s is based on three German coins – the earliest German coins deposited in a Viking-Age hoard from Bornholm. The Dammegård and Kannikegærðet hoards, both presumably deposited in the transitional phase 990–1000/1005 (section 3.3), have almost identical chronological profiles, both including dirhams reflecting a continuous importation of dirhams up to c. 950, as well as a small western European coin component. The Rosmannegård SV hoard is a third dirham hoard, probably deposited in the 990s (section 3.3). Coin identification is difficult because 121 of the 134 coins are fragmented. It is only possible to date 52 coins within a forty-year span, and the dynasty cannot be determined for 65 dirhams. This weakens the interpretive value of the hoard in the chronological and geographical discussion. The relatively small proportion of coins that can be identified more precisely have a chronological profile similar to Dammegård and Kannikegærðet, where the Islamic coins reflect a continuous import of dirhams up to 950/960, while the hoard includes a small number of later western European coins. The composition of the three hoards confirms a clear break in the importation of dirhams minted after c. 950 and suggests that dirhams minted before 950 dominated coin circulation on Bornholm until the 990s.

The small parcel of western European coins in the late dirham hoards seems to illustrate a shift in import contacts towards the West. This is confirmed by the three other hoards deposited in the 990s (Figure 3.11). Two of these, Store Frigård II and Tyskegård, are clearly dominated by English coins, while 50 per cent of the coins in the Vellensbygård hoard consist of German coins. Thus, the composition of the Bornholm hoards demonstrates that the import of Western European coins does not occur until the 990s, even though dirham imports probably cease in the mid-900s. This suggests that there was not a direct link between the cessation of dirhams and the importation of Western European coins. Simultaneously with the new contacts to the West, there is an increase in coin imports, and the 990s represents the first decade with a significant increase in deposited hoards – based on the *tpq* dates. An interesting question is whether there is a correlation between the people who deposited dirham hoards and the people who deposited the ‘new’ Western European coinage. The relationship between hoards dominated by dirhams and hoards dominated by Western European coins is explored in section 8.1.

#### 5.4 Scandinavian coins

Scandinavian coins begin to appear in Bornholm hoards from the second half of the 900s, as reflected in Skærpingegård (*tpq* 962) and Kongens Udmark (*tpq* 967), which contain a few examples (one and four, respectively) of Dorestad imitations (Figure 3.11). The relatively high proportion of tenth-century Scandinavian coins is attributed to a single hoard, Brandsgård, which contains 65 of the 72 Dorestad imitations deposited on Bornholm.

A coinage was initiated in Hedeby in the early 800s, with coin motifs primarily imitating Charlemagne’s Dorestad coins (Malmer 1966, 209; Moesgaard *et al.* 2015, 55). The Hedeby coinage with motifs imitating the Carolus monogram, the so-called Dorestad imitations, continues with pauses in minting until c. 970

(Moesgaard 2015 *et al.*, 55–58). Malmer carried out typological analyses of the Hedeby coinage, and divided the group of coins into different motif combination groups (KG). All Dorestad imitations in the Brandsgård hoard are of Malmer's KG 9, struck c. 950–970 (Malmer 2002, 124–125; Moesgaard 2012, 114; Moesgaard *et al.* 2015, 55–58). Carolus-Dorestad imitations were primarily in use in Hedeby and the surrounding area (Wiechmann 2007; Hilberg 2011, 205–206; Moesgaard 2012, 117; Moesgaard *et al.* 2015, 56). The distinctive assemblage of Dorestad imitations in the Brandsgård hoard therefore suggests a direct import event between Hedeby and Bornholm, and they probably represent an early accumulation phase approximately 20–30 years before the Brandsgård hoard was deposited in the first decade of the eleventh century (section 3.3). Unfortunately, the site has not been archaeologically investigated.

The coin composition of the Brandsgård hoard differs markedly from all other Bornholm hoards. Hence, Anglo-Scandinavian imitations minted c. 995–1035 in Lund and Sigtuna predominate among the Scandinavian coins in the other Bornholm hoards. As documented by Malmer's die studies, new English coin types are rapidly imitated in the Scandinavian coinage, reflecting a close link between English and Scandinavian coin production (Malmer 1997, 45–49, 2010, 19). Store Frigård II, which is the earliest hoard dominated by English coins, is also the oldest Bornholm hoard which includes Anglo-Scandinavian coins, consisting of four *Crux* imitations struck 995–1005. Store Frigård II's closing coins, two Otto III coins minted in Dortmund and Deventer, respectively, provide a *tpq* date of 996.

The overall chronological profile of the Store Frigård II hoard suggests a deposition shortly after 996. Thus, the four *Crux* imitations in the hoard were deposited very shortly after minting. As suggested in section 5.2, the owner of Store Frigård II may have acquired the coins by participating in Viking raids in the early 990s. Among the *Crux* imitations in the Store Frigård II hoard is the extremely rare Olaf<sup>ƿ</sup> Tryggvason coin struck in Norway. The type is only known from five examples and is considered to be Norway's first coin, which was struck at the same time that Sweyn Forkbeard and Olaf Skötkonung initiated coinage in Lund and Sigtuna. The *Anglo-Saxon Chronicle* states that the 994 attack was led by Olaf, and it is possible that this was Olaf Tryggvason (Whitelock 1979, 236). The presence of the Olaf Tryggvason coin in the Store Frigård II hoard thus supports the idea that the coins were accumulated during participation in a raid in the 990s. An interesting parallel to the Store Frigård II hoard is the large Scanian hoard from Igelösa. The hoard is dominated by English coins, especially *Long Cross* and above all *Crux* types, and has small components of Islamic, Irish, and 101 Scandinavian coins, one of which is an Olaf Tryggvason coin (Jonsson 1986, 132–141; von Wowern 2009, 58–61). The Igelösa hoard should probably be interpreted as a Danegeld payment along the same lines as the Tyskegård and Store Frigård II hoards.

Notably, some of the Bornholm hoards have a large proportion of die-identical Anglo-Scandinavian imitations. Table 5.2 includes only coins of which both obverse and reverse dies are identical (die duplicates), and where two or more dies are deposited in the same find. It is very likely that these coins were minted and accumulated at the same time, and therefore deposited at the same time.

Table 5.2 Bornholm hoards with two or more Anglo-Scandinavian coins with identical obverse and reverse dies.

<i>Ref. Malmer 1989 (4); 1997 (9)</i>	<i>Slamrebjerg</i>	<i>Dalegård</i>	<i>Nørre Sandegård</i>	<i>Skovvang</i>	<i>Gyldensgård</i>	<i>Nørremølle</i>
Malmer 9.296.1217, 4-L	7					
Malmer 4.21.87, chain 10		3				
Malmer 9.148.1164, 3-L		3				
Malmer 9.251.1224, chain 163		3				
Malmer 9.263.9118, S		2				
Malmer 9.8.1029, chain 101		2				
Malmer 9.632.1731, chain 138			2			
Malmer 9.115.1793, chain 105 D						
Malmer 9.115.1793, chain 105 D						
Malmer 9.115.1793, chain 105 D					3	
Malmer 9.127.1722, chain 105 D					2	
Malmer 9.378.1793, chain 105 D					2	
Malmer 9.506.1771, chain 105 C					2	
Malmer 9.604.1227, chain 105 D					2	
Malmer 9.628.1732, chain 105 D					4	
Malmer 9.715.1738, 3-L					16	
Malmer 9.717.1749, chain 105 C					2	
Malmer 9.952.1793, chain 105 D					18	
Malmer 9.15.1075, chain 101						2
Malmer 9.127.1722, chain 105 D						2
Malmer 9.233.1216, 4-L						3
Malmer 9.640.1756, chain 105 C						2

The Skovvang hoard stands out with two large groupings of 16 coins of Malmer 9.715.1738, and 18 coins of Malmer 9.952.1793. The dies 715 and 1738, which are represented in the first group, are probably struck from imported English dies (Blackburn 1985, 111; Malmer 2010, 42). The die combination 9.715.1738 is attributed to Sigtuna based on a large number of square planchets with this stamp combination (Malmer 1997, 51–52). The chain is dated to 1017–1025 because die 715 imitates the *Quatrefoil* type. The die combination 9.952.1793 is included in the late part of the largest chain in Lund: chain 105 D. The chain is divided into four sections: A, B, C, and D. Malmer argues for a clear chronological division between A/B and C/D (1997, 46, 634). Section A and the majority of section B is the earliest part of the chain and is minted after c. 1000. Section C contains two Canute the Great dies with the inscription *Rex Dænor* dated to c. 1015. The presence of *Quatrefoil* imitations in sections C and D gives a *tpq* of 1017 (Malmer 1997, 46). Section A/B does not include *Quatrefoil* imitations and section C/D does not include *Pointed Helmet* or *Short Cross* imitations. Based on these observations chain 105 A-B is dated to 1000–1015 and C-D is dated to 1015–1025. Thus, the die combinations 9.715.1738 and 9.952.1793 were produced concurrently.

In connection with die studies, Malmer analysed the coins from Skovvang and observes that the Sigtuna coins (9.715.1738) show many traces of secondary treatment (average of 4.6 pecks on each coin). She concludes that the coins had been widely in circulation – in Malmer’s opinion probably on Bornholm (Malmer 1997, 52). The Lund coins (9.952.1793) in the Skovvang hoard show fewer traces of use. However, it is unlikely that two substantial groups of die-identical coins deposited together circulated widely on Bornholm, since they would have been dispersed. The die combinations are not found in other Bornholm hoards (Table 5.2). As stated in section 4.2, the recording of circulation traces is influenced by the researcher’s background. In this study the Sigtuna group is recorded as whole, bent up to two times and bear five peck-marks at most, while the Lund group is recorded as whole, the majority are bent once and bear between 2–5 pecks. The Sigtuna coins, as stated by Malmer, show more traces of circulation compared to the Lund coins. However, compared to the objects deposited in Bornholm hoards in general, both groups show relatively few traces of circulation (section 6.1).

Since the die-identical coins are deposited together, it can be concluded that the coins were kept together if they were exchanged on Bornholm. As discussed in section 4.2, it is likely that several marks, possibly in combination with bends, were in some cases made on the same occasion. There is nothing to prevent the circulation data of the coins from reflecting that both groups changed hands, perhaps only a few times, between production and deposit. The Skovvang hoard contains five further groupings of two to four die-identical coins (Table 5.2). These coins bear more secondary traces. The contemporary Slamrebjerg hoard, deposited about 6 km south of Skovvang, is also notable for containing seven die-identical coins (Malmer 9.296.1217, 4-L). These also show many secondary traces. Dalegård, on the other hand, contains five groups of two or three die-identical coins. These coins bear very little circulation data, and in many cases they appear to have been newly

minted. In addition to the die-identical coins, the Dalegård hoard contains coins with mutual die-links, suggesting that the journey from mint to deposit was direct (Gunnarsson 2015, 9). The Skovvang and Dalegård hoards probably reflect the fact that parts of the hoards were deposited shortly after acquisition. Since the two large groups of die-identical coins in the Skovvang hoard, from Lund and Sigtuna respectively, were produced within a ten-year period (1015–1025), it is likely that the person(s) who accumulated the hoard made one or more trips, within a few years, to Lund and Sigtuna.

Since the die-identical coins on Bornholm were most likely accumulated at the same time, and thus probably also arrived on Bornholm at the same time, the die-identical coins can be used as an indication of interrelations on Bornholm. The relation diagram in Figure 5.12 is based on die-identical Anglo-Scandinavian coins in the Bornholm hoards. The diagram elucidates the relationship between hoards with die-identical coins, and thus reveals the network of the persons who accumulated and deposited these hoards. The three large hoards, Gyldensgård SV, Nørremølle, and Skovvang, all deposited in the 1030s, are central to the network chart. Each hoard has many relations – also between each other. The connections between the Nørremølle and Skovvang hoards are particularly strong. The large Pæregård hoard, deposited 1047–1060 in northwestern Bornholm, is very similar in composition to both the Nørremølle and Skovvang hoards, but it does not occupy the same central place in the diagram. The Pæregård hoard only shows contact with Gyldensgård SV and the Nørremølle hoards. There also seems to be a difference in spheres of contact between Skovvang and Nørremølle and between Skovvang and Gyldensgård SV. The three hoards Blykobbegård, Munkerup, and Slamrebjerg can only be related to Skovvang, while Nørremølle and Gyldensgård SV are part of a complicated network of contacts. The network of hoard sites will be discussed further in section 8.2. Whether the exchange of Anglo-Scandinavian coins took place on Bornholm cannot be determined with certainty. Another possibility is that the network diagram reflects joined voyages, for example when several people may have gone on a trading expedition to Sigtuna and acquired the die-identical coins there at the same time. This discussion will be addressed again in the analysis of secondary treatment.

Just over half (188 out of 360) of the Anglo-Scandinavian coins can be attributed to either Lund or Sigtuna. Among imitations with a starting date before c. 1015, there is a preponderance of coins struck in Sigtuna in the Bornholm hoards, while from c. 1015 onwards coins struck in Lund dominate. The shift coincides with the coinage of Canute the Great. The trend towards a stronger connection with southwestern Scandinavia continues after Canute the Great, and after c. 1035 Scandinavian coins are dominated by the coinage of the Danish kings Harthacnut, Magnus the Good, and Sweyn Estridsson. The orientation towards Lund continues, and Lund coins dominate under the reigns of Magnus the Good and Sweyn Estridsson. However, in contrast to hoards in Scania and on Zealand, the hoards on Bornholm continue to be dominated by foreign coins throughout the eleventh century and probably also throughout the twelfth century (section 3.3).

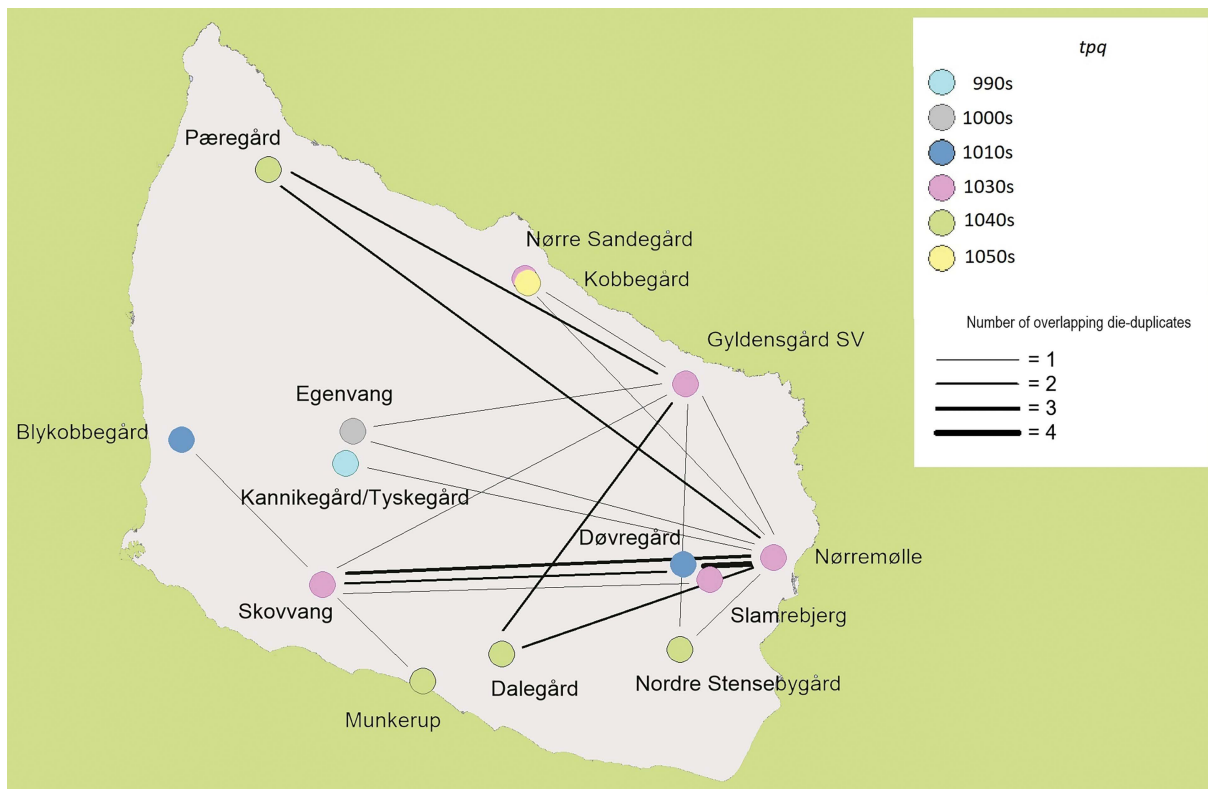


Figure 5.12 Map showing links between hoards with overlapping Anglo-Scandinavian die-duplicates (coins struck from the same sets of dies), since these are most likely contemporaneous. The map illustrates the number of different die-combinations the hoards have in common. The number of die-identical coins is not indicated.

## 5.5 Jewellery

It is more challenging to state an exact date and place of production for the uncoined silver than for the coined silver. Hence, it is not possible to use jewellery, ingots, personal objects, and scrap-silver in the same way as coins in the analysis of the production data for objects. However, the jewellery reflects certain distinctive elements which should be addressed.

It has been possible to identify in detail the production area of 261 pieces out of 476 whole and fragmented silver jewellery deposited in the hoards. Ornaments from the West Slavic area represent 58 per cent of all identified jewellery, while jewellery produced in Scandinavia (including Bornholm and Gotland) represents 17 per cent. Ornaments produced to the southeast and east of the Baltic Sea area in the eastern parts of Europe (including eastern Germany, Poland, the Baltic countries, Prussia, and the Balkans) represent 21 per cent of the jewellery. In rare cases jewellery made of gold, and perhaps also bronze, was deposited in the hoards (section 3.1.1).

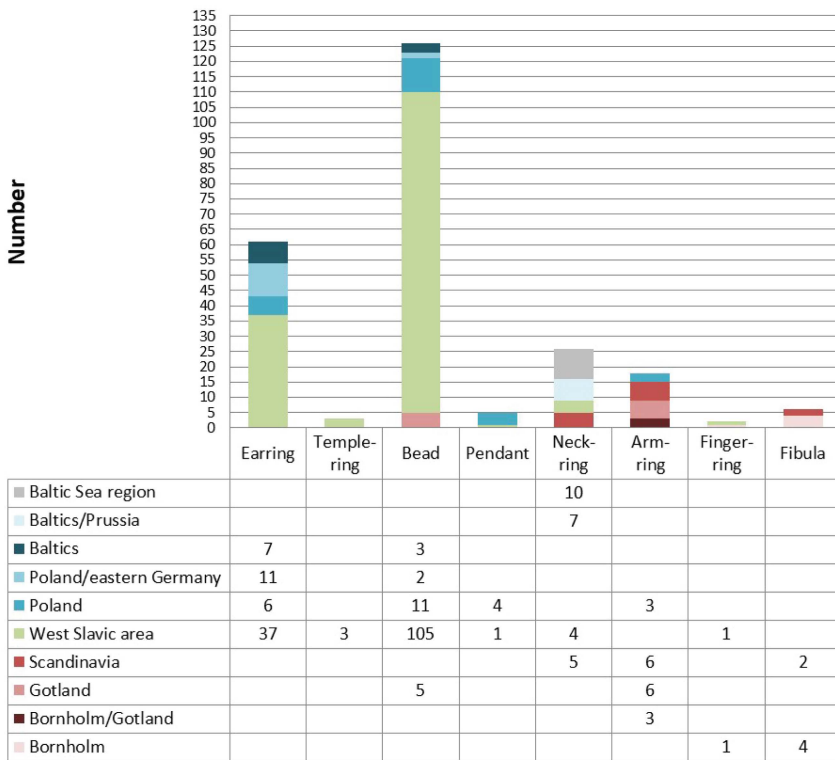


Figure 5.13 The distribution of types of jewellery according to production areas.

The types of jewellery represented from the different areas varies greatly. Beads, earrings, and, of course, temple-rings are produced above all in the West Slavic area, but there is also a marked presence of earrings and beads from the eastern regions of Europe (Figure 5.13). Scandinavian types, on the other hand, dominate the group of arm-rings. There is great variation in the production area of the relatively few identified neck-rings. A significant proportion is made up of a neck-ring type that is mainly found in the Baltic region and in areas further east. The type is also found on Gotland (Hårdh 2013, 530–531). The neck-ring type differs from the Scandinavian and West Slavic neck-rings in that the thickness of the ring body is the same all around. The endplates are elongated rhomboids and, like the Scandinavian and West Slavic types, are often decorated with stamp impressions. Unlike Scandinavian and West Slavic neck-rings, the Baltic type does not end in a fastener (Figure 5.14). The type was created as a neck-ring in the area of production but was transformed into spiral arm-rings in Scandinavian finds (Hårdh 2013, 530–531).<sup>6</sup>

An originally complete trefoil brooch and three fragments of the same brooch type (two of which probably originated from the same fragment), have been identified as a Bornholm-produced type. The complete brooch was deposited in the Buddegård hoard, and the two fragments which are probably associated are from the Kannikegærdet site (not attributed to the hoard cf. section 3.1.1). The third fragment was deposited in the Dammegård hoard. The type is found exclusively on Bornholm and must therefore be regarded as a Bornholm type (Figure 5.15).<sup>7</sup> The site analysis confirms that a foil arm-ring decorated with wave ornamentation and rosette and triangle impressions was produced at the Kannikegærdet site



*Figure 5.14* Fragments of neck-rings deposited in the Nørremølle hoard. The large fragment on the right and probably also the large fragment on the left at the bottom of the photograph are of Baltic type without a fastener. In the production area, the type was used as a neck-ring, but in the Scandinavian context it has been transformed into an arm-ring. At the top is a neck-ring fragment of a Scandinavian type with a fastener.

*Photograph:* J. Lee, National Museum of Denmark (CC-BY-SA).



*Figure 5.15* Trefoil brooch of Bornholm type from the Buddegård hoard. The brooch is now fragmentary (three pieces) but was probably complete when deposited. Fragments of a similar type of brooch have been found at Kannikegærdet and Dammegård. Find no. BMR 2306x18.

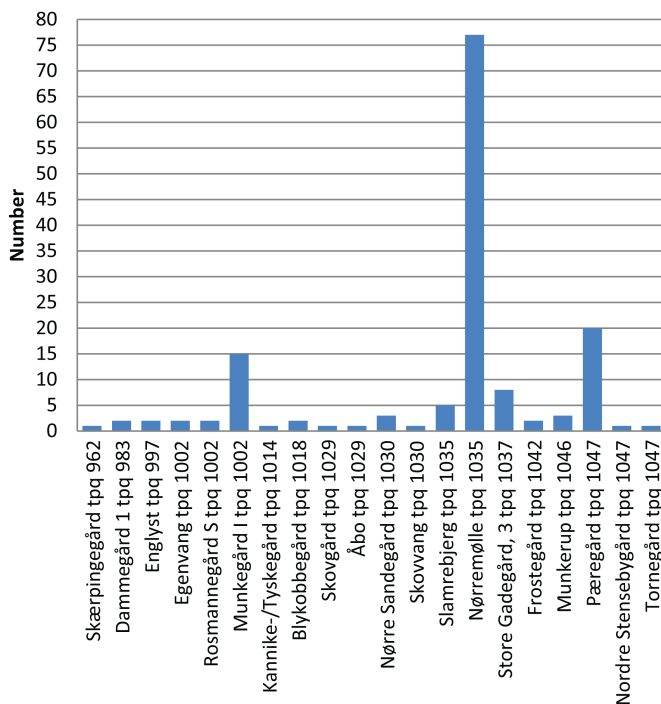
*Photographs:* R. Laursen, the Bornholm Museum.

(section 7.3.1). Fragments of arm-rings of similar shape and ornamentation are found in the Buddegård and Pæregård hoards. Foil arm-rings with wave ornamentation also occur on Gotland, and the arm-rings in question are therefore identified here as a Bornholm or Gotland type.

As stated, West Slavic jewellery is by far the largest group of ornaments in terms of numbers. However, it should be noted that the weight distribution is markedly different. The West Slavic beads usually weigh less than 1 g; by comparison, one of the Scandinavian neck-rings from Smedegård NØ weighs over 200 g. However, in line with coins which also often weigh around 1 g, the large group of West Slavic earrings and beads represents an interesting group of finds for the discussion of interactions and import events. Twenty Bornholm hoards include West Slavic jewellery. The vast majority, however, contain only one or two West Slavic beads, earrings, or temple-rings. Hence, the high proportion of West Slavic silverwork in the material is due to there being few hoards with many West Slavic silver beads and pendants (Figure 5.16). It is, above all, the coin-rich hoards of Munkegård I, Pæregård, and in particular Nørremølle, which are characterised by a large proportion of West Slavic ornaments. The Egenvang hoard, deposited 1002–1020, consists of about 60 per cent fragmented jewellery, but only two fragments were produced in the West Slavic area. Munkegård I, also deposited 1002–1020 but consisting mainly of coins, contains 15 West Slavic ornaments. There are only a few examples of imported West Slavic metalwork in the hoards of the ninth century, while the centre of gravity for imports from this region is the first half of the eleventh century.

## 5.6 Summary

The Skovsholm hoard deposited 855–900 probably reflects the oldest import phase of Viking-Age coins on Bornholm. The present material points to an isolated event. Western European coins do not appear in the Bornholm hoards until the end of



*Figure 5.16* The distribution of Slavic jewellery in the Bornholm hoards. The number of pieces of jewellery in each hoard varies greatly. The coin-rich hoards from Munkegård I, Pæregård, and above all Nørremølle stand out with large Slavic jewellery components.

the 900s. Thus, the Viking raids of the 800s which targeted the coasts of Britain and Ireland have not left any traces in the body of coin evidence. The production data of the Islamic dirhams in the Bornholm hoards reflect the ebb and flow of dirham imports to the Baltic Sea area. A decline in the 820s–840s can be linked to a decrease in mint output in the Caliphate. In the last decades of the ninth century, there is another decline – or perhaps even a cessation – in dirham imports to Bornholm. Based on hoards deposited in the Caliphate, it can be documented that the decline at this point is not linked to a decrease in production volume, but to a break in contact between the Abbasid Caliphate and the Baltic Sea region. Hence, an increase in the number of hoards with a *tpq* in the 810s and in the 860s, respectively, deposited in European contexts, does not reflect an increase in imports, but the fact that already imported dirhams circulated for a long time. The Bornholm hoards confirm this, since remarkably few coins minted 855–890 were deposited on Bornholm, while all were deposited at least 90 years after their minting date.

The vast coinage of the Samanid dynasty from 892–943 is clearly marked in the production dates of the coins, but only three hoards, Buddegård, Rabækkegård, and Skørrebro, have *tpq* dates in the first half of the 900s. The chronological profile of

the three hoards suggests that all three contain coins from the same import horizon, but that the coins were deposited at different times and in different contexts. Based on the grave goods, the Samanid hoard in the Rabækkegård grave was deposited during the first decades of the tenth century. Thus, this dates the first import event and the arrival of Samanid dirhams on Bornholm.

As in the rest of the Baltic Sea area, there is a marked decline in the number of dirhams on Bornholm after 950/960. This probably reflects an increase in imports before c. 950, but also the fact that the imported coins circulated for a long time. Both coins and written sources indicate that the Volga-Bulgarian area functioned as an intermediate station in dirham imports from the Samanid Caliphate to the Baltic Sea area. On Bornholm, Volga-Bulgarian dirham imitations also begin to appear simultaneously with the import of Samanid dirhams. The composition of hoards deposited in the Volga-Bulgarian area illustrates that Samanid dirhams were either exported or deposited relatively shortly after arrival. This confirms that dirhams were imported into the Baltic Sea area relatively soon after their minting and that they circulated here for an extended period. Gotland holds a special position, since dirhams seem to have been imported continuously at the transition between the Abbasid and Samanid dynasties. The early Samanid hoard deposited in the Rabækkegård grave may reflect a personal contact between the buried individual and Gotland in an exchange system of early Samanid dirhams. The observed decline in dirhams minted after 950/960 is unlikely to have been linked to a deterioration in silver content, since a similar decline is seen in the importation of oriental beads. Instead, the cause may be a reorganisation of the trade system in Russia, which meant that only small quantities of coin were exported onwards from Volga-Bulgaria to the Baltic Sea region. Since dirhams minted before 950 dominate circulation until around the 990s, coins must have remained in circulation for a long time.

In the 990s, German and English coins begin to dominate the hoards. With the exception of the Brandsgård hoard, with 65 Dorestad imitations, the inclusion of Western European coins is sporadic in the period c. 950–990. There does not seem to be a direct link between the end of dirham imports and that of Western European coins. It is likely that the large parcel of Dorestad imitations in the Brandsgård hoard reflects an early direct import event from Hedeby to Bornholm. An increased coin supply to Bornholm is illustrated by a marked increase in the number of hoards deposited in the 990s.

Predominant among the English coins are the Æthelred II types. The dominance of *Crux* and *Long Cross* pennies from the southern English mints suggests that most English coins struck c. 990–1020 and deposited on Bornholm were acquired through participation in the major Viking raids of the decades before and after 1000. It is likely that the English coins in the Store Frigård II hoard were acquired through participation in the raids of the 990s, while the Tyskegård coins were accumulated through participation in the 1002 raid. The Gyldensgård SV hoard reflects several phases of accumulation. The composition of English coins suggests that the coins were acquired in raids immediately before and after 1000, but the collected hoard was deposited about 30 years later. Thus, from the end of the reign of

Æthelred II, there is evidence of increased contact with eastern England, suggesting an intensification of trade contacts.

While the early English coins show conformity, an uneven composition of German coins deposited in early hoards indicates that the acquisition of German coins probably depended on private contacts and initiatives. It is possible to trace both western and southern contacts among the earliest German coins in Bornholm hoards. The find situation changes with the initiation of the vast Otto-Adelheid coinage. Already from the turn of the millennium, the Harz coins dominate the German material in the Bornholm hoards, and from the beginning of the eleventh century, the Otto-Adelheid penny is the dominant coin type. However, the jewellery suggests a continued orientation towards the southern shores of the Baltic Sea, and in the first half of the eleventh century some hoards show a marked presence of West Slavic jewellery in the form of beads and earrings.

The material reflects clear regional differences between, on the one hand, Scania and Bornholm, where *Crux* coins predominate, and, on the other hand, Zealand and Jutland, where *Long Cross* is most abundant. Common to Scania, Zealand, and Jutland is an increase in the number of English coins from around 1020, when Canute the Great assumed the throne, but this increase is not present on Bornholm. However, a clearer link to the Lund coinage than to the Sigtuna coinage can be observed from around 1020 in the Anglo-Scandinavian coins deposited on Bornholm. The trend continues after Canute the Great, when the Scandinavian coins are dominated by Danish coinage, and Lund stands ever stronger. The end of the Otto-Adelheid coinage is clearly visible in the Bornholm hoards, and from the mid-1000s there is a general decline in depositions of coins and hoards.

A consistent *tpq* dating and an unambiguous dominance of *Crux* coins in the Munkegård, Rosmannegård S, and Egenvang hoards suggest a relationship between the three depositions, and it is possible that the English coins in the hoards were accumulated during the same raid. The relationship between die-identical Anglo-Scandinavian coins in several Bornholm hoards suggests that the three northeastern sites Skovvang, Nørremølle, and Gyldensgård SV occupied central roles in an exchange system in which Skovvang alone can be related to a group of localities, while Nørremølle and Gyldensgård SV are part of a complex network of contacts. The contact between Skovvang and Nørremølle is also very strong. In contrast, the site of the slightly later Pæregård hoard in northwestern Bornholm, with an almost identical composition, does not occupy a comparable central position.

## Notes

- 1 Charts illustrating the hoards' accumulation horizons are available in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).
- 2 Arab-Sassanid drachms are coins with Sassanid motifs struck under Arab rule by the Umayyad dynasty or by the Abbasid dynasty in Tabaristan.
- 3 Find no. BMR 2320x46.
- 4 Find no. BMR 3419x1047.

- 5 English spelling of Olav.
- 6 I am grateful to Professor Emerita Birgitta Hårdh for drawing my attention to the presence of the type in the Nørremølle hoard, and for help with the identification of the type in the Egenvang hoard.
- 7 Thanks to Professor Emerita Birgitta Hårdh for discussions on the distribution of the type.

## 6 Stab, bend, and cut

### Analysis of circulation data

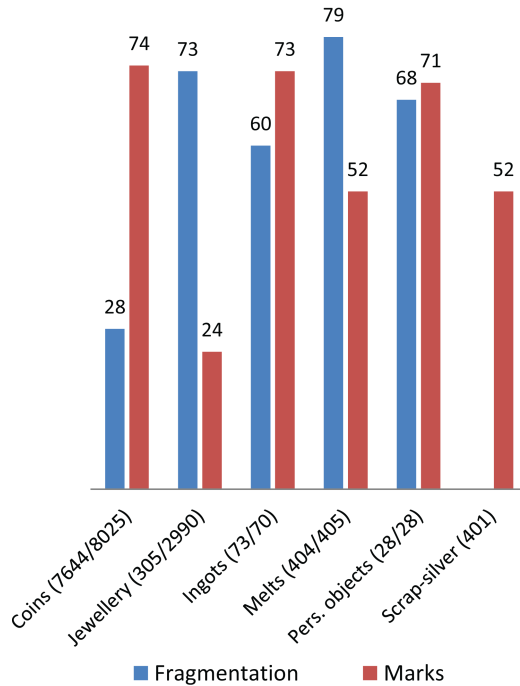
Circulation traces play a crucial role in the interpretation of the impact of hoards on the economic, social, cultural, and symbolic capital of their owners. Traces of use can reflect the actions that led to the accumulation of the hoard, and circulation data help to form an image of the relationship between the hoard and the person who deposited it. This survey takes a differentiated view on fragmented objects (cf. section 4.2). Hence, the following analysis aims to unfold profiles of circulation data on different types of objects and material groups, and to discuss traces of use in relation to the production time and origin of objects as well as time of deposition.

It is difficult to compare circulation data across artefact types because of the different characteristics of the objects. For example, while it is possible and logical to record the number of times a coin has been bent, it neither makes sense nor is possible to record the number of times a collapsed silver-foil bead was bent. Should a collapsed foil bead count as having been bent one, two, three, or more times? It is also difficult to determine whether the fragile bead was damaged deliberately or whether it is the result of having been deposited in the earth for centuries.

Two of the most common circulation traces, fragmentation and marks, can be recorded consistently across all find groups and are therefore suitable for comparison analysis of circulation data. Thus, all object groups are included and compared in the analysis of fragmentation and marks, while only a selection of types will be included in the analysis of bending, chisel marks, suspension mounts, and graffiti/scratches.

#### 6.1 Fragmentation and marks (pecks/nicks/notches)

Fragmentation and pecks/nicks/notches occur in all object categories, but there are clear differences in the extent of fragmentation and/or marking of the different object types. Among jewellery, ingots, melts, and personal objects, 60 per cent or more are fragmented, while only 28 per cent of the coins are fragmented (Figure 6.1). Depending on whether the scrap-silver is considered unidentifiable fragments or preparatory work, the fragmentation percentage will be 100 or 0, and scrap-silver is therefore excluded from the chart and analysis. The situation is different for marks, as more than 50 per cent of melts and scrap-silver and more than 70 per cent of coins, ingots, and personal objects bear marks, while only 24 per cent



*Figure 6.1* Percentage of fragmented and marked (pecks/nicks/notches) objects by find category. In addition, there are ten symbolic objects, four of which are fragmented, and one has notches. Modern breakages are not included in the analysis. In some cases, in which only a photograph was available, it has not been possible to record marks; thus, the empirical basis may vary within the same category. The numbers above the bars indicate the percentage; the empirical basis (fragmentation/marks) is provided after each find category.

of the jewellery is marked. These two anomalies, that is the small proportion of fragmented coins and the small proportion of marked jewellery, will be examined in more detail.

### 6.1.1 Fragmentation

The fragmentation rate of the hoard may depend in part on contemporary factors such as the experience of the metal detector user and the characteristics and settings of the metal detector (sections 3.1 and 4.2.1). Therefore, the earliest detected sites may hold a higher percentage of objects that have escaped the attention of the detector user, both because detector archaeology was new and untested, and because more sensitive metal detectors have been developed since 1989, when Lillegærde, the first hoard from Bornholm recovered through detector survey, was investigated. Small fragments are more difficult to detect than complete coins, and one would expect the number of fragments in the hoards to increase in step with the

improved methods of detector archaeology. However, this is not the case, because there is no immediate correlation between the year of detection and the percentage of fragments in the hoards (Figure 6.2). Thus, it may be assumed that differences in the fragmentation percentage of the hoards largely reflect actual differences. Still, with reference to the studies of the Mózgowo hoard (cf. section 4.2.1), a general underrepresentation of the smallest fragments cannot be excluded.

The purpose behind deliberately fragmenting an object may be 1) to obtain a particular weight unit in connection with a transaction; 2) as part of a transformation process in connection with silversmithing; 3) an action performed in the context of ‘sealing a deal’; or, 4) to ritually destroy the object (section 2.1).

Coins were rarely fragmented in connection with transactions in a metal-weight economy, possibly because it was unnecessary due to their low weight. The low fragmentation rate of coins may also be due to 1) the introduction of a coin-economy system; 2) coins being only marginally involved in a transformation process, or fragmentation being unnecessary in the transformation process, again given the small size of coins; 3) fragmentation being only used in transactions in Eastern Europe, and it therefore stopped with the importation of Western European coins (cf. Jankowiak 2019); 4) coins being either not used in ritual deposits or not fragmented in ritual deposits (section 2.1).

The fragmentation rate varies markedly within the largest coin groups in the Bornholm hoards. More than half of the coins are fragmented among Islamic, Islamic imitation, and Bohemian coins, while the proportion of fragmented coins among Polish, German, English, and Scandinavian coins ranges from 8 per cent to 24 per cent (Figure 6.3). The Islamic dirhams are significantly larger and heavier than Western European pennies, and the difference may therefore be due to the fact that Western European coins were less likely to be fragmented in weight-economy transactions or in transformation processes. Bohemian coins are roughly the same weight as Western European coins, which argues against this interpretation. Beads are among the largest subgroup in the jewellery material. The majority are foil beads, which like Western European coins have a low weight. More than 80 per cent of the beads are fragmented; this indicates that the low fragmentation rate among Western European coins is not exclusively related to the low initial weight (Figure 6.4).

The observed differences can probably be attributed in part to chronology. Hence, Islamic dirhams and imitations of the same are the oldest coin groups. The same applies to Bohemian coins: 40 out of 64 coins have *tpq* dates before 1000, while, for example, only 14 out of 82 Polish coins have *tpq* dates before 1000. The very low fragmentation rate among Polish coins, the majority of which were struck after the year 1000, argues against the idea that fragmentation of coins in Eastern Europe occurred to seal a deal, whereas this was not the case for Western European coins, as suggested by Jankowiak (Jankowiak 2019, 24–29). Jankowiak argues that fragmentation of dirhams occurred during the import phase and not in the deposit area. Part of his argument is that dirhams with long circulation periods are fragmented to the same degree as dirhams with short circulation periods (Jankowiak 2019, 24–27) (section 2.1). This is not evident in the Bornholm

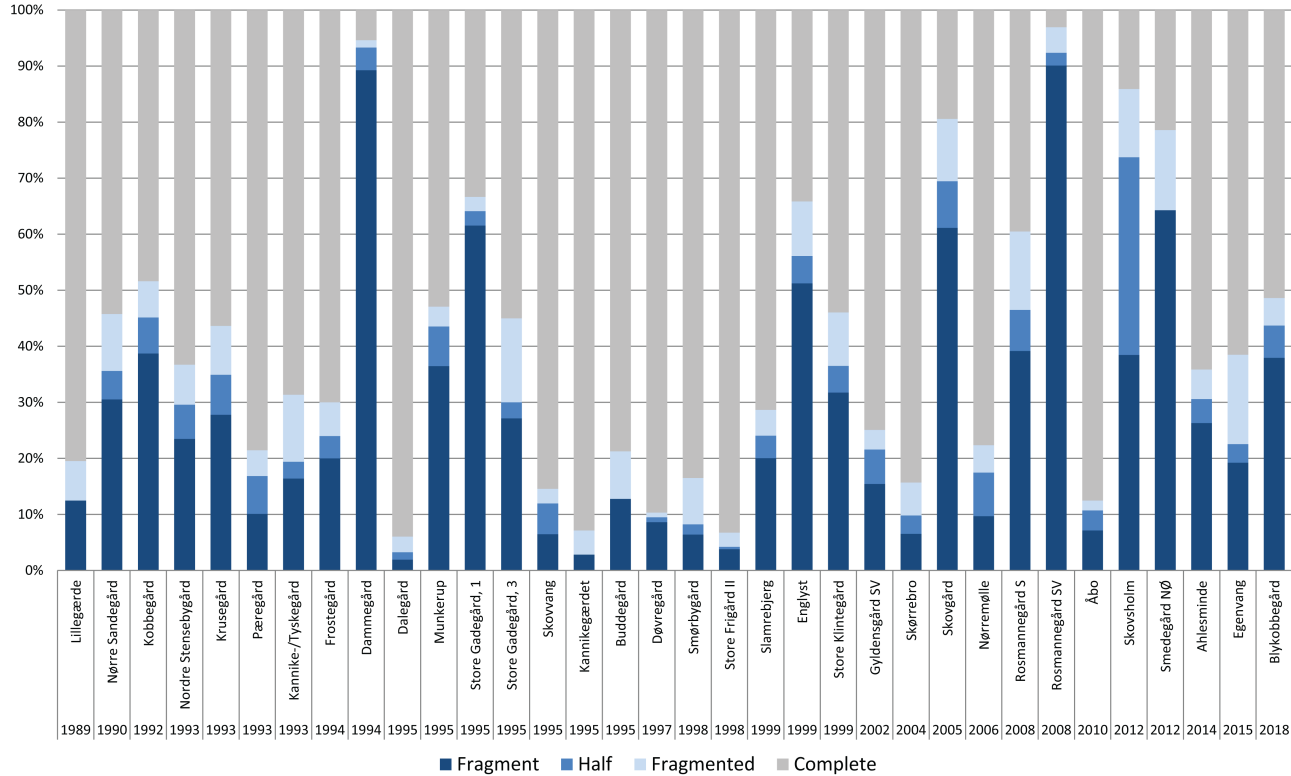
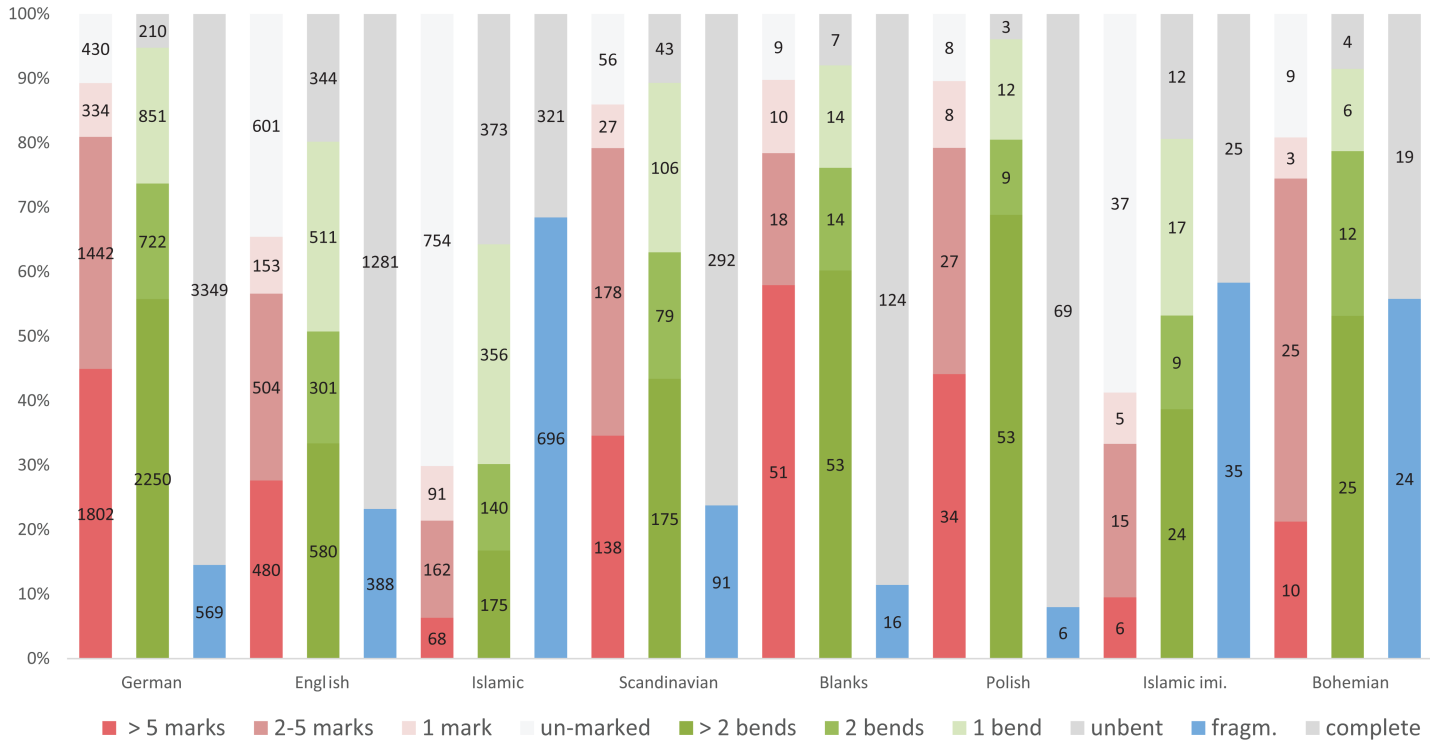


Figure 6.2 The percentage of fragmented coins in the hoards. The hoards are organised by year of discovery (indicated in the bottom row). The proportion of fragmented coins cannot be linked to the year of discovery, suggesting that the degree of fragmentation in the hoards largely reflects the actual conditions.



*Figure 6.3* The proportion of marked, bent, and fragmented coins varies within each coin group. The high fragmentation rate among Islamic, Islamic imitation, and Bohemian coins is striking, compared to German, English, and Polish coins. Equally striking is the low proportion of Islamic, Islamic imitation, and English coins with marks, compared with German, Scandinavian, and Polish coins, up to 90 per cent of which bear marks. Numbers indicate the total number of objects.

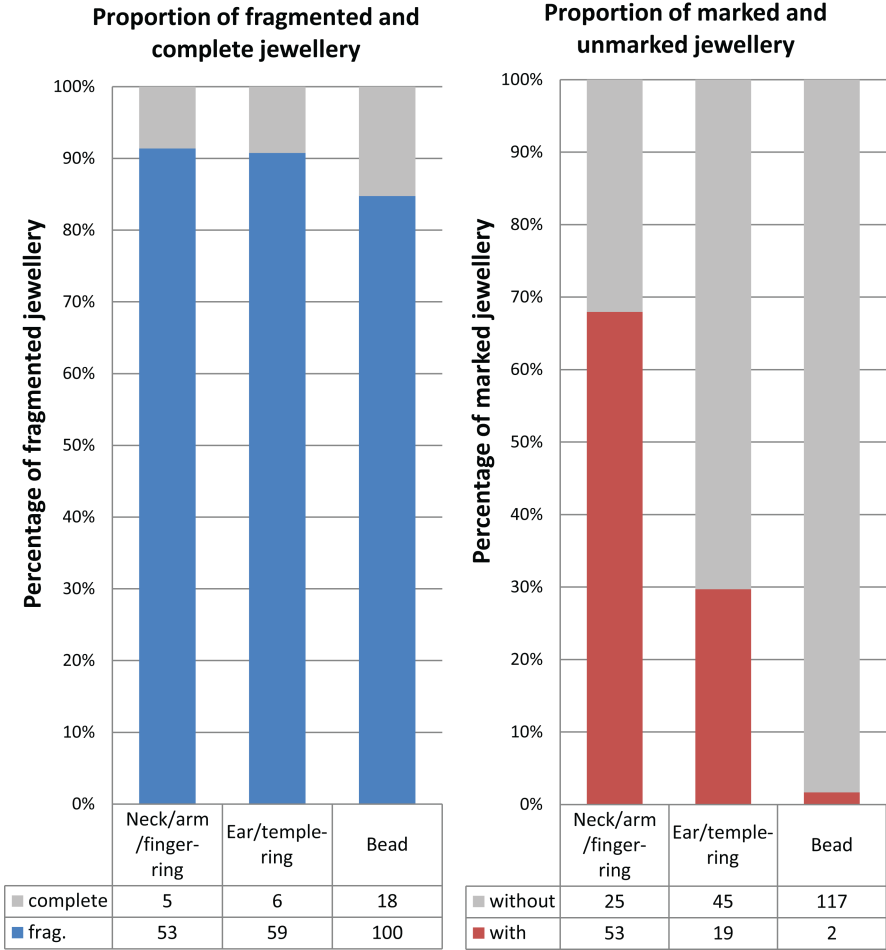
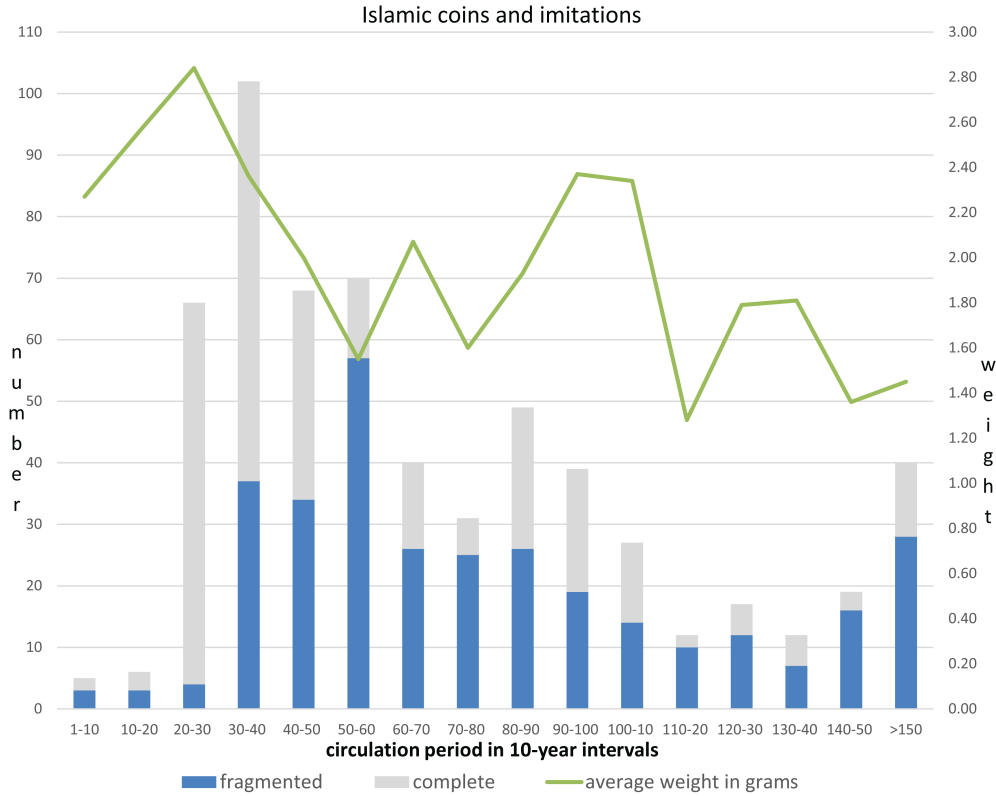


Figure 6.4 There are very few examples of complete jewellery in the Bornholm hoards. More than 80 per cent of the jewellery within the three main jewellery groups is fragmented. The proportion of marked jewellery varies within the categories. The low proportion of marked beads is probably due to their fragile nature, since it does not make practical sense to add marks to foil silver.

material, where there is a tendency for the average weight of dirhams to decrease over time (Figure 6.5). There are large fluctuations in the material, which may be due to the significant imprint of individual hoards. The individual imprints are clearly illustrated by analysing the degree of fragmentation in relation to the time of hoard deposition. The two dirham hoards, Skørrebrogård and Buddegård, deposited 939–990 and 947–990, have a very low fragmentation percentage among coins, while the dirham hoards Dammegård and Kannikegærde, both deposited in the transitional phase 990–1000/1005, have a high and a low fragmentation percentage,



*Figure 6.5* The circulation period for dirhams (503 coins) is calculated as the difference between the time of minting and the estimated time of deposition in the hoards. There is a clear tendency for the degree of fragmentation among dirhams to increase the longer the coin has been in circulation. However, the material displays large variations over time, which must be attributed to the ‘personal’ imprint of individual hoards.

respectively. Finally, the Skovgård and Åbo hoards deposited 1029–1040, consisting primarily of Western European coins, have a high and a low fragmentation percentage among the coins, respectively. The examples show that the fragmentation of coins should not be interpreted from a chronological perspective alone. The diverging fragmentation percentages in hoards with similar deposition horizons suggest that the fragmentation percentage is related to the function of the hoards.

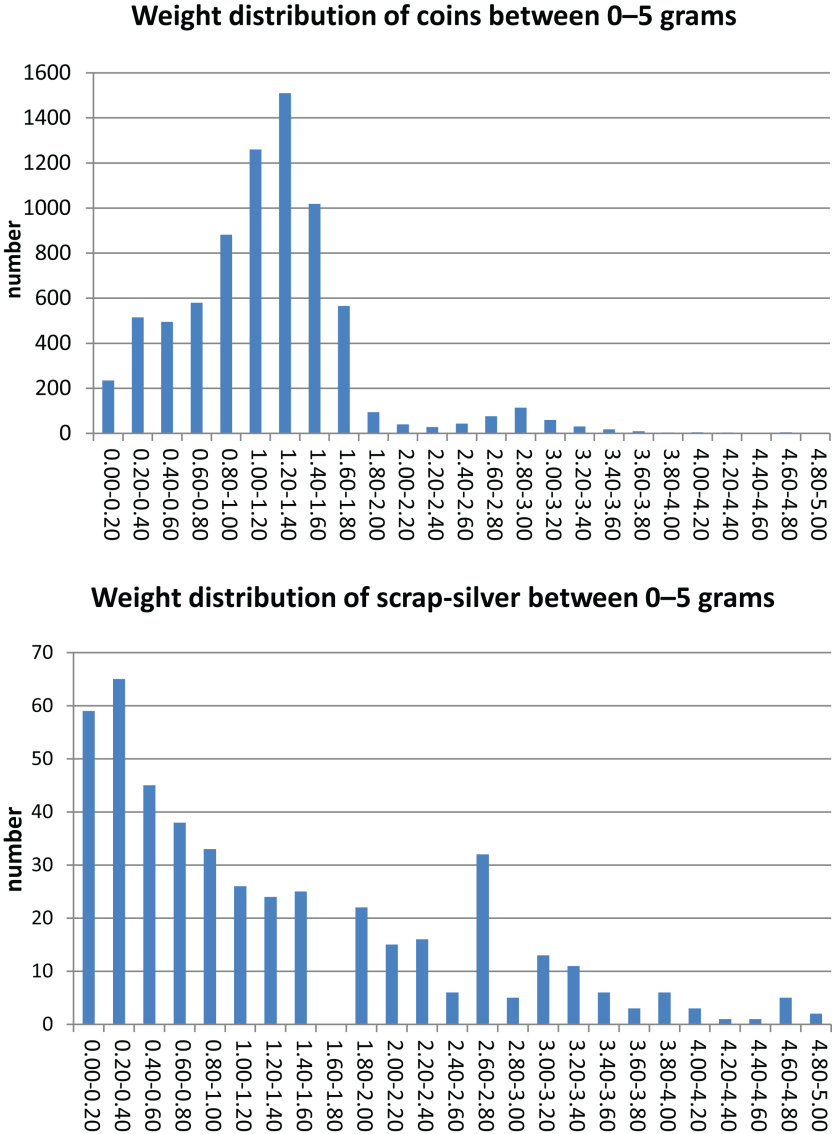
The other object groups show that the need for dividing silver into small units continued, despite a lower fragmentation rate among the more recent Western European coins than the older Eastern European coins. Thus, scrap-silver, predominantly consisting of very small pieces of silver, first appears in the transitional phase from 990–1000/1005. In addition, ingots are largely replaced by melts in the first decades of the 1000s (cf. section 3.3), and the high fragmentation rate of melts confirms that the need for fragmented silver continued after 1000. This suggests a continuing weight economy.

The weight distributions of coins and scrap-silver reveal two very different, almost complementary, profiles. The scrap-silver is grouped in either lower or higher weight units than the main weight groups of coins 0.80–1.60 g (Figure 6.6). This suggests that coins and scrap-silver were part of a shared weight system, in which fragmentation of coins was largely avoided. Complete coins had a potential dual use, since they could function both in areas with a weight economy and in areas with a coin economy. By avoiding fragmentation, the full potential of the coin was preserved. The fact that the coins are largely preserved whole suggests that the Bornholm people were aware that complete coins were necessary or advantageous for trade in other areas where coin economy prevailed, although the fragmented material clearly shows that the Bornholm people also practised a weight economy. It can be concluded that coins, both Western and Eastern European, were in some situations deliberately preserved and deposited complete, while in other situations coins were fragmented and deposited. This aspect will be discussed in relation to the deposition contexts and events of the hoards in section 7.1.1.

### **6.1.2 Marks**

Apart from jewellery and symbolic objects, 50 per cent or more of the objects within each find group bear either pecks, nicks, and/or notches. The percentages of marked objects are as follows: coins 74 per cent; ingots 73 per cent; personal objects 71 per cent; melts and scrap-silver 52 per cent; and jewellery 24 per cent. In addition, one of the ten symbolic objects has notches. Marks are clearly not limited to coins, but were a phenomenon common to all forms of silver (and gold, see the following), at least on Bornholm. The widespread use of marks on all types of objects suggests that marks were applied during transactions, either to test the silver quality or as a ritualised sealing of the deal. Thus, the low proportion of marked jewellery may reflect that jewellery was largely not exchanged, or that jewellery was not tested for silver quality.

The distribution of marks within jewellery types poses a third possible interpretation (Ingvardson 2019, 34–35). The three main jewellery types are neck/arm/



*Figure 6.6* The complementary weight distribution of coins and scrap-silver suggests that coins and scrap-silver were part of a shared weight system, in which coins were preferably not fragmented. Please note the large difference in the empirical basis: 7,587 coins and 462 pieces of scrap-silver are included in the chart.

finger-rings, ear/temple-rings, and beads. The three groups exhibit different characteristics. Neck/arm/finger-rings often consist of solid end plates and/or ring bodies made of heavy wire or rods, while nearly all the beads are light foil beads. The low proportion of marked jewellery is ascribed to ear/temple-rings and particularly beads. While almost 70 per cent of neck/arm/finger-rings are marked in line with other object groups, almost all beads are unmarked (Figure 6.4). Notches are made by cutting a silver edge, which requires a certain silver mass not found in foil beads. Pecks and nicks are produced by stabbing or scratching the silver, and the very thin foil beads would puncture or crack if this were attempted. Hence, if the purpose was to test the silver quality, the methods are not suited to thin foil. This suggests that silver was marked precisely with the purpose of testing silver quality. If the silver was marked as a ritualised sealing of a deal one would also expect marks on foil beads. The argument is strengthened by the fact that when ear/temple-rings are marked, the marks were not placed on the beads but on the hoop, which is the most solid part of the earring (Ingvardson 2012, 21) (Figure 6.7).

The distribution of marks on different coin groups adds an interesting element to the discussion of whether pecks, nicks, and notches were applied in order to test the silver quality or as a ritualised act to complete a transaction. Islamic coins and imitations of the same have a significantly lower proportion of coins with marks than the other coin groups. The reason is that dirhams are primarily dated before 890–925, when the phenomenon of pecks emerges (section 4.2). The chance of finding a mark on a coin fragment is, all other things being equal, reduced proportionally with the size of the coin fragment; the picture may therefore be reinforced by the fact that a high proportion of Islamic coins are fragmented (Figure 6.3). The marks found on Islamic coins are mainly nicks, which are in turn rare on the other coin groups. Thus, the Bornholm hoards confirm the prevailing interpretation that nicks are an early and eastern phenomenon (section 4.2.2). Excluding English coins, 80–90 per cent of the coins in the other coin groups bear one or more marks. English coins differ markedly from this, because only 65 per cent bear



*Figure 6.7* The temple-ring from the Egenvang hoard is sprinkled with marks. This is perhaps partly because the temple-ring is produced of a solid silver rod. In contrast, the thin foil beads in Figure 4.2 are unmarked. Find no. BMR 3836x128.

*Photograph:* R. Laursen, the Bornholm Museum.

marks (Figure 6.3). The high proportion of German coins with marks shows that the discrepancy is not due to differences in the treatment of Eastern and Western European coins, nor is it due to chronological reasons. This suggests that the difference is caused by the appearance of the coins. The English coins can be described as a homogeneous group of well-minted coins, while the myriad German mint authorities resulted in the German coins appearing as a heterogeneous group of varying quality.

As Galster poetically expresses in the publication of the Store Frigård II hoard:

Agreeable it is to shift from the motley mixture of German coins to the uniform and clear character of English coins.

(Galster 1929, 290 – translation by the author)

The Scandinavian coins have the same heterogeneous appearance, and the copies of English coin motifs can be original. The difference in the proportion of marks may be due to a greater trust in the silver quality of English coins, whereas the Vikings found it necessary to test the quality of German and Scandinavian coins more often. This is confirmed by the group of anonymous blanks, which is characterised by a high proportion of blanks with many pecks. Similarly, the relatively rare Polish and Bohemian coins, which for many were probably unrecognisable, also have a high proportion of test marks. If the argument is accepted, the low proportion of marked English coins means that marks were made for the purpose of testing silver quality. That the marks were not applied specifically to detect plated forgeries is shown by the 485 coins on which notches were applied to the fragmented edge.

The relatively low proportion of marked English coins may also be due to differences in acquisition. As discussed in section 4.2.2, the number of marks cannot be equated with the number of transactions, since multiple marks may have been applied in the same transaction. However, other things being equal, the likelihood of an object being marked must increase with the number of times the item changed hands, whether marks were to test silver quality or to conclude a deal. The low proportion of marked English coins may also be due to the fact that English coins were deposited after few transactions. This suggests that the journey from production to deposition was more direct for English coins than for German coins. This correlates with the interpretation of the Tyskegård and Store Frigård II hoards, where the owners of the hoards acquired the coins by participating in Viking raids on the coasts of Britain. This would mean they were imported directly from Britain to Bornholm (cf. section 5.2). Thus, the proportion and extent of marked objects may reflect the owner's familiarity with and trust in individual find types, as well as the accumulation processes.

### **6.1.3 *Did marked objects change function?***

It may be relatively simple to decode whether an object changes function through fragmentation, e.g. a fragmented neck-ring losing its potential function as a social

marker. However, it is more challenging to interpret the influence of marks on an object's function. Did the addition of pecks to a finger-ring mean that it changed value and function? This question will be discussed based on complete jewellery and symbolic objects. Jewellery differs from the other types of objects because it was essentially created to be worn visibly, thus openly demonstrating the economic, social, cultural, and/or symbolic capital of its owner. Complete coins with pendants hold the same properties. As long as the coin was complete, it could potentially be used as jewellery or as an amulet. The deposition of reworked coins in hoards does not necessarily mean that the coins changed function from jewellery or amulet to currency or raw material. Thus, a complete example of coin-jewellery contains the same duality as other forms of complete jewellery and is treated as such in the analysis. The focus here is exclusively on marks, while questions relating to coin types and suspension are discussed in section 6.4. Beads are excluded from the analysis, since the low proportion of marks on beads is attributed to their physical features (section 6.1.2). Symbolic objects are not necessarily created to be worn visibly but contain an additional ritual dimension that can shed light on the status of marked objects.

Complete coins with pendants (coin-jewellery) in the Bornholm hoards are neither more nor less marked than coins in general. It is difficult to determine whether the marks were applied to the coin before or after it was reworked. According to Audy, it is possible to discern whether marks were applied before or after a transformation based on the coin-jewellery deposited in graves. Because the coins have not been returned to circulation, Audy suggests that the marks must have been applied before the coin was converted into jewellery. More than 50 per cent of the grave coins in Audy's analysis are without marks. Audy argues that this shows that the coins had not circulated long before being taken out of circulation and converted into jewellery (2018, 158). The argument is based on the assumption that coin jewellery did not circulate and was not marked during transactions. However, as is clear from this study, jewellery was also marked. Thus, the coin jewellery in graves does not demonstrate whether the coins were marked before or after the transformation: they only document that coins with pendants and marks functioned as jewellery or amulets deposited in graves.

Audy demonstrates that Byzantine coins with pendants deposited in graves are less marked than similar coins deposited in hoards, and he concludes that the latter were probably tested after they changed function from jewellery to currency (2018, 158). This is an interesting observation in relation to the influence of marks on the function of objects. On the other hand, Audy highlights the fact that in some cases, coin-jewellery bears many marks. This occurs particularly in remote areas where access to coins was limited (2018, 158). People had no choice but to use marked coin-jewellery, or to transform marked coins into jewellery. This suggests that marks reduced the value of coin-jewellery as jewellery.

There are noticeably few complete items of jewellery in the well-documented and partly documented hoards (cf. section 1.2.2. for definition). Eleven partly available hoards include complete jewellery (catalogue: 3, 11, 14, 19, 22, 28, 30, 35, 40, 43, and 45). The complete jewellery from partly available hoards has

not been included in the analysis, since the ornaments were not physically available for the study of circulation data. The limited material makes it difficult to draw general conclusions. However, certain trends need to be addressed in more detail. While almost 70 per cent of the total number of neck-rings, arm-rings, and finger-rings are marked, only one finger-ring out of ten complete neck/arm/finger-rings bears marks (Figure 6.4). There seems to be a tendency for complete rings to be less marked than fragmented rings. This tendency is significantly weakened by the fact that seven out of ten whole rings derive from the Smedegård NØ hoard. The few marks may also be due to the fact that the Smedegård NØ hoard was deposited in the mid-twelfth century (section 3.3). The marked ring is found in the Ahlesminde hoard, which consists entirely of coins, two square plates which have the character of square coin blanks, the finger-ring, which is of gold, and a dragon-head-shaped buckle (Figure 3.2). Thus, it is a pure coin hoard, with two personal objects that were probably worn by the owner of the hoard (section 3.1.1). This suggests that the marks did not destroy the ring's importance as a social and/or status marker, since it was probably worn with visible marks.

There are six complete earrings deposited in the Bornholm hoards. Of these, two pairs of earrings were found *in situ* in the Pæregård hoard (Figure 6.8). The four earrings are without marks. The last two complete earrings are marked and represent two different types deposited in the Nørremølle hoard. The remains of the matching pair of the set of earrings are among the fragmented silver of the hoard (Ingvardson 2012, figure 6.5). That the earrings were not preserved in sets indicates that the complete earrings were not saved for their value as jewellery (Ingvardson 2012, 8). The different treatment of the earrings in relation to fragmentation and marks in the Pæregård and Nørremølle hoards, respectively, may reflect a difference in function of the earrings for the owners of the two hoards. In the Nørremølle hoard the fragmentation of earrings demonstrates the fact that it was of secondary importance whether the earrings were kept as a set in a transaction. The earrings changed their significance from jewellery to raw material or means of payment, and they may also have been marked in the process. In the Pæregård hoard the earrings are complete and unmarked. The original appearance of the earrings has been preserved, and they could continue to function as a set of jewellery. Here the earrings were not marked. For aesthetic reasons, the marks may have been perceived as reducing the value of the earrings as jewellery. Thus, the earrings in the Pæregård hoard, like the gold ring and belt buckle in the Ahlesminde hoard, can be interpreted as personal objects that could be withdrawn from the hoarded context and worn by the hoard's owner on special occasions.

One out of four Thor's hammer ornaments is marked.<sup>1</sup> The ornamented Thor's hammer from Nørre Sandegård bears a mark at the bottom of the axe on one side, and three marks along the shaft on the other side, and finally the hammer's suspension ring bears four marks (Figure 6.9). The marks on the hammer are placed discreetly, indicating that the aim was not to disturb the hammer's expression. However, marks are placed on both sides of the hammer, indicating that no attempt



*Figure 6.8* Two sets of earrings are deposited in the Pæregård hoard. The sets were kept together, and they are complete and unmarked. This may reflect the intention to preserve the function of the earrings as jewellery. One earring has been deposited with an additional bead attached to the hoop. Thus, in its present state, it cannot be used as an earring. However, the bead can easily be removed again. Finds nos. National Museum Dnf 72–75/1993.

*Photographs:* R. Laursen, the Bornholm Museum.

was made to conceal the marks. The grouping of the marks probably reflects three events in which the Thor's hammer was assigned marks in connection with transactions – three 'test actions' according to Kilger (2003). The events reflect different people with potentially different motivations for disposing of and acquiring the Thor's hammer. At the first event, the intention was perhaps to preserve and/or respect the symbolic and ritual significance of the Thor's hammer through the



*Figure 6.9* Thor's hammer from the Nørre Sandegård hoard. The hammer appears to have received marks on three occasions: on the ring, the front, and the back. The scratches on the hammer are interpreted as modern. Find no. BMR 1853x188.

*Photographs:* R. Laursen, the Bornholm Museum.

deliberate placement of the marks on the suspension ring. In the second transaction, the marks were placed on the back for aesthetic reasons, while in the third event it was of no importance whether the marks could be seen when the Thor's hammer was worn. Thus, the placement of the marks may reflect the changing importance of the object to different people.

A square silver plate measuring approximately 2 x 2 cm with a circular hole in one corner and a suspension ring formed by two twisted threads is one of four complete pendants deposited in the hoards (Figure 6.10). The plate was found in the Blykobbegård hoard. The significance of the plate is uncertain. It is similar in size to the square blanks on which Anglo-Scandinavian coins were sometimes struck in Sigtuna, and it is similar in shape to the two square plates in the Ahlesminde hoard. Two similar plates are also found in the Blykobbegård hoard. It is unusual to select coin blanks for coin-jewellery (Audy 2018, table 2.3, 59), and none of the other 140 blanks in the Bornholm hoards have provisions made for suspension



*Figure 6.10* Pierced and suspended square silver plate from the Blykobbegård hoard (top). The plate may be an amulet, and is similar in shape and design to a runic example from the Englyst hoard (bottom), which can be interpreted as a maternity amulet. Find no. BMR 3890x216, BMR 2320x17.

*Photographs:* R. Laursen, the Bornholms Museum.

(section 6.4). The simple form is far removed from the often very ornate jewellery inventory of the Viking Age. Perhaps the plate is a form of weight adjustment along the lines of the plane rings with twisted clasps placed on arm-rings found in many hoards (see e.g. the Rømersdal hoard, Skovmand 1942, 130–131). The square plate may also be an amulet. In shape and design, it is very similar to the rune amulet from the Englyst site (Figure 6.10). The runes on the Englyst plate are carved in a spiral, moving from the corner around the hole towards the centre (Steenholt Olesen 2010, 161–176). The runes are aligned with the space between the perforation and the edge of the amulet, indicating that the runic inscription was carved into the approximately 2 x 2.2 cm plate after the circular hole was added. The two objects may have started life with the same physical conditions as square silver plates with holes. Runes were at one point carved into the Englyst plate, and the written word added a magical/protective meaning to the plate (Imer 2019, 195).

Exciting new research shows that the Englyst plate can be interpreted as a maternity amulet (Imer 2021, 32–33). Both the inscription and the spiral-shaped inscription find parallels in a thirteenth- or early fourteenth-century British manuscript which describes how a lead amulet should be designed to help and protect an expecting mother and her child (Imer 2021, 32–33). The description states that

the amulet should be wrapped in cloth or leather and hung around the woman's neck during pregnancy but removed soon after birth to avoid disease (Hindley 2019, 369).

After birth, the carved plate had served its purpose and was discarded as an amulet. The two plates differ significantly in terms of marks. The Englyst plate does not bear marks (Figure 6.10). This may be due to the fact that the maternity amulet was deposited shortly after its owner had given birth. The Englyst plate was probably deposited in the hoard. It was found 18 m to the north in the present ploughing direction of the hoard's primary distribution area. Thus, the plate changed function from maternity amulet to currency or raw material after it had fulfilled its very specific purpose of protecting mother and child. The lack of marks suggests that the carved runes still had a symbolic meaning, because marks were not added. On the contrary, the Blykobbegård plate is dotted with pecks (Figure 6.10). It cannot be determined with certainty whether the marks were added before or after piercing. The pecks almost cover the surface of the plate, but are not found in the area around the hole, indicating that the marks were added after the piercing. If it were an amulet, the pecks did not have a negative impact on its value or importance, judging by the extensive pecking. One might even be tempted to interpret the many pecks as a ritualised practice associated with the amulet. The other square plates (without holes), like the blanks, generally have many pecks (Figure 6.3).

To conclude, complete coins with suspensions deposited in hoards are marked to the same degree as similar coins without suspensions. The difference between the intact earring sets in the Pæregård hoard, which are not marked, and the split earring set in the Nørremølle hoard, which are marked, suggests that marks reduced the value of the jewellery in aesthetic terms. There is also a tendency for symbolic objects not to have been marked.

## 6.2 Bending

Bending is difficult to record systematically in find-groups other than coins. Hence, the analysis focuses on an overall discussion of the coin material, followed by a study of selected object types and forms. The bending of an object can represent an economic action to test the silver's quality, or can be ritually motivated (cf. section 4.2.3). The aim of the analysis is to investigate whether it is possible to decode the motivation behind the bending. The study consists of a quantitative analysis investigating the number of bends per coin type, and a qualitative analysis, in which the nature of individual bends will be examined in detail.

The number of bends per coin group is almost identical to the distribution of the number of marks. However, the ratio of bent coins within each coin group is higher than the ratio of marked coins. This makes bending the most common type of circulation trace on coins. Thus, with the exception of English (65 per cent bent) and Islamic coins (30 per cent bent), including Islamic imitations (41 per cent bent), 90 per cent or more are bent within the other coin groups. The

uniform distribution suggests that marks and bends served the same purpose, confirming a link between the two kinds of secondary feature. Again, English coins are characterised by a lower proportion of bent coins and a higher proportion of coins with only one bend compared to the other Western European coins. This, together with the relatively few marks on English coins, probably indicates that English coins were a familiar and trusted currency and/or that English coins came to Bornholm via a more direct route than the other Western European coins (section 5.2). Among the bent Islamic coins, a large proportion are also only bent once. This is probably not due to being directly imported (section 5.3), but rather to the fact that a high proportion of the Islamic coins are fragmented into small pieces (Figure 6.3).

Special types of bends such as folded coins, perpendicular bends, U-shaped, and rolled coins have been recorded. Twenty-one hoards contain one or more of these special types of bending (Table 6.1). The general picture is that each

*Table 6.1* Number and distribution of coins with special types of bending.

	<i>Folded</i>	<i>Perpendicular</i>	<i>Rolled</i>	<i>U-shaped</i>
Blykobbegård	1			
Dalegård	2			
Dammegård			1 (partly)	
Egenvang		1		1
Gyldensgård SV	1			
Kobbegård	1			
Munkerup		1		
Nørremølle	1			1
Nørre Sandegård	1	1	2	
Pæregård			1	
Rosmannegård S			1 (partly)	
Rosmannegård SV		1		
Skovgård				
Skovsholm	1			
Skørrebro	1	1		
Slamrebjerg			1	
Smedegård NØ	1			
Smørbygård	1			
Store Frigård II	7	11	1	
Store Klintegård	4		1	
Tyskegård		18		

hoard contains a few examples of either one or several of these special types of bends. The Tyskegård and Store Frigård II hoards differ markedly from this trend.

In the Tyskegård hoard, 18 of the seemingly newly minted coins are bent at the same angle, probably reflecting that one person bent a sample of coins on one occasion, perhaps at the transfer of a Danegeld payment. The *Crux* coins in the Store Frigård II hoard are also interpreted as Danegeld payment (section 5.2). As in the Tyskegård hoard, few of the coins of the Store Frigård II hoard bear marks. Unlike the Tyskegård hoard, a complicated picture of coin bending emerges. During the registration of the Store Frigård II hoard, it became apparent that a large proportion of the coins were bent in the same unusual way. Hence, the edges of 36 coins were bent at a specific angle (Figure 6.11). The uniform, but unusual, bends suggest that the same person performed the bending. This particular type of bend is not only found on the *Crux* coins, which were presumably acquired as Danegeld, but is also seen on two Scandinavian *Crux* imitations and three German coins. Thus, the bending was probably not conducted at a single event, and can be interpreted as one person's special way of handling coins in transactions – a 'signature bend'. In addition to the special signature bend, 11 coins are bent perpendicularly and seven are folded (of which one coin both is folded and has a perpendicular bend) (Figure 6.11).

The special bending types – signature bends, folded coins, and perpendicular bends – are distributed within the largest coins groups in the Store Frigård II hoard (Figure 6.12). The question stands as to why three different bending types are used. Perhaps three people, each with their own personal method, tested a selection of coins in the transaction, or perhaps one person used three different methods in the same transaction. In addition to the English coins in the hoard, there is a small element of German coins. Among them is a group of nine coins from the Friesland-Utrecht area, seven of which are of the same type. The group shows the same bending pattern as the English coins (Figure 6.12). This indicates that the same person bent the



*Figure 6.11* Three English *Crux* pennies of Æthelred II from the Store Frigård II hoard with three different types of bends. The hoard includes 36 coins which were bent at the edge, like the coin on the left, producing a distinct angle – a signature bend. Similarly, like the coin on the right, 11 coins have a perpendicular bend. Seven coins were folded like the coin in the centre. Finds nos. BMR 1711x360, x364, and x392.

*Photographs:* R. Laursen, the Bornholm Museum.

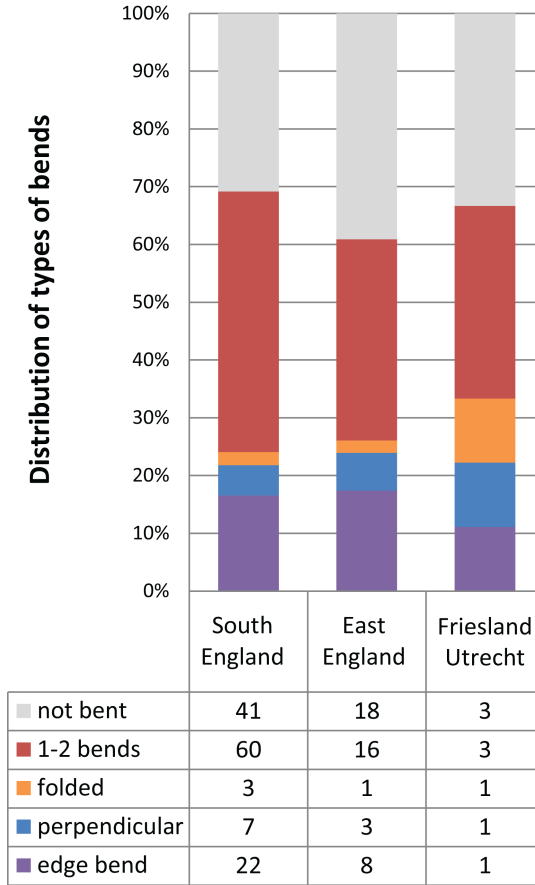


Figure 6.12 The distribution of types of bends by production area among the coins in the Store Frigård II hoard. A selection of coins within each production area are bent with the special signature bend ('edge bend'), folded, and perpendicular bend.

coins in three different ways. The uniform approach suggests a ritualised action at each major transaction, when a certain proportion of coins were tested with the signature bend, while a few coins had to be folded and angled. Of course, it may also reflect a thorough test of the silver's purity, using several different methods to ensure that the silver was of the right quality. The accumulation of coins from mints in southern England and eastern England (the Danelaw) may represent two different spheres of contact, with southern English mints reflecting Danegeld and eastern English mints reflecting trade contacts (section 5.2). The almost identical pattern in the distribution of the special bends within the southern English and eastern English



*Figure 6.13* Fragment of arm- or neck-ring deposited in the Egenvang hoard. The folded fragment has numerous notches along the edge of the jewellery, suggesting that the object functioned as raw material and/or means of payment at the time of deposition. Find no. BMR 3836x13.

*Photograph:* R. Laursen, the Bornholm Museum.

coins, respectively, suggests that the coins were accumulated in two separate transactions in which the particular bending procedure was used.

In the Dalegård hoard, an Æthelred II *Long Cross* coin is folded around another coin that is unfortunately fragmented (in recent times) and cannot be identified. In medieval English contexts, folded coins, including coins folded around other coins, are associated with the ritual practice of folding a coin to cure illness (Kelleher 2018, 78–82). The coin in the Dalegård hoard is the only example of a coin folded around another coin in the Bornholm hoards. Thus, a widespread ritual practice does not seem to be involved. Another possibility is that the two coins were joined to adjust the weight in a transaction. Something similar may be the case in the Egenvang hoard, wherein a flat ingot is bent around a piece of foil or a piece of jewellery.

Many pieces of jewellery are bent and twisted, but only two are folded. One is a fragment of a neck/arm-ring from the Egenvang hoard. Both the fragmentation and numerous notches along the edge suggest that the jewellery fragment was deposited as currency or raw material (Figure 6.13). The second piece of jewellery is a trefoil brooch from Buddegård. The jewellery is now in three parts, but can be assembled into a complete brooch and was probably complete when deposited. One end of the brooch is bent over at the back (Figure 5.15). Part of the hoard is interpreted as a jewellery set including the brooch. Bending destroyed the object's function as jewellery, indicating a ritual action in connection with the deposit (section 7.2.4).

It can be concluded that bending in general seems to be associated with marks, and bends and marks probably served the same purpose: to test the silver quality. In some cases, particular signature bends may reflect the handling of silver by individuals at accumulation events, as illustrated by the Store Frigård II hoard. It is likely that the trefoil brooch in the Buddegård hoard represents

an example of how bending was used as a form of ritual destruction through deposition.

### 6.3 Scratches and chisel marks

A large number of the silver objects bear scratches, but it is often not possible to determine whether the scratches represent deliberate actions or post-deposition and recovery processes. Deep scratches are an exception, and probably represent deliberate actions. The deep scratches are mainly found on coins, and they show different characteristics in their appearance and location on the coin. One group resembles nicks, but they are not located at the edge of the coin and therefore do not meet the definition of nicks (section 4.2.2). It is possible that these deep scratches were added for reasons which were similar to those for nicks (Figure 6.14). Unlike nicks, the deep scratches are found in equal numbers on Western European coins and on Islamic coins. Another type of deep scratch runs across the coin, often along the fragmented edge. This suggests that the scratch was applied as part of the fragmentation process, either as a form of preparation or as a line of sight before dividing the coin (Figure 6.14).

Chisel marks are found on more solid objects such as ingots, melts, and plates. The fractured surface shows that these types of objects were divided with a tool similar to a chisel. In line with the deep scratches on coins, several examples of chisel marks seem to be a form of preparation for fragmentation (Figure 6.15). In some cases, the preparation may have occurred during the production of melts (Ingvardson 2019, 52–53) (Figure 4.1). This suggests an early awareness that the refined melt would be fragmented on a later occasion, for example in transactions



*Figure 6.14* Examples of different types of scratches. Left: Abbasid dirham minted 804/805 in present-day Tehran for Harun al-Rashid deposited in the Skovvang hoard. A prominent scratch at the centre of the coin may have served the same function as nicks. Middle: English *Crux* penny deposited in the Egenvang hoard. Along the edge of the half coin is a deep scratch, which may have been applied in preparation for dividing the coin. Right: Anglo-Scandinavian imitation from the Egenvang hoard. The coin has been bent back and forth and has several very heavy scratches along the ridge. Both actions may represent preparation for division. However, silver testing or ritual destruction are alternative interpretations. Finds nos. BMR 2291x220, BMR 3836x50 and x68.

*Photographs:* R. Laursen, the Bornholm Museum.



*Figure 6.15* Hammered band-shaped ingot from the Egenvang hoard. The deep furrows along the fragmented edges were perhaps made with a chisel. The furrows may represent preparation for fragmentation like the deep scratches on coins (see *Figure 6.14*). Find no. BMR 3836x20.

*Photograph:* R. Laursen, the Bornholm Museum.

in which melts were used as currency, or in the further processing of melts in silversmithing.

## 6.4 Suspension

Close to 3 per cent of the 8,019 coins included in the analysis have one or more piercing, ring, rivet, and/or loop.

Most frequent is one piercing, and more than half of the perforations are round. Possibly, many of these coins had a ring or loop at some point, which subsequently was removed or fell off (*Figure 6.16*). Most piercings are located near the edge of the coin, making it likely that they were used as pendants and/or amulets. There seems to be no correlation between the design of the holes and the hoard's dating, geographical composition, or geographical location on Bornholm. Examples of coins with irregular, round, and triangular holes are found in the same hoard and among all major coin groups. This supports Audy's conclusion that the design of the hole had neither a functional nor an aesthetic significance (Audy 2018, 103).

Coins with two holes display different characteristics, perhaps reflecting different use. Two holes next to each other on a coin may have been added for the purpose of sewing the coin onto a piece of cloth. In cases in which one of the holes is fragmented, it is likely that the second piercing was added to repair a piece of coin-jewellery. Diagonally placed piercings on a coin may signal the intention to include the coin in a coin chain (*Figure 6.17*). Only four coins have more than two piercings. In the Skovgård hoard, an unidentified fragment is pierced four times; here the piercings seem to represent four powerful pecks that have passed through the coin planchet. Thus, these piercings were not applied with the intention of using the coin as decoration. In the Kannikegærde hoard, a Saffarid dirham has three piercings, presumably reflecting two events. Two diagonal piercings in the centre of the coin are similar in character and may



Figure 6.16 German Otto-Adelheid penny from the Skovvang hoard. The coin is pierced, and a small piece of solid silver wire has been threaded through the hole. The silver wire may be preparation for a rivet, or the remains of a fragmented ring for suspension. The find is unusual, for in most cases the wire has been removed, leaving only the piercing. Find no. BMR 2291x221.

Photograph: R. Laursen, the Bornholm Museum.



Figure 6.17 Examples of coins with two or three piercings which may reflect different functions and life biographies.

Samanid dirham, minted in Uzbekistan, from the Kannikegærdet hoard. The coin has two piercings close together, perhaps for attaching the coin to cloth. On a later occasion, one of the piercings was reused for a loop.

Photograph: S. Greve, National Museum of Denmark (CC-BY-SA).



Persian Sassanid drachma from the Skovsholm hoard. The coin is pierced and there are traces of a suspension loop. The first piercing (now fragmented) was placed so the portrait of King Khuzrau II was correct when the coin was worn. This was not a consideration for the second piercing.

Photograph: R. H. Nielsen, National Museum of Denmark (CC-BY-SA).



*Crux* penny of Æthelred II from the Englyst hoard. The coin has two diagonally placed piercings, suggesting that it was formerly part of a coin chain.

*Photograph:* S. Greve, National Museum, Denmark (CC-BY-SA).



The Saffarid dirham minted in Shiraz from the Kannikegærðet hoard is one of the few coins with more than two holes. The two central holes appear to have been added simultaneously, perhaps with the intention of using the coin as a fitting, while the third hole at the edge was probably applied to convert the coin into jewellery.

*Photograph:* S. Greve, National Museum of Denmark (CC-BY-SA).

represent one action, perhaps with the purpose of attaching the coin to clothes or to use the coin as a fitting. The third hole is placed at the edge of the coin, and probably represents another action, presumably to transform the coin into a piece of coin-jewellery (Figure 6.17).

A total of six coins are looped, and three of these are deposited in the Kannikegærðet hoard. All three are undecorated loops of Audy's 'sandwiched type' with a rectangular lower part attached by a rivet (Audy 2018, type Lr1) (Figure 6.17). The shape is simple and uncharacteristic, but the uniform design and the deposition in the same hoard suggest that the coins were looped at the same time. Perhaps the looped coins were part of a jewellery set. In the Kannikegærðet hoard there is also a loose loop of the sandwiched type with a rectangular lower part, but this is decorated with lines (Audy 2018, type Lr2). Perhaps the loop was previously attached to one of the pierced coins in the hoard, or it may have been in the process of being prepared to be transformed into a piece of coin-jewellery.



Figure 6.18 Two *First Hand* pennies of Æthelred II from the Egenvang hoard are fitted with suspension rings. The *First Hand* pennies are relatively rare in the Bornholm hoards with only 42 examples in total. Although the coins from the Egenvang hoard are of the same type, suggesting some kind of connection, the rings are very different in design and expression. Finds nos. BMR 3836x28 and x29.

Photograph: R. Laursen, the Bornholm Museum.

The Egenvang hoard contains two out of a total of three coins suspended with rings. The Egenvang coins are of the same type, Æthelred II's *First Hand*, but the designs are very different (Figure 6.18). This suggests that the suspensions were not made at the same time, or that, as has been suggested for the design of the piercings (Audy 2018, 103), the suspensions were not of functional or aesthetic importance.

Particular care is reflected in the design of the loop and suspension ring on a coin found at the Lillegærde site. The motif is reminiscent of some of Sweyn Estridsson's coins minted in Lund, but the size of the planchet indicates that it is not a coin. The pendant is related to a small, exclusive group of jewellery with Sweyn Estridsson coin motifs with considerably larger planchets than the coins (Märcher 2010, 202–205). The object was probably originally intended to function as jewellery, not as a coin. The jewellery bears remnants of gilding, which supports

the idea that it is not a coin. Like the gold ring and the belt buckle in the Ahlesminde hoard, the coin-like pendant can be interpreted as a personal object that may have been deposited in the hoard (section 3.1.1).

There are no examples of fragmented coin-jewellery deposited in graves. This suggests that the fragmentation of coins with piercings/suspensions occurred after they were used as coin-jewellery (Audy 2018, 70). Thus, upon fragmentation, the coins lost their significance as jewellery or amulets. Complete examples of coin-jewellery deposited in hoards may have been deposited as jewellery or amulets. The fragmentation rate among Islamic coins, Islamic imitations, and English coins, in particular, in the Bornholm hoards is significantly lower among coins with suspension attachments compared to those without. The same does not apply for German coins. This indicates that the fragmentation of dirhams and English coins was preferably avoided – it signals a wish to preserve the function of these coins as jewellery/amulets.

Bornholm differs from the rest of Scandinavia in containing the extremes in relation to the proportion of reworked coins in hoards. Thus, the island holds hoards with a very high proportion of coins with suspensions as well as hoards without coin-jewellery. Audy interprets this from a chronological perspective (Audy 2018, 65). In contrast, this survey interprets the extreme differences as a reflection of the different functions of the hoards.

The high proportion of complete deposited dirhams with suspensions is primarily represented by two hoards: Buddegård and Kannikegærdet. The proportion of looped/pierced coins in the other Bornholm hoards is limited to 6 per cent or less, similar to the norm in Scandinavia (Audy 2018, 61). In contrast, 47 per cent of the coins in Buddegård and 77 percent of the coins in Kannikegærdet have suspensions (Table 6.2). Thus, the two hoards differ significantly from the hoards in Scandinavia in general (Audy 2018, 63–64). The Buddegård hoard, with the trefoil brooch, a silver bracelet, and 47 mainly complete dirhams, many of them looped/pierced, can be interpreted as a central brooch deposit with parallels in Viking-Age female graves (cf. section 2.1). As a central brooch deposit, the high proportion of complete coins with suspensions does not stand out from the rest of Scandinavia, where this particular type of hoard is characterised precisely by a high proportion of Islamic dirhams with suspensions (see Audy 2018 appendix 1, 335–336 for examples of central brooch deposits with complete coins with suspension). The Buddegård and Kannikegærdet sites are strongly linked, since almost identical trefoil brooches and bracelets are found at both sites (section 5.5). In this survey, the brooch and bracelet are not interpreted as part of the Kannikegærdet hoard, since they were found 75 m north, and 95 m south of the deposition areas of the respective hoards (section 3.1.1). Because of a very high proportion of coins with suspensions, the hoards differ markedly from other dirham hoards in Scandinavia. Thus, it is possible that the Kannikegærdet hoard, like the Buddegård hoard, should be associated with the female sphere.

*Table 6.2* Proportion of coins with suspensions in relation to the total number of coins in the hoards.

<i>Deposition phase</i>	<i>Site</i>	<i>Coins</i>	
		<i>With suspension in %</i>	<i>Total number</i>
850–900	Skovsholm	5	156
900–990	Skørrebro	3	153
	Buddegård	47	47
990–1000/1005	Dammegård	4	149
	Store Frigård II	1	237
	Kannikegærdet	77	70
	Englyst	6	82
	Tyskegård	0	82
	Rosmannegård SV	2	131
1000/1005–1020	Rosmannegård S	4	286
	Egenvang	2	213
	Dalegård	1	462
	Store Gadegård, area 1	5	39
	Kannikegård/Tyskegård	3	67
	Blykobbegård	2	469
1020–1040	Store Klintegård	2	63
	Døvregård	4	116
	Skovgård	6	72
	Åbo	5	55
	Nørre Sandegård	1	118
	Skovvang	1	851
	Kobbegård	3	117
	Slamrebjerg	1	349
	Gyldensgård SV	2	343
	Nørremølle	1	1,207
	Store Gadegård, area 3	2	140
1040–1060	Froste gård	0	50
	Smørbygård	1	109
	Munkerup	2	85
	Pæregård	1	1,020
	Nordre Stensebygård	3	107
	Lillegærde	2	128
	Krusegård	1	126
after 1060	Ahlesminde	3	305
	Smedegård NØ	0	15



Figure 6.19 The only object with identified graffiti is this silver plate/ingot, on which an animal – perhaps a bird or a seal – is carved. Find no. BMR 3710x20.

Photographs: R. Laursen, the Bornholm Museum.

There are relatively few hoards without reworked coins in a Scandinavian context, and they are characterised by being relatively small (Audy 2018, 63–64). This also applies to the three Bornholm examples Tyskegård, Frostegård, and Smedegård NØ. The Smedegård NØ hoard stands out in that it contains only 15 coins, but is, in turn, Bornholm’s largest hoard by weight (Figure 3.12). Just as the Buddegård hoard, with its distinct content, can be interpreted as a thematic hoard, the Tyskegård hoard, exclusively containing *Long Cross* pennies of Æthelred II, can be interpreted as a type of thematic hoard. Thus, the proportion of coin-jewellery can be included as an important element in the interpretation of the actors and functions of the hoards. This conclusion will be elaborated upon further in section 7.2.5.

## 6.5 Graffiti

Graffiti or possible graffiti has been recorded on just seven coins from Bornholm. The character of the graffiti is very simple, more like random lines than actual symbols or images. The only example of documented graffiti was found in the Smedegård NØ hoard, where a heavy silver plate/ingot bears the form of a carved animal interpreted as a bird (Grinder-Hansen *et al.* 2013, 151). However, the head shape, distinctive eyes, and distinct whiskers could also be the image of a seal poking its head out of the water (Figure 6.19). Graffiti is a personal message from the people of the Viking Age, and it is very likely that the carving reflects a person’s experience, captured and preserved here on a silver plate.

## 6.6 Summary

The secondary applied circulation traces change the appearance and function of objects and are crucial for the interpretation of hoards and their relation to the economic, social, cultural, and symbolic field. An example is the proportion of

coins transformed into jewellery, which can provide insights into the function of the hoards.

Many objects are fragmented and marked, but coins differ from the other object groups in their significantly lower rate of fragmentation, while jewellery differs in that it bears significantly fewer marks. The relatively low proportion of fragmented coins is mainly attributed to the later coin groups represented by Polish, German, English, and Scandinavian types, while the older coin groups represented by Islamic, Islamic imitations, and Bohemian types have a high proportion of fragmented coins. However, the difference in fragmentation rates is not attributed to chronological factors alone. There are marked variations in the fragmentation rates of hoards within the same deposition horizon. This demonstrates that the fragmentation rate is also related to the function of a hoard, and that coins within all groups were sometimes deliberately preserved complete.

The decrease in the fragmentation rate of coins over time can be linked in part to the shift from the dominance of Eastern to Western European coins in the hoards from c. 990. The remaining find material clearly illustrates the continuing need for fragmented silver. During this period, for example, scrap-silver and the often highly fragmented melts begin to appear in the hoards. Chisel marks added to melts during the production phase may reflect the preparation of melts for fragmentation, signalling that melts were intended to have a role in a weight system either as payment or raw material. The weight distribution of scrap-silver and coins clusters differently in two complementary profiles, suggesting that scrap-silver and coins were part of a joined weight system, with coins largely deliberately exempted from fragmentation. This preserved the potential dual function of coins as means of payment in both weight and coinage systems.

The widespread use of marks and bends on all types of objects demonstrates that marks and bends were applied during transactions. The Vikings sometimes refrained from applying marks, either for aesthetic reasons in the case of jewellery, or for ritual reasons in the case of symbolic objects.

The relatively low proportion of marked jewellery is mainly due to foil beads, on which marks are almost non-existent. This is probably due to the nature of the beads, since the thin foil beads do not possess sufficient silver mass to apply pecks, nicks, or notches for testing the silver quality.

English coins are significantly less marked and bent than the other coin groups. This may be because the Vikings had more confidence in the silver quality of the easily recognisable and well-struck English coins than they did in other coin types, such as the heterogeneous group of German coins. The lower proportion of marked and bent English coins may also be due to a more direct journey from production to deposition, since many English coins were probably acquired through Danegeld payments. In the Tyskegård and Store Frigård II hoards, interpreted as Danegeld, the bending profile shows that only a selection of objects were bent in major transactions.

Bending and marking were probably often used to test the silver quality. A form of ritual practice may be mirrored in specific signature bends, reflecting the handling of silver by individuals at accumulation events. In one case, the trefoil

brooch from Buddegård, it is plausible that bending was part of a ritual act during deposition.

**Note**

- 1 The partly available Rømersdal hoard contains two Thor's hammers which has not been available for study. Thus, they are not included in the analysis (catalogue: 30).

## 7 Containers, structures, and sites

### Analysis of deposition data

Chapter 7 investigates whether the deposition context of a hoard reflects its function and how it is related to the people who deposited it. The underlying hypothesis is that hoards deposited centrally on settlements, on the periphery of settlements, or in areas with no other archaeological remains exhibit different structural features, which reveal their function (cf. section 2.1).

An essential element in the analysis is to characterise the deposition contexts of the hoards. Even though the Bornholm hoards have been the focus of archaeological investigations and are generally well researched, the material presents several challenges when uncovering the deposition contexts of the hoards. Limited financial resources have forced excavations to focus on securing and documenting the hoard itself. Hence, the distribution of the silver dictates the size and location of the excavation area. When the topsoil has been surveyed and removed, the insufficient financial resources will not extend to the investigation of the structures and associated features below. Therefore, the excavations are characterised by partially exposed houses, uninvestigated burnt dwellings, and unexcavated structures. This has resulted in a number of methodological challenges: is it possible to establish whether hoard and house are concurrent on a site that has not been fully excavated? Can a house be categorised when only the gable has been uncovered? Is it safe to interpret the structure of a site when only a fraction has been uncovered and excavated? The premise of the material means that it is not possible to set fixed criteria for when a hoard is interpreted as being deposited in the centre of a settlement, on the periphery of a settlement, or in an area without settlement remains. The length of a house, for example, cannot be used strictly as an indicator of whether a hoard was deposited in or near a dwelling house or an outbuilding, since the houses are often only partially unearthed. The archaeological finds to document simultaneity between house and hoard are of course non-existent if the postholes are not excavated. The interpretations of the sites are based on available publications and archaeological reports, which are summarised in the catalogue.

The context analysis initially investigates the immediate context of the hoards. Firstly, an overview of container types of deposited hoards is given. It is then discussed whether the position of the objects in the container may reflect how the hoard was accumulated (section 7.1.1). The following section 7.1.2 considers whether the function of a hoard is reflected in the immediate context.

The feature contexts are investigated in section 7.2. Viking-Age pottery (section 7.2.1) and house chronology (7.2.2) on Bornholm are discussed in order to document concomitance between hoards and other features at the sites. The hypothesis that some hoards are deposited in a central location on settlements, while others are deposited at the periphery of settlements, while still others are deposited in areas with no other archaeological remains is tested in section 7.2.4. The precondition that the nature of hoard depositions reflects the function of hoards, is assumed. Finally, a discussion about whether the function of a hoard is reflected in its feature context is presented in section 7.2.5.

Section 7.3 provides a characterisation of the site context of the hoards. The sites are examined for traces of craft and trade activities (section 7.3.1) and ritual/symbolic activities (section 7.3.2). The living conditions of the sites are interpreted in section 7.3.3, while the social hierarchies of the sites are discussed in section 7.3.4. Evidence of fatal events as the cause for the non-retrieval of hoards is discussed in section 7.3.5. Finally, the chapter concludes with an analysis of whether the functions of the hoards are reflected in the site contexts (section 7.3.6).

## 7.1 Immediate contexts

The analysis of the immediate contexts is based on well-documented and partly available hoards, whereof the precise find-spot is known and/or for which information on conditions of deposition is available (catalogue). Hoards for which the deposition context is completely destroyed by ploughing are excluded from the analysis, since information on the possible container of the hoard, or the lack thereof, is not known.

Some hoards were found in the nineteenth or early twentieth centuries. Despite their early date of discovery, information on the containers of the hoards is often quite detailed. Descriptions of the Skærpingegård hoard, found in 1878, reveal that the hoard was found by a worker, when he was quarrying the ground around a boulder, prior to it being blasted away using dynamite. Further, it is described that the silver lay  $\frac{1}{2}$  *alen* (31 cm) below the surface on two small pieces of hide with hair (Skovmand 1942, 117; Galster 1980, 32). In other cases, the find information is minimal, such as for Brandsgård and Øster Rosendalegård, where it is simply described that the former was found when removing a tree root, while the latter was found in a mound. It is therefore not possible to determine whether the hoards were deposited with or without containers.

In his landscape-contextual analysis of hoard finds in the Mälaren area, Pomerania, and Gotland, Gruszczynski interprets small finds without containers as hoards deposited without the intention of retrieval, considering them as ownership markers/offerings in the landscape (Gruszczynski 2019, 253–255) (section 2.1). This interesting interpretation will be tested on the well-surveyed Bornholm hoards. No definite traces of containers were found in the cases of the three small hoards Åbo, Kobbegård, and Smørbygård (Table 7.1). The Åbo and Kobbegård hoards were both deposited in houses. This is not consistent with Gruszczynski's interpretation linking small hoards without containers to a deposition context in the landscape,

Table 7.1 The containers of the Bornholm hoards. The hoards are arranged according to weight. The catalogue holds a more detailed description of the find context of the individual hoards.

Site	Date	Weight/g	Container	Description	Catalogue:
Brandsgård	1001–05	0–200	No details	Found when removing a tree root.	5
Åbo	1029–40	0–200	Bag?	No preserved container. The hoard consists of coins, melts, and one silver bead. The bead may be part of a closing mechanism for a bag.	48
Kobbegård	1035–40	0–200	Bag?	No preserved container. Silver wire and silver lock indicates bag.	18
Smørbygård	1042–60	0–200	No traces		39
Nordre Stensebygård	1047–60	0–200	Pottery	Hoard found in concentration around pit with two Baltic Sea Ware vessels, of which one has preserved food crust.	24
Rabækkegård	913–90	0–200	No details	In stone chest as grave good.	28
Østre Rosendalegård	1047–60	0–200*	No info	In mound.	47
Tornegård	1047–60	0–200**	Ox horn		43
Holsegård	1004–20	200–400	Box of bark	Described as almost completely disintegrated.	14
Lillegærde	1048–60	200–400	Pottery	Bottom and side of coarse ceramic vessel.	21
Ahlesminde	<i>tpq</i> 1070	200–400	Leather bag		1
Blykobbegård	1018–20	400–600	Horn/leather wrap and bag	Double hoard. One part was deposited in a horn or leather, the other part was deposited in leather bag.	2
Gyldensgård SV	1035–40	400–600	Hide/bark/cloth	The hoard was found in dissolved dark organic material.	15
Dalegård	1009–20	600–800	Pottery	Fragmented ceramic vessel was found <i>in situ</i> . Perhaps a separate sherd had functioned as lid.	7

(Continued)

Table 7.1 (Continued)

<i>Site</i>	<i>Date</i>	<i>Weight/g</i>	<i>Container</i>	<i>Description</i>	<i>Catalogue:</i>
Døvregård	1028–40	600–800	Pottery	Ceramic vessel destroyed by ploughing; only the bottom was preserved.	9
Skærpingegård	962–90	600–800	Hide	The hoard was placed in two pieces of hide.	35
Skovvang	1030–40	1200–1400	Pottery	Vessel of Baltic Sea Ware type. It was not possible to see an arrangement of objects.	34
Bolbygård	1042–60	1200–1400	Pottery	According to description, vessel of Baltic Sea Ware type.	3
Pæregård	1047–60	1200–1400	Pottery and bag?	Vessel of Baltic Sea Ware type. Between hoard and vessel side was dirt and decomposed remains of organic material – perhaps the remains of a bag of leather or cloth.	27
Store Frigård I	<i>tpq</i> 1106	1400–1600	Pottery	Vessel with bowl as lid.	40
Munkegård I	1002–20	1400–1600***	Wooden box	‘Decomposed wooden box’.	22
Nørremølle	1035–40	1800–2000	Pottery	Ceramic vessel bottom stamp. Lower part preserved.	25
Enegård	1040–60	1800–2000	Pottery	Hand-built partly turned biconical pot of Slavic Bobzin type.	11
Kongens Udmark	967–90	2200–2400	Pottery	Hand-built unornamented settlement pottery with decomposed lid.	19
Smedegård NØ	<i>tpq</i> 1152	4000–4200	Wooden box and bark	Dep. I: Ash box deposited with bottom up. Dep. II: Objects were placed in a large circular brooch. Strips of bark were wrapped around the objects. Inside the hoard was a bark parcel with 20 melts.	38

\* The hoard consists of 27 coins. Weight unknown.

\*\* The hoard consists of 110 coins and a few jewellery fragments. Thus, it is unlikely that the hoard weighs more than 200 g.

\*\*\* All coins are not weighed. Assuming an average weight of 1 g, the total weight of the 959 coins has been estimated to 959 g. The unminted silver weighs 597 g.

e.g. at field boundaries (Gruszczynski 2019, 57–65, 126–132, 175–182). Furthermore, possible closure devices were found for two of the hoards, indicating that the hoards were deposited in a type of bag that is not preserved today (Table 7.1). The much larger Gyldensgård SV hoard has similar circumstances relating to the deposition. Here there was no direct evidence of a container, but the silver was found surrounded by decomposed dark organic material. Skin, fabric, or bark may have formed the original container. Thus, only the Smørbygård hoard was likely to have been deposited without a container in a landscape context. Hence, the Bornholm material does not confirm Gruszczynski's observations. Of course, it cannot be ruled out that some of the hoards where information about the immediate context is missing were deposited without containers. However, at this point, it must be concluded that most of the Bornholm hoards were deposited with a container.

Closure devices were found in the Åbo and Kobbegård hoards, suggesting that these hoards were deposited in a bag. However, remains of the bags have not survived. This highlights the fact that preservation conditions influence the interpretation of the immediate context of the hoards. Preservation may be one of the reasons why pottery is the most common hoard container (Table 7.1). Of the 25 hoards included in the analysis, 11 were deposited in ceramic vessels. There is a clear tendency towards pottery as the preferred container for large hoards. Nine of the 11 hoards deposited in ceramic vessels weigh more than 600 g. Among the hoards weighing more than 1000 g, only the Munkegård I and Smedegård NØ hoards were not deposited in ceramic vessels (Table 7.1). This may reflect a deliberate choice when depositing large hoards. The ceramic vessels are often partially destroyed due to agricultural activities, and only the lower part is preserved. At Dalegård, Store Frigård I, and Kongens Udmark, observations suggest that the vessels were closed with lids. At Dalegård the excavator observed that sherds of a different type were found together with the ceramic vessel used as a container, and it is possible that these sherds were used as a lid (Wagnkilde 1996b\*). At Store Frigård I it was observed that a bowl was used as a lid, while at Kongens Udmark a collapsed lid is described. The lid may have been of wood or unfired/poorly fired clay. The lids indicate an intention to protect the contents of the vessels, and possibly also to allow access to the hoards at a later point. Since it is often the lower part of the ceramic vessels that is preserved, it can be difficult to determine whether the pottery is unornamented settlement pottery or Baltic Sea Ware pottery, in which the upper part of the vessel is turned and ornamented (Ulriksen 2018, 186). When the pottery type can be identified it is most often Baltic Sea Ware vessels, also representing the most common type of pottery at eleventh- and twelfth-century settlements on Bornholm (Naum 2008, 87 and section 7.2.1). The Kongens Udmark hoard was deposited 967–990, i.e. before Baltic Sea Ware pottery became dominant at the Bornholm settlements. The vessel is not turned, and three knobs on the vessel's shoulder constitute the only ornamentation. Two opposing holes are probably secondary additions, and they may have served to hang the vessel (Liebgott 1978, 23–25). The vessel is not of a much older type than the hoard as stated by Niels-Knud Liebgott (1978, 23). Unornamented hand-built pottery is common on the Bornholm settlements up to the turn of the millennium (section 7.2.1). The

vessels that were used as containers can therefore probably be regarded as common household pottery. In one of the two vessels, which has been interpreted as the possible deposition place of the Nordre Stensebygård hoard, traces of food crusts were also found, indicating that the vessel had been used for cooking (Nielsen 1994c\*).

The ceramic vessel containing the Lillegærde hoard is an exception. Lillegærde was deposited around 1048–1060 in a vessel of unornamented settlement pottery. At this point, this type of pottery had been phased out (section 7.2.1), and the vessel was likely old when it was chosen as hoard container. Whether the age of the vessel added an extra protective dimension to the hoard, or whether the vessel was selected because it had outlived its function in the household, is difficult to determine.

While ceramic vessels are clearly the preferred container for large hoards, the situation is different for smaller hoards weighing less than 600 g. Here a wide variation in containers is seen, including leather bag, pottery, ox horn, wooden boxes, and pieces of skin (Table 7.1). The majority of these materials tends to degrade more than pottery when deposited in the soil. The observations from the carefully documented Bornholm hoards suggest that Gruszczynski's interpretation should be reassessed. Small hoards are generally not deposited without containers, but are deposited in types of containers which are different from those used for larger hoards. These are container types for which the risk of decomposition is conspicuously greater than for the large hoards.

The placement of objects in the hoards may potentially reflect the Vikings' considerations on the significance and function of the objects. For example, studies of the Stale hoard from Rone on Gotland, which was preserved *in situ*, showed that German coins were separated from English and Scandinavian coins at the time of deposition, and that fragmented dirhams were placed with the German coins, while complete dirhams were placed with English/Scandinavian coins. The separation was not attributed to different chronological accumulation phases, because both new and old English coin types were deposited together at the bottom of the vessel (Kilger 2013\*). Thus, deliberate segregation of different coin types occurred during the deposition.

If the objects were added to the same container cumulatively, over a long time span, it may be possible to separate different accumulation phases. Observations made at the excavation of the Pæregård hoard indicate that part of the hoard was separated from the rest of the silver and stored in a bag at the top of the vessel (Nielsen 1993\*). The observation supports Östergren's interpretation of active hoards, part of which could be reactivated by, e.g., trade journeys (section 2.1). The separated objects in the Pæregård hoard may represent the hoard's final accumulation phase and/or may be objects prepared to go on the next journey. Unfortunately, the separation was not retained when the hoard was recorded, and it is therefore not possible to determine whether the separated objects differ in type and/or chronology from the rest of the hoard.

The discussion that follows considers whether accumulation phases can be separated in the Bornholm hoards. It also examines the placement of the objects in the hoards, and explores whether this might reflect different perceptions of the significance and function of the objects.

### 7.1.1 Accumulation phases and events

In the Ahlesminde, Blykobbegård, Gyldensgård SV, Nørremølle, and Smedegård NØ hoards the internal positions of the objects are recorded in detail. Thus, the hoards can serve as a platform for discussing the possibility of distinguishing accumulation phases in the hoards and whether these phases can be linked to different accumulation strategies and events.

The Ahlesminde hoard was removed as a soil block and excavated in part at the Bornholm Museum (level 1–5) and subsequently at the conservation department of the National Museum (level 6). The remains of a leather bag appeared at the lowest level. No chronological or geographical internal organisation can be identified in the deposit. During the excavation at the Bornholm Museum, small stacks of coins were separated. The organisation suggests that the coins in the individual stacks were added to/placed in the hoard at the same time, but no geographical or chronological relationships are visible within the stacks. This means that new and old coins from different production sites were mixed at the time of deposition and were deposited randomly in the bag. The hoard contains silver coins and three gold coins, a gold finger-ring, and a silver belt buckle (section 3.1.1). The restricted distribution of the objects suggests that the hoard was found shortly after the depositional context was disturbed by agricultural activities. The gold coins, finger-ring, and belt buckle were found immediately next to the hoard deposit, and it is likely that these special, personal items were placed at the top of the hoard. The personal items, the gold ring and belt buckle, would have been easily accessible, perhaps so they could be retrieved and worn on special occasions.

The Blykobbegård hoard was clearly divided into two separate parts. Indicated by its form, one part was deposited in a horn or in a narrow container made of skin or leather (Figure 7.1). The other part lay on the remains of a leather bag. The lower part of the hoard showed a very clear separation between the two parts, here named horn and bag, respectively. The two deposits have different profiles. The bag contains many German coins, a number of unidentified coins (indicating that they were in poor condition), and also an older parcel of Islamic coins, as well as a significant amount of unminted silver in the form of fragmented jewellery and personal objects, ingots, melts, and scrap-silver. The horn contains predominantly English coins, a large proportion of German coins, a small proportion of Scandinavian and Polish coins, a ¼ Byzantine coin which is relatively rare in the Bornholm context, and among the Scandinavian coins a very rare cross coin (Figure 7.2). The unminted silver in the horn is limited to two foil pieces, a piece of wire, and a rectangular plate. A significantly smaller proportion of the coins in the horn (17 per cent) are fragmented compared to the coins in the bag (50 per cent). The profile suggests that the silver in the horn comprises specially selected objects of good quality. No chronological or geographical internal organisation is visible in either of the deposits. For example, the hoard contained English *Long Cross* pennies and German Otto-Adelheid pennies of Hatz type III and IV in both level 1 (the top layer) and in level 17 (the lower layer). The bag contained the older group of Islamic coins in the lower part of the bag, distributed in levels 8–11, 17–18, and 20, while English *Crux* pennies were found in both levels 1 and 20. Thus, it is unlikely



*Figure 7.1* The Blykobbegård hoard was divided into two depositions. The objects in one part lay as if deposited in a horn.

*Photograph:* Å. Henrik-Klemens, National Museum of Denmark (CC-BY-SA).

that the silver was added to the containers successively over a number of years. The unminted silver was distributed across almost all levels; the heaviest piece, a fragmented silver ingot of 22.3 g, was at the top of the bag.

It is difficult to establish when the segregation into horn and bag took place. Both older and more recent coins are found in both units; however, the most recent coins were not present in the horn. Since no internal chronological order is seen in the respective containers, the division of the silver likely took place at one event when specially selected silver objects were singled out. Whole coins of good quality were selected for the horn, while a mixture of the same types of coins as in the horn, but also fragmented coins, the older Islamic coins, worn/poor quality coins, and the unminted silver were collected in the bag. Thus, the silver in the horn and that in the bag may have been attributed different functions. The silver in the horn was perhaps savings – a sum set aside – while the bag represented a fortune that could be activated when needed. The latter is supported by the fact that the latest coins are not represented in the horn, indicating that silver continued to be added to the bag, but not to the horn. However, this may also be caused by conditions of preservation, since the upper part of the hoard was scattered in the plough layer. An alternative interpretation is that the objects in the horn were separated from the hoard, perhaps as a gift, a payment, or a symbolic deposit.

The Gyldensgård SV soil block was recorded in five levels (upper, second uppermost, third uppermost, middle, and lower layers) during excavation at the conservation department of the National Museum in Copenhagen. In the middle layer, some objects were in a vertical position suggesting that they were deposited in a smaller container inside the larger container that held the hoard. This is similar

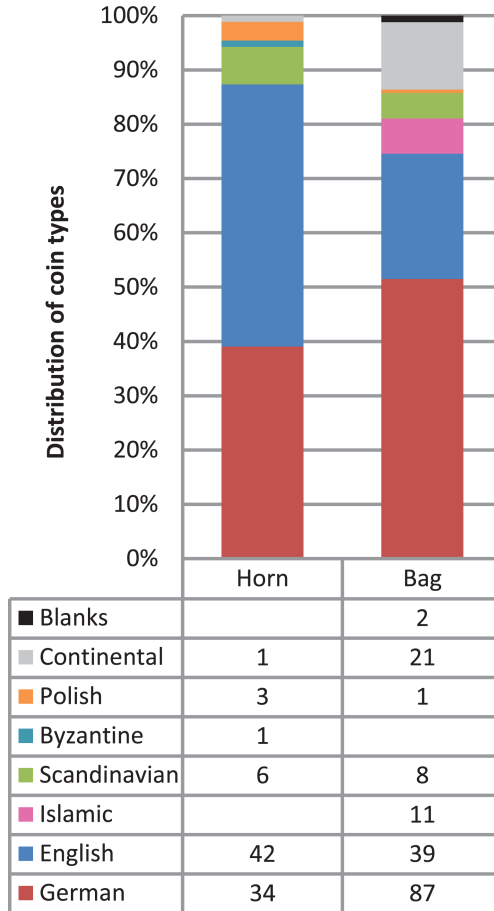


Figure 7.2 Composition of coin types in horn and bag, respectively, in the Blykobbegård hoard.

to the observations made in the case of the Pæregård hoard. The vertically placed objects include four Otto-Adelheid pennies, one of type IV.5, two type IV.5 or 6, and one unidentified type; two silver rods of 3.1 g and 3.3 g; and a small square silver plate with rounded corners, possibly representing a weight. The assemblage may reflect a small purse containing some coins, scrap-silver, and a weight that could be used in silver transactions.

A similar possible weight of 1.3 g and a rod of 3.9 g were in the top layer, while two rods, two melts, a mesh bead, and a fragmentary earring formed the bottom layer, which did not include coins. The coins show no clear chronological or geographical organisation within the different layers. All layers have a roughly equal distribution of German and English coins and minor inclusions of a few other coin types. In all layers, the chronological centre is c. 990–1010. The top layer differs

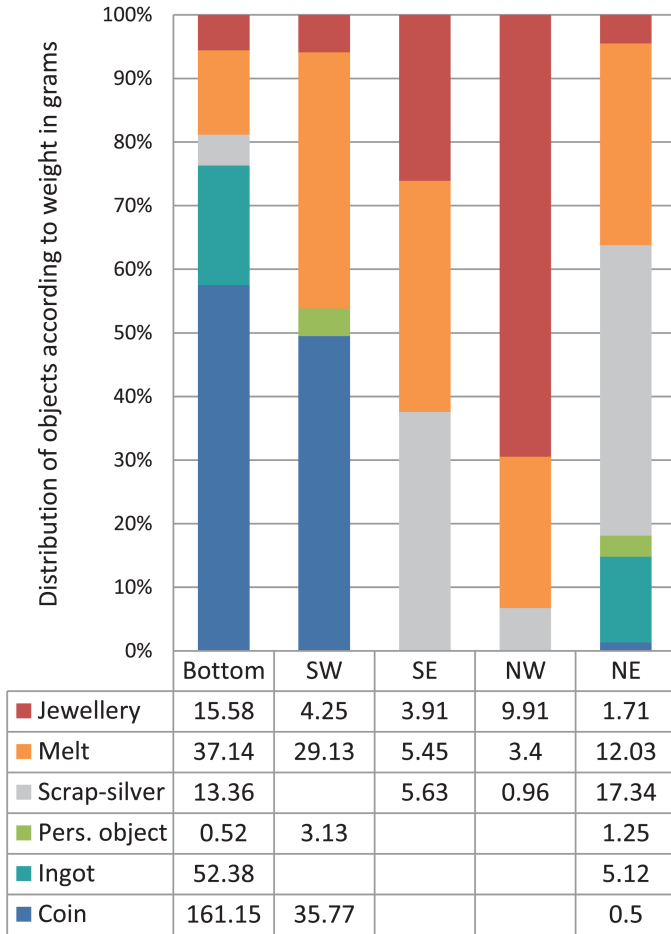


Figure 7.3 The distribution of objects within the different sections of the Nørremølle hoard.

from the others by the absence of older coins. This may represent the latest accumulation phase of the hoard.

The objects in the Nørremølle hoard were divided into five sections during excavation. The upper section was divided into SW, SE, NW, and NE, while the lower part of the vessel constituted a fifth section. The objects in the five sections display very clear differences. The lower part of the vessel mainly contains coins, ingots, and melts, including a complete ingot of 43.33 g and a melt of 18.20 g (Figures 4.1). The SW part consists of coins and melts. The SE part includes jewellery, melts, and scrap-silver. The NW part mainly comprises jewellery, melts, and a little scrap-silver, while the NE part is a mixture of many different types, mainly scrap-silver and melts, a small number of ingots, some jewellery and personal equipment, but only one fragmentary coin (Figure 7.3).

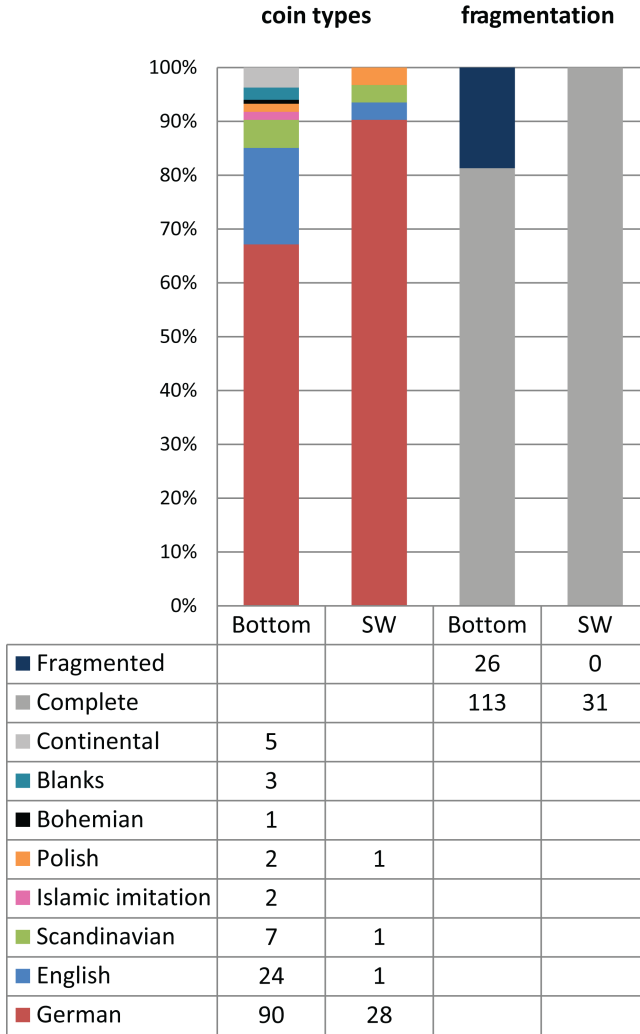


Figure 7.4 Coins were deposited in the lower and SW parts of the Nørremølle hoard. The two columns to the left illustrate the distribution of coin types in the two sections. The two columns to the right illustrate the proportion of fragmented coins in the two sections.

The division clearly illustrates that the objects were grouped by type. This supports the notion that fragmented objects were not regarded as a unified group, but that different types of fragmented silver had different significance (section 4.2).

The coins in the SW section comprise 31 complete coins consisting of 28 German coins, one English, one Scandinavian, and one Polish coin, while the variation is greater in the lower layer, where the proportion of German coins is 67 per cent, and almost 20 per cent of the coins are fragmented (Figure 7.4). It is doubtful

whether this reflects a deliberate selection of complete German coins in the SV part; the difference may also be because the larger batch of coins in the lower part of the vessel has a larger range of coin types. Because 138 coins in the lower layer have been recorded as one section, a further chronological analysis of the composition of the hoard is not possible.

The Smedegård NØ hoard consists of silver and gold objects deposited in two containers. The hoard is regarded as one hoard deposited in two units. Deposit I was disturbed by agricultural activities, while deposit II was found undisturbed about 80 cm away.

The silver objects in deposit I were tightly packed in a wooden box made of ash tree. The box was probably deposited with the bottom up, indicating that the objects found in the plough layer were from the bottom of the box. These objects include a reliquary cross, three coins, two beads, an ingot, and some pieces of scrap-silver (Grinder-Hansen *et al.* 2013, 142–145) (Figure 7.5). Another reliquary cross, three ingots/melts, and a bead were at the top of the deposit. During excavation, the lower part of the deposit appeared first, revealing an Edward the Confessor (1042–1066) coin, a silver bead, and a 90 cm long chain with animal heads entwined around the entire box.

At one end of the box, the melts and ingots lay close together from bottom to lid. A carrier ring, probably for the large reliquary cross, was placed above the long



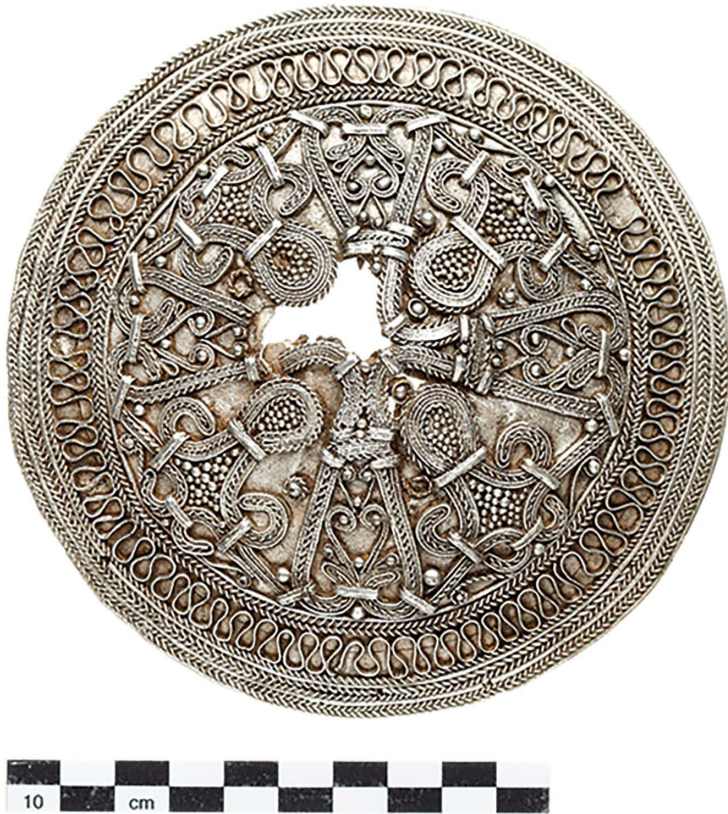
*Figure 7.5* Most of the non-numismatic objects from the Smedegård NØ deposit I. The objects include finds from both plough layers and soil-block. Melts and ingots deposited closely together at one end of the box are shown at the bottom right. The small fragments of wire and rods seen at the top left were probably placed at the bottom of the box, while the carrier ring immediately above the relic crosses was at the top of the box.

*Photograph:* R. Fortuna, National Museum of Denmark (CC-BY-SA).

chain, at the top of the box. If the box were placed bottom up in a pit, one would expect the objects to be mixed up in the box during the actual act of depositing. However, this was minimised because the objects were packed close together in the box. The chronological profile of the hoard spans over 100 years. Among the oldest objects are an Otto-Adelheid type V coin minted 1025–1060 (Rundberg 2000, 10) and an Edward the Confessor *Trefoil Quadrilateral* from 1046–1048 (Grinder-Hansen *et al.* 2013, 149–153). In addition, the scrap-silver and beads of the hoard also point to the eleventh century (catalogue: 38). The reliquary crosses were probably produced in the first half of the twelfth century, and the hoard's latest objects are two German bracteates, indicating deposition after 1152 (Grinder-Hansen *et al.* 2013, 145–150). The oldest objects appear to have been at the bottom of the box, indicating that the box was used to store valuables for many years. Both the nature of the objects and the context of their deposition point to several phases of accumulation successively added to the wooden box. The heavy melts were packed in one side and thus have been kept together as a unit. Both reliquary crosses were located at the bottom of the box, while the carrying ring, which may have belonged to the large reliquary cross, was located at the top. This means that the cross and suspension were separated at the time of deposition.

Deposition II was found undisturbed by the plough, and was fully excavated at the conservation laboratory. Strips of birch bark must have formed the container of the hoard, and remains were found at the top and mainly at the bottom of the soil block. The strips do not seem braided, and there appears not to have been a basket, but rather birch-bark strips were wrapped around the hoard (Pedersen *et al.* 2014, 215–218). The upper layer of the hoard consisted of large melts which had been smoothed. Beneath these lay the jewellery, which consisted of a completely braided neck-ring that almost formed a barrier to the other jewellery: a reliquary cross with chain, a twisted arm-ring, and a gold finger-ring that was displaced slightly to one side. Beneath the jewellery was a bark parcel containing 20 melts. In both deposits I and II, the melts were separated from the other objects. Two silver finger-rings lay under the bark parcel, and at the bottom of the hoard was a large filigree-decorated oval brooch measuring 13.2 cm in diameter. The brooch was facing upside down, and almost formed a bowl (Pedersen *et al.* 2014, 223) (Figure 7.6). The objects in deposit II also span a long period. The large circular filigree-decorated brooch dates from the eleventh century. Wear along the edge and the hole in the middle, probably also due to wear, show that the brooch was much used when deposited (Pedersen *et al.* 2014, 223). The braided neck-ring with oval end-plates and the twisted arm-rings and finger-rings are classic Viking-Age types (Figure 7.7). The faceted threads of the neck-ring are an unusual feature in Viking-Age contexts, which may point forward in time. A parallel to the unusual end knobs of the arm-ring is found in a Gotlandic hoard from the mid-1000s. The flat finger-ring with an incised cross and niello probably dates to the twelfth century (Pedersen *et al.* 2014, 218–219). In contrast to the oval brooch, the braided neck-ring, and the twisted arm-ring and finger-rings, appear to be new.

The designs of the twisted arm and finger-rings are so uniform that it is likely that these ornaments were made at the same time as a jewellery set. The absence



*Figure 7.6* This filigree-decorated oval brooch with central cross motif was placed at the bottom of the Smedegård NØ deposit II. The brooch weighs 180.91 g. Worn edges indicate that the fragmentation is probably due to wear. The brooch was produced in the eleventh century (Pedersen *et al.* 2014, 223).

*Photograph:* S. Greve, National Museum of Denmark (CC-BY-SA).

of circulation marks and the lack of traces of use suggests that the deposition took place shortly after the time of production. If the two units (deposits I and II) were deposited simultaneously, this must have occurred after 1152. The organisation of the objects suggests a deposition event in which the objects were carefully arranged, wrapped in birch bark strips, and deposited. The fact that what is presumed to be the latest object in the hoard, the band-shaped finger-ring with niello, is placed immediately above the hoard's oldest object, the circular brooch, and subsequently covered by several other older objects, suggests that the organisation, wrapping, and deposition constituted a single deposition event.



*Figure 7.7* Complete neck-ring from Smedegård NØ deposit II. The ring weighs 206.72 g. The type is characteristic of the Viking Age, but it is very unusual to find complete rings deposited in hoards.

*Photograph:* S. Greve, National Museum of Denmark (CC-BY-SA).

### 7.1.2 Summary

Most large hoards of more than 600 g were deposited in plain pottery normally used for everyday household purposes. The only exception is the Lillegærde hoard, which was deposited in a vessel that was probably old at the time of deposition. In addition to pottery, there are examples of large hoards deposited in wooden boxes, on skins, and wrapped in birch bark. However, pottery is the most common container for large hoards. There is a great variety of containers among the smaller hoards. The Bornholm material documents containers made of cloth or skin bags, ox horns, clay vessels, and wooden boxes. Gruszczynski's interpretation, that small hoards were deposited without containers, and thus without any intention of retrieval, cannot be confirmed by the Bornholm material. Small hoards, on the other hand, seem to have been deposited more often in containers that decompose in the soil than ceramic vessels.

The immediate contexts of the hoards include several examples of hoards with subdivisions. The division may reflect either different phases of accumulation or a differentiated view of the objects. This illustrates that the different groups of objects had different functions and were probably used in different contexts in the Viking Age. In the Gyldensgård SV and Pæregård hoards, the position of the objects in the containers indicates that some of the objects were separated into a special unit. In the Gyldensgård SV hoard, a small purse with weights, some scrap-silver, and a few coins may have been placed in the hoard among the other objects. Unfortunately, in the case of Pæregård, the separated unit was not recorded during excavation. In Smedegård NØ deposits I and II the melts were kept separate, and thus seem to have a particular significance. In the Blykobbegård and Nørremølle hoards, clear divisions of objects attest to a differentiated view of silver. In Blykobbegård selected coins are deposited together – perhaps in a horn. This may represent special savings or was perhaps in preparation for a gift/exchange. In the Nørremølle hoard, a clear division of both the coined and uncoined silver confirms

the thesis that fragmented objects should not be considered as a unified find group, but that different types of fragmented silver had different functions. In most hoards, the position of the objects reflects that the hoard was placed in the hoard container at one time. The Pæregård hoard may be an exception, since some of the objects may have been deposited in a bag at the top of the hoard. Finally, the organisation of the objects deposited in the wooden box at Smedegård NØ may suggest that the box was used for savings over several generations, while deposit II seems to represent one action in which new and old objects were wrapped and deposited in birch bark strips.

## **7.2 Feature contexts**

The interpretation of the feature contexts and site contexts of the hoards (section 7.3) is based on the Bornholm Museum's archaeological investigations of the deposition areas of the hoards, supplemented by the finds and observations made during reconnaissance conducted by private individuals with and without metal detectors. The find circumstances are described in the catalogue.

Often, the hoards cannot be definitively linked to a specific structure (or feature), since all objects were found scattered in the plough layer. In order to link a hoard to a feature, it is essential to establish a plausible coexistence between a hoard and a nearby feature. Only three such structures have been radiocarbon dated. Thus, the other objects found in association with them date the remaining structures. Since pottery is the most frequently found object group, this section opens with a discussion of Bornholm's Viking-Age pottery. The aim is to identify examples that support the coexistence between hoards and structures. House remains have been found at many of the excavated hoard sites. The chapter will discuss whether typological features can date the houses. Based on these chronological discussions, the feature contexts of hoards are evaluated. Finally, the relationship between hoard composition and feature context is discussed, including an evaluation of the notion that the contexts of hoards may reflect their function.

### **7.2.1 *The Viking-Age pottery of Bornholm***

The Bornholm Viking-Age pottery can be roughly divided into unornamented, hand-built pottery and ornamented fully or partly turned pottery. The development from unornamented to ornamented pottery on Bornholm is, as in many other parts of Scandinavia, inspired by the Slavic pottery tradition, and is referred to as Baltic Sea Ware (Roslund 2007; Naum 2008, 87; Ulriksen 2018, 202–203). It is difficult to distinguish between Slavic pottery and Baltic Sea Ware, because elements of design and ornamentation are shared. Thus, in line with Jens Ulriksen's definition, Baltic Sea Ware is defined as 'pottery vessels or sherds which find parallels in form and style with the pottery traditions in the Slavic areas south of the Baltic Sea in the period seventh-eighth to thirteenth centuries' (2018, 202, translated by author). The hand-built unornamented pottery is referred to, also in

line with Ulriksen, as unornamented settlement pottery (2018, 188). An in-depth analysis of the Bornholm pottery tradition is far beyond the scope of this survey. The purpose of this discussion is to determine whether it is possible to single out easily recognisable datable elements in the analysis of the features found on hoard sites.

Magdalena Naum (2008) has compiled the most comprehensive analysis of Baltic Sea Ware on Bornholm, where the first examples of Slavic pottery appear in the 900s. Naum states that the Bornholm Baltic Sea Ware differs from, for example, the pottery on Zealand and in Scania, where hemispherical vessels inspired by the pottery tradition of Rügen and the inland areas of Mecklenburg-Vorpommern predominate, while on Bornholm the most common types are S-shaped vessels with outward facing rims, inspired by traditions in the West Slavic area and the eastern part of Mecklenburg-Vorpommern (2008, 88). There are a few examples of Feldberg and Fresendorf pottery, while Menkendorf pottery is more abundantly represented. Naum's studies show that Baltic Sea Ware dominates the pottery on the Bornholm settlements from the beginning or middle of the eleventh century; the unornamented settlement pottery was produced and used only to a small extent after the end of the eleventh century (2008, 87).

The dating of Baltic Sea Ware is tangled with that of the Slavic models. However, they are difficult to date, and there are large regional differences in the dating of individual types (Ulriksen 2018, 202). Furthermore, the types can be difficult to identify, especially on fragmented pottery. In general, it can be stated that partly turned pottery with comb-line ornamentation is earlier than fully turned pottery with furrow ornamentation (Ulriksen 2018, 202–203). The partly turned pottery with comb ornamentation includes types such as Feldberg, Fresendorf, and Menkendorf, while the furrow-ornamented pottery includes types such as Vipperow, Teterow, Bobzin, Warder, and Weisdin. Feldberg- and Fresendorf-inspired pottery is only present in a few examples in the Bornholm material, while pottery modelled on Menkendorf types accounts for 12 per cent in Naum's analyses (2008, 92). In the Slavic area, Menkendorf is produced from the eighth century until the middle of the twelfth century. On Bornholm, the type appears in graves from the late 900s at the Runegård and Slamrebjerg burial sites. Pottery of the Menkendorf type is found at some settlements together with unornamented settlement pottery and at other settlements together with the later furrow-ornamented Baltic Sea Ware (Naum 2008, 95). It seems to constitute a transitional type on Bornholm. From the beginning or middle of the eleventh century, the turned furrow-ornamented pottery is dominant among the pottery inventory from the Bornholm settlements, and pottery modelled on Vipperow and Teterow is especially common (Naum 2008, 94). Subject to chronological overlap, it can be concluded that 1) a pottery inventory consisting entirely of unornamented settlement pottery indicates a date before 950/1000; 2) the presence of partly turned furrow-ornamented pottery possibly in combination with unornamented settlement pottery indicates a date from the late 900s to the early 1000s; and 3) a pottery inventory dominated by turned furrow-ornamented pottery reflects a date after 1000.

### 7.2.2 *The Viking-Age houses of Bornholm*

Most hoard sites are connected with settlement remains. Unfortunately, there is no available Viking-Age house typology on Bornholm. A settlement dating from the early Roman Iron Age to the Viking Age has been excavated at Runegård. The houses at the site are primarily recorded by search trenches (Watt 1982, 1983, 140–142). A single Viking-Age house (House XX) with a length of 28.5 m and a width of 7.7 m was fully excavated. The house was identified by traces of five sets of roof-bearing posts, and a western roof-bearing end post (not gable). The house had curved wall lines identified by traces of double rows of posts. The gables were also marked by posts. No datable finds were made during the excavation of the house, but the pottery inventory in the area consisted of unornamented settlement pottery, suggesting a date around the year 1000. House XXI, which also showed traces of curved walls with double rows of posts, was partially uncovered. The house was later than house XX. House XX is a clear example of a particular Bornholm construction feature, in which the roof-bearing structure consists of only one post at the western end of the house (Watt 1983, 141–144).

It is beyond the scope of this survey to perform a detailed chronological analysis of house types. However, it has been possible, in the course of examining the excavated hoard sites, to identify some typological elements that, based on stratigraphic observations and the hoard dates, can be used as chronological pointers.<sup>1</sup>

Hoards which have been preserved partly *in situ* and which are linked to houses can be used as chronological reference points in house typology. The Gyldensgård SV hoard was preserved partly *in situ* in the remains of a three-aisled longhouse with slightly curved walls with a single row of wall posts. The hoard was deposited 1035–1040 and thus dates the house type to the first half of the eleventh century. At Dammegård, house I is of the same type. House I at Dammegård is stratigraphically older than House II, which is characterised by curved walls with double rows of wall posts (catalogue: 8).

Houses I and II at Kannikegærdet are situated parallel to each other. The roof-bearing post sets reflect two separate phases (catalogue: 16). Charcoal and burnt wattle and daub were found in the post imprints of the remains of roof-bearing posts in House I. The finds indicate that the house was burnt. House II, on the other hand, contained charcoal and burnt wattle and daub in the posthole fillings, suggesting that House II is the most recent. Adjacent to the roof-bearing posts is a slightly curved wall course indicated by the remains of a double row of wall posts. A wide trench probably with the purpose of collecting rainwater ran parallel to the wall. The excavator has interpreted the wall course with posts and trench as belonging to both houses I and II. An alternative interpretation is that the remains of House II consist of sets of roof-bearing posts and a curved wall course with a double row of wall posts, similar to House II at Dammegård, while the remains of House I are sets of roof-bearing posts and wide rainwater trenches indicating the north and south walls.

Rainwater trenches are a distinctive element in the Viking-Age settlement of Bornholm. House sites characterised by sets of roof-bearing posts and wide

rainwater trenches along the north and south walls have been found at Skørrebro, Kannikegård/Tyskegård, Store Klintegård, and possibly also at the Nørremølle site. The pottery at Skørrebro consists exclusively of Baltic Sea Ware, found in the rainwater trenches and on the site in general. Based on the absence of wave ornamentation, excavator Anders Pihl has dated the pottery to the last half of the tenth century and earlier (2005). Naum has assigned the pottery to the Vipperow type, and she argues that the vessel types represented at the Skørrebro site appear in the eleventh century at the earliest. Based on the numismatic analysis, the deposition horizon of the Skørrebro hoard is 939–990 (Table 3.3). Thus, if the house is related to the hoard, there is a discrepancy between the pottery-dated house and the dating of the hoard. This will be discussed in more detail in section 7.2.3. The Kannikegård/Tyskegård and Store Klintegård hoards were probably deposited 1010–1020 and 1035–1040, respectively. The hoards have been interpreted as being deposited in association with houses with rainwater trenches (section 7.2.3). This seems to confirm that the house type may belong to the first half of the eleventh century. The house at Store Klintegård also has the characteristic Bornholm feature of only one western roof-bearing post, similar to the house at the Runegård settlement (catalogue: 42). Hence, this feature is found both in connection to houses with rainwater trenches as well as houses with curved walls with double rows of posts. The house at Slamrebjerg is another example with this special construction detail. Here, no traces of walls have survived (catalogue: 37).

At the Kannikegærde site, the southern rainwater trench intersects House III, which also has double wall posts or, alternatively, replacements. It is difficult to determine if House III had curved or straight walls, because the house is only partially unearthed. Unlike the Kannikegærde house (I)/II, the gable end of house III is clearly marked with a row of gable posts.

At the Åbo site, a small rectangular house with a partially preserved rainwater trench is later than a house with curved wall courses with a double row of wall posts. The latter is similar to house II at Dammegård and house (I)/II at Kannikegærde. Based on the hoard deposited by one of the roof-bearing posts, the Åbo House can be dated to after c. 1030.

Another house with curved walls and a double row of wall posts has been excavated at Store Gadegård area 3. The double rows are best preserved along the north wall, where it was documented that the outermost row had consisted of angled support posts. Thus, the house type is similar to the so-called Trelleborg/Fyrkat houses. Around the Store Gadegård house there is a clear rainwater trench. Hence, the house may represent a parallel to Kannikegærde house I/II, which, according to the excavator, also combines a double row of wall posts with a rainwater trench.

At the Pæregård site, a circumferential rainwater trench, very similar to the Åbo house, marks a small rectangular house. Neither remains of roof posts nor wall posts can be associated with the house. It is therefore possible that it was a sill construction, which argues for a late date (Vennersdorf 2004). The house is later than a three-aisled house with curved walls with a single row of posts. It is uncertain whether the Pæregård hoard, deposited 1047–1060, was associated with the house with curved walls or with the small rectangular house with a trench.

Another small house has been located at the Kobbegård site. The house remains consist of four sets of roof-bearing postholes with slightly drawn-in gable sets. Based on the hoard (*tpq* 1035), part of which was preserved *in situ*, the house can be dated to around the middle of the eleventh century. The Åbo house, the possible sill house at Pæregård, and the Kobbegård house document the appearance of small dwelling houses from around 1030/1040. Thus, there seems to be a tendency for the dwelling houses to become smaller from the mid-1000s.

Summarised, the excavated settlement remains associated with hoard sites reflect four possible house types:

Type 1) Three-aisled houses with wide rainwater trenches along the north and south walls without gable markings. The pottery in the Skørrebro house and the house type's association with the Kannekegård/Tyskegård and Store Klintegård hoards indicate that Type 1 houses date to the eleventh century.

Type 2) Three-aisled houses with curved walls with a single row of posts without a rainwater trench. The Gyldensgård SV hoard dates an example of this house type to around 1035–1040.

Type 3) Three-aisled houses of Trelleborg type<sup>2</sup> with curved double rows of wall posts, possibly with a rainwater trench. The gables are not marked with posts. The stratigraphic observations at the Dammegård site demonstrate that the house type is later than Type 2 houses, and depending on the interpretation of the Kannekegærdet houses, that it is later than Type 1 houses. On the other hand, the Åbo house, which can be dated to around 1029–1040 based on the hoard, also overlays a Type 3 house. Thus, the probable date for the house type is the first half of the eleventh century.

Type 4) Different types of small rectangular houses with and without rainwater trenches. The stratigraphic observations at the Åbo site illustrate that the type is later than Type 3 houses. The hoards that were preserved *in situ* at Åbo and Kobbegård establish a date from around 1030/1040.

Based on hoard finds and stratigraphic observations, it can be concluded that houses with wide rainwater trenches along the north and south walls and without gable markings (Type 1) were probably built in the eleventh century. Houses with curved walls begin to appear during the eleventh century. The material indicates that Type 1, Type 2, and Type 3 houses are probably present from the early 1000s. From around the middle of the eleventh century, the houses start to become smaller (Type 4) and there are various types of small rectangular houses in the material that can be dated to the last half of the eleventh century and onwards.

### **7.2.3 *The feature contexts of hoards***

The focal point of the feature-context analysis is the relationship between hoards and settlements. A main aim of the survey is to determine whether the hoards were deposited centrally on settlements, at the periphery of settlements, or in areas without settlements. Due to the often very limited excavation areas, the categorisation

of a hoard's association with a settlement is subject to some uncertainty. The excavation area offers only a small sample of settlement remains, and it is obviously impossible to determine whether finds just outside the excavation area would change the interpretation of the deposition contexts of the hoards.

The method used is based on the identification of characteristic structure types that can plausibly demonstrate the nature of the area in which the hoard was deposited, provided of course that coexistence between structures and hoards can be established. Three-aisled longhouses traditionally contain dwellings and/or stables and indicate that the hoard was deposited centrally at a settlement site. Pit areas with boulders, clay, and/or waste pits are considered to be located at the periphery of settlements. Small outbuildings and craft activities associated with fire-based crafts may also indicate the periphery of a settlement area. The last category, unrelated to settlement, is defined by the absence of settlement remains.

On Bornholm, Viking-Age house sites are often visible in the plough layer as areas with concentrations of primarily wattle and daub and pottery, and to a lesser extent fragmented bronze objects, slate whetstones, and grindstones. The research value of the surface finds is limited, especially from a chronological perspective, since the finds may originate from activities spread over many phases and many types of activities. Although it cannot be determined what lies outside the excavated areas, surface finds can indicate activities in an area. Considering these factors, surface finds are included in the analysis.<sup>3</sup>

As a starting point, all excavated sites are included. However, the Skovsholm site is excluded from the analysis because it is not possible to determine whether the hoard was deposited in a house, near a spring, or near a work building (catalogue: 33). As an exception, the Rabækkegård hoard is included in the analysis. The location has not been subject to archaeological investigations, but find information clearly indicates that the hoard was deposited in a grave.

Initially, the analysis discusses the structure types and dates of the excavated hoard sites, leading to an interpretation of the site context of each hoard. The chapter then examines the possible relationship between hoard structures and feature contexts. Finally, a more detailed analysis of the specific depositional circumstances surrounding each hoard is carried out, and it is discussed whether these circumstances can contribute to the interpretation of the functions of hoards.

### 7.2.3.1 Hoards deposited centrally on settlements

Fifteen hoards are interpreted as deposited centrally on settlements. Hoards were preserved partly *in situ* at **Gyldensgård SV**, **Kobbegård**, **Pæregård**, and **Åbo**, and these hoards are most likely associated with houses interpreted as dwellings (catalogue: 15, 18, 27, and 48).

The **Dalegård** hoard (catalogue: 7) was found redeposited in a modern drainage trench that runs close to a house site. The hoard was probably originally deposited in the house, which due to the very scarce finds has been interpreted by the excavator as a possible stable building. The sparse material may also be due to the

conditions of preservation, since the only remaining traces of the house were three sets of roof-bearing postholes.

The **Kannikegård/Tyskegård** and **Rosmannegård S** hoards have also been interpreted as deposited centrally at a settlement, but here the silver distribution suggests that the deposit was outside a house, which in both cases have been interpreted as dwellings. At the **Kannikegård/Tyskegård** (catalogue: 17) site, the silver was scattered immediately south of a Type 1 house, where a Menkendorf-type rim sherd was found in the rainwater trench (Naum 2008, figure 7). Thus, the house probably dates to the end of the tenth century or the first half of the eleventh century. This supports a coexistence with the hoard deposited 1014–1020. The silver distribution at **Rosmannegård S** (catalogue: 29) was centred on a stone trace approximately 10 m south of some house sites indicated only by roof-bearing postholes. The postholes revealed very few finds, and, as at Dalegård, the structures may have functioned as stables. Neither typology nor finds can date the houses, and it is difficult to establish potential simultaneity with the hoard. The only excavated feature providing material culture was a small pit with a spindle weight, a slate whetstone, and ceramic fragments of both unornamented settlement pottery and Baltic Sea Ware. The Baltic Sea Ware is not described in detail in the report. The combination of unornamented settlement pottery and Baltic Sea Ware suggests a date before 1050, and thus possible contemporaneity with the Rosmannegård S hoard, deposited 1002–1020. The pit is not necessarily associated with the house sites, and the interpretation of the Rosmannegård S hoard's deposition context is tentative.

For the **Dammegård**, **Kannikegærden**, **Munkerup**, **Rosmannegård SV**, **Skørrebro**, **Store Gadegård** (area 3), and **Store Klintegård** hoards it is difficult to determine whether the hoards were deposited in or near a house. At **Dammegård** (catalogue: 8), the largest concentration of silver objects is in the south central part of House I (a Type 2 house), or immediately outside the south entrance to House II (a Type 3 house). The **Dammegård** hoard was probably deposited 990–1000/1005, and may be contemporary with both houses. In a pit, which is stratigraphically older than House I, a small fragment of Baltic Sea Ware ornamented with a furrow was found; it is not possible to determine whether it is an early or late type. The remaining pottery, found among other fragments in postholes, consists of unornamented settlement pottery. This confirms an early dating of House I and a possible connection with the hoard. Thus, the find distribution suggests that the **Dammegård** hoard was deposited in a house.

The silver distribution at **Kannikegærden** (catalogue: 16) was centred on the western part of Houses I and II, which may represent a Type 1 and/or a Type 3 house (section 7.2.2). A soapstone spindle weight and a sherd of Baltic Sea Ware were found in the roof-bearing postholes of House I. The pottery is ornamented with a double-incised furrow. Unornamented settlement pottery and a single sherd of Baltic Sea Ware (not described in detail) were found in the rainwater trench. House I/II is later than house III, which is later than the boulder pits with a pottery inventory consisting exclusively of unornamented settlement pottery. In general, the ceramics on the site were dominated by unornamented settlement pottery, with

a few inclusions of Baltic Sea Ware associated with Houses I and II. It is therefore likely that the Kannikegærdet hoard, deposited either immediately before or after AD 1000, is contemporaneous with either House I or II. Since the find distribution was confined to the west end of these houses, it is reasonable to interpret the hoard as deposited in either House I or II.

The excavated postholes at **Munkerup** (catalogue: 23) are interpreted by the excavator as two stack barns. However, an alternative interpretation is proposed, and settlement remains are interpreted as a dwelling house with four sets of roof-bearing posts with drawn-in gable sets – a house structure that finds its parallel in design and dimensions in the Kobbegård house (section 7.2.2). The similar deposition horizons of the hoards, Munkerup 1046–1060 and Kobbegård 1035–1040, support this interpretation. The Kobbegård hoard, part of which was preserved *in situ*, provides a date around the mid-1000s for the Kobbegård house. This suggests that contemporaneity between the similar house and hoard at Munkerup is likely. A waste pit to the northwest of the Munkerup house contained a wide variety of furrow-decorated turned Baltic Sea Ware, including sherds of Weisdin-like pottery<sup>4</sup>, indicating activity in the eleventh century. It is unclear whether the hoard was deposited in or near the house.

The **Nørremølle** hoard, part of which was preserved *in situ*, was found next to stone traces indicating that the hoard was deposited near a large stone. In addition to a few pits, small ditches, and a few postholes, the gables of two houses were uncovered. The remains of three roof-bearing posts and possibly a rainwater trench indicate the presence of a Type 1 house south of the hoard. Unornamented settlement pottery in one of the roof-bearing postholes confirms an early date for the house. West of the hoard, a set of roof-bearing postholes indicates another house. The postholes contained a large number of finds including Baltic Sea Ware, sherds of soapstone vessels, and an unornamented miniature vessel. The finds suggest a date in the eleventh century, and the house may be concurrent with the hoard. The limited excavation area makes it difficult to define the character of the house. However, the rich cultural material found in connection with the house indicates a dwelling, and the Nørremølle hoard is tentatively interpreted as deposited centrally on a settlement just outside a house.

At **Rosmannegård SV** (catalogue: 29) the distribution of silver is concentrated at the eastern end of House 4. Here the southern wall is marked by a row of postholes indicating a Type 2 house. Pottery<sup>5</sup> and sherds from soapstone vessels were recovered from the roof-bearing postholes, suggesting a Viking Age date. The hoard was deposited at the turn of the eleventh century. The house type and the soapstone sherds suggest contemporaneity between hoard and house, and the concentration of silver dispersed over House 4 indicates a hoard deposition in the house.

The excavated area at the **Skovgård** site (catalogue: 32) is characterised by massive fire and cultural layers containing the remains of at least five houses, according to the excavator. The material culture primarily reflects activity from the Viking Age in the form of Baltic Sea Ware, fragments of grindstone of mica schist, a whetstone of Norwegian slate, a rim sherd of a soapstone vessel, a playing piece of sandstone, and a rock crystal bead. The deposition place of the hoard could not

be determined, but the concentration of settlement traces and the finds indicate that the hoard was deposited centrally on a settlement in or near a house.

The silver of the **Skørrebro** (catalogue: 36) hoard was mainly scattered in an area immediately outside the northwest gable of a Type 1 house. As mentioned previously, the house produced a pottery inventory consisting entirely of Baltic Sea Ware, dated by Naum to the eleventh century. Thus, there appears to be a discrepancy between the numismatic dating of the deposition horizon 939–990 of the hoard and the pottery-dated house. However, the site seems to represent a single phase in a settlement, which is supported by the uniformity of the pottery inventory. Thus, the concentration of silver dispersed immediately outside the northwestern gable of the house can cautiously be interpreted as deposited in connection with the house. If it is accepted that hoard and house are related, this reflects one of the following scenarios: either the hoard was deposited later than the numismatic analysis indicates, or Skørrebro represents one of the earliest examples on Bornholm wherein pottery of the Vipperow type appears as the dominant type. The chronological centre of the Skørrebro hoard is before 910, and only two coins were struck later, around 930. In section 5.3 it is argued that Islamic coins could circulate for a long time, but given the chronological discussion of the Skørrebro hoard's deposition horizon (section 3.3), it is unlikely that the hoard was deposited in the first half of the eleventh century. Thus, the hoard is interpreted as deposited in connection with the Type 1 house, and signals a very early example of Vipperow-type pottery on Bornholm.

An abundance of finds dating from the Stone Age and Roman Iron Age to the Middle Ages are associated with **Store Gadegård, area 3** (catalogue: 41). In addition, relatively extensive excavation activity, in which 1,395 m<sup>2</sup> was exposed, has recorded a high concentration of constructions. The archaeological investigations were focused on a Type 3 house, which was completely exposed and investigated. A large pottery ensemble was revealed in the southeastern part of the house's rainwater trench. It consisted mainly of turned furrow-ornamented Baltic Sea Ware and a few sherds of unornamented settlement pottery (Naum 2008, 115). This confirms the identification of the house as a Type 3 house dated to the eleventh century, probably in the first half. Thus, probable contemporaneity can be established between the house and the hoard deposited 1010–1020. The hoard is mainly dispersed in areas outside the house indicating that it was deposited close to the Type 3 house. Unfortunately, none of the other postholes on the site was investigated in detail, making it impossible to identify any additional house structures. It can therefore neither be rejected nor proven whether the hoard should be linked to other structures. Based on the probable contemporaneity with the Type 3 house, the hoard is interpreted as deposited near a dwelling house.

The **Store Klintegård** hoard (catalogue: 42) was mainly scattered in an area south of the west gable of a Type 1 house. The southern rainwater trench contained a large pottery assemblage consisting of a mixture of unornamented settlement pottery and Baltic Sea Ware ornamented with waves and horizontal furrows. The pottery inventory points to a date at the end of the tenth century and the first half of the eleventh century, which supports contemporaneity with the hoard deposited

1023–1040. The distributed silver probably reflects a deposit immediately outside the house.

At **Slamrebjerg** (catalogue: 37) the silver distribution is concentrated in and immediately outside the southeastern part of a three-aisled house. Remains of wall constructions are not preserved, but a roof-bearing end post is included, a feature that can be found in the Store Klintegård house (section 7.2.2). A few sherds of unornamented settlement pottery as well as turned Baltic Sea Ware ornamented with waves and horizontal furrows were found. Thus, a possible contemporaneity between hoard and house is established, but it is difficult to determine whether the hoard was deposited inside or outside the house.

### 7.2.3.2 Hoards deposited at the periphery of settlements

Nine hoards are interpreted as having been deposited at the periphery of settlements. Døvregård, Smedegård NØ, and Smørbygård are preserved partly *in situ* in areas interpreted as the outskirts of settlements.

Part of the **Døvregård** hoard (catalogue: 9) was preserved in a pottery vessel at the time of discovery. The vessel had been lowered into a small pit about the same size as the vessel. Immediately west of the hoard, the remains of 3–4 sets of roof-bearing posts were exposed, probably representing a small north-south oriented outbuilding. No datable finds were made in the postholes, and the structure holds no datable typological features. Thus, possible contemporaneity between hoard and building can be neither confirmed nor rejected. A large pit and a cooking pit without datable finds were exposed near the hoard. Concentrations of burnt wattle and daub, pottery, and some bronzes were found 100–200 m south of the deposit. The Døvregård hoard is therefore interpreted as deposited at the periphery of a settlement area, but this is tentative, and an alternative interpretation might view the hoard as having been deposited in an unsettled area.

The coins preserved *in situ* in the **Smørbygård** hoard (catalogue: 39) were found in a small pit 40 cm in diameter and just 4 cm deep. North of the hoard the remains of two small buildings/stacks were uncovered in the form of 2 x 2 sets of roof-bearing postholes. A slate whetstone and shards of Baltic Sea Ware decorated with a wave were found in several postholes. Several pits with a pottery inventory consisting exclusively of Baltic Sea Ware were found in the area. The activities in the area can be dated to the eleventh century, and are likely contemporary with the Smørbygård hoard, deposited 1042–1060. Because the structures consist of outbuildings/stacks and pits, the hoard is interpreted as deposited at the periphery of a settlement.

The **Smedegård NØ** site (catalogue: 38) is notably the only site where extended excavations have been carried out in order to clarify the overall structure of the settlement and the location of the hoard in relation to it. The Smedegårds NØ hoard deposits I and II were located 5–6 m from a fire layer with large amounts of charred grain covering at least two postholes and a pit that can be interpreted as a small building/stack. Grain from the fire layer is C-14 dated to 1045–1280, with 82.6 per cent probability of a date 1147–1280. This establishes a likely contemporaneity

with the hoard. A small east-west oriented house was uncovered 75 m northwest of the hoard. The house exhibited an irregular internal post setting, perhaps because some of the posts were placed on stones. The length between the westernmost and easternmost sets of roof-bearing posts was 12.5 m. Baltic Sea Ware was found in the easternmost set of roof-bearing postholes. One of the sherds was ornamented with three parallel horizontal furrows. Furthermore, an iron knife and a fragment of a rotary quern in mica slate were found in the northern and southern postholes, respectively. Grains from a charred post pipe of a roof-bearing post provide a C-14 date of 1217–1387. It is likely that the charred material is from the final phase of the house, indicating a chronological overlap between the house and the hoard (*tpq* 1152), depending on the lifespan of the house. The C-14 dating does not immediately confirm the contemporaneity between house and hoard. Macrofossil analyses of samples from the postholes of the house and the fire layer show great uniformity in species composition, suggesting a link between the house and the fire layer. The Smedegård NØ hoard is interpreted as deposited at the periphery of a settlement because of its likely contemporaneity with the stack barn with fire layer. Because the link between the house and the stack barn is plausible based on macrofossil analyses, it is likely that the three-aisled house was part of the same settlement.

The **Egenvang** hoard (catalogue: 10) may also have been deposited near an economy building/stack. The hoard was scattered in an area with pits, and the remains of a small building with two sets of roof-bearing posts was excavated just north of the main silver concentration. Baltic Sea Ware was found in one of the postholes (Laursen 2016, 5). The pottery is of the early comb-ornamented type, which makes it likely that the building is contemporaneous with the hoard, deposited 1002–1020. The hoard is interpreted as having been deposited at the edge of a settlement area near an economy building.

The **Frostegård** hoard (catalogue: 13) was scattered in an area with pits and postholes, but none of the postholes could be linked to house structures. Thus, the area is interpreted as the periphery of a settlement area. The pottery at the site consists of turned furrow-ornamented Baltic Sea Ware, indicating a contemporaneity with the hoard deposited 1042–1060.

The **Munkegård** site (catalogue: 22) has been investigated several times, which has provided a relatively good overview of the site structure. Traces of the central settlement with dwelling houses were recorded in the southern part of the surveyed areas. The northern part has produced finds indicating a workshop area. Signs of settlement activity decrease to the east, where the Munkegård I hoard was deposited. Thus, the hoard was deposited at the periphery of the workshop area. The site undoubtedly contains several activity horizons, but based on the present investigations it is not possible to divide the activities into phases. A wealth of material consisting of Baltic Sea Ware, grindstones of mica schist, slate whetstone, bronzes, fragments of scales, a weight, and coins date the site to the eleventh century, and a coexistence between hoard and settlement is likely.

The **Englyst** hoard (catalogue: 12) was dispersed in an area with a trench which is presumed to be modern. Large concentrations of burnt wattle and daub about

50–75 m west of the hoard's deposition area indicates the presence of a burnt house site. The area is also characterised by concentrations of bronzes. Finds of both unornamented settlement pottery and furrow-ornamented Baltic Sea Ware indicate that settlement activity dates from the late 900s to mid-1000s. Thus, the activities may have coincided with the Englyst hoard, deposited around 1000, or alternatively after 1065 (Appendix 1). Hence, the hoard is tentatively interpreted as being deposited at the periphery of a settlement.

The results of the **Skovvang** (catalogue: 34) excavation were sparse. The only recorded structure was a boulder pit. This may be due to poor observation conditions caused by a very stony subsoil. For the same reason, only a small area was exposed. The find distribution displays a small concentration of coins, bronzes, and weights about 70 m northeast of the hoard. This suggests the presence of a settlement. The hoard is therefore cautiously interpreted as deposited on the outskirts of a settlement.

The **Nordre Stensebygård** hoard (catalogue: 24) 1047–1060 was scattered in an area with clear traces of silversmithing activity. A pit with silversmith debris consisting of, among other things, a crucible with a partially melted coin, a fragment of a Viking-Age silver arm-ring, silver drops, and flakes was found near the silver concentration. The lower portions of two turned Baltic Sea Ware vessels were located at the top of the pit. Considering the silver distribution and the contents of the pit, it is interpreted as the likely original deposition place of the hoard. Adjacent to the pit was a triangular stone setting that may have formed the base of a forge. The edge of a stone-paved floor was uncovered to the east of the forge. The arm-ring, the Baltic Sea Ware vessels, and the partially melted Viking-Age coin suggest that the hoard and pit were contemporaneous. Hence, the hoard is interpreted as deposited at the periphery of a settlement close to a forge.

### 7.2.3.3 *Hoard deposited by settlements*

At three sites it cannot be determined whether the hoards were deposited centrally on the settlement or on the outskirts of the settlement. The excavation reports for the **Ahlesminde** and **Blykobbegård** (catalogue: 1 and 2) hoards are at present unprocessed, and the **Lillegærde** site (catalogue: 21) has not been subject to archaeological investigation, except for the 10 m<sup>2</sup> area which was cleared around the hoard when it was recovered. The surface finds in the area indicate the presence of a Viking settlement, and observations made during the retrieval of the hoard suggest that it was embedded in a clay floor. However, the nature of the settlement cannot be determined.

### 7.2.3.4 *Hoard deposited outside settlements*

Four hoards were deposited outside settlement context. Although the **Rabæk-kegård** hoard is not among the excavated sites, it is included in the hoard analysis. The find description clearly states that the hoard was deposited in a grave, enclosed by four stones that formed a coffin in a mound (Galster 1980, 30).

The **Buddegård** hoard (catalogue: 6) was located on a hillside sloping down to a lowland with a stream bed which is now dried out. The only finds in the area were the silver objects of the hoard, and a spherical bronze weight with flat poles and an iron core. The weight was located some distance from the silver concentration, but may have originally been deposited with the hoard (section 3.1.1). The area around the silver concentration was unearthened and search trenches were opened in the area where the weight was located, but no structures were identified in the area.

No structures were recorded when the area around the **Tyskegård** hoard (catalogue: 44) was excavated. Instead, it was documented that the hoard was probably deposited by a large rock.

Coins from the **Krusegård** hoard (catalogue: 20) were found in 1941. It is recorded that the coins lay in a depression that held water almost all summer. It was also noted that no pottery, charcoal, or other discarded objects were found in the area. The deposition area was re-located by detector and subsequently excavated in 1993–1994. The coins found during excavation were located at the top of the plough layer, and the find was interpreted as a re-deposited hoard. By submission in 1941, it was stated that the area would subsequently be filled with stones and covered with earth (Galster 1980, 126). It is probably in connection with this work that the earth layers were moved. This does not change the original description of the find, which clearly states that the hoard was deposited in a wetland area with no traces of settlement.

An overview of the structure contexts of the hoards and their association with settlements is provided in Table 7.2.

*Table 7.2* Summary of interpretations of feature contexts of hoards.

<i>Site</i>	<i>Date</i>	<i>Context</i>	<i>Interpretation</i>
Skørrebro	939–990	(in or) near dwelling house	central at settlement
Dammegård	990–1000/1005	in (or near) dwelling house	central at settlement
Kannikegærde	996–1000/1005	in (or near) dwelling house	central at settlement
Rosmannegård SV	997–1000/1005	in (or near) dwelling house	central at settlement
Rosmannegård S	1002–1020	near stable, by large stone	central at settlement
Dalegård	1009–1020	in stable	central at settlement
Kannikegård/ Tyskegård	1014–1020	near dwelling house	central at settlement
Store Klintegård	1023–1040	(in or) near dwelling house	central at settlement
Skovgård	1029–1040	in or near house	central at settlement
Slamrebjerg	1035–1040	in or near dwelling house	central at settlement
Åbo	1029–1040	in dwelling house	central at settlement
Gyldensgård SV	1035–1040	in dwelling house	central at settlement

(Continued)

Table 7.2 (Continued)

<i>Site</i>	<i>Date</i>	<i>Context</i>	<i>Interpretation</i>
Kobbegård	1035–1040	in dwelling house	central at settlement
Store Gadegård, area 3	1037–1040	near dwelling house	central at settlement
Munkerup	1046–1060	in or near dwelling house	central at settlement
Nørremølle	1035–1040	near dwelling house, by large stone	by settlement
Pæregård	1047–1060	in dwelling house	central at settlement
Buddegård	947–990	hillside sloping towards stream	outside settlement
Rabækkegård	913–990	in grave	outside settlement
Tyskegård	997–1000/1005	by rock	outside settlement
Krusegård	1056–1060	by wetland	outside settlement
Englyst	997–1000/1005	50–75 m east of a burnt house	periphery of settlement
Egenvang	1002–1020	near economy building/stack	periphery of settlement
Munkegård I	1002–1020	outskirts of workshop area	periphery of settlement
Døvregård	1028–1040	near economy building	periphery of settlement
Skovvang	1030–1040	near boulder pit	periphery of settlement
Frostegård	1042–1060	by ‘random post- holes’ and pits	periphery of settlement
Smørbygård	1042–1060	in pit area, south of outbuildings	periphery of settlement
Nordre Stensebygård	1047–1060	in pit with silver- smithing debris	periphery of settlement
Smedegård NØ	after 1152	near economy building/stack	periphery of settlement
Blykobbegård	1018–1020	in or near house	by settlement
Lillegærde	1048–1060	in or near house	by settlement
Ahlesminde	after 1070	In or near house	by settlement

*Note:* The table summarises the interpretation of the feature contexts of the hoards, and whether they were deposited centrally on settlements, at the periphery of settlements, or without connection to a settlement. Grey text indicates the least likely interpretation (according to author). Grey background indicates that it has not been possible to establish (or reject) contemporaneity between structure and hoard.

#### 7.2.4 *The connection between hoards and settlements*

The analysis of the relatively well-studied Bornholm hoard sites contributes to the discussion on the connections between hoards and settlements, which Östergren started in the 1980s based on the Gotlandic hoards (section 2.1).

The vast majority of hoards are linked to settlements. Of the 33 hoards with an estimated deposition area, 29 hoards are deposited either centrally on the settlements or at the periphery of settlements (Table 7.2). The analysis documents that many – but far from all – hoards were deposited centrally on settlements. It is likely that 15 hoards, i.e. almost half of those analysed, were deposited in or immediately

outside a dwelling house, or perhaps in a few cases a stable. The deposition pattern is not chronologically tied to a particular phase, and there are examples of hoards deposited in or near a house within phases 2 to 6, covering 900–1060 (Table 3.3). The deposition practice is not represented in the oldest phase 1 (850–900) and the latest phase 7 (after 1060); however, this may be due to limited finds, since only one hoard is attributed to phase 1 and four hoards to phase 7 (Table 3.3). It is possible that the Ahlesminde hoard with a *tpq* of 1070 was found in a house. The preponderance of hoards deposited centrally on settlements may be partly due to methodological issues, since areas with settlement traces are more often targets for detector searches than areas without settlement traces (Chapter 3). There is a strong likelihood that hoards deposited in areas without settlement traces are underrepresented in the material.

A relatively large number of hoards are also deposited on the edges of settlements. Six hoards most likely fall into this category, while three hoards are tentatively assigned to it. Again, no clear chronological relationships in deposition patterns are apparent; however, none of the hoards deposited in the 900s are included in this category. The group of hoards deposited on the outskirts of settlements include hoards dated around 1000 and up to after 1150 (Table 7.2).

Only four hoards are interpreted as deposited without any connection to the settlement. The Rabækkegård hoard was deposited in a grave, the Buddegård hoard was deposited in an area without traces of settlement, and the same applies to the Tyskegård and the Krusegård hoards, which were deposited near a rock and in wetland, respectively. Three of the hoards date to the tenth century, while the last, Krusegård, dates to around the middle of the eleventh century. There is a slight tendency for hoards deposited in areas without settlement traces to be early. Hoards not associated with settlements may be underrepresented in the material, since areas without other settlement indicators are rarely selected for surveys by the private metal detector archaeologists (Chapter 3).

Both small and large hoards are deposited centrally on the settlement and at the periphery of the settlement. The four hoards with no documented relation to a settlement are all small and weigh less than 200 g (Figure 7.8). There is a tendency for hoards deposited centrally on settlements to be dominated by coins. An exception is Skovgård, Store Klintegård, and Åbo, all dated to 1023–1040. Melts form the largest object group in these hoards. This is a characteristic feature of hoards with a *tpq* in the 1020s, and the Døvregeård hoard with a *tpq* of 1028 is dominated by melts (Figure 3.12). Døvregeård, unlike the other three melt-dominated hoards, is deposited at the periphery of a settlement. Døvregeård is significantly larger than the other three hoards. Together with the Egenvang and Smedegård NØ hoards, Døvregeård forms part of a small group of very large hoards dominated by find groups other than coins, all deposited on the outskirts of settlements (Figure 7.8).

While there is a relatively even distribution of small, medium, and large hoards deposited at the centre of settlements, two groupings can be seen among hoards deposited at the periphery of settlements. One group consists of small hoards of less than 200 g, consisting mainly of coins. The second group consists of large hoards of 800 g or more; among these are the aforementioned hoards Døvregeård,

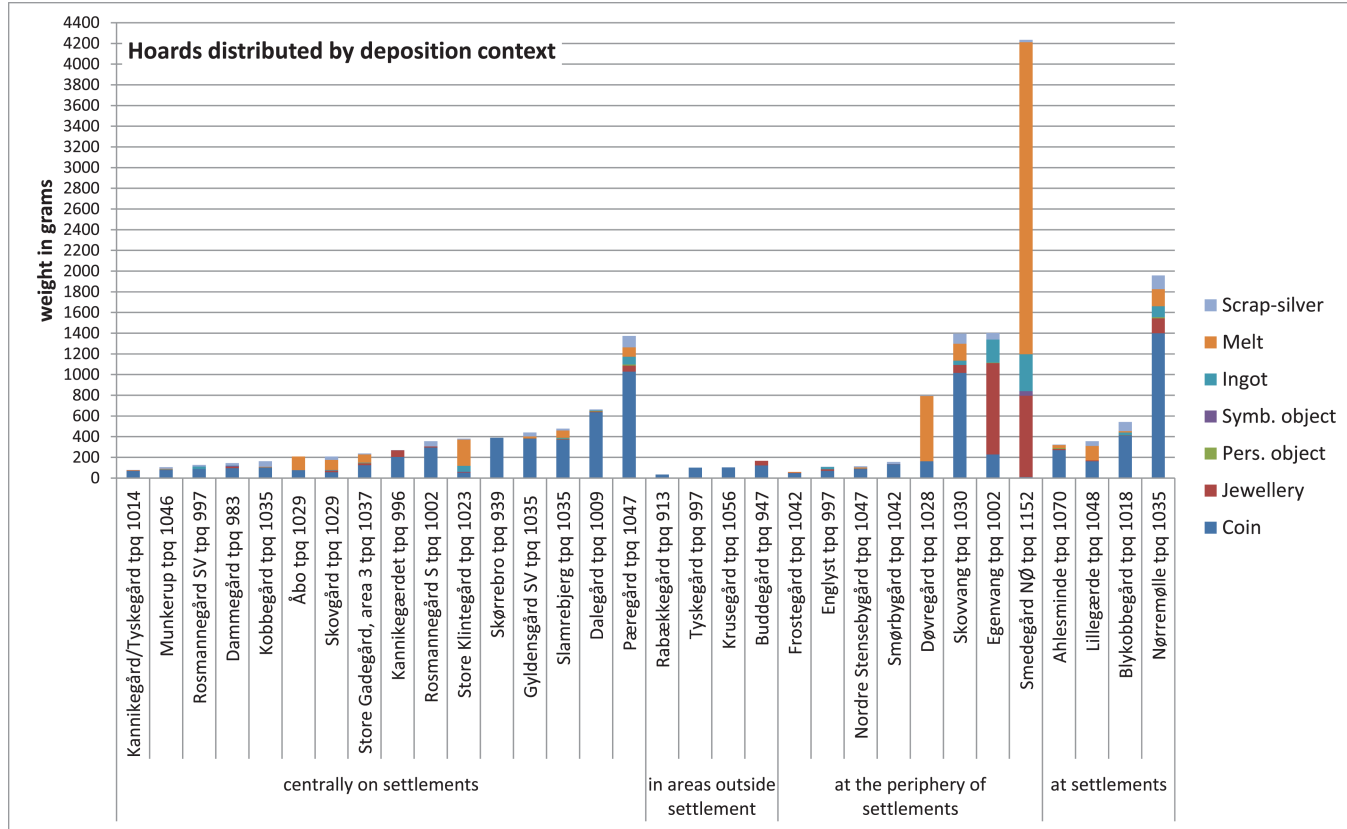


Figure 7.8 The connection between hoard compositions and settlements.

Egenvang, and Smedegård NØ, with a high proportion of uncoined silver. The three hoards are all found near small economy buildings/stacks. A long expanse of time is covered by the three hoards, which are dated to 1028–1040, 1000/1005–1020, and after 1152, respectively (Table 3.3). The fourth of the large hoards deposited at the periphery of settlement is the Skovvang hoard, which is very similar in composition to the Pæregård hoard, which was deposited centrally at a settlement.

It can be concluded that hoards were deposited centrally at settlements (both in and immediately outside houses) throughout the investigated period, and that there is a slight tendency in the 900s for hoards also to be deposited without a connection to settlements, while in the 1000s hoards are also deposited at the periphery of settlements. The weak chronological trend may also be due to the relatively limited material. Small, medium, and large hoards are deposited centrally within settlements, and coins are typically the dominant object group in these hoards. The only exception is hoards with a *tpq* in the 1020s, in which melts appear as a prominent element. Hoards deposited at the periphery of settlements fall into two groups. One group consists of coin-dominated small hoards under 200 g, while the other group is made up of four large hoards, three of which are dominated by jewellery and/or melts. Hoards deposited outside settlements are also dominated by coins and weigh less than 200 g.

### *7.2.5 Are hoard functions and feature contexts interlinked?*

The composition of hoards deposited at the centre of settlements versus those on the outskirts of settlements are similar. The feature context of the Nordre Stensebygård hoard provides the only direct evidence of the hoard's purpose. The hoard is most likely linked to a pit with objects related to silversmithing activities. Thus, the feature context indicates that the hoard functioned as the raw material of a silversmith.

However, as outlined, certain trends are documented. Coins dominate in hoards deposited centrally on settlements. Coins constituted small units which are easy to transport. Coins could be used in areas with a weight economy as well as in areas with a coin economy. Coins were ideal units if part of the hoard was to be reactivated, for example during a trade journey. Thus, the predominance of coins among hoards deposited centrally on settlements falls in line with Östergren's interpretation of active hoards deposited in houses (Östergren 1989, 248). Von Heijne argues that hoards were deposited on settlements, but not in houses (von Heijne 2004, 58–59) (section 2.1). The analysis of the Bornholm hoards demonstrates that hoards found centrally on settlements were deposited both in houses and immediately outside houses. There seems to be no difference in the composition of hoards deposited inside or outside houses. The immediate contexts of the Pæregård and Gyldensgård SV hoards reveal that a portion of each hoard was probably contained in a bag/purse. This supports the idea that hoards deposited centrally on settlements were active hoards, with a dynamic accumulation process, whereby objects were added and removed even after the hoard was deposited.

Three hoards deposited centrally on settlements, Skovgård, Store Klintegård, and Åbo, are dominated by melts rather than coins. Many of the melts found in the

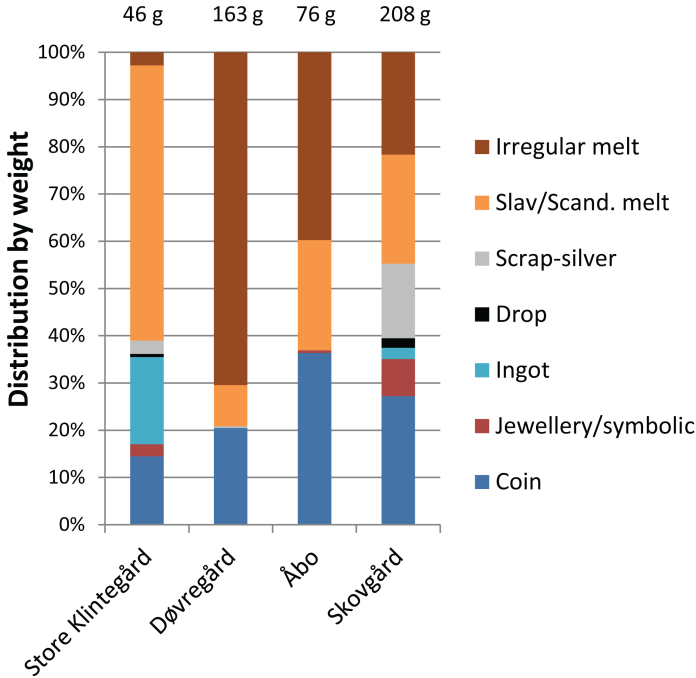


Figure 7.9 The four hoards with *tpqs* in the 1020s – Store Klintegård, Døvregeård, Åbo, and Skovgeård – are dominated by melts. However, there are differences in the types of melts in the hoards. This is true of the Store Klintegård hoard in particular, but Åbo and Skovgeård also have a significant element of Slavic/Scandinavian melts, while the Døvregeård hoard is dominated by irregular melts.

hoards are of the Slavic/Scandinavian type (Figure 7.9). The characteristic appearance of these melts is probably the result of a cupellation process (section 4.1). They represent a group of objects in which silver was processed in the Viking Age in order to improve and standardise its quality. The Slavic/Scandinavian melts display numerous chisel marks, some of which were added during the production process, while the silver was still soft. This suggests preparation for later division, for example in transactions (section 6.3) (Figure 4.1). Slavic/Scandinavian melts are found in hoards on Bornholm, eastern Sweden, and the West Slavic area. The object group becomes a dominant feature in hoards with a *tpq* in the 1020s (Figure 3.12). As shown by Hårdh, the fragmentation of silver objects in hoards peaks around 1000 and declines again after 1020 particularly in Scania, Blekinge, Bornholm, and the Slavic area, where Slavic/Scandinavian melts are widespread (section 4.1). Slavic/Scandinavian melts may have been introduced as a more manageable unit than the highly fragmented silver (Hårdh 2013, 530). Slavic/Scandinavian melts are, because of the cupellation process, of good quality silver. Together with their standardised design and evidence of preparation for division, it is likely that these melts functioned as a trusted currency in the Baltic region. As outlined earlier, Slavic/Scandinavian melts possessed properties which were similar to coins. In

the Skovgård, Store Klintegård, and Åbo hoards, Slavic/Scandinavian melts are a principal element (Figure 7.9), and an interpretation similar to the coin-dominated hoards deposited centrally at settlements is likely. Irregular melts dominate the contemporary Døvregård hoard, deposited at the periphery of the settlement. This suggests a different function to the other three melt-dominated hoards deposited centrally at the settlement. It is possible that the Døvregård hoard, like the Nordre Stensebygård hoard, which is also deposited at the periphery of a settlement area, should be interpreted in connection with craft activities.

The Buddegård, Tyskegård, and Krusegård hoards, deposited outside settlement contexts, display a markedly different composition to other concurrent hoards (Figure 3.11). Buddegård is interpreted as a central brooch deposit, consisting of a trefoil brooch, probably subjected to deliberate destruction upon deposition, a bracelet, and a large proportion of complete Islamic coins transformed into coin-jewellery (sections 6.1.1, 6.2, and 6.4). A symbolic function of the hoard is suggested by the association of the hoard type with female graves and the deliberate destruction of the trefoil brooch. The composition of the Tyskegård hoard is unique, because it consists exclusively of one coin type, and the coins display very few circulation traces (sections 6.1.2 and 6.2). This suggests a deliberate selection of objects before deposition, indicating a symbolic function, like the Buddegård hoard. The Krusegård hoard consists exclusively of coins, and thus differs from all other Bornholm hoards of the 1000s. This reflects a special selection of the deposited objects. The hoard was deposited in or near a wetland. The composition of the hoard and its context suggest that it had a symbolic significance. Thus, there is strong evidence that hoards deposited outside settlements were linked to the symbolic field.

The Buddegård hoard was deposited 947–990 just 2.5 km from the Kannikegærødet site with the Kannikegærødet hoard deposited 990–1000/1005. The presence of the same type of unusual trefoil brooch at both sites (Figure 5.15), and a very high proportion of coins with suspensions in both hoards, links the two locations together (sections 5.5 and 6.4). The Tyskegård hoard, dated to 997–1000/1005, is deposited just 200 m from the Kannikegård/Tyskegård site, where the hoard is dated to 1014–1020. Possibly, the same group of people were associated with the Buddegård and Kannikegård hoards, and the Tyskegård and Kannikegård/Tyskegård, respectively. However, the hoards represented different types of capital, which is reflected in their compositions and deposition contexts. The Buddegård and Tyskegård hoards connect to the symbolic field through a special selection of objects and a deposit outside the settlement context. The Kannikegærødet and Kannikegård/Tyskegård hoards, on the other hand, are deposited centrally at settlements, and as will be demonstrated in section 7.3, hoards deposited centrally within settlements are primarily linked to the economic and social fields, as built-up value through trade and network contacts.

The Buddegård and Tyskegård hoards may be markers of ownership for the inhabitants of the Kannikegærødet and Kannikegård/Tyskegård sites. Thus, Buddegård and Tyskegård were perhaps deposited as symbolic capital when the people at Kannikegærødet and Kannikegård/Tyskegård settled in the areas. The

Kannikegærðet and Kannikegård/Tyskegård hoards, on the other hand, represented the economic and social capital of the same individuals.

The fourth hoard deposited outside a settlement context is the Samanid hoard deposited in the Rabækkegård grave. The function of the hoard as a burial gift also signals a connection to the symbolic field. In Svanberg's analyses of death rituals in southern Scandinavia, the Rabækkegård grave is included in the group of aristocratic burials. The group is characterised by a) demonstrating significant financial surpluses; b) reflecting aristocratic lifestyles; c) containing several objects displaying participation in intra-regional networks with the exchange of luxury items and alliances; and d) differing from the general burial tradition in the area (2003, 130–134). As a burial gift in an aristocratic burial, the Samanid hoard functioned as a social marker. In the analysis of the importation and deposition of Islamic coins on Bornholm (section 5.3), it is argued that the buried person, or people close to the buried person, were directly involved in the early import of Samanid dirhams. The feature context of the hoard reveals that early dirham imports were linked to the elite of society.

As mentioned, Bornholm hoards deposited at the periphery of settlement areas are clustered into two groups, one of which consists of small coin-dominated hoards of less than 200 g (Figure 7.8). The Nordre Stensebygård hoard is interpreted as a raw material deposit for a silversmith. The remaining hoards in the group are Frostegård, Englyst, and Smørbygård. The latter is one of the few hoards interpreted in the site analysis as deposited without a container, while the question of whether or not a container existed remains unanswered for the Frostegård and Englyst hoards, because they were completely scattered in the plough soil (section 7.1). The hoards thus potentially meet Gruszczynski's criteria for hoards interpreted as deposited to mark ownership of/offerings to newly cultivated fields (Gruszczynski 2019, 253–257). The hoards, like the Tyskegård and Buddegård hoards, may represent agents in the symbolic field. The special significance of Frostegård is supported by the fact that very few Scandinavian Viking-Age hoards do not contain suspended coins (section 6.4). Although the Bornholm material does not support Gruszczynski's observations that small hoards are generally deposited without containers, the site analysis supports the idea that some small hoards were deposited to mark ownership of/sacrifice to newly cultivated fields.

The Pæregård and Skovvang hoards must be highlighted as examples of the limitations of the method used. The hoards have almost identical compositions, but were deposited at the centre of the settlement and at the periphery of the settlement, respectively.

In summary, the functions of hoards may in some cases be reflected in hoard compositions and site contexts. Hoards dominated by coins or Slavic/Scandinavian melts deposited centrally on settlements are interpreted as active hoards with a dynamic accumulation horizon. In these hoards, objects may have been added and removed in the course of various activities, such as trade transactions, alliance gifts, and/or re-melting. Hoards deposited at the periphery of settlements have a more heterogeneous character. There are small coin-dominated hoards, possibly representing markers of ownership, as well as hoards linked to craft activities.

Finally, hoards deposited outside settlement contexts are likely to have been associated with the symbolic field.

### **7.3 Site contexts**

The actors and events that formed the hoards will be investigated based on the characteristics of hoard sites. The questions of why and how silver was accumulated in hoards will be considered, and the following questions are discussed: Where are hoard sites placed in the social hierarchy? Is it possible, through an analysis of the features and objects, to shed light on the activities that took place at the location? For example, are there traces of crafts, trade, fishing, agricultural activities, or symbolic actions? In addition, the analysis includes a discussion of the deposition events of the hoards. As suggested by the analysis of the feature contexts, hoards deposited in areas without settlement, as well as some of the hoards deposited at the periphery of settlement areas, can be linked to the symbolic field. It is therefore possible that they were deposited without the intent of retrieval. The majority of the hoards on Bornholm were deposited centrally on settlement sites, and it is suggested in the feature context analysis that these were active hoards with a dynamic accumulation horizon. The reasons why these hoards were not retrieved will also be discussed.

Despite differences in excavation size and recording methods, most of the Bornholm hoard sites form a relatively uniform study area. This means that comparison of the status and character of the sites is possible. The excavated areas are dictated by the distribution of the silver objects in the plough layer. This means that they produce fragmented insights into the features of the sites. Hence, finds from the plough layer, where metal detector finds dominate, form an important analytical element. The inclusion of stray finds is not without problems, in part because the detector users primarily collect metals, but also because some object types are poorly preserved and hard to discern in the plough layer. Metal crafts will be over-represented compared to, for example, glass and amber bead production, bone and antler working, and textile production. These activities are often only identified in the context of excavated structures.

Activities associated with the various hoard sites are mapped in the following. Section 7.3.1 discusses craft and trade activities. The section begins with a methodological discussion of which find groups reflect craft and trade. The Bornholm hoard sites are then examined for craft and trade markers. Section 7.3.2 addresses ritual/symbolic activities. It is discussed whether some hoards deposited in connection with houses were deposited without the intention of retrieval, and thus should be interpreted as symbolic capital. In section 7.3.3 the hoard sites are surveyed for archaeological evidence attesting to the sites' subsistence economy. Section 7.3.4 analyses status markers, including a discussion of whether the sites contain traces of high-status objects and buildings. Finally, section 7.3.5 examines whether hoard sites contain evidence of catastrophic events such as fire, assault, or disease which may have caused the non-retrieval of hoards.

The analysis is based on material found outside hoard contexts. The results are compared with the results of the hoard analysis in section 7.3.6.

### 7.3.1 Identification of crafts and trade activities

Crafts are visible in the archaeological material through a number of structures and object categories. Traces of crafts may include features associated with the execution of the craft itself. In the case of fire-based crafts such as iron, silver, and goldsmithing as well as bronze casting, this may be a fireplace or a hearth, as documented for example with the cupellation hearths at the Fröjel workshop on Gotland (section 4.1). Traces of stack burning or ovens may reflect the production of pottery, bread, or beer (Naum 2008, 134; Larsson *et al.* 2019, 1961–1972). Textile production may be revealed by the traces of posts of a loom, retting wells, or channels (Thomsen 2016, 310–312). Crafts can also manifest themselves in waste products from the process itself. For example, these may take the form of lumps of vitrified sand created by the high temperatures around a hearth or fireplace. Concerning bronze, silver, and goldsmithing, the traces may be whole or fragments of moulds, crucibles, models, dies, or stamps (Ulriksen 2002, 8–9). Hammer scale and slags are common waste products after iron forging.

Tool finds also indicate craft activities. Associated with the hearth, these may include the bellows nozzle and the forge-stone. In the context of textile production, the most common traces are loom and spindle weights. Needles were probably also used extensively, but they are less common finds from settlements, possibly due to their fragile nature (Thomsen 2016, 314). On rare occasions, finds such as scissors, a weaving-sword, and iron teeth from wool combs or hackles may be found. The reason for their rare occurrence in settlement contexts is probably due to the fact that iron was a valuable resource. People were therefore careful to take their tools with them, and worn-out iron implements were recycled (Ulriksen 2002; Thomsen 2016, 316–330). Tools such as hammers, planes, axes, and chisels cannot be linked to a specific craft, but can be broadly connected to woodworking, ranging from shipbuilding and house building to furniture making and wood turning (Ulriksen 2002, 9). Likewise, nails, tacks, and rivet plates may have been used for a range of constructions, and cannot be unambiguously linked to one type of craft activity. For example, as documented at the Pæregård excavation, a large concentration of nails, tacks, and rivet plates may reflect the remains of a house wall (Vennersdorf 2004).

The final find category reflecting crafts is raw materials, semi-finished products, and residues. For fire-based crafts, this is the most common find category, and includes ingots, melts, and scrap-silver. Raw glass and glass rods represent bead production, while traces of processing other than slaughter suggest production of bone and antler objects (Ulriksen 2002, 8–9).

Some crafts appear in a wide range of site types, while other crafts are reserved for places with a special status in the social hierarchy. Ulriksen has studied traces of crafts at a number of sites in present-day Denmark (excluding Bornholm), which he divides into landing sites and rural settlements. Traces of ironworking are found at 85 per cent of the sites, while the next most common crafts are bronze casting and textile production, which are present at 76 per cent and 73 per cent of the sites, respectively. Bone and antler work was carried out at half of the landing sites, while glass bead production, gold/silver forging, and amber processing were

found at 31 per cent, 23 per cent, and 19 per cent of the sites, respectively (2002, 9–11). On the agrarian settlements, textile production is clearly the most common craft, while ironworking is also massively present on 52 per cent of the sites (2002, 11–12). Bronze casting and gold/silver forging are relatively rare and are detected at 28 per cent and 20 per cent of the agrarian settlements, respectively. Finally, traces of bone and antler working and glass bead production have been found on a few agrarian settlements (2002, 11–12). The observations are in line with Sindbæk, who argues that glass bead production was linked to trading hubs, because the craft required a regular supply of raw materials and was thus directly dependent on routine long-distance exchange (2005, 95).

Pit houses are the most frequent context for craft finds outside towns (Ulriksen 2002, 7–8). Thus, it is worth noting that pit houses do not appear at the Bornholm settlements. It is possible that this difference in settlement structure also results in a difference in the degree of preservation of traces of crafts at Bornholm sites compared with sites in Scania, Zealand, Funen, and Jutland.

Weights are an interesting group of finds in terms of decoding the activities which took place at a site. As discussed in the following, weights can be linked to both trade and craft activities. Based on the immediate contexts and feature contexts of the hoards, hoards deposited centrally on settlements are interpreted as active hoards with a dynamic accumulation horizon, meaning objects were added and removed in the course of transactions (section 2.1). Trade is one of the possible motivations for the retrieval of objects. Thus, weights can potentially illustrate the processes of hoard accumulation. Among hoards deposited at the periphery of settlements are examples of hoards interpreted in the context of craft activities. In this context, weights may also constitute an interesting group of finds for interpreting the functions of hoards.

Towards the end of the eighth century, two new types of weights were introduced in the Baltic Sea region: spherical bronze weights with flattened poles and iron cores, and polyhedral bronze weights. The new types of weights were part of a standardised weight system, in which polyhedral weights followed the low weight standards, while the spherical weights with iron cores followed the heavier weight standards. The new weight types were introduced together with a very accurate balance scale (Steuer's type 3: Steuer 1987, 462). The weight types probably originated in the Islamic areas, and they were introduced to the Baltic Sea region together with the influx of dirhams (Steuer 1987, 462; Gustin 2004, 99).

In Heiko Steuer's analyses of weights, the focus is on the relationship between the distribution of weights and monetary developments. Steuer concludes that accurate balance scales and standardised weight types appear in societies with a weight economy, whereas weights have a more unsystematic character in societies with a coin economy (1987, 407–409).

Ingrid Gustin has analysed weights at four Swedish central sites: Paviken and Bandlund on Gotland, Uppåkra in Scania, and Birka on Lake Mälaren. Here Gustin documents a marked difference in the distribution pattern between, on the one hand, spherical bronze weights with iron cores and polyhedral weights and, on the other hand, different types of primarily lead weights, e.g. spherical, cylindrical, disc-shaped, square, conical, and biconical. Bronze weights dominate in areas with

high concentrations of coins and silver, while lead weights dominate in areas with craft activities. Both Steuer and Gustin associate spherical bronze weights with iron cores and polyhedral weights with a standardised weighing of silver in transactions. Hårdh has also demonstrated this standardisation through fragmentation analyses of silver in the hoards of the Baltic Sea region (1996, 94–130).

A further link between lead weights and crafts has been documented in the excavation of the Posthusgrund in Ribe (southern Denmark). Here, a clear link was found between lead weights and mould fragments, clearly indicating that lead weights were used in metalworking processes (Gustin 2004, 108–109; Feveile 2006, 143–144, 2023, 117–119).

A sharp division between associating spherical weights with iron cores as well as polyhedral weights with trade, and lead weights with crafts, can be questioned. Based on the stratigraphically well-dated material from Kaupang in Norway, U. Pedersen has documented that traces of weight economy appear earlier than the presence of the standardised bronze weights. U. Pedersen concludes that lead weights were also used for weighing fragmented silver in the first half of the eighth century (2008, 162). Another example of a link between the weight economy and lead weights is found at the Anglo-Scandinavian settlement of Cottam in Yorkshire, England. Here, metrological analyses of 15 weights dating from the late eighth to early ninth centuries indicate that various forms of lead weights were used together with balance scales. It is argued that lead weights were adapted to a standardised Scandinavian weight system, and that lead weights were used in an economic context (Haldenby & Kershaw 2014, 106–121).

To conclude, crafts can be revealed in both the structures and tools used in the production phase, as well as raw materials and waste products from craft processes. Certain crafts, such as ironworking and textile production, can be classified as common, and are found in a wide range of site types, including common agrarian settlements. Bronze casting and gold/silver forging are relatively rare, and occur only at a selection of sites. Glass bead making, bone and antler working, and amber processing occur at only a small number of sites. Furthermore, it can be summarised that standardised bronze weights are related to the weighing of silver, for example in trade transactions, while lead weights can be related to craft activities. In some cases, lead weights have also been used for weighing silver in a weight economy system; this function of lead weights seems to be linked to the eighth century. It should also be noted that spherical bronze weights with iron cores and polyhedral weights have the distinct advantage in the interpretation of Viking-Age hoards because they can be dated to the Viking Age (after c. 800), whereas lead weights have been in use throughout the Iron Age and Viking Age (Ingvarsson 2014, 330–332). Bronze weights and balance scales are considered to be evidence of silver weighing.

### *7.3.1.1 Craft and trade activities at hoard sites*

Traces of trade and crafts at the Bornholm hoards sites are listed in Appendix 2.<sup>6</sup> Bronze and iron scrap are interpreted as indicators of bronze forging and iron working. However, at the detector sites it is very difficult to distinguish scrap intended

for reworking in a Viking-Age context from worn, fragmentary bronze and iron objects which were either lost or discarded or belong to a time period other than the Viking Age. Therefore, bronze and iron scrap are excluded from the analysis.

Traces of textile production/hide processing are found at 26 of the 33 sites included in the study. Thus, textile production/hide processing is the most widespread craft activity. At most of the sites, the traces consist of needles, pins, and/or spindle weights, signalling what can be termed common domestic activities such as sewing and spinning. At six sites, evidence of weaving is present in the form of one or more loom weights. It is to be expected that loom weights are underrepresented compared to spindle weights, for example, because the poorly fired or unfired clay loom weights are less well preserved than spindle weights made of hard-fired clay, sandstone, or, in a few cases, lead. In general, the sites are characterised by the small number of examples of fragmentary loom weights, a fact that is probably reinforced by the lack of pit houses, which are the most common find context for loom weights in other parts of Scandinavia. Gyldensgård SV differs in this respect from the rest of the sites. Here, 26–30 fragments of 4–6 loom weights were found in a trench north of the house where the hoard was deposited. The finds included a  $\frac{1}{4}$  loom weight decorated with finger impressions on the upper side. Furthermore, six fragments of a loom weight were found in a small charcoal-rich pit north of the house, one fragment of a loom weight in a trench west of the house, and eight possible fragments of loom weights in a depression with cultural layers southwest of the house. Finally, 30 fragments of loom weights of various sizes were deposited in the posthole of one of the roof-bearing posts in the treasure house (catalogue: 15). The fragments can probably be linked to the post imprint, indicating that the weights ended up in the hole after the post had been removed. Presumably, there was a loom in the house, and the loom weights were left behind when the house was demolished. Preservation conditions at the site were very good, and the northern trench was wet sieved, resulting in many finds. The large number of loom weights may be attributed, at least in part, to both preservation conditions and excavation techniques. However, the number of loom weights represented is significantly higher at the Gyldensgård SV site compared to the other hoard locations, and it can be concluded that intensive loom activity took place at Gyldensgård SV. Comparable intensity in activity is not present at the other investigated sites. The evidence of intensified textile production at Gyldensgård SV is reinforced by the discovery of 21 iron teeth, which probably represent the remains of one or more wool combs or heckles used for processing fibres.

Store Gadegård, area 3, stands out due to the unusually large number of needles and awls found. Bone needles are suitable for sewing coarser textiles, while metal needles are better for sewing finer textiles (Thomsen 2016, 328). The presence of five bronze needles and eight iron needles, as well as a bronze needle holder, indicates that the sewing of finer textiles was an important activity at this site. Furthermore, three spindle weights, and a pair of scissors, as well as a single loom weight, were also found at the site (Appendix 2). The archaeological investigation of Store Gadegård, area 3, was extensive, and included sieving of the southern rainwater trench of the Trelleborg-like house. Thus, the extent and method of excavation is

probably partly responsible for the relatively large number of needles. However, only one loom weight was found, suggesting that the primary focus was on sewing. The southern trench contained a large quantity of cultural material, compared, for example, to the northern wall trench of the house (Wagnkilde 1998\*). According to the excavator, waste from the house was probably dumped at a midden south of the house. It is therefore likely that the needles had been used inside the house.

An unusual structure may be associated with skin processing at the Skovsholm site. The structure consists of a trapezoidal pit measuring approximately 14 m x 2–3 m. One side is flanked by a heavy stone foundation consisting of large boulders. The bottom layer is paved and slopes from west to east. A trench runs along the stone foundation for the entire length of the construction. The feature was found close to a natural spring, and it is reasonable to see the structure in the context of the spring, since the sloping floor and the trench suggest that water was diverted away from the structure. Bones of cow, horse, sheep/goat, and seal were found in the pit. A preponderance of tarsal bones suggests that the site was used for skin processing. Three bone pins and an iron pin found in the structure may have been used to attach hides during preparation. The construction is C-14 dated to the late 700s and 800s and may be contemporaneous with the hoard (catalogue: 33).

Bronze casting is the second most common craft activity and is present at 22 of 33 sites. Melts and ingots/rods are the most common traces of the activity, but a large number of sites also have casting residues and casting cones, which clearly indicate that bronze casting took place at the sites (Appendix 2). At all sites the number of finds indicating bronze casting is relatively limited, but a large number have two or more indicators of bronze casting. The find pattern illustrates that bronze casting was a common activity at hoard sites, but that the level of activity was relatively modest.

Evidence of ironworking occurs at 12 of the 33 sites. Slag is the most common indicator. Hammer scales are only found at two sites. This is partly due to excavation techniques, since wet sieving and magnets were used at few of the excavated hoard sites. Dammegård and Store Gadegård, areas 1–2, stand out as sites with possible traces of iron extraction. Both sites are part of an extensive settlement complex around St Peders Church. A slag of 250 g with a glazed surface and pieces of burnt wattle and daub attached was found at Dammegård.<sup>7</sup> This indicates that the slag originated from an iron extraction furnace. At Store Gadegård, area 1–2, finds of bog ore indicate iron extraction, while more than 3 kg of slag, a possible iron bloom of about 500 g, and 10 iron ingots bear witness to significant activities involving iron processing (Appendix 2).

Clear traces of silversmithing have been found in a pit with metalworking debris, which may be the original deposition site for the Nordre Stensebygård hoard (section 7.2.3). A crucible containing a partially melted coin not only establishes that silver melting took place, but also illustrates that coins were sometimes re-melted and reused for purposes other than payment. The pit was lined with straw, the purpose of which may have been to collect silver drops. Excavation revealed that the pit had been reused: new layers of straw rested on top of older, hard charred layers of straw. Several iron objects were deposited in the pit, one of which is a tubular

object perhaps representing a tong used to hold the crucible (catalogue: 24). The other iron objects are unidentified. A fragment of a silver bracelet found in the pit may have been another item intended for re-melting. Next to the pit was a triangular stone formation of vertically placed sandstone tiles within a semi-circular 20 cm high stone ring. The formation may be the base of a hearth. The edge of a paved area was unearthened to the east of the pit. The paving probably continued further to the east of the excavated area. This may have been a stone floor in a building (catalogue: 24). The probable association with the Nordre Stensebygård hoard dates the activity to the late eleventh century.

A small spoon with a central hole was found at Slamrebjerg. The spoon has traces of gold on the underside, and it is likely that it is a tool used in goldsmithing. This indicates goldsmith activities at Slamrebjerg, an interpretation supported by the discovery of a fragmentary gold ingot. A gold rod, gold threads, gold ingot, and gold disc were all found at Lillegærde, Munkegård, Skovgård, and Skørrebro, respectively. The finds can be interpreted as raw material for a goldsmith or alternatively as gold currency (cf. Kershaw 2019 and section 3.1).

Punches and matrices are potentially linked to gold, silver, and bronze processing. The punch at the Kannikegærdet site consists of a lead rod with three rosette motifs (Figure 3.6). The punch was found after excavation in the area of the re-covered field. It is likely that it was deposited in the vicinity of the hoard. Similar rosette motifs recur on a silver arm-ring found some 95 m south of the excavation area (section 3.1.1) (Figures 3.5 and 3.6). Thus, the silver arm-ring may have been produced locally at the Skørrebro site. Two fragments of a trefoil brooch with decorated punches and blackberry buds were found about 73 m north of the hoard. The only parallels to the piece are found in the Buddegård (Figure 5.15) and Dammegård hoards. It is likely that these trefoil brooches were produced on Bornholm (section 5.5). The Kannikegærdet sites may have been the place of production for these unusual items of jewellery.

Traces of bone and antler working have been found exclusively during excavations, while traces of metal working have also, to a large extent, been found by detector surveys. Thus, indications of bone craft will be underrepresented compared to metal craft activities. There are traces of bone processing at three sites. A horn handle and a rib with triangular decorations were found at Munkegård and Åbo, respectively. Only the Kobbegård site displays more extensive traces of bone and antler crafts. During the excavation, a large pit was wet sieved, resulting in the discovery of, among other things, three bone skates, reworked bones, a bone needle, and two almost complete bone combs and five fragments of combs (catalogue: 18). It has not been possible to trace activities indicating glass bead production or amber processing.

One or more bronze weights are present at 25 of the 33 surveyed sites. Bronze weights were, as argued earlier, probably used for weighing silver in transactions. The evidence is supported by finds of balance scales at seven of the 25 sites (Appendix 2). In contrast, lead weights are represented at just 14 sites.

Englyst has a significant number of weights consisting of two polyhedral bronze weights and six spherical bronze weights with flattened poles and iron cores. Two



*Figure 7.10* The weights from the Englyst site are of high quality. Two weights have symbols imitating the Kufic writing on dirhams (top). One has silver preserved on the flat poles. A third weight is decorated with horse's head, with a large eye with lashes and pellets for mane (middle). The last weight is decorated with a star (bottom). Finds nos. BMR 2320x21, 76–78.

*Photographs:* R. Laursen, the Bornholm Museum.

of these are decorated with a pseudo-Kufic inscription on the poles, one is decorated with a horse's head, and one is decorated with a central star surrounded by concentric circles (Figure 7.10). The site has little evidence of crafts, with the exception of bronze working. The large number of finely decorated weights suggest that trade was an important activity at the site.

To conclude, textile production is the most widespread craft activity at the sites. Compared to Ulriksen's analyses of craft traces at landing sites and rural

settlements, the Bornholm hoard sites have a clearer parallel with the rural settlements in Ulriksen's study area (2002, 9–12). Iron working is present at about half of the Bornholm sites, which corresponds to the extent of iron working at the rural settlements in Ulriksen's studies. The situation is markedly different regarding bronze working, in that the presence of bronze crafts at the Bornholm sites instead corresponds to the bronze craft activities at landing sites in Ulriksen's analysis. Bronze weights and parts of balance scales indicating trade are a prominent feature at the Bornholm sites, and trade activities are almost as common as textile production.

In addition, a number of sites display distinctive activities. Gyldensgård SV is characterised by an elevated level of weaving activity. At Store Gadegård, area 3, sewing was carried out on a large scale, while at Skovsholm it is skin processing that emerges as an important activity. Dammegård and Store Gadegård, areas 1–2, are the only sites with traces of iron extraction, while at Nordre Stensebygård and Kannikegærdet silversmithing activities have been documented, and at Slamrebjerg there are traces of goldsmithing. A further four sites also demonstrate evidence of either trade or the processing of gold.

### 7.3.2 *Ritual/symbolic activities*

Cultic buildings and other ritual structures are a prominent feature at the manor sites on Zealand and in Scania. At Tissø, Toftegård, and Järrestad, small enclosed buildings in connection with the manor houses may have hosted ritual acts. At Tissø and Lejre, large heaps of cultural layers with burnt stones and animal bones are connected to great ritual feasts (Jørgensen 2009; Christensen 2015, 173–180). Studies of the Tissø and Järrestad complexes show that the sites functioned as supra-regional cult centres. The analyses reveal a ritual landscape in which various rites associated with pre-Christian religion were performed in different areas both centrally on the site and in the open landscape surrounding the site (Jørgensen 2008, 79–81, 2009, 346; Jørgensen *et al.* 2014, 188–199; Nilsson 2003, 287–308). Nothing similar is documented at the Bornholm sites, perhaps due to the limited excavation areas. The location of the Dammegård and Store Gadegård sites around St Peders Church indicates that the area was later a religious centre. A gold ring was found at Dammegård. Spectacularly, a parallel to the ring is present in Bishop Absalon's tomb in Sorø church on Zealand. Absalon was bishop of Roskilde (1158–1192) and archbishop of Lund from 1178, and served as the closest advisor of King Valdemar I of Denmark (1154–1182). This indicates that Dammegård was a high-status site towards the end of the twelfth century, when the St Peders Church may have been built (Wienberg 1986, 50–54).

Ritual/symbolic activities may also have been an integral part of everyday life on individual farms, but may be difficult to encapsulate in the archaeological material (Ölund 2010, 127–130). Objects found in a context that does not immediately indicate a profane function, or particular collections of objects, may reflect a ritual act. A pit with jaws from seven pigs of different ages was found at the Nørremølle site (Thorsen 2007). The pit may represent the traces of a ritual act, perhaps related to a ritual meal and/or sacrifice. Deposits in houses are a common ritual strategy in

settlement contexts (Ölund 2010, 129). At the Nørremølle site, a miniature vessel was found in the posthole of a roof-bearing post. Miniature vessels deposited in the postholes of Iron Age houses are a well-known phenomenon. The vessels may have been placed in connection with either the construction or the clearing of the house (Christiansen 1999, 202–204). These house sacrifices, which perhaps served as a form of protection for the house and its occupants, may have been part of a dedication or completion ritual.

At many of the Bornholm hoard sites, finds have been made in roof-bearing postholes. The most common finds are wattle and daub, charcoal, small pieces of pottery, and grain, and it is likely that the objects were deposited unintentionally in the postholes, either when the house was built or demolished. However, finds of a more unusual nature have also been made at several sites. It is possible that these finds, like the miniature vessel, should be interpreted as house offerings. A spindle weight in red slate and a slate grindstone were found in the southwestern roof-bearing posthole of the Åbo house (Nielsen 2019\*).

A soapstone spindle weight was deposited in a roof-bearing posthole for House I at Kannikegærdet (Nielsen 1996\*). What was probably a complete iron knife and a fragment of a rotary quern were placed near the northeast and the southeast roof-bearing posts of the Smedegård NØ house, respectively (Pihl 2014). At Store Gadegård, a complete burnt loom weight was deposited in a posthole of a roof-bearing post of the Trelleborg-type house (Wagnkilde 1998\*). As mentioned earlier, 30 fragments of loom weights of various sizes were deposited in the hole of a roof-bearing post at Gyldensgård SV. They were found in the post pipe, suggesting that they fell into the hole after the roof-bearing post was removed. However, a slate grindstone in another roof-bearing posthole of the house may represent a deliberate deposition (Thorsen 2003). Two postholes in the Munkerup house hosted a grindstone and a piece of bronze foil (Wagnkilde 1995b\*). Finally, larger fragments of soapstone vessels were deposited in postholes of both House 3 and House 4 at Rosmanegård SV, while a sherd from an unusual ceramic vessel with rosette stamps was found in one of the roof-bearing postholes at Kannikegård/Tyskegård (Wagnkilde 1994a\*; Pihl 2009\*). Hence, there is a relatively large number of finds whose character suggests intentional deposition by roof-bearing posts. The evidence is probably fragmentary, since the postholes were only recorded on the surface at sites like Kannikegærdet, Store Klintegård, and Skovgård. The deposits are interesting in relation to the interpretation of hoards deposited in or near the roof-bearing posts of houses. Do these hoards also represent house offerings? Unlike the hoards, the possible house offerings mentioned earlier consist of everyday objects related to some of the common activities that took place in the house and on the settlement. Hence, they differ significantly from the hoards, which seem to express a different type of depositary activity.

### 7.3.3 *Subsistence economy*

Presumably, virtually all settlements were to some degree involved in fishing and agricultural activities such as animal husbandry and crop cultivation. These activities are mostly represented by finds of grain and animal bones. Status indicators

within these find categories may be the presence of a particular variety of grains and/or animal bones. This is documented, for example, at the manor site Tissø, where bones of large high-status birds such as herons, storks, spoonbills, and cranes were excavated in the large halls. Furthermore, studies show differences in the fish remains within the site, since bones of cod predominate outside the central hall areas, while freshwater fish and salmon are most common in the hall areas (Gottfredsen 2006, 7). If the bone material at a site or structure focuses on a special selection of bone, this may also indicate particular activities. As discussed previously, this is the case at the Skovsholm site, where a preponderance of tarsal bones among the bone material in the special building with a paved sloping floor indicates that hides from different animals were processed here. Grain and animal bones have been recorded at many of the Bornholm hoard sites, but the material has only rarely been subjected to close examination, which is understandable given the often very limited financial resources available at the hoard excavations (Chapter 1 and catalogue). Without such investigations, finds of grains and animal bones cannot contribute directly to an interpretation of the social status of the sites.

There is no doubt that fishing was an important element in the islanders' subsistence economy. At a site like Gyldensgård SV, good conditions of preservation and systematic wet sieving have produced large quantities of fish bones. Selected structures at Kobbegård, Munkegård, and Munkerup have also been wet sieved, also providing fish bones (catalogue: 18, 22, and 23). No otoliths were found among the fish bones at Gyldensgård SV, indicating that the fish had been cleaned before being transported to the site 1.2 km from the sea (catalogue: 15). Apparently, hunting of mammals in the Baltic Sea was also included in the Bornholm inhabitants' diet. Seals are documented in the bone material from Skovsholm with Bornholm's oldest Viking-Age hoard, and in the form of graffiti on an ingot from the latest Viking-Age hoard from Smedegård NØ (section 6.5) (Figure 6.19).

The distribution of 2183 analysed bones from the Åbo site is as follows: cattle 39 per cent; horse 29 per cent; sheep/goat 18 per cent; and pig 13 per cent (Traberg 2019\*; Vilhelm 2019\*; Nielsen 2019\*). The bone material originated from ten pits stratigraphically later than the treasure house and partially cutting the western gable trench of the house (catalogue: 48). Perhaps because the contents of the pits were not wet sieved, neither bird nor fish bones were found. The distribution was calculated based on the number of complete and fragmented bones. Since 44 per cent of the fractures occurred in recent times, the percentage distribution may be ambiguous (Vilhelm 2019). Most cows were slaughtered between the ages of three and six years signalling exploitation for milk. Furthermore, cut marks on the bones show that cows were also an important meat resource (Traberg 2019); sheep/goats were another important meat resource. Among the bones that could be species-determined, sheep were predominant. The majority of the animals were slaughtered at the age of one year or earlier. This indicates that sheep were primarily farmed for lamb meat, and not for wool (Traberg 2019). The relatively small number of pig bones indicates that pig was relatively rare in the diet. There is a marked absence of pig bones, and those identified are based on finds of teeth and jaws. It is possible that pig bones were used for other purposes (Traberg 2019). This

relates to the analysis of craft activities, whereby Åbo is identified as one of the few hoard sites with traces of bone working. Horses were generally not used as a meat resource in the Viking Age (Gotfredsen 2006, 4). This can also be documented at Åbo, where none of the horse bones have incised marks, unlike, for example, the cattle bones (Traberg 2019; Vilhelm 2019). The percentage of horse bones is unusually low at Viking-Age settlements. At the Tissø complex, horse bones constitute 6 per cent of the larger domestic animals, which is a high proportion compared to other sites (Gotfredsen 2006, 4; Ulriksen 2018, 294). Hence, the high proportion of horse bones at Åbo is remarkable, and suggests that horses constituted a special resource at the site. However, for purposes of comparison with, for example, the Tissø material, it must be factored in that the Åbo analysis is based on the content of ten pits in a delimited part of a settlement, whereas the Tissø excavations comprise a much larger body of material. There is a risk that the ten pits do not provide a representative sample of the bone material from the settlement. Nevertheless, it should be noted that horse bones were found in nine out of ten pits, which in itself must be considered remarkable.

The bone material at the Englyst site has not been analysed in detail, but here the metal detector material also shows a particular association with horses. A significant group of equestrian equipment is among the detector finds. Two whole, two fragmentary, and a possible fragment of a harness fitting were recorded at the site. As described in section 7.3.1, the site's craft activities are limited to bronze working and some textile production identified by four spindle weights. On the other hand, trade activities are strongly represented in the form of eight high-quality bronze weights. Notably, one of the weights is decorated with a horse's head<sup>8</sup> (Figure 7.10). It is possible that horses were a commodity traded on or from the site. This interpretation is supported by two unusual finds: a gilded bronze ring buckle, possibly decorated with a horsehead, and a miniature bronze horse (Figure 7.11). The function of the miniature horse is uncertain, but together with the significant presence of equestrian equipment, suggests that horses were of special importance at Englyst.

#### **7.3.4 *Status indicators***

Both objects and buildings can characterise the social and economic status of settlements. Precious metals as well as special imports, including gold and silver objects, can be considered high-status markers (Ulriksen 2009, 203–205). Thus, the Bornholm hoards, with gold, silver jewellery, coins, silver ingots, and silver melts, can be regarded as high-status markers in their own right. Leaving the hoards aside, there are few objects at the sites signalling high status. However, the relatively frequent occurrence of bronze crafts (section 7.3.1) is an element indicating that the settlements differ from what might be termed ordinary agrarian sites.

In addition to the gold ring and gold coins in the Ahlesminde hoard and the gold ring in the Smedegård NØ hoard, fragmented gold objects have been found at seven sites (section 3.1.1). The gold fragments indicate that gold was used either as a means of payment or as raw material. Kershaw has argued that gold functioned



*Figure 7.11* Equestrian equipment in the form of harness fittings has been found in relatively large numbers at the Englyst site. These special objects also indicate the site’s noteworthy connection with horses. Top: Miniature bronze horse, perhaps an amulet. Bottom: Gilded bronze ring decorated with a horse head?

*Photographs:* The Bornholm Museum.

as high-value currency in the Viking-Age weight system, but emphasises that gold is rare in Scandinavian Viking-Age contexts (Kershaw 2019, 233–247). Hence, the relatively high proportion of Bornholm hoard sites producing gold objects seems to signal some form of status.

Elements in the building structures may also constitute status markers. The settlements of the Viking Age range from few houses to large complexes with halls, storage houses, and workshop areas (Fallgren 2008, 69–70). Lejre, Tissø, and Toftegård on Zealand and Järrestad in Scania, with their extensive building complexes, are among the absolute elite of the Viking Age (Tornbjerg 1998; Jørgensen 2003; Söderberg 2005; Christensen 2015). The often incomplete picture of the settlement structure at the Bornholm Viking-Age sites, where only small parts of the settlement have been excavated, makes it difficult to use building features as status indicators. However, certain structures can be distinguished. At the Dammegård and Store Gadegård sites, which are located around St Peders Church, the settlement structure evidently contains both an extensive building complex and craft activities, i.e. elements that recur at high-status sites such as Tissø, Toftegård, and Järrestad.

At the Dammegård site, parts of two different building phases in the form of two parallel houses, of Type II and Type III, respectively, have been partially unearthed. Based on typological considerations, the hoard is probably associated with the Type II house, which is a three-aisle longhouse with a curved wall course consisting of a single row of posts (sections 7.2.2 and 7.2.3). Aerial photographs display shapes in the fields revealing the outlines of buildings extending beyond the two partially uncovered houses. Several settlement phases, reconnaissance finds, and metal detector finds attest to extensive settlement from, above all, the Viking Age and the Middle Ages (Nielsen 1994b\*, 128–129). Find distribution maps reveal up to several areas of settlement and craft activities in the vicinity of the hoard (Figure 7.12). The analysis of craft and trade activities document evidence of iron extraction, iron working, bronze casting, gold/silversmithing, and trade at the site (section 7.3.1). A high proportion of fragmented coins distinguishes the Dammegård hoard from, for example, the roughly contemporaneous Kannekægærdet hoard, suggesting a difference in the functions of the hoards (section 6.1.1). The high fragmentation rate makes it likely that the hoard was accumulated through trade, which is consistent with the activities traced at the site.

A 33 m longhouse of Trelleborg type has been uncovered and excavated at Store Gadegård, area 3 (catalogue: 41). The house is in an area with extensive settlement remains, of which only the house of Trelleborg type has been examined in detail. A large quantity of metal detector material indicates that the settlement continues to the north and northeast. The craft and trade analysis shows that craft activities are divided into different zones. The northern areas 1 and 2 are characterised by iron extraction, iron processing, and bronze casting, while area 3 is characterised by mainly textile production but also bronze casting. The traces of textile processing are centred on sewing, and a large number of metal needles demonstrate that it was the sewing of finer textile types that took place here. This is considered to be a status-indicating element.

The relatively extensive excavation activities at the Munkegård site have also provided a good overview of the site structure. The settlement consists of a central southern part with up to several dwelling houses, while finds in the northern part of the site indicate a workshop area. The location displays evidence of textile production (with a focus on sewing), iron working, bronze casting, bone working, and possibly goldsmithing activities (section 7.3.1). A relatively large number of lead weights are probably related to the extensive craft activities, while trade activity is reflected through the central part of a balance scale, three scale arms, and four bronze weights (Appendix 2).

Not all hoard sites have settlement traces suggesting high status. The hoards at the Kobbegård, Pæregård, and Åbo sites were preserved partly *in situ*, and are unambiguously associated with small modest dwelling houses (section 7.2.3). Given the limited excavation areas, it is difficult to assess whether further excavations would produce different results regarding the character of the settlement. The plough layer finds clearly demonstrate that there are probably additional settlement traces in the immediate vicinity of the hoards at Pæregård and Åbo. At the much-studied Smedegård NØ site, it is clear that the hoard was associated with an ordinary rural settlement, with a small 12.5 m long dwelling house, a stack barn,

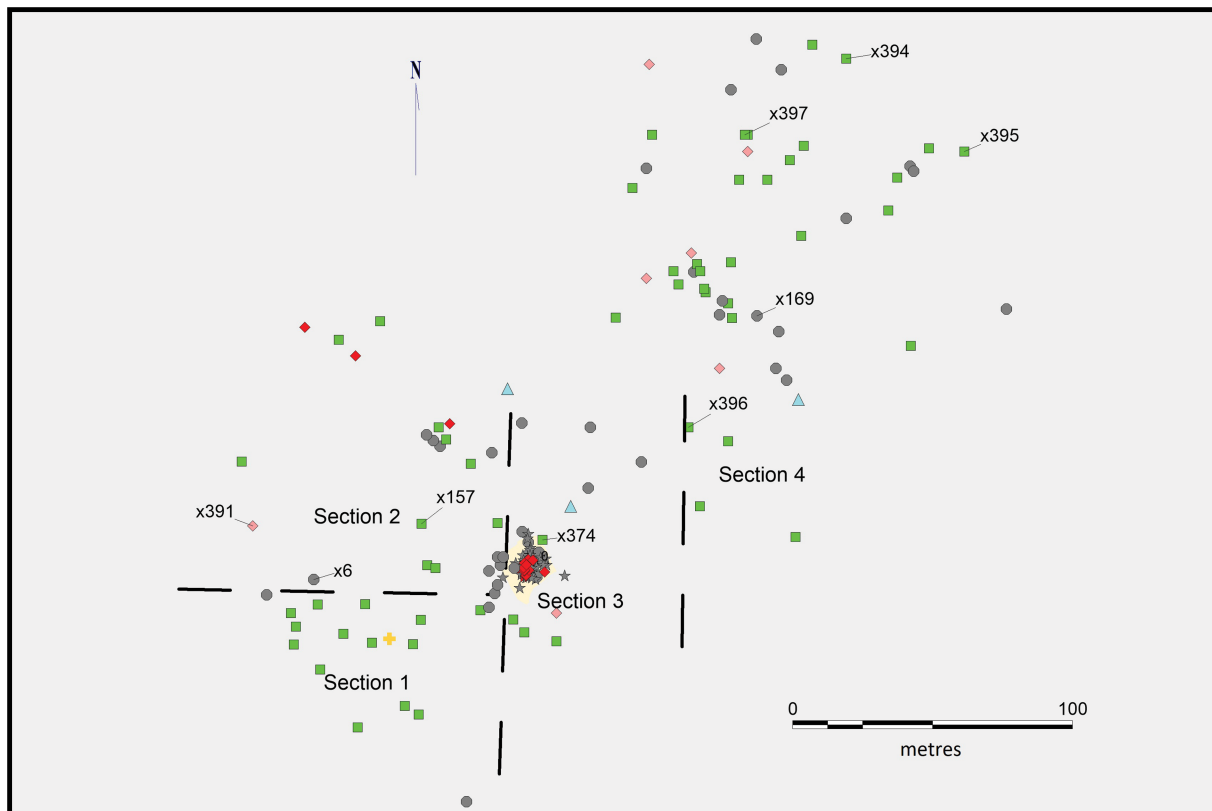


Figure 7.12 Distribution map of the Dammegård site. Grey circle: silver coin, red rhomboid: silver object, yellow cross: gold object, blue triangle: weight, and green square: bronze object.

Map: J. S. Andersen.

and very few traces of craft activities (catalogue: 38 and Appendix 2). Furthermore, the site is located in an outlying area, just a few hundred metres from Højlyngen, an approximately 120 km<sup>2</sup> stretch of rocky marginal heath and scrubland in central Bornholm.

Valuable and exotic objects can reflect positions in the social and economic hierarchy, while everyday objects can be important markers of cultural identity. It is in everyday practices and routines that cultural identity is expressed (Naum 2008, 77). On Bornholm, a marked and rapidly implemented shift in the character of settlement pottery occurred at the turn of the eleventh century (section 7.2.1). In less than fifty years, the ceramics shift from unornamented, hand-built pottery to turned, ornamented Baltic Sea Ware. Naum relates this marked change to the immigration of Slavic potters to Bornholm (2008, 126–131). She argues that the production of Slavic pottery, especially of the early eleventh-century Vipperow type, was organised along the same lines as in the Slavic area, where specialised potters produced ceramics for profit and further distribution (2008, 126–127). Naum suggests that the specialised Slavic potters were based on large farms, from which the pottery was distributed to smaller settlements in the vicinity. The argument is supported by analyses of distinctive features in the form and ornamentation which reflect different pottery workshops within the Bornholm Baltic Sea Ware (2008, 126–132). The hoard and settlement at the Skørrebro site are connected, as argued in section 7.2.3. If the proposed coexistence is accepted, Skørrebro is probably one of the earliest examples of a site dominated by Vipperow-type pottery. Perhaps, an immigrant Slavic potter produced the pottery at Skørrebro, and following Naum's argumentation, this indicates that Skørrebro occupied a high-status place in the social hierarchy.

### 7.3.5 Catastrophic events

Catastrophic events resulting in death or capture may have caused the non-retrieval of hoards deposited centrally on settlements and are therefore possible reasons why hoards remained deposited (section 2.1).

Attacks on the Bornholm inhabitants are mentioned in a few Norse sagas. The *Jómsvíkinga saga*, for example, describes a conflict between Vesete, the ruler of Bornholm, and Earl Harald of Zealand. The conflict begins with Earl Harald's sons landing on Bornholm and plundering. After the conflict escalates, King Sweyn [Forkbeard] (c. 986–1014) mediates between the warring parties at Iseøre Thing. Several versions of the *Jómsvíkinga saga* have been handed down. A Latin translation and four Icelandic versions are considered the main sources from which all other versions were copied (Blake 1962, VX–VXI). The oldest written version is from the late thirteenth century. Thus, it is a relatively late source of the events described.

The *Knýtlinga saga* (*The Saga of Cnut's Descendants*) describes a conflict between the Danish king, Canute the Holy (1080–1086), and his subject, an earl of Bornholm. The introduction states that the manager of the king's twelve farms on Bornholm had died, and that the king appointed Egil Ragnarson, later nicknamed

Blood Egil, as his successor. In brief, the saga describes a conflict between Egil and the king, as Egil resists the king's command not to plunder and to repent of his pagan act of drinking blood (hence the nickname). The story ends with the king punishing Egil with death for his insubordination. The Bornholm inhabitants regretted this, because Egil had managed to fight back the Wends, who earlier plundered and ravaged Bornholm (Rafn 1829, ch. 33–40). The material for the *Knýtlinga saga* was probably collected by Óláfr Þórðarson, when he resided at the court of King Valdemar II in 1240–1241 (Jónsson 1900, 40–41). However, the saga was not completed until the years after Óláfr Þórðarson's death in 1259, and the *Knýtlinga saga* is thus also a late source depicting Bornholm during the time of Canute the Holy. Furthermore, it has been documented that the main source of the *Knýtlinga saga* is Saxo's *Gesta Danorum*; however the chapters on Blood Egil are only found in the *Knýtlinga saga* (Albeck 1946; Gelting 2011, 131–134 with further references).

Finally, in the royal saga *Heimskringla* in Olaf Tryggvason's saga, Snorri Sturluson (1179–1242) describes how King Olaf, on a journey west, landed on Bornholm, where he plundered (Jónsson 1893). Again, the events described took place some 200 years earlier.

A parallel archaeological and written source describing the death of a Bornholm islander is the Nylarsker 1 runestone with the inscription: 'Sasser had this stone erected after his father Alvard; he drowned abroad with the entire ship-crew. Christ help his soul eternally without end (?). This stone shall stand after (in memory)' (Imer & Fortuna 2016, 307, translation by author). Thus, the inscription tells of Alvard, who drowned with his entire ship crew, but it is impossible to link the event to the non-retrieval of a hoard.

It is difficult to assess the range of raids on the island based on the written sources. The *Knýtlinga saga* describes how Wends had plundered and ravaged Bornholm. The saga describes contact resulting in a conflict between the inhabitants of Bornholm and the Wends. However, the archaeological evidence reflects more peaceful contact, since Slavic cultural elements are integrated, e.g. in grave rituals and women's outfits on Bornholm (section 8.3). However, the settlement structures of the island indicate that attacks from the sea were a problem, because settlements were placed a safe distance from the coast. This was, perhaps, to prevent surprise attacks (section 8.3).

To link a fatal event to the non-retrieval of a hoard, the historical as well as archaeological evidence must be linked to the site where the hoard was deposited. Fire is a catastrophic event that may be evident at archaeological sites. Traces of burnt houses were found at six out of 15 settlement sites with centrally deposited hoards (catalogue: 8, 16, 17, 27, 29, 32). Several settlement phases are often present at the sites, making it difficult to unambiguously link the burnt house to the hoard. However, it must be noted that a significant proportion of sites show traces of fire. Observations made at Kannikegård/Tyskegård illustrate that the fires may not have resulted from attacks. The house at the site is clearly burnt down. Parts of a burnt wall were even found in the rainwater trench. Massive amounts of burnt wattle and daub were found deep in the postholes of the roof-bearing posts,

among other places. This suggests that the posts were removed before the house was burned, which may reflect a planned burning. That the house was cleared before burning is confirmed by the fact that there are very few finds of pottery, for example, in the burnt-down site (catalogue: 17). Whether the house was destroyed because something happened to its occupants, or whether its occupants just wanted to move, cannot be determined.

### 7.3.6 *Are hoard functions reflected in the site contexts?*

The analysed site contexts demonstrate that the Bornholm hoards were deposited at a heterogeneous group of sites. Hence, a wide range of activities are documented and different levels in the social and economic hierarchy are evident.

The hoard sites, Dammegård, Store Gadegård, and possibly Munkegård, situated around St Peders Church, reflect high-status environments, with some parallels to manor sites as Tissø, Toftegård, and Järrestad. These Bornholm sites are characterised by extensive settlement traces divided into a central settlement and nearby areas of intense craft activity, though of course on a smaller scale than the Zealand and Scania sites. The ritual aspect, which is evident in the manor sites on Zealand and in Scania, is not documented at the Bornholm sites. However, this may be due to limited archaeological investigations. Based on Naum's analyses of Baltic Sea Ware on Bornholm, it has also been suggested that the early predominance of Vipperow-type pottery at Skørrebro may indicate a high-status environment.

The size and composition of the hoards may also provide an indication of the social and economic position of their owners. The Dammegård and Skørrebro hoards stand out as some of the earliest and largest Bornholm hoards dominated by Samanid coins (Figure 3.11). Furthermore, the high proportion of fragmented material in the Dammegård hoard underlines the focus on craft and trade activities displayed at the site. The Munkegård hoard comprises more than 900 coins (catalogue: 22) and is characterised as being by far the most coin-rich hoard deposited between c. 1000/1005–1020. Thus, it contains more than twice as many coins as the other two coin-dominated hoards in this phase, Dalegård and Blykobbegård (Figure 3.11). Due to methodological challenges, the objects in the Munkegård hoard have not been weighed, thus are not included in Figure 3.12 (section 1.2.2). However, at the time of discovery the uncoined silver in the hoard weighed 597 g (Galster 1980, 63). If it is estimated that each of the approximately 900 coins weighs about 1 g, this means that the hoard weighed about 1500 g, thus making it the largest hoard in terms of weight from the period. The Egenvang hoard follows as the second largest hoard. It contains a limited number of coins (217), but has a total weight of 1400 g because of the large jewellery content (Figure 3.12). The excavation results are only available in a preliminary publication, making it impossible to include the site in the further discussion of site contexts (Laursen 2016). The composition of the Munkegård hoard is very similar to the Nørremølle, Skovvang, and Pæregård hoards (Figures 3.11 and 3.12). It is difficult to characterise the position of the site in the social hierarchy because of limited excavation. The investigated area of the Pæregård site displays intense settlement activities,

but a characterisation of the settlement is not possible based on the present data (catalogue: 27).

The relation analysis of the Anglo-Scandinavian coins in the Bornholm hoards reveals that Nørremølle and Skovvang in particular had strong contacts, and additionally had contacts with a wide range of other Bornholm sites. The two sites probably played central roles in the island's social hierarchy (see further discussion in section 8.2). The most coin-rich hoards: Munkegård, Nørremølle, Skovvang, and Pæregård, probably occupied a special position in the social hierarchy on Bornholm. In contrast, the archaeological evidence at Store Gadegård, area 3, indicates a high-status settlement, while the deposited hoards are relatively modest.

As argued in the context analysis, hoards deposited in areas with no other archaeological remains, as well as small coin-dominated hoards found at the periphery of settlements, may have been deposited without the intent of retrieval. The site context analysis strongly suggests ritual practices at many of the hoard sites, with objects associated with everyday activities being deposited near the roof-bearing posts of dwelling houses. The ritual differs markedly from silver hoards deposited in houses by virtue of the nature of the objects. This possibly reflects that hoards deposited in houses were not symbolic depositions. However, why the hoards deposited in or near houses were not recovered is difficult to determine. Traces of fire are found at a third of the sites. Thus, it is reasonable to think that the people who deposited the hoards may have suffered a traumatic event that prevented them from retrieving the hoards. On the other hand, observations made during the excavation of the burnt house at the Kannikegård/Tyskegård site show that the house had been cleared and the roof-bearing posts removed before the house was burnt. This does not suggest that the burning was caused by a sudden attack.

Characteristic of several of the hoard sites is a certain form of specialisation. In the activity analyses, sites with a special focus on horses (Englyst and Åbo), a high consumption of lamb meat (Åbo), weaving (Gyldensgård SV), sewing of fine textiles (Store Gadegård, area 3), iron extraction and processing (Store Gadegård, areas 1–2 and Dammegård), silversmithing activities (Nordre Stensebygård and Kannikegærdet), and skin processing (Skovvang) have been singled out. Based on Naum's analyses of the Bornholm Baltic Sea Ware, it is also suggested that specialised pottery production took place at Skørrebro. Extensive finds of bronze weights and balance scales at a relatively large proportion of the hoard sites reflect a strong relationship with trade. If many of the hoard sites had some form of specialised production that generated a production surplus, the high occurrence of bronze weights and balance scales suggests that goods were traded, and that the trade involved silver. Thus, hoards deposited centrally on settlements were perhaps accumulated through the trade of locally produced goods.

Typical for hoards deposited centrally on settlements is that they are dominated by coins or Slavic/Scandinavian melts. Coins and Slavic/Scandinavian melts probably possessed a special function in the trade of silver. Selected coins were largely kept unfragmented, signalling that the Bornholm people were aware of the duality of the coins, in that they could be used for both money transactions and silver trade

by weight (sections 6.1.1 and 7.2.5). Slavic/Scandinavian melts may have been introduced as a form of uniform currency, as a consequence of, or a counterweight to, the highly fragmented silver of varying quality that characterised the hoards in the decades up to 1020 (section 7.2.5). Thus, it may be argued that coins, as well as Slavic/Scandinavian melts, played a special role in trade.

There seems to have been a functional difference between Slavic/Scandinavian melts and irregular melts. The Døvregård hoard, deposited at the periphery of a settlement and thus possibly linked to craft activities, consists mainly of irregular melts. This implies that while Slavic/Scandinavian melts primarily appear in hoards accumulated through, and used for, trade, irregular melts may have been used for other types of activities involving silver.

The frequent presence of traces of bronze casting is another element indicating that many hoard sites differ from ordinary agrarian settlements. The presence of bronze casting at Bornholm hoard sites corresponds with the concentration of bronze crafts at landing sites in Zealand and Scania. A parallel to the frequent presence of traces of bronze crafts at hoard sites is found on Gotland, where bronze working is also fairly common at sites with Viking-Age hoards (Östergren 1989, 187). Gold objects are found at a relatively large number of Bornholm sites, seemingly reflecting a status level exceeding a common agrarian site. Goldsmith activities are documented at Slamrebjerg, suggesting that the gold may have been used in the manufacture of jewellery. The gold in the hoards and at the sites consists of bullion gold, which may also have been used in trade transactions (Kershaw 2019, 233–246) (section 3.1.1). The few exceptions are the Ahlesminde hoard, containing a gold ring and three very rare gold dinars, and the Smedegård NØ hoard, which included a gold ring. Thus, the proportion of sites with bronze production and with gold signal that the social status of hoard sites differs from ordinary agrarian settlements. The presence of textile production and iron processing at the Bornholm hoard sites, on the other hand, corresponds to the situation at ordinary agrarian settlements on Zealand and in Scania. In addition, some of the hoards are deposited at sites with more modest houses, which do not immediately reflect the economic surplus signalled by the hoards. This interpretation may be due in part to the often incomplete picture provided by the limited excavations. However, it should be pointed out that Bornholm's largest hoard, Smedegård NØ, can most likely be linked to people who lived in a dwelling which was only 12.5 m in length on a peripherally located settlement (catalogue: 38).

## Notes

- 1 The presented data was compiled before 2019.
- 2 The type is named after the Viking-Age ring fortress in West Zealand, Denmark.
- 3 Distribution maps displaying recorded finds of coins, non-numismatic silver objects, weights, bronzes, gold, excavation areas, and find-spots of hoards are available in the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).

- 4 Pottery identification is based on drawings in the find lists.
- 5 The pottery is not described in detail in the excavation report.
- 6 Almost every excavated Viking-Age site on Bornholm is also a hoard site; thus, it is not possible to compare the evidence of hoards sites versus non-hoard sites in the analysis of craft and trade activities.
- 7 See <https://www.kulturarv.dk/regin/index.do>, x 295, visited 2/12/2019.
- 8 I would like to thank Kristin Bornholdt Collins for bringing the decoration to my attention.

## 8 The hoards in local and regional contexts

It has been possible to trace significant changes in hoard structures based on the analysis of the production and circulation data of the objects, together with the immediate contexts, feature contexts, and site contexts of the hoards. The changes include the first import of dirhams in the 800s and 900s and a shift from the import of dirhams to the import of Western European coins and Slavic silver around the year 1000. Other major developments are the establishment of a new currency in the form of Slavic/Scandinavian melts in the 1010s, an increase in the deposition intensity from around 990, and a decrease in the number of hoards deposited from around 1050. Additionally, it has been possible to offer a differentiated interpretation of the meaning of each hoard by connecting its structure and deposition context.

In this chapter, the context of the hoards is extended to Bornholm and the Baltic Sea region. Trends and changes are discussed and related to other archaeological objects from Bornholm and compared to the development in the areas surrounding the Baltic Sea. The discussion draws on Bourdieu's concept of capital within the economic, social, cultural, and symbolic fields.

The hoards and the individuals behind them provide the starting point for the discussion. An interesting question is whether the owners of the hoards were active participants in the outlined developments. To elucidate what mechanisms triggered these developments, a prominent theme in the analysis will be whether the sites reflect continuity or rupture. Are the same actors (families/areas) initiating the various changes on Bornholm, or do new actors on the island generate the changes? The shifts in the structure and deposition of the hoards may be conditioned and/or influenced by contacts with the outside world. Thus, the topographical location of the sites in relation to access to the Baltic Sea is considered.

### 8.1 Early dirham imports – a new elite on Bornholm

It is likely that the importation and accumulation of silver in the ninth and tenth centuries are connected to just a few individuals or families on Bornholm. The Skovsholm hoard deposited 855–900 probably reflects the earliest import phase of Viking-Age coins. Skovsholm's profile and location in a regional perspective fit well into the picture we already know from Scandinavia and the Baltic region.

From central Sweden and the Baltic area, we know of 76 hoards with more than five coins containing Islamic coins deposited during the ninth century (Kilger 2008a, 207–209). The find situation in southern and western Scandinavia is completely different. Here only 14 hoards deposited in the eighth and ninth centuries contain Islamic coins. These hoards are primarily made up of uncoined metal in the form of jewellery, rings, and ingots, and the few Islamic coins found in these hoards are reworked into jewellery (Sawyer 1971, 110–112; Kilger 2008a, 207, forthcoming). In Scandinavia, Islamic coins from the ninth century are generally found in a few larger hoards (Kilger 2008a, 221–234). This indicates that a limited number of actors were involved in the transport, exchange, and handling of dirhams. Thus, it is reasonable to assume that the owners of the Skovsholm hoard played a central role in the economic and social fields of Bornholm.

The Skovsholm site is located 1.5 km southeast of the Sorte Muld complex, which, during the Roman and Germanic Iron Ages, was one of five central sites on Bornholm. In addition to Sorte Muld, the Bornholm centres include Møllegård, Agerbygård, Sandegård, and Smørenge (Figure 3.13). Sorte Muld is highlighted as the leading centre with an overwhelming and exclusive selection of high-status objects (Christensen *et al.* 2008, 148–149). However, Smørenge also stands out, for example with the largest denarius hoard in Denmark, and the cult area known as ‘*Guldhullet*’ [The Gold Pit] where 110 gold-figure foils and eight small three-dimensional gold-figures have been found<sup>1</sup> (Larsen & Watt 2011; Horsnæs 2013, 140–144; Nielsen 2018).

Lars Jørgensen links the Sorte Muld complex to the group of first-generation central sites with supra-regional importance based on phosphate analyses, geomagnetic surveys, and surface finds. These also include Gudme on Funen, Uppåkra in Scania, and Helgö in Lake Mälaren (2009, 332–337). The finds indicate that the position and extension of the Sorte Muld complex peaked between the fourth and seventh centuries, after which there was a gradual phasing out of its dominant role (Aarsleff 2008, 119; Watt 2008, 26–27). The establishment of second-generation central sites in the sixth and seventh centuries, which Jørgensen identifies at Tissø, Lejre, Toftengård on Zealand, and Järrestad in Scania, apparently does not take place on Bornholm. The second-generation sites are characterised by seasonal craft and trade activities while the first-generation sites, including Sorte Muld, appear to maintain a structure of permanent craft activities (Jørgensen 2009, 337–347).

Distribution maps show that the settlement at Sorte Muld reduces to a few smaller areas during the ninth century. Towards the end of the ninth century, and at the beginning of the tenth century, the activity level decreases at the centre of Sorte Muld but at the same time the activity level increases at the surrounding settlements at Dalshøj II, Engegård, and Nordre Brændesgård. The quality of the artefacts found at these sites cannot be compared to the quality of the artefacts found at Sorte Muld during its heyday, and by the eleventh century, Sorte Muld was reduced to an area with a few isolated farms (Aarsleff 2008, 119, 2010, 338–340; Watt 2008, 26–27). Thus, the Skovsholm hoard was deposited at a time when the activities at the central Sorte Muld site had decreased. The analysis of the Islamic coins makes it likely that the importation of the coins found in the hoard occurred relatively shortly before the deposition horizon (section 5.3).

What relation did the Skovsholm site have to the Sorte Muld complex? A comparison of the composition of the dirhams in the Skovsholm hoard and those found at Sorte Muld sites shows that Skovsholm was probably not a replacement for Sorte Muld. In the Skovsholm hoard the distribution of dirhams is 27 (17.4 per cent) minted before 750, 112 (72.3 per cent) Abbasid dirhams minted 750–832, and 15 (9.7 per cent) Abbasid dirhams minted 833–922. At the Sorte Muld site the distribution of dirhams is 4 (14.8 per cent) minted before 750, 17 (63 per cent) Abbasid dirhams minted 750–832, and 6 (22.2 per cent) Abbasid dirhams minted 833–922 (Kilger forthcoming). Thus, the chronological distribution of dirhams is relatively uniform. There is an even higher percentage of ‘late’ dirhams found at Sorte Muld than in the Skovsholm hoard, although the relatively small number of finds must also be taken into account.

The geographical proximity and the uniform composition of the dirhams suggest a connection between Sorte Muld and Skovsholm. But should the Skovsholm site be seen as an outpost to Sorte Muld, or as a new power on Bornholm? Several factors indicate that Skovsholm constituted an independent social and economic power. The site is located a safe distance from the coast on a plateau where the terrain slopes evenly down towards the coast a little south of the current town of Svaneke. Skovsholm stream runs close to the site and empties into the Baltic Sea between the natural harbour of Thygehavn to the north and the fishing village of Årsdale to the south. The inhabitants of Skovsholm had easy access to the Baltic Sea but were at the same time at a relatively safe distance to avoid attacks from the seaside (Laursen & Ingvardson 2014, 55–58). Thus, the site was strategically well located for trade in the Baltic Sea area. The site analysis suggests that large-scale production of possible trade goods such as leather and hides took place at the site. The strongest argument that the inhabitants of Skovsholm played a role in the power politics of Bornholm is the island’s earliest Viking hoard. Seen from a regional perspective, the hoard suggests that the owners of the Skovsholm hoard were part of the trade network that imported and redistributed dirhams in the Baltic Sea region in the 800s.

Margrethe Watt proposes, without further elaboration or reference, that the phasing out of Sorte Muld should be seen in connection with the establishment of several trade centres along the south coast of the Baltic Sea at the end of the eighth century, which meant that trade eventually bypassed Bornholm (2008, 27). Along the Pomeranian coast there are traces of settlement at Menzlin towards the end of the eighth century, Wolin at the end of the eighth century or the beginning of the ninth century, and at Ralswiek and Kolobzeg in the ninth century. However, these settlements first show signs of extensive trading activity in the tenth century (Sindbæk 2005, 188–200; Gruszczynski 2019, 94–113). However, in the eighth and ninth centuries, Truso can be highlighted as a trading hub comparable to Ribe, Kaupang, and Birka (Sindbæk 2005, 196). Imports of dirhams from Russia to Gotland after c. 825 and a little later along the south coast of the Baltic Sea (Kilger 2008a, 214–221) substantiate the impression of a change in the trade structures and the establishment of new contact networks in the Baltic Sea region. It is thus possible that the importance of Sorte Muld as a hub for international trade diminishes because of changes in the Baltic Sea trade network. The interpretation

is supported by the only contemporary written source that describes Bornholm in the Viking Age:

Then on our left we had the land of the Burgundians, who have a king to themselves. Then, after the land of the Burgundians, we had on our left the lands that have been called from the earliest times Blekingey, and Meore, and Eowland, and Gotland, all which territory is subject to the Sweons.

(Hakluyt 1893)

The quotation is from the merchant Wulfstan's famous account of his seven-day journey from Hedeby to Truso. The journey follows the south coast of the Baltic Sea between the trading centres of Hedeby and Truso, and it appears from his description they did not land at Bornholm. Wulfstan's tale is in addition to the history of the world by Paulus Orosius (dated to c. 420), which was translated from Old English around 890 at the instigation of the English King Alfred the Great (c. 849–899). Substantial parts of the original manuscript have been preserved to this day with the unfortunate exception of Wulfstan's narrative, which instead has survived in a very careful copy of the manuscript from the eleventh century (N. Lund 1983, 24–25). Thus, the historical source has great value.

The next import event reflected in the hoarded silver on Bornholm takes place in the first half of the tenth century. The import incident is documented by the three hoards from Buddegård, Rabækkegård, and Skørrebro. The chronological profiles of the three hoards suggest that all include coins from the same import phase, but that the coins were deposited at different times and in different contexts (section 5.3). The earliest deposit was in a grave context. Fourteen Samanid dirhams struck during the first two decades of the 900s were deposited in the Rabækkegård grave. In addition to the hoard, the grave contained a collection of jewellery including bronze pendants and beads, which confirm a dating of the grave to the first half of the tenth century (section 5.3).

On Bornholm, there is a marked break in the dirham import between the Abbasid hoard deposited at Skovsholm and the Samanid hoard deposited in the Rabækkegård grave. In contrast, Gotland sees a continuous importation of Islamic coins during the transition between the Abbasid and Samanid Caliphates. Samanid dirhams probably reached Gotland shortly after their minting at the beginning of the 900s, and from there they spread westwards to Ireland via Jutland (Kilger 2008a, 238–237). It is argued in section 5.3 that the early inclusion of Samanid dirhams in the Rabækkegård grave can also be interpreted as an 'intermediary' in the distribution of Samanid dirhams from Gotland to Ireland. The deceased, or people close to the deceased, were probably directly involved in the early distribution of Samanid dirhams. The Rabækkegård grave is included by Svanberg in the group of aristocratic burials in southern Scandinavia (Svanberg 2003, 130–134) and the feature context of the hoard reflects the fact that the early dirham import was linked to the elite (section 7.2.5).

Most of the coins in the Skørrebro hoard probably originate from the same import phase as the 14 Samanid coins found in the Rabækkegård grave/hoard, and

perhaps also the 'Unknown location' grave (section 5.3). The Skørrebro hoard was deposited between 939 and 990, and with the exception of two coins, all the dirhams were minted before 920 (Appendix 1). It has been argued that the Skørrebro hoard was deposited in or near a dwelling house. The Skørrebro site is distinguished by being the earliest documented site on Bornholm where the pottery inventory is dominated by Baltic Sea Ware (sections 7.2.1 and 7.2.3). Naum's analyses show that the Baltic Sea Ware at the Bornholm settlements was of good quality and probably made by specialists with in-depth knowledge of the use of turntables, preparation of ceramic clay, and firing techniques (2008, 126–127). Naum points to several ceramic groups on Bornholm that exhibit uniform morphological and decorative features. Based on the distribution of the groups, Naum suggests that the Baltic Sea Ware was produced at individual farms and then distributed to the surrounding areas (Naum 2008, 126–127). Thus, the settlements producing pottery would have played a central role in the social and economic hierarchy on Bornholm. However, the Skørrebro site does not form part of Naum's analyses.

The Buddegård hoard, like the Rabækkegård and Skørrebro hoards, comprises a significant number of Samanid dirhams minted before 920. The hoard is distinguished by a high proportion of complete coins converted into jewellery (sections 6.1.1 and 6.4). Further items include a bracelet and a deliberately bent trefoil brooch (section 6.2). The hoard was deposited in an area without other archaeological remains (section 7.2.4). The structure of the hoard and its context indicate that the hoard was connected to the symbolic field (section 7.2.5). The hoard can be interpreted as a central brooch deposit which shows a marked coincidence with the inventory in Scandinavian Viking-Age women's graves (sections 2.1 and 7.2.5). One of two other brooches, similar to the trefoil brooch from the Buddegård hoard (Figure 5.15), was found at the Kannikegårdet site just 2.4 km from Buddegård (Figures 3.5 and 3.13). The other parallel was found in the Dammegård hoard. A bracelet like the one found at Buddegård was also found at the Kannikegårdet site. However, in this survey, the trefoil brooch and the bracelet from Kannikegårdet are not interpreted as part of the hoard, but their presence documents a clear relationship between the two sites (section 3.1.1). The site analysis suggests that there was silversmithing at the Kannikegårdet site, and it is possible that the special trefoil brooches were produced at Kannikegårdet (section 7.3.1). A further connection between the two sites is that the Kannikegårdet hoard, like Buddegård, contains an unusually large number of whole coins with suspension mounts (sections 6.1.1 and 6.4). A significant difference between the two hoards is their deposition contexts, since the Kannikegårdet hoard is deposited in a dwelling house (section 7.2.3). The deposition contexts indicate that the Buddegård and Kannikegårdet hoards had different functions, while the coincidence in the inventory suggests that the hoards were probably linked to the same group of people. In section 7.2.5, it is argued that the same people who established themselves at the Kannikegårdet site deposited the Buddegård hoard to mark ownership of or as a sacrifice for newly cultivated fields.

The deposition contexts of Bornholm hoards containing a marked element of early Samanid coins minted before 920 suggest that women were involved in the

distribution and handling of silver in the Viking Age. Two of the three hoards, Rabækkegård<sup>2</sup> and Buddegård, show a connection to women by virtue of their composition and structure contexts. The connection between Buddegård and Kannikegærðet further illustrates that the relationship between hoards and women was not exclusively related to the symbolic field. The hoard at the Kannikegærðet site was deposited in a house, which indicates that the hoard constituted economic and social capital. Furthermore, the contexts of the hoards show that the early import of Samanid dirhams was linked to the elite. This is illustrated by the connection the Rabækkegård grave has to aristocratic environments in southern Scandinavia and by the early dominance of Baltic Sea Ware at the Skørrebro site. The early import phase of Samanid dirhams connects the three sites of Buddegård, Rabækkegård, and Skørrebro. Further, the close connection between Buddegård and Kannikegærðet is reflected in the unique jewellery and the very high proportion of coins converted into jewellery at the two sites. The hoards are deposited on southwest Bornholm, central Bornholm, and eastern Bornholm, respectively (Figure 3.13). Hence, the hoards reflect an elite network across the island.

In relation to the central settlements from the Roman and Germanic Iron Ages (Sorte Muld, Møllegård, Agerbygård, Sandegård, and Smørenge) both continuity and rupture are seen in relation to the geographical location. The Skørrebro site is close to Smørenge, while both Rabækkegård and Buddegård/Kannikegærðet are located in areas where no central sites have been registered (Figure 3.13). This reflects a clear break with the previously dominant central sites. The interpretation of the Buddegård hoard as marking ownership of or sacrifice for newly cultivated fields confirms that the people at Kannikegærðet established themselves in a new area. The development on Bornholm has similarities with the rest of Scandinavia, where it is possible to trace a decentralisation of imports in the first half of the tenth century, and new sites with coin finds emerge (von Heijne 2004, 96).

To summarise, the early import of dirhams is linked to people within the Bornholm elite. The distribution of early Samanid dirhams reflects an elite network across the island where women played an important role in the network and in the distribution of dirhams. The early dirham hoards, including the Skovsholm hoard, also seem to reflect a partial break with the former elite structure.

## **8.2 Joint journeys, social networks, and mobility**

The analysis of the production and deposition data of the Islamic coins indicates that dirham imports on Bornholm stopped after c. 950 as a result of a reorganisation of the trade and tax system in Russia (section 5.3). A significant influx of Western European coins can only be traced in the hoards from the 990s, which suggests that the importation of Western European coins was not directly linked to the end of dirhams (Figure 3.11). The Skærpingegård, Dammegård, Kannikegærðet, and probably also the Rosmannegård SV hoards show almost identical chronological profiles with a continuous influx of dirhams until c. 950 and a small number of German coins that point to a deposition horizon later in the 900s. The Skærpingegård hoard was probably deposited between 962 and 990, while the other three hoards were

probably deposited in the 990s (section 3.3). Thus, there appears to be continuity between the people involved in the importation of dirhams and those involved in the earliest import of German coins. The analysis of production data suggests that the German coins found at Dammegård, Kannikegærdet, and Rosmannegård SV came to Bornholm via contacts to the West, while the German coins found at Kongens Udmark arrived in Bornholm via the West Slavic area (section 5.1). Continuity between the people who imported and deposited both Islamic and German coins is exemplified at the Rosmannegård site, where the two hoards, Rosmannegård SV and Rosmannegård S, reveal that people within the same settlement first deposited a hoard dominated by Islamic coins and, a few years later, deposited a hoard with a marked component of German coins (catalogue: 29).

The Brandsgård hoard, with its massive element of Dorestad imitations, was deposited just 320 m from Rabækkegård (Figure 3.13). The hoard attests to an early direct import event from Hedeby to Bornholm, probably in the last third of the tenth century. The Rabækkegård grave with the early Samanid hoard reflects, as argued earlier, a probable elite environment with supra-regional contacts to Gotland and Jutland in the early 900s. The early and unusual importation of Western coins in the form of Dorestad imitations in the Brandsgård hoard seems to suggest that people within the same social circle had special supra-regional contacts, which also facilitated the early import of Western European coins.

The early importation of German coins thus seems to be linked to the same group of people within the newly established and decentralised elite power structure on Bornholm in the early 900s, which was involved in the early importation of dirhams. Furthermore, the import of dirhams as well as early German coins seems to be conditioned by the local and supra-regional networks of the elite.

There is a marked increase in the number of hoards deposited at the end of the tenth century (Figures 3.11 and 3.12). The increase suggests that more people were involved in the accumulation and handling of silver compared to the limited number of high-status persons involved in the import of Islamic coins as well as in the early import of German coins. The increase coincides with more extensive imports of Western European coins. The importation of English coins in the late 900s is particularly significant. The detailed analysis of the production data demonstrates that English coins found in hoards deposited in the decades around the year 1000 were primarily accumulated through participation in raids in England (section 5.2). Based on the production data of the coins, two hoards can probably be linked to expeditions mentioned in the *Anglo-Saxon Chronicle*. It is probable that the Store Frigård II was primarily accumulated through participation in raids in the 990s, perhaps in 994, while the Tyskegård hoard was accumulated during the 1002 raid (section 5.2). Tyskegård was deposited centrally on the island in an area without other clear signs of high-status settlement at the time of deposition around the year 1000. However, the early Kongens Udmark hoard, which was probably deposited 967–990, was found 1.7 km away (Figure 3.13). The Kongens Udmark site has not been excavated and therefore no further characteristics of the site can be given. The special structure of the Tyskegård hoard in relation to production and circulation data compared to the hoard's deposit data, which shows that the hoard was

deposited in an area without other archaeological remains, suggests that the hoard was a symbolic deposit. The hoard may have been deposited either to mark ownership of or as a sacrifice for newly cultivated fields (section 7.2.5).

Thus, the accumulation of silver acquired through Viking raids in England seems to have influenced the social structure on Bornholm. By participating in raids, more people could accumulate silver and thereby create a position in society by acquiring land. The situation is like that described on the Veda runestone in Uppsala, which tells the story of Ärinmund, who bought a farm with the riches he had acquired in the East (section 2.2). The Tyskegård hoard illustrates silver having agency in social mobility on Bornholm.

The Tyskegård and Store Frigård II hoards were deposited shortly after their accumulation. Therefore, they consist entirely, or almost exclusively, of English coins and are clear examples of the Bornholm inhabitants' participation in the raids. It is a different scenario for the Gyldensgård SV hoard. The analysis of the hoard biography demonstrates that the hoard includes an accumulation phase in which coins were acquired through raids in England, but the hoard was deposited approximately 30 years after the raids (section 5.2). This suggests that the owners of the Gyldensgård SV hoard also took part in the raids in England, and thus were able to establish themselves at the top of the social hierarchy on Bornholm. The reason for the difference between the structure of the Tyskegård and Gyldensgård SV hoards must be found in the context of deposition. The English coins in the Tyskegård hoard were deposited shortly after the acquisition as a symbolic act – perhaps as a sacrifice to newly cultivated fields. The English coins in the Gyldensgård SV hoard were part of a hoard accumulated over a longer period and then deposited in a house. A closer analysis of the context suggests that part of the hoard was collected in a small purse together with a little silver and a weight (section 7.1.1). The structure and deposition context of the hoard shows that the accumulation was a dynamic process in which parts of the hoard were reactivated. Although the hoard was deposited approximately 30 years after the raids in England, the hoard's biography suggests that one or several members of the family at Gyldensgård SV also participated in the raids.

The profile of the Gyldensgård SV hoard also reflects the fact that raids were merely one of several accumulation strategies. The Baltic-Finnish fire-steel, which may have been deposited in the hoard, shows possible contacts to the north or east. The fire-steel may have been acquired during a trip to Birka. Several Birka graves containing one or more Finnish objects also contain scales and/or weights, indicating that the buried individuals were part of supra-regional networks of people involved in the exchange and sale of goods (Gustin 2004, 234). Four bronze weights were found immediately east of the deposition place of the Gyldensgård SV hoard: one small spherical weight, a tablet-shaped weight, and two spherical weights with flat poles and iron cores. The weights likely compose a set. Thus, the presence of a fire-steel (Figure 3.4) and weights at Gyldensgård SV form a clear parallel to the previously mentioned Birka graves. This makes it probable that the people who collected and deposited the Gyldensgård SV hoard were part of the same supra-regional network of exchange and trade of goods as those buried in Birka.

As argued, it was the same people among the elite of Bornholm who imported dirhams and early German coins. However, the hoards do not reflect continuity between the people who accumulated and deposited Islamic coins and the people who accumulated and deposited English coins. This supports the idea that the acquisition of silver by participating in raids in England affected social mobility on Bornholm, and perhaps created the basis for a new elite structure. An exception is Rosmanegård S, which comprises a significant number of Islamic, English, and German coins and is deposited at the same location as a dirham hoard (catalogue: 29).

Common to Rosmanegård S, Munkegård, and Egenvang, which were all deposited 1002–1020, is a clear dominance of the *Crux*-type among the English coins in the hoards. This suggests that the coins, as in Store Frigård II, may have been acquired through raids in the 990s. Thus, the people who accumulated the coins in Rosmanegård S, Munkegård, Egenvang, and Store Frigård II may have participated in the same raid. As stated in section 5.2, the connection between the hoards is further supported by the fact that Rosmanegård S and Munkegård have a uniform composition of German coins (Figures 5.3 and 5.5).

The analysis of die-identical Anglo-Scandinavian imitations confirms that the inhabitants of different parts of the island of Bornholm went on joint expeditions. The relationship between die-identical Anglo-Scandinavian coins probably reflects an extensive and complicated social network on the island (section 5.4) (Figure 5.12). The three coin-rich hoards from Skovvang, Nørremølle, and Gyldensgård SV occupy central positions. Gyldensgård SV and Nørremølle are part of a complicated network of contacts in northeast Bornholm, and there is also a very strong connection between Skovvang and Nørremølle. Furthermore, Skovvang is related to Munkerup and Blykobbegård in southwest Bornholm and to Slamrebjerg, which is geographically close to Nørremølle (Figure 5.12). The slightly later Pæregård hoard in northwest Bornholm is similar in structure to the Nørremølle hoard, but does not occupy a corresponding central position in the network system. Pæregård only shows contacts to the central locations Gyldensgård SV and Nørremølle in the network. The excavation of some of the potential hoards on North Bornholm may possibly change this picture (Ingvardson & Nielsen 2015, fig. 1). In five of the Bornholm hoards, there are examples of a special type of neck-ring with a primary distribution area in the Baltic area (section 5.5). There are one or two fragments of the neck-ring type in the hoards found at Egenvang, Englyst, Nørremølle, Pæregård, and Skovvang. Perhaps this reflects a mutual relationship between the sites and suggests that the inhabitants of the different settlements of Bornholm made journeys to the East together.

### **8.3 Contacts and trade**

From around the year 1000, Otto-Adelheid pennies from the Harz area dominate the German material in the Bornholm hoards, and from the beginning of the 1000s, the Otto-Adelheid penny is the most common coin type, dominating the entire coin material (section 5.1). The period of imports of Western European coins from the

end of the tenth century coincides with a marked increase in the number of hoards deposited, which lasts until c. 1050 (Figures 3.11 and 3.12). Thus, once again, Bornholm seems to become an integral part of the Baltic Sea trade network.

Bornholm is mentioned in Adam of Bremen's chronicle book IV 'Describing the countries and islands of the North'. In a list of Danish islands, Adam describes Bornholm as Denmark's most famous port and a safe haven for travellers to the barbarians or Greece (A. A. Lund 2000, 210). Adam of Bremen's chronicle is one of the most important written sources of Denmark's history in the tenth and eleventh centuries, and it contains a wealth of information not found anywhere else. It was written in the 1070s and is close to the events it describes. The chronicle was written at a time when the archdiocese of Hamburg-Bremen was in crisis, and Adam had the clear aim of highlighting and praising the Archbishop of Hamburg's missionary work in the Nordic countries and the Slavic territories (Gelting 2011, 127–130). Adam describes how Bishop Eginow went to Scania around 1060 at the instigation of Sweyn Estridsson, and that the bishop engaged in missionary work on Bornholm in the 1060s (Gelting 2012, 107). While Adam had a clear aim with the description of Eginow's missionary activities, there seems to be no immediate reason to doubt the information about Bornholm's position as a safe and important port.

However, it is not archaeologically possible to locate significant ports from which trading activities on a large scale could take place. The settlement development on Bornholm differs markedly from Zealand and Scania. As described, the activity at Sorte Muld decreases during the ninth century. However, at the second-generation Scandinavian central sites on Zealand and in Scania the trading activities seem to continue with the same strength. At these sites, activities are only phased out towards the end of the tenth century and at the beginning of the eleventh century (Hårdh 2000; Söderberg 2005, 74–84; Christensen 2015, 282–286). In some cases, the central sites are replaced by medieval towns established inland or along fjords (Andrén 1985, 71–72; Skre 2016, 167–170). For example, in Scania Uppåkra declines while Lund is established (Hårdh 2000) and on Zealand, the royal manor functions in Lejre are transferred to the newly established town of Roskilde (Christensen 2015, 282–286). It is in these urban centres that trade is concentrated (Birkebæk 1992, 41–49; Carelli 2001, 178–206; Ingvarðson 2010, 80–88). However, this urbanisation process is absent on Bornholm, and in contrast to the situation on Zealand and in Scania, Sorte Muld is not replaced by a newly established town. Instead, the settlements are decentralised, and individual farms are established from the tenth century. One of the earliest examples may be the Skovsholm site, but Skørrebro, Kannikegærdet, and Dammegård are also early examples of this decentralisation. The site analysis shows that the Dammegård and Store Gadegård complex around the current St Peder's Church and the Munkegård site probably housed some of the same functions as the central sites of Zealand and Scania (section 7.3.4). However, the central sites on Bornholm were established at a time when the central sites of Zealand and Scania were becoming less important.

Lars Bjarke Christensen, Finn Ole Nielsen, and Michael Vennersdorf suggest that the new decentralised settlements were established in places where there are

historically known farms (2008, 148–149). The farm settlements on Bornholm can largely be traced back to the 1600s–1700s. The *Land Register* of 1691–1692 provides the first overview of all named farms: 680 free farms, 224 copyhold farms, 16 proprietary farms, 15 vicarage farms, and 15 parish farms are listed. A further 12 farms are not specifically located (Nielsen 1983, 43). The oldest detailed maps showing the existing buildings are Bernhard Frantz Hammer's topographical maps from 1746–1750, but the maps contain inaccuracies, and cannot be directly transferred to modern maps. However, Hammer's maps largely outline the settlement landscape that appears from the precise cadastral maps that were prepared on Bornholm in 1816–1820 (Nielsen 1983, 21). The early maps and farm inventories have formed the basis for several retrospective settlement surveys, which establish that the Bornholm farms were not organised in closed villages (Nielsen 1983, 44–45 with further references, 1994, 131–37; Watt 1988, 105–116). Instead, the farms are placed in rows that often follow natural boundaries, such as deglaciation lines, shorelines, streams, fissure valleys, and other terrain boundaries. Certain farms cannot be connected to natural lines, but rather follow old roads. In addition to the rows of farms, there are 'farm villages' which Nielsen defines as three farms lying near each other in a row or in a triangular formation (1983, 44–46, 1994, 130–131). The development of settlements on Bornholm is reminiscent in certain respects of the situation on Gotland, where the settlements from c. 600 are organised in individual farms and small villages without clear fiscal delimitation (Svedjemo 2014, 189–207).

The site analysis reveals relatively modest settlements with deposited hoards on Bornholm. Many Bornholm hoard sites show traces of bronze production, and together with a relatively frequent occurrence of gold, it signals that the social status of the sites differs from ordinary agrarian settlements on Zealand and in Scania. On the other hand, the presence of textile production and iron processing at the Bornholm hoard sites corresponds to the picture of ordinary agrarian settlements in the same areas (section 7.3.1).

Several of the Bornholm hoards are deposited at sites with small, modest houses which do not immediately reflect the economic surplus that is signalled in the hoards. Bornholm is characterised by many small natural harbours along the island's rocky northern and eastern coasts, while the southern coast is characterised by long sandy beaches. There is a marked correlation between the distribution of hoards and natural harbours on the island's northern and eastern coasts, where the hoards are concentrated in the hinterland of the small natural harbours. There is an absence of hoards found at the southern tip of Bornholm, where landing from the seaside could easily take place along the wide sandy beaches (Ingvardson 2020, figure 17.3). This signals that settlements with hoards were oriented towards the Baltic Sea, but at the same time were at a relatively safe distance in the event of attacks from the coast.

In the feature analysis, it was found that hoards deposited centrally in settlements were dominated by coins or Slavic/Scandinavian melts. The latter probably also constituted a form of standardised currency that possessed the same characteristics as currency (sections 7.2.5 and 8.4.3). The site analysis shows that several

hoard sites display traces of trade in silver in the form of bronze weights and parts of balance scales. The analysis confirms previous studies that demonstrate that spherical weights with flat poles and polyhedral weights are found at a wide range of settlements spread over virtually all of Bornholm (Aarsleff 2010, 342–343). Furthermore, some kind of specialisation can be traced at many sites (section 7.3.6). Thus, several factors indicate that hoards deposited centrally in settlements were partly accumulated through trade, possibly with surplus goods produced at the site itself. If trade took place on Bornholm, it may have happened by ships landing at the small natural harbours. The activities at the Dammegård/Store Gadegård complex and at Munkegård signal a greater focus on various craft activities, and it is possible that the sites ranked higher in the social hierarchy on Bornholm (section 7.3.4). These sites may be possible candidates for trade centres on Bornholm. However, the nature of the settlement seems to signal local rather than supra-regional trade.

Another possibility is that the people of Bornholm left the island and traded at central trading sites. As argued in section 8.2, the analysis of Anglo-Scandinavian coins indicates joint expeditions to Sigtuna and Lund. The coin material also reflects trade contacts with England. The analysis of the production data for English coins reveals that towards the end of Æthelred II's reign (978–c. 1017) part of the English coins in Bornholm hoards had probably already been acquired through trade in the former Danelaw areas (section 5.2). Finally, the dominant Otto-Adelheid pennies demonstrate contact with the German territories. Contact with the northern German area is confirmed by Schleswig municipal law, which contains a special privilege granted to resident merchants from the Duchy of Saxony, Friesland, Iceland, and Bornholm. Schleswig municipal law is dated by historian Michael Gelting to the reign of Sweyn Estridsson (1047–c. 1074) (Gelting 2012, 108). Hence, the historical source reflects a direct contact between Bornholm and northern Germany. This connection will be elaborated upon further in section 8.4.1.

A significant presence of West Slavic jewellery in the hoards found at Munkegård I, Pæregård, and especially Nørremølle indicates that trade also took place at one of the central trading posts on the south coast of the Baltic Sea (section 5.5). The contact between Bornholm and the West Slavic area is confirmed by the special common feature of Slavic/Scandinavian melts deposited in hoards found on Bornholm, in eastern Sweden, and the West Slavic area (section 7.2.5).

The network analyses based on die-identical Anglo-Scandinavian coins may contribute to a more nuanced understanding of the trading system of Bornholm. As described in section 8.2, the Skovvang, Nørremølle, and Munkegård sites are central sites in the network system. There is a strong mutual association between the three sites, and each site also seems to be connected to several smaller and less central sites within the network. Based on relatively extensive excavation activities, the Munkegård site can be characterised as a central site with a wide range of craft activities (sections 7.3.1 and 7.3.4). A very limited excavation area at the Nørremølle and Skovvang sites does not, in the same way, allow for a characterisation of the nature of the sites (catalogue: 25 and 34). However, distinctive for the three hoards is the fact that they are among the richest hoards (in terms of coin) deposited on the island, which may reflect a special status (Figure 3.11).

These observations indicate that some settlements on Bornholm (such as Skovvang, Nørremølle, and Munkegård) functioned as local trade centres, where the people of Bornholm exchanged the surplus goods produced at the settlements. People who ranked high in the island's social and economic hierarchy controlled the local trading centres. This local elite went on joint trading journeys, during which they traded the Bornholm-produced goods. Upon return to Bornholm, a portion of the silver acquired during these trade voyages was distributed to the smaller sites which sold their goods at local trade centres.

Contact with the West Slavic territory seems to extend beyond trade contacts. Characteristic of the West Slavic jewellery within the Bornholm hoards are beads and, to a lesser extent, earrings (Figures 4.2 and 6.8). An interesting parallel to the Slavic beads in the Bornholm hoards are Slavic beads in graves on Bornholm. At the four early Christian burial sites Slamrebjerg, Runegård, Munkegård, and Nordre Grødbygård (described in detail in section 8.4.2), clear West Slavic features are observed in both burial gifts and burial rites. Among the grave goods of Slavic origin or of Slavic type can be highlighted temple-rings, knife sheath fittings, square amulets ('captorga'), and silver beads. In addition, funeral rituals such as depositing sherds of broken pottery can be highlighted as a parallel to the Slavic area, where rituals with food and drink at the burial site ended with the destruction of the vessels and deposition of sherds in the graves (Wagnkilde 1999, 9–14, 95–96; Naum 2008, 190–196, 227–232, 2015, 77–78). The Runegård burial ground probably contains the graves from a single farm. The burial ground is divided into three sections; the middle section includes children's graves. In three of the graves in the southern section, and in a child's grave, large shards of Baltic Sea Ware were placed beneath the dead. The clear division of the burial site and the differences in the burial ritual in relation to the deposit of pottery are interpreted by Naum as a possible sign that the farm's slaves were buried in the southern section (2008, 200–203, 218–219, 248). This spatial separation between graves with and without Slavic elements is not present at the slightly later Nordre Grødbygård burial site (Naum 2008, figure 232).

The burial sites thus seem to reflect a gradual integration of Slavic as well as Christian elements in the Bornholm burial rites (section 8.4.2). After knives, Slavic silver beads are the most common burial gift at the Nordre Grødbygård burial ground (Wagnkilde & Pind, 1996, 175; Wagnkilde 2000, 95–96). The beads were originally part of Slavic earrings, and Wagnkilde interprets the beads as 'pars pro toto' in line with the deposited pottery fragments in the graves. Together with coins and simple buckles, Wagnkilde interprets beads and sherds as symbols for grave gifts, and she suggests that the grave inventory demonstrates an 'amuletisation' of the grave goods. Based on the marked presence of silver beads in hoards deposited primarily in the first half of the eleventh century, Wagnkilde argues that beads may have been perceived in line with coins as having a fixed value that could be converted into other objects in the afterlife (2000, 95–98). Naum rejects that the silver beads should be identified as symbols/substitutes for other grave gifts, with the argument that graves with silver beads are the most well-equipped graves. Furthermore, the beads have been found at the neck of the buried person, at the temple,

or when excavating around the skull, which indicates that the beads functioned as jewellery (2008, 228). In addition, graves with beads are often also equipped with a coin. However, one interpretation does not exclude the other. The beads may have served as a unit of value and at the same time been used as jewellery. This interpretation is supported by the fact that coiled coins have been found in five graves (Wagnkilde 2000, 96). Here, the function of coin, jewellery, and amulet are potentially integrated into the same object.

The concentration of the West Slavic silver beads in the coin-rich hoards from Munkegård I, Nørremølle, and Pæregård seems to confirm a connection between the meaning of coins and beads (Figure 5.16). On the other hand, fragmentation analyses show that beads in graves are much more fragmented than coins in graves, which seems to signal that beads and coins have been used in different contexts (section 6.1.1). Many of the West Slavic beads were originally produced for, or as part of, an earring (section 4.1). In the graves, they are often found together with beads made of other materials. Thus, the Slavic beads constitute an external element that is changed and integrated into the standard Bornholm women's adornment. Hence, the four burial sites reflect a (southern) Bornholm society in the eleventh century, when external impulses, be they Christian (section 8.4.2) as well as pagan Slavic, are absorbed into Bornholm culture. This is especially evident in the adornment of women as well as in the burial processes, in which external elements such as the organisation of the burial sites testify to an increased Christian consciousness, while the processes of preparing the dead before burial continue to follow a pagan mindset.

A significant Slavic influence that Bornholm shares with other parts of Scandinavia is the integration of the Slavic pottery tradition into everyday ceramics at the settlements (7.2.1). The presence of Slavic-inspired ceramics as such is not a sign of a special connection between Bornholm and the Slavic area, since a similar influence exists to the same extent in other parts of Scandinavia (Roslund 2007, 261–468; Ulriksen 2018, 202–210). However, Naum establishes that the Bornholm Baltic Sea Ware differs from, e.g., Zealand and Scania, and that the Baltic pottery on Bornholm is specifically inspired by pottery of the West Slavic area and in the eastern part of Mecklenburg-Western Pomerania (2008, 88). Based on analyses of special characteristics in form and ornamentation, Naum separates Bornholm pottery workshops, and suggests that specialised Slavic potters lived on, and worked at, large farms/manors on Bornholm (2008, 126–132). Thus, the ceramics on Bornholm also show a very direct contact and influence from the West Slavic area. Naum suggests, as stated, that graves with Slavic features at the Runegård burial site represent the farm's Slavic slaves.

An alternative interpretation is that Slavic settlers were part of the new power structure established on Bornholm during the tenth century after the phasing out of Bornholm's first-generation central sites (section 8.1). A special contact between Slavs and the early import of Samanid dirhams can be seen at the Skørrebro site. If it is accepted that the hoard is linked to the house, then the site can be dated to the second half of the tenth century (section 7.2.2). The site's uniform pottery inventory indicates that the site forms a single phase of a settlement, and that at the time of the

establishment of the settlement the ceramics consisted of the Slavic Vipperow type. It is therefore probable that Slavs lived at Skørrebro, and that Slavs were involved in the exchange of the first Samanid dirhams on the island. An interesting aspect is that the Skørrebro house is probably the oldest known example of the characteristic Bornholm house with trenches (section 7.2.2). Thus, this house type may be Slavic inspired. However, this strand cannot be investigated within the framework of this investigation. The contact between the Rabækkegård grave and the Skørrebro hoard, illustrated by the early Samanid import (section 8.1), may reflect contact between the established elite on Bornholm and a new elite on the island. The marked Slavic influence on southern and eastern Bornholm is illustrated by West Slavic jewellery in the Nørremølle hoard, the integration of Slavic elements in women's adornment, and Slavic graves in the early Christian cemeteries from the late 900s and first half of the 1000s. This confirms a strong social and cultural influence, suggesting that the influence comes from elements of the elite rather than slaves.

#### **8.4 Politics, Christianity, or economic stagnation – the decline in depositions**

From the middle of the 1000s, there is a marked decrease in the number of hoards deposited on Bornholm. This section will discuss the reason for the shift in the intensity of depositions. The two prevailing theories of war versus peace and paganism versus Christianity, will be discussed as possible reasons for the decline in the number of hoards deposited from the mid-1000s. Furthermore, economic stagnation is presented as a possible cause of the decline.

Times of unrest have been presented as an argument for an increase in deposit activity. If the argument is followed, it means that c. 990–c. 1050 was a particularly turbulent period for the people of Bornholm, while a more peaceful era in Bornholm's history began after c. 1050. In the site analysis, it was discussed whether catastrophic events were the reason why hoards deposited centrally in settlements had not been reclaimed. Approximately one third of the sites where hoards were found showed traces of burnt-down houses. However, it could not be proven via the archaeological site analysis that the burnt houses were linked to fatal incidents for the people who accumulated and deposited the hoards (section 7.2.5).

In section 8.4.1, the issue of peace versus unrest is raised on a regional level, and it will be discussed whether the high deposit activity between c. 990–c. 1050, and the declining deposit activity thereafter, can be linked to Bornholm's political organisation. As described in section 8.3, most of the hoards have been found at sites located a safe distance from the coast. This suggests that attacks from the seaside were a threat. Bornholm's decentralised settlement pattern and lack of urbanisation may be because the island was not ruled by a central power. Perhaps the many hoard deposits are due to the fact that the island lacked the protection of a strong central power. The decrease in deposit intensity can thus potentially be linked to Bornholm's incorporation into the Danish kingdom. In other words, is the decline in the number of deposited hoards due to the establishment of a strong central power on the island?

Another theoretical starting point, which addresses the decline in deposit intensity, is the introduction of Christianity. On Gotland, Widmaier's and Dieckmann's empirically based analyses have convincingly documented a connection between the cessation of the deposit of hoards and the construction of churches (2016) (section 2.1). This question will be investigated in section 8.4.2 based on the Bornholm material.

As discussed, the increase in the number of hoards deposited from around the 990s onwards can be linked to an increased accumulation of silver on Bornholm through participation in expeditions and trade. Thus, the increase in the number of deposited hoards is seen as a result of an increased amount of economic capital becoming available to a larger number of people than previously. It will therefore be discussed in section 8.4.3 whether the reason for the decreasing deposit intensity should be seen as an expression of a decrease in the available economic capital.

#### **8.4.1 *The political landscape of Bornholm***

Wulfstan's travel account mentions that Bornholm had its own king (section 8.1). The report describes the conditions at the end of the ninth century. If the information is true, it is possible that the royal residence was located at the Sorte Muld central site. As described, however, the dirham hoards indicate that there was a decentralisation of power during the 900s, i.e. after Wulfstan's journey (section 8.1). The runestones from Bornholm contribute to the picture of a decentralised power structure on the island. The Bornholm runestone tradition is late, and dates to 1025–1150. There are few titles found on the Bornholm runestones. A good 'Dreng' is mentioned on the Nylarsker 2 and Vestermarie 5 stones, a good farmer is mentioned on the Klemensker 3 stone, while the Åker 3 stone inscription mentions a good 'Thegn'. The few titles may reflect that the Bornholm elite did not need representatives. This may be linked to the decentralised trading structure described in section 8.3. The leading farm owners and their families handled the trading activities themselves (Imer & Fortuna 2016, 311). The fact that the runestones have been erected across the island further indicates the absence of one central power (Imer & Fortuna 2016, 300).

A markedly different economic development on Zealand/Scania and Bornholm, respectively, indicates that the areas were not united under the same king. From c. 1020, when King Canute came to power, there is an increase in the number of English coins in the hoards of Scania, Jutland, and Zealand. This trend is not seen on Bornholm (section 5.2). From the middle of the 1000s, Scandinavian coins make up an increasing part of the hoards on Zealand, and from the end of the 1000s, this trend spreads to Scania and probably also to Funen and Jutland (von Heijne 2004, figure 6.23; Ingvarðson 2016, 141–143). On Bornholm, the hoards continue to be dominated by German and English coins (Figure 3.11). Another Bornholm feature, which Bornholm shares with Gotland, is the continued presence of non-minted silver in the hoards (Figure 3.12). In this respect, Bornholm also differs from Zealand and Scania (Hårdh 1976, 130; von Heijne 2004, 21–75, 127–129; Ingvarðson 2016, 138–141).

Gelting has recently brought a ‘new’ source into the discussion about Bornholm’s political status in late Viking times. Schleswig municipal law chapter 29 contains a special privilege given to ‘guests’, i.e. resident merchants from the Duchy of Saxony, Friesland, Iceland, and Bornholm (2012, 108). Gelting suggests that since Saxony, Friesland, and Iceland were outside the Danish realm, then Bornholm was also outside Denmark’s borders at the time the privilege was granted. However, there are doubts as to when this was. The original wording of the Schleswig municipal law has been preserved as a transcript, since it formed the basis for several other municipal laws of towns in Jutland, while the Schleswig law is only preserved in a reworked late medieval version. The transcript for Ebeltoft municipal law was written in the early fourteenth century, and it contains chapters of text that describe very specific local Schleswig conditions, which suggests that it is an exact transcript of the original law (Gelting 2012, 108–109). In the preface of the municipal law, it is mentioned that the author was King Sven, and Gelting argues that the mentioned ‘Sven’ is Sweyn II Estridsson (1047–c. 1074) and not Sweyn III Grathe (1146–1157) as previously assumed (Gelting 2012, 109–110, 2016, 195–199). Thus, according to Gelting’s argument, Bornholm was not part of the Danish kingdom during Sweyn Estridsson’s reign.

The Bornholm Museum initiated the Bornholm Fortress Project in 2011 in collaboration with the National Museum of Denmark. The purpose of the project was partly to provide an overall presentation of Bornholm’s seven historically known fortresses, and partly to identify sites with hitherto unknown fortresses. Nielsen and Benny Staal suggest that Bornholm’s defence was organised with an internal and an external defence system (2014). The outer defence comprised simple fortifications consisting of, e.g., ramparts and ditches, the purpose of which was to delay an attacking enemy until the inhabitants could seek refuge in more heavily fortified fortifications located further inland.

Gamleborg in Almindingen was a central fortification – if not *the* central fortification – on the island. Gamleborg is located centrally 9 km from the coast (Figure 3.13). In the 1950s, the National Museum of Denmark carried out excavations at Gamleborg, and in 1953 the fortress was systematically surveyed with military mine detectors (Klindt-Jensen 1957). The archaeological research showed that the fortress was built in the tenth century (Nielsen & Staal 2014, 273). The excavations also revealed that the fortress’s fortifications were strengthened around 1100, e.g. the ramparts were reinforced with a 2 m thick boulder wall and a watchtower. Most of the objects found at the fortress can be dated to the first half of the twelfth century, and the character of the objects (iron knives, arrowheads, stirrups, whetstones, ceramics, and looms) indicate a more permanent settlement at the fortress from this period (Nielsen & Staal 2014, 275–276). The material culture does not suggest that the fortress served as a trading centre.

Historian Saxo Grammaticus (c. 1160–1208) mentions in the *Gesta Danorum* that around 1150 Sweyn Grathe gave a large part of Bornholm to Archbishop Eskil of Lund as compensation for the king’s imprisonment of the archbishop during the civil war (Zeeberg 2015, 613). While Saxo’s history of the Danes is highly tendentious in the first chapters, the narrative takes a different and more credible

form in the later chapters, which include Saxo's contemporary history (Gelting 2012, 131–132 with further references). If we can rely on Saxo's information, then the king retained Vester district including Gamleborg. It is unknown whether the fortifications carried out 50 years earlier at the fortress were constructed on the initiative of the Danish king, or whether they were made to counter the threat of a Danish king trying to gain control of the island. The archaeological material indicates that Gamleborg was abandoned around 1150 and replaced by Lilleborg, which was built by the Danish king just 700 m northwest of Gamleborg (Nielsen & Staal 2014, 277). At around the same time, the Archbishop of Lund began the construction of the castle Hammershus on Bornholm's northern point (Nielsen & Staal 2014, 279).

Neither written nor archaeological sources seem to reflect a shift in Bornholm's political status around 1050, which can be related to the marked decline in the number of hoards deposited. The strengthening of Gamleborg in around 1100 may have taken place on the initiative of an outside power, such as the Danish king, and the permanent settlement of the fortress signals a functional change of the structure. Hence, around 1100, the fortress may possibly have changed its significance from a refuge for the island's population to a political and military manifestation of a new central power seeking control of the island. It is possible that Bornholm became part of the Danish kingdom at the turn of the twelfth century – but only for a brief period, because the majority of the island was given to the archbishopric of Lund in the middle of the twelfth century.

#### 8.4.2 *The introduction of Christianity*

According to Adam of Bremen's chronicle, it was Bishop Egin of Lund and Dalby who converted the people of Bornholm to the Christian faith:

They must all have been moved to tears over his sermon and have shown such remorse over their delusion that they immediately shattered their idols and vowed to receive baptism. Then they threw their hoards, and everything they owned, at the feet of the bishop and begged him to accept it. He rejected it and instead asked them to build churches for the money, feed the needy, and free prisoners.

(A. A. Lund 2000, 205–206, translated by author)

As described in section 8.3, Adam had a clear purpose in highlighting the excellence of Archbishop Egin. Bishop Egin probably served as a missionary on Bornholm in the 1060s (Gelting 2012, 107). Whether the people of Bornholm actually burst into tears, competed to be baptised, and gave all their values to the bishop is perhaps more doubtful. A more complex and complicated Christianisation process emerges when archaeological sources and monuments are consulted.

Of particular interest in relation to the question of the relationship between the concentration of hoards and the introduction of Christianity is the cultural landscape around St Peder's Church (Figure 8.1). Immediately north of the church is

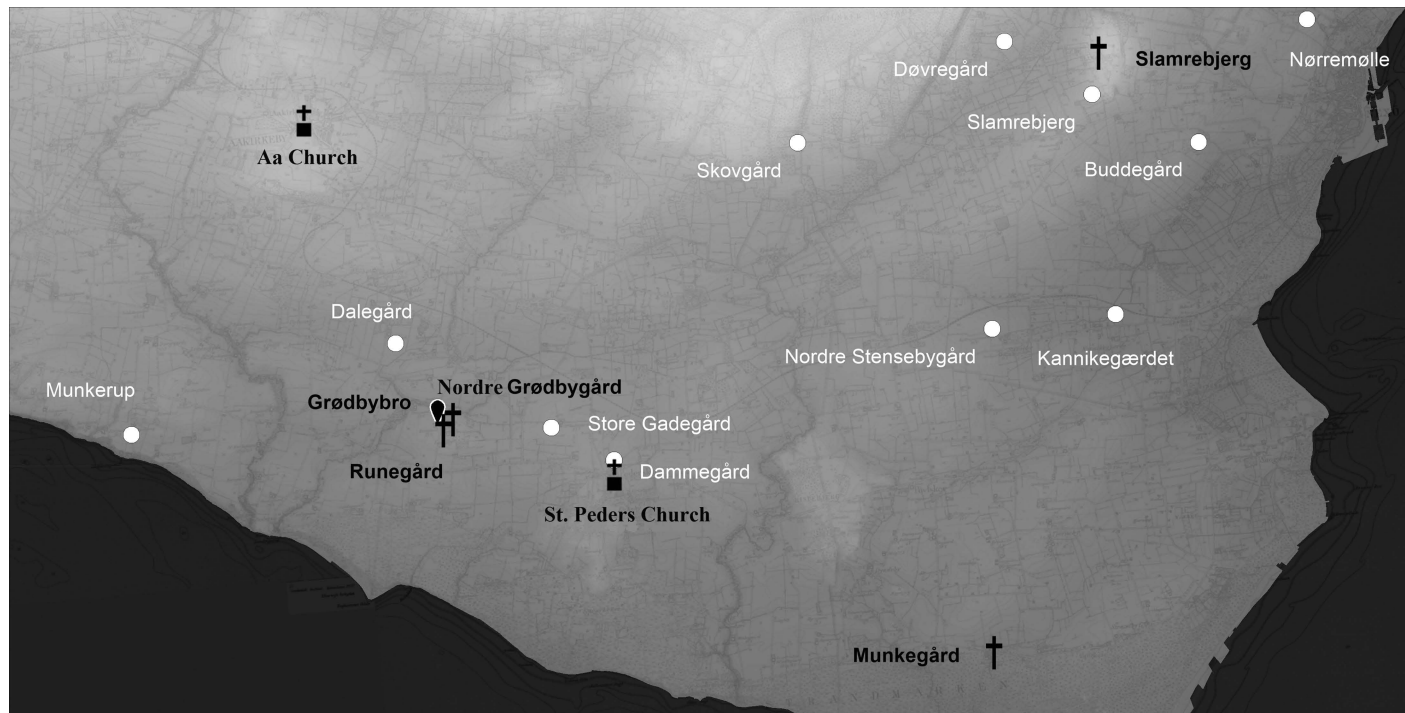


Figure 8.1 The cultural landscape of southern Bornholm showing the hoard sites (white text), early Christian cemeteries (cross), and what are possibly Bornholm's oldest churches, Aa Church and St Peders Church, and Grødbybro [bridge], where the Åker 1 runestone was found.

Map: J. S. Andersen.

the Dammegård site, one of the earliest examples of the new elite that established itself at decentralised settlements after the phasing out of the first-generation central sites on Bornholm (section 8.3). About 1 km west of Dammegård we find the Store Gadegård complex, which, based on the site analysis, can be interpreted as a second-generation central site on Bornholm. The site was established towards the end of the tenth century or the beginning of the eleventh century, at a time when the central functions of the second-generation central sites on Zealand and in Scania were moved to newly established towns such as Roskilde and Lund. Just 1.3 km west of Store Gadegård, the burial ground of Nordre Grødbygård was established in the late 900s or early 1000s. The burial ground is one of four new cemeteries with a Christian element which were established along Bornholm's southern coast. The cemeteries of Slamrebjerg and Runegård were built from the end of the tenth century and were in use throughout the 1000s, while the Munkegård<sup>3</sup> and Nordre Grødbygård cemeteries were built a little later, and were primarily in use in the second half of the eleventh century (Svanberg 2003, 125–126; Naum 2008, 207–208).

The new burial sites were established, while the activities at the traditional Germanic and Viking-Age burial grounds were gradually abandoned. The burial rites from the late Germanic Iron Age to the Viking Age on Bornholm are illustrated by a number of well-studied larger burial grounds located within a narrow geographical area around Gudhjem on Bornholm's northern coast.<sup>4</sup> The activity at Nørre Sandegård Vest, Bækkegård, and Glasergård stopped before 800, while Lousgård and Kobbeå extended into the 800s, and Lillevang was probably in use until the eleventh century (Rasmussen & Roland 1989, catalogue no: 3–6, 27, and 30). The sites represent family burial grounds for between one and three/four farms (Lyngstrøm 1989, 140–148; Rasmussen & Roland 1989, 244; Jørgensen 1990, 64–68; Nørgård Jørgensen 1992, 166–168). The 'new' burial sites in the south are, like the 'old' burial sites in the north, established within a narrow geographical area. Thus, it is possible that new finds from other parts of the island will change the picture.

The four southern burial sites reflect different stages of the Christianisation process. At Slamrebjerg burial ground there were six burials. The dead were all buried in east/west-oriented wooden coffins, the graves were covered with low mounds, and in two cases the burials were surrounded by a stone circle. The graves contained grave gifts such as knives, grindstones, and ceramics (Svanberg 2003, 32; Naum 2008, 201). The Runegård burial ground contained 27 graves which were placed in irregular rows and divided into three sections, with the middle section comprising six children's graves (Watt 1983, 1985). Fourteen individuals were buried in wooden coffins and sixteen were east/west-oriented with their heads towards the west. Just over half of the graves (15) contained grave goods. The most common grave equipment was knives, either alone or with ceramics, beads, or coins. Seven graves contained ceramic vessels or sherds, while every grave contained either a grindstone, a coin, or a belt buckle. There was no evidence of external marking of the graves (Svanberg 2003, 225–326; Naum 2008, 201–202).

The Nordre Grødbygård burial ground is only a few hundred metres from the Runegård burial ground, and contained 540 individuals in 515 graves. The graves were placed in rows, the majority (422) were east/west-oriented, and over half

contained traces of wooden coffins. Women were placed in the northern part of the burial ground, while men were buried in the southern part. About 20 per cent of the buried were children. No traces of physical demarcation of the burial site have been found, but the burials appear to be located within a restricted area, and the burial site assumes an approximate square shape, suggesting the possible presence of a fence. An empty area in the middle of the burial ground suggests that a building may have been erected there. Excavation of the empty area recorded traces of a longhouse with curved walls. The house was demolished, and the area ploughed over during the construction of the burial site. The house is certainly earlier than the burial site, since some graves have been dug into the remains of the roof-bearing posts and wall trenches (Wagnkilde & Pind 1996, 173). A total of 63 per cent of the graves contained grave goods. The most common type of grave gift was knives, but coins, personal equipment such as fittings and jewellery, and ceramics were also common (Wagnkilde 2000, 93–104; Svanberg 2003, 326–327; Naum 2008, 203–206).

A total of 90 graves from the Viking Age/early Middle Ages have been excavated at the Munkegård burial ground. Unfortunately, the southern part of the cemetery is severely disturbed by a road, but the Munkegård cemetery was probably organised just like Nordre Grødbygård, with men buried in the south and women buried in the north. Thus, largely exclusively women's graves were preserved when the site was excavated. The deceased are placed with their heads towards the west, the graves are organised in rows, and about half of the graves contained traces of wooden coffins. A total of 71 per cent of the graves contained grave goods; again, knives were the most common burial gift followed by beads, coins, and pottery (Svanberg 2003, 325; Naum 2008, 206–208).

The cemeteries exhibit both pagan and Christian elements, and they seem to reflect different stages of Christian influence on the burial rituals on (southern) Bornholm. As a pagan element, the graves at Slamrebjerg cemetery are still covered by small mounds, and at all four burial grounds many of the graves still contain grave goods. The grave goods consist primarily of personal items and indicate that the dead were buried clothed and not wrapped in a shroud. The Christian influence is seen in the fact that the dead were buried in east/west-oriented wooden coffins. Furthermore, the children's graves can be interpreted as a Christian element, since children's graves are rare in older pagan burial grounds (Wagnkilde & Pind 1996, 176; Kieffer-Olsen 2002, 29). Munkegård and Nordre Grødbygård also have the character of regular Christian burial sites with graves in rows in gender-segregated sections. The well-defined area and the empty section in the middle of the completely excavated Nordre Grødbygård burial site suggest that the burial site was physically demarcated and that a building may have been erected on the site. It is possible that there was a small church building there, but no traces of a building were found during the excavation (Wagnkilde & Pind 1996, 173).

Svanberg describes the Bornholm graves as distinctive. The way in which Christian elements are gradually integrated into the burial rituals, but noticeable only at new burial sites, is not seen in other areas of southern Scandinavia (2003, 146–149). Anna Lihammer argues that this mixture of grave rituals reveals that the

people of Bornholm gradually integrated Christian elements into their traditional burial rituals, and that the Christianisation of Bornholm was an individual-based inside-and-out process, and not the result of an external power factor (2007, 247–250). This supports the theory that Bornholm was not ruled by a central power. The structural shift from family burial grounds to the Nordre Grødbygård and Munkegård cemeteries, which in their arrangement are similar to Christian cemeteries, can be considered a sign of a significant change in the social structure of the island. Naum believes that the construction of these burial sites constituted a demonstration of power, since the founders could control how the local residents buried their dead there. Interesting in this context is the Åker 1 runestone. In the nineteenth century, the stone was moved from Grødby bridge to Aa Church. The reuse in Grødby bridge makes it probable that the stone's original location was at a crossing point by the Grødby River, which runs just a few hundred metres north of the burial site. The stone has been dated to 1025–1075 and is contemporary with the cemetery. According to Naum, the stone substantiates an elite presence in the area (2008, 199). As stated earlier, the late runestones on Bornholm probably reflect a decentralised power structure, and powerful landowners presumably erected the stones. Naum mentions the nearby Viking-Age settlements of Munkegård and Grødbygård as the possible founders of the burial sites, but emphasises that these settlements do not distinguish themselves either in size or artefacts from the surrounding settlements (2008, 208–209). The Store Gadegård site, which here has been interpreted as a second-generation central site of Bornholm, is also close to the Nordre Grødbygård burial ground; perhaps this is where the founders of the cemetery could be found. Considering Bornholm's decentralised power structure as suggested by runestones and hoards, an alternative interpretation is that several influential farmers joined forces to build the burial sites. Notably, the Nordre Grødbygård burial site is situated between the hoard sites of Dalegård and Store Gadegård (Figure 8.1).

As mentioned, Widmaier and Dieckmann connect the decline in the tradition of hoard deposits on Gotland with the fact that society's resource surplus was instead channelled into the building of churches and offerings in the church with the introduction of Christianity (2016). While the construction of Christian cemeteries on Bornholm signals the integration of a Christian mindset, the construction of cemeteries does not seem to signal that society's resource surplus was channelled into building churches, since no churches can be linked to the cemeteries. However, the empty area at Nordre Grødbygård cemetery may indicate the presence of a now ploughed-out sacred building. No direct traces of early wooden churches have been found on Bornholm. The earliest preserved traces of church buildings are Bornholm's 15 medieval stone churches. The dating of the stone churches has been debated with the earliest proposed dating from c. 1150 to the middle of the thirteenth century (Wienberg 1986, 50–54 with further references). Thus, based on existing knowledge, the building of churches on Bornholm did not take place until the middle of the twelfth century. Therefore, the decline in the number of hoards deposited around 1050 cannot be directly linked to the island's economic profits being channelled into the building of churches. However, it should be emphasised

that a clear gap between the construction of the choir and the nave in both Aa Church and St Peder's Church may indicate the presence of a wooden predecessor (Wienberg 1986, 47). Hence, Aa Church and St Peder's Church may be the first churches built on Bornholm.

However, the distribution of hoards may support a link between Christianity and the absence of deposited hoards. From c. 1040 there is a marked shift in the chorological location of the hoards. Hoards from the previous periods were primarily deposited on southern and eastern Bornholm, but from c. 1040 there is a significant shift to northern Bornholm (Figure 3.13). Since the Christian elements outlined here are all registered on southern and eastern Bornholm, this suggests a connection between the introduction of Christianity and the decline in the number of deposited hoards. The only two hoards deposited on southern Bornholm after 1040 are the Nordre Stensebygård and Munkerup hoards. During the site analysis, it could be proven that the Nordre Stensebygård hoard should be interpreted as a silversmith's deposit. Hence, the significance of this hoard differs markedly from most hoards deposited centrally at settlements. The Munkerup hoard stands out as being the only hoard found at a site located right by the sea. Bornholm was probably divided between the coastal areas of southern and eastern Bornholm, which during the 1000s moved towards an integration into Christian Europe, while the northern part of the island retained the old Norse beliefs and deposition practices.

Bornholm's latest Viking-Age hoard, Smedegård NØ, contains, among other things, two relic crosses and a large disc brooch with a Christian motif, and a contradiction (section 7.1.1) (Figures 7.5, 7.6, and 7.7). These are Christian objects deposited in an old Norse context. The lavish content of the hoard stands in sharp contrast to the site context, which reflects a very modest settlement in a peripheral area of the island (catalogue: 38). It is, for example, difficult to imagine the occupants of the small post-built house of just over 12 m walking around with the extravagant relic crosses which were deposited in the hoard. A possible interpretation of the Smedegård NØ hoard is that it is looted goods.

The establishment of burial sites on southern and eastern Bornholm shows a gradual integration of the Christian mindset during the 1000s. Aa Church and St Peder's Church may be the first churches built on Bornholm. This supports the idea that the Christianisation process started on southern Bornholm. This is interesting in relation to the hoard deposits, since the late hoards are concentrated on northern Bornholm. Thus, although no direct link can be made between the decline in the number of hoards deposited and the construction of churches, the introduction of Christianity seems to have an impact on deposition practices. Thus, the evidence from Bornholm may reflect a conceptual change in deposition practices due to the influence of Christianity (Gullbekk 2019, 91–94), and is not necessarily linked to society's resource surplus being channelled into the building of churches.

#### **8.4.3 *Economic development***

From the eleventh century onwards, the hoards from Bornholm reveal a distinctive and independent economic development. A special and very significant element

appears in the form of Slavic/Scandinavian melts. Melts are introduced into the hoards from c. 1010, and very quickly become a dominant element, so that they constitute the largest find group (by weight) in hoards with a *tpq* in the 1020s (Figure 3.12). As Hårdh has pointed out, Slavic/Scandinavian melts may have been introduced as a more manageable unit than the highly fragmented silver that was common in the hoards in the early 1000s (2013, 530). In section 7.2.5, it is argued that the silver in Slavic/Scandinavian melts was refined through a cupellation process, and that the standardised melts can be interpreted as a form of currency in good quality silver. In addition to Bornholm, melts are found in hoards from the West Slavic area and eastern Sweden (Hårdh 2011, 289). The marked element of Slavic/Scandinavian melts in the Bornholm hoards and the rapid integration into the Bornholm economy may indicate that the phenomenon originated on Bornholm, and from there spread to the areas with which the people of Bornholm traded. These areas included eastern Sweden, exemplified by the import of Anglo-Scandinavian coins, and the West Slavic territory, illustrated by Slavic jewellery. A cupellation process that may have resulted in products such as Slavic/Scandinavian melts has been archaeologically documented at the forging workshop Fröjel on Gotland (section 4.1), which could thus also be the origin of the melt type. To test this theory, there is a need for further studies of hoards containing Slavic/Scandinavian melts deposited in Sweden and the West Slavic area, which unfortunately is beyond the scope of this survey. Slavic/Scandinavian melts are introduced at about the same time as the initiation of the Anglo-Scandinavian coinage in Lund and Sigtuna. Anglo-Scandinavian imitations and Slavic/Scandinavian melts may have fulfilled the same function: to transform small unmanageable fragments of silver of different quality into manageable units of good quality silver. The difference in the design of the object types seems to reflect two different economic systems which may be related to the presence of a central power that facilitated, and perhaps also partly controlled, the handling of silver in Lund and Sigtuna, while a similar power is absent on Bornholm.

Concurrent with the decline in the intensity of depositions from the middle of the 1000s, there is, with the exception of the Pæregård and Store Frigård I hoards, a tendency for a decrease in the number of coins found in the hoards (Figure 3.11). This coincides with the end of the Otto-Adelheid pennies, which constituted a dominant element in the Bornholm hoards from the beginning of the 1000s (section 5.1). Bornholm in this respect differs from the situation on, for example, Zealand, where there is only a decline in the number of coins and hoards deposited after the reign of Sweyn Estridsson c. 1070/80 (Ingvardson 2010, 20–21).

On Gotland, as mentioned, there is also a decrease in the number of hoards deposited from the middle of the 1000s, but in contrast to Bornholm, the number of coins deposited increases, since some of the hoards are very large (Östergren 1989, 24–25). A large number (approximately 50) of harbour and landing sites dating from the Viking Age have been documented along the coast of Gotland. Few Gotland harbour and landing sites have been excavated, and the majority are documented only by surface finds, and therefore have a wide dating range (Gruszczynski

2019, 51–55). However, studies suggest that activities ceased in some harbours in the eleventh century, while they intensified in others. This indicates a shift from seasonal to permanent activities (Östergren 1989, 210–213; D. Carlsson 1999). Many of Gotland's Viking-Age hoards are found in the hinterland of the island's many harbours (Gruszczynski 2019, 51–55), which corresponds to the situation on Bornholm (section 8.3). However, from the middle of the eleventh century, the Gotland settlements seem to have a clearer orientation towards harbours (Östergren 1989, figure 8.13). This development cannot be documented on Bornholm, where the settlements still seem to have been built away from the coast. However, the Munkerup site is an exception (Ingvardson 2014, 330, 2020) (section 8.4.2). In the twelfth century, Visby went from being one of many harbours to being the most important and most active harbour on Gotland, and the harbour developed into an important trading town<sup>5</sup> (Östergren 1989, 121–123). At the same time, from around 1140, a milestone is introduced in Gotland's economic development as Gotland's own coinage is initiated (Myrberg 2008, 149–156).

As demonstrated in the feature and site analysis, there is a marked coincidence between hoards deposited centrally at settlements and trading activities (sections 7.2.5 and 7.3.6). Together with the lack of urbanisation and the absence of central trading places, after the cessation of the first-generation central sites, the analysis demonstrates that Bornholm had a decentralised trading structure and that the exchange of silver was linked to the individual farm. A similar situation is reflected on Gotland, where finds of scales, weights, and coins are common on farms in the 1000s (Östergren 1989, 184–186). The most significant difference in the economic development of the two islands is that on Gotland there is a centralisation of trade in the form of harbours with permanent trading activities, while this, based on the current material, cannot be traced on Bornholm (Ingvardson 2020). Thus, the decline in the number of deposited hoards may be indicative of an economic stagnation. This may be due to the flat power structure, the decentralised trading system, and the different economic system which meant that Bornholm failed to meet the demands of a rapidly changing medieval trading system. This was in sharp contrast to Gotland, and Visby in particular, where trade was centralised, and a local coinage was established.

## Notes

- 1 The numbers include metal detector surveys conducted before 16.01.2020, *pers. comm.* René Laursen, the Bornholm Museum.
- 2 The dirhams in the 'Unknown location' grave may also be included (catalogue: 45).
- 3 This is a different Munkegård site from the Munkegård site where a hoard was found.
- 4 A complete presentation of the Viking-Age graves is found in Svanberg 2003; for a detailed publication of the Kobbeå burial site see Nørgård Jørgensen 1992; for the Nørre Sandegård Vest burial site see Jørgensen & Nørgård Jørgensen 1997; for the Lousgård burial site see Lyngstrøm 1989; and for the Bækkegård and Glasergård burial sites see Jørgensen 1990.
- 5 However, the harbours of Fröjel and Västergarn were also active in the twelfth century (Carlsson 1999, 120–123; Kilger *et al.* 2015).

## 9 The hoarding Vikings

This investigation has focused on the people accumulating, handling, and depositing silver hoards in the Viking Age. The fundamental notion is that the choices and actions of these individuals have left their mark on the structure and deposition context of the hoards. Through the analysis of the production data of 13,869 objects, the circulation data of 9,189 objects, and the deposition data of 34 hoards, it has been possible to reveal the diversity of the Bornholm hoards. Differences in accumulation and deposition strategies have been highlighted and related to people with different economic, social, cultural, and religious backgrounds.

A basic premise is that all parts of the hoards are equally important for interpretation, and an important aim has been to develop a method that integrates all aspects of accumulation and deposition of hoards. Thus, the analysis has moved between a micro-perspective, whereby the placing and number of pecks on a single object are analysed to interpret the object's significance (Chapter 6), to a macro-perspective, where the Caliphate's coinage is integrated in the analysis of the silver's journey from Baghdad to Bornholm (Chapter 5). From a methodological perspective, the analysis switches between analysing all objects as a whole and analysing the hoards as a selection of the available silver on Bornholm. These methodological tools have made it possible to focus on the distinctive character of the hoards, which is crucial for the interpretation of the functions of hoards.

A common thread throughout the analysis has been to focus on all stages of the biography of the objects and hoards. Charts illustrating biographical chronology have been introduced as a new model for hoard analysis (section 3.2.1). By analysing the biographical chronology of hoards, it has been possible to distinguish different accumulation phases and strategies in hoards. In some cases, the accumulation phases and strategies can be linked to the life-cycle of the individuals behind the hoards.

The method of analysis has clearly demonstrated the limitations of previous research in focusing on only one aspect of hoards. It is only in the interaction between archaeology and numismatics, between the production and circulation data of the objects, and between the patterns of the immediate contexts, the feature contexts, and the site contexts, that the multifaceted functions of the hoards materialise. Thus, the holistic analysis has contributed to a nuanced narrative of the Viking-Age hoards from Bornholm.

An essential part of the survey was to address the challenges of interpreting metal detector finds. The analysis of the objects' distribution patterns has challenged the prevailing interpretation that the Viking-Age hoards of Bornholm contain only silver and, in rare cases, gold. Specially selected bronzes and weights were also included in the hoards, and reflect the individuals behind the hoards (section 3.1.1). The analysis has demonstrated how accurate documentation, measurement, and recording of the metal detector finds is crucial to the research value of the find group, for example in relation to the interpretation of the depositional horizon of the hoards (section 3.1.2).

Bourdieu's notion of capital has provided an overarching theoretical framework for interpreting the functions of silver hoards. Bourdieu's ideas on capital and field have facilitated a differentiated analysis of hoards as actors in the economic, social, cultural, and symbolic fields. Through a holistic model of analysis, it has been possible to answer the three overarching research questions elaborated upon and further clarified in the following three sections.

### **9.1 The people that accumulated, handled, and deposited hoards and their accumulation strategies**

The people that imported, handled, and deposited the dirham hoards of the eighth and ninth centuries were active actors in the processes of change that characterised the power structures of Bornholm after the discontinuation of Sorte Muld and the other central places on Bornholm towards the end of the eighth century and during the ninth century. The owners of the dirham hoards were part of a new elite power structure on the island. The new elite probably comprised a mixture of people linked to the old power structure, as well as a new and external circle of people.

The owners of the Skovsholm hoard were among the first to adapt to a new reality in which Sorte Muld did not attract foreign travellers and traders to the same extent as before. The changes took place as new trading hubs were established along the southern coast of the Baltic Sea. The Skovsholm hoard may be the earliest example of Bornholm inhabitants facing the new realities and leaving the island to accumulate silver. The proximity of the Skovsholm site to Sorte Muld suggests a connection to the 'old' elite. It is possible that the people at Skovsholm, through this connection, had an established regional network and contacts with those who imported and redistributed dirhams in the eighth-century Baltic Sea region. Both Gotland and the West Slavic area constitute significant hubs for dirham imports in the eighth century, and the proportion of North African coins among the Bornholm dirhams suggests a Bornholm network involving both areas (sections 5.3 and 8.1).

At Skovsholm, a special trapezoidal-paved structure has been excavated. Its function is likely linked to the processing of skins and hides. Perhaps the inhabitants of Skovsholm brought processed skins and hides with them on their journey to Gotland and/or the south coast of the Baltic Sea, and exchanged them for Islamic coins (sections 7.3.1 and 7.3.6).

The buried woman in the Rabækkegård grave, where Bornholm's oldest Samanid hoard was deposited, was probably part of a southern Scandinavian aristocratic

network (sections 7.2.5 and 8.1). The Samanid coins in the grave indicate that the buried person participated in the distribution of early Samanid dirhams from Gotland to Ireland. The grave context dates the hoard to the first half of the 900s (section 5.3). About 300 m divides the Rabækkegård and Brandsgård hoards. Thus, it may be the descendants of the woman who, thirty years later, visited or received visitors from Hedeby, illustrated by the distinctive and unusual inclusion of Dorestad imitations in the Brandsgård hoard. The hoard was deposited after 1001, but the Dorestad imitations probably represent an early accumulation phase in the hoard's biography (section 5.4).

Women seem to have played a central role in early Samanid imports on Bornholm. Hence, the Buddegård and Kannikegærdet hoards can be interpreted as hoards with different functions belonging to one or more women within the same circle of people (sections 7.2.5 and 8.1).

The individuals who accumulated the early Samanid hoard at Skørrebro probably had a special connection to the West Slavic area. The uniformity of the pottery inventory at the site suggests that the site represents a single phase in a settlement. Thus, the pottery already comprised the Slavic-inspired Vipperow type when the settlement was established (sections 7.3.4 and 8.3). The early presence of Baltic Sea Ware suggests that people from the Slavic area lived at Skørrebro, and that Slavic people were involved in the exchange of the first Samanid dirhams on the island.

The import of English coins from c. 990 reflects a marked shift in the individuals who accumulated, handled, and deposited silver. From being restricted to the Bornholm elite, the range of persons now broadened to include a wider range of people. The southern English coins in the Tyskegård and Store Frigård II hoards were likely accumulated through the participation in raids to England by the hoard's owner (section 5.2). The biographical chronology of the Gyldensgård SV hoards shows that older parts of the hoard were also accumulated through raids in England, while more recent parts were probably accumulated through trade in Sigtuna and Lund, among other places, demonstrated by the Anglo-Scandinavian coins in the hoard (sections 5.2 and 5.4).

The life-history of the Gyldensgård SV hoard may thus reflect the life-history of its owner. Set in a narrative framework, it may have happened in the following way: in his/her youth, the Gyldensgård man or woman went on a raid to England and accumulated silver. As the years went by, the waistline expanded, and the sword-hand grew tired. Sword was replaced by scales and weights, and raids were replaced by trading journeys. Of course, the hoard cannot shed light on either the weight or the fighting prowess of the people who accumulated and deposited them. However, the accumulation phases of the Gyldensgård SV hoard reflect clear shifts in accumulation strategies over time.

In the Store Frigård II hoard, analysis of the distinctive bending patterns of the coins suggests that they were collected via both raids and trade in England and Friesland, and that the same person was involved in both types of transaction (section 6.2).

Most objects in the Bornholm hoards of the eleventh century were in all likelihood collected through trade. Many settlements with deposited hoards show

evidence of a form of specialisation that may have generated a surplus production that could be exchanged for silver. The range of potential trade goods is wide, extending from pottery, iron, textiles, horses, lamb, and jewellery, to other objects of gold, silver, and bronze. That trade was an integral part of Bornholm life is reflected by bronze weights and balance scales at many sites (section 7.3).

Coin-rich hoards such as Nørremølle, Skovvang, and Munkerup I were probably accumulated by people from the Bornholm elite. This elite played a central role in the organisation of trade on Bornholm, and smaller farms from the hinterland probably sold their goods here (sections 8.2 and 8.3). This internal network was strong, and it is likely that individuals from the Bornholm elite went on joint expeditions, whereby they marketed Bornholm-produced goods. On returning to Bornholm, some of the accumulated silver was distributed to the smaller farms that sold goods to the central actors. However, the Bornholm inhabitants seem to have used several different trading strategies. Some of the trade may also have taken place via ships landing at some of Bornholm's many natural harbours. Thus, there does not appear to be a centrally controlled system, but rather a cooperative one (sections 8.2, 8.3, and 8.4.1).

The inhabitants of Munkegård, Pæregård, and in particular Nørremølle, probably had close contacts with the West Slavic area, illustrated by a large quantity of Slavic jewellery in the hoards. The contacts were more than just close trade relations. Southern and eastern Bornholm in particular show a strong connection with the West Slavic area through the integration of Slavic elements in female dress, everyday pottery, and funerary rituals (sections 8.3 and 8.4.2). It is likely that the strong cultural influence reflects the fact that Slavs were an integral part of the Bornholm elite. Thus, there is a continuous presence of Slavs on Bornholm, extending in time from the circle of people around the Skørrebro hoard in the mid-800s to the circle of people around the Nørremølle hoard in the mid-1000s. Thus, individuals of Slavic origin appear to be a significant part of those involved in the accumulation, handling, and deposition of silver on Bornholm.

The deposition of hoards was probably linked to a pre-Christian mind-set. The decline in the intensity of depositions from the mid-1000s can be partly related to a gradual integration of Christianity on Bornholm and partly to economic stagnation. The economic stagnation may be attributed to Bornholm's decentralised power and trade structure, which did not provide optimal conditions for the continued facilitation of large-scale trade on Bornholm (sections 8.4.1 and 8.4.3). The introduction of Christianity seems to have taken hold in the southern part of the island first, with southern and eastern Bornholm absorbing the Christian impulse in burial as well as deposition customs. On the northern part of the island the deposition of hoards continued until around 1100, and this may reflect the fact that the Bornholm people here preserved the old traditions longer than in the southern part of the island (section 8.4.2).

Bornholm's latest Viking hoard, Smedegård NØ, has a marked presence of Christian artefacts (section 7.1.1), and thus seems to carry an inherent contradiction in relation to the link between the deposition of hoards and Christianity. The hoard is indisputably Bornholm's largest silver hoard (Figure 3.12). However, the

extravagant content sharply contrasts with the site context, which reflects a very modest settlement in a peripheral area of the island (section 8.4.2) (catalogue: 38). One suggested interpretation of the hoard is that it is plunder, and it is tempting to declare the owners of the Smedegård NØ hoard to be the last Vikings of Bornholm.

## 9.2 Hoard functions reflected in the archaeological contexts

The archaeological context has contributed significantly to the interpretation of hoard functions. The Nordre Strensebygård and Rabækkegård hoards are extraordinary because the feature contexts directly reflect the purpose of each hoard. The Nordre Strensebygård hoard was deposited in or very close to a silversmith's pit, clearly indicating a function as raw materials for the silversmith (section 7.2.3). The Rabækkegård hoard was deposited in a grave, and the hoard's significance as a burial gift shows its connection to the symbolic field. The feature contexts of the other hoards do not directly indicate the functions of the hoards. However, the holistic analysis relating hoard structures to the immediate contexts, the feature contexts, and the site contexts of the hoards has made it possible to draw some general conclusions about their purpose.

Hoards deposited centrally on settlements are clearly the largest category, compared to hoards on the periphery of settlements, or in areas with no other archaeological remains. Fifteen hoards, which comprise almost half of the analysed hoards, were deposited in or immediately outside a dwelling house – both contexts are documented. There is an even distribution of small, medium, and large hoards within the category, and hoards within virtually all periods are deposited centrally on settlements (section 7.2.4).

The second largest group relates to hoards deposited at the periphery of settlements. Six hoards are, with high certainty, deposited on the outskirts of a settlement area, while three hoards are possibly deposited in this context. Chronologically, the hoards range from c. 1000 to c. 1150. The hoards in this category are grouped into small coin-dominated hoards of less than 200 g, and large hoards of 800 g or more, with a high proportion of uncoined silver, the exception being the coin-dominated hoard from Skovvang (section 7.2.4).

Hoards deposited with no connection to a settlement are the most weakly represented category, with just four examples. The group may be underrepresented because areas without other settlement indicators are rarely selected for detector surveys by the private metal detector users (Chapter 1). Three hoards were deposited in the 900s, while the last hoard was deposited in the mid-1000s. All hoards are small (section 7.2.4).

How hoards relate to settlements may reflect the function of hoards. Silver collected through trade was probably the dominant component in hoards deposited centrally on settlements. The interpretation is based on observations made within the immediate contexts, the feature contexts, and the site contexts. The hoards are dominated by coins or Slavic/Scandinavian melts, which are also interpreted as a form of currency (section 7.2.5). Most sites with centrally deposited hoards have the character of relatively common agrarian settlements, albeit with specialisation

in a particular field suggesting surplus production of possible commodities. Many sites display finds of weights and/or parts of balance scales, with a clear relation to trade (section 7.3.1). Most hoards deposited centrally on settlements were probably deposited in connection with dwelling houses (section 7.2.3). There is no evidence that the depositions were symbolic (section 7.3.2). In the Pæregård and Gyldensgård SV hoards it could be observed that parts of the hoards were probably collected in a bag/purse. In combination with the association of hoards with dwelling houses, this may reflect a dynamic process of accumulation, whereby objects were successively added and removed, for example during trade voyages (section 7.1.1).

Hoards deposited at the periphery of settlements are interpreted partly as possible ownership markers/offerings to newly cultivated fields, and partly as hoards linked to fire-based crafts. The three small coin-dominated hoards Frostegård, Englyst, and Smørbygård potentially meet Gruszczynski's criteria for hoards deposited to mark ownership of or offerings to newly cultivated fields (2019, 253–257). The last of the small coin-dominated hoards deposited on the outskirts of a settlement is the Nordre Stensebygård hoard, which, based on the feature context, has been interpreted as raw material for a silversmith.

Døvregård is among the four large hoards deposited at the periphery of a settlement which are dominated by find groups other than coins. Melts dominate the hoard, like the other hoards with a *tpq* in the 1020s (Figure 3.12). While the other hoards deposited in the 1020s (Store Klintegård, Åbo, and Skovgård) contain mainly Slavic/Scandinavian melts, the Døvregård hoard is dominated by irregular melts (section 7.2.4). This suggests that Døvregård had a different function than the other melt-dominated hoards deposited centrally on settlements. Possibly, the Døvregård hoard should also be interpreted in relation to craft activities. Perhaps the Egenvang hoard, a large hoard mainly comprising fragmented jewellery and deposited at the periphery a settlement area, should be interpreted along the same lines.

There are strong indications of links between hoards deposited outside a settlement and the symbolic field. In addition to the Rabækkegård hoard deposited in a grave context, the Krusegård hoard can also be highlighted. The hoard differs from all other Bornholm hoards of the 1000s in consisting exclusively of coins, which probably reflects a special selection of objects before deposition. The fact that the hoard was deposited in or near a wetland supports its symbolic nature.

The remaining two hoards, deposited outside the settlement context, also demonstrate a special selection of objects. The Tyskegård hoard is entirely made up of one coin type, and the coins have very few circulation traces (sections 6.1.2 and 6.2). The Buddegård hoard consists of a deliberately destroyed trefoil brooch and a high proportion of complete coins with suspensions (sections 6.2 and 6.4). The hoards are interpreted as ownership markers or offerings to newly cultivated fields for those who settled at the Kannikegærdet and Kannikegård/Tyskegård sites. Buddegård and Tyskegård may have been deposited as a symbolic act when the residents of Kannikegærdet and Kannikegård/Tyskegård sites settled in the area. The Kannikegærdet and Kannikegård/Tyskegård depositions in or near dwelling

houses presumably represent the economic and social capital of the same individuals. Thus, the four hoards represent striking examples of how the functions of hoards are reflected in the archaeological contexts.

### **9.3 Hoards as actors in the economic, social, cultural, and symbolic fields**

The multi-contextual analysis has demonstrated that the hoards influenced the people and society of the Viking Age. Further, it is confirmed that the hoards were actors in the economic, social, cultural, and symbolic fields, thus establishing that the hoards should not be considered as a uniform phenomenon, but rather as individual life stories related to many different phases and facets of Viking life and society.

The hoards were most likely actors in the establishment and stabilisation of social and economic networks on Bornholm, but they were also actors in processes of change and disruption of old structures.

The Rabækkegård, Buddegård, and Skørrebro hoards all comprise early Samanid dirhams which may derive from the same import event (section 5.3). This illustrates that the coins played a role in establishing a local network on the island from the late ninth century and during the tenth century, when the power structures were changing (section 8.1). The interpretation of the Buddegård hoard as an ownership marker or offering for newly cultivated fields shows that the hoards were also actors in the alliance between humans and gods (section 7.2.5). Further, the Abbasid coins in the Skovsholm hoard as well as the Samanid coins in the Rabækkegård hoard illustrate that leading Bornholm individuals/families were part of a supra-regional Baltic network distributing dirhams (section 8.1).

Above all, the analysis of die-identical Anglo-Scandinavian coins highlights how silver functioned as actors in the social and economic network on the island. As suggested, the island's elite of the eleventh century collaborated on joint expeditions where silver was accumulated. This created a strong network between the island's leading families, as illustrated by the distribution of die-identical Anglo-Scandinavian coins in some of the most coin-rich hoards on the island, such as Skovvang, Nørremølle, Gyldensgård SV, and Pæregård (sections 5.4 and 8.2). The prominent position of the leading families in the economic field made these journeys possible. This established a relationship of dependence/cooperation between the elite at Skovvang, Nørremølle, and Gyldensgård SV and the smaller farms in their vicinity, which traded goods at the elite farms in exchange for silver.

A marked cultural influence from the West Slavic area can be traced in pottery, female dresses, and burial rituals on Bornholm (sections 8.3 and 8.4.2). The presence of West Slavic jewellery in Skovvang, Pæregård, and above all the Nørremølle hoards (section 5.5) suggests that the accumulation of silver by elites also took place on the southern coast of the Baltic Sea. Thus, silver functioned as a link between Bornholm and the West Slavic area, making the hoards actors in the significant cultural changes on Bornholm in the eleventh century.

The hoards collected in raids in England increased social mobility on Bornholm. The significant increase in the number of hoards deposited from c. 990 reveals that more people were now involved in the accumulation and handling of silver than before, when the accumulation and handling of silver was limited to a few individuals among the Bornholm elite (section 8.2). The economic capital acquired by the Bornholm inhabitants through plundering attacks had a direct influence on their position in the social field, since they were able to establish farms on their return. The Tyskegård hoard, collected through participation in the 1002 raid on England (section 5.2), also fulfilled a role as mediator between humans and gods, since the hoard was probably deposited as an offering to the newly cultivated fields, which may have been acquired for English silver (section 7.2.5). The composition of the hoards shows a break between those who acquired Islamic coins and those who collected English coins (section 8.2). Hence, hoards accumulated through raids had a direct impact on Bornholm's overall power structure, since they facilitated and empowered a new elite.

# Catalogue

## 1. Ahlesminde (BMR 3767), Vestermarie parish

Deposited: after 1070. Partly documented.

Discovered: 2014. Recovered: 2014. Excavated: 2015. Excavated area: Details not available.

Part of find *in situ*: yes. Number of objects: 314. Total weight: 323 g.

### Content

Coins: 6 Continental, 90 English (2 Scandinavian?), 122 German, 2 Irish, 9 Islamic (4 Abbasid, 2 Fatimid, 1 Samanid, 1 Umayyad), 1 Polish, 25 Scandinavian (3 Anglo-Scandinavian, 22 Danish), 3 blanks (2 square), 48 not identified.

Other silver objects: 2 melts (1 irregular, 1 Slavic/Scandinavian); 1 personal (belt buckle with dragon head and niello [complete<sup>1</sup>]); 1 scrap-silver.

Gold objects: finger-ring [complete].

### Container

The remains of a leather bag were found during excavation of soil block at the Bornholm Museum.

### Context

The hoard is deposited in an area with extensive settlement remains. Excavations revealed several phases of settlement in the area surrounding the deposition place. The hoard was probably deposited in or near a house. Excavation report has not been available. Thus, at present it is not possible to connect the hoard to a specific feature, nor is it possible to characterise the nature of the settlement. However, the distribution of objects is documented.

Reference: Pers. comm. 02.09.2019, head of excavations, F. O. S. Nielsen, The Bornholm Museum.

## 2. Blykobbegård (BMR 3890), Rønne parish

Deposited: 1018–1020. Partly documented.

Discovered: 2017. Recovered: 2017. Excavated: 2017. Excavated area: Details not available.

Part of find *in situ*: yes. Number of objects: 551. Total weight: 542 g.

### Content

Coins: 1 Bohemian, 2 Byzantine, 29 Continental, 130 English, 223 German, 20 Islamic (3 Abbasid, 2 Marwanid, 9 Samanid), 5 Islamic imitations, 6 Polish, 25 Scandinavian (22 Anglo-Scandinavian, 2 perhaps Polish imitations, 3 Danish), 4 blanks, 24 not identified.

Other silver objects: 2 ingots (1 circular, 1 not identified); 3 melts (2 irregular, 1 Slavic/Scandinavian); 4 jewellery (3 arm/neck-rings, 1 pendant); 1 personal (knife-fitting); 72 scrap-silver.

### Container

The hoard was in two parts. One was in the shape of an upright horn (Figure 7.1).

There were no visible traces of a container. The presence of protein in the soil surrounding the silver indicates that the container was made either of horn, wool/hair, or hide. The remains of a leather bag were found beneath the other part of the hoard.

### Context

The hoard was deposited in an area with settlement remains including postholes.

The hoard was probably deposited in or near a house. Excavation report not available at time of writing. Thus, at present, it is not possible to connect the hoard to a specific feature, nor is it possible to characterise the nature of the settlement. However, the distribution of objects is documented.

References: Christensen 2017, *Danefæ Rapport* [Treasure trove report]; Pers. Comm. 30.09.2019, head of excavations, F. O. S. Nielsen, The Bornholm Museum.

## 3. Bolbygård, Klemensker parish

Deposited: 1042–1060. Partly available. Discovered: 1871.

Part of find *in situ*: yes. Number of objects: > 1,000. Total weight: 1,211 g.

### Content

Coins: 19 English, 943 German, 1 Hungarian, 1 Italian, 13 Scandinavian (Danish).

Other silver objects: 1 ingot (ribbon shaped); jewellery (1 arm-ring [complete], 2 arm/neck-rings, 4 beads, 1 earring, 3 neck-rings [1 complete], 1 possible pendant: circular decorated foil); 3 melts (irregular); 10 scrap-silver.

### **Container**

Hand-built and partly turned s-shaped vessel of Baltic Sea Ware type decorated with diagonal incisions followed by furrows (Naum 2008, 94 motif 5).

### **Context**

The ceramic vessel containing the silver hoard was found when an area was cleared before the blasting of a large rock. The hoard was sent to Oldnordisk Museum [Old Norse Museum] where the objects were recorded and described.

References: Skovmand 1942, 163–164 no. 36; Liebgott 1978 no. 7; Galster 1980 no. 32; Jensen *et al.* 1992 no. 2; von Heijne 2004 no. 5.4.

## **4. Bondegård, Rutsker parish**

Deposited: 1002–1020. Partly available. Discovered: 1855.

Part of find *in situ*: details not available. Number of objects: > 32. Total weight: details not available.

### **Content**

Coins: 4 English, 26 German, 1 Islamic (Samanid), 1 Scandinavian (Anglo-Scandinavian).

Other silver objects: 4 scrap-silver.

The hoard is incomplete (full contents uncertain).

### **Container**

Details not available.

### **Context**

The hoard was found when a dyke was removed. No further details available.

References: Skovmand 1942, 117, no. 54; Galster 1980, no. 24; von Heijne 2004, no. 5.21.

## **5. Brandsgård, Knudsker parish**

Deposited: 1001–1000/1005. Partly available. Discovered: 1840.

Part of find *in situ*: yes. Number of objects: 152 coins + 44 g silver. Total weight: 162 g.

**Content**

Coins: 18 German, 1 Hungarian, 67 Islamic (3 Abbasid, 2 Buyid, 15 Samanid, 47 not identified), 1 Italian, 65 Scandinavian (Hedeby).

Other silver objects: The unminted silver was described as '44 g of fragmented silver'.

**Container**

Details not available.

**Context**

The hoard was found when a tree root was removed.

References: Skovmand 1942, 127 no. 59; Galster 1980, no. 21; von Heijne 2004, no. 5.74.

**6. Buddegård (BMR 2306), Bodilsker parish**

Deposited: 947–990. Well documented.

Discovered: 1995. Excavated: 1996. Excavated area: 675 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 49. Total weight: 167 g.

**Content**

Coins: 41 Islamic (8 Abbasid, 32 Samanid, 1 Tahirid), 6 Islamic imitations.

Other silver objects: 2 jewellery (1 arm-ring, 1 trefoil brooch [complete]).

**Container**

No traces.

**Context**

During metal detector surveys it was observed that the area lacked settlement remains such as pottery and wattle and daub. This was confirmed by excavations, and no features were found. The silver concentration was located on a hillside sloping towards a lowland with a stream bed which is now dry. The subsoil comprises heavy clay with few stones. The distribution of silver objects was limited, which indicates that the hoard had been disturbed by the plough relatively recently. The Bornholm Museum excavated an area of 388 m<sup>2</sup> around the silver concentration. Surveys were also conducted south of the silver concentration; however, because there were no finds in this area, the plough layer was not stripped to the subsoil. The only other find in the area is a spherical bronze weight with flat poles and an iron core found uphill to the west of the

silver concentration. A search trench (1.8 x 35 m) in this area did not result in further finds or features. An area of 675 m<sup>2</sup> was investigated.

Reference: Wagnkilde 1996a, excavation report.

### **7. Dalegård (BMR 1754), Åker parish**

Deposited: 1009–1020. Well documented.

Discovered: (1887) 1995. Recovered: 1996. Excavated: 1996. Excavated area: 450 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 471. Total weight: 663 g.

#### **Content**

Coins: 2 Bohemian, 198 English, 231 German, 21 Scandinavian (Anglo-Scandinavian), 7 not identified.

Other silver objects: 1 melt (irregular); 1 personal (fitting with animal head, dragon?); 3 scrap-silver.

Gold objects?: 2 ingots (ribbon-shaped, one folded twice, one shaped like an eye); 1 rod.

Weights?: 2 spherical bronze weights with iron cores and flat poles.

#### **Container**

The hoard was deposited in a ceramic vessel, of which only unornamented fragments were preserved. Fragments of a different type of pottery were found by the deposit and may have functioned as a lid.

#### **Context**

In 1886 two Viking-Age coins were found in the area. Follow-up detector surveys were conducted in 1995. This resulted in 75 coins followed by an archaeological excavation.

The site is placed on a slight rise on a plateau. The subsoil is sandy clay. The vessel was found in a modern drain ditch, which was established in the 1950s and runs close by the remains of a three-aisled house. It is likely that the hoard was originally deposited in the house. The house remains include three sets of roof-bearing posts. Several small pieces of pottery were found in the post-holes. Three sherds of Baltic Sea Ware were found in the post pipe of one of the roof-bearing posts. The excavator suggests that the limited number of ceramics indicate that the house functioned as a stable. Two spherical bronze weight with flat poles and an iron core were found in the main distribution area of the silver, while one polyhedral weight was found around 40 m south of the deposition place. Finally, three pieces of gold were found in a line following the ploughing direction at the periphery of the distribution area of the silver (Figure 3.3).

References: Galster 1980, no. 17; Wagnkilde 1996b, excavation report.

## 8. Dammegård (BMR 2000), Pedersker parish

Deposited: 990–1000/1005. Well documented.

Discovered: 1994. Excavated: 1994. Excavated area: 300 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 189. Total weight: 146 g.

### Content

Coins: 136 Islamic (3 Abbasid, 3 Buyid, 1 Saffarid, 125 Samanid), 12 Islamic imitations, 1 German.

Other silver objects: 2 ingots (1 oval, 1 D-shaped); 1 symbolic (Thor's hammer [complete]); 1 personal (heart-shaped fitting [complete]); 12 jewellery (2 arm/neck-rings, 2 beads, 4 earrings, 3 pendants, 1 trefoil brooch); 42 scrap-silver.

### Container

No traces.

### Context

A concentration of silver objects was located by metal detector surveys in January 1994. A small investigation was conducted by the Bornholm Museum in February. This revealed that the hoard had been deposited near a roof-bearing post. An excavation was initiated in August to investigate the house structure.

Three three-aisled houses were partially unearthed. House I had curved walls and was 5.5–5.75 m wide. Two entrances were recorded in opposite walls. The house was symmetrical and 19 m long. House I was stratigraphically earlier than House II, which had sets of roof-bearing posts and curved walls with double rows of wall posts. A set of roof-bearing posts of House II contained burnt wattle and daub and charcoal in the post pipes. Only the gable of House III was unearthed. The hoard was likely deposited in or just outside House I or II.

The site is part of a larger settlement area, which has been known since 1989, where the outline of longhouses with curved walls were visible from the air in the field of grain. The settlement surrounds St Peders Church. Dammegård is situated to the north of the church. Store Gadegård area 1 and 3 (catalogue: 40) is also part of the settlement. The site is located on a slight ridge sloping to the southwest to northeast. The ridge is delimited by a wetland area to the north and a gorge with a now dried-out stream to the southwest. The subsoil is sandy. Metal detector finds attest to intensive settlement activities. Concentrations of weights, bronze, gold, and silver objects have been recorded in several areas. The metal detector finds range from the 700s to the end of the twelfth century. Different phases are represented in the same areas (cf. discussion in section 7.3.4).

References: Nielsen 1994, 127–130, 1994a, excavation report; Nielsen 1994b, excavation report.

**9. Døvregård (BMR 2588), Bodilsker parish**

Deposited: 1028–1040. Partly documented.

Discovered: 1997. Recovered: 1997. Excavated: 1997. Excavated area: 360 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 193. Total weight: 797 g.

**Content**

Coins: 24 English, 8 Islamic (5 Abbasid, 1 Hamanid, 2 Samanid), 74 German, 9 Scandinavian (Anglo-Scandinavian), and 1 blank.

Other silver objects: 82 melts (70 irregular [2 complete], 12 Slavic/Scandinavian); 1 scrap-silver.

**Container**

Ceramic vessel; only the bottom was preserved.

**Context**

The hoard was deposited on a hillside slightly sloping to the north, south, and east.

The hoard was placed in a small pit just fitting the size of the vessel. A few postholes interpreted as a north/south-oriented outbuilding with 3–4 sets of roof-bearing pots were recorded east of the deposition place. The post remains were excavated but no finds that can date the house were discovered. Settlement indicators such as pottery, wattle and daub, charcoal, and metal objects from the Viking Age were found 100–200 m south of the hoard during reconnaissance. However, the distribution of most bronzes was not recorded. Silver only was found/recorded during excavations. A spherical bronze weight with flat poles is described as having been found near the hoard. It is uncertain if the hoard and the settlement remains are contemporaneous.

References: Høier 1997, excavation report.

**10. Egenvang (BMR 3836), Vestermarie parish**

Deposited: 1002–1020. Partly documented.

Discovered: 2015. Excavated: 2015. Excavated area: 300 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 298. Total weight: 1,403 g.

**Content**

Coins: 1 Bohemian, 10 Continental, 88 English, 2 Islamic (1 Anti-Umayyad, 1 Samanid), 1 Islamic imitation, 105 German, 1 Polish, 4 Scandinavian (Anglo-Scandinavian), 1 blank.

Other silver objects: 21 ingots (6 D-shaped [4 complete], 13 hammered [3 complete], 2 irregular); 26 jewellery (23 arm/neck-rings, 1 bead, 1 temple-ring [complete], 1 suspension); 3 personal (captorga [2 complete]); 35 scrap-silver.

**Container**

No traces.

**Context**

The site is located on a significant ridge giving a view of the river valley of Tingsted. Excavations did not determine the deposition place of the hoard. Finds of heavy silver ingots close to the subsoil may indicate that the original deposition place was near the silver concentration found in an area of 9 x 15 m. The remains of an outbuilding comprising two sets of roof-bearing posts were recorded just north of the deposition area. Baltic Sea Ware was found in one of the postholes, and the building may be contemporaneous with the hoard. A spherical bronze weight with flat poles was found just east of the silver concentrations. Excavation report was not available at the time of writing.

References: Laursen 2016; Ingvardson & Laursen 2016.

**11. Enegård, Nylarsker parish**

Deposited: 1040–1060. Partly available. Discovered: 1862.

Part of find *in situ*: yes. Number of objects: 915. Total weight: 1,912 g.

**Content**

Coins: 3 Bohemian, 86 English, 2 Hungarian, 7 Islamic (2 Samanid, 5 not identified), 699 German, 4 Polish, 46 Scandinavian (17 Anglo-Scandinavian, 29 Danish).

Other silver objects:<sup>2</sup> 6 ingots (hammered [1 complete]); 6 jewellery (3 arm-rings [complete], 2 arm/neck-ring, 1 neck-ring [complete]); 31 melts (26 irregular, 5 Slavic/Scandinavian); 13 scrap-silver.

**Container**

The silver was found in a coarse hand-built partly turned biconical pot of Slavic Bobzin type decorated with ribbons of incisions made with a toothed tool.

**Context**

The hoard was found during fieldwork close to a gravel hill. The probable site has been located by metal detector surveys but has not been excavated.

References: Skovmand 1942, 167 no. 39; Liebgott 1978, no. 6; Galster 1980, no. 31; Jensen *et al.* 1992, no. 1; von Heijne 2004, no. 5.79.

**12. Englyst (BMR 2320), Østermarie parish**

Deposited: 997–1000/1005 (or after 1065).<sup>3</sup> Well documented.

Discovered: 1999. Excavated: 2000. Excavated area: 230 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 97. Total weight: 111 g.

**Content**

Coins: 26 German, 23 Islamic (11 Abbasid, 7 Samanid, 1 Umayyad), 22 English, 3 Continental, 3 Bohemian, 2 Islamic imitations, 1 Carolingian, 1 Persian (perhaps imitation), 1 Scandinavian (Danish).

Other silver objects: 1 symbolic (rune amulet [complete]); 2 melts (drops); 3 scrap-silver.

**Container**

No traces.

**Context**

The site is located on the slightly sloping northeastern side of a plateau. The Store Frigård site (catalogue no. 30) is visible to the north. Kelse stream is located around 1 km to the west. The subsoil is sandy clay. Surface finds of undecorated settlement pottery, Baltic Sea Ware, spindle weights of sandstone slates, whetstones, and wattle and daub indicate that the area was settled in the Viking Age. The largest concentration of burnt wattle and daub was located approximately 50–75 m west of the silver concentration, according to Jack Simonsen, the metal detector user who located the hoard. This indicates the presence of a burnt dwelling. However, the only recorded features in the area around the silver concentration was a ditch which runs north to south. It is unclear if the ditch marks the boundaries of the settlement.

Reference: Vennersdorf 2000, excavation report.

**13. Frostegård (BMR 1229), Åker parish**

Deposited: 1042–1060. Well documented.

Discovered: Before 1846. Detected: 1985, 1989, 1994–1995. Excavated: 1996.

Excavated area: 575 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 58. Total weight: 59 g.

**Content**

Coins: 2 Bohemian, 2 English, 37 German, 2 Islamic (1 Abbasid, 1 Samanid), 3 Polish, 2 Scandinavian (Danish), 2 not identified.

Other silver objects: 4 jewellery (2 beads, 2 earrings); 4 melts (1 drop, 3 Slavic/Scandinavian).

**Container**

No traces.

**Context**

In 1876 three coins found on the site were sent to the Royal Collection of Coins and Medals in Copenhagen. Records describe that more silver had been found at this location. Hence, part of the hoard has been lost.

The site is situated far from the coast in comparison to other hoard locations. The location is sited on a sloping hillside close to where two streams, Læsø and Nydam, meet. Silver objects, iron nails, Baltic Sea Ware, a weight, a bronze fitting, and a whetstone are recorded from the site. Finds were distributed in an area with postholes, but house structures were not identified. The deepest postholes were recorded in the northwestern corner of the excavation area, which, according to the excavator, indicates that a settlement was located to the west of the excavation field.

References: Galster 1980, nr. 23; Wagnkilde 1996c, excavation report.

**14. Høsegård, Østerlars parish**

Deposited: 1004–1020. Partly available. Discovered: 1884.

Part of find *in situ*: yes. Number of objects: 218. Total weight: 321 g.

**Content**

Coins: 2 Bohemian, 1 Byzantine, 61 English, 146 German, 2 Irish, 1 Scandinavian (Swedish), 4 not identified.

Other silver objects: 1 jewellery (arm-ring [complete]).

**Container**

The silver was deposited in a box of bark that was almost completely disintegrated at the time of discovery.

**Context**

The hoard appeared when the farmer ploughed deeper than usual.

References: Skovmand 1942, 121–122 no. 56; Galster 1980, no. 23; von Heijne 2004, no. 5.121.

**15. Gyldensgård SV (BMR 3194), Østermarie parish**

Deposited: 1035–1040. Well documented.

Discovered: 2002. Recovered: 2002. Excavated: 2003. Excavated area: 255 m<sup>2</sup>.  
Part of find *in situ*: yes. Number of objects: 370. Total weight: 440 g.

### **Content**

Coins: 6 Bohemian, 1 Byzantine, 123 English (perhaps 1 Scandinavian imitation), 163 German, 4 Irish, 5 Islamic (4 Samanid), 1 Islamic imitation, 1 Polish, 21 Scandinavian (Anglo-Scandinavian, perhaps 1 Polish imitation), 1 blank, 17 not identified.

Other silver objects: 3 jewellery (2 beads [1 complete], 1 earring); 9 melts (2 drops, 6 irregular [3 complete], 1 Slavic/Scandinavian); 2 personal (weights [complete]), 13 scrap-silver.

Bronze objects: 1 personal (fire-steel [complete]).

### **Container**

The hoard was found in disintegrated dark organic material, perhaps originally hide, bark, or cloth.

### **Context**

The site is located on a flat hilltop with a north/south boundary. To the east, the terrain drops towards the stream Gyldenså. A rocky area lies to the northwest. Here the bedrock is close to the surface and in some sections exposed.

The hoard was deposited in a three-aisled house approximately 70 cm from the northern roof-bearing post in the west gable. The house was 6.15 m wide. The length cannot be established, since it was only partly unearthed. Numerous postholes attest to a settlement in several phases, but no other structures were identified. Two ditches were exposed to the north and the west, respectively. The northern trench is likely contemporaneous with the house. The ditch had exceptional preservation conditions for organic material. The trench was sieved, which resulted in many fish bones. A notable absence of otoliths (ear bones) imply that the fish were brought to the site without heads. Aside from fish bones, the ditch contained iron needles, iron nails, iron flakes, Baltic Sea Ware, loom weights, a piece of bronze foil, two glass beads, and a silver coin. All ceramics found are Baltic Sea Ware. An unusually large number of loom weights were found at the site. A total of 26–30 fragments from 4–6 loom weights were found in the northern trench, 6 fragments were found in a small pit filled with charcoal north of the house, and 30 fragments in different sizes were found in one of the roof-bearing posts of the house. Many bronze objects were spread across the entire area. A small concentration of bronze objects and weights (3 spherical bronze weights with iron core and flat poles, 1 lead weight, and a small sphere with a pyramid-shaped bronze top, which may also have functioned as weights).

Reference: Thorsen 2003, excavation report.

## 16. Kannikegærdet (BMR 2292), Bodilsker parish

Deposited: 996–1000/1005. Well documented.

Discovered: 1995. Excavated: 1996. Excavated area: 289 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 78. Total weight: 269 g.

### Content

Coins: 67 Islamic (6 Abbasid, 1 Anti-Umayyad, 1 Buyid, 3 Saffarid, 50 Samanid), 3 Islamic imitations, 4 German, 2 Roman.

Other silver objects: 5 jewellery (1 arm-ring, 2 fibula, 1 finger-ring [complete]; 1 suspension [complete]); 1 melt (drop); 2 scrap-silver.

### Container

No traces.

### Context

The area was detected because finds of weights, iron knives, and slate whetstone indicated a Viking-Age settlement. The site is sited on an approximately 200 m-wide sandy ridge, delimited to the west of a stream that flows into a larger wetland north of the settlement. Traces of six houses were partly unearthed during excavations.

Houses I, II, and VI were situated at roughly the same location. The orientation of Houses I and II are identical. The remains comprise two series of sets of roof-bearing post, walls with double rows of posts, and rainwater trenches running parallel to the walls. The silver was concentrated in the western part of these house remains, and it is likely that the hoard was deposited in one of them. However, the hoard may also be connected to the house remains that were found to the north and south of the silver concentration. The roof-bearing posts of House I contained burnt wattle and daub and charcoal in the post pipes. This indicates that the house was burnt. In contrast, House II contained burnt wattle and daub in the posthole filling, which indicates that House II was earlier than House I. House VI was placed slightly farther north. The remains consisted of roof-bearing posts with burnt wattle and daub. The eastern end of House IV was placed in the southwest corner of the excavation field. House IV was a three-aisled house with a single row of posts. The west gable of a three-aisled house (House III) with double rows of wall posts was exposed in the southeast corner of the excavation field. Houses I and II are stratigraphically later than House III. Only a selection of features was excavated. Unornamented settlement pottery and Baltic Sea Ware were found in the southern rainwater trench of House II. House III is later than a pit containing Baltic Sea Ware. Boulder pits later than Houses I and II contained pottery from the Germanic Iron Age through Viking Age.

Reference: Nielsen 1996, excavation report.

**17. Kannikegård/Tyskegård (BMR 2174), Vestermarie parish**

Deposited: 1014–1020. Well documented.

Discovered: 1993. Excavated: 1994. Excavated area: 585 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 71. Total weight: 78 g.

**Content**

Coins: 10 English, 47 German, 2 Islamic (1 Abbasid/Hamdanid, 1 Samanid), 1 Italian, 2 Roman, 4 Scandinavian (Anglo-Scandinavian), 1 blank.

Other silver objects: 1 jewellery (temple-ring [complete]); 2 melts (1 drop, 1 Slavic/Scandinavian); 1 scrap-silver.

**Container**

No traces.

**Context**

The site is located at the westernmost farm in a row of prehistoric settlements that follow an elongated ridge. The terrain is slightly sloping, and sections of bedrock are exposed. Settlement remains were indicated by burnt wattle and daub in the surface of the field, and the remains of a house were exposed to the north of the silver concentration. The house was approximately 18 m long and 7 m wide. The remains of 5 sets of roof-bearing posts were recorded, and may represent to phases of the same house. Massive rainwater trenches were found along the walls and the northern gable of the house. Postholes and walls were filled with large quantities of burnt wattle and daub. Part of a fallen wall could be observed in one of the rainwater trenches. Very few objects (e.g. pottery) were found in the house, indicating that the house was emptied before it was burnt. The burnt wattle and daub were located deep in the postholes, which may support the idea that the timber was also removed and recycled. Sherds of Menkendorf pottery were found in the wall trench (Naum 2008, figure 7). Two spherical bronze weights with flat poles and iron core were located near the house.

Reference: Wagnkilde 1994a, excavation report.

**18. Kobbegård (BMR 2114), Østerlars parish**

Deposited: 1035–1040. Well documented.

Discovered: 1992. Excavated: 1993. Excavated area: 240 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 139. Total weight: 162 g.

**Content**

Coins: 19 Continental, 18 English (perhaps 1 Scandinavian imitation), 59 German, 6 Islamic, 1 Islamic imitation, 3 Polish, 8 Scandinavian (Anglo-Scandinavian), 2 blanks, 1 not identified.

Other silver objects: 2 jewellery (1 bead, 1 loop); 3 melts (irregular); 17 scrap-silver.

### Container

The coins preserved *in situ* were placed in a tight stack; a piece of silver thread and a loop were placed underneath the coins. They may have composed some form of closure. A greasy blackish substance surrounding the hoard may have been the remains of a now decomposed bag, which functioned as the container of the hoard.

### Context

A part of the hoard was preserved *in situ* in a small pit, at the west end of a dwelling of around 15 m. The pit was marked with two stones. The house remains consisted of 4 sets of roof-bearing posts, of which the gable sets were slightly withdrawn. A selection of posts was fully excavated.

The site is located on a plateau, where the terrain drops sharply to the northeast. The subsoil is heavy clay with sections of stone and gravel. In addition to the house, scattered pits were found. The largest pit was water sieved and contained a heavily corroded equal-arm brooch of Viking-Age type, iron nails and rivets, a bronze needle, an iron needle, Baltic Sea Ware, grinding stones, sandstone beads, 3 bone skates, processed bones, a bone needle, 2 almost complete bone combs, 5 fragments of combs, and animal bones, including fish bones. Among the surface finds are a lead weight and a spherical bronze weight with an iron core.

Reference: Wagnkilde 1993, excavation report.

## 19. Kongens Udmark, Vestermarie parish

Deposited: 967–990. Partly available. Discovered: 1861.

Part of find *in situ*: yes. Number of objects: <535. Total weight: 2,205 g.

### Content

Coins: 6 Byzantine, 2 Italian, 71 Islamic (11 Abbasid, 6 Buyid, 4 Hamdanid, 2 Umayyad, 48 Samanid,<sup>4</sup> and a large number of unidentified fragments), 3 Islamic imitations, 21 German, 1 Polish, 1 Roman, 4 Scandinavian (Hedeby).

Other silver objects: 84 ingots (4 D-shaped [3 complete], 19 hammered, 34 heavy rods, 27 square-shaped [4 complete]); 148 jewellery (17 arm-rings [1 complete], 100 arm/neck-rings, 11 beads, 2 chains [1 with 25 large links, 1 with rings attached], 8 earring pendants, 1 pendant [complete], 1 ring: 34 mm in diameter [complete], 8 rings: 14–28 mm in diameter [complete], 5 and 2 are interlinked); 199 scrap-silver.

### Container

Hand-built unornamented settlement pottery. Two opposing piercings just below the rim are secondary. Traces of decomposed lid of organic material.

### **Context**

The hoard was found when a newly cultivated plot of land was ploughed. The vessel is recorded as having been complete and was immediately sent to the National Museum of Denmark. Thus, it is likely that the description of the content is reasonably complete. However, a large number of fragments (246.32 g) were not described and preserved, and were melted down.

References: Skovmand 1942, 127–130 no. 61; Liebgott 1978, no. 4; Galster 1980, no. 14; von Heijne 2004, no. 5.97.

### **20. Krusegård (BMR 2158), Rutsker parish**

Deposited: 1056–1060. Partly documented.

Discovered: 1924, 1941. Rediscovered: 1993. Excavated: 1994. Excavated area: 245 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 126. Total weight: 103 g.

### **Content**

Coins: 17 Continental, 15 English, 65 German, 26 Scandinavian (2 Anglo-Scandinavian, 24 Danish), 1 blank, 2 not identified.

### **Container**

No traces.

### **Context**

Two coins were found in the area in 1924. The find circumstances were clearly described when the more coins were found in 1941. The coins were distributed in a depression by a water point, which maintained water almost all summer. It was also noted that there was no pottery, charcoal, or objects in the area. The report stated that the area was to be filled with stones and covered with earth. Excavations in 1994 yielded 66 coins, but no other finds or settlement remains. The coins were found in the upper topsoil layer, which indicates that the hoard had been moved from its original deposition place. However, the find report of 1941 clearly states that the hoard was deposited in the wetland area.

References: Skovmand 1942, 168 no. 44; Galster 1980, no. 39; Jensen *et al.* 1992, no. 13; Wagnkilde 1994b, excavation report; von Heijne 2004, no. 5.22.

### **21. Lillegærde (BMR 1513), Østerlars parish**

Deposited: 1048–1060. Partly documented.

Discovered: 1989. Recovered and excavated: 1989. Excavated area: 10 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 127. Total weight: 256 g.

**Content**

Coins: 1 Byzantine, 7 Continental, 24 English, 75 German, 7 Islamic (1 Abbasid, 1 Buyid, 2 Samanid, 3 not identified), 1 Polish, 10 Scandinavian (4 Anglo-Scandinavian, 6 Danish), 1 blank, 1 not identified.

Other silver objects: 28 melts (1 irregular [complete], 7 Slavic/Scandinavian [1 complete], 20 not available for identification); 5 jewellery (3 arm/neck-ring, 2 pendants [1 complete, gilded]); 10 scrap-silver.

**Container**

The hoard was preserved partly *in situ* in the lower part of a ceramic vessel described as 'coarse clay vessel of Viking Age type' (Watt 1989).

**Context**

After 38 coins were found using a metal detector within an area of approximately 10 m<sup>2</sup>, the hoard was recovered by the Bornholm Museum and the area around the deposition place was excavated manually. No further excavations have been conducted. Lillegærde was the first of the Viking-Age hoards to be located by metal detector surveys on Bornholm. Thus, the excavation method used today had not yet been developed. This means that the find-spots for many objects were not recorded.

Several reconnaissance investigations, before the area was metal detected, had resulted in settlement finds such as wattle and daub, fragments of fibulas from the Germanic Iron Age, a complete gilded trefoil bronze brooch from the Viking Age, slate whetstones, Baltic Sea Ware, fragments of spindle weights, and a few glass beads. Eight weights, 1 of which is lead, while 3 are spherical bronze weights with flat poles, were also found close to the hoard. Further, 1 polyhedral weight, 1 not identified, and 2 spherical bronze weights with flat poles were also found at the site. Finally, a fragmentary gold ingot of 31 g was found 30 m from the hoard's deposition place.

Reference: Watt 1989, excavation report.

**22. Munkegård I (BMR 2212), Ibsker parish**

Deposited: 1002–1020. Partly available.

Discovered: 1864. Rediscovered: 1991. Excavated: 1993 and 2011. Excavated area: 690 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 946. Total weight: unknown.

**Content**

Coins: 9 Bohemian, 2 Byzantine, 159 English, 591 German, 29 Islamic (3 Abbasid, 1 Buyid, 1 Hamdanid, 20 Samanid, 1 Uqaylid), 3 Islamic imitations, 1 Italian, 1 Carolingian, 8 Scandinavian (2 Anglo-Scandinavian, 6 Hedeby).

Other silver objects: 10 ingots (round or square); 69 jewellery (2 arm-rings [1 complete], 53 beads [25 complete]; 6 earrings [1 complete], 3 finger-rings [1 complete], 3 neck-rings [1 complete but in 6 fragments], 1 circular decorated foil in 3 fragments, 1 pendant [complete]); 67 scrap-silver.<sup>5</sup>

### **Container**

The farmer who found the hoard in 1864 described the silver as having been deposited in a crumbling wooden box.

### **Context**

The find-spot was well described in 1864 and therefore was easily re-located using metal detectors in 1993. The area has been surveyed using a metal detector several times. The investigations have resulted in several coin finds to the west and north of the deposition place of the hoard. In 2009 a small coin stack of 7 coins with 2 heavy gold threads were found. The Bornholm Museum therefore initiated another excavation in 2011. An area approximately 450 m<sup>2</sup> was excavated. The site is located on a hilltop sloping to the west and the coastline of the Baltic Sea near Årsdale in the east. The subsoil is a heavy yellow clay with few stones. Excavations in 1995 revealed postholes and a few pits. Baltic Sea Ware was found in the features, and one pit contained many pieces of slag. Reconnaissance of the surface has resulted in finds of Baltic Sea Ware, bronze objects, whetstone, grindstone of mica slate, and a fragment of an ornamented bone comb in the area to the west of the hoard. Three trial trenches in the area revealed cultural layers, ditches, a few postholes, and pits. The cultural layer yielded loom weights, Baltic Sea Ware, and a fragment of a soapstone vessel. The area did not show signs of houses and is interpreted as the outskirts of a settlement area. The small hoard with 7 coins and 2 gold threads was found to the south of this area. A myriad of postholes, ditches, and pits were unearthed in the area in 2011. Three houses have been identified, but it is likely that the postholes represent several more structures. The finds encompass Baltic Sea Ware, grindstone of mica slate, slate whetstone, bronze objects, a spherical bronze weight with an iron core, fragments of scales, scrap-silver, a bone comb, and animal bones of cow, boar, pig, sheep/goat, and fish. The deposition place of the small hoard was not revealed. Based on the present excavations at Munkegård, it remains unclear whether the silver found at the site represents the remains of one, two, or three hoards and/or single finds. The small hoard is therefore not included in the analysis.

References: Skovmand 1942, 123–124; Galster 1980, nr. 25; Wagnkilde 1995a, excavation report; Staal 2011, excavation report.

### **23. Munkerup (BMR 2255), Åker parish**

Deposited: 1046–1060. Partly documented.

Discovered: 1995. Excavated: 1995. Excavated area: 276 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 104. Total weight: 105 g.

### Content

Coins: 2 Bohemian, 1 Continental, 5 English (perhaps 1 Scandinavian imitation), 48 German, 1 Irish, 7 Islamic, 1 Italian, 1 Polish, 8 Scandinavian (Anglo-Scandinavian), and 10 not identified.

Other silver objects: 1 ingot (hammered); 3 jewellery (1 bead, 1 earring, 1 temple-ring [complete]); 3 melts (2 irregular [1 complete], 1 Slavic/Scandinavian); 12 scrap-silver.

### Container

No traces.

### Context

The area was surveyed by metal detector because of observations of fragments of Baltic Sea Ware and soapstone vessels on the surface. The site is located around 200 m from the coast on a plateau sloping towards the Baltic Sea. The subsoil is sandy clay. The plough soil contained many fragments of burnt wattle and daub. The silver was concentrated around four sets of roof-bearing posts interpreted by the excavator as two-by-two sets in two small buildings. The area has traces of several more postholes, and when these are included a more plausible interpretation is that the settlement remains represent a dwelling house with four sets of roof-bearing posts with drawn-in gables sets – a house structure that finds its parallel in design and dimensions in the Kobbegård house (catalogue no. 13). A few pits were recorded in the area; two cohesive pits were water sieved and contained traces of textile production in terms of a soapstone spindle weight, a clay spindle weight, a fragment of a loom weight, and a pair of scissors. In addition, the pits contained unidentified iron objects, turned furrow-ornamented Baltic Sea Ware, of which 2 sherds are Weisdin-type, and bones of mammals, birds, and fish. The pottery at the site is dominated by furrow-ornamented Baltic Sea Ware. The exact locations of 2 spherical bronze weights with flat poles and an iron core found in the area have not been recorded.

Reference: Wagnkilde 1995b, excavation report.

## 24. Nordre Stensebygård (BMR 2151), Bodilsker parish

Deposited: 1047–1060. Partly documented.

Discovered: 1870. Rediscovered: 1993. Excavated: 1994. Excavated area: 400 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 123. Total weight: 114 g.

**Content**

Coins: 1 Bohemian, 18 Continental, 8 English, 64 German, 3 Islamic (2 Abbasid, 1 Samanid), 1 Polish, 12 Scandinavian (3 Anglo-Scandinavian, 9 Danish).  
 Other silver objects: 2 ingots (T-shaped, rectangular); 2 jewellery (1 bead, 1 arm/neck-ring); 6 melts (1 drop, 5 irregular [2 complete]); 6 scrap-silver.

**Container**

The original deposition place of the hoard may have been where two vessels were found at the top of a pit with silversmithing debris. One of the vessels had remains of food crust demonstrating that it had been used for preparation of food.

**Context**

The earliest record of the hoard is in 1820 when Lieutenant Jansen excavated a megalith near Stensebygård.<sup>6</sup> The excavation report notes that 6 Viking-Age coins were found to the south of the mound. Half a century later the farmer of Stensebygård found 3 more coins (Galster 1980, 78–79, no. 27). Metal detector surveys in 1993 and 1994 yield 68 pieces of silver spread across an area of 70 x 20 m. The widespread distribution is likely due to agricultural activities since 1820. However, a clear concentration of silver was found within 18 x 12 m. Settlement remains interpreted as at least four houses were documented in the excavated area. However, the postholes were not excavated, and the interpretation is based only on visible remains in the surface of the subsoil. No part of the hoard was preserved *in situ*. However, a small pit of approximately 25 x 30 cm with silversmithing debris was found near the silver concentration. The remains of 2 Baltic Sea Ware vessels were found at the top of the pit. The bottom of one of the vessels was still intact. The vessels are interpreted as the containers for the hoard.

In the top of the pit was the remains of a fragmented and small (around 6 cm tall) crucible together with a fragment of a Viking-Age silver arm-ring. Many silver dops, silver flakes, and unidentified fragmented iron objects, of which one was a tube-shaped object that might have functioned as forceps for the crucible, were found in the same level and in the levels below. Organic material such as small strips of leather, charred wheat grains, straw, and large amounts of charcoal were also found. Shifting layers of straw imprints indicate that the pit was reused by adding fresh layers of straw and leaving the hardest charred layers in the pit. Possibly the pit was used to catch silver drops.

(Nielsen 1994c, excavation report, translated by author)

Notably, a crucible with a partly melted coin was also found in the pit. Adjacent to the pit was a triangular stone setting with vertically placed sandstone tiles within a semi-circular 20 cm-high stone ring that may have formed the base of

a forge. The edge of a stone paved floor was uncovered to the east of the forge. This may represent the smithy.

Reference: Nielsen 1994c, excavation report.

## 25. Nørremølle (BMR 3419), Nexø parish

Deposited: 1035–1040. Well documented.

Discovered: 2006. Recovered: 2006. Excavated: 2007. Excavated area: 425 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 1,469. Total weight: 1,958 g.

### Content

Coins: 10 Bohemian, 47 Continental, 202 English, 786 German, 2 Irish, 64 Islamic (12 Abbasid, 1 Buyid, 1 Hamdanid, 28 Samanid, 1 Umayyad, 4 Uqaylid, 17 not identified), 8 Islamic imitations, 3 Italian, 1 Persian (imitation?), 26 Polish (9 uncertain), 46 Scandinavian (Anglo-Scandinavian), 11 blanks, 1 not identified. Other silver objects: 8 ingots (6 D-shaped [1 complete], 2 hammered [1 complete]); 106 jewellery (68 beads [10 complete], 28 earrings [2 complete], 2 finger-rings, 7 neck-rings, 1 pendant); 54 melts (16 irregular [2 complete], 38 Slavic/Scandinavian); 8 personal (knife fittings [1 complete]); 86 scrap-silver.

### Container

Part of the hoard was found *in situ* in a ceramic vessel that was heavily damaged by agricultural activities. A circular stamp in the bottom indicates that it is Baltic Sea Ware. The pottery was deposited in a small pit. Traces of a large stone next to the deposition place indicates that the hoard was deposited near a large stone.

### Context

The terrain is relatively flat, but in the Viking Age there was a clear view to the Baltic Sea. A small stream, Nørrebæk, runs around 50 m south of the excavation field. The subsoil is clay. The gable ends of two three-aisled houses, small trenches, a few pits, and postholes were recorded in the excavation field. House I dates to the late Viking Age based on finds of burnt wattle and daub, Baltic Sea Ware, sherds of soapstone vessel, a complete miniature vessel (likely a house offering), a fragment of an amber bead, and some unidentified iron objects found in the roof-bearing postholes. The post pipes were filled with charred grain, which indicates that the house was burnt. The roof-bearing postholes of House II contained small pieces of pottery. Pits and trenches primarily contained fragments of Baltic Sea Ware. Pottery decorated with circular impressions, probably made with a jagged tubular bone, were found in two different features, which also held animal teeth and bones, wattle and daub, and charred grain. A small pit contained teeth and jaws of at least 7 pigs. At the top of a posthole, which was not obviously linked to a structure, was a lanceolate iron arrowhead, and in

a large pit, which also contained Baltic Sea Ware, was a large loom weight of 1,630 g. A lead weight and a spherical weight with flat poles were among other objects found in the topsoil.

References: Thorsen 2007, excavation report; Ingvardson 2012.

## **26. Nørre Sandegård (BMR 1853), Østerlars parish**

Deposited: 1030–1040. Partly documented.

Discovered: 1989. Excavated: 1991. Excavated area: 240/480 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 140. Total weight: 139 g.

### **Content**

Coins: 10 Continental, 14 English (perhaps 1 Scandinavian), 64 German, 8 Islamic, 5 Polish, 1 Roman, 9 Scandinavian (5 Anglo-Scandinavian, 4 Danish), 2 blanks, 5 not identified.

Other silver objects: 5 jewellery (1 arm-ring, 1 bead, 2 earrings, 1 loop); 7 melts (1 drop, 3 irregular [1 complete], 3 Slavic/Scandinavian); 9 scrap-silver.

### **Container**

The deposition place of the hoard was not located. The topsoil was removed in layers of 10–15 cm. The crude method has reduced the chances of finding small objects in particular, and has made it difficult to narrow down the possible deposition place.

### **Context**

The excavation was initiated because reconnaissance with a metal detector had yielded Baltic Sea Ware, whetstone, animal bones, weights, and bronze in addition to silver objects in an area of 20 x 20 m. The excavation covered 480 m<sup>2</sup>; however, an area of only 240 m<sup>2</sup> was unearthed to the subsoil. The site is located on a hill sloping towards the coast overlooking the Baltic Sea and the small island Christiansø.

The surface finds clearly indicate Viking-Age settlement activities. Five postholes filled with burnt wattle and daub and charcoal may represent the remains of a burnt-down house. A boulder pit was excavated and contained pottery, animal bones, and teeth. However, the finds were discarded on site, and are not available for further investigations. Following the excavation, reconnaissance has resulted in interesting finds such as a Thor's hammer, an enamel cross, 2 bronze weights (one spherical and one polyhedral), scale arms, glass beads, and a decorated soapstone spindle weight. The excavation method probably provides a fragmented picture.

Reference: Hansen 1991, excavation report.

## 27. Pæregård (BMR 1083), Olsker parish

Deposited: 1047–1060. Well documented.

Discovered: 1993. Recovered: 1993. Excavated: 2006. Excavated area: 470 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 1,137. Total weight: 1,373 g.

### Content

Coins: 3 Bohemian, 1 Byzantine, 32 Continental, 169 English (perhaps 11 Scandinavian imitations), 647 German (perhaps 1 Polish imitation), Irish, 1 Italian, 21 Islamic (5 Abbasid, 1 Hamdanid, 1 Marwanid, 1 Umayyad, 9 Samanid, 1 Uqaylid, 3 not identified), 6 Islamic imitations, 1 Hungarian, 1 Kingdom of Kiev, 29 Polish, 50 Scandinavian (41 Anglo-Scandinavian, 9 Danish), 48 blanks, 10 not identified.

Other silver objects: 6 ingots (2 D-shaped [1 complete], 2 hammered, 1 irregular, 1 not identified); 41 jewellery (6 arm-rings, 18 beads [2 complete], 11 earrings [4 complete], 2 neck-rings, 1 pendant, 1 ring-needle); 20 melts (1 drop, 6 irregular [1 complete], 13 Slavic/Scandinavian); 6 personal (1 kaptorga, 4 knife fittings, 1 weight [complete]); 43 scrap-silver.

Bronze objects: 1 jewellery (gilded pendant [complete]).

### Container

A large part of the hoard was preserved *in situ* in a Baltic Sea Ware vessel, approximately 15 cm high. The top part of the hoard was cylinder-shaped. Between hoard and vessel side was dirt and decomposed remains of organic material – perhaps the remains of a bag of leather or cloth that had contained a selection of objects.

### Context

The site was surveyed by metal detector because surface finds of Baltic Sea Ware indicated a Viking-Age settlement. The hoard was probably deposited between the western set of roof-bearing posts in a three-aisled house, possibly in two phases.

The site is located near the round church in Olsker on a ridge overlooking the Baltic Sea approximately 2 km from the coast. The subsoil is sandy clay. The bedrock is close to the surface, and several sections of bedrock are exposed. The excavation documented a settlement in several phases. The remains of three houses were identified in roughly the same location, and the hoard was likely deposited in one of these. The edge of another house is documented in the northern part of the excavation field, and the gable end of a fifth house was found in the eastern part of the excavation area. To the northeast, the treasure house was bordered by a distinctive fire layer in which silver objects were found. It is clear based on the context that these silver objects were not part of the hoard. The hoard had disturbed a grey layer with small lumps of yellow clay, which may have been a floor.

A distinctive concentration in a field to the north of the excavation area may represent traces of a wall. Many bronze objects are found in the same area. Few features are excavated, and practically all finds are from the plough soil. Four spherical bronze weights with flat poles were found near the house with the hoard and the fire layer. A mushroom-shaped feature with red-fired clay to the east of the treasure may represent an oven; however, the structure was not excavated.

References: Nielsen 1993, excavation report; Vennerdorf 2004, excavation report.

## **28. Rabækkegård, Knudsker parish**

Deposited: 913–990. Partly available. Discovered: 1874.

Part of find *in situ*: yes. Number of objects: 14. Total weight: Details not available.

### **Content**

Coins: 15 Islamic (1 Umayyad, 14 Samanid).

Bronze objects: 2 pendants [complete].

Glass objects: 29 beads [complete].

### **Container and context**

Silver coins and jewellery were found in a stone coffin covered by a mound. One of the dirhams is much older than the rest and has a suspension loop. Thus, the find has been interpreted as part of a jewellery set from a grave.

References: Galster 1980, no. 11; Svanberg 2003, no. 295.

## **29. Rosmannegård S and SV (BMR 3494), Knudsker parish**

Rosmannegård S

Deposited: 1002–1020. Well documented.

Discovered: 2008. Excavated: 2009. Excavated area: 412 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 308. Total weight: 357 g.

### **Content**

Coins: 5 Continental, 36 English, 120 German, 115 Islamic (4 Abbasid, 1 blank, 1 Buyid, 67 Samanid, 42 not identified), 7 Islamic imitations, 1 Polish, 1 Scandinavian (Anglo-Scandinavian), 1 blank.

Other silver objects: 2 jewellery (1 bead, 1 arm-ring); 20 scrap-silver.

Rosmannegård SV

Deposited: 997–1000/1005. Well documented.

Discovered: 2008. Excavated: 2009. Excavated area: 509 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 147. Total weight: 128 g.

## Content

Coins: 1 Byzantine, 1 Continental, 1 English, 11 German, Irish, 115 Islamic (4 Abbasid, 47 Samanid, 64 not identified), 2 Islamic imitations.

Other silver objects: 5 ingots (1 hammered, 3 rectangular [1 complete], 1 square); 1 melt (irregular); 1 jewellery (gilded pendant); 9 scrap-silver.

Rosmannegård S and SV

## Containers

No traces.

## Context

Two concentrations of silver were located around 50 m apart during metal detector surveys. The two sites were excavated at the same time by the Bornholm Museum. The excavation fields are named S and SV, which refer to their relation to the present farm, Rosmannegård.

Rosmannegård is sited roughly 1 km from the coast. Both sites are located on a hill which is bound to the north and west, and which slopes towards the stream, Rosmannebæk, which is now piped. The subsoil is of clay, with many stones in the SV field. Settlement remains were found in both fields.

**S:** Three sets of roof-bearing posts were recovered in the southern part of the excavation area. The house remains may have continued further west beyond the excavation border. An additional set of posts may represent another house or a replacement set. The gable of a house was also exposed in this area, and this also continues further to the west. The silver concentration was centred on the remains of a stone, roughly 10 m south of the house remains. However, coins were also found to the east of the house remains. The coins are dominated by German and English coins to the south, and Islamic coins to the east. In general, few objects were found in the features. One exemption was a pit containing a spindle weight, Baltic Sea Ware, unornamented settlement pottery, and a whetstone.

**SV:** The remains of several three-aisled houses lay on top of each other in a line across the excavation field. Two houses could be clearly identified. House III comprised three sets of roof-bearing posts and was likely exposed in its entire length. Three sets of roof-bearing posts were attributed to House IV, but the house continued farther to the west beyond the edge of the excavation. Two fragments of soapstone vessel were found in one of the posts. The eastern set of roof-bearing posts of a third house were recorded along the western edge of the excavation. More postholes were recorded in the area but were not connected to identified structures; one of these yielded a sandstone spindle weight, a horse tooth, animal bones, pottery, and wattle and daub. The silver concentration was located over the eastern part of House IV. In general, the field was characterised by large amounts of burnt wattle and daub, particularly around House III. In addition, the postholes of House III were filled with burnt wattle and daub and slag.

Reference: Pihl 2009, excavation report.

### 30. Rømersdal, Åker parish

Deposited: 960–970. Partly available. Discovered: 1811.

Part of find *in situ*: no. Number of objects: >12 objects. Total weight: 354 g.

#### Content

Coins: ‘some small kufic coins’\*

Other silver objects: Jewellery (2 arm-rings [complete], 1 arm-ring with 10 small rings attached [complete], 1 brooch\* [complete], 3 neck-rings [complete], 2 small rings [complete]); 3 symbolic objects (1 Thor’s hammer suspended with ring [complete], 1 Thor’s hammer and 3 small rods suspended with ring [complete], the lid of a silver box\*). (\*not preserved)

#### Container

Details not available.

#### Context

The hoard was found during ploughing.

References: Skovmand 1942, 130–132 no. 63; Galster 1980, no. 3; von Heijne 2004, no. 5.64.

### 31. Simblegård, Klemensker Parish

Deposited: after 1065. Partly available. Discovered: 1939.

Part of find *in situ*: no. Number of objects: 28. Total weight: 27.65 g.

#### Content

Coins: 27 German, 1 Scandinavian (Danish).

#### Container

No traces.

#### Context

The coins were found in a pile of gravel that came from a gravel pit situated west of the farm Simblegård.

References: Skovmand 1942, 168 no. 43; Galster 1980, no. 44; von Heijne 2004, no. 5.14.

**32. Skovgård (BMR 3360), Bodilsker parish**

Deposited: 1029–1040. Well documented.

Discovered: 2005. Excavated: 2006. Excavated area: 500 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 123. Total weight: 208 g.

**Content**

Coins: 13 English, 4 Islamic, 6 Scandinavian (Anglo-Scandinavian), 1 blank, 13 not identified.

Other silver objects: 2 ingots (1 faceted, 1 hammered); 10 jewellery (3 arm-rings, 1 arm/neck-ring, 1 bead, 1 earring, 1 finger-ring, 1 neck-ring, 2 pendants [1 complete]); 16 melts (4 drops, 5 irregular, 7 Slavic/Scandinavian); 22 scrap-silver.

**Container**

No traces. All silver objects were found in the plough soil and the exact deposition place was not located. However, one coin was found beneath a layer of 10 cm of burnt wattle and daub in a curved trench.

**Context**

Metal detector surveys were initiated because a punch-decorated gold ring of Germanic Iron Age date had previously been found in the field. The investigations located a concentration of silver in an area where burnt wattle and daub and Baltic Sea Ware were visible on the surface.

The site is located on a ridge delimited to the east by a small stream. The subsoil is clay with gravel inclusions. The remains of a row of posts probably represent part of an earlier settlement phase, since one of the posts yielded a decorated ceramic vessel from the Germanic Iron Age. This is confirmed by single finds such as a beak fibula and the gold ring. Otherwise, the pottery at the site was characterised by Baltic Sea Ware, and fragments of soapstone vessels, grindstone of mica slate, whetstone of Norwegian slate, a sandstone playing piece, and a rock crystal bead confirm the presence of a Viking-Age settlement. The site featured extensive fire- and cultural layers. The excavation report mentions at least five house remains, boundary ditches, and a boat-shaped feature with trenches in the excavation field. It is likely that the hoard was deposited in or near one of the burnt-down houses. Three lead weights and a fragment of a gold ingot were located south of the silver concentration.

Reference: Thorsen 2005, excavation report.

**33. Skovsholm (BMR 3709), Ibsker parish**

Deposited: 950–900. Partly documented.

Discovered: 2012. Excavated: 2012–2014. Excavated area: 580 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 156. Total weight: 226 g.

### **Content**

Coins: 152 Islamic (126 Abbasid, 1 Anti-Umayyad, 2 Kharijite, 23 Umayyad), 1 Islamic imitation, 2 Persian, 1 Persian imitation.

### **Container**

No traces.

### **Context**

During excavation the Islamic coins were found in the upper parts of the plough layer, while a Danish coin from the twelfth or thirteenth century was found in the lower parts. Thus, the hoard has likely been disturbed, perhaps in connection with the sinking of a well 5–6 years before the survey. The well was constructed by a spring located north of the distribution area of the coins. The farmer explained that when the well was drained, he had pushed the earthworks to the south and south-west of the well into a depression. Subsequent detector surveys to the west of the excavation field have resulted in Islamic coin finds in an area with burnt wattle and daub indicating settlement. This could be the original deposition area of the hoard, but further investigations are required to clarify this question.

The site is located at a plateau sloping towards the coastline south of the city of Svaneke in East Bornholm. Skovsholm is situated approximately 1.5 km south-east of the central site Sorte Muld. Skovsholm stream runs to the south of the site. The outlet of the stream into the Baltic Sea is flanked by two natural harbours, Thygehavn, north of the stream, and Årsdale, now a small village, south of the stream. Both sites also have access to fresh water sources from natural springs.

The remains of eight sets of roof-bearing posts were recorded in the excavated field. They likely form the remains of two outbuildings. Baltic Sea Ware was found in one of the postholes, indicating that the feature is not contemporaneous with the hoard. A trapezoidal pit house measuring approximately 14 m x 2–3 m was found just southeast of the postholes. The northern side comprises a heavy stone wall or foundation consisting of large boulders. The house has a paved floor that slopes from west to east. A trench runs parallel approximately 25–30 cm from the stone foundation for the entire length of the construction. Bones of cow, horse, sheep/goat, and seal were found in the pit. A preponderance of tarsal bones suggests that the site was used for skin processing. Three bone pins and an iron pin found in the structure may have been used to attach hides during preparation.

C-14 analysis of 2 animal bones (1 cow, 1 unidentified) from the bottom layer are dated to 730–970 (with 78.6 per cent probability for a date of 771–905) and 771–946 (with 89.3 per cent probability for a date of 771–899). Thus, the structure may have been in use when the hoard was deposited.

References: Laursen 2013a; Nielsen 2013, excavation report; Laursen & Ingvarsson 2014; Horsnæs 2014.

**34. Skovvang (BMR 2291), Nylars parish**

Deposited: 1030–1040. Well documented.

Discovered: 1995. Recovered: 1995. Excavated: 1996. Excavated area: 240 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 953. Total weight: 1,396 g.

**Content**

Coins: 4 Bohemian, 1 Byzantine, 3 Continental, 188 English (perhaps 2 Scandinavian imitations), 493 German (perhaps 1 Polish imitation), 3 Irish, 22 Islamic (8 Abbasid, 12 Samanid, 1 Spanish Umayyad, 1 Uqaylid), 3 Islamic imitations, 3 Italian, 3 Polish, 89 Scandinavian (87 Anglo-Scandinavian, 2 Danish), 8 blanks, and 20 not identified.

Other silver objects: 3 ingots (D-shaped [complete]); 11 jewellery (3 arm-rings, 1 arm/neck-ring, 1 neck-ring, 4 earrings, 1 pin); 46 melts (1 drop, 34 irregular [complete], 11 Slavic/Scandinavian); 39 scrap-silver.

**Container**

A large part of the hoard was preserved *in situ* in a vessel of Baltic Sea Ware type ornamented with parallel furrows.

**Context**

The hoard was deposited on a rocky plateau sloping towards the stream, Præstegård-såen. The only recorded feature in the field of excavation was a boulder pit. However, observations were made difficult because of the rocky subsoil. Only a small area was unearthed for the same reason. Few objects have been found in the area. Three bronze objects (a needle, a small fitting, and a heavily corroded equal-arm brooch) date to the Viking Age were found south of the deposition place. A few bronze objects and 2 spherical bronze weights with flat poles were found around 70 m northeast of the deposition place. The surveys indicate that the hoard was deposited on the outskirts of a settlement area.

References: Wagnkilde 1996e, excavation report; Hårdh 2013.

**35. Skærpingegård, Rø parish**

Deposited: 990. Partly available. Discovered: 1878.

Part of find *in situ*: yes. Number of objects: > 168. Total weight: 711 g.

**Content**

Coins: 1 Byzantine, 3 German, 31 Islamic (3 Abbasid, 2 Buyid, 26 Samanid), 1 Scandinavian (Hedeby).

Other silver objects: 6 ingots (1 D-shaped, 1 hammered, 4 rectangular); 60 jewellery (2 arm-rings [complete], 12 arm/neck-rings, 1 bead, 2 neck-rings [1

complete], 1 ring with 6 chains of which 3 have rings); 2 symbolic objects (1 cross [complete], 1 shield-shaped amulet); > 4 scrap-silver.

### **Container**

The silver was deposited in two pieces of hide with hair.

### **Context**

An employee found the hoard 31 cm below the surface, when he was digging in earth around a rock (or large stone).

References: Skovmand 1942, 117 no. 55; Galster 1980, no. 13; von Heijne 2004, no. 5.29.

## **36. Skørrebro<sup>7</sup> (BMR 3337), Åker parish**

Deposited: 939–990. Well documented.

Discovered: 2004. Excavated: 2005. Excavated area: 240 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 151. Total weight: 389 g.

### **Content**

Coins: 150 Islamic (148 Samanid, 2 not identified), 1 Islamic imitation.

### **Container**

No traces.

### **Context**

The site is located on a headland of approximately 1 x 1 km. To the west, the area is delimited by the stream, Læs Å, which runs through a large area which used to be wetland. To the east the area is bounded by another stream, Nydam Å. The two streams meet south of the Skørrebro site and flow into the Baltic Sea on the south coast of Bornholm. The site is located 6–7 km from the coast. The headland continues towards the north, where it is delimited by wetland areas to the west and steep slopes to the east. The subsoil is gravelly, then clay. The excavation revealed the western part of a three-aisled house, in the form of the remains of a set of roof-bearing posts between two parallel rainwater trenches. The concentration of silver was found to the immediate northwest of the gable. All pottery finds are of Baltic Sea Ware type with simple line ornamentation (and no furrows), dated by the excavator to the second half of the tenth century. A small gold disc was found after the excavation was completed.

Reference: Pihl 2005, excavation report.

**37. Slamrebjerg (BMR 1508),<sup>8</sup> Bodilsker parish**

Deposited: 1035–1040. Well documented.

Discovered: 1999. Excavated: 1999. Excavated area: 280 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 402. Total weight: 478 g.

**Content**

Coins: 2 Bohemian, 1 Byzantine, 11 Continental, 49 English (perhaps 1 Scandinavian imitation), 243 German, 16 Islamic (3 Abbasid, 1 Marwanid, 1 Umayyad, 8 Samanid, 3 not identified), 1 Islamic imitation, 2 Polish, 17 Scandinavian (Anglo-Scandinavian, perhaps 2 Polish imitations), 5 blanks.

Other silver objects: 4 ingots (2 D-shaped, 1 rectangular [complete], 1 not identified); 6 jewellery (3 beads [2 complete], 3 earrings); 28 melts (6 drops, 4 irregular, 16 Slavic/Scandinavian [1 complete], 2 not identified); 2 personal (weights? [complete]); 13 scrap-silver.

**Container**

No traces.

**Context**

A very clear concentration of silver by a three-aisled house indicates that the hoard was deposited in or near the house. The house was partly unearthed in the northern part of the field of excavation and remains likely continued to the east. The house features included the remains of three sets of roof-bearing posts and a roof-bearing post in the west gable. Baltic Sea Ware was found in the posts.

The hoard is deposited in the southwestern part of the prominent hill, Slamrebjerg around 500 m northeast of Bodils Church. An Iron-Age burial ground with graves from the Roman to Germanic Iron Age is situated north of the deposition area. Reconnaissance in an area approximately 100 m northeast of the silver concentration has yielded burnt wattle and daub, Roman Iron-Age pottery, undecorated settlement pottery, Baltic Sea Ware, and fragments of grinding stones. The area is delimited by a sandstone quarry to the south. The subsoil comprises sand and gravel-mixed clay covering granite bedrock.

Bronze objects, a scale arm, 8 weights (5 spherical bronze weights with flat poles, 1 disc-shaped bronze weight, and 2 lead weights), a small fragment of a gold ingot, and a bronze spoon with a central perforation with traces of gold were found to the east of the excavation field. The ingot and spoon indicate goldsmithing. In addition, 22 features within the excavated field have been interpreted as cremation graves from the Germanic Iron Age.

Reference: Wagnkilde 1999b, excavation report.

### 38. Smedegård NØ (BMR 3710), Østermarie parish

Deposited: after 1152. Well documented.

Discovered: 2012. Recovered: 2012. Excavated: 2013 and 2014. Excavated area: 2,491 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 120. Total weight: 4,235 g.

#### Content

Smedegård NØ, deposit I

Coins: 1 English, 10 German, 6 Scandinavian (Danish)

Other silver objects: 4 ingots (2 curved, 1 D-shaped, 1 plate [4 complete]); 15 jewellery (7 beads [3 complete], 1 chain, 3 chain fittings [complete], 1 finger-ring, 2 loops [complete], 1 neck-ring); 7 melts (1 circular, 3 flat, 2 oval [6 complete], 1 irregular); 1 personal (fitting [complete]); 3 symbolic (2 relic crosses [1 complete], 1 cross); 40 scrap-silver.

Smedegård NØ, deposit II

Other silver objects: 2 ingots (rectangular [complete]); 6 jewellery (1 arm-ring [complete], 1 brooch, 1 chain [complete], 2 finger-rings [complete], 1 neck-ring [complete]); 23 melts (3 irregular [1 complete], 20 oval [complete]); 1 symbolic (relic cross [complete]).

Gold objects: 1 jewellery (finger-ring [complete]).

#### Containers

The hoard was deposited in two containers but are interpreted as one deposition.

Deposit I was preserved partly *in situ* and deposit II was completely undisturbed by agricultural activity. The objects in deposit I were tightly packed in a wooden box made of ash tree. The box was probably deposited with the bottom up. Deposit II was likely wrapped in strips of birch bark. A separate parcel of bark with 20 melts was found inside. The box and birch-bark parcel were deposited in two separate pits.

#### Context

A partly *in situ* hoard was found using metal detectors in 2012. The Bornholm Museum immediately recovered the hoard, and investigations of the area were initiated a few days later. The investigation resulted in another deposit less than 1 m from the first hoard. Deposit II was also recovered in a soil block. Thus, both deposits were excavated in conservation facilities. Kiel University conducted geophysical investigations by magnetometer of the area in 2024. Funded by the Augustinus Foundation, the area was excavated by the Bornholm Museum in collaboration with the National Museum in 2014. The extensive investigations mean that Smedegård can be characterised as the only hoard site where excavations provide a near complete picture of the settlement structure.

The site is located approximately 6 km from the coast on a slightly sloping hilltop with boundaries to the south and east by a now piped stream. The terrain rises towards the north. The subsoil is clay.

The site is situated a few hundred metres from Højlyngen – a rocky area of approximately 120 km<sup>2</sup> with heather and brushwood on central Bornholm. Højlyngen is a marginal area and in historic times has been used for pasture and peat extraction. An east/west-oriented house of 12.5 m was unearthed around 75 m west-northwest of the hoard. The distance between posts was 2.8 m at the eastern gable and 3 m at the western gable. The roof-bearing posts were asymmetric, which indicates that some of the posts had been standing on stones. Several stone traces were recorded in the area. Baltic Sea Ware was found in the postholes of the eastern gable, an iron knife in the northern posthole, and a fragment of a rotary grinder of mica slate in the southern posthole. An east-west trench north of the house may be a boundary ditch for the settlement. A fire layer containing large amounts of burnt grain was located 5–6 m from the hoard depositions. The layer covers at least two postholes and a pit. The features may constitute the remains of a small building for grain storage. Macro-fossil analyses demonstrate that the composition of grain in the postholes of the house is consistent with the composition of grain in the fire layer. Grain found in one of the roof-bearing postholes is C-14 dated to 1217–1387, while grain from the fire layer is dated to 1045–1280 with 82.6 per cent probability for a date of 1147–1290.

References: Pihl 2013, excavation report; Pihl 2014, excavation report; Nygaard 2014, conservation report; Grinder-Hansen *et al.* 2013; Pedersen *et al.* 2014; Henriksen 2016, macrofossil survey report.

### **39. Smørbygård (BMR 1491), Knudsker parish**

Deposited: 1042–1060. Well documented.

Discovered: 1998. Excavated: 1999. Excavated area: 280 m<sup>2</sup>.

Part of find *in situ*: yes. Number of objects: 114. Total weight: 155 g.

#### **Content**

Coins: 6 Bohemian, 1 Continental, 5 English, 91 German, 1 Islamic (Abbasid), 1 Italian, 1 Polish, 1 not identified.

Other silver objects: 1 jewellery (finger-ring); 1 personal (knife fitting); 3 scrap-silver.

#### **Container**

No traces.

**Context**

A concentration of silver was located by metal detectors in 1998. Reconnaissance surveys in the area had earlier resulted in finds of Baltic Sea Ware and fragments of grindstone. The silver concentration was located around a pit, where 7 coins were found *in situ*. The remains of the pit were 4 cm deep and 40 cm in diameter. The hoard was deposited on a northwest-facing slope overlooking the sea by Rønne on southeast Bornholm. A quarry to the south and east of the site has destroyed the original terrain. The subsoil is a tough yellow clay. Several postholes and pits were found in the excavation area; nine postholes, four pits and a ditch were investigated. The remains of 2 x 2 sets of roof-bearing posts were found north of the hoard. The features may constitute the remains of an outbuilding. A slate whetstone was found in one of the postholes, while sherds of Baltic Sea Ware were found in a few other postholes. Since no traces of a regular dwelling house were found, the area is interpreted as the outskirts of a settlement. This is confirmed by finds of bronzes, 2 spherical bronze weights with iron cores, and 2 weight arms in the area to the north of the excavation area. A fragment of a finger-ring with engraved crosses was found north of the excavation area. A similar ring was deposited in Smedegård NØ, deposit II. The ring is dated to the twelfth century and suggests that activity in the area occurred later than the hoard.

Reference: Wagnkilde 1999a, excavation report.

**40. Store Frigård I and II (BMR 1711), Østermarie parish****Store Frigård I**

Deposited: after 1106. Partly available. Discovered: 1928.

Part of find *in situ*: yes. Number of objects: 1,326. Total weight: 1,478 g.

**Content**

Coins: 2 Bohemian, 110 English, 1,006 German, 2 Hungarian, 3 Irish, 23 Islamic (Samanid), 1 Italian, 1 Roman, 74 Scandinavian (11 Anglo-Scandinavian, 61 Danish, 2 Norwegian), 52 blanks (square), 27 not identified.

Other silver objects: 4 ingots (2 hammered, 2 rectangular); 7 jewellery (2 arm-rings [complete], 3 beads, 1 finger-ring [complete], 3 pendants (1 lunula, 1 gilded ornamented silverplate, 1 ring with two coins suspended with loops [1 complete, 1 fragmented])); 2 personal (fittings); 1 symbolic (circular pendant with engraved figure with raised hands and halo [complete]); 9 scrap-silver.

**Container**

The hoard was deposited in a coarse hand-built and partly turned vessel of Baltic Sea Ware type decorated with horizontal furrows; only the lower part is

preserved. A low hand-built and partly turned bowl with flared side functioned as a lid. The inside of the bowl was decorated with a spiral line.

### **Context**

The hoard was found during levelling work in the farm's the courtyard. The farmer recognised the hoard the second time it was hit by the soil mover and silver objects appeared in the soil.

References: Skovmand 1942, 165–166 no. 37; Liebgott 1978, no. 11; Galster 1980, no. 48; Jensen *et al.* 1992, no. 37; von Heijne 5.135.

### **Store Frigård II**

Deposited: 996–1000/1005. Partly documented.

Discovered: 1998. Excavated: 1998. Excavated area: 450 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 245. Total weight: 353 g.

### **Content**

Coins: 4 Continental, 190 English, 36 German, 3 Islamic (2 Abbasid, 1 not identified), 4 Scandinavian (Anglo-Scandinavian).

Other silver objects: 1 ingot (rectangular); 1 jewellery (neck-ring); 3 melts (1 drop, 2 irregular [1 complete]); 3 scrap-silver.

### **Container**

No traces.

### **Context**

Seventy-five silver objects were found within 100 x 100 m. The area with the highest density of silver was excavated by the Bornholm Museum in 1999. The silver objects were distributed on a hill sloping to the north, east, and southwest. The subsoil consists of fine clayey sand with sections of coarse gravel. The hoard was distributed in an area of 10,000 m<sup>2</sup>. The remains of three sets of irregularly placed roof-bearing posts were recorded in the subsoil, which may represent the remains of a heavily disturbed house, perhaps some kind of outbuilding. The excavation area also revealed large pits with pottery at the top. Neither postholes nor pits were excavated. Due to the conformity of the coins, it is likely that this is a single deposit, but the context of the hoard must be characterised as completely destroyed by agricultural activities.

References: Wagnkilde 1999c, excavation report; Moesgaard 2006.

#### **41. Store Gadegård, areas 1 and 3 (BMR 1978), Pedersker parish**

Deposited: 1010–1020 and 1037–1040. Partly documented.

Discovered: 1995–1996. Excavated: 1997–1998. Excavated area: 1,395 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 50 and 193. Total weight: 46 and 237 g.

#### **Content**

##### **Area 1**

Coins: 4 Continental, 3 English, 12 German, 12 Islamic (3 Abbasid, 4 Samanid, 5 not identified), 3 Islamic imitations, 5 not identified.

Other silver objects: 2 symbolic (Thor's hammers [complete]); 4 melts (2 drops, 1 irregular [complete], 1 Slavic/Scandinavian); 5 scrap-silver.

##### **Area 3**

Coins: 4 Bohemian, 15 Continental, 8 English, 99 German, 8 Islamic (4 Abbasid, 1 Umayyad, 1 Samanid, 2 not identified), 1 Islamic imitation, 1 Polish, 2 Scandinavian (1 Anglo-Scandinavian, 1 Danish), 2 not identified.

Other silver objects: 1 ingot (hammered); 25 melts (3 drops, 6 irregular [2 complete], 1 round [complete], 15 Slavic/Scandinavian); 1 personal (pin of belt buckle); 11 scrap-silver.

#### **Container**

No traces.

#### **Context**

An archaeological investigation was initiated, since detector surveys had resulted in two concentrations of silver in the area. A concentration of silver was found north of the field of excavation. The silver distribution is likely the remains of a hoard and is included in the analysis as Store Gadegård area 1; however, the area has not been subject to archaeological investigations.

Store Gadegård is located approximately 1 km northwest of St Peders Church. The site is, like Dammegård (catalogue: 8), part of a larger settlement area, which has been known since 1989, where the outline of longhouses with curved walls were visible from the air in the field of grain.

The site is located on a slight ridge. The subsoil consists of well-drained light soil. The area contains traces of intense settlement activities, with many features like postholes and pits, as well as finds ranging in time from the Stone Age and Roman Iron Age to the Middle Ages. The purpose of the 1998 excavation was to unearth and excavate a 33 m longhouse of Trelleborg type with curved walls and sloping posts. This is the only house at the site that has been investigated. The other postholes were only recorded on the surface. It is therefore impossible to determine how many houses there are traces of, and dating is not possible. The

scattered silver objects constitute one or perhaps two hoards. It is not possible to determine whether the hoard(s) were deposited in the investigated house. Therefore, it can only be stated that the hoard(s) were deposited in a settlement area. Uncertainty about the phases of the settlement and an uneven registration of the bronzes, for example, make it difficult to use the very large number of finds to shed light on the context of the hoard(s).

References: Nielsen 1997, excavation report; Wagnkilde 1998, excavation report.

#### **42. Store Klintegård (BMR 2758), Vestermarie parish**

Deposited: 1023–1040. Well documented.

Discovered: 1999. Excavated: 1999. Excavated area: 420 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 86. Total weight: 315 g.

##### **Content**

Coins: 17 English, 27 German, 2 Islamic, 1 Scandinavian (Danish), 8 not identified. Other silver objects: 1 ingot (D-shaped); 1 jewellery (bead [complete]); 25 melts (1 drop, 3 irregular, 20 Slavic/Scandinavian [1 complete], 1 not identified); 3 scrap-silver.

Gold objects: 1 ingot (ridge-shaped); 1 jewellery (bead); 1 symbolic (processional cross); 1 scrap-gold (perhaps part of processional cross).

##### **Container**

No traces.

##### **Context**

The area is located on a southwest sloping plateau overlooking the Baltic Sea.

The subsoil is a stony clay with gravel. The remains of a set of roof-bearing post, two rainwater trenches, and a roof-bearing gable post were unearthed during the excavation and make up the western part of a three-aisled house.

The roof-bearing posts were not excavated. The rainwater trenches were sectioned. The southern trench yielded finds and was water sieved. The finds included a large number of pottery fragments, a slate grindstone, and half of a glass bead. The ceramics consisted of undecorated settlement pottery and Baltic Sea Ware ornamented with waves and horizontal furrows. One sherd had a mark on the base shaped like a tree. The distribution of silver and gold objects were primarily found south of the west gable of the house. This indicates that the hoards were deposited in or near the house. A rainwater trench indicating the remains of another house were recorded in the southern part of the excavated field.

Reference: Wagnkilde 1999d, excavation report.

#### **43. Tornegård, Rutsker parish**

Deposited: 1047–1060. Partly available. Discovered: 1846.

Part of find *in situ*: yes. Number of objects: 117. Total weight: Details not available.

##### **Content**

Coins: 1 Bohemian, 6 English, 84 German, 1 Islamic (Samanid), 1 Italian, 16 Scandinavian (2 Anglo-Scandinavian, 14 Danish).

Other silver objects: 3 jewellery (1 arm-ring?, 1 finger-ring [complete], 1 neck-ring); 3 scrap-silver.

##### **Container**

The silver was deposited in an ox horn which was damaged during agricultural activity.

##### **Context**

The hoard was found when ploughing a field.

References: Skovmand 1942, 163 no. 33; Galster 1980, no. 36; Jensen *et al.* 1992, no. 12; von Heijne 2004, no. 5.25.

#### **44. Tyskegård (BMR 2150), Vestermarie parish**

Deposited: 997–1000/1005. Well documented.

Discovered: 1876. Rediscovered: 1993–1994. Excavated: 1996. Excavated area: 420 m<sup>2</sup>.

Part of find *in situ*: no. Number of objects: 82. Total weight: 315 g.

##### **Content**

Coins: 82 English.

##### **Container**

No traces.

##### **Context**

In 1876 the farmer from Tyskegård found 34 Æthelred II *Long Cross* pennies within an area of 1 x 1 m close to a very large stone in his field. A coin was missing when the hoard was handed in to the Royal Collection of Coins and Medals in Copenhagen. The coins were recorded with detailed descriptions; however, weights and secondary treatment were not noted. As was customary in

the 1800s, 21 coins were exchanged as duplicates. Thus, only 12 coins were preserved in the Copenhagen collection (Galster 1980, 48–51). In 1993 the fields of Tyskegård were surveyed by metal detectors. The surveys resulted in the discovery of 10 coins. Further surveys the following year produced 18 coins. Archaeological excavations in 1996 uncovered 300 m<sup>2</sup> to the subsoil and a further 120 m<sup>2</sup> to about 5 cm above subsoil.

The excavation resulted in the discovery of 20 coins within an area of approximately 20 x 30 m. No other finds or features were recorded. The coins were distributed across a sloping plateau. The subsoil comprises clay with the bedrock close to the surface. Some rock sections were characterised by being blasted. The location is approximately 300 m from the Kannekegård/Tyskegård hoard (catalogue no. 12).

References: Wagnkilde 1996d, excavation report; Moesgård 2006.

#### **45. Unknown location, Bornholm**

Deposited: after 913. Partly available. Discovered: before 1910.

Part of find *in situ*: Details not available. Number of objects: 7. Total weight: 19.82 g.

#### **Content**

Coins: 7 Islamic (1 Abbasid, 6 Samanid) (all coins are pierced, some have suspension loop).

Other silver objects: 9 jewellery (beads [complete]).

Bronze objects: 1 gilded trefoil brooch [complete], 6 gilded pendants [complete].

#### **Container**

Details not available.

#### **Context**

In 1910 the Museum of Stralsund acquired a find from Bornholm. Details about the find-spot and circumstances were not available. The objects were transferred to the National Museum of Denmark in 1928. The objects are probably grave goods, since the composition of objects resembles no. 28 Rabækkegård.

References: Brøndsted 1936, 212; Galster 1980, nr. 12; von Heijne 2004, nr. 5.140.

#### **46. Vellensbygard, Nylars parish**

Deposited: 996–1000/1005. Partly available. Discovered: 1811.

Part of find *in situ*: no. Number of objects: 86. Total weight: 437.5 g.

**Content**

Coins: 1 English, 16 Islamic (not identified), 29 German.  
Other silver objects: 2 jewellery (chains); 28 fragmented silver.<sup>9</sup>

**Container**

Details not available.

**Context**

The hoard was found when ploughing the field; the area around it was surveyed by the farmer.

References: Skovmand 1942, 130 no. 62; Galster 1980, no. 16; von Heijne 2004, no. 5.91

**47. Østre Rosendalegård, Rutsker parish**

Deposited: 1047–1060. Partly available. Discovered: 1846.  
Part of find *in situ*: Number of objects: >28. Total weight: 44.1 g.

**Content**

Coins: 1 English, 24 German, 2 Scandinavian (Danish), 2 not identified.  
Other silver objects: ‘some small silver fragments of which one is likely part of an arm-ring’.

**Container**

Details not available.

**Context**

Found in a mound.

References: Skovmand 1942, 163 no. 34; Galster 1980, no. 37; Jensen *et al.* 1992, no. 7; von Heijne 2004, no. 5.26.

**48. Åbo (BMR 1831), Østerlarsker parish**

Deposited: 1029–1040. Well documented.  
Discovered: 2010. Excavated: 2013–2014. Excavated area: 480 m<sup>2</sup>.  
Part of find *in situ*: yes. Number of objects: 70. Total weight: 208 g.

## Content

Coins: 3 Continental, 18 English, 22 German, 11 Islamic (10 Abbasid, 1 Samanid), 1 Scandinavian or Polish imitation.  
 Other silver objects: 1 jewellery (bead [complete]); 13 melts (5 irregular [1 complete], 8 Slavic/Scandinavian).

## Container

No traces were recorded. However, the hoard comprises coins and melts, and one complete bead. It is possible that the bead was part of a closing mechanism and that the hoard was deposited in a bag.

## Context

Detector surveys in 2010 and 2012 yielded 29 silver objects from an area of 12 x 12 m. Excavations in 2013 and 2014 established that a hoard had been deposited in a house. Part of the hoard, 21 coins, a melt, and the bead, were found *in situ* in the remains of a roof-bearing post of a 15 x 5.5 m house with four sets of roof-bearing posts and a partly preserved rainwater trench. Small fragments of pottery, some bones, and charcoal were found in the postholes and trench. Water sieving resulted in few burnt grains. A conical spindle weight in red slate and a slate grindstone were deposited in the southwestern roof-bearing posthole. The objects likely compose a house offering.

The excavated settlement remains are located on a south-facing slope and were probably part of a larger settlement area stretching farther uphill. The subsoil is clay with sections of sandy clay. The area covered remains of both earlier and later settlements. The 'hoard-house' was stratigraphically earlier than a Viking-Age longhouse with curved walls with double rows of posts which were partly unearthened, and waste pits with many animal bones comprising 39 per cent cattle, 29 per cent horse, 18 per cent sheep/goat, and 13 per cent pig. A large pit contained iron slags indicating iron extraction at the site was later than the 'hoard-house' and earlier than the Viking-Age house.

References: Laursen 2013b; Ingvardson & Nielsen 2015; Nielsen 2019, excavation report; Traberg 2019; Vilhelm 2019.

## Notes

- 1 All objects are fragmented unless otherwise stated.
- 2 Classification is based on photos.
- 3 Time of deposition is uncertain cf. Appendix 1.
- 4 No. 14.79 is not used in Galster's list of coins (Galster 1980).
- 5 The silver objects were not available for study, and therefore have not been included in charts.

- 6 When recorded at the National Museum in Copenhagen the hoard was mistakenly described as located near the megalith near Hallebrønshøj in Bodilsker parish. This error is repeated in Galster 1980.
- 7 The site is also named Bagergård.
- 8 In excavation report named Bdr. Bjergegård.
- 9 The silver is not described by Skovmand.

# Appendix 1

## Divergent coins and closing coins

This appendix contains a discussion and interpretation of chronologically divergent coins found at excavated hoard sites included in the survey. A summarised description of each site is presented in the catalogue. Charts illustrating the accumulation horizons of the hoards as well as distribution maps are available via the online Supporting Materials: [www.routledge.com/9781032647623](http://www.routledge.com/9781032647623).

### **Ahlesminde – *tpq* 1070**

The Ahlesminde hoard shows a chronological gap late in the accumulation horizon. The latest coin found *in situ* in the Ahlesminde hoard is an Edward the Confessor *Hammer Cross* type minted 1059–1060. The coin is split in two by a modern break. One part (x57) was found in the pit where the hoard was deposited, while the other part (x56) was moved a few metres with the plough. The site's latest coin (x58), struck during the reign of William the Conqueror, minted 1070–1074, was found very close to the deposition place and is most likely the closing coin of the Ahlesminde hoard.

### **Døvregård – *tpq* 1028**

During the recovery of the hoard in April 1997, the remains of the vessel in which the hoard was deposited were numbered x1, the silver concentration in the base level of the vessel was labelled x2, while silver objects in the plough layer in an area of 8 x 13 m around the deposition place were all numbered x3. The latest coin at the site, an Archbishop Poppo and Henry III coinage from Trier dated 1028–1039. It belongs to the group of coins with x3 and was found close to the deposit place, but its exact location cannot be established. The silver at Døvregård is distributed in a limited area, and it is likely that the hoard was located relatively soon after it was hit by the plough. The accumulation horizon of Døvregård shows several phases, with the closing coin lying alone. None of the *in situ* coins are from the latest accumulation phase. This may be because they were deposited at the top of the vessel in which the hoard was deposited and therefore all have been scattered by the plough. The latest phase is completed by 3 Duke Henry V coins minted in Regensburg and Salzburg 1018–1026. The chronological gap between the Duke Henry V coins and

the Archbishop Poppo coin is thus potentially only a few years. The distribution and chronological profile of the coins makes it likely that the Archbishop Poppo coin is the closing coin of the hoard.

### **Dammegård – *tpq* 983**

The Dammegård hoard was found in an area near St Peders Church with extensive traces of settlement remains. Detector surveys and archaeological investigations produced 189 silver objects within an area of around 20 x 20 m. The deposition place was not preserved, but the uniform composition and dense concentration of finds indicates that the objects were originally deposited in a hoard. The area has been surveyed with metal detector before and after the hoard was located. The area displays several find concentrations with bronzes, gold, silver, and weights. The area has been divided into four sections by detectorist J. Simonsen. The most recent finds have GPS coordinates, other objects are mapped according to a local coordinate system, while others are simply described as being found in, for example, section 3. The less precisely mapped objects are not included in the distribution map, which makes it incomplete (Figure 7.12). The concentrations probably reflect several settlement phases. The surface finds do not provide a clear picture of the activities, e.g. a beak brooch (x394) from the late fifth to sixth century, 2 oval plate brooches with an S-shaped animal (x395–96) from the sixth century, and an animal-shaped plate brooch (x397) from the seventh century are scattered in section 4, while another oval plate brooch (x374) was found near the deposition area of the hoard (Figure 7.12) (the used jewellery chronology is presented in Jørgensen & Jørgensen 1997, 28–35).

In the southern part of section 2 finds of Viking-Age character have been located, for example as a fragment of an end-plate of a silver neck/arm-ring (x391) and an Otto-Adelheid penny (x6). However, the area also yields a small equal-arm bronze brooch (x157) from the second half of the fifth century (Jørgensen & Jørgensen 1997, 28–35). On the other hand, the gold object mapped immediately to the south in section 1 is a finger-ring from the end of the twelfth century (Figure 7.12). The dense settlement remains, and the plentiful detector finds make it difficult to delineate the Dammegård hoard from the other objects located at the site. There are surprisingly few other finds mapped around the concentration of dirhams (Figure 7.12: grey dots in section 3). The dense concentration of dirhams suggests a recently disturbed hoard. Further, considering the distance between the dirham concentration and the other find concentrations indicating Viking-Age activities, it is likely that exclusively silver finds near the dirham concentration should be included in the hoard. The few mapped bronzes are excluded with reference to the discussion on bronzes in section 3.1.1.

Except for a German Otto-Adelheid penny minted 983–1035, all coins consist of dirhams, with a relatively unified chronological profile. The German coin creates a chronological gap to the latest Islamic coin dated 961/962. The Kongens Udmark hoard is a clear example of dirham hoards in which few late German coins are included late in the accumulation phase. From the primary distribution area of

the Dammegård hoard and in a streak to the north, there are several coins that have clearly been dragged by the plough from the deposition place to the north, which is also noted in the report by excavator F.O.S. Nielsen (1994b). The German coin (x170) is the last coin in this series and is located at the border of the hoard's distribution area. Thus, it is possible that the Otto-Adelheid penny is to be included in the hoard and constitutes the closing coin.

### **Englyst – *tpq* 997?**

The Englyst hoard is very difficult to interpret. After 1999, the ploughing direction of the field was changed. Thus, the objects have been ploughed in both an east/west direction and in a north-northeast/south-southwest direction (section 3.1). The coins found at the site have an unusual chronological profile. There is a chronologically scattered group of Islamic coins and a possible Persian coin with dates ranging from the seventh to the tenth centuries. This is followed by a chronologically unified accumulation phase with six Æthelred II *Crux* types minted 991–997, six Otto-Adelheid pennies, Hatz type IV minted 995–1035, and 12 Æthelred II *Long Cross* types minted 997–1003. In addition, there is a Conrad II coin minted in Tiel 1027–1039 and a Sweyn Estridsson rune coin (Hauberg 1900, type 31) minted c. 1066–1074 (x35).

The large chronological gap between the two late coins (Conrad II and Sweyn Estridsson) and the other coins from the site makes it unlikely that the two late coins are part of the hoard (cf. discussion in section 3.1.2). Further, the two late coins were found in an area with many bronzes and finds of burnt wattle and daub and pottery indicate that there was a settlement in this area (catalogue: 12). Thus, it is possible that the Conrad II and Sweyn Estridsson coins are related to these activities. However, the same area has yielded two unidentified continental coins, a fragment of an Abbasid dirham minted 818–819, a Boleslev II coin minted in Prague 967–999, and an Otto III coin minted in Cologne 983–1002. These coins fall in line with the chronological profile of the other coins in the hoard. The prominent content of Islamic coins suggests an early date, while the mixed chronological profile of the hoard suggests a later date (Figure 3.11). The hoard is labelled with a *tpq* date of 997 in charts and tables, but the closing coin of the hoard cannot be determined with the current evidence.

### **Kannikegård/Tyskegård – *tpq* 1014**

The objects are scattered over two plots of land on either side of a field boundary at the Kannikegård/Tyskegård site, as suggested by the name. Thus, the dispersal of the hoard must have occurred before the boundary was established. Except for an early diffuse phase with German and Islamic coins, the coins show three phases of accumulation, one dominated by Otto-Adelheid pennies of Hatz type III minted 983–1015, one dominated by Otto-Adelheid pennies of Hatz type IV minted 995–1035, and finally one with a *tpq* of 1000, which Magdeburg coins dominate.

As is the case with the Skovvang hoard, a long unified chronological profile is terminated by a small group of later coins, and as with Smørbygård hoard, one of these is significantly later than the rest. The latest coin recorded at the Kannikegård/Tyskegård site is a Sweyn Estridsson coin (Hauberg 1900, type 4) minted 1047–1060 (x73). Unlike the late coin of the Smørbygård hoard, x73 is located far from the primary distribution area of the hoard. Since the area contains traces of late Viking-Age settlement (catalogue: 17), the coin may originate from other activities at the site and is not interpreted as the closing coin. Hence, the closing coin of the Kannikegård/Tyskegård hoard is an anonymous coin minted in Speyer 1014–1039 (x15).

### **Lillegærde – *tpq* 1048**

During recovery of the hoard an area of approximately 4 x 8 metres was excavated in layers by hand. The area was surveyed by metal detector between each layer, and the finds were marked on a map without any indication of numbers. The marked objects are located a maximum of 4 metres from the deposit place, and they are most likely part of the hoard. No further archaeological investigations have been carried out on the site. Concentrations of burnt wattle and daub and pottery suggest that the area contains several house sites. The area has been surveyed using metal detectors on several occasions, both before and after the recovery of the hoard. Unfortunately, the finds from these surveys have not been mapped, and it is difficult to determine with certainty whether the objects should be included in the hoard. The most recent detector finds at the site have GPS coordinates, but it has not been possible to establish their location in relation to the deposition place. The hoard shows a closed final accumulation horizon of 14 Scandinavian, English, and German coins with a *tpq* in the 1040s. Of these, 11 coins were found either in the hoard vessel or a maximum of 4 metres from the deposition place. It is therefore likely that the latest of these, an Edward the Confessor penny minted 1048–1050, is the closing coin of the hoard. A Bishop Dietrich obol, minted in Verdun 1078–1085 (x106), has been found at the site. The coin has not been mapped and is not interpreted as part of the hoard.

### **Pæregård – *tpq* 1047**

Excavations of the Pæregård site documented that some silver objects were deposited in a context outside the hoard. According to the excavation report, a distinctive fire layer contained coins and jewellery fragments, and coins were also found in a posthole/floor layer. These observations prove that not all silver objects at the site are associated with the Pæregård hoard. The investigations uncovered settlement traces in several phases. The uncovering of a wall ditch at the northern boundary of the field and detector finds, including large quantities of iron nails and rivets, show that the settlement continues north of the excavation field. The hoard was likely deposited between a set of roof-bearing posts in a house. The distribution of coins

located during the excavation was also concentrated in the area north of the excavation field. Based on the contextualised finds which, with certainty, were not part of the hoard and the distribution of the coins, the head of excavations M. Vennersdorf argues that most of the coins found are not attributed to the hoard. This is despite a very similar composition of coins in the hoard and plough layer finds (2004). The excavation report shows that the number of contextualised silver objects located outside the hoard is limited to four: a silver bead (x103) found in a fire layer; a Sweyn Estridsson coin minted in Lund 1047–1060 (x129) found in pit; a Henry II coin minted in Dortmund 1014–1024 (x170) found in the lower part of a floor layer; and a Otto-Adelheid penny minted 983–1000 (x222) found in a wall ditch.

There is a discrepancy between the text of the report and the finds list, because the report mentions coins and items of jewellery from the fire layer, while the list only mentions one silver bead from the fire layer. The hoard was located and recovered in 1993. These investigations yielded 12 coins and 1 piece of jewellery. When the 1993 finds are included in the distribution analysis, the vast majority of the silver objects found by metal detector are located north of the deposit. There is a notable absence of coins immediately south and southwest of the deposit. This is due to modern conditions, because the field here is bounded by a road and has not been ploughed to the south. Based on the limited number of contextualised finds, the distribution of the silver objects, and the similarity in composition between plough layer coins and *in situ* coins, it is likely that most silver objects found at the Pæregård site was originally deposited in the hoard. Thus, a Sweyn Estridsson coin minted in Lund 1047–1060 is interpreted as the closing coin of the Pæregård hoard (section 3.1.2). Following the excavation, detector surveys produced 3 coins (x286, x290, x294), a weight (x304), and 8 bronzes (x300, x302, x303–7, x309) approximately 50–150 m southeast of the deposition place. Due to the anomalous distribution and distance to the deposition place, these finds are not included in the hoard.

### **Rosmannegård SV – *tpq* 997**

It is difficult to provide a complete picture of the chronological profile of the Rosmannegård SV hoard. Of the site's 133 coins, 120 consist of fragments. The fragmentation makes the identification difficult, and only 53 coins can be dated within a 40-year range. The site has mainly yielded Islamic coins (89 per cent), primarily minted in the first half of the tenth century, among the identified coins. In addition, a small number of Western European coins have been found on Rosmannegård SV. The western European coins are grouped in two accumulation phases in the second half of the tenth century. The latest phase is grouped around coins with a *tpq* in the 990s.

The latest coin found at the site is an Archbishop Pilgrim and Conrad II coin minted in Cologne 1027–1036 (x545). The coin is located at the border of the hoard's distribution area. At the turn of the eleventh century, there is a marked change in the Bornholm hoards from a dominance of Islamic coins to a

dominance of Western European coins (Figure 3.11). If x545 is the closing coin of the Rosmannegård SV hoard, the hoard would be the only one dominated by Islamic coins with a *tpq* after 1000. Considering the coin's peripheral location, it is unlikely that x545 is part of the hoard. Instead, and English *Long Cross* penny minted 997–1003 is interpreted as the closing coin of the Rosmannegård SV hoard.

### **Skovgård – *tpq* 1029**

More than half (45 out of 73) of the coins at the Skovgård site are fragments, which makes precise identification difficult. For the same reason, only 37 coins are included in the chronological analysis. This may be the reason for the relatively dispersed profile of the hoard. The large proportion of unidentified coin increases the likelihood of chronological gaps, because part of the chronological profile is missing. The late chronological gap at the site is between an English Canute the Great *Short Cross* penny minted 1029–1035 and a Sweyn Estridsson coin (Hauberg 1900, type 6) minted in Lund 1047–1060 (x41). Most of the coins from the Skovgård site consist of Western European types (50 out of 73), and there is a significant proportion of coins minted in the first decades of the eleventh century. This is contrary to, e.g., the Rosmannegård SV hoard, in which a Sweyn Estridsson coin is not included as the closing coin. Further, the Sweyn Estridsson coin at the Skovsgård site (x41) was located at the centre of the coins' distribution area. The Sweyn Estridsson coin was located very close to an Æthelred II *Long Cross* minted in Oxford 997–1003 (x1), which is central to the chronological profile of the hoard. Several factors suggest that x41 may be the closing coin of the hoard. As discussed in section 3.1, the dating and composition of the other hoards are included in the interpretation of the hoards' deposition horizon, and the Skovgård hoard differs significantly in two aspects from the other hoards deposited after 1047. Firstly, only about 20 per cent of the coins can be identified as German, and secondly, more than 30 per cent of coins are dirhams (Islamic coins including imitations) (Figure 3.11). The significant discrepancies make it unlikely that the hoard was deposited after 1040, and the Sweyn Estridsson coin is therefore rejected as the closing coin; instead a Canute the Great *Short Cross* penny minted after 1029 (x24) is interpreted as the closing coin.

### **Skovvang – *tpq* 1030**

The latest coin found at the Skovvang site is an anonymous Frisian coin (x134) minted in the second half of the eleventh century (Ilisch 2000, no. 22). Unfortunately, the coin is not mapped. Further, the unprecise date of the coin makes it unsuitable for chronological purposes. When the Frisian coin is excluded, the Skovvang hoard shows no late chronological gaps and the closing coin is a Saxony penny [*Sachsenpfennig*] minted in Meissen 1030–1050 (x177).

**Skørrebro – *tpq* 938**

Most of the coins at Skørrebro were found within an area of around 15 x 15 metres, indicating the approximate location of the hoard. The hoard shows a uniform chronological profile terminating in 917, with a few later coins forming two chronological gaps. Among the later coins is a dirham imitation (x26) with the date 296 AH (AD 908/909). G. Rispling has identified the coins and suggests that it was minted around 930, because a related imitation was deposited in the Triberga hoard (Hulterstad parish) on Öland with *tpq* 930–931. The dating is uncertain. The four latest coins were all located within the primary distribution area of the silver. The site appears very ‘clean’, and apart from Islamic coins and pottery, the only objects found were a small gold disc, a bronze needle, a fragmented bronze buckle, and an un identified lead object. Based on the unambiguous character of the site and the association of the latest coins with the primary distribution area, an al-Radi, Nasr ibn Ahmad dirham minted in al-Shash (Taskjent) in Uzbekistan 938/939 is interpreted as the closing coin of the hoard.

**Slamrebjerg – *tpq* 1035**

In addition to the deposited hoard, the site contains traces of Viking-Age settlements and cremation graves from the Germanic Iron Age. The coins are located before, during, and after excavation. Inexperienced private detectorists were used during the excavation (Wagnkilde 1999b\*, 3). Many coins were therefore not recognised during the layer-by-layer clearance of the topsoil, and a large number of coins was recorded in the cleared piles of earth, or in the refilled soil of the excavated area after excavation. It is not possible to pinpoint the location of these coins closer than within the excavation area. These inaccuracies do not alter the fact that an overwhelming concentration of finds in the northeastern part of the field indicates the depositional area of the hoard. The Slamrebjerg hoard exhibits three distinct accumulation phases: 1) coins with a *tpq* in the 970s and 980s, 2) coins with a *tpq* in the 990s, and 3) coins with a *tpq* around the year 1000. The accumulation horizon is terminated by a more chronologically dispersed phase when the *tpq* dates of the coins gradually increase by a few years, ending with a small chronological gap between two Conrad II coins minted 1027–1039 (x2, x433) and the latest coin minted in Bardowick 1035–1055 (x357). The Bardowick coin was located close to the main distribution area of the hoard, and in conjunction with the small chronological gap, it is interpreted as the closing coin of the hoard.

**Smørbygård – *tpq* 1042**

Chronological gaps and the closing coin of the Smørbygård hoard are discussed in section 3.1.2.

**Store Klintegård – tpq 1023**

A high degree of fragmentation and many pecks and bends have made the identification of the Store Klintegård coins difficult. The chronological profile builds on 36 out of 63 coins. As previously stated, the likelihood of chronological gaps increases in hoards in which a large proportion of the coins are unidentified. The three latest coins from the site are a Canute the Great *Short Cross* penny minted in London 1029–1035 (x105), a Sweyn Estridsson coin (Hauberg 1900, type 13) minted in Lund 1047–1060 (x134), and the latest, a Bishop Henry I minted 1067–1076 in Speyer (x14). The latter is centrally located in the find distribution immediately south of the remains of a house which may be the hoard's original deposit place (catalogue: 41). The Sweyn Estridsson coin was located at the border of the silver concentration, while the Canute the Great coin is located in a separately defined silver concentration approximately 50 metres south of the hoard, which is interpreted here as a potential new hoard (Store Klintegård II). Almost 40 per cent of the coins are English, which is unusual for hoards deposited after 1035 (Figure 3.11). Slavic/Scandinavian melts make up the largest group of finds in the hoard by weight. This makes the composition of the hoard similar to hoards deposited in the 1020s (Figure 3.12). It has been argued in section 3.3 that Slavic/Scandinavian melts are a chronologically significant element. Thus, it is unlikely that the Bishop Henry coin is the closing coin of the hoard. Instead, an English *Pointed Helmet* type penny minted 1023–1029 is interpreted as the closing coin. This interpretation is in line with Horsnæs and Märcher's interpretation of the deposition date of the hoard (Horsnæs *et al.* 2013, 57).

**Store Gadegård, area 3 – tpq 1037**

The Store Gadegård site exhibits traces of intense settlement activities and a relatively scattered distribution of objects. This makes it difficult to determine with certainty whether the objects derive from one or two ploughed-out hoards or other activities (catalogue: 40). Apart from an early component of Islamic coins, the coins from the site display a unified chronological profile which makes it likely that most of the objects originate from a disturbed hoard. The silver objects are distributed in two concentrations, which is probably partly because excavations were carried out in these areas, and therefore a more in-depth search for objects was carried out in these areas (catalogue: 40). The site contains a Count Philipp von Heinsberg coin minted in Cologne 1167–1197 (x158), which is 130 years later than the second latest coins on the site; 2 Bohemian Bretislav I coins minted in Prague 1037–1055 (x212 and x590).

The Count Philipp von Heinsberg coin (x158) was located at the centre of the easternmost silver concentration, but due to the very large chronological gap, it is unlikely that the coin is part of the hoard. There is also a chronological gap between the two Bohemian coins and the third latest coin in the area: a Conrad II minted in Duisburg 1024–1039 (x640). One Bretislav I coin (x212) was located in the centre

of the westernmost silver concentration, while the precise location of the other Bretislav I coin (x590) is missing. Bretislav I coins are rare on Bornholm and are only found at two other sites, Enegård (*tpq* 1040) and Tornegård (*tpq* 1047). It is therefore likely that the coins were imported at the same time. Due to the small chronological gap and the central position of x212, the Bretislav I coins are interpreted as the closing coins of the hoard.

# Appendix 2

## Traces of trade and crafts

This appendix summarises trade and crafts activities on excavated hoard sites. The information is drawn from excavation reports. More detailed descriptions of the sites are presented in the catalogue, where references to the excavation reports are also presented.

### **Buddegård**

Weights and scales: 1 bronze weight.

### **Dalegård**

Textile production/hide processing: 1 iron needle, 1 bronze needle.

Bronze casting: 2 ingots, casting residue.

Weights and scales: 3 bronze weights.

### **Dammegård**

Textile production/hide processing: 3 bronze needles.

Iron processing: 6 slags, 1 slag of 800 g, 1 slag of 250 g with sintered and glazed surface with few fragments of wattle and daub.

Bronze casting: 2 ingots, 1 slag, 2 melts, 1 rod, 1 moulding cone.

Gold/silver/bronze smithing: 1 matrix.

Wood crafts: spoon bit, 2 fragments of iron axes.

Weights and scales: 4 bronze weights, 4 lead weights, 1 scale arm.

### **Døvregård**

Textile production/hide processing: 1 spindle weight.

Iron processing: 6 slags, 2 possible ingots.

Bronze casting: 5 melts.

Weights and scales: 1 bronze weight, 1 lead weight.

### **Englyst**

Textile production/hide processing: 4 spindle weights, 2 bronze pins.  
Bronze casting: 1 ingot, 1 slag, 2 melts, 1 rod, 1 plate with hammer marks.  
Weights and scales: 8 bronze weights.

### **Frostegård**

Textile production/hide processing: 2 spindle weights.  
Iron processing: 5 slags, 1 possible ingot.  
Weights and scales: 1 bronze weight.

### **Gyldensgård SV**

Textile production/hide processing: large number of loom weights, 22 iron teeth/  
needles, 2 bronze needles, 2 semi-processed sandstone spindle weights.  
Iron processing: 2 slags, iron flakes.  
Bronze casting: 1 ingot, 4 melts (1 possible faulty casting), 1 rod, 1 crucible.  
Weights and scales: 5 bronze weights, 1 lead weight.

### **Kannikegærdet**

Textile production/hide processing: 1 spindle weight.  
Bronze casting: 3 melts, 1 rod, 1 casting residue.  
Gold/silver/bronze smithing: 1 matrix, 1 patrix.  
Weights and scales: 5 bronze weights.

### **Kannikegård/Tyskegård**

Textile production/hide processing: 1 iron needle.  
Bronze casting: 2 melts, 1 moulding cone.  
Weights and scales: 3 bronze weights.

### **Kobbegård**

Textile production/hide processing: 1 iron needle.  
Iron processing: 2 slags.  
Bronze casting: 1 melt, 1 rod.  
Bone and antler processing: processed bones, 1 bone needle, 7 comb fragments.  
Weights and scales: 1 lead weight.

### **Lillegærde**

Bronze casting: 1 melt.  
Gold/silver/bronze smithing: 1 gold rod.

Wood crafts: 1 possible iron axe.

Weights and scales: 7 bronze weights, 1 lead weight.

### **Munkegård**

Textile production/hide processing: 2 bronze needles, 1 bone needle, 1 bone pin, 1 iron needle, 1 spindle weight, 3 fragments of loom weights.

Iron processing: 10 slags.

Bronze casting: 3 ingots, slags, 2 rods.

Gold/silver/bronze smithing: glazed sand, cut solid gold wires.

Wood crafts: 1 iron axe.

Bone and antler processing: 1 semi-processed horn handle.

Weights and scales: 4 bronze weights, 5 lead weights, 1 middle part of scale, 3 scale arms.

### **Munkerup**

Textile production/hide processing: 2 spindle weights, 1 fragment of loom weight, 1 scissors, 3 iron needles.

Iron processing: 3 slags.

Weights and scales: 2 bronze weights.

### **Nordre Stensebygård**

Textile production/hide processing: 2 iron needles, 1 iron awl, 2 fragments of spindle weights, more than 7 fragments of loom weights.

Iron processing: 15 small slags, iron flakes.

Bronze casting: 2 small fragments of ingots, 1 melt.

Gold/silver/bronze smithing: bottom of a hearth, fragments of burnt wattle and daub from the mantle of an oven, 1 tube-shaped object (possible forceps to the crucible), 1 fragmented crucible, 1 fragmented crucible with partly melted coin, silver drops.

Weights and scales: 3 bronze weights, 1 lead weight.

### **Nørremølle**

Textile production/hide processing: 1 loom weight of 1,630 g, 1 bronze needle.

Weights and scales: 1 bronze weight, 1 lead weight.

### **Nørre Sandegård**

Textile production/hide processing: 1 spindle weight, 1 semi-processed spindle weight.

Bronze casting: 1 melt, 2 rods.

Weights and scales: 4 bronze weights, 3 scale arms, 1 scale needle.

### **Pæregård**

Textile production/hide processing: 1 spindle weight, 1 bronze needle.  
Bronze casting: 1 ingot, 1 drop.  
Weights and scales: 6 bronze weights, 1 scale arm.

### **Rosmannegård S**

Textile production/hide processing: 1 spindle weight.  
Iron processing: 1 moulding cone, 1 partly melted unidentified object.

### **Rosmannegård SV**

Textile production/hide processing: 2 spindle weights.  
Bronze casting: 2 ingots, 1 partly melted unidentified object.  
Wood crafts: 1 chisel.  
Weights and scales: 4 bronze weights, 2 lead weights.

### **Skovgård**

Textile production/hide processing: 2 iron needles, 1 fragment of loom weight.  
Iron processing: 2 slags.  
Bronze casting: melts (bag of).  
Gold/silver/bronze smithing: 1 fragment of gold ingot.

### **Skovsholm**

Textile production/hide processing: feature used for skin/hide processing, 3 bone pins, 1 iron pin.  
Weights and scales: 1 bronze weight.

### **Skovvang**

Weights and scales: 2 bronze weights.

### **Skørrebro**

Textile production/hide processing: 1 bronze needle.  
Gold/silver/bronze smithing: 1 small gold disc, 1 patrix.

### **Slamrebjerg**

Iron processing: 1 slag.  
Bronze casting: 1 melt.  
Gold/silver/bronze smithing: 1 small spoon with central perforation and traces of gold, 1 fragment of gold ingot.

Weights and scales: 6 bronze weights, 2 lead weights (or spindle weights), 1 scale arm.

### **Smedegård NØ**

Textile production/hide processing: 1 possible iron needle.

Iron processing: 1 slag of 33.2 g.

### **Smørbygård**

Textile production/hide processing: 2 spindle weights.

Bronze casting: 1 ingot

Weights and scales: 2 bronze weights, 2 lead weights, 2 scale arms.

### **Store Frigård**

Iron processing: 6 slags.

Bronze casting: 7 melts, 2 rods, 1 moulding cone.

Weights and scales: 4 bronze weights, 1 scale arm.

### **Store Gadegård, area 1–2**

Textile production/hide processing: 2 spindle weights, 1 bronze needle.

Iron processing: more than 3 kg slag, a possible iron bloom of c. 500 g, 10 iron ingots, bog iron.

Bronze casting: 1 ingot, 1 melt (150 g), 1 moulding residue.

Weights and scales: 5 bronze weights, 5 lead weights.

### **Store Gadegård, area 3**

Textile production/hide processing: 3 spindle weights, 5 bronze needles, 8 iron needles, 1 iron teeth/pin, 1 bone pin, 1 scissors, 1 loom weight, a 6.8 cm-long cylinder-shaped needle-holder with loop.

Iron processing: slags.

Bronze casting: 1 ingot, 24 melts, 1 rod.

Weights and scales: 6 bronze weights, 2 lead weights.

### **Store Klintegård**

Textile production/hide processing: 2 bronze needles.

Bronze casting: 1 melt.

Weights and scales: 2 bronze weights.

### **Åbo**

Textile production/hide processing: 1 bronze needle, 3 bone pins, 1 spindle weight.

Iron processing: 2 slags.

Bone and antler processing: 1 rib with triangular decorations.

# References

## Abbreviations

<b>Aarb.</b>	Årbøger for Nordisk Oldkyndighed og Historie
<b>Dbg.</b>	Dannenberg 1876–1905
<b>CNS</b>	Corpus nummorum saeculorum IX–XI qui in Suecia reperti sunt
<b>Comm., NS</b>	Commentationes De Nummis Saeculorum IX–XI. In Suecia Repertis, Nova Series
<b>Häv.</b>	Hävernicks 1935
<b>JDA</b>	Journal of Danish Archaeology
<b>MLUHM</b>	Meddelanden från Lunds Universitets Historiska Museum
<b>NNUM</b>	Nordisk Numismatisk Unions Medlemsblad
<b>NNÅ</b>	Nordisk Numismatisk Årsskrift
<b>SNT</b>	Svensk Numismatisk Tidsskrift

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# Index

Note: Numbers in *italics* indicate figures, and numbers in **bold** indicate tables, on the corresponding pages.

- Aa Church 229, 232–233
- Abbasid: Caliphate/dynasty 120–122, 214; dirhams/coins 63, 103, 107, 102–108, 145, 213, 242
- Absalon, Bishop (tomb), ring parallel 198
- accumulation: events 161–168; strategies 237–240
- accumulation horizon 33, 60; biographical perspective 62; chronological gaps 34–35, 52, 55–56; coins, distinction 55; defining 71n3; division 62; dynamic accumulation horizon 189–190, 192; hoards, accounting 35; hoards, elucidation 61–62
- accumulation phases 62, 161–168; hoard biography 238
- active hoard 20; defining 28; dynamic accumulation horizon, presence 190; interpretation 14, 160, 186, 189, 192
- actor-network theory (ANT) 26
- Adam of Bremen, chronicle 220, 228
- Æthelred II: *Crux* penny 147; *Crux* type // *Long Cross* type 99; English *Crux* pennies (Store Frigård II hoard) 142; *First Hand* pennies (Egenvang hoard) 149; *Helmet*-type minting 97; *Last Small Cross* coins 99; *Long Cross* coin, folding 144; *Second Hand* type 94
- Africa *see* North Africa
- agency: conditioning 27; possession 29; presence 26, 30, 74; providing 62; question 26; silver agency, possession 29, 218
- Agerbygård: central site 212; geographical location, continuity/rupture 216
- Ahlesminde hoard (Catalogue no. 1, 244): belt buckle, silver 40, 51, 136, 150, 161; English coins, batches (accumulation) 99; gold dinars/coins 39, 40, 102, 201–202; gold, presence 52; gold ring 40, 136, 150, 201–202; *in situ* hoards (found) 34, **53**; internal organization 161; leather bag 161, marked ring, discovery 136; personal items/imprint 51, 161; square plates 138–139
- Ahmad ibn Isma'il 106, 107
- Åker 1 runestone 229, 232
- Alexander the Great, drachma 54
- al-Madhi reign, coined silver (production) 102
- al Mahdiya (Tunisia), dinars 40
- amber: bead production 190; objects, presence 33; processing 191–193, 196
- amulet 54; bronze amulet (Kannikegærdet) 43; captorga (square amulets) 223 carved plate, discarding 140; coin-amulet, example 58; coin, human transformation 57; function, integration 224; lead amulet, design 139–140; maternity amulet 139–140; maternity amulet, interpretation 139; miniature bronze horse, comparison 202; ritualised practice 140; rune amulet, comparison 139; shield amulet (Holmegård) 57; usage 82, 135
- Anglo-Saxon Chronicle*: attack, Olaf (leadership) 112; Danegeld payment, record 94, 97; expeditions, hoards (link) 217–218; raids, mention 97; tribute 94
- Anglo-Scandinavian coinage, initiation 234
- Anglo-Scandinavian coins: deposition 122; blank, pendant 138, 139; Egenvang hoard 145; exchange 115; import (trade) 234, 238; inclusion 112; die-identical

- (Bornholm hoards) **113**, 219; relation/network analysis *116*, 208, 222
- Anglo-Scandinavian settlement (Cottam), lead weights (discovery) 193
- Anno II of Cologne (Archbishop), denarius *40*
- antler work 190; execution 191–192; occurrence 193; traces 192, 196
- Arab-Sassanid drachms 104, 122n2
- archaeological contexts: (definition) 84–85; hoard functions (relationship) 240–242
- archaeology, context 13–15
- aristocratic burial, burial gift 189
- arm-ring 22; Bornholm/Gotland type, identification 119; discovery (Kannikegærddet site) *45*; end knobs 167; foil arm-ring, decorations 118; fragment, Buddegård hoard 29, 118–119; fragment, Egenvang hoard *144*; fragment, Nordre Stensebygård hoard 181; fragment, Pæregård hoard 118–119; Krappervu hoard 82; motifs 44–45; Scandinavian types, dominance 118; silver arm-ring *44*; silver arm-ring, rosette motifs 196; twisted arm-ring, Smedegård NØ II hoard 85, 167; twisted clasps, placement 139
- Arrhenius, Birgit 22
- Årdsdale, fishing 213
- artefacts, dispersal 36
- Asser Rig 21
- bags, coin type composition (Blykobbegård hoard) *163*
- balance scales 222, 239; accuracy 192; arm (Slamrebjerg site) 48; display 241; finds, extensiveness 208; lead weights, usage 193; object type, examination 39; silver weighing evidence 193, 196; trade activity, relationship 203; trade indication 198; usage 33–35
- balance weights, usage 25, 33
- Baldringe hoard 88
- Balkans, ornaments (production) 117
- Baltic countries, ornaments (production) 117
- Baltic-Finnish fire-steel *43*, 50–51, 218
- Baltic Sea, Roman gold coins 4–5
- Baltic Sea Ware 170–171, 176–181, 205
- Bandlund (Gotland), weights analysis 192
- Bardowick coins, minting 291
- bark: birch bark strips, container **158**, 159, 167; bundle (Smedegård NØ) *85*; parcel, melts (discovery) 167; wrapping 85, 169
- Bavaria: coins 88; coins, minting 89; Germany division 87, 88
- bead production 196; *see also* glass
- belt buckle, niello-decorated silver: Ahlesminde hoard *40*, 51, 136, 150, 161; dating (Viking Age) 41
- bend(s) 124; marks, documentation 82; signature bends 142; types (distribution), coins (Store Frigård II hoard) *143*
- bending 77, 140–145; analysis 124; coin usage 81–82; commonness 140; form 28; impact 144; objective record 81; patterns, analysis 238; procedure, usage 144; recording 76; types, coins (number/distribution) **141**; types, differences 142–143; usage 145, 153–154
- bent coins: pecks, combination 80; proportion, variation *128*
- Berlok bead: discovery 50; fragment *49*
- biographical chronology 60–62
- biography: long 73; course 74; hoards 17, 56–62; perspective 99; stages, focus 236; total biography 61–62; uncovering/interpretation 81
- birch bark *see* bark
- Birka: trading hub 213; weights analysis 192–193
- Birka grave: Berlok bead, discovery 50; coins, usage 104–105; contents 24–25; Finnish objects, presence 218; gender perspective 25; scales, discovery 39; trading site importance 104
- Bishop Egin of Lund, Bornholm conversion 228
- Blackburn, Mark 17
- blanks 140; anonymous blanks 134; coin blanks 51, 138–139; pecks, combination 134; square blanks 136–138
- Blekinge: German coins, occurrence 88–89; homogenous economic region 18; melts, presence 187–188; Västra Skällö hoard (composition) 33
- Blood Egil *see* Ragnarson
- Blykobbegård hoard (Catalogue no. 2, 245): agricultural impact 36; coin-dominated hoards 207; coins, selection 169–170; coins, types (composition) *163*; containers **157**; depositions division *162*; distribution, aerial photograph 37;

- distribution areas 51; English coins, batches (accumulation) 99; excavation reports 181; *in situ* hoards (found) 34, **53**; parts, division 161; square plate (pierced/suspended/pecked) 138, 139, 140; Skovvang, relationship 115;
- Blykobbegård (site): content/context/container 245
- bogs: bog-finds, weapons (ritual destruction) 80; bog ore (Store Gadegård, area 1–2) 195; objects, discovery 12
- Bohemian coins 153; fragmentation 126; rarity 134
- Bolbygård hoard (Catalogue no. 3, 245–246): closed contexts 34; container **158**; *in situ* hoards (found) 34, **53**
- Bolbygård (site): content/context/container 245–246
- Bolin, Sture 16–17
- Bondegård hoard/site (Catalogue no. 4, 246): content/context 246
- bone work 190; execution 191–192; occurrence 193; traces 192, 196
- Borgeby hoard (Scania), composition 33
- Bourdieu, Pierre 11, 27–30
- Box-shaped brooches 22
- bracelet: hoard presence 188, 215; inclusion 215; rosette motif, repetition 45; silver bracelet, discovery 150–151, 196
- bracteates: characterisation 22; German bracteates 167; gold bracteates (personal ornament) 39
- Brandsgård: Dorestad imitations 111; information 156; Knudsker parish, contents/containers/contexts 246–247
- Brandsgård hoard (Catalogue no. 5, 246–247): coin composition 112; direct imports 121; Dorestad imitations 111–112, 121, 217; Hedeby coins 63; Rabækkegård hoard, relation 238; transitional phase 63
- Brandsgård (site): content/context 246–247
- breakages, analysis exclusion 125
- Britain coasts, Viking raids 92–93, 120, 134
- broken objects, circulation data classification 75–84
- bronze casting: crafts, commonness 191–192, 195; evidence 203; fire-based craft 191; indicators 195; rarity 192, 193; traces, presence 209
- bronze pendant 47
- bronzes: amulet (Kannikegærdet) 43; distribution (Kannikegærdet) 44; forging 193–194; gilded bronze pendant (Pæregård) 46, 47; gilded bronze ring (Englyst site) 202; miniature bronze horse (Englyst site) 202; objects, presence 33;; plough layer **38**; presence 36
- bronze weights 222, 239; depositional context 51; finds, extensiveness 208; silver weighing evidence 193; trade indication 198
- brooch: box-shaped brooches 22; central brooch deposit 29, 31; deposition (Buddegård hoard) 118; disc-on-bow brooches 22; equal-arm brooch 257; gilded trefoil bronze brooch 108; oval brooch 167, 168; plate brooch 46, 286; tortoise brooches 39; *see* trefoil brooch
- Brunnby hoard (Scania), circular bronze pendants (discovery) 109
- Buddegård hoard (Catalogue no. 6, 247–248): bronze weight, depositional context 51; central brooch deposit 29–31; brooch, deposition 118; categorisation 29; deposition 184, 188; deposition (Kannikegærdet hoard) 215; distinct content 152; female sphere, association 152; import horizon 109; import incident 214; interpretation 216, 242; location 182; objects, selection 188; Samanid dirhams, minting 109, 215; symbolic capital 29; trefoil brooch 119, 144–145, 150, 215, 241
- Buddegård (site): content/container/context 247–248
- burial ground/site 48; empty area 231; heathen grave-sites, usage 21; Munkegård 21, 231; Nordre Grødbygård, 21, 230; Nordre Grødbygård, Slavic silver beads (presence) 223–224; proximity 230–231; Runegård 21, 223, 230; Slamrebjerg 21, 39, 230
- burnt stones/animal bones, cultural layers (Lejre) 198
- burnt wattle and daub 31, 42, 172–175, 195, 206; concentration 179–180
- Burström, Mats 23–24
- Byzantine coins 161; deposition, marking amount 135; nicks, presence 79; rarity 161
- Byzantium 87

- Caliphate 87; Abbasid/Samanid Caliphate, coins (minting) 103; Bornholm hoard object 4; coin production, ebb/flow 102; Eastern Europe, contact (break) 105; hoard deposition 120; internal conflicts, impact 102; Islamic dirhams, production 26–27; minting output 104; minting volume, contrast 106; mint output, decrease 120; northern regions, trade 108; Samanid Caliphate (coinage), Bornholm (link) 110; Samanid Caliphate, dirham imports 121; Samanid Caliphate, dirhams (silver content) 109–110; Samanid Caliphate, Europe (trade links) 105; silver stream, flow 26–27
- Canute the Great: coinage 115; coins, presence (implication) 100; dies, *Rex Daenor* inscription 114; English payment 94; *Pointed Helmet* 99; power/reign 99–100; *Quatrefoil* 99; *Short Cross* penny, chronological gap 290; throne, assumption 122; tribute 97
- Canute the Holy, conflict 205–206
- capital, types (Bourdieu) 27
- captorga (square amulets) 223
- Carolingian coins, identification 87–88
- Carolingian Empire, contacts 104–105
- Carolus-Dorestad imitations, usage 112
- Carolus monogram, motif imitation 111–112
- carved plate, discarding 140
- catastrophic events 205–207
- Celtic coins, discovery 80
- cemeteries: Ladegård cemetery 5; Munkegård cemetery, organisation 231; Rø cemetery, identification 5
- central brooch deposit (midtspændedepot) 24, 29; examples 150–151; female hoards, grave inventory (link) 22; interpretation 31; morning gifts, examples (question) 22–23; thematic hoards, relationship 33
- central site: characterisation 222; first-generation central sites 212; second-generation central site, interpretation 230, 232; Sorte Muld central site, royal residence location 226; Sorte Muld central site, Skovsholm (proximity) 270
- ceramic clay, preparation 215
- ceramic fragments (Rosmannegård S) 176
- ceramic vessel: container function 159; hoard deposition 84–85, 159–160, 169; Lillegærde hoard 160; graves 230; rosette stamps 199
- character (Bornholm hoard identification) 31
- Charlemagne, Dorestad coins 111–112
- chest *see* stone chest
- chisel marks 82–83, 145–146; addition 153; analysis 124; display 187; fragmentation 76, 145; purpose, clarity (absence) 82–83
- Christianisation: Bornholm 230–233; Nordic countries 5; premise 6; process 6, 20–21, 228, 230; spiritual economy, connection 21; view, simplification 20–21
- Christianity: conversion 228; deposited hoards, absence (relationship) 233; earthly goods, need (disappearance) 20; impact 19–22, 225–235; integration 239; introduction 20–21, 228, 232; patriarchal monogamy 24
- Christian motif 49
- Christians: burial ground 21; cemeteries, location 229
- chronological distance 52
- chronological gap 33–25, 52–56; (overview) 53
- chronological profile 52–56; Islamic coins (Bornholm hoards) 107; Gyldensgård SV 100
- chronology (Bornholm hoard identification) 31, 62 *see* biographical chronology
- circular bronze pendants, discovery 109
- circulation 73; data, analysis 124
- circulation traces 62, 73; actions, representation 81; application 152–153; display 188; objects 57, 77; recording 114; role 124; types 124; value 76
- clipped coins 78
- closing coins 35, 54–56, 285–293
- coin-jewellery: coin banks, selection 138–139; coin transformation 148; deposition 135, 150; examples 135; proportion, inclusion 152; repair 146–147; transformation 149
- coin-like pendant 150
- coin-lists 7
- coins: Abbasid dirham(s), 63, 102–103, 145; Anglo-Scandinavian coin (Egenvang hoard) 145; Anglo-Scandinavian coins, die-identical (Bornholm hoard) 113; Anglo-Scandinavian die-duplicates,

- hoard links (map) 116; bending 81–82; bent coins, proportion (variation) 128; biography 13; blanks 51, 138–139; Bornholm hoards, coin profile 64; character 52; circulation traces display 188; closing coins 285; coin-amulet, example 58; complementary weight distribution 132; composition (Brandsgård hoard) 112; *Crux* pennies, representation 100; *Crux* types 62; divergent coins 52–56, 285; English coins 92–102; English coins, distribution (Bornholm hoards) 96; English coins, geographical distribution (Bornholm hoards) 95; English coins (types) distribution 101; English *Crux* pennies of Æthelred II (Store Frigård II hoard) 142; English *Crux* penny (Egenvang hoard) 145; English mints/coin types, relation (Bornholm hoards) 98; *First Hand* pennies of Æthelred II (Egenvang hoard) 149; folded coins 141–144, 142, 143; fragmented coins, percentage 127; fragmented coins, proportion (variation) 128; function, integration 224; German coins 88–92, 89–90, 93; German coins, production data analysis 88–92; German Otto-Adelheid penny (Skovvang hoard) 147; gold coins (Ahlesminde) 39–40; gold coins, presence (Ahlesminde) 39–40; Gyldensgård SV hoard, coins (chronological profile) 100; high fragmentation rate 128; hoards, *in situ* discovery 53; human transformation 57; Islamic coins 102–111; Islamic coins, deposit distribution (Bornholm hoards) 103; Islamic coins, dominance 64; Kongens Udmark hoard, German coins (composition) 91; Krusegård hoard, coins (discovery) 182; *Long Cross* pennies, representation 100; looped/pierced coins 150; marked coins, proportion (variation) 128; minting (Bavaria) 89; Nørremølle hoard, coins (deposition) 165; notches 54; number/distribution, bending (presence) 141; Otto-Adelheid pennies (Harz area) 89–90; Otto III coin, test actions traces 81; pierced coins 74; piercings, examples 147–148; production data classification 73–75; rolled coins 82, 141; Samanid coins, proportion (decrease) 110; Scandinavian coins 111–115; selection (Blykobbegård) 169–170; *in situ* preservation (Smørbygård hoard) 179; suspensions 149; suspensions, proportion 151; tenth-century coins, nicks (examples) 79; transformation 148–149; types, composition (Blykobbegård hoard) 163
- Cologne: Archbishop Anno II, denarius coin 40; coins, presence/circulation 88–89, 91–92; Otto III coin 81; Otto III coin, minting 287
- Cologne/Bornholm, exchange (intermediaries) 92
- complete jewellery, examples proportion (Bornholm hoards) 129
- complete neck-ring (Smedegård NØ deposit II) 169
- Conrad II minting 292
- consumption, narrative 58
- containers 155, 157–158, 244; traces, absence 84
- content 244; Bornholm hoard identification 31
- context 211, 244; feature context 85, 170–190; immediate context 84–85, 156–170; site context 85–86, 190–200
- Corpus nummorum saeculorum IX–XI qui in Suecia reperti sunt* (CNS) 76, 80
- craft activities: hoard sites 193–198; identification 191–198
- crafts, traces 294
- cross, suspension (separation) 167
- crucible: holding, tong (usage) 196; melted coin, presence 181, 195, 262; remains 262
- Crux* coins/pennies: distribution 97; imitations 112; dominance 97, 121–122; interpretation (Store Frigård II hoard) 142; presence 94; representation 100; types 99, 102, 112
- Crux/Second Hand* combination 94
- cultural capital 26–30
- cultural markers 39; emphasis 6–7; interpretation 51
- cupellation: hearth (Fröjel workshop) 191; hearth, excavation 75; process 187, 234; result 75
- currency, usage 74
- cut 124
- Dalegård hoard (Catalogue no. 7, 248): coin-dominated hoards 207; discovery

- 175–176; distribution, aerial photograph 42; distribution areas 51; English coins, batches (accumulation) 99; *in situ* hoards (found) 34, 53
- Dalegård (site): content/container/context 248; fragmented gold/weight set 41–42; trade/craft, traces 294
- Dalshøj II settlement, activity level (increase) 212
- Dammegård hoard (Catalogue no. 8, 249): brooch fragments, deposition 118; fragmented coins, proportion 203; fragmented material, proportion 207; parallel 215; Samanid dirhams, dominance 63; scrap-silver, presence 63
- Dammegård (site): brooch fragments 119; deposition 176; distribution map 204; divergent coins/closing coins 286–287; content/context/container 249; silver objects, concentration 176; trade/craft, traces 294
- Danegeld (protection money): collection 97; English mints, relationship 143–144; form 100; hoard accumulation 102; interpretation 94–95; payment 94, 97, 99, 112; payment, transfer 142; representation 82; royal payment 94; size, increase 97
- Danelaw 92–93; coins, proportion 94; contact spheres 143–144; hoard acquisition 222; Scandinavia, link 99; transactions 97
- Danmarks middelalderlige skattefund* (Denmark's medieval hoards) 12, 60–61
- data: broken objects, circulation data classification 75–84; circulation data, analysis 124; coins, production data classification 73–75; deposition data, analysis 155; deposition data, classification 84–86; distribution data 73; German coins, production data analysis 88–92; ingots, production data classification 73–75; jewellery, production data classification 73–75; silver flows, production data analysis 87
- daub see burnt wattle and daub
- De danske skattefund* (Skovmand) 12
- Denmark, Viking culture 5
- deposited hoards (absence), Christianity (relationship) 233
- deposition data: analysis 155; classification 84–86
- deposition horizon 60, 91; phasing (Bornholm hoards) 66–67
- depositions: Blykobbegård hoard, deposition division 162; decline 225–235; Egenvang hoard, deposition 180; event 60; practices, ritual aspect 20–21
- deposit time, calculation 20
- detector-archaeology 1–2, 125–126; prerequisite 15
- Deventer, minting 55, 112
- Dieckmann, Janina 21
- die-combination 76
- die-identical Anglo-Scandinavian coins/imitations 29, 112, 115; analysis 219, 242; network analyses 222–223; relationship 122, 219
- die-identical coins: acquisition 115; deposition 114–115
- Die Schatzfunde Gotlands der Wikingerzeit* (Stenberger) 12
- dies, *Rex Dænor* inscription 114
- dirhams: 855–890 minting (Bornholm hoards) 106; 950/960 minting 110; Abbasid dirham, 804/805 minting 145; circulation period, minting time/deposition time difference (calculation) 130; imports, Bornholm elite (relationship) 211–216; imports, Samanid Caliphate origin 121; pierced/looped Umayyad dirham 108; pierced/suspended Samanid dirhams, deposition 109; Saffarid dirham (Kannikegærdet hoard) 148; Samanid dirham 14, 147; silver content, decline (Samanid Caliphate) 109–110
- Disc-on-bow brooches 22
- disc-shaped fibula (Smedegård NØ II hoard) 85
- distribution data 73
- distribution map (Dammegård) 204
- divergent coins 52–56, 285
- DNA analysis 25, 58
- Dobrovol'skij, Igor Georgievič 83
- Dorestad coins 111–112
- Dortmund, minting 55, 112, 289
- dowry: payment 22; precious metals 22; system 23
- drachma: Alexander the Great minting 54; Persian Sassanid drachma 147; Tabaristan drachma, knowledge 104
- drawn-in gable sets 177

- Dreng, mention (runestone) 226  
 Duisburg, Conrad II minting 292  
 Duke Henry V 55, 285–286  
 Duke of Saxony 227  
 dynamic accumulation horizon  
 189–190, 192
- Døvreård hoard (Catalogue no. 9, 250):  
 deposition 188, 209; *in situ* hoards  
 (found) 34, **53**; melts, dominance  
 184, 187, 241; pottery vessel,  
 preservation 179
- Døvreård (site): content/context/container  
 250; divergent coins/closing coins  
 285–286; melts, dominance 187; trade/  
 crafts, traces 294
- earthly goods, need (disappearance) 20  
 Eastern Europe, Caliphate contact  
 (break) 105  
 East Midlands (England) 87  
 economic: capital 26–30; development  
 (Bornholm) 234–235; homogenous  
 region (Bornholm) 18; stagnation  
 225–235  
 economy: building 180, **183**, 186; coin 6,  
 21, 102, 131; money 5; spiritual 21;  
 subsistence 190, 199–201; weight 5–7,  
 34, 126, 131, 186, 192–194  
 Edward the Confessor: coin, interpretation  
 55; coin, revealing 166; *Hammer  
 Cross* 285; minting 55; *Trefoil  
 Quadrilateral* 167  
 Edward the Martyr 92  
 Egebjerg SSØ site, Arab-Sassanid  
 drachm 104  
 Egenvang hoard (Catalogue no. 10,  
 250–251) 31; Æthelred II *First Hand*  
 pennies 149; arm-ring, fragment 144;  
 coins suspension 149; deposition  
 119, 180; English coins, batches  
 (accumulation) 99; English *Crux*  
 penny 145; hammered band-shaped  
 ingot 146; neck-ring, fragment 144;  
 objects, selection 59; temple-ring, marks  
 (presence) 133  
 Egenvang (site): content/container/context  
 250–251  
*Egils Saga* 20  
 Egino (Archbishop) 228  
 Egino (Bishop) 220, 228  
 Enegård hoard (Catalogue no. 11, 251):  
 container (pottery) **158**
- Enegård (site): content/container/context 251  
 Enegård settlement, activity level  
 (increase) 212  
 England: Bornholm hoard objects 4; coins,  
 accumulation 143–144; coins, direct  
 import 100; contact, increase 122;  
 Danelaw 94; hoards, collection 243;  
 hoards, deposition 34; hoards, usage 94;  
 trade contacts 222; Viking-dominated  
 areas 79; Viking raid 87, 94, 97, 99,  
 217–218, 238  
 English coins 92–102; character, uniform/  
 clarity 134; distribution (Bornholm  
 hoards) 96; geographical distribution  
 (Bornholm hoards) 95; German coins,  
 mixture 59; high fragmentation rate 128;  
 types, distribution (Bornholm/Zealand/  
 Scania) 101  
 English *Crux* pennies 161–162; Æthelred II  
 (Store Frigård II hoard) 142; Egenvang  
 hoard 145  
 English mints/coin types, relation  
 (Bornholm hoards) 98  
 English regions 87  
 Englyst hoard (Catalogue no. 12, 252) 287;  
 Æthelred II *Crux* penny 147; dispersal  
 180–181; runic example 139  
 Englyst (site): content/container/context  
 287; divergent coins/closing coins 287;  
 equestrian equipment, harness fittings  
 202; object distribution 42; trade/crafts,  
 traces 295; weights, high quality 197  
 equal-arm brooch 257  
 equestrian equipment, harness fittings  
 (Englyst site) 202  
 Estonia: bronzes, specimens (discovery)  
 43; dirhams, arrival 19  
 Estridsson, Sweyn: coinage 33, 115;  
 reign 222  
 European coins, pecks (presence) 79  
 Europe, Samanid Caliphate (trade  
 links) 105  
 exchange: Anglo-Scandinavian coins 115;  
 gift/exchange, preparation 169–170;  
 goods, trade 242; human activities 57;  
 intermediaries 92; interregional networks  
 39, 51; long-distance exchange 192;  
 luxury items/alliances 189; Samanid  
 dirhams, exchange system 109; silver  
 exchange 235; Slavic people, involvement  
 238; supra-regional networks,  
 involvement 218; system 29, 121–122

- farmer, mention 226  
 Fatimid Caliph al Mustansir, dinars 40  
 Fatimid gold dinars, presence (Ahlesminde hoards) 102  
 feature context 85, 170–190; hoard  
   functions, link (question) 186–190;  
   hoards, interpretations **182–183**; houses  
   174–182  
 female dress: difference 22; Slavic  
   elements, integration 239  
 female graves: burial gift, presence  
   78; central brooches, design 22;  
   chronological analysis 7; connection 24;  
   hoard type 188; inventories, analysis  
   23–24; Viking-Age female graves,  
   central brooch deposit 150; weights,  
   discovery 39  
 female hoards, link 22  
 female-related jewellery 22  
 female sphere: Buddegård hoard,  
   association 152; central brooch deposit,  
   relationship 29  
 female Viking graves, inventory  
   (parallels) 22  
 Ferskenøen, Sassanid/Arab-Sassanid  
   drachms (discovery) 104  
 Feveile, Claus 43  
 field, determination (empirical work) 27  
 filigree-decorated oval brooch, central cross  
   motif (Smedegård NØ deposit II) 168  
 finger-rings (Smedegård NØ II hoard) 85  
 fire-based crafts 191  
 fire-steel *see* Baltic-Finnish fire-steel  
 first-generation central sites 212  
*First Hand* coins/pennies 94; of Æthelred II  
   (Egenvang hoard) 149  
 fishing, activities 190, 199–200, 213  
 Fjenneslev church, foundation fresco 21  
 flat rod, folding 41  
 foil arm-ring, decorations 118  
 foil, selection (Nørremølle hoard) 79  
 folded/folding: coins 82, 141–144, 142,  
   143; flat rod 41; jewellery 144; objects  
   82; trefoil brooch 29  
 forge: settlement, proximity 181;  
   stone-paved floor, uncovering 181  
 forge-stone 191  
 forging: bronze forging 193–194; gold/  
   silver forging 191–193; iron forging  
   191; workshop (Fröjel) 75, 234  
 Forkbeard, Sweyn (coinage) 112  
 fossilised research tradition 13  
 fragmentation 124, 125–131, 292;  
   circulation trace types 124; objects,  
   fragmentation 77–78; Viking-Age  
   hoards, completion/fragmentation  
   18–19  
 fragmented coins: percentage 127;  
   proportion, variation 128  
 fragmented objects, percentage 125  
 fragmented ring, remains 147  
 Franconia: Germany division 87, 88; mints  
   88–89, 91, 92  
 Frankish trefoil brooch 22  
 Friesland-Utrecht: coins, influx 92; coins,  
   minting 92, 142; Germany division  
   87, 88  
 Frisian coins, dominance 92  
 Fröjel workshop 191  
 Frostegård hoard (Catalogue no. 13,  
   252–253): characterisation 152;  
   coin-dominance 241 distribution area  
   51; mark ownership 241  
 Frostegård (site): content/container/context  
   252–253; settlement, traces 180;  
   significance 189; trade/crafts, traces  
   295; weight 42–43  
 Galster, Georg 1  
 Gamleborg (fortification) 68, 227–228  
 Gästrikland 25  
 Gelting, Michael 222  
 gender, social glue (relationship) 22–25  
 geomagnetic surveys, usage 212  
 German bracteates 167  
 German coins: English coins, mixture 59;  
   geographical distribution (Bornholm  
   hoards) 89–90, 93; high fragmentation  
   rate 128; hoards, deposition  
   (transitional phase 990–1000/1005)  
   91; Kongens Udmark hoard, German  
   coins (composition) 91; mixture 134;  
   Otto-Adelheid pennies (Harz area)  
   89–90; production data analysis 88–92  
 Germanic Iron Age 7, 39; brooch fragments  
   48; Early Germanic Iron Age 4; Late  
   Germanic Iron Age 5; Late Germanic  
   Iron Age, burial rites 230; pottery 255  
 German mint, impact 134  
 German Otto-Adelheid penny (Skovvang  
   hoard) 147  
 Germany: coins, arrival 100; division/  
   regions 87, 88; ornaments, production 117  
*Gesta Danorum* (Saxo) 206

- gifts 162; aristocratic burial, burial gift 189; burial gift 223, 240; burial gift, Slavic silver beads (usage) 78; gift/exchange 169–170; grave gift 231; morning gifts, examples (question) 22–23  
 gilded bronze pendant (Pæregård) 46, 47, 50–51; Terslev type 47  
 gilded bronze ring (Englyst site) 202  
 glass: objects, presence 33; presence 33; production 190; raw glass, usage 191; rods, usage 191  
 glass beads 33–34, 254; making 193; production 190–193  
 gold: bracteates (personal ornament) 39; coins (Ahlesminde) 39–40; disc (Skørrebro) 48; Fatimid gold dinars, presence (Ahlesminde hoard) 102; finger-ring (Ahlesminde) 39–40, 136, 150; forging 191–192; forging, rarity 193; fragment (Store Gadegård, area 3) 48–49; fragment gold (Dalegård) 41–42; ingot, fragment 49; objects (Store Klintegård) 49, 49–50; objects, plough layer 38; presence (Bornholm hoards) 36–52; weight economy 34  
 gold/silver forging 191–193  
 goldsmithing 196; activities 203; evidence 203; fire-based craft 191; traces 198  
 goods, exchange (interregional networks) 39, 51  
 Gotland: harbour/landing sites, excavation 234–235; supra-regional contacts 217  
 Graagaard hoard 88–89, 91  
 graffiti 76, 82–83, 152; analysis 124; classification 83; definition 83; form 200; Islamic coins 83; object identification 152; silver plate/ingot 152; Viking-Age coins 83  
 grave-field (Bornholm) 82  
 grave gifts 231  
 grave rights (changes), Christianity (impact) 20–21  
 Great Army, movements 92–93  
 Greek coins, absence 54  
 Grinder-Hansen, Keld 12  
 grindstone: fragments 177–178; presence 230; slate grindstone, discovery 199  
 Grisebjerggård hoard, analysis 79  
 Grødbybro (bridge), location 229  
 Grødbygård *see* Nordre Grødbygård  
 Grødby River, cemetery (proximity) 232  
 Gudme: first-generation central site 212; site, Roman denarii/Roman silver/gold objects (presence) 4–5  
 Gustin, Ingrid 192–193  
 Guta Lagen 24  
 Gyldensgård, Østermarie parish (contents/containers/contexts) 253–254  
 Gyldensgård SV hoard (Catalogue no. 15, 253–254): coins, chronological profile 100; deposition horizons 91; special unit (separation) 169; English coins, batches (accumulation) 99; fire-steel 43, 50–51; *in situ* hoards (found) 34, 53, 172–175; Skovvang/Nørremølle, relationship 115  
 Gyldensgård SV (site): content/container/context 253–254; Three-aisled house (dating) 174; loom weights 194; weaving activity 198; trade/crafts (traces) 295  
 hack-silver hoards 4, 19, 74–75  
 Haimfylgi, description 24  
 Hammarby hoard 104  
 Hammer Cross type, minting 285  
 hammered band-shaped ingot (Egenvang hoard) 146  
 harbour sites 26; excavation 234  
 Harefoot, Harold 99  
 Harthacnut: coinage 115; reign 61  
 Harun al-Rashid 102, 106; Abbasid dirham minting 145  
 Harz region, Otto-Adelheid pennies (minting) 88–89, 100, 102  
 Hatz, Gert 17  
 heathen grave-sites, usage 21  
 Hedeby: bronze specimens, discovery 43; coinage 104, 111–112; coins, minting 63; direct import event 121, 217; trading centres 214  
 Heimskringla 206  
 heirloom 47, 50–51  
 Helgö, first-generation central site 212  
 Helmet: *Pointed Helmet* (English coin) 114; type, interpretation 99  
*Helmet-type* minting 97  
 Henry II coin, minting 29  
 Henry III 55; coinage 285–286  
 Henry V *see* Duke Henry V  
 Herred, Vester (Bornholm) 16  
 hide: container (hoards) 157–158; processing (Skovsholm) 194–195; silver lay, relationship 156

- Hildebrand, Hans 17
- hoard accumulation (*Schatzbildung*):  
horizon 35; strategies 237–240
- hoard biography 17, 56–62, 84;  
accumulation phase 238; analysis 218;  
deposition event 62
- hoard deposition (*Schatzvergrabung*)  
11–12, 169, 184, 237–240; place/area,  
distance 52
- hoard functions: archaeological contexts,  
relationship 240–242; feature contexts,  
link (question) 186–190; site contexts,  
relationship 207–209
- hoarding Vikings 236; accumulation/  
handling/deposition methods/strategies  
237–240; detection 3–4
- hoards 33; actors, function 242–243;  
agency 30, 56; chronological gap  
33; chronological profile 52; coins,  
chronological distance 52; coins, *in situ*  
discovery **53**; compositions, settlements  
(connection) 185; dating, source-critical  
discussion 52–56; economic/social/  
cultural/symbolic fields 242–243;  
feature contexts 174–182; feature  
contexts, interpretations **182–183**;  
fragmented coins, percentage 127;  
handling 237–240; local/regional  
contexts 211; loss/excavation/  
future 7–10; melts, dominance 187;  
offerings 11–12; outside settlements,  
deposition 181–182; settlement  
deposition 175–179, 181; settlements,  
connection 183–186; sites, craft/trade  
activities 193–198; symbolic nature,  
support 241; total biography 61–62;  
votives 11–12
- Hoen gold hoard 22
- Holmegård (Bornholm), shield amulet 57
- Holsegård hoard/site (Catalogue no. 14,  
253): container (bark box) **157**; content/  
container/context 253
- horizon: accumulation horizon 60;  
deposition horizon 60
- horn(s) 84–86; coins, presence 161; coin  
types, composition (Blykobbegård  
hoard) 163; container (hoard) 160–161,  
162, **157**; deposition 161, 169; horn  
handle, discovery 196; object selection  
161–162; ox horn 160; segregation 162;  
silver, presence 162
- horse: bones 195, 270; distribution (bones)  
200; head (weight/ring) 197, 202;  
miniature bronze horse (amulet) 202;  
Tissø excavations 201; tooth 267
- Horsnæs, Helle 16
- houses 84–86; sacrifice 58, 199;  
three-aisled houses 174; types 174;  
Viking-Age houses (Bornholm)  
172–174
- human activities, life-cycle link 57
- humans, agency 26
- Iceland, resident merchants (privilege)  
222, 227
- Igelösa hoard (Scania) 112
- Ilisch, Peter 88
- immediate context 84–85, 156–170
- ingots, production data classification 73–75
- Iraq/Iran, Abbasid dirhams (presence) 103
- Ireland: coasts, Viking raids 92–93, 120;  
Samanid dirhams, dispersal 108–109,  
214, 238
- Iron Age 5–7
- iron extraction/processing/working:  
activities 195; evidence 203; forging  
191; indicators 193–194; presence 198,  
209, 221
- iron objects: deposition 195–196;  
fragments 194; presence 33
- Islamic coins 102–111; chronological  
profile (Bornholm hoards) 107;  
deposit distribution (Bornholm hoards)  
103; dominance 64; graffiti 83; high  
fragmentation rate 128; nicks 133
- Islamic dirhams, production 26–27
- Isma' il ibn Ahmad, coinage 26–27,  
106–107
- Jankowiak, Marek 19, 126
- Järrestad: building complexes 202;  
manor sites, parallels 207; ritual acts,  
small enclosed buildings (usage) 198;  
second-generation central site 212;  
supra-regional cult centres, function 198
- Jensen, Jørgen Steen 12
- jewellery 117–119; complete jewellery,  
examples proportion (Bornholm hoards)  
129; folding 144; function, integration  
224; Pæregård hoard, earrings sets  
(deposition) 137; production data  
classification 73–75; Slavic jewellery,  
distribution (Bornholm hoards) 120;  
Thor's hammer (Nørre Sandegård  
hoard) 138; types, distribution 117;  
usage 82, 135

- joint journeys 216–219  
*Jómsvíkinga saga* 205  
 Jonsson, Kenneth 17  
 Jørgensen, Lars 212  
 Jutland 4, 89, 92; chronological focus 99; dirhams, dispersal 108; German coins, import 88; hoards 91; *Long Cross* abundance 122; Samanid dirhams, spread 214; Schleswig municipal law 227; sites, comparison 192; supra-regional contacts 217
- Kannikegærdet hoard (Catalogue no. 16, 255) 203; brooch/bracelet, relationship (absence) 150–151; deposition 177, 188, 215; female sphere, association 152; looped coins 148–150; Saffarid dirham 148; Saffarid dirham, piercings 146–147, 148; Samanid dirham 147; sandwiched type coin 149; suspension, coin (separation) 84
- Kannikegærdet (site): arm-ring 44, 45; brooch, fragments 118, 119; Buddegård (link) 188; content/container/context 255; houses, interpretation 172–174; silversmithing, jewellery production 196–198; matrix 44, 45; silver distribution 176–177; silver/bronzes/weights (distribution) 44; trade/crafts, traces 44, 295
- Kannikegård/Tyskegård hoard (Catalogue no. 17, 256): divergent coins/closing coins 287–288; English coins, batches (accumulation) 99; hoard, distribution 51, 176; weight set 41
- Kannikegård/Tyskegård (site): bronzes 41; burnt house/fire 206–208; content/container/context 256; house offering 199 house type 174; rainwater trenches (houses) 173; trade/crafts, traces 295; Tyskegård (relationship) 188; weight set 41, 51
- Kaupang: grave, scales (discovery) 39; material, basis 42, 193; trading hub 213
- Kiev coin, identification 87–88  
 Kiev kingdom 87  
 Kilger, Christoph 19  
 King Valdemar I (Denmark) 198  
 King Valdemar II (Denmark) 206  
 Klemensker 3 runestone, farmer (mention) 226  
*Knýtlinga saga*, material (collection) 205–206
- Kobbegård hoard (Catalogue no. 18, 256–257) 174, 203; deposition 156, 159; closure devices 159; container (bag) 157; *in situ* preservation 175
- Kobbegård (site): bone/antler crafts, traces 196; bronzes 45; content/container/context 256–257; house 174, 177, 203; Samanid dirham (broken/perforated/stitched) 14; trade/crafts, traces 295; wet sieved structures 200
- Kongens Udmark hoard (Catalogue no. 19, 257–258) Abbasid dirhams, presence 106; closed contexts 34; composition, difference 89, 91; container (pottery/lid) 158, 159; deposition 159, 217–218; dirham hoards, relationship 286–287; discovery 76; German coins, composition 89, 91; *in situ* hoards (found) 34, 53; Roman denarius 54
- Kongens Udmark (site): content/container/context 257–258
- Krapperrup, arm-ring 82
- Krogegård II site, Arab-Sassanid drachm 104
- Krusegård hoard (Catalogue no. 20, 258):71; coins, discovery 182; composition 241
- Krusegård (site): content/container/context 258; wetland deposition 183, 184, 188, 241
- Ladegård cemetery 5  
 Lake Mälaren 192, 212  
 landing sites 191–192; bronze craft activities 198; bronze crafts, concentration 209; craft traces 197–198; dating/excavation 234–235  
 landowner markers/ritual 25–26  
 landowner marks 25  
*Last Small Cross* coin/type 92–93, 99–100  
 Latvia, bronze specimens (discovery) 34  
 lead amulet, design 139–140  
 lead objects, presence 33  
 lead weights, usage 193  
 leather: bag, remains 158, 161; container material 160–161; purse, usage 84; trade goods 213; wrapping 140  
 Lejre: building complexes 202; burnt stones/animal bones, cultural layers 198; Roman denarii/Roman silver/gold objects, presence 4–5; royal manor functions, transfer 220; second-generation central sites 212

- lid: collapsed lid 159; container 157, 159, 166
- Lillegårde hoard (Catalogue no. 21, 258–259) 35, 54, 92, 169; containment, ceramic vessel (usage) 160; *in situ* hoards (found) 34, 53
- Lillegårde (site): content/container/context 258–259; divergent coins/closing coins 288; archaeological investigation (absence) 181; trade/crafts, traces 295–296
- Lincoln, coins minting 99
- local contexts, hoards (relationship) 211
- Lolland-Falster, trade zone 17–18
- London: Canute the Great *Short Cross* penny, minting 292; coins, presence 94; mint 94
- Long Cross* coins/pennies/types: 62, 73, 82, 97, 99, 102, 112; distribution 97; dominance 121–122; presence 94; representation, Gyldensgård SV 100
- loom-weight (loom weight) 46, 191, 194–195, 199
- loop: analysis 146; artefacts, dispersal 36; design 149–150; loose loop 149; piercings, reuse 147; sandwich loop 84; silver/artefacts, dispersal 36; suspension loop 28, 84, 147
- looped/pierced coins 108, 148–150
- lost hoards 9–10
- Lower Lorraine: Germany division 87–89; minting 91
- Lund: coinage 122; expeditions 222; silver, handling 234
- luxury items/alliances, exchange 189
- macrofossil analyses 180
- Magnus the Good: coinage 115; reign 61
- Mainz, minting 88–89, 91
- Mälaren area: graves, concentration 50; hoards, contextual topographical analysis 25; landscape-contextual analysis 156
- male graves: chronological analysis 7; weights, discovery 39
- manor sites: cultic buildings/ritual structure, prominence 198; ritual aspect, evidence 207; Tisso/Toftgård/Järrestad 198–200
- Märcher, Michael 16
- marked coins: impact 134–140; proportion, variation 128
- marked objects, percentage 125
- marked ring, discovery (Ahlesminde hoards) 136
- marking, usage 153–154
- marks 124, 131–134; chisel marks 82–83; circulation trace types 124; distribution 133–134; neutral term, usage 80; presence 78–81; temple-ring (Egenvang hoard), marks (presence) 133; wear-marks 78; *see also* chisel marks
- material, defining 4–10
- maternity amulet 139–140; interpretation 139
- Meissen *see* Thuringia-Meissen
- Mellan stengrund och stenhus: Gotlands vikingatida silverskatter som boplatsindikation* (Östergren) 13
- melts: chisel marks, addition 153; chisel marks, display 187; dominance 187; Nørremølle hoard (Slavic/Scandinavian type) 75; processing 146
- Menkendorf-type rim sherd 176
- merchants *see* Iceland
- Merovingian time 7
- mesh beads (Nørremølle hoard) 79
- metal crafts, overrepresentation 190
- metal detectorists, impact 8
- Metcalf, Michael 94
- mica schist grindstone, fragments 177–178
- Middle Age 5–7
- Middle Ages 5, 7, 14; coin economy 21; family structure 24; finds, abundance 178; graves, excavations 231; hoards, deposits 33, 39; Viking Age, relationship 5–6
- midtpændedepot *see* central brooch deposit
- miniature: axe 43; bronze horse (Englyst site) 202; vessel 177, 199; weapons 57
- mint: German mint, impact 134; direct journey 115; London mint 94; output, decrease (Caliphate) 120; Royal Mint 76
- Misr (Egypt), dinars 40
- mobility (social) 216–219
- Møllegård: central site 212; geographical location, continuity/rupture 216
- money economy 5
- morning gifts, examples (question) 22–23
- Mózgowo (Poland): hoard 77, 126; site, objects (fragmentation) 77–78
- multi-causal hoards 11, 26–30
- Munkegård: burial ground, graves (presence) 231; cemetery, organisation 231; central site characterisation 222; Christian burial site 223;
- Munkegård I hoard (Catalogue no. 22, 259–260): 46, 207, 233; closed contexts 34; container, wooden box 158; *in situ*

- hoards (found) 34, 53; Slavic jewellery/beads (concentration) 119, 120, 222–224
- Munkegård (site): content/container/context 259–260; excavations 9; investigation 180; settlement 180; trade/crafts, traces 296; wet sieved structures 200
- Munkerup hoard (Catalogue no. 23, 260–261): Abbasid dirham, presence 106
- Munkerup (site): bronzes 45–46; content/container/context 260–261; excavated postholes, interpretation 177; grindstone/bronze foil (house offering) 199; Skovvang, relationship 115, 219; trade/crafts, traces 296; wet sieved structures 200
- Nasr II 106, 107
- nation-building, process 6
- neck-ring: complete neck-ring (Smedegård NØ deposit II) 169; fragment (Egenvang hoard) 144; Nørremølle hoard, fragments 118
- needle(s): discovery 46, 48; holder 194; large number (Store Gadegård, area 3) 194–195, 203; usage 191
- networks: actor-network theory (ANT) 26; Baltic Sea contact network 17; contacts 108, 115, 122, 188, 213; creation 4; interregional networks 39, 51; intra-regional networks 189; social networks 22, 216–219; trade networks 29, 108, 213
- nicks 34, 76, 124–140; application 133, 153; defining 79, 145; examples 79; function 145; Islamic coins 133; occurrence 124–125; percentage 125; presence 78–81; production 133; research 80–81; test-marks 80
- niello-decorated silver belt buckle 51
- non-religious deposits 12
- Noonan, Thomas 104
- Nordre Brændesgård settlement, activity level (increase) 212
- Nordre Grødbygård: Christian burial sites 223; rolled coin, presence 82; usage 21
- Nordre Grødbygård burial ground: establishment 230; Runegård burial ground, proximity 230–231; Slavic silver beads, presence 223–224; Store Gadegård site, proximity 232
- Nordre Mulebygård II Øs, Sassanid/Arab-Sassanid drachms (discovery) 104
- Nordre Stensebygård hoard (Catalogue no. 24, 261–263): container (pottery) 157–160; hoard, scattering (silversmithing activity traces) 29, 181; trade/crafts, traces 296
- Nordre Stensebygård (site): bronzes/weights 46; content/container/context 261–263; silversmithing 85, 186; trade/crafts, traces 296
- Nørremølle hoard (Catalogue no. 25, 263–264) Arab-Sassanid drachms 104; beads, selection 79; *in situ* hoards (found) 34, 53; Container (pottery) 158; Earrings 136; lower/SW parts, coins (deposition) 165; melt (Slavic/Scandinavian type) 75; mesh beads 79; neck-rings, fragments 118; objects, distribution 164; silver distribution, concentration 177; Skovvang, relationship 115, 208; Slavic jewellery/beads (concentration) 119, 120, 222–224
- Nørremølle (site): bronzes/weights 46; content/container/context 263–264; house offering (miniature vessel) 199; large stone (deposition) 177; sacrifice (pigs) 198; settlement, traces 177; trade/crafts, traces 296
- Nørre Sandegård hoard (Catalogue no. 26, 264) Thor's hammer 136, 138;; trade/crafts, traces 296
- Nørre Sandegård (site): content/container/context 264
- Nørre Sandegård Vest 230
- North Africa, Abbasid dirhams (presence) 103
- northern regions, Caliphate trade 108
- Northwest English region 87
- Norway: bronze specimens, discovery 43; fire-steel specimens 43; Olaf Tryggvason coin 112; Viking culture 5; weight economy 193
- notches 34, 76, 124–140, 144; application 133–134, 153; coins 54; defining 79; making 133; occurrence 124–125; percentage 125; presence 78–81; research 80–81; symbolic objects 131; test-marks 80; visibility 81
- Nylarsker 1 runestone 206
- Nylarsker 2 stones 226
- objects: agency 26; Ahlesminde hoard, objects 40; biography 56–62; Bornholm hoard objects, deposit (pie chart) 59; Bornholm hoard objects, finding 33; broken objects, circulation data classification 75–84; circulation traces

- 57, 77; distribution (Nørremølle hoard) 164; Englyst, object distribution 42; folded objects 82; fragmentation 77–78; fragmented objects, percentage 125; function (change), marked objects (impact) 134–140; gold objects (Store Klintegård) 49, 49–50; gold objects, plough layer 38; Kannikegærdet objects 43–45; life biography 58; marked objects, percentage 125; personal objects 50–52; profile (Bornholm hoards) 65; secondary modification 13; selection 188; silver objects, inclusion 65; Smedegård NØ deposit I, non-numismatic objects 166; Store Klintegård, gold objects 49, 49–50; symbolic objects, notches 131; types, examination 39
- Oder river 103
- Odin's Law 20–21
- Offering 11–12, 242–243
- Öland 4, 21, 88, 92
- Olga, Grand Princess 110
- ornaments, production 117
- Östergren, Majvor 13–15
- Otto-Adelheid pennies 88, 100, 163; cessation 234; coinage 92; dominance 92, 122, 222; German Otto-Adelheid penny (Skovvang hoard) 147; German Otto-Adelheid penny, minting 286; Harz area 89–90
- Otto-Adelheid type 55
- Otto-Adelheid type V coin, minting 167
- Otto III coin 55, 112; test actions traces 81
- outbuildings: fire-based crafts, association 175; hoard deposition 155; north-south orientation 179
- outside settlements, hoard deposition 181–182
- oval brooch 167, 168
- owners: agency, providing 62; biography 99; marks 83
- pagan: blood drinking 206; elements 21, 231; mindset 224; private hoard deposits, cessation 20
- partly available hoards 9
- partly documented hoards 8–9
- patriarchal monogamy 24
- Paviken (Gotland), weights analysis 192
- payment: Danegeld payment 94, 97, 99, 112, 142; function 49, 195; means 54, 58, 73–74, 136, 144, 153; royal payment 94
- pecking: bending, comparison 81; extensiveness 140; mixed hoards, association 79; origin 79
- pecks 76, 124–140; addition 135; application 81, 133, 153; bent coin, combination 80; blanks, combination 134; European coins 79; interpretation 19, 80, 140; occurrence 124–125; percentage 125; presence 78–81; production 133; representation 146–147; research 80–81; test-marks 80; visibility 81
- pendant: bronze pendant 47; coin-like pendant 150; conversion 46; deposit, proximity 47; gilded bronze pendant 46–47; gilded circular pendant 46; gilded pendant 40, 50; shield-shaped pendant 57
- Persian Sassanid drachms/drachma 102, 104, 147
- Persian written sources 108
- personal hoards, deposit time (calculation) 20
- personal objects 50–52
- Person, Erik 12
- phosphate analyses, usage 212
- pierced: coins 74, 147, 149; Samanid dirhams, deposition 109; squared silver plate 139; Umayyad dirham, looped 108; unidentified fragment 146–147
- piercing 83–84; coin examples 147–148; reuse 147
- pit-houses 10n4
- plate brooch 46, 286
- ploughing 43; directions 36, 41, 42, 46, 51, 140; impact 41, 156
- plough layer 38
- Pointed Helmet* (English coin) 99; imitations 114; minting 292
- Poland: excavations 77; German coins, comparison 88–89; ornaments, production 117; Roman denarii, documentation 54; Roman gold coins 4–5; West Slavic hoards 75
- Polish coins: high fragmentation rate 128; rarity 134
- political landscape (Bornholm) 226–228; southern Bornholm 229
- politics, impact 225–235
- polyhedral weights, usage 34, 192–193, 196–197, 222
- Pomerania: area, attributions 88; coins 5; trade zone 17–18

- Pomerania hoards: contextual topographical analysis 25; landscape-contextual analysis 156
- Poppo (Archbishop) 55
- Posthusgrund (Ribe) excavation 193
- potential hoards 10
- potters, Slavic potters: existence 224; immigration 205
- pottery 177; Germanic Iron Age 255; vessel, preservation (Døvreård hoard) 179
- power: seizure 27; struggles 27
- production: classification 73; data, classification 73–75
- Prussia, ornaments (production) 117
- punch, discovery (Kannikegårdet site) 45
- Pæregård hoard (Catalogue no. 27, 265–266): distribution areas 51; earrings sets, presence/deposition 136, 137; gilded pendant 50–51; *in situ* hoards (found) 34, 53, 175; Slavic jewellery/beads (concentration) 119, 120, 222–224
- Pæregård (site): content/container/context 265–266; divergent coins/closing coins 288–289; gilded bronze pendant/weight set 46–47; heirloom 51; Olsker parish, contents/containers/contexts 265–266; trade/crafts, traces 297
- Quatrefoil* (Canute the Great, English coin) 99; imitations 114
- Rabækkegård hoard (Catalogue no. 28, 266) 108–110, 175, 184; analysis, inclusion 182; Brandsgård hoard, division 238; connections 109; extraordinariness 240
- Rabækkegård (site): buried woman grave 237–238; coins 120–121; contact 225; dirham hoard, deposition 108; grave finds 28–29, 73, 108–109, 189, 214–217; import incident 214; content/container/context 266; Samanid hoard 105–106, 108, 120–121, 189
- Ragnarson, Egil (Blood Egil) 205–206
- raids 97; coinage, relationship 94; impact 26; range 206; Viking raids 5–7, 92, 99, 112, 120–121, 134
- raw material: coin, usage 57; deposition 38–39, 50, 144; earrings, relationship 136; function 140, 144, 186; gold fragments, relationship 201–202; interpretation 189, 196; melts, role 153; payment 49–50; representation 52; usage 74
- Regensburg, minting 55
- regional contexts, hoards (relationship) 211
- relic crosses 71, 166, 233
- religion: change 21; pre-Christian religion, rites 198
- reliquary cross 166–167
- Rex Dænor* inscription 114
- Ribe: excavation 193; Roman denarii/Roman silver/gold objects, presence 4–5; trading hub 213
- Riello, Giorgio 58
- ritual hoards 34
- ritual-motivated theory 20
- rituals: actions 29, 80, 82, 144; activities 156, 198–199; death rituals, analyses 189; deposits 12, 18–19, 56; destruction 83, 126, 145; events 4; grave rituals 206; landowner markers, relationship 25–26; mediator, impact 74; Northern European ritual practice 58; perspectives 4; power 25–26; sphere 12, 83; weapons destruction 80
- Rø cemetery, identification 5
- rods: flat rod 41–42; gold rod 41–42, 196; lead rod 196; silver rod 133
- rolled coins 82, 141
- Roman coins, discovery 80
- Roman denarii, fragmentation 4
- Roman Iron Age: brooch fragments 48; finds, dating 178; hoards, deposition 54; objects 50; pottery 273; settlement dating 172
- Roman silver, fragmentation 4
- Rømersdal hoard (Catalogue no. 30, 268): content/context 268; arm-ring 139; Thor's hammers 154n1
- Rone (Stale hoard) 160
- Rosmannegård S hoard (Catalogue no. 29, 266–267): Abbasid dirham, presence 106; *Crux* coins, dominance 97, 122, 219; silver distribution 176; trade/crafts, traces 297
- Rosmannegård SV hoard (Catalogue no. 29, 266–267): divergent coins/closing coins 289–290; hoard 13, 59, 111, 176, 216; fragmentation 13; German coins 91, 217; objects, selection 59; postholes 199; silver, distribution 177; trade/crafts, traces 297
- Rosmannegård (site): contents/containers/contexts 266–267; continuity, Islamic/German coins 217; house offering 199;

- house, silver distribution 177; settlement 176; stone trace, silver distribution 176
- rotary quern 180, 199
- Royal Collection of Coins and Medals 9
- royal manor functions, transfer 220
- Royal Mint 76
- Runegård: cemeteries, construction 230; Christian burial site 223; excavations 172; graves 171; settlement 173
- Runegård burial ground/site 223, 230; construction 21; Nordre Grødbygård burial ground, proximity 230–231; Slavic features 224
- runes: alignment 139; amulet, comparison 139; carved runes 140; carvings 83; Englyst plate 139; inscriptions 83
- Rytterbakken, Sassanid/Arab-Sassanid drachms (discovery) 104
- Saffarid dirham (Kannikegærdet hoard) 146, 148; piercings 146–147
- sagas: *Egils Saga* 20; *Jómsvíkinga saga* 205; *Knýtlinga saga*, material (collection) 205–206; *Ynglinga Saga* 20
- Salzburg coins 55, 285
- Samanid Caliphate: coinage, Bornholm (link) 109–110; coins, minting 103; dirham imports 121; dirham, silver content (decline) 109–110; Europe, trade links 105
- Samanid caliphs, coins (minting) 106
- Samanid coins/dirhams: discovery 14; Kannikegærdet hoard 147; minting/discovery 215; proportion (decrease) 110
- Samanid dynasty: coinage 106–107, 120; mints 107
- Samarkand mint 107, 109
- Sandegård central site 212
- Sandegård Øst, Sassanid/Arab-Sassanid drachms (discovery) 104
- sandwich loop 84
- Santa Colonia types 88
- Sassanid: Arab-Sassanid drachms, presence 104; Persian Sassanid drachms, discovery 102, 147
- Sawyer, Peter 17
- Saxo 206
- Saxony: Duchy of Saxony, merchant privilege 222, 227; Germany division 87, 88; pennies 89; western Saxony, minting 91; *see* Duke of Saxony
- Saxony coins: importation 92; minting 88; predominance 92
- scales: plough layer 38; usage 326
- Scandinavia: Danelaw, link 99; regional differences 6–7
- Scandinavian coins 111–115
- Scandinavian *Crux* imitations 142
- Scania: German coins, import 88; homogenous economic region 18; melts, presence 187–188
- Schleswig municipal law 222, 227
- scissors, impact 77, 78, 191, 194
- scrap-silver 36; complementary weight distribution 132; production data classification 73–75
- scratches 76, 82–83, 145–146; analysis 124; fragmentation, comparison 145; types 145; visibility 81
- seal: carving 152; image 152
- seal the deal 19, 82, 126
- secondary modification 13
- secondary treatment, traces 114
- second-generation central site, interpretation 230, 232
- Second Hand* type, Æthelred II *Second Hand* type 94
- self-executed metal detector surveys 14
- settlements: catastrophic events 205–207; hoard compositions, connection 185; hoards, connection 183–186; hoards, deposition 175–179, 181; outside settlements, hoard deposition 181–182; periphery, hoard deposition 179–181; ritual/symbolic activities 198–199; status indicators 201–205; subsistence economy 199–201
- shears, impact 76
- sherds, presence 230
- shield amulet (Holmegård) 57
- shield-shaped pendant 57
- shipbuilding 191
- ship-crew 206
- Short Cross* penny, chronological gap 290
- signature bends 142
- Sigtuna: coinage 122; coins 112, 114–115, 138; die-identical coins, acquisition 115; expeditions 115, 222; silver, handling 234
- silver: al-Madhi reign, coined silver (production) 102; content, decline (Samanid Caliphate) 109–110; crisis 104–105; dispersal 36; exchange 235; exchange/acquisition, impact 29; finds 16, 286; flows, production data analysis 87; foil 75; forging 191–192; forging,

- rarity 193; rods 75; weighing, evidence 193, 196; wires 75
- silver agency, possession 29, 218
- silver arm-ring 44; rosette motifs 196
- silver belt buckle (Ahlesminde hoard) 40, 161
- silver bracelet, discovery 150–151
- silver cross (Smedegård NØ II hoard) 85
- silver distribution: Kannikegærdet 44; Kannikegærdet, centering 176–177; Rosmannegård S 176; Rosmannegård SV 177; Slamrebjerg, concentration 179
- silver-foil bead, fragmentation 74
- silver ingots (Smedegård NØ II hoard) 85
- silver objects: concentration (Dammegård) 176; inclusion 65
- silver plate/ingot (grafitti) 152
- silversmithing 203; activities 208; activities, objects (relationship) 186; activity (traces), Nordre Stensebygård hoard (scattering) 181; evidence 203, 215; indication 45; Kannikegærdet activities 198; melts, processing 146; Nordre Stensebygård activities 198; traces 85, 195; transformation process, connection 126
- Simblegård hoard (Catalogue no. 31, 268), single find 33
- site contexts 85–86, 190–209; hoard functions, relationship 207–209
- sites 155
- Skötikonung, Olaf (coinage) 112
- Skovgård hoard (Catalogue no. 32, 269): Bodilsker parish, contents/containers/contexts 269; divergent coins/closing coins 290; melts, dominance 187; site, excavated area (characterisation) 177–178
- Skovgård Øst site, Arab-Sassanid drachm 104
- Skovsholm: Ibsker parish, contents/containers/contexts 269–270; Sorte Muld central site, proximity 270; trade/crafts, traces 297
- Skovsholm hoard (Catalogue no. 33, 269–270): Abbasid coins 242; Abbasid dirhams, dominance 63; dating horizons 106; deposition 104, 119–120, 147, 211–212; deposition time 105–106; dirhams, distribution 213; owners, role 212, 213, 237; Persian Sassanid drachms, discovery 102; Umayyad dirhams, deposition 102
- Skovvang: divergent coins/closing coins 290; excavation, results (sparseness) 181; German Otto-Adelheid penny 147; Nylars parish, contents/containers/contexts 271; trade/crafts, traces 297
- Skovvang hoard (Catalogue no. 34, 271) 145; coins, groupings 114; die-identical coins 115; *in situ* hoards (found) 34, 53; Lund coins 114; parallels 55; settlement periphery 186
- Skærpingegård hoard (Catalogue no. 35, 271–272), closed contexts 34; *in situ* hoards (found) 34, 53
- skin: bags 169; container material 159, 161; pieces, usage 160; processing 195, 198, 208, 270
- Skørrebro hoard (Catalogue 36, 272): Åker parish, contents/containers/contexts 272; divergent coins/closing coins 291; gold disc 48; silver hoard, scattering 178; trade/crafts, traces 297
- Slamrebjerg hoard (Catalogue no. 37, 273) 48; Bodilsker parish, contents/containers/contexts 273; burial ground 39, 230; cemeteries, construction 230; Christian burial site 223; divergent coins/closing coins 291; hoard 114; silver distribution, concentration 179; Skovvang, relationship 115; trade/crafts, traces 297–298
- slate grindstone, discovery 199
- slaves 29, 225; burial 223; burial site representation 224
- Slavic area: homogenous economic region 18; melts, presence 187–188
- Slavic jewellery, distribution (Bornholm hoards) 120
- Slavic potters: existence 224; immigration 205
- Slavic/Scandinavian melt 75; chisel marks 187; currency 209; presence (hoards) 64, 187–188; production 75
- Slavic silver beads, usage 78
- Smedegård NØ hoard (Catalogue no. 38, 274–275) bark bundle 85; containers (wooden box/bark) 158; *in situ* hoards (found) 34, 53
- Smedegård NØ deposit I, non-numismatic objects 166; relic crosses 71, 166, 233
- Smedegård NØ deposit II: arm-ring 85; complete neck-ring 169; disc-shaped fibula 85; filigree-decorated oval brooch, central cross motif 168; finger-rings 85; silver cross 85
- Smedegård NØ (site): contents/containers/contexts 274–275; excavation extension 179–180; trade/crafts, traces 298

- Smørbygård hoard (Catalogue no. 39, 275–276) 288; coins, *in situ* hoards (found) 34, 53, 179; deposition 159
- Smørbygård (site): divergent coins/closing coins 291; content/container/context 275–276; trade/crafts, traces 298
- Smøreng: central site 212; geographical location, continuity/rupture 216
- soapstone: sherds 177; spindle weight 176–177; vessels 177
- social ages, identification 23–24
- social capital 26–30
- social identity 23–24
- Social Life of Things, the* (Appadurai) 58
- social markers, interpretation 51
- social networks 216–219
- Social networks, establishment 22
- Södra Sandby hoard (Scania) 88–89, 91
- Sorø church (Zealand), ring parallel 198
- Sorte Muld, central site: activities, decrease 212, 220; complex, first-generation central site (link) 212; complex, Skovsholm site (relationship/proximity) 213, 270; dirhams distribution 213; discontinuation 237; geographical location, continuity/rupture 216; importance 213–214; leading centre 212; phasing out 213–214; Sassanid/Arab-Sassanid drachms, discovery 104; settlement, reductions 212
- source-critical problem 77
- space, defining 4–10
- Speyer: coins 88; mints 88–89, 91
- spherical weights 192–193, 218, 222
- spindle weight 176; discovery 199; soapstone spindle weight 176–177
- spiritual economy, Christianisation (connection) 21
- square amulets (captorga) 223
- square coin blanks 136; Anglo-Scandinavian coins (attachment) 138–139
- square plates (Blykobbegård hoard) 138–139
- Stale hoard (Gotland), studies 160
- Staraya Ladoga 50
- status indicators 201–205
- status markers 190, 201, 202
- Stenberger, Mårten 12
- Steuer, Heiko 192
- stomacher, house sacrifice 58
- stone chest, objects (discovery) 28
- Store Frigård I hoard (Catalogue no. 40, 276–277): closed context 34; *in situ* hoards (found) 34, 53; Roman denarius 54
- Store Frigård II hoard (Catalogue no. 40, 276–277): English *Crux* pennies of Æthelred II 142; publication 134
- Store Frigård (site): contents/containers/contexts 276–277; trade/crafts (traces) 298
- Store Gadegård (site): contents/containers/contexts 278–279; Nordre Grødbygård burial ground (proximity) 232; St Peders Church (proximity) 198; trade/crafts, traces 298
- Store Gadegård, area 1–2 (site): bog ore 195; iron extraction 195; trade/crafts, traces 298
- Store Gadegård, area 3 (site): archaeological investigation 194; curved walls, house 173; divergent coins/closing coins 292–293; gold fragment 48–49, 51; metal needles 194; Stone Age/Roman Iron Age/Middle Age dating 178;
- Store Klintegård hoard (Catalogue no. 42, 279): divergent coins/closing coins 292; gold objects 49, 49–50; hoard, scattering 178–179; melts, dominance 187; trade/crafts, traces 298
- Store Klintegård (site): contents/containers/contexts 279; rainwater trenches (houses) 173
- St Peders Church: building complex/craft activities 202; high-status environment 207; location 229, 233; religious centre 198; settlement complex 195; settlement, location 249
- Sturluson, Snorri 206
- subsistence economy 199–201
- supra-regional cult centres, function 198
- supra-regional networks, involvement 218
- surface finds, usage 10, 15, 175, 181, 212, 234
- suspended square silver plate 139
- suspension 83–84, 135, 146–152; attachments 150; coins, proportion 151; cross, separation 167; fragmented ring, remains 147; inclusion 74; loop 28, 147; mounts 73, 215; mounts, analysis 124
- suspension rings 136–137; design 149–150; marks, placement 138; usage 149
- Svedjemo, Gustaf 14
- Svenska myntfynd från Vikingatiden* (Person) 12
- Swabia (Germany division) 87–89

- Sweden: coins, transport 19; graves, dirhams (absence) 104; hoards 16, 212, 222, 234; melts 75, 187; Viking-Age coins 76; Viking culture 5
- symbolic activities 198–199
- symbolic capital 26–30
- symbolic nature, support 241
- symbolic objects: basis 135; bronzes, significance 39; fragmentation 125; marks, application (absence) 153; notches 131; representation 36
- Tabaristan drachma, knowledge 104
- Taskjent: dirhams, presence 109; mint 107
- temple-ring (Egenvang hoard), marks (presence) 133
- Terslev: coins 88–89; disc-shaped pendants 47; gilded pendant 47
- test actions 81, 137–138
- test-marks (test marks) 80, 83
- textile, biography 58
- textile production 190; craft, commonness 191–192; presence 209, 221
- Thedéen, Susanne 23
- thematic hoards 31, 152; central brooch deposit, relationship 33
- Thorkild the Tall, English payment 94
- Thor's hammer (Nørre Sandegård hoard) 83, 136–138, 138
- three-aisled longhouse(s) 172–175, 203
- Thunmark-Nylén, Lena 20
- Thuringia-Meissen (Germany division) 87, 88
- time, defining 4–10
- Tissø: bones, excavations 200; building complexes 202; horse bones, excavations 201; manor sites, parallels 207; ritual acts, small enclosed buildings (usage) 198; second-generation central sites 212; supra-regional cult centres, function 198
- Toftegård: building complexes 202; manor sites, parallels 207; ritual acts, small enclosed buildings (usage) 198; second-generation central sites 212
- Tornegård hoard (Catalogue no. 43, 280): closed context 34; container (ox horn) 157; *in situ* hoards (found) 34, 53
- Tornegård (site): content/container/context 280
- tortoise brooches 39
- trade (Bornholm) 219–225
- trade activities: hoard sites 193–198; identification 191–198
- trade goods 213
- trade/craft, traces (overview) 294–298
- traumatic events 208
- trefoil: central brooch 22; Frankish trefoil brooch 22; gilded trefoil bronze brooch 108
- trefoil brooch 118; Bornholm type 119; Buddegård 144–145, 150, 215, 241; destruction 188, 241; folding 29; fragments 196
- Trefoil Quadrilateral* 167
- Triberga hoard (Öland) 291
- tribute: coincidence 97; payments 94
- Trier coin, interpretation 55
- 'trump cards' (Bourdieu) 27
- Truso, trading hub/centre 213, 214
- Tryggvason, Olaf 112, 206
- twisted arm-ring 169
- twisted clasps, placement 139
- Tyskegård hoard (Catalogue no. 44, 280–281): circulation traces 73; distribution areas 51; excavation (structures), raid 88; recording (absence) 182; ritual deposition 82; *Long Cross* coins/pennies 74, 82; objects, selection 59
- Tyskegård (site): divergent coins/closing coins 287–288; site 176; trade/crafts, traces 295; contents/containers/contexts 280–281; weight set 41
- Unknown location hoard (Catalogue no. 45, 281): content/context 281; grave 109, 215; Samanid dirhams 105
- Uppåkra: decline 220; first-generation central site 212; weights analysis 192
- Upper Lorraine: Germany division 87, 88; mintings 91
- Uppland 21, 25; graves 43; Hammarby hoard 104
- Uppsala, Veda runestone 26, 218
- Valhalla, owner entry 20
- valuables, collections 11–12
- Västra Skällö hoard (Blekinge), composition 33
- Veda runestone 26
- Vellensbygard hoard (Catalogue no. 46, 281–282)
- Vendel time 7
- Vennersdorf, Michael 16
- Vestermarie 5 runestone 226
- Viking Age 5–7; arm-ring, fragment 181; belt buckle, dating 41; Bornholm,

- description 214; defining 5–7; gender, examination 22–25; houses (Bornholm) 172–174; landowner markers/ritual 25–26; pottery (Bornholm) 170–171; social glue 22–25; war/trade, impact 16–18
- Viking-Age coins: graffiti 83; presentation 80
- Viking-Age hoards: archaeology, context 13–15; capital 26–30; cataloguing/contextualisation 12–13; coins, interpretation 16; completion/fragmentation 18–19; multi-causal hoards 26–30; single finds/hoards 15–16; studies 11
- Viking culture, narrative 5
- Vikingetids möntfund på Bornholm* (Galster) 12
- Viking hoards (Bornholm), overview 63–64, 71
- Viking raids 5–7, 92, 99, 112, 120–121, 134
- Vistula river 103
- Volga-Bulgaria: description 108; dirham imitation identification 102
- Volga-Bulgarian: area 110, 121; dirham imitations, appearance 107–108; Empire 108; Samanid dirhams 92
- Votive 11–12
- war: civil war 227–228; emphasis 18; loot, interpretation 17; peace, contrast 225; thesis (Bolin) 20; trade, relationship 16–18
- warrior grave 24–25
- Watt, Margrethe 213
- weapons 83; Iron Age weapons 11–12; men, relationship 24–25; miniature weapons 57; ritual destruction 80
- wear-marks 78
- weaving-sword 191
- weights: analysis 192; Blykobbegård weight set 40–41; distribution (Kannikegærdet) 44; economy 193; Englyst site, high quality 197; plough layer 38; spherical weights 192–193, 218, 222; usage 36
- weight set: Dalegård 41–42; Kannikegård 41; Pæregård 46–47; Tyskegård 41
- Welin, Ulla 83
- well-documented hoards 8
- western Franconia, minting 91
- West Midlands 87
- wetlands 241; areas (Stenberger's catalogue) 20; deposits, interpretation 12; hoards, deposition 184, 188; ritual deposits, distinction 12
- wetstone 176, 177; sherds 179, 180
- Widmaier, Jörg 21
- Wikingerzeitliche Depotfunde aus Südschweden* (Hårdh) 18
- William II 99
- William the Conqueror, minting 285
- women: buried woman (Rabækkegård grave) 237–238; connection 215–216; girl, phase/maturation 24; girls, development 23–24; land inheritance, impossibility 24; married women, perception 24; status 25; Viking-Age women, invisibility 22
- wooden box: accumulation phases, addition 167; object deposition 170; silver object deposition 166
- wooden chest, usage 84
- wool combs 191, 194
- Worms: coins, minting 88–89, 91
- Þórðarson, Óláfr 206
- written references 6
- written saga version 205
- written sources 6, 121, 206, 214, 220, 228; absence 82; Islamic/Persian written sources, confirmation 108
- written transcript 227
- written word, magical/protective meaning 139
- Ybnastedgård 9
- Ynglinga Saga* 20
- Yorkshire-Humber 87, 94
- Yorkshire settlement 193
- Zachrisson, Torun 12–14, 21, 25
- Østre Rosendalegård hoard (Catalogue no. 47, 282): content/context 282; mound (deposition in) 157
- Åbo hoard (Catalogue no. 48, 282–283): container 159 *in situ* hoards (found) 34, 53, 175; melts 184–188
- Åbo site (Catalogue no. 48, 282–283): bone material (horse/lamb) 200–201, 208; bronzes 50; house offering 199; settlement, traces 173–174, 184, 203; trade/crafts, traces 298