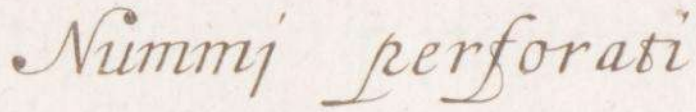

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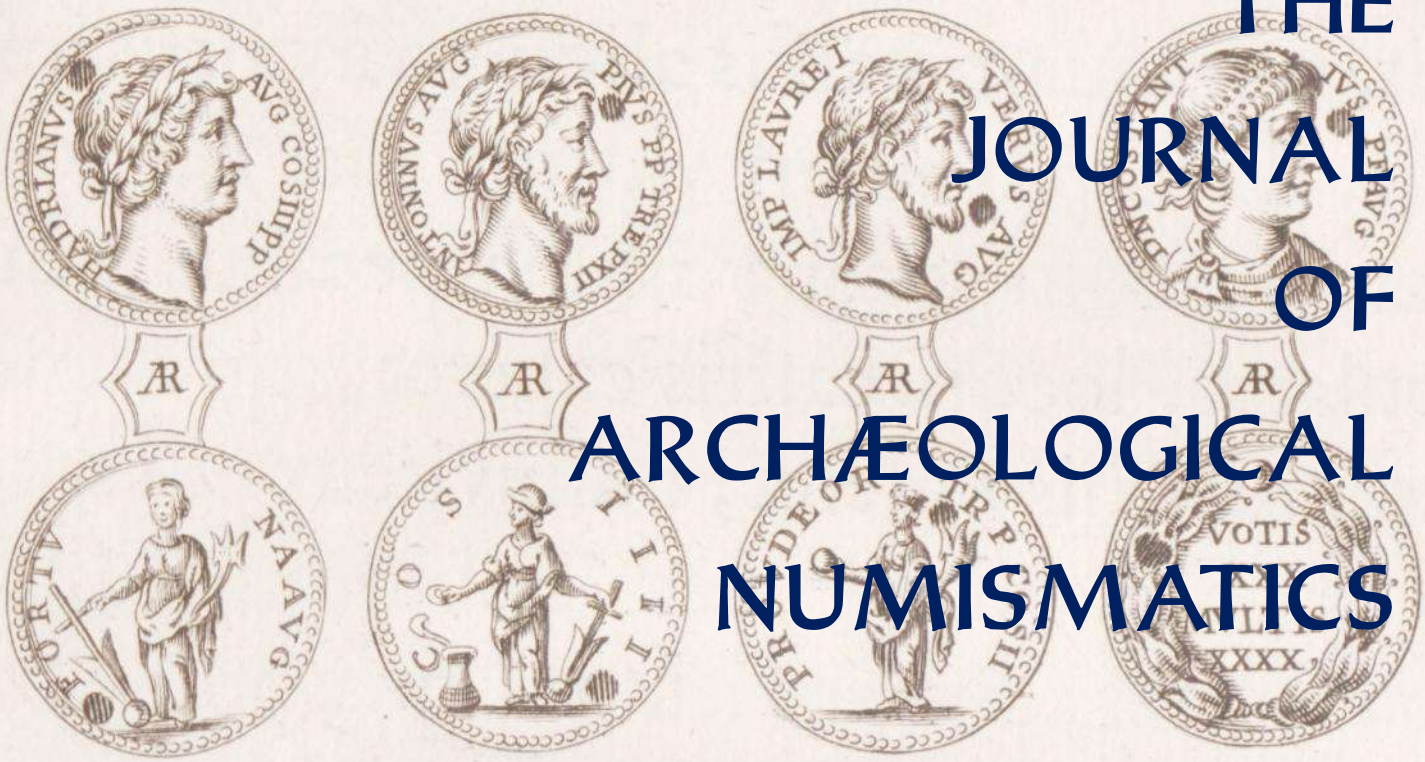

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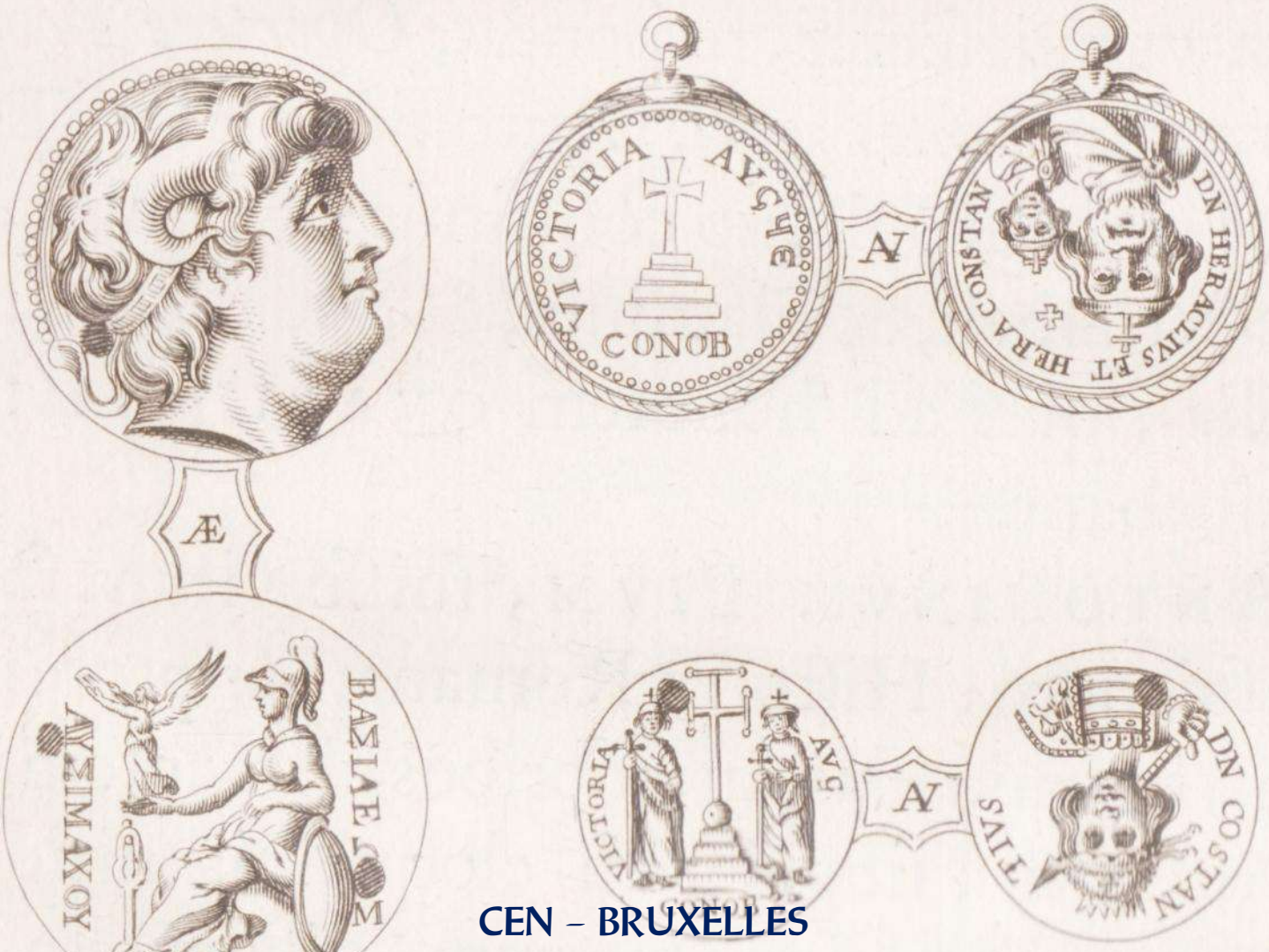

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A STEPPING STONE IN THE BALTIC SEA. TWO MILLENNIA OF COIN FINDS AND COIN USE – A CASE STUDY OF VESTER HERRED, BORNHOLM

Helle W. Horsnæs*, Michael Märcher* & Michael Vennersdorf**

Abstract *– The project 'A stepping stone in the Baltic Sea' aimed at investigating coin finds from a specific area from two points of view. From a methodological point of view it investigates the potentials and pitfalls in the use of archaeological material deriving from detector surveys undertaken by amateur archaeologists and the integration of these finds, in casu coins, with finds deriving from other types of investigation or from accidental finds. In the interpretative level this is the first diachronic analysis of coin use covering a whole region of Denmark from the first appearance of coins in the archaeological material until the present day* [1].

The paper is divided into three main parts: first an introduction to the material, detector archaeology and Bornholm, followed by the analysis of coins and contexts and conclusions based on the finds, and finally close descriptions of the sites used as main cases.

Résumé *– Le projet* « A stepping stone in the Baltic Sea » *avait pour but d'étudier les trouvailles monétaires d'une région précise sous deux aspects différents. Tout d'abord, d'un point de vue méthodologique, il s'attache à identifier les possibilités et les problèmes résultant de l'exploitation de données issues de prospections au détecteur à métaux conduites par des archéologues amateurs, ainsi que de l'intégration de ces données (dans ce cas, des monnaies) avec d'autres types de découverte (fouilles archéologiques, trouvailles fortuites). En second lieu, ce projet est le premier exemple d'analyse diachronique des trouvailles monétaires, depuis l'apparition de ce type de mobilier jusqu'à nos jours, pour la totalité d'une région du Danemark.*

L'article est composée de trois parties : premièrement, une présentation du mobilier, de l'usage du détecteur à métaux en archéologie et de l'île de Bornholm ; deuxièmement, une analyse des monnaies et de leurs contextes ; troisièmement, une description minutieuse des sites présentés dans le cours de l'étude.

* The Royal Collection of Coins and Medals, National Museum of Denmark.

** MA, Prehistoric Archaeology, Field archaeologist, Museum Southeast Denmark.

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STRUCTURE OF THE STUDY

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   1.2 Detector archaeology in Bornholm
   1.3 Vester Herred
   1.4 Coin finds from Vester Herred
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   2.1 Hoards and detector sites
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   3.9 Store Klintegård, Vestermarie parish (060305)

Appendix

Abbreviations

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1. INTRODUCTION

The empiric starting point for the present project was the very large amounts of coins found as a result of the use of metal detectors by amateur archaeologists since the early 1980s. The project has compiled information on coins found in Vester Herred (Western Shire), the shire that encompasses the south-western quarter of the island Bornholm in the Baltic Sea (fig. 1-2). The project would ideally comprise all coins from the shire, but in practise we cannot guarantee that all coins registered in The Royal Collection of Coins and Medals (KMMS) at The National Museum of Denmark after 2012 have been included [2]. Initially coin finds were mapped on a site level providing a good overview on the geographical distribution. Secondly all finds from a selected number of detector sites were mapped according to coordinates of the individual object. The detailed archival information on old finds facilitated the mapping on site level, indeed most of the sites had already been pinpointed within the framework of the national register of finds 'Sites and Monuments' (*Fund og Fortidsminder*, hosted by the Danish Agency for Culture) [3]. Practically all the remaining finds could be mapped thanks to additional archival studies, and they have subsequently been added to the *Fund og Fortidsminder* database [4]. In a few cases the analysis of recent detector finds has enabled a more precise mapping of 19th century hoard finds (see below, Brandsgård). Two groups of sites were chosen for mapping individual finds: multi-period sites and sites which elucidate the problem of distinguishing between hoards and single finds.

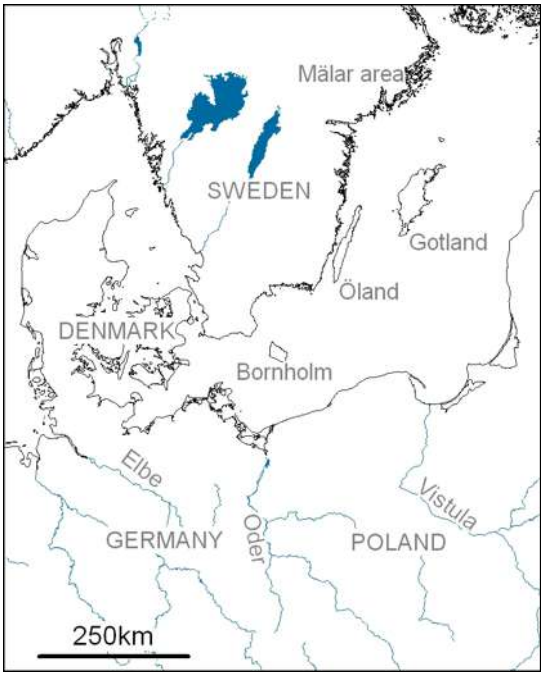

Fig. 1 – Position of Bornholm in the Baltic Sea

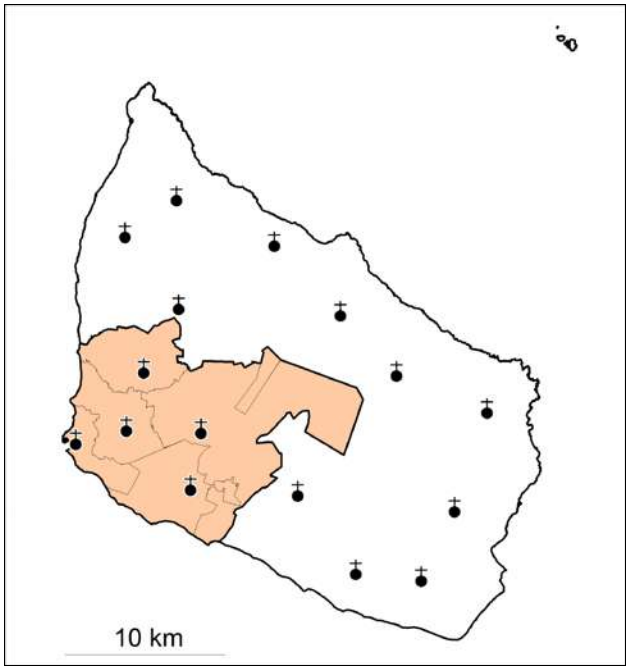

Fig. 2 – Bornholm: distribution of medieval churches; enhanced: Vester Herred

[2] Inventory numbers lower than FP 9100 should be covered completely. It is important to note that only sites which have yielded one or more coin finds are listed.

[3] http://www.kulturarv.dk/fundogfortidsminder/

[4] The additions to the Fund and Fortidsminder were undertaken by René Laursen of Bornholms Museum.

1.1 INVESTIGATING NON-STRATIFIED FINDS

The concept of context is of fundamental importance for all modern archaeological studies. Objects found in a primary context, *in situ* as deposited (whether this happened consciously or not), have always assumed special attention. However, only a minority of the coins available for and used in research derives from known and well-registered find contexts. Much material comes from accidental finds on which we possess only a fragmented knowledge of find circumstances. Many finds are for example recorded with approximate provenances, and the date of the find is not secured. Even the coins themselves have been described only in general terms and are now dispersed (and perhaps lost), thus forcing all research to be based on descriptions that cannot be checked. On the other hand, a very large part of numismatic studies are based on coins housed in collections without known find provenance. Much of what we have been using for numismatic research for centuries is therefore in practice de-contextualized: either reports of coins no longer existing or unprovenanced coins in collections.

Since the late 1970s a new find category has altered the way we study coin finds in Denmark. When metal detectors first became available and affordable to the general public the potential dangers for the archaeological heritage were soon recognized. It caused much concern, in Denmark as in other countries, but while private use of metal detectors was banned in most countries on the Continent, a pragmatic stance in the end prevailed in Denmark. Rather than demonizing the metal detector, it was seen as a tool that could be used with good or bad intentions [5].

It is strictly forbidden to use metal detectors on sites with protected heritage, but otherwise metal detector use is allowed on all areas, provided the owner has given his permission. In practice this means that detection rarely takes place on public areas. Metal detector surveys seldom affect coastal areas that are normally public property, and urban areas are naturally impossible to survey. The countryside of Denmark is on the contrary well-suited for detector archaeology. Around 60% of the country is farmed land, and much farming is based on cereal-growing, often alternating with other types of crops such as beet or rape. Many fields are worked all year round and they are regularly ploughed and harrowed. As such they are ideal for metal detector use: detecting normally takes place in the short period between the harrowing of the field and the germination of the next crop. The harrowed field presents a relatively level surface with good visibility, and the trained detectorist is often able to see changes in soil colour indicating the existence of ploughed up cultural layers. But not all crops provide the same possibilities. Areas with orchards or greeneries will normally not be subject to detector investigation, and uncultivated areas as well as forests are not favourable for detecting.

Critics of detector archaeology sometimes claim that the use of metal detectors destroys the archaeological context, when finders dig small holes to recover single objects. The experience from Denmark is contrary to this. Although some modern metal detectors can reach quite deep into the subsoil, the detectors used by amateur archaeologists only rarely reach deeper than the modern plough layer. Therefore most finds from metal detector surveys stem from primary contexts already destroyed by the working of the land. The beginning of this destruction may have taken place only shortly after the abandonment of a site as a result of horizontal displacement of sites or farms, but there is little doubt that

[5] For an evaluation of the first results of Danish detector archaeology see articles in Henriksen 2000; for a more recent discussion see Dobat 2013.

the continuous intensification of modern agriculture has resulted in a similarly growing pace of destruction: in particular after the Second World War the machines used in modern agriculture have been growing in size as well as power, and the plough is reaching deeper and deeper. Field investigations have demonstrated that the depth of the plough layer has increased considerably during the last decades, and the thickness of the cultural layers below has decreased similarly [6]. The objects found during these surveys are therefore those ploughed up from destroyed cultural layers.

Interpreting metal detector finds requires the same caution as the interpretation of all other types of non-intrusive archaeological investigations, whether they have been undertaken as large scale naked eye surveys, as analysis of aerial photographs, or as geophysical surveys. We see only part of the truth, in the sense that during detector surveys only metallic objects are recovered. Among the finds iron objects are frequently missing, as most amateur archaeologist will use metal detectors that are able to sort out (discriminate) iron objects. Still, non-metallic artefacts as flint, pottery, glass etc. are in some cases recorded and/or collected by the observant surveyer.

It is, however, important to note that not all objects from a surveyed area will become registered as finds. The Danish legislation on treasure (*danefæ*) is part of the Museum Act and requires that "… all ancient objects, including coins, … are *danefæ* if made of valuable material or of particular value for the cultural history" [7]. The finder of objects that may be declared *danefæ* must hand in the finds to the local museum responsible for the archaeological heritage of the area. After initial registration the finds are forwarded to the National Museum for valuation. All objects declared treasure (*danefæ*) remains the property of the Danish state and are the responsibility of the National Museum. Objects that are not declared treasure are returned to the finder, unless (s)he transfers ownership of the object(s) to the museum with responsibility for the archaeology of the area. In the case of Bornholm most finds remain in the local museum, but on a national level the amount of non-*danefæ* transferred to and registered in local museums varies greatly, not only because some finders are more willing to present their finds to the local museum, but also according to priorities in the individual local museums. Experienced amateur archaeologists have a very good knowledge of what is normally declared treasure, and what is regarded as interesting finds by the local museum, but not declared treasure. What comes to our knowledge is thus the result of several levels of selection, some of which are undertaken before the objects reach authorities in the form of the local museums: from the detectorist's choice which field to survey, his choice whether to collect an object in the field or not, his choice whether his finds may be *danefæ* – or of interest to the local museum.

All coins struck before 1537 are declared treasure indiscriminately, while coins struck after that period as well as other objects types are only declared treasure under certain circumstances. In Bornholm most amateur archaeologists hand in most of their finds for registration in Bornholms Museum, but even here small denomination coins struck after 1536 and other humble objects are rarely registered [8].

[6] Watt 2006, 2009 & 2010.

[7] Our translation. Full text of Museumsloven (Museum Act) available at www.retsinformation.dk

[8] Bornholms Museum has now decided that from January 1st, 2014 all coins produced after 1536 and found during detector surveys will be registered in the museum with the same level of precision as older coins, even though they are not declared treasure. This decision is incredibly important. It means that within a few years we will be able to begin evaluation of the amount of coin loss in post-Reformation period in regards to earlier times.

The absolute numbers of registered finds from a detector site depend on several factors. Apart from the selection of finds for registration, survey intensity is of vital importance. Annual ploughing and subsequent surveying should lead to an accumulation of finds of the same types, but according to experienced detectorists the finds gradually become lighter and the plough layer is expected to be emptied during 20-30 years of surveying. In practice, however, this theoretical decrease in find numbers and weights is often interrupted, in particular when the farmer decides to use a plough going a bit deeper and thereby bringing material from hitherto untouched layers into the plough layer.

The detector finds will always show a chronological mixture of objects. Objects from a certain period will indicate some sort of occupation of the site in that period, but absence of evidence is by no means evidence of absence: lack of finds from for example the Roman Iron Age may indicate *either* that the site was only settled after that period, *or* that the remains of the Roman Iron Age settlement are preserved in intact cultural layers below the plough layer.

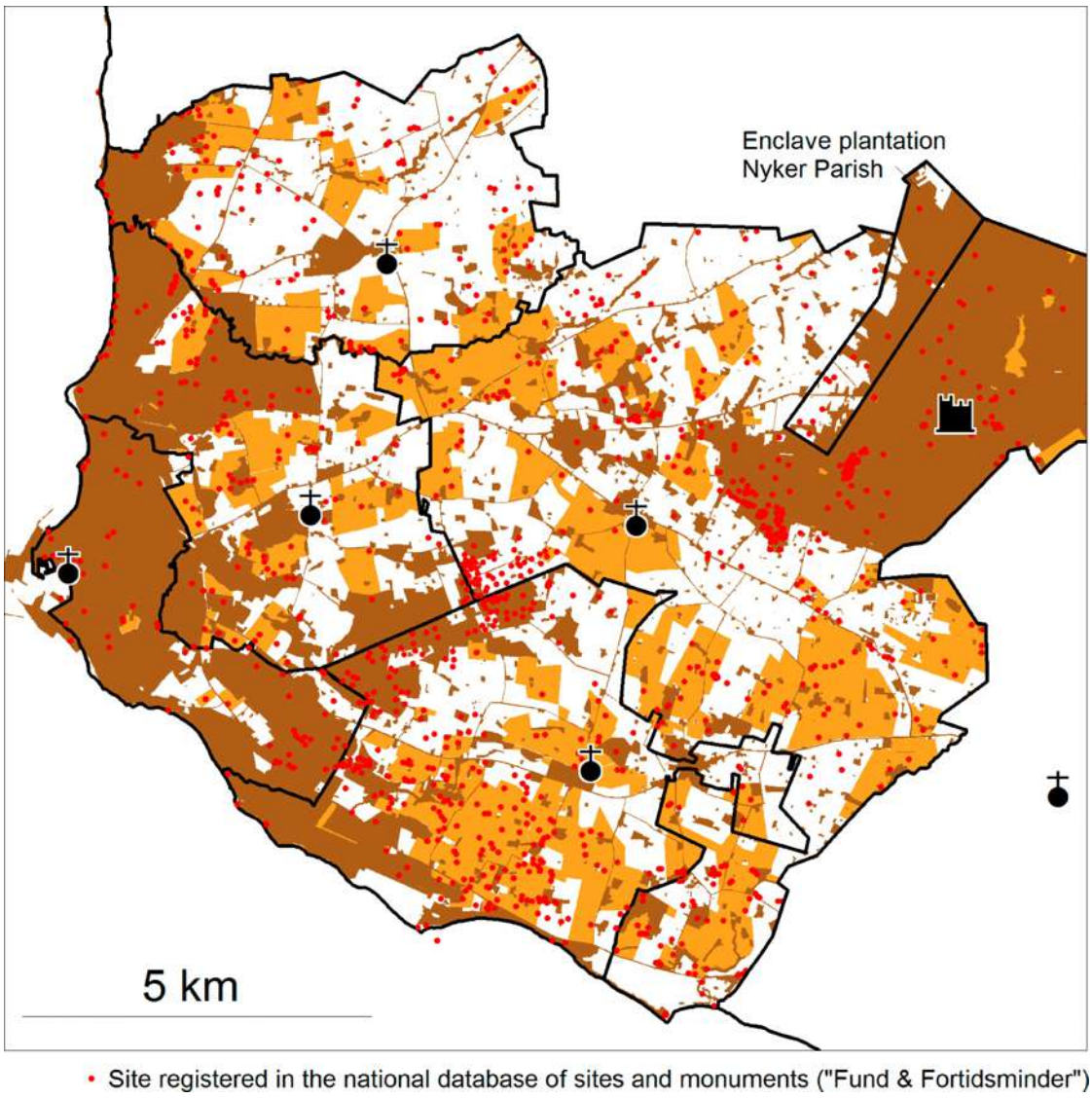

Fig. 3 – Vester Herred (shire) in Bornholm. Known archaeological sites (red dots) shown on a backdrop of: 1) areas not available or unsuitable for metal detecting (urban areas, forests): dark brown; 2) areas not yet subject to surveying: white; 3) areas partially surveyed or with excavated surfaces: light brown. With indication of parish churches (cross on globe) and Castle Lilleborg

A contextual approach is vital to be able to distinguish between the typical, the rare, and the exceptional/unique find. Although rarely defined or outspoken most experienced field archaeologists will have created an intuitive backdrop for the unusual find, but it is important that this valuable knowledge does not remain tacit. We will here try to define the norm, by comparing, for example, the relative numbers of finds of different object types and periods to indicate areas used for special purposes, shifts in settlement use or horizontal stratigraphy.

1.2 DETECTOR ARCHAEOLOGY IN BORNHOLM

Bornholm is situated in the Baltic Sea south of Sweden (Fig. 1). It was one of the first areas where collaboration between professional archaeologists and metal detectorists was established, and considering the relatively small size of the island it has a large group of very active and skilled metal detectorists. Originally working alone or in loose groupings the amateur detectorists have since 1995 been organized in *Bornholmske Amatørarkæologer* (Association of Amateur Archaeologists of Bornholm) [9]. This has ensured an extremely high number of finds as well as an impressive level of registration of the finds. The number of coin finds is for example growing steadily with an approximate annual average of 700 coins (all periods antedating 1537) in the period 2004-2012 [10].

Iron Age and Viking Period central places are traditionally among the best investigated sites, and also the amateur archaeologists have focused on these sites. Iron Age sites have been recognized by the characteristic blackening of the topsoil deriving from the decomposition of organic settlement material and hence often referred to as black soil sites – taking the name of the most prominent site, Sorte Muld ('Black Soil') in Ibsker parish on the north-eastern tip of the island [11]. Viking Age sites have been searched by metal detectorists using Georg Galster's publication of Viking Age coin finds from Bornholm as a guide book [12]. As a consequence Bornholm presents the undisputed highest find density of Roman coins not only in Denmark [13], but (we believe) in all regions outside the Roman Empire [14], and also the number of coins from the Viking Period is very high. On the contrary, the relative number of coin finds from the medieval period has traditionally been considered to be lower in Bornholm than in the remaining areas of Denmark. The systematic compilation of finds from all periods within the present project has to some degree falsified this assumption. Sites peaking in the medieval period have generally received less attention and are less thoroughly surveyed and investigated than Iron Age and Viking Period sites, still medieval coins do appear on a growing number of sites.

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[9] www.dbabornholm.dk. The president informs that the association has *c.* 70 active members. See Nielsen 2000 on the early development of detector archaeology in Bornholm.

[10] During the nine-year period 2004-2012, 667 individual files containing a total of 6,458 coins were handed in to KMMS from Bornholms Museum.

[11] The research history of Iron Age Bornholm is outlined by Ulla Lund-Hansen 2010; on Sorte Muld see Adamsen 2009; Watt forthcoming.

[12] Galster 1980.

[13] Half the number of Roman coins from Denmark comes from this small island that represents 1.38% of the size of all Denmark.

[14] The find numbers cannot be compared with the much larger material from Britain recorded within the Portable Antiquities Scheme because of Britain's status as Roman province: for the numbers of finds of Roman coins from England, see Walton 2012. The best comparison outside the Empire is the Swedish island Gotland, where professional archaeologists have used metal detectors when (re-) investigating sites known to have produced coin hoards, Östergren 1981 and 1986. Private use of metal detector is, however, illegal in Sweden, which is probably the main reason why the relationship in find density per km² between Bornholm and Gotland is *c.* 2 to 1, Horsnæs 2013.

The combination of small size, high find density, and exemplary work by local enthusiasts has made Bornholm an ideal laboratory for detector archaeology, and provides an excellent starting point for an evaluation of the results of more than thirty years of detecting. With few exceptions archaeological research of Bornholm in the two recent millennia has until now focussed on one of three themes: burials, hoards, or central places. In the present project we focus on some secondary sites with evidence from different periods, representing either long-lived continued use of the area or several shorter periods of reoccupation. We will attempt to analyse finds from a diachronic perspective, demonstrating both the horizontal development within a single site with continuous occupation or series of re-occupations, or the complete displacement of settlements from one site to another within an area. As part of the investigations of detector sites we will discuss the complexities in the traditional numismatic distinction of hoards and single finds. We will furthermore quantify the coin finds, and compare the evidence gained from detector archaeology with traditionally recovered finds in order to present a first comprehensive outline of the history of coin use in a part of Bornholm from the appearance of the first coins to our days.

1.3 VESTER HERRED

Bornholm is divided into four *herreder* (shires), named after the four corners of the world (fig. 4). Vester Herred (Western Shire) encompasses the south-western part of the island, and within the shire's 145 km² we find good examples of a number of different context types and methods of recovering coin finds, making Vester Herred ideal as a case for our investigation. The shire consists of five parishes, and in each of the five old churches investigations have led to coin finds. The largest town on Bornholm, Rønne, is situated in Vester Herred. As the first town on Bornholm, it was granted a municipal charter in 1327. At least two fortified sites are situated within the shire: Gamleborg ('Old Castle') with remains dating from the Viking Period and Lilleborg ('Small Castle') with a medieval fortress overlying levels from the Iron Age as well as from the Neolithic Period. Metal detector surveys of the market place evolving around the sacred spring Koldekilde ('Cold Spring') have produced one of the most important series of finds of 17-20th century small coins in Denmark. Finally, a considerable number of detector sites have been or are currently under investigation by amateur archaeologists, in particular in Nylarsker and Vestermarie parishes, and a number of these sites have been investigated also by archaeological excavations undertaken by Bornholms Museum [15].

We have decided to use the administrative definition of an archaeological 'site' as the basic unit in the present work. The administration of cultural heritage in Denmark uses the pre-1973 three-level division of the country into county – district/shire – parish, as a framework for archaeological studies. Since the early 19th century descriptions of ancient monuments etc. have been registered parish by parish, and this registration have formed the core of the *Fund og Fortidsminder* (translates to 'Finds & Monuments') database of finds, cultural heritage etc. Each parish was given a six-digit code, and as Bornholm constituted the former Bornholms *Amt* (county) all sites on Bornholm start with the number 06. Vester Herred (shire) is 0603, and the five parishes are numbered 01-05: Knudsker 060301, Nyker 060302, Nylarsker 060303, Rønne 060304, and Vestermarie 060305. Within each parish, every site is assigned a serial number. This means that we may find settlements or complexes consisting of more than one administratively defined 'site' or that a site which was only approximately located in the 19th century may today be interpreted as part of a recently discovered and more precisely located 'site' (see the Brandsgård case).

[15] Few excavation reports have been published, but they are filed and available in Bornholms Museum.

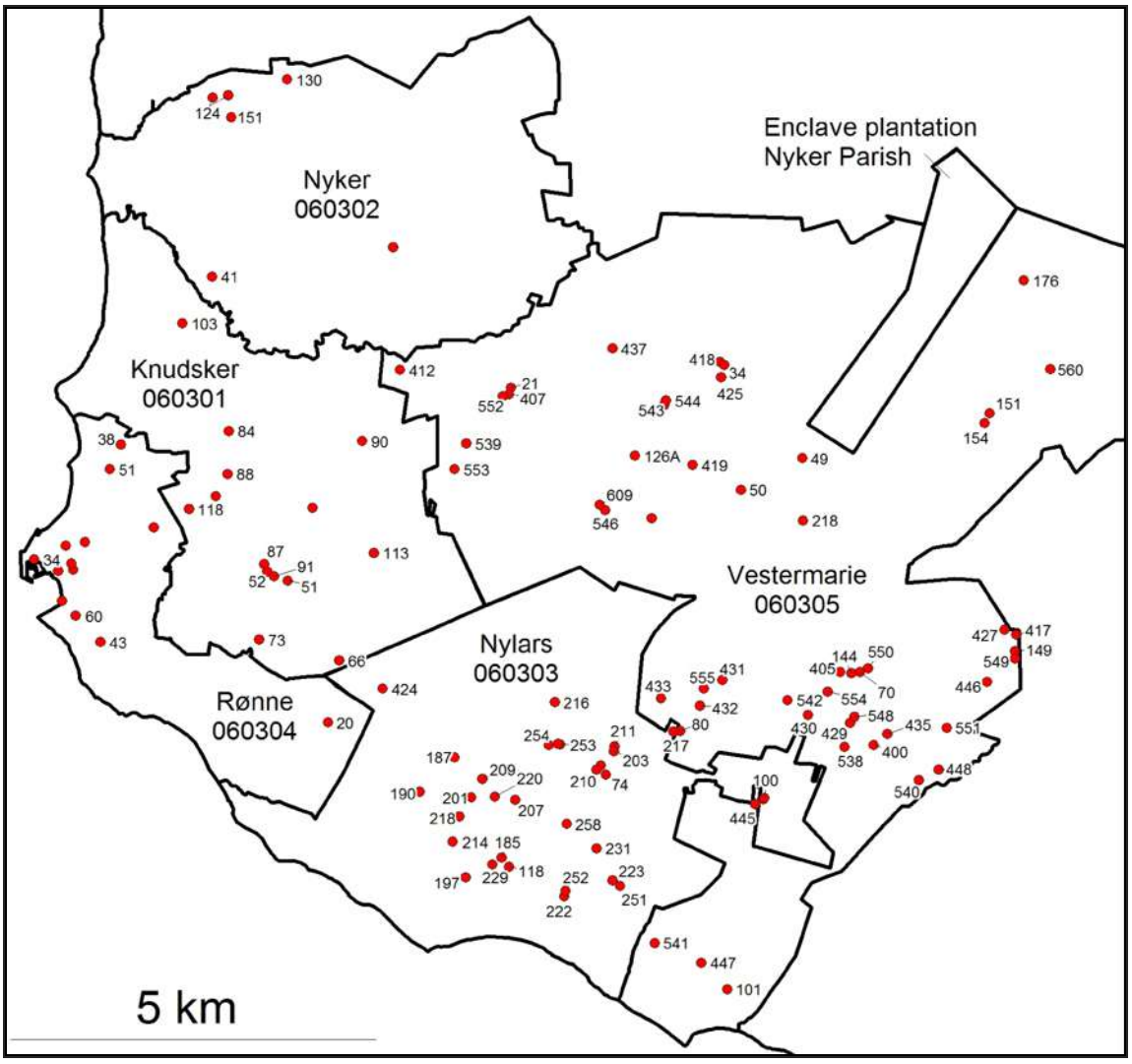

Fig. 4 – Distribution map: all sites in Vester Herred with coin finds (red dots) marked by the serial number. The map contains data from the Danish Geodata Agency

1.4 COIN FINDS FROM VESTER HERRED

Almost 6,000 coins divided into four main periods were included in the analysis (fig. 5). All coins struck until 600 (1,434 coins) have been lumped together under the heading 'Roman coins'. In practice the Roman coins can be divided into three groups. The overwhelming majority are *denarii* struck in the period 64-218/22 (1,410 coins). 20 solidi dated from the second quarter of the 5th to the early 6th centuries form the second group, while the third group consists of only two or three Roman bronze coins found in Vester Herred [16].

Viking Age in Denmark is traditionally dated 700-1066, but is has been decided to extend that period in absolute dates to 600-1100 in order to allow for on the one hand coins struck in the Sasanian Empire and imitations thereof to be discussed in connection with the later Cufic coins that they are normally found with, and on the other to be able to discuss hoards of Viking Age type, *i.e.* mixed silver hoards containing both coins and hacksilver within this timeframe [17].

[16] Horsnæs 2013, p. 139-152 (descriptions of sites) and p. 165-177 (coin lists).

[17] This definition follows the one proposed by von Heijne 2004.

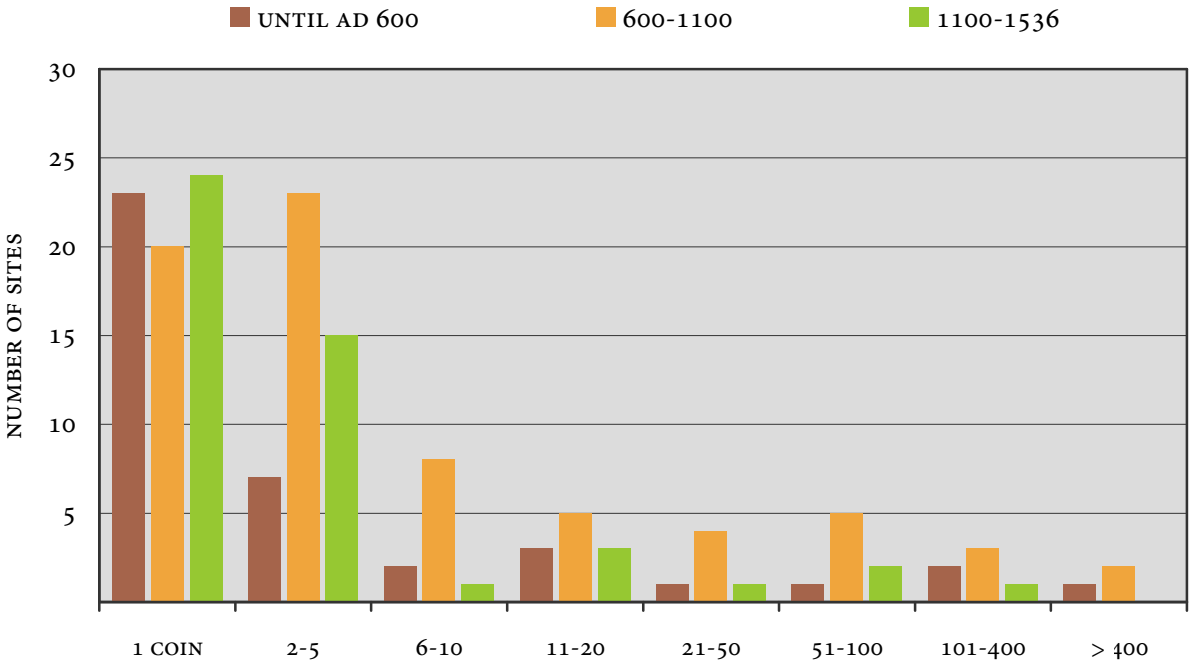

Fig. 5 – Distribution of sites according to number of coins, periods till 600, 600-1100, 1100-1536

The main group 'Viking Age coins' comprises more than 3,100 coins struck 600-1100. An exact number of finds cannot be given: in the 19th century small fragments of coins and other objects from hoards were not formally registered. Normally the 'small' fragments were weighed rather than counted, and they were eventually sent back to the finder or even to the melting pot, depriving us of all possibilities to re-study the material. From the preserved coins we can sometimes assess a minimum number of coins melted down, *e.g.* by guessing that the lost fragments were on average smaller than the preserved specimens, but we will never know for sure. The Kongens Udmark Hoard is an eloquent case. It was found in 1861, partly *in situ* in a pottery jar and consisted of coins and hacksilver. 110 coins were listed individually, but a considerable number of small fragments of Cufic (?) coins were only described by the total weight of fragments, 246.32 g, and were taken to the melting pot. Considering the high degree of fragmentation of many Cufic coins found in hoards this amount of silver may represent many hundreds of individual specimens [18].

It is characteristic for both Iron Age and Viking Period that a considerable number of the sites investigated has yielded only one coin pr. site, while the vast majority of the coins derive from hoards, and a smaller number of sites with multiple single finds.

The third main period, the Middle Ages, comprises *c.* 557 coins struck from *c.* 1100 until 1536 incl. The majority have been found at Lilleborg castle (270 coins) and in the five medieval parish churches (*c.* 181, incl. a hoard with 61 coins from Rønne church). The remaining *c.* 106 coins are found individually, primarily with metal detector. The main groups are *c.* 55 Danish pennies dated from the middle of the 13th century through most parts of the 14th century, 15 Danish klippings from 1518-1523 (wartime coinage), and only *c.* 11 foreign coins.

[18] Galster 1980, p. 33-39, find no. 14. In fig. 7 the fragments have been inserted as 246 Cufic coins – this is probably a conservative estimate, the number of specimens represented by the fragments could be more than 1,000.

According to present practice, all coins from these first three periods found in Denmark are declared treasure, and we can thus ensure an almost complete registration of finds of these coin groups.

The last main period consists of coins struck after 1536. In the present project this group demonstrates a particular methodological problem. Since the beginning of the 21st century coins struck after 1536 are only declared treasure under certain circumstances: for example if they have been found as part of a hoard, during controlled archaeological investigations, in churches, or if they are high denomination gold or silver coins [19]. This means that we do not have systematic records of this part of the total material. This administrative practice is easily visible in the distribution map (fig. 6).

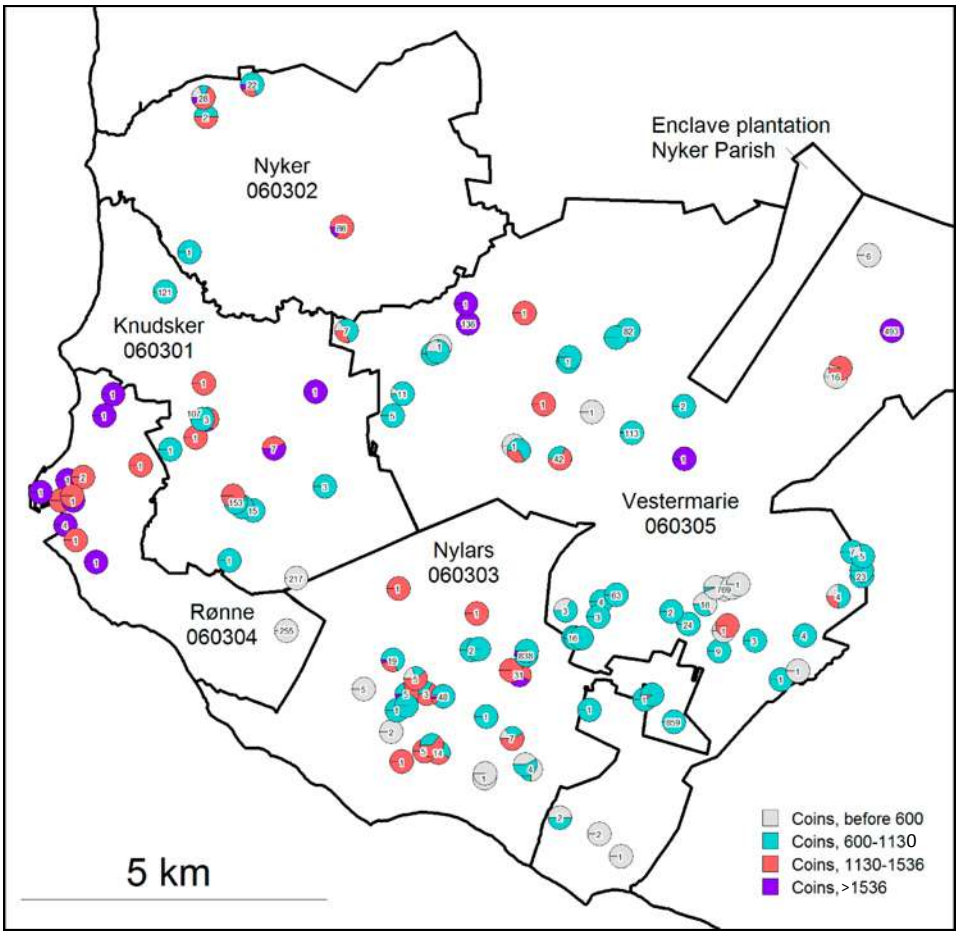

Fig. 6 – Distribution map: coin finds in Vester Herred divided according to main periods and number of coins per site. The map contains data from the Danish Geodata Agency

C. 740 coins from the period after 1536 are registered. No less than 496 are from the sacred spring and market place at Koldekilde, *c.* 41 are from the five medieval parish churches, while 159 are from three hoards. The remaining *c.* 44 coins were found individually, mostly as accidental finds, while very few of them derive from excavations. Single finds of coins post-dating 1536 are clustering in and around Rønne, and a closer look at the find circumstances reveal that most of them were made before metal detecting began, when the *danefæ* concept was defined more broadly than today. Single finds are almost completely

[19] During the 19th and 20th century practice in the administration of the treasure act has been less consistent. In the last part of the 20th century, however, Danish coins struck before *c.* 1660 and foreign coins struck before *c.* 1900 were normally declared treasure.

lacking from the rural areas now subject to intensive metal detecting. Therefore the few single finds cannot be considered representative due to the general lack of registration of single found small coins from after 1536. An isolated look at the distribution map might thus lead to the conclusion that coin use was restricted outside urban areas after the mid-16th century, but nothing could be more wrong: a quick glance at the finds published by the amateur archaeologists' web site falsifies this assumption [20]. Coins post-dating 1536 are in fact quite commonly found by amateur archaeologists in rural areas, but the present administrative practise in the administration of the *danefæ* legislation means that they are rarely handed in for registration. Therefore the finds – although existing – are not available for research.

1.5 COIN FINDS – BEFORE METAL DETECTING

Coin finds made before the early 19th century have often left traces in the archives, as was shown by the lists of early coin finds from Denmark compiled by Galster [21]. The inventory of coin finds in the KMMS was initiated in the first decade of the 19th century and then restarted in 1840. Since then it is possible to follow the development in the number and types of coin finds quite closely, even though some of the coins themselves are no longer available for study.

One of the first to assess the coin finds from Bornholm in general was Christian Jürgensen Thomsen (1788-1865) [22]. He claimed that there were four coin groups dominating the find spectrum of the island: Late Roman solidi, Cufic coins, Western (English and Continental) coins from the years around 1000, and finally low value coins struck in the period from 1241 to the middle of the 14th century. According to Thomsen these four groups were never found mixed with each other. Today this picture has changed considerably: Roman *denarii* have by far outnumbered the solidi [23]; Cufic dirhams are often found in hoards also containing Western coins of the late 10th and 11th centuries [24], and we now have sites where all these coins types – and more – have been found together.

A thorough revision of the basic registration of the coin finds from Vester Herred fell outside the scope of the present project: coins have only been re-identified when encountering obvious errors, or in cases where greater precision of specific type identifications were desired. Roman coin finds were previously published by Breitenstein, Kromann, and Horsnæs [25] while Viking Age coin finds were compiled and discussed by Galster and von Heijne [26]. Mørkholm made a brief note on the Roman coins from Lilleborg, in which a list of the medieval coins was presented [27], and the catalogue of medieval coin hoards from Denmark included finds interpreted as hoards [28], but until now no comprehensive assessment of finds from medieval and later periods has been attempted. This will be the theme of a two-year research project launched from 2014 [29].

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[20] For example http://www.detectingpeoples.dk (consulted March 14th 2013).

[21] Galster 1936a, 1936b, 1937, 1938.

[22] Thomsen 1827.

[23] Horsnæs 2013.

[24] Von Heijne 2004, fig.5·5 (p. 71) and 6·23 (p. 159); in the latter illustration, Cufic coins are included under the heading 'other types'.

[25] Breitenstein 1944; Kromann 1983-84; Horsnæs 2013.

[26] Galster 1980; von Heijne 2004. Later publications of Viking Age coins from individual sites in Bornholm include Moesgaard 2006; Horsnæs 2011; Ingvardson 2012.

[27] Mørkholm 1969.

[28] DMS.

[29] Märcher forthcoming.

1.6 MEASURING AND MAPPING OF SURFACE FINDS ON ARCHAEOLOGICAL SITES ON BORNHOLM

During the last four decades the number of surface finds on archaeological sites on Bornholm has shown an immense growth rate. The overall reason for this development is the presence of a large group of active, disciplined, and knowledgeable amateur archaeologists on the island.

The archaeological and historical value of surface finds is not restricted to the possibility to analyse them as objects. Although they are formally de-contextualized in the sense that their primary depositional context has been destroyed, the fact that information about the exact find spot is recorded by the finder and conveyed in the site documentation allows for mapping of finds in two dimensions. Thus the totality of the finds from an individual site can shed light on aspects such as its size, structure, and horizontal stratigraphy. In many cases the purposeful measuring of surface finds has proven essential for the planning of archaeological investigations of coin scatters suspected of being remains of a buried hoard/deposition brought to light by agricultural works. As such the measuring of surface finds, *in casu* coins, can be rewarding during later excavation in terms of locating point of origin and thus even *in situ* context for the remainder of the hoard.

The measuring of surface finds has undergone significant changes since metal detecting began in the early 1980s. In the first decade of activity all artefact measuring was done exclusively by means of orthogonal coordinate systems laid out on each site, often by the archaeological staff on Bornholms Museum, and subsequently used by the individual amateur archaeologists during surveying. Information about all of these coordinate systems is stored in the archives of Bornholms Museum.

The coordinate systems were normally laid out using a rectilinear field boundary as a primary axis. This type of measuring is time consuming since it requires pulling tape measures between the axes and each find spot. For that reason the ratio between measured and not measured artefacts varies greatly from site to site, with the overall focus on special objects being a deciding factor: high quality or rarity in combination with a clear focus on precious metals.

In the 1990s measuring with total station also took place but this was limited to sites where Bornholms Museum had undertaken or was about to undertake archaeological investigations. Therefore the number of sites where surface finds have been measured with total station is very small; in the scope of our present area of investigation, the shire Vester Herred, measuring with total station has only taken place on Smørenge, by far the largest and best documented Iron Age site in the shire.

The turn of the millennium saw the advent of the handheld GPS-receiver in amateur archaeology on Bornholm and with this new tool the conventional measuring by use of orthogonal coordinate systems became almost obsolete. The GPS-receiver is capable of positioning an artefact very quickly compared to the average measuring time in a conventional system and this has led to an increase in the number of find categories being measured. As a natural consequence the value of find mapping has also increased.

As the GPS-system defines the receiver's position relative to the position of specific satellites, the precision of each positioning depends on the number of satellites within range, *i.e.* well above the horizon, at the time of measuring. With a handheld GPS-receiver the position can, in general, be established with the accuracy of 2-4 metres and on rare occasions better than that.

Alongside the increasing use of handheld GPS-receivers there has been a general change in farmland ownership on Bornholm. This has resulted in a tendency of farmers' merging fields with adjacent fields under the same farm or adjacent fields under a neighbouring farm, either because of purchase of the neighbouring farmland itself or the entire neigh-

bouring farm and its farmland. Often this has no influence on the availability of the fields for surveying, but the field boundaries suffer from this development since they are no longer needed and therefore cancelled. This makes the handheld GPS-receivers all the more necessary since the axes of the conventional measuring systems are in danger of disappearing if not already gone.

As described there are different methods of measuring to take into consideration when mapping the finds. In some cases the surveying of a particular site has ended before the GPS-receiver came in use and so there is only a conventional coordinate system to take into account. The opposite situation can also occur, *i.e.* surveying on a given site has begun only after the GPS-receiver became prevalent. On the majority of archaeological sites on Bornholm the beginning of active surveying predates the advent of the GPS-receiver with several years. As a consequence positions in local coordinate systems often have to be matched with or transformed to positions in a global coordinate system.

The GPS-receivers themselves can also position the artefacts in different coordinate systems that have to be matched with each other. Concepts such as datum and geoid can vary from system to system. Very early on the association *De Bornholmske Amatørarkæologer* decided to use only the coordinate system UTM33WGS84 [30] when positioning the artefacts with GPS. This standard was decided on in order to avoid confusion and maintain consistency when communicating information about finds internally and to Bornholms Museum, subs. The National Museum of Denmark.

In 2005 the Danish National Map & Cadastre (the present Danish Geodata Agency) introduced the UTM/ETRS89 as the standard mapping coordinate system for Denmark. ETRS89 is essentially a European manifestation of the WGS84 system and GPS-coordinates obtained by the amateur archaeologists on Bornholm therefore effectively conform to the Danish national mapping standard.

Naturally, neither the coordinates provided by old-fashioned tape measures, nor those provided by modern handheld GPS-receivers are exact to the centimetre. Due to the lack of precision in measurements we cannot use the maps to relate two or more objects directly to each other. The distribution maps are useful for a more general interpretation of the site, the find density, and possible displacements of the site over time. Furthermore, concentrations of finds within a restricted area indicate that the objects may have been part of the same deposition.

2. ANALYSING COINS AND THEIR CONTEXTS

2.1 HOARDS AND DETECTOR SITES

Numismatists commonly distinguish between hoards and single finds. This distinction is useful for statistics because one find of a large number of coins of the same type, deposited at the same time, may seriously distort any pattern of finds. However, definitions of hoards vary. In some cases any find of two or more coins together is defined as a hoard, while other scholars prefer to use a definition which takes into consideration both the number of coins and their nominal or intrinsic value. In the present study the word 'hoard' is employed for any closed deposition containing two or more items (coins, precious metal etc.). Single finds (also called stray finds) are coins not belonging to a hoard. The distinction between hoard and single finds does not initially take the deposition event into account. Yet, a hoard is often interpreted as a deliberate cache of valuables (a treasure), while un-intentional losses of for example purses are also known. Single finds are, on the other hand, often regarded to be casual losses rather than intentional depositions, and

[30] Universal Transverse Mercator zone 33, World Geodetic System 1984.

they are thereby seen as a better source for understanding the everyday use of coins as money. In these cases we should expect hoards to contain a larger proportion of high denomination coinages or coins of better quality or higher precious metal weight compared to circulation coins. The so-called accumulated finds form a special type of context. They are contexts consisting of a large number of objects formed as a result of a large number of individual losses/depositions. Votive deposits are typical examples of this group of contexts and will be treated below (Koldekilde).

Many hoards known today have been found accidentally during agricultural works, peat digging, or similar processes taking place before the Second World War. In some cases the finds consist of mainly scattered objects, while in other cases the presence of a container for the hoard is mentioned. Sometimes the container is explicitly described as broken in connection with the find, and it is not clear how far objects were removed from the original deposition. The sudden find of many coins and/or other valuables on the same spot or at/in a container clearly reflects a single act of deposition, and thereby the interpretation of the finds as a hoard.

Early finds of hoards can rarely be pinpointed exactly, but in several cases detectorists have succeeded in locating series of finds that together form a structure closely comparable to the material from a previously known hoard. In particular the deposition spot of Viking Age hoards have been sought for systematically, and in many cases it is possible to argue that recent stray finds belong to a hoard found scattered in the 18th-early 20th century. Thereby detector archaeology has enabled a more precise location of the find spot of a hoard, and a possibility of contextualizing the find.

The distinction between hoard and single finds has come under serious pressure as a result of detector archaeology. The distinction does not take into account the many coins found scattered throughout a field thanks to detector archaeology. How should they be interpreted? Are they single finds or hoards? Or should they form a special type of finds?

We opt for a greater awareness among numismatists when interpreting detector finds as 'hoard' or 'single finds' and we propose that a number of different parameters should be taken into account when analysing coins and other objects pertaining to a possible hoard.

- Proximity of finds, not only in relation to each other, but also in a distribution pattern different from other object types from the same site.
- Composition of find types.
- Number of coins and other objects pertaining to a possible hoard in relation to the number of other finds from the same site.
- Similarities in surface conservation of finds.

These parameters should be evaluated both separately and in combination, and scholars should clearly state arguments for their interpretation.

The analysis of the coin finds from Vester Herred underlined the difficulties in this initial level of identification, but it also demonstrated the possibilities when applying strict methodology to the material. We have proved the existence of depositions of several objects together (commonly described as hoards) as well as situations where the finds are more likely to have derived from multiple depositions (commonly described as single finds).

To someone not used to analysing numismatic material, the distinction between hoard and single find may seem an academic exercise of little importance, but it is in fact crucial for the understanding of the processes involved in the deposition/loss of the individual coins and thereby for the consequent anthropological/historical/economic interpretation of the coin use of the individual sites and in Bornholm as a whole.

At Uglegård five coins were found attached into a small stack (fig. 20: distribution map). The two identifiable coins in the stack were struck during the reign of the Danish king Svend Estridsen (1047-1074) in Lund [31]. The remaining coins from the site are varied and found quite distant from each other. Here the close proximity of the Svend Estridsen coins, physically (in a stack!) as well as typologically (coins of Svend Estridsen), and the lack of typological correspondence with other finds from the same site induce us to suggest that the stacked coins were deposited together, while there is little reason to believe that the remaining coin finds from the site were part of the hoard.

At Ndr. Mulebygård a small cluster of coins was found in the north-western part of the site (fig. 16: distribution map). It consisted of a foreign coin and four coins struck during the reign of the Danish king Christoffer of Bavaria (1440-1448). The latter type is so far unknown from other sites in Bornholm [32]. The same situation applies to the finds of five imitations of an issue from the Danish king Niels (1104-1134) unique to Myregård (fig. 18: distribution map) [33]. In both cases the combination of the physical proximity of the coins in question as found and the rarity of the types in the overall picture of finds in Bornholm identify these small clusters of coins as closed depositions, while other coins from the same sites must be interpreted as either single finds/losses or other depositions.

Some of the Viking Age hoards from Bornholm are extremely hard to date. The majority of the Viking Age coins from Bornholm belong to the years shortly before and after the turn of the millennium, but there are several sites where one or a few coins are considerably later than the majority of the coins. While the sheer number of coins (and hacksilver) in relation to the overall number of finds from the site suggests the presence of a hoard, it is very hard to draw a line between objects from the hoard and single finds. A case in question is Store Klintegård (fig. 22), where the distribution of the coins does not provide a clear answer as to the exclusion or inclusion of the two latest coins from the site in the hoard (see case). We here argue that the latest coins do *not* belong to the hoard, but it is important to communicate the uncertainties and discuss their implications for the results of the next interpretative level.

We are probably on safe ground when attributing the coins found on the Brandsgård Øst site to the hoard originally found by the owner of Brandsgård in 1840, because of the close similarities in the coin structure of the two finds. At Vellensbygård on the other hand, new finds cannot be identified as additions to the hoard located in the 19th century due to the minute differences in the coin structures (see cases).

In the following we will present a short survey of hoards from Vester Herred divided into chronological phases.

2.1.1 Roman hoards

Four Roman coin hoards were found in Vester Herred in the 19th century. The earliest find was made in the lake Borresø before 1832. The hoard consisted of an unknown number of *denarii* and some gold spiral finger rings, among which 16 *denarii* and one gold ring were acquired by the National Museum [34]. *Denarii* were registered from Udmarken on three different occasions in 1853 and 1857, but were soon interpreted as the remains of a single

[31] 060303-187; BMR 1550x82; FP 7633.2-6.

[32] See case, below.

[33] See case, below.

[34] Breitenstein 1944, p. 33-35, find 3.

hoard [35]. In 1889 a small solidus hoard consisting of six coins was discovered at Ravnebro in Almindingen forest [36]. Finally, the Robbedale *denarius* hoard was found in 1893 together with fragments of a container [37]. Attempts have been made to locate the exact position of the Ravnebro and Robbedale hoards, so far without success [38].

The locations of these finds are only known through the original descriptions. It is not impossible that stray coins belonging to the hoards may still be found, but the find spots of these hoards are in terrains unfavourable to metal detectors and no attempt to locate the depositions have been made. On several occasions Roman *denarii* have been found on the Lilleborg castle mound next to the Borresø, and although the Borresø Hoard should be interpreted in connection with these finds they are not part of the same deposition [39].

The only undisputed hoard of Roman coins from Vester Herred recovered by the use of metal detector was found in 1983 on the Smørenge site. The subsequent rescue excavation located the original deposition of the hoard in two small pottery jars [40]. The hoard was most probably deposited in the late 5th or early 6th century, as a solidus struck under Anthemius (467-472) was found only 15 cm from the pottery containing part of the hoard [41]. A second cluster of *denarii* have been identified on the same field, but it cannot be proved whether this material belong to the 1983 hoard or an independent deposition. In fact it has not been possible to say with certainty how many of the more than 700 *denarii* from this field actually derive from the hoard(s) and how many should be considered 'single' finds or 'stray' finds. Analysis of the surface conservation revealed that some *denarii* found on the same field as the hoard differed considerably from the coins found in or at the deposition area [42]. These *denarii* should not be considered part of the hoard. Unfortunately there is a large 'grey zone' of *denarii* without clear-cut surface characteristics, and in such cases it is preferable to admit that definite conclusions cannot be reached.

2.1.2 Viking Age hoards

Viking Age coins make up for a very large number of the total number of coins finds from Vester Herred (fig. 7 and 8). The vast majority of them can be assigned to hoards.

Five Viking Age hoards were located in the 19th century (Tyskegård, Brandsgård, Engegård, Vellensbygård, Kongens Udmark) [43]. Three of them have been found again during recent detector surveys and more coins have been added to the original find numbers. The identification of the detector finds as part of the previously found hoards can be ascertained because the unusual and very characteristic composition of the coins in both the original hoards is echoed in the recent detector finds. Tyskegård consists of exclusively Anglo-Saxon coins [44], while the Brandsgård Hoard has a significant number of Nordic coins normally ascribed to Haithabu which are otherwise rarely found in Bornholm [45].

[35] Breitenstein 1944, p. 3-7, find 1 with references.

[36] Breitenstein 1944, p. 66-68, find 26.

[37] Breitenstein 1944, p. 7-33, find 2.

[38] Information from Finn Ole Nielsen, Bornholms Museum.

[39] Horsnæs 2013, p. 145-149.

[40] Kromann & Watt 1984.

[41] Kromann & Watt 1984.

[42] Horsnæs 2006; 2013, p. 129-134 and p. 167-175 (list of *denarii*).

[43] Galster 1980, finds nos. 20, 21, 31, 16 and 14.

[44] 060305-34 and -418; Galster 1980 no. 20; von Heijne 2004, find 5·103; Moesgaard 2006.

[45] 060301-52 and -91; Galster 1980 no. 21; von Heijne 2004, find 5·74. See case study below.

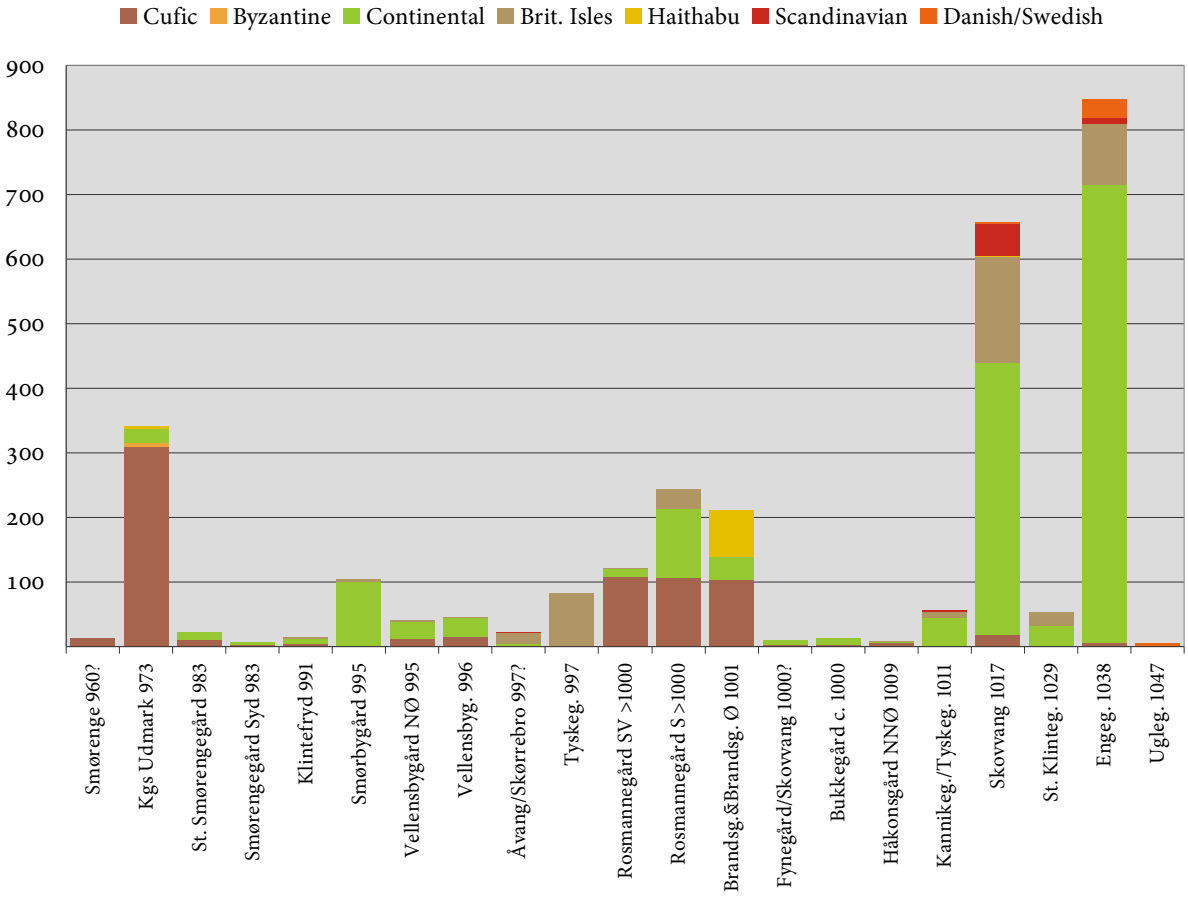

Fig. 7 – Number of coins in Viking Age silver hoards from Vester Herred

Engegård consisted of 859 coins (w. 1,044 g) and 924.63 g hacksilver. The coin *tpq* of the hoard is based on two coins of Bretislav I of Bohemia (1037-1055). The presence of 19 coins of king Hardeknud (1035-1042) and the absence of coins struck under king Magnus (1042-1047) suggest that the hoard was deposited close to the *tpq* date [46]. Nine Viking Age coins found during detector surveys at Engegård are of types comparable to those of the hoard. In particular three coins struck in Cologne during the reign of emperor Conrad II and archbishop Piligrim (1027-1036) of the type Häv. 222, which was already present in eight specimens in the Engegård Hoard but not recorded elsewhere in Vester Herred, should be mentioned. To date only 31 objects in total have been recorded during surveys, and the identification of the detector site as the original find spot of the 19th century hoard find is convincing [47]. Vellensbygård was found in 1811. It consisted of 56 coins, among which 10 were never identified fragments, as well as two chains and 28 pieces of hacksilver (total weight 437.5 g), *tpq* 996 [48]. Detector surveys at Vellesbygård NØ have brought to light more Viking Age coins as well as one Roman and four medieval coins, and two coins postdating 1536. At first sight, the over-all composition of the recently found Viking Age coins seems comparable to that of the 19th century hoard, yet minute differences in composition of individual coin types have induced us to suggest that the newly found coins constitute a second hoard (See case).

[46] 060303-100; Galster 1980, no. 31; *DMS* 1; von Heijne 2004, find. 5·79 (hoard).

[47] The first detector finds were mentioned by von Heijne 2004, find 5·80.

[48] KMMS inv.no. FP XI. Galster 1980, no. 16; von Heijne 2004, find 5·91. See case study.

Site	sb	Site name	Prof. exc.	Det.	Coins in hoard	Other coins	Hack silver	G	H	Other litt.
060305	144	Smørenge	N	Y	13	756	?			
060305	50	Kongens Udmark	N	N	>110 [49]		Y	14	97	
060305	430	Store Smørengegård	N	Y	23		N			
060305	538	Smørengegård Syd	N	Y	8	1				
060305	424	Klintefryd	N	Y	15	1	not mentioned		82-83	
060301	88	Smørbygård	Y	Y	105 [50]		Y		77	
060303	207	Vellensbygård NØ	N	Y	41	7	Y		(92)	
060303	–	Vellesbygård	N	N	56		Y	16	91	
060305	549	Åvang/Skørrebro	Y	Y	23		Y			
060305	34 & 418	Tyskegård	Y	Y	82		N	20	103	Moesgaard 2006
060301	103	Rosmannegård SV	Y	Y	121		Y			Horsnæs 2011
060301	103	Rosmannegård S	Y	Y	245		Y			*ibidem*
060301	52 & 91	Brandsgård & Brandsgård Ø	N	Y	215		Y	21	74	
060303	211	Fynegård/Skovvang	N	Y	11	2	Y		81	
060302	130	Bukkegård	N	Y	13	9	Y			
060305	539	Håkonsgård NNØ	N	Y	9	2	Y			
060305	425	Kannikegård/ Tyskegård	Y	Y	61	1	Y		95	
060303	203	Skovvang	Y	Y	836 [51]		Y		86-87	
060305	431	Store Klintegård	Y	Y	61	2	Y		101	
060303	100	Engegård	N	Y	868		Y	31	79-80	
060303	187	Uglegård	N	Y	5	13	N			

Fig. 8 – Viking Age silver hoards, in chronological order (tpq date of hoard). Legends: N = no; Y = yes; G = Galster 1980, find no.; H = von Heijne 2004, Bornholm find no. To this list should probably be added some sites with finds of one or a few Viking Age coins in combination with hacksilver: Klintefryd SØ (060303-217); Tornegård Vest (060303-231); Almegård (060305-433; BMR 2661); Ll. Bjergegård NNV (060305-544)

Since 1995 detector surveys have located several previously unknown Viking Age hoards in Vester Herred. The two most recently found hoards were located only 50 m apart at Rosmannegård in 2008. Rosmannegård Sydvest consisted of almost exclusively dirhams and it was deposited *tpq* 997 (based on a specimen of Æthelred II long cross type). Rosmannegård Syd is almost contemporary, but in spite of the chronological correspondence and the close distance between the finds, the two hoards present significant differences in com-

[49] 110 coins were registered in the KMMS. To these should be added 'small fragments of the same issues', probably referring to the Cufic dirhams, 'with a total weight of 246.32 g'. In fig. 7, these fragments have been inserted as 246 dirhams, but the real number could easily be considerably higher, as many Cufic fragments from Bornholm weigh only a fraction of a gram.

[50] Diagram fig. 7 is based on the first 97 coins found, registered in KMMS as FP 7450.

[51] Diagram fig. 7 is based on the first 663 coins found, identified by Kenneth Jonsson. Some of the coins registered as 'Skovvang' have been found close to the Fynegård/Skovvang border, and they most probably belong to the Fynegård/Skovvang Hoard rather than to the Skovvang hoard (we thank Finn Ole Nielsen for this observation).

position as well as in the degree of fragmentation of the coins [52]. The Smørbygård Hoard was located in 1998, and excavations showed that it had been deposited in a small pit close to a barn and to remains of a boundary or wall. Today the hoard consists of 107 coins and hacksilver, and it is dated *tpq* 995 based on the presence of a coin of Duke Heinrich IV of Regensburg (995-1004) [53]. The coins, however, have a quite unusual composition. Apart from a single dirham and four CRVX coins of Æthelred II, the hoard is completely dominated by Continental coins. Many of these were struck before the turn of the millennium, but no less than 54 are Otto Adelheid Pennies (henceforth OAP) of types Hatz III and/or IV that may point to a deposition date somewhat later than the *tpq* date [54]. The Skovvang Hoard is the largest among the newly found hoards. It was discovered by an amateur archaeologist during a metal detector survey in 1995 and immediately excavated by Bornholms Museum. The hoard was found partly in situ in a Baltic Ware jar. A preliminary list of finds included 666 coins, and a *tpq* date 1017 was based on the presence of four coins struck during the reign of Cnut (1017-1035) and a noteworthy number of Anglo-Scandinavian coins [55]. Since then another 170 coins have been found at Skovvang during excavation in 1996 [56], and during four seasons of detector surveying in the years 1997-2000 [57]. The majority of these probably derive from the Skovvang Hoard. The hoard also included hacksilver.

There is little doubt that a hacksilver hoard with Viking Age coins was once deposited in the Viking Age settlement at Store Klintegård, but the distribution of the coins does not provide a clear answer as to the exclusion or inclusion of the two latest coins in the hoard. It is here suggested to see them as single finds, and consequently date the hoard *tpq* 1029 (see case).

A hoard found at Kannikegård/Tyskegård presents a similar problem. The first 21 coins and three pieces of hacksilver from the hoard were found during metal detector surveys on the boundary between the two properties Kannikegård and Tyskegård in 1994. During the subsequent emergency excavation 26 coins, one piece of hacksilver, fragments of *fibulas* from the Early Germanic Iron Age, a weight and two buckles of bronze were found [58]. Today 62 coins have been registrered from Kannikegård/Tyskegård from a total of 104 recorded finds (*c.* 60% of all finds). The majority belong to the years around the turn of the millennium, with a significant concentration of Otto Adelheid Pennies, type-identical Cross-deniers [59] and other German types, providing a numismatic *tpq* for the hoard in 1011. A single coin struck under Svend Estridsen (1047-1074) was found on the site as well, but considering the close temporal correspondence among the remaining coins, as well as the fact that the *tpq* date is provided by a number of coins rather than a single specimen, this induces us to suggest that the Svend Estridsen coin should be interpreted as a single find.

[52] Horsnæs 2011. More than 30 coins have been found at Rosmannegård since then.

[53] Hahn 1976, type 25.

[54] 060301-88; BMR 1491. KMMS inv.no. FP 7450; additional finds made during detector surveys in 2000, 2001 and 2002 have not yet been registered in KMMS. *AUD* 1999, 142.

[55] The coins were examined and preliminarily identified by Kenneth Jonsson in 1996/97. Von Heijne 2004, find 5·86.

[56] 132 coins, exc.no. BMR 2291x14-150.

[57] 38 coins, exc.no. BMR 2291x152-168, x173-187, x189-197.

[58] 060305-425; BMR 2174. *AUD* 1995, 266 (coin list); *AUD* 1997, 247; von Heijne 2004, find 5·95 and 5·96.

[59] Following Kilger 2000, p. 161-169, 'Cross-denier' is here used as the English name for the coin types often described in German as Randpfennige, or previously as Sachsenpfennige or Wendenpfennige.

Åvang/Skørrebro belongs to a cluster of Viking Age sites on either side of the Læså stream dividing Vester Herred from Sønder Herred. The sites in this area are dominated by Viking Age material, but there are significant differences in the coins structure when comparing the individual sites. Åvang has produced 35 recorded finds, among which 23 coins (*c*. 66%), dominated by small cross issues of king Æthelred II (997-1017: 18 coins, in addition one Scandinavian, two German and two Cufic coins) [60]. The remaining finds include hacksilver. It is likely that most of or all the coins as well as the hacksilver come from the same deposition, which could present a small-scale parallel to the Store Frigård II Hoard, also dominated by Æthelred II's coinages [61]. Across the stream the Skørrebro/Bagergård site has yielded a 10th century dirham hoard [62].

As outlined above several parameters must be taken into consideration when interpreting multiple finds of coins as either hoards or single finds: the composition of the coin types, the proximity of the finds in the field, their relation to other finds, the number of coins, and this number of coins in relation to the number of other finds. Among 'other finds', hacksilver takes a special position. The majority of the Viking Age coins derive from hacksilver hoards containing *among other things* silver coins from a wide variety of mints. A few hoards stand out as atypical, because they seem not to have contained hacksilver: either single-type hoards (Tyskegård, only English coins), or hoards consisting of coins rarely encountered in other sites on Bornholm (Brandsgård).

In general the amount of hacksilver in hoards seems to diminish after *c*. 1000 AD [63], but this is not the case in Bornholm, where hoards until the 1150s include considerable proportions of non-numismatic objects [64]. The presence of hacksilver on a detector site is therefore an extra indication to interpret multiple finds of Viking Age coins as remains of a silver hoard. In some cases even a single or very few finds of Viking Age coins in reality turns out to be part of a hoard. This is possibly the case in the recently discovered settlement at Almegård, which has so far produced two Viking Age coins in connection with hacksilver [65].

It is thus possible that small Viking Age silver hoards may not yet have been recognized. A review of three sites with around ten Viking Age coins (Fynegård/Skovvang, Håkonsgård NNØ, and Lillevang) demonstrates that while the majority of the Viking Age coins can indeed be ascribed to closed depositions, in other cases it is extremely hard to distinguish between single finds and remains of 'very small hoards', 'very dispersed hoards', or 'hoards still to be found/identified'.

Fynegård/Skovvang is situated close the Skovvang site where the above-mentioned large hoard was discovered [66]. The site has only been surveyed twice in the 1990's, but has nevertheless produced a total number of 72 recorded finds among which a possible Viking

[60] 060305-549; BMR 3188.

[61] Moesgaard 2006.

[62] 060205-289; BMR 3337, excavated in 2007. Unpublished, but mentioned in Ingvardson 2012, p. 308.

[63] Von Heijne 2004, p. 127-128.

[64] Store Frigård: von Heijne 2004, find 5·135. In 2012 and 2013 two silver hoards were found *c.* 1 m apart near Østermarie in northern Bornholm. The first contained several coins, among which German bracteates providing a numismatic *tpq* for the hoard 1153, Grinder-Hansen et al. 2013.

[65] The amount of hacksilver and of possible mixed hoards may, however, be even larger than normally recognized. As we have seen, small fragments of coins were discarded from 19th century finds, and even today small fragments of silver or even gold are not consistently declared treasure.

[66] 060303-211; BMR 2239.

Age hoard consisting of hacksilver and ten or eleven coins (*c.* 14% of the total number of finds). The coins are three dirhams and eight German coins, among which four OAP. One of the German coins was struck in Goslar 1046-1056 (king Heinrich III), and it is possible that it should be considered a late single find in line with the situation at for example Bukkegård and Store Klintegård (see cases). Furthermore the field has yielded a medieval penning (struck in Lund, 1270s, MB 119) and a pre-modern Danish 2 skilling.

Håkonsgård NNØ is a newly found site, which has so far yielded a total of 83 objects among which ten Viking Age coins and a single Roman *denarius* recorded during four surveys (*c.* 11%) [67]. The Viking Age coins are five dirhams, two German coins, and two English coins. One coin is not identified. One of the English coins is unusually late, struck 1050-1053 (Edward Confessor), while the remaining ones belong to the 10th and early 11th centuries. Other finds include a considerable number of hacksilver pieces, and the finds may tentatively be interpreted as a scattered Viking Age silver hoard and possibly some single finds. Håkonsgård NNØ is situated in an area which has not been densely surveyed, but it is interesting to note that the Håkonsgård N site only 400 m away has produced five Viking Age coins and other settlement material during three surveys since 2005 [68].

Lillevang has produced 150 recorded objects. The numismatic material forms two distinct groups of coins [69]. One consists of nine Roman *denarii* (*c.* 6%), the other of twelve Viking Age coins from the 10th century (*c.* 8%): ten dirhams and two Cross-deniers [70]. The site thus conforms to the emerging group of sites – notably Sorte Muld [71] and Smørenge (see case study) – with a combination of Roman coins and 10th century Viking Age coins, but no 11th century coin finds. This impression is supported by the finds of three *denarii* and one dirham on the field across the road, and the site has been described as the most promising Germanic Iron Age site in the area [72]. The number of Viking Age coins in relation to other finds from the Lillevang site is not as high as in some of the other sites here discussed, and no finds of hacksilver have so far been mentioned. Unfortunately it was not possible to examine the artefact distribution of the site within the present project. The site has therefore not been listed among possible Viking Age hoards [73].

Coin hoards are often dated by the *tpq* method – based on the earliest possible deposition date of the latest coin of the hoard. The method is well established and most useful in cases where coin types are in use for a restricted period, or where the coin hoards have a so-called 'strong end'. In 11th century hoards from Bornholm, however, the end coin is often a German/Continental coin type that can only be identified in detail by specialists, and/or it is of a type that can only be dated within a relatively broad time frame. Furthermore the coins are often bent, pecked, or fragmented. Therefore many coins are only classified in a basic registration as 'German type from the late 10th-11th century'. It is therefore necessary to point out that some of the Viking Age hoards from Bornholm (including those discussed in the present study of Vester Herred) may be deposited later than what is indicated by the *tpq* date, as the real end coin may not have been recognized during registration.

[67] 060305-539; BMR 3428.

[68] 060305-553; BMR 3427.

[69] 060303-223; BMR 2656.

[70] One identified as Kilger 2000, kn 1, dated 965-985.

[71] Aarsleff 2010.

[72] 060303-251; BMR 3495.

[73] The distribution of the finds from Lillevang has not yet been plotted.

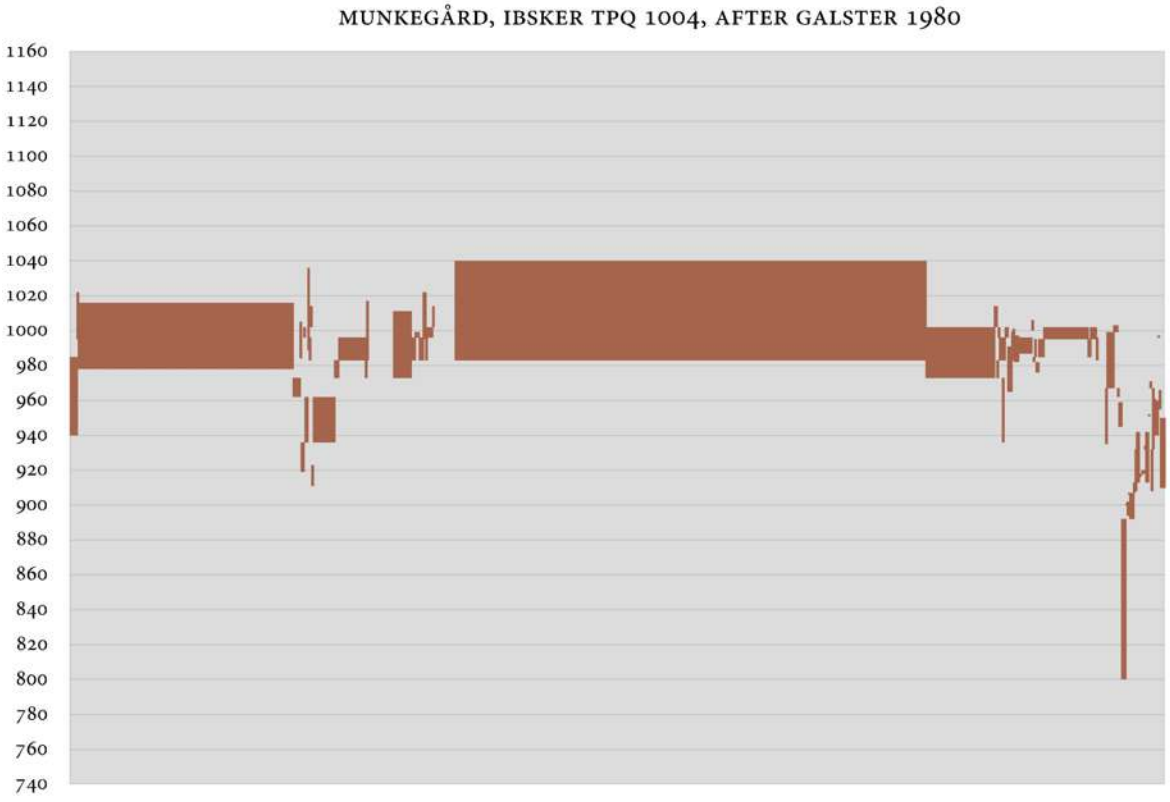
MUNKEGÅRD, IBSKER TPQ 1004, AFTER GALSTER 1980
1160
1140
1120
1100
1080
1060
1040
1020
1000
980
960
940
920
900
880
860
840
820
800
780
760
740

Fig. 9A

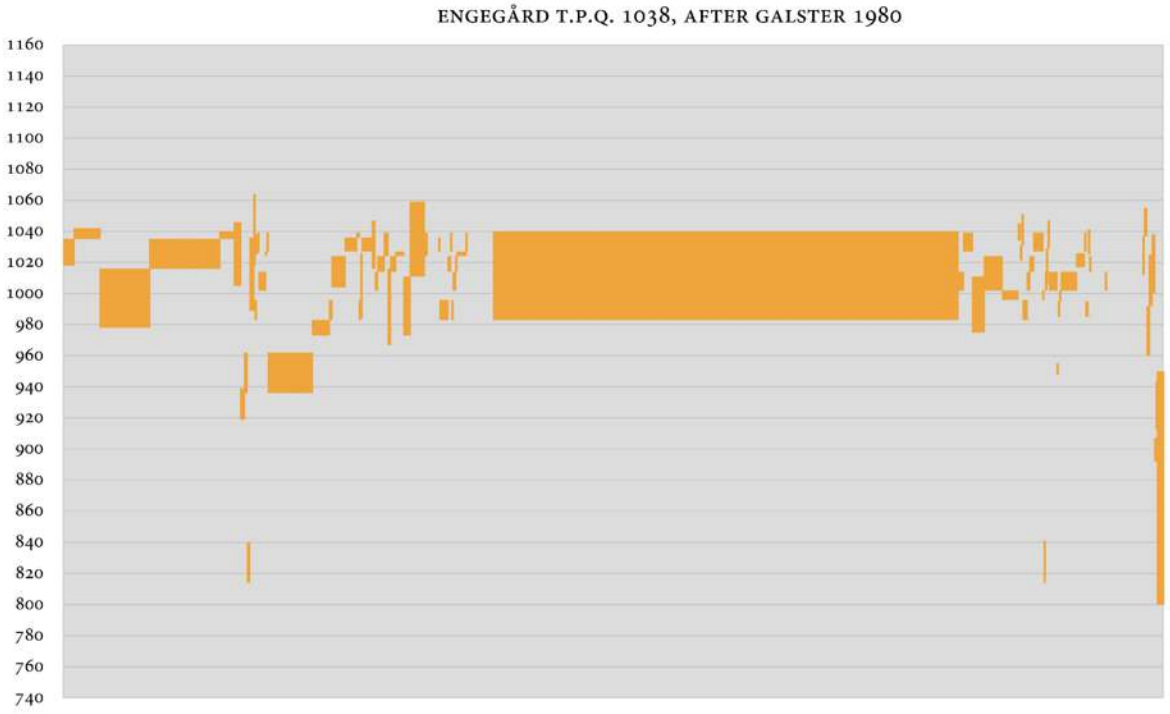
ENGEGÅRD T.P.Q. 1038, AFTER GALSTER 1980
1160
1140
1120
1100
1080
1060
1040
1020
1000
980
960
940
920
900
880
860
840
820
800
780
760
740

Fig. 9B

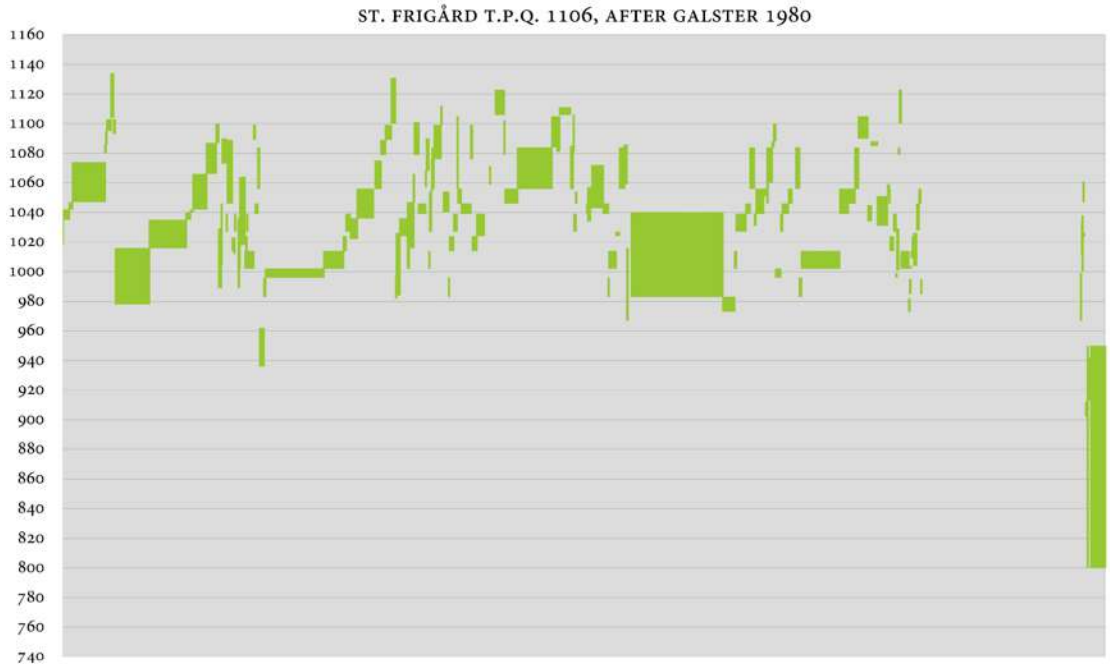

Fig. 9A-C – The chronological composition of three major hoards from Bornholm as presented by Galster 1980. Munkegård (Ibsker – 9A) tpq 1004; Engegård (Nylarsker – 9B) tpq 1038 and Store Frigård (Østermarie – 9C) tpq 1106. Each line represents the possible date range of a single coin. An empty line represents an unidentified or undated coin.

Most Viking Age hoards from Bornholm are characterized by a 'weak end', where the majority of the coins are considerably older than the latest issue(s) represented (fig. 9). The *tpq* date is therefore based on a singleton or a very low number of the coins from the hoard that can be dated within a short time frame. In large hoards the number of coins securely *tpq* dated within the last decade before the hoard *tpq* is very low, varying from *c.* 3% to 7% [74]. The recently published diagram representing the structure of the Nørremølle Hoard from Bornholm is instructive, because it includes both the geographical and chronological composition of the coins from the hoard, as well as the insecurities deriving from coins types dated only within broad periods [75].

This applies in particular to the Otto-Adelheid Pfennige (OAP). It is one of the most common coin types of Viking Age Scandinavia, and it appears regularly in hoards with a *tpq* date from the late 10th century until into the 12th century. The OAP were probably struck from the accession of king Otto III in 983, but the type was continuously produced with immobilized types until the mid-11th century, long after the death of Otto. The typology of the issues allow for a more precise dating of some of the OAP types [76], but unfortunately many of the coins are badly preserved (bent, pecked, fragmented, or simply much

[74] Based on hoards from Bornholm containing +600 coins: Munkegård *tpq* 1004: 7% coins struck after 994; Nørremølle *tpq* 1024: 4% coins struck after 1014; Engegård *tpq* 1038: 4% coins struck after 1028; Bolbygård *tpq* 1042: 5% coins struck after 1032; St. Frigård *tpq* 1106: 3% coins struck after 1096. The figures are approximate, and the uncertainties caused by the large number of undated or only generically dated coins in Viking Age hoards must be stressed.

[75] Ingvardson 2012, fig. 4.

[76] Typology by Hatz 1961; dating of individual issues by Rundberg 2000. Rundberg dated the beginning of the oap issues in 991, but Ilisch 2005 and Leimus 2006 both suggested that the minting of the oap started with the accession of Otto in 983.

worn or corroded) which renders the type identification difficult, or they derive from finds where the coins were not preserved till our days. For example the initial registration of the coins from the Engegård Hoard (*tpq* 1038) listed 163 OAP. Three were of Hatz type I and 160 were of Hatz type III-IV, but cannot be more precisely identified today. The majority of the Hatz III-IV coins from Engegård, 120 specimens, were taken out for melting [77].

The longevity of coin types from the late 10th and early 11th century in combination with the 'weak end' of several hoards found (partly) *in situ* of course makes it extremely difficult to date Viking Age hacksilver hoards with precision. This will also have implications for the interpretations of single finds. Knowing that many Viking Age coins must have circulated for a century or more, the production date of any single find of a Viking Age coin can only be seen as a very rough guide to chronology. It will always have to be qualified by comparison with the total find spectrum from a site. Furthermore the long chronological structure of some Viking Age hoards makes it difficult to include or exclude coins from a hoard solely on the basis of the production date of the individual coins. On the one hand, all coins from a site need not belong to the same deposition, on the other hand, how can we distinguish between single finds (stray finds) and coins from a scattered hoard? This question has been acute in three sites in Vester Herred: Kannikegård/Tyskegård, Klintefryd, and Store Klintegård. Having studied the composition of the numismatic material in relation to the spatial distribution of finds we suggest that the few coins from these sites struck around and after the mid-11th century should be interpreted as singletons. All the remaining Viking Age coins have been listed as part of hoards in figure 7, notwithstanding the fact that even some of them may have been single depositions/losses.

According to von Heijne both Bornholm and Scania have produced an above-average number of finds from the period 990-1005 [78]. This is certainly true in Vester Herred, where the majority of the Viking Age hoards are *tpq* dated in the late 10th century or around the turn of the millennium. Other areas of Bornholm have however yielded a larger percentage of hoards dated into the second quarter of the 11th century, but few hoards have a *tpq* date after 1050. On the basis of the present analysis it is not possible to decide whether the concentration of hoards from *c.* 1000 AD in Vester Herred is anything but casual. It is however true that hoards with a *tpq* date in the second quarter of the 11th century or later are still dominated by coins struck many years earlier. This leads to the suggestion that the hoarding of silver was a phenomenon mainly connected to the late 10th and the first half of the 11th century. The influx of silver faded during the second quarter of the century, and it was very small in the second half of the 11th century.

The majority of the Viking Age coins have been found on sites interpreted as settlements. This applies both to the sites with few or scattered coins that cannot with certainty be related to a single large deposition, and to the sites where excavations have been undertaken in connection with a hoard [79]. The same coin types are repeatedly found in the majority of the sites, either as hoards or as possible single finds, yet there are differences in composition from one hoard to another and occasional appearances of several specimens of otherwise less well represented types in a single hoard. While some hoards seem to have been formed outside Bornholm and brought to the island as a closed entity, the settlement context in connection with the 'long' chronological spread of coins and other silver objects

[77] Registration of KMMS inv. no. FP 241. The OAP are listed by Galster 1980, p. 95 as nos. 332-484, note that he listed the 160 OAP of Hatz III-IV as only 150 coins, nos. 335-484.

[78] Von Heijne 2004, p. 155.

[79] Ingvardson 2012.

in most hoards suggest that wealth in the form of silver was acquired continuously over a long period and that the stores of wealth were 'active' in the sense that the more recent coins from a hoard represent a topping up of earlier accumulations of valuables taking place in Bornholm [80].

2.1.3 A Viking Age burial

15 dirhams were found in a cist built of four stones in a mound near Rabækkegård. This is the only case in Vester Herred where coins were probably part of a 10th century burial. The burial context is clearly a closed deposit, but it cannot be directly compared with the hack-silver hoards. The find comprised one reworked Ommayad coin and 14 Samanid coins among which some were fragmented [81]. The grave furthermore contained bronze jewellery and 29 glass beads, and the coins were most likely part of a jewellery set [82]. No other 10th century burial from Bornholm contains coins, but a significant number of 11th century burials with coins have been found in the large cemetery at Nr. Grødbygård [83].

2.1.4 Medieval and later hoards

At least five medieval and four later hoards have been found in Vester Herred [84]. The majority of these finds were made in the 19th and early 20th centuries, and the ones dated *c.* 1050-1550 are described in the catalogue of medieval hoards found in Denmark (DMS). The catalogue includes four hoards from Vester Herred, of which one, the hoard from Engegård (DMS 1, where the site is called 'Enegård'), is already mentioned among the Viking hoards. Two coins found under a building in Rønne and sent together to the coin collection in 1874 were interpreted as a hoard (DMS 63). The coins are pennies from the reign of the Danish kings Knud VI (1182-1202) and Valdemar II (1202-1241), but we do not know whether or not they were found together or at the same time, and there is no additional information *e.g.* about a purse. Due to this lack of information, it is not reasonable to consider the two coins a hoard. Four type-identical coins struck in Lund in Scania during the reign of Eric Ploughpenny (1241-1250, MB 5) were found in 1963 by a couple of schoolboys, who reported that the coins were lying together in loose soil close to a wall at Lilleborg castle (DMS 80). Other specimens of this and contemporary types are found among the remaining coins from Lilleborg, and some of these may belong to DMS 80 or to other closed depositions. A hoard of 61 coins was found 1916 in Rønne church during rebuilding (DMS 195) [85]. It appears to be fully recovered and confined. The coins lay in a bag-like cover, which unfortunately has not been preserved, on the foundation of the Gothic northern wall west of the Gothic outer door around 3-3.5 metres from the west gable just below the old floor layers. The hoard consists of 53 Danish pennies from Lund dated from the 1280s to the middle of the 14th century and eight Swedish bracteates from the 1350s or later. The pennies are hard to date precisely, but the important type MB 656 struck *c.* 1359-1361 is not present, and the Swedish coins provide a *tpq* 1356 that probably dates the deposition to the second half of the 1350s.

[80] Ingvardson 2012, p. 311 for similar thoughts.

[81] Galster 1980, p. 30-31 with references.

[82] Thanks to Anne Pedersen for a discussion of the find.

[83] Wagnkilde 2000.

[84] Perhaps some of the remaining coins from Koldekilde, the churches and Lilleborg should also be interpreted as hoards. The lack of precision in registration of these finds makes it impossible to be sure.

[85] For this hoard see Jensen 1977.

Two medieval hoards have been recovered during detector surveys. A small 15th century hoard was found at Ndr. Mulebygård and a small hoard of 12th century counterfeit coins comes from Store Myregård (see cases).

Three post-Reformation hoards were found in the 19th century. Around 1899 a boy found four Polish 3-groschen from 1583, 1586, 1590, and 1592 near the beach at Kapelstræde 83a in Rønne [86]. The unusual composition of the four coins must be a hoard, but since no further information exists *e.g.* about container, it is impossible to know if it was then fully recovered. No registration of coin finds from this location or of other finds of medieval or later Polish coins on Bornholm exists. Another poorly described coin find was made *c.* 1862 [87], when 18 Danish (probably incl. Norwegian) coins dated between 1663 and 1734 were found during paving of a street in Rønne. It was probably a hoard, but no further information on the coins or the find circumstances exists. The coins were sent to KMMS, and this would probably only be done if the find was then considered to be a hoard. A typical Danish hoard from the middle of the 18th century primarily consists of small, domestic coins from the middle of the 17th century and onwards – and this also seems to be the case with this poorly documented hoard. The youngest hoard from Vester Herred was found in 1877 on the boundary between Steensgård and Gadegård by a smallholder removing a tree. It was probably fully recovered. The 137 silver coins are all Danish-Norwegian small coins from 1629-1750 [88].

In the 1990s two (or perhaps three) coins melted together were found at Vellensbygård with metal detector. The coins are probably Danish-Norwegian 2 skillings from the 17th century, and since they are found together, they in numbers constitute the smallest possible hoard [89].

2.1.5 Other medieval and later coin finds

2.1.5.1 Lilleborg Castle

Lilleborg ('Small castle') is a medieval castle mound in the forest Almindingen. It is situated next to the lake, Borresø, which served as part of the fortification of the castle. Since the early 19th century a total of 270 medieval coins have been found in or around Lilleborg (fig. 10). Unfortunately the find spots of the coins were rarely recorded, and then only in rather general terms: 'in the courtyard' or 'on the southern slope'. Many coins were found during investigations undertaken in the 1950s when sifting the soil heaps from 19th century earthmoving and excavations.

Almost all coins are Danish pennies, and they are important for the understanding of the life of the castle and power structures on Bornholm in the 12-13th century. The chronological distribution of the coins is quite clear and indicates activities on the site from at least the middle of the 12th century to the 1270s with a weak period during the reign of Valdemar II (1202-1241), and a strong and absolute end in the 1270s. The castle is generally believed to be founded in the middle of the 12th century. This dating is based primarily on the coin finds, and may be misleading. Coins from the early 12th century are rarely found on Bornholm, so an earlier phase may not have yielded numismatic evidence. A Papal letter refers to the complete destruction of the king's castle on Bornholm in 1259

[86] FP 765.

[87] FP 231.

[88] FP 410; Märcher 2012B, p. 330-332, pl. 49.

[89] 060303-201; BMR 2031; FP 6116.1-2.

during struggles between the king and the archbishop in Lund. This castle was probably Lilleborg, but the extent of the damages may have been exaggerated as the letter is the response to an appeal from the Danish king to the Pope to intervene against the archbishop. The coin finds clearly shows activities on the site until the 1270s, and other finds supports the idea that the place was alive in the decades after 1259 [90].

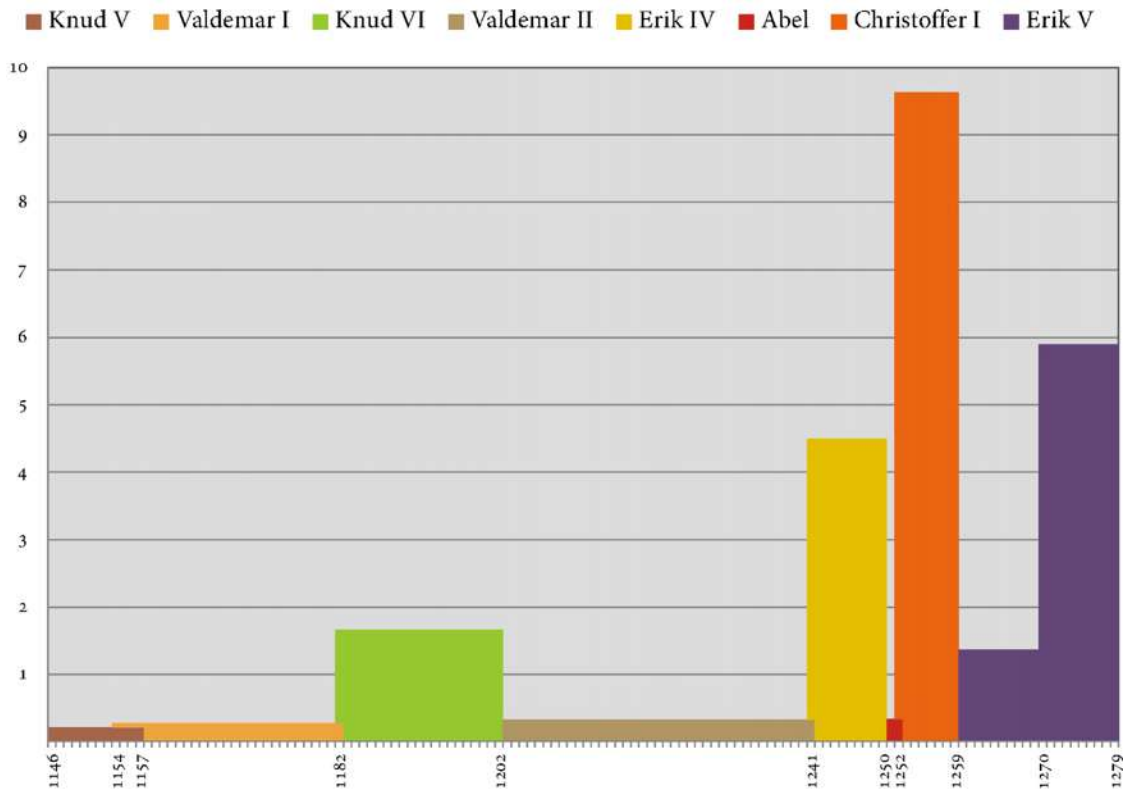

Fig. 10 – Lilleborg. The distribution of medieval coin finds per reign or, for Erik V, per decade (average per year)

2.1.5.2 Churches

Coin finds exist from all the five medieval parish churches in Vester Herred [91]. None of the *c.* 229-234 coins from the churches stem from modern excavations with detailed recording of the exact find circumstances, but some are from church refurbishments with general information about their find location within the church.

In the 12th century Knuds Church, seven coins were found in 1976-1977 during relaying of the floor in the tower. Three medieval coins were probably lost separately, while two coins from the 19th century and two coins from the 20th century may have been lost together in the 19th and 20th century [92]. Apart from the mentioned coin hoard two other

[90] Isler 2004 on small finds from the old investigations; Mikael Thorsen, unpublished report from small scale investigations in 2010-11; a more detailed discussion of the Medieval coin finds in Horsnæs & Märcher 2014, while Roman *denarii* from Lilleborg have been discussed in Horsnæs 2013, p. 135-139.

[91] Danmarks Kirker VII Bornholms Amt (1954) can be found online at http://danmarkskirker.natmus.dk/

[92] FP 3442 and FP 3490: Danish penning from 1270s, Lund, MB 119; unidentified medieval coin, perhaps Pomeranian denier; five Danish coins: ½ mark 1532, Copenhagen; 3 skilling 1812; ½ skilling 1838; 1 øre 1930; 1 øre 1936.

coins (a Danish coin of the 1330s and a Riga schilling struck in 1563) were found in the floor fill during rebuilding of the 13th century St. Nicolaus church in Rønne in 1915-1918. 31 coins were found during restoration work in the 12th century Nylars Church in 1881-1883. The oldest coin dates from the reign of the Danish king Knud VI (1182-1202), while the rest are ten medieval Danish coins (1202-1513), two later Danish coins (1627 and 1770-80s), two 17th century coins from the duchies Schleswig-Holstein-Gottorp and Schleswig-Holstein-Sønderborg, a group of nine Danish(-Norwegian) 1- and 2- skillings from 1563-1721, and seven small medieval coins from Mecklenburg [93], Wismar, Rostock, Kolberg, Garz, and Stettin.

In 1885 a new Vestermarie Church replaced the medieval church, and during the demolishing of the old church some coins were found. The exact number of finds is uncertain. 37 coins were registered at KMMS and another six coins were registered at Bornholms Museum. At least four more coins were found, but never handed in to a museum [94]. The finds from Vestermarie Church consist of 40-60% Danish coins – most are medieval, but also some modern – and the rest are primarily North German and Pomeranian coins from the 14-17th centuries. Some 14-16th century coins from Gotland and Tallinn were also found at the old Vestermarie Church.

A total of 86 coins were found in Ny Church. Little information is available concerning 14 coins found before 1927: five are Danish coins from 1280s to 1483, three are Danish-Norwegian from the 17-18th centuries, five are 14-15th century coins from Pomerania and Northern Germany, and one is not identified. During restoration works in 1958-1960 another 72 coins were found and some details about the find spots of several of the coins are known from drawings or other types of information. The coins should probably be considered single finds (losses). The oldest coin is from the reign of Knud VI (1182-1202), and ten of the coins are Danish medieval coins, while 11 are Danish-Norwegian coins from the middle of the 16th century to 1815. Foreign coins are two medieval Gotlandic coins and an English ½ penny from 1480s. The rest are North German and Pomeranian small coins from the 14-16th centuries.

Churches	Medieval coins	Recent coins	Danish	Foreign	Total
Knuds Church	3	4	6	1	7
Rønne Church	1	1	1	1	2 [95]
Nylars Church	18	13	24	7	31
Vestermarie Church	20+	10+	40-60%	60-40%	30+
Ny Church	71	15	29	57	86

Fig. 11 – Medieval coins from churches

[93] Jensen 1980.

[94] Not included in the coins listed here are A) Four coins now in Bornholms Museum that are either from Vestermarie Church or Nylars Church. B) Five coins in Bornholms Museum that may be from Vestermarie Church.

[95] To this should be added the medieval hoard consisting of 61 coins.

2.1.5.3 Koldekilde

Koldekilde [96] ('Cold Spring') is located in the middle of the isle Bornholm in the forest Almindingen, north of the east-west going road through the forest. Coins were thrown into/offered to the sacred spring, and according to literary sources the offered coins were repeatedly collected for Nylars church and the hospital in Åker parish on Bornholm until the very beginning of the 19th century. The repeated collection of offered coins is confirmed by the chronological distribution of the 54 coins found during dredging of the spring in 1894-1895. They are all from the 19th century [97].

In the years around 1980 almost 442 small coins [98] from the 17-20th century were found in the areas around the spring during some of the first metal detector surveys [99]. The Island's annual Midsummer Day market took place around the spring until the late 19th century, and in the 20th century the area around the spring was used for cattle shows, shooting meetings, and other activities. The finds are interpreted as accidental losses at these public gatherings. The find spots of the coins were not recorded accurately, but they were found in four different locations, which can be approximately located. The different provenances of the finds are matched by the different chronological distribution of the four batches handed in to KMMS: FP 3711 (271 coins), FP 3712x22 (32 coins), FP 3712x23 (107 coins), and FP 3774 (31 coins), fig. 12.

FP 3711 is the largest batch and the one with the latest chronological composition. This fits with the dating of the cattle shows and other gatherings of the 19-20th centuries and the information that it is "found at the show yard", which was the field used for cattle shows next to the spring. The spring is located on the boundary between this field and the forest, the latter surrounds the relatively small and slightly hilly field. The small batch FP 3712x22 consists of coins dated from the 1610s to 1900s. It is described as "found at Koldekilde", probably intending closest parts of the field next to the spring, which also around 1980 was dominated by trees, bushes etc. and a small open area with the spring. FP 3774 consists of coins from 17-18th century "found on Kildebakke" ('Spring Hill'), which must be the hilly field a bit further away from the spring. Unfortunately, no more information about this interesting batch is preserved. A special batch is also the 107 coins in FP 3712x23, primarily from 1810-1930. It turns out that they are not found very close to the spring, but probably south of the main road running south of Koldekilde; on the footpath from the road to the hill Jomfrubjerget ('Virgin Mountain') and on the top of the hill itself. The hill is a great viewpoint, and the Hotel Jomfrubjerget was located on the top 1891-1974.

Taken together the 496 primarily Danish small coins from the four sites at Koldekilde constitute an important assembly of post-Reformation coins. Very little comparative material of this type exits elsewhere in Denmark, and nowhere in amounts of this size. The material is therefore one of our main archaeological sources for the study of for example the general composition of the coin circulation or the development in metals used for small coins [100].

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[96] Svane 1984, p. 115, no. 653, picture p. 43.

[97] KMMS inv.no. FP 840.

[98] Standard coins are coins produced according to the monetary standard in use, while small coins are coins produced below standard, with insufficient intrinsic value, and normally only for domestic use.

[99] BMR 826.

[100] See Märcher 2013.

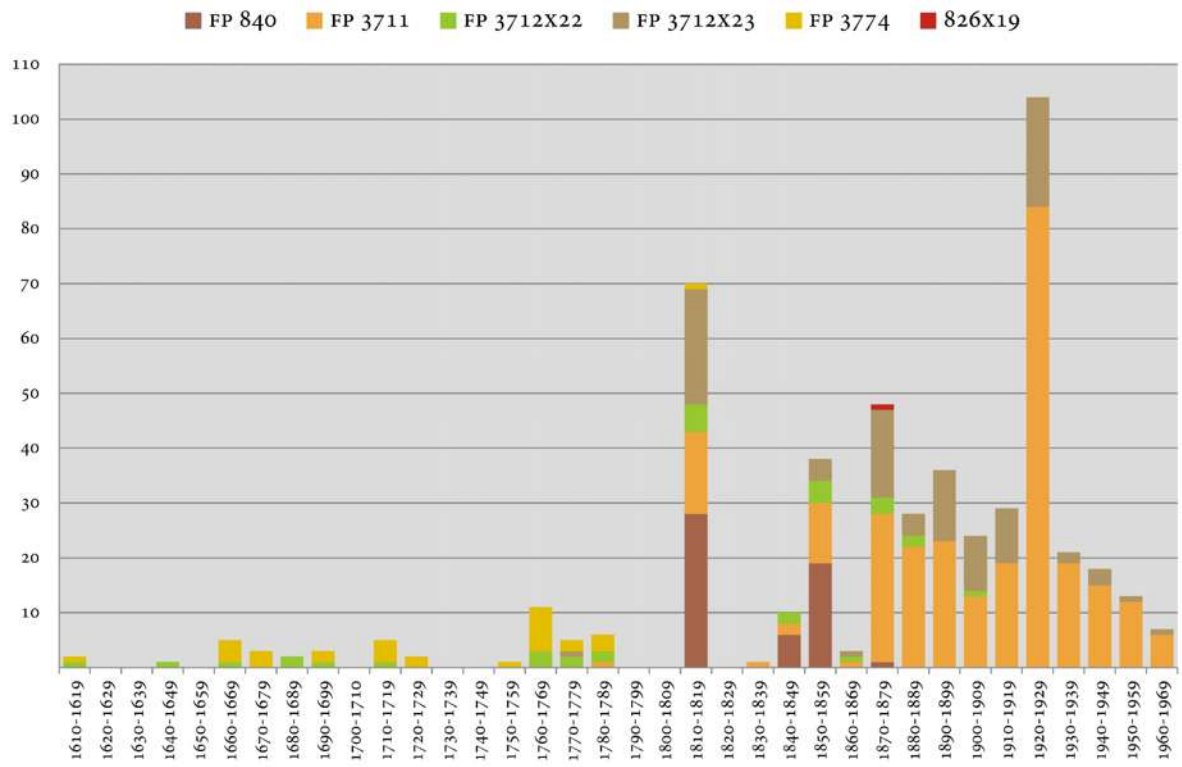

Fig. 12 – Chronological and batch distribution of the 496 coins found near Koldekilde according to the years on the coins; for poorly preserved coins the earliest possible year is used

2.1.6 Multiperiod detector sites

As demonstrated above, the majority of the sites known from detector surveying have produced coins from only one of the three main phases (not considering the post-1536 phase). Even when two periods are represented, their numbers are rarely evenly balanced.

Three sites have produced coin finds from all three main phases. Together these three sites and their adjacent sites have yielded more than 700 individually registered finds, among which 134 (19%) are coins. None of the sites can be identified as high status sites, and they therefore form a welcome possibility to study the temporal development of sites of presumably medium size and social level. Nor have any of the multi-period sites been subject to excavation. Only analyses of surface finds, air photography and historic maps, place names etc. have been available to present an outline of the historical development of these sites.

'Multi-period' sites in Vester Herred are found in two clusters. Muleby in the north-western part of Vester Herred is situated close to the stream Bagå dividing Nyker parish from Hasle parish in Nørre county. The Ndr. Mulebygård site is dominated by finds from the Late Germanic Iron Age, while the Viking Period seems better represented in the neighbouring site Bukkegård *c.* 1.5 km east of Ndr. Mulebygård and in sites north of the Bagå, such as Baggård, which previously was connected to Ndr. Mulebygård by a direct road [101]. Detector finds suggest that the Ndr. Mulebygård site has been inhabited at intervals, with a displacement from the Prehistoric settlement(s) to the use of the area in the Medieval period.

[101] Map drawn by Bernhard Franzt Hammer 1746-1750, available at http://www.sa.dk/content/dk/undervisning_og_temaer/webudstillinger/kort_over_bornholm

The other two sites, Vellensbygård and Myregård, develop as part of the rich scatter of coin yielding detector sites in Nylarsker parish on the southern coast of Bornholm. The sites are situated on comparable topographical situations: in each case the main scatter of finds have been reported from the southern rim of a plateau overlooking the southern coast. The nature of these settlements cannot be identified closely, but a settlement pattern dominated by single farms is described in *Borringholms Krønike* from 1671 and in land registers from the 16th century, and is normally regarded to go back to at least the 13th century [102]. Three sites are discussed as cases (Myregård, Vellensbygård, and Uglegård), but they are not the only ones within the *c.* 6.75 km² area in fig. 13. Viking Age coins dominate the numismatic material from these sites, but both earlier and later coins are present, and it is possible on an over-all level to gain an idea of the chronological span of the sites.

The distribution of finds at the Myregård sites to some extent respects borders visible on the early 19th century cadastral map of the Myregård area. The present road from the coast turns sharply to the east at Lille Myregård, but the older map reveals the existence of a northward continuation of this road directly towards the western fringes of the find distribution, as well as an eastbound deviation passing east of the find distribution (fig. 15). At Store Myregård, on the road towards the Arnager landing place, we find a circular structure with the indication 'ruins' surrounded by ponded water. The date and nature of these ruins are not known, but some structure certainly existed on the site before the mid-18th century when the pond was depicted on Bernhard Franzt Hammer's map of Bornholm (1746-1750) [103], and in the cadastral map this site is described as '*rudera*'.

In the remaining part of Bornholm three multi-period sites have been mapped, and they serve as reference material for the sites here investigated. At Nygård/Skovgård (Klemensker parish in north-western Bornholm) finds from the Roman Iron Age are found to the west of the modern road, while Germanic Iron Age material, including Roman *denarii*, is mainly found to the east of the road [104]. Viking Age material is present albeit more sporadically in peripheral parts of the same area. It seems that intensive use of this particular site has been interrupted for some time during the Viking Age, while other sites close by flourished. Later re-use of the site is suggested by detector finds of a cluster of Danish penninge in the easternmost part of the site, outside the area of the densest cluster of Late Iron Age finds [105]. The site thus presents a history comparable to the situation at Muleby.

At Agerbygård/Bakkegård close to Østerlars Church in Øster Herred the same periods are represented [106]. Here Roman coins are found along a modern road dividing the site, of which only the part south of the road has been surveyed, while Viking Age coins are found in various areas. Some of the finds may reflect the presence of small Viking Age silver hoards. Medieval coins are scattered more randomly. This site is better compared to Vellensbygård and Myregård, although both these sites have produced relatively larger amounts of Viking Age material.

[102] Nielsen 1998.

[103] http://www.sa.dk/content/dk/undervisning_og_temaer/webudstillinger/kort_over_bornholm?pageIndex=23&gallery=full&media_id=1136

[104] 060104-190 AND -235, BMR 2001.

[105] Horsnæs 2012, p. 120-122.

[106] 060405-201, BMR 1523. Horsnæs 2013, p. 130-132.

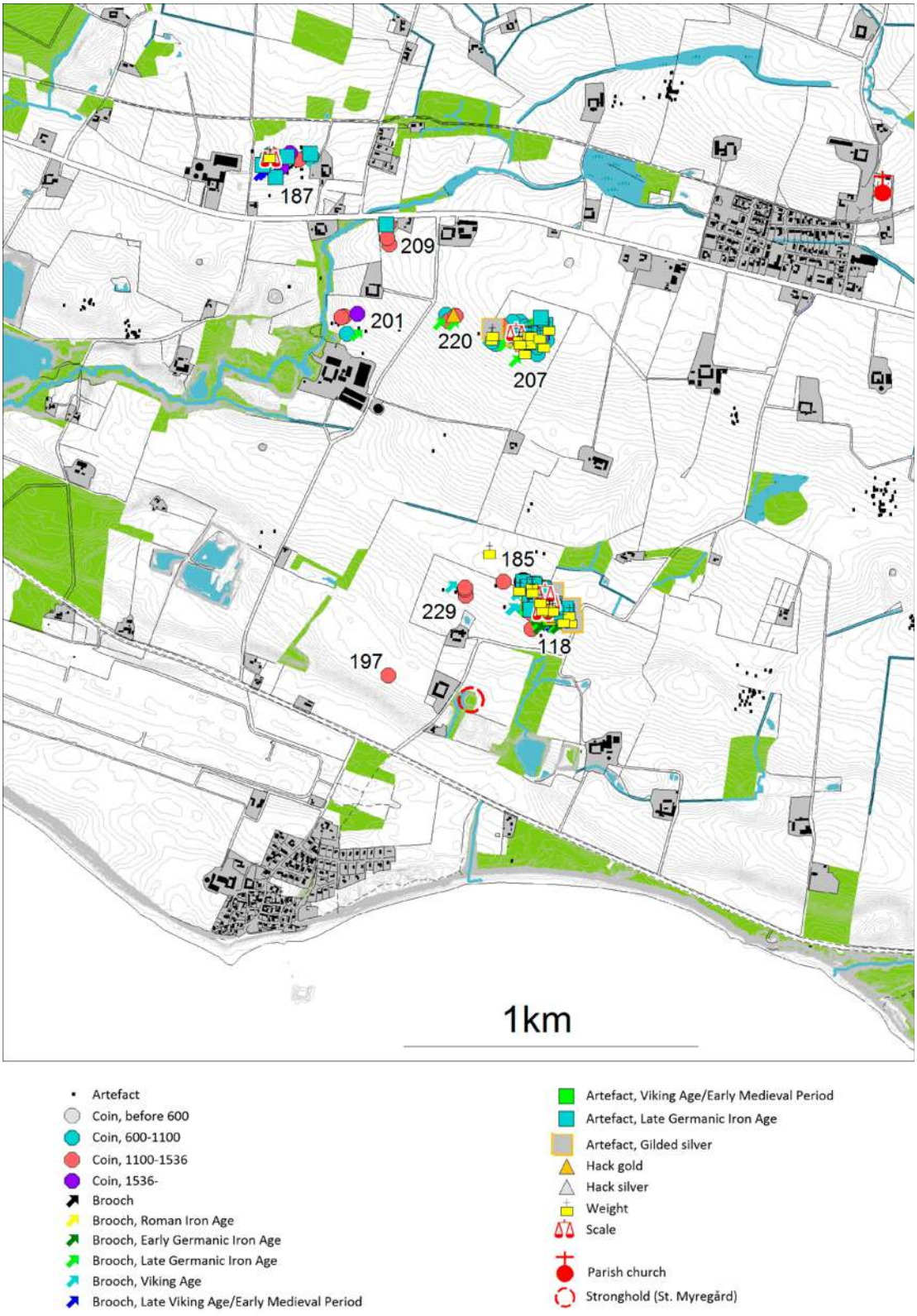

Fig. 13 – Distribution map: the three sites Uglegård, Vellensbygård, and Myregård are situated less than 750 m from each other, and several smaller detector sites – presently without coin finds – have been located. Cropmarks indicating possible remains of building structures are visible on air photos of the area southwest of Myregård (fig. 14). A single Danish penning from the 1320s, Lund, MB 321 and other – unspecified – medieval finds are known from this site. The map contains data from the Danish Geodata Agency

Fig. 14 –Air photo of Nylars sb 197. Photo: M.F. Jensen, Bornholms Museum

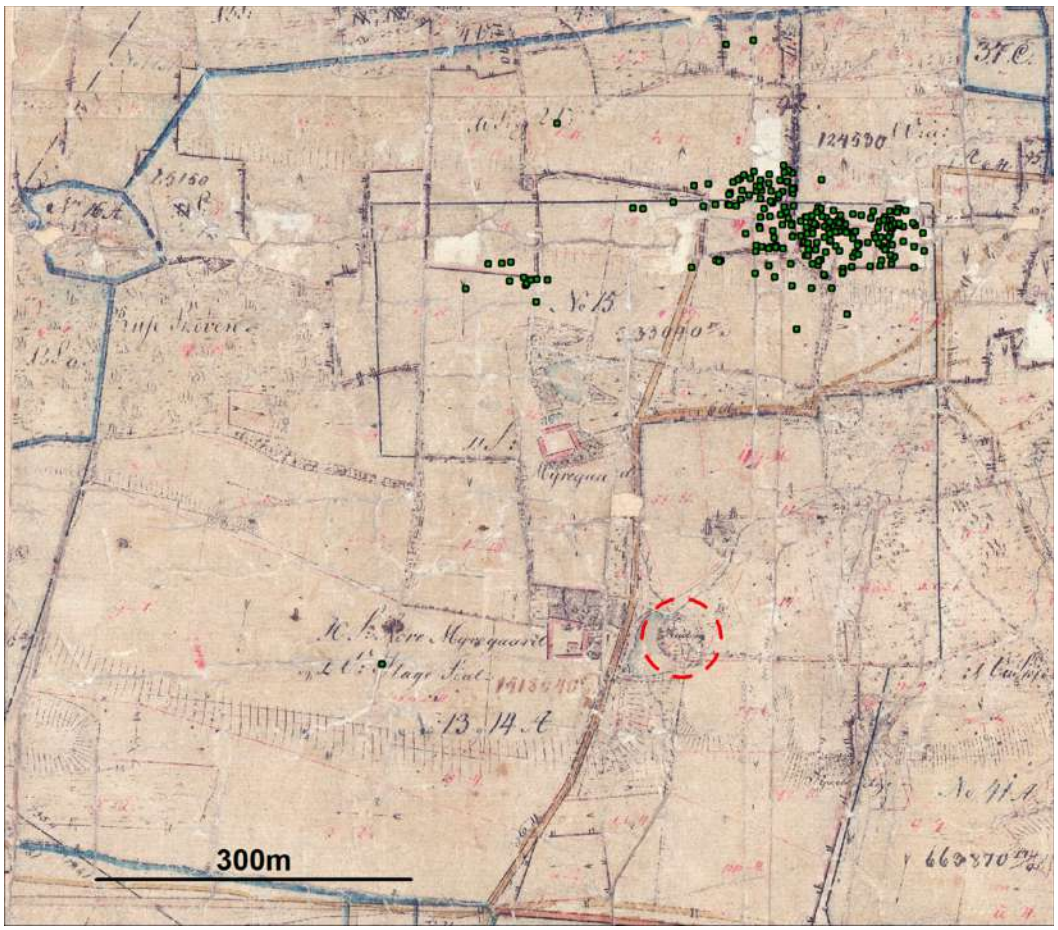

Fig. 15 – Cadastral map from the early 19th century indicating 'ruins' – perhaps a medieval fortification? – close to Lille Myregård (red circle). Green dots: artefacts. The map contains data from the Danish Geodata Agency

The most intriguing site is Sandegård in southern Bornholm [107]. The site has long been recognized as an important Iron Age site, and finds – among which a fragment of a Nordic gold bracteate – were made long before the detector era. Detector finds include more than 1,000 registered objects, including 121 coins (12%) The spatial distribution of the numismatic material is however difficult to interpret: many coins of practically all periods (including post-reformation coins) have been found, but no part of the site distinguishes itself as particularly dense or from a certain period.

2.2 SINGLE FINDS AND THE USE OF COINS

2.2.1 Iron Age and Early Viking Period

Hoards have been discussed at some length, not only to evaluate them as a group, but also to illuminate the problems involved with the traditional numismatic division of material into hoards and single finds. The intensive hoarding of silver in both the Early Germanic Iron Age and the Viking Age, and the subsequent deposition of silver within the settlements, makes it extremely hard to identify 'single finds' in the detector material. For both periods this implies that taking away coins interpreted as (possible) hoards leaves few sites with possible multiple finds of individually lost/deposited coins. Only two types of Roman coins appear consistently in the archaeological material from Bornholm, *denarii* from the period 69-211 AD and solidi from the 5th century. The majority of the coins derive from defined hoards, and there is no difference between types found in hoards and types found as (possible) single finds [108]. In Vester Herred 57 Roman coins found on 28 different sites (an average of *c.* 2 coins per site) are the maximum of possible single finds of Roman coins [109]. Among these, a substantial number of coins derive from sites that have only been surveyed once, and it seems hazardous to say much about the use or deposition circumstances of the individual objects from extensively surveyed sites that have until now yielded only a handful of finds in total.

There is a much larger variation in the many coins types present in the Viking Age. There are not only coins from a large number of different geographical areas, but also variations in the composition of coin types from site to site. It is suggested that a thorough analysis combining the inherent properties of the coin (typology, chronology, reworking, and surface preservation) with the distribution – temporal as well as spatial – of objects from a detector site can be used to argue that in a few cases one or a few coins from a site with many Viking Age coins were *not* part of ploughed-up hoard. It has, on the other hand also been possible to suggest that coins from sites that have (until now) produced a smaller number of finds may be regarded as the remains of a single deposition of a hoard. In spite of the possibility that a few coins should be regarded as the result of single losses or depositions, we must still conclude that the vast majority of the Viking Age coins can be interpreted as parts of silver hoards. The many coins from both the Iron Age and the Viking Period should therefore be seen as the result of intensive hoarding rather than widespread use of individual coins.

The predominant number of detector sites has yielded only one or two Viking Age coins (see List of sites). Analysing the Viking Age coins from these sites it becomes clear that they together have a typological/chronological composition which is comparable to

[107] 060205-33, BMR 1371. Horsnæs 2013, p. 142-143.

[108] Horsnæs 2013.

[109] The number of Roman coins left, when excluding coins from hoards and from the Smørenge sites sb 144, 70, 405, and 429.

the 'typical' Viking Age hoard from Vester Herred. There are 40 coins: 21 dirhems, 15 German coins, two English coins, an unidentified coin, and a single Byzantine coin from the Øster Klintgård which together with three German coins struck after 1020 are the most unusual finds. Half the sites which have up till now produced only one or two Viking Age coins were discovered after the turn of the millennium, and as a parallel to the situation described for the Roman coin finds, the Viking Age coin is still the only coin find, or one of a very few finds, from the sites. These coins must today be treated as single finds, but again we stress that this interpretation will most probably be revised in light of future surveys and/or excavations, in particular in cases where the single or few coins are already today known to have been found in connection with hacksilver.

2.2.2 From 1020 to 1241/70

Contrary to the enormous amounts of coins from the late 10th and early 11th century, the number of coins produced after *c.* 1020 drops significantly (fig. 16). Only two Viking Age hoards in Vester Herred must be dated after 1020: the St. Klintegård Hoard (*tpq* 1029) and the Engegård Hoard (*tpq* 1038), but coins securely dated within the last years before the numismatic *tpq* of the two hoards form a small minority. In other parts of the island some relatively large hoards (+200) coins dated 1004-1042 and an equal number of smaller hoards mainly dated 1042-1079 have been found. Also in these hoards there are considerable amount of surviving 'old' coins, and on basis of this material it still seems safe to conclude that the influx of new coin was diminishing from the 1020s all over the island [110].

Eight coins outside the St. Klintegård and Engegård hoards can be dated *c.* 1020-1040 and there are ten coins dated (*tpq*) 1040-1080, excluding the Svend Estridsen hoard at Uglegård. They are found as outliers in hoard sites or on sites which are difficult to interpret because of the few finds so far retrieved. Still, 18 coins from the 60-year period 1020-1080 is a relatively high number compared to the very low number of single finds from the period 1080-1270.

The period 1080-1270 is only represented by six single found coins (excl. finds from churches and Lilleborg):

- Knud IV (1080-1086), Roskilde, type Hbg. 7, found with detector at Klintefryd
- Imitation in copper (?) of a penny from Bardowick (?) [111], first half of the 12th century, found with detector at Uglegård
- Three coins struck during the reign of Knud VI (1182-1202)
  1. Type Hbg. 1, found with detector at Store Myregård
  2. Type Hbg. 2, found in Rønne 1874
  3. Type Hbg. 4, found near Vestermarie Church in 1884-1885
- Valdemar II (1202-1241), Lund, type Hbg. 4, found in Rønne 1874.

Three of the coins were found in the 19th century in Rønne or close to a church. Considering the high number of coins from detector sites it is noticeable that only three coins (among which one is an imitation) from the almost two hundred years 1080-1270 were found with metal detector in Vester Herred. This very low number makes it quite hard to argue for extensive rural coin use in this period in Vester Herred.

[110] Coin lists in Galster 1980; von Heijne 2004; Ingvardson 2012 on the Nørremølle Hoard.

[111] Kilger 2000, type 3.2.2.C 1.

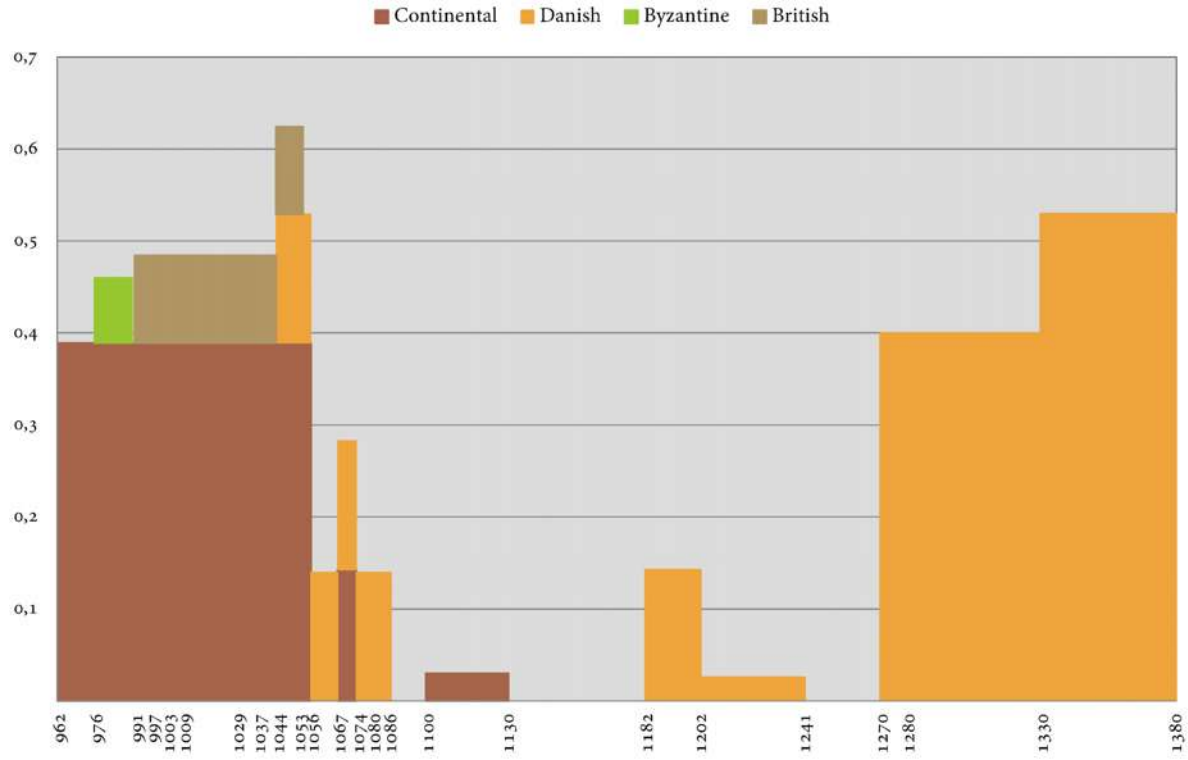

Fig. 16 – The geographical and chronological (years of production) distribution of possible single finds 962-1380 shown as index of coins pr. year. The diagram is based on 111 coins. Dirhams as well as unidentified and/or imprecisely dated coins are not considered. Coins found in connection with the Lilleborg Castle and in churches are not included

The period 1020-1241 was the subject of a regional study of coin use in Zealand with particular focus on the growing urban development in Roskilde [112]. Ingvardson demonstrated differences in the coin use in Zealand depending on the functional context of the finds, notably differences in coin use in and around the developing city of Roskilde in relation to the remaining parts of Zealand. On an overall level three peaks in coin loss could be documented during the reigns of Svend Estridsen (1047-1074), Valdemar I (1157-1182), and Valdemar II (1202-1241).

The material from Vester Herred is considerably smaller, but the differences between this material and the one presented by Ingvardson are so large that they deserve to be considered, even if in a preliminary way. As we have seen, coins struck during the reign of Svend Estridsen are found in some numbers, but for the next century there is only one Danish coin among the single finds. The coinage of Valdemar I is completely absent, while just three coins struck during the reign of Knud VI (1182-1202) form a small peak, since only one coin from his successor Valdemar II is found [113].

Most of the medieval churches are traditionally dated *c.* 1150-1250. We should therefore not expect considerable numbers of 12th century coins to be found in them. Among the church finds only two coins are from the period 1182-1202 (Knud VI), which is represented in both detector sites and Lilleborg, while four are from 1202-1241. Admittedly,

[112] Ingvardson 2010.

[113] Compare Ingvardson 2010, figs. 7 and 15.

these numbers are far too low to allow for far-reaching conclusions, but they provide a hint that church contexts may be contrary to the finds from this period in detector sites and on Lilleborg.

Seen in isolation the almost complete lack [114] of coins produced from the mid-11th to the late 13th in the detector sites might be interpreted as evidence for lack of contacts and/or of economic recession. This is in opposition to the information produced by other sources: the written sources indicating an interest in the island both from the Danish king and the Archbishop in Lund, and not least the Christening of the island and the subsequent construction of monumental stone-built churches all over the island, in parallel to the contemporary church building in Southern Scandinavia in general. Although we do not know who actually built the churches (the Church(es), local magnates, the king etc.) the extensive building activities are clear manifestations of power and a substantial financial basis, which is not consistent with economic recession.

2.2.3 From 1241/70 to 1536

As a result of detector archaeology, Bornholm presents a considerable growth in the number of finds of the poor Danish pennies from the 1270s to the late 14th century. From Vester Herred we currently know four single finds from the 1270s, 24 from 1280-1329, and 27 from 1330-1380. These new finds have completely changed the picture presented previously, not only as regards numbers. More importantly the recent detector finds have a wholly different chronological composition than the material available to Grinder-Hansen [115] in his very useful study of the coinages of 1241-1340. It then seemed that Bornholm presented an unusual find pattern in Denmark, but compared to the 55 single finds from Vester Herred known today, Grinder-Hansen knew less than 45 single finds (*i.e.* finds outside Lilleborg and the churches) from the entire island. In Grinder-Hansen's study the coin finds from the castle Lilleborg constituted almost all the non-hoard material from Bornholm. As described, Lilleborg has still produced the largest number of (single) coin finds from any medieval site in Bornholm. The earliest coin finds from Lilleborg are dated 1146-1157, and the mentioned surprisingly low number of coins struck during the reigns of the two Valdemars in comparison with the number of coins of Knud VI is re-found in the material from Lilleborg castle. However, *c.* 73% of the finds from Lilleborg in fact cover the period 1241-1270s, from which finds are lacking elsewhere in Vester Herred. After the 1270s Lilleborg seems to be deserted.

Among the single finds from detector sites, on the other hand, issues of 1241-1270 are absent, and larger numbers of finds are only seen in the period *c.* 1270-1380. Regarding the period 1241-1380 the material from the churches largely comply with the detector finds: of 23 Danish pennies found in the five churches in Vester Herred, only one is from 1241-1270, four belong to the 1270s, and 12 are from 1280-1380.

Our study has demonstrated that the chronological distribution of Danish pennies from 1241-1380 in Bornholm was probably more in line with the remaining parts of medieval Denmark than previously suggested. But there is still an important difference in volume: the relative number of medieval pennies is far lower than in the remaining parts of modern Denmark, where sites dominated by single finds of Danish 13-14th century pennies have been found in most regions, *e.g.* in connection with a *fjord* or in coastal positions, or

[114] 11th century coins were to some degree available in Bornholm in the first half of the 12th century (Märcher & Aagaard 2014).

[115] Grinder-Hansen 2000, for Bornholm see p. 189-191.

near medieval villages or churches [116]. Despite the many new sites with finds of Danish pennies from the late 13th and early 14th centuries in Bornholm, no site dominated by these types has so far been located. Why? In Bornholm villages did not develop, and a settlement pattern of single farms persisted almost to our days, which would explain the lack of finds from villages. The coastal trade stalls from the medieval period known in several places in Bornholm have not been surveyed and only a single site has been excavated [117], but might be worth a closer look. Some areas near churches have been surveyed, but except for the Agerbygård/Bakkegård site near Østerlars Church [118], they have not yielded significant numbers of medieval coin finds. It is therefore still difficult to argue whether the relatively low number of finds reflects differences in political affiliations, topographical, and/or economic patterns in Bornholm compared to the remaining parts of Denmark, or rather detectorists' focus on the find rich Iron Age and Viking Period sites in Bornholm, and lack of surveys areas that would typically produce medieval coin finds. In this connection it is important to note that the number of medieval coin hoards in Bornholm in relation to the size of the island is probably higher than any other Danish region *e.g.* Zealand [119].

When it comes to the remaining parts of the medieval period differences between the finds from Bornholm and the remaining parts of medieval Denmark are very large, and some of them are for the moment hard to explain satisfactory. Including very insecurely attributed coins, Vester Herred has produced 99 single finds (outside Lilleborg and churches) of coins dated *c.* 1100-1536, among which the 55 Danish pennies from 1241-1380 have already been discussed. Between nine and 13 of the remaining 44 coins (corresponding to 20-30%) are foreign, primarily from *c.* 1350-1536. The low number of foreign coins is surprising, when compared to the finds from churches in Vester Herred, where 60-70% of the medieval coins are foreign. The general lack of the small and thin North German bracteates on detector sites is a common phenomenon in Denmark [120], but many bracteates are found in churches and in hoards. This difference with regards to the small, foreign medieval coins between the detector sites and the churches has sometimes been explained by the metal detectors' poor ability to detect thin coins or small fragments of coins [121]. A full discussion of this explanation is outside the scope of this project, but recent technological development of metal detectors as well as coin finds from Denmark as a whole do not seem to support this explanation. Massive amounts of small or thin coin types and minute fragments of coins and other objects are found with metal detectors, while even today only quite few North German medieval bracteates are found. In Vester Herred the absence of bracteates in detector sites are paralleled by a similar absence of Pomeranian deniers that generally are considerably thicker and heavier than the bracteates: among the *c.* 15 Pomeranian deniers registered only one derives from recent detector surveying, while all the remaining ones derive from churches. It is therefore suggested that the difference reflect a real difference in the practise of coin use depending of coin types.

No less than 18 coins from Vester Herred are Danish klippinge from 1518-1523, almost exclusively struck in Malmø in Scania. They constitute a disproportionately high amount,

[116] Grinder-Hansen 2000. The Danish pennies constitute 60% of all coin finds (excluding hoards found partially *in situ*) registered in the period May 2012 to May 2013; Line Bjerg paper presented at ODM annual meeting November 2013.

[117] Bølshavn in northern Bornholm, Nielsen 2000-01, p. 106-107. No coins were recorded.

[118] Horsnæs 2013, p. 130-131.

[119] DMS, *passim*.

[120] E.g. mentioned by Jensen 1988, p. 227.

[121] See short discussion in Grinder-Hansen 1998.

a find pattern which is unique for Bornholm. In 1994, Grinder-Hansen [122] knew 31 klippinge from present-day Denmark (one from a hoard, 13 from churches and monasteries). No less than seven (*i.e. c.* 23%) were from Bornholm (*c.* 1.38% of Denmark's land territory). Today we know 50 klippinge from Bornholm: 18 are from Vester Herred, and among them 14 were found with detector within the last 25 years. This not only demonstrates the immense growth in numbers of finds in general, but also stresses Bornholm's unique situation with this coin type. The find patterns described by Grinder-Hansen are still valid: from May 2012 to October 2013 26 klippinge from new Danish finds were registered at KMMS, and six are from Bornholm, again giving a rate around 23%.

More than 50 million klippinge were produced and spread all over the country 1518-1523. The truly poor and highly unpopular coin was apparently easily and effectively withdrawn by the reform of February 25, 1524. It is therefore in general only found in relatively low numbers. The many finds from Bornholm therefore suggest that the reform was not carried out here, probably because of the political history of Bornholm in those years. Bornholm was ruled by the Hanseatic city of Lübeck from 1522-1576; Lübeck conquered the isle in 1522 as part of their war against the Danish king Christian II (1513-1523), and in 1525 Bornholm was given as fief to Lübeck for 50 years by Frederik I (1523-1533) as recognition of Lübeck's military help against Christian II and his admiral Søren Norby. Frederik I needed to get the important Isle of Gotland from Lübeck that had conquered it and Bornholm was used in that trade [123].

Only seven other single finds of coins from Vester Herred can be dated 1400-1536:

1) copper sterling (*c.* 1420-1440), found at Uglegård
2) hvid, Christian I (1448-1481), found at Uglegård
3-4) two hvid from Hans (1483-1513), found at Ndr. Mulebygård and in Rønne
5) søsling 1524, Ribe (G. 73), found at Ndr. Mulebygård
6) pierced søsling 1525, Ronneby (G. 80), found at Vellensbygård
7) pierced and fragmented 4 skilling 1534-1536 (G. 91), found at Bukkegård.

The copper sterling, Christian I hvid, and Hans hvid are very common detector finds in Denmark, dozens or perhaps hundreds are found each year. They are in general the most commonly found coins from the 15th and very early 16th century [124]. The three coin types are surprisingly uncommon as finds in Vester Herred as in the entire Isle of Bornholm, when compared to the rest of Denmark or the very high find numbers on Bornholm. Metal detecting has indeed provided new finds, but still relatively few: only seven copper sterlings have been found in Bornholm, two are finds from the great, medieval castle Hammershus on the northwestern tip of Bornholm, one is from surveying 1992, while the last four are metal detector finds from 1995-2010. The pattern is more or less the same with the Christian I hvid from Bornholm: ten specimens are known, among which six are metal detector finds made since 1992. However, the finds of Hans hvid so far point in another direction. 13 specimens have been found in Bornholm, but only two are found with metal detector. These find numbers demonstrate the probable lack of domestic coins in rural Bornholm around the year 1500.

[122] Grinder-Hansen 1994.

[123] Kruse 1986.

[124] Together almost 15% of all coin finds (excluding hoards found partially in situ) registered in the period May 2012 to May 2013; Line Bjerg paper presented at ODM annual meeting November 2013.

The general lack of coins from the second half of the 14th century to the beginning of the 16th century was probably not as severe as the Danish coins indicate, since most of the foreign coins are from this period. Especially coins from cities on or near the cost of present-day Germany and Poland were important, but coins from Gotland and the Baltic countries also found their way to Bornholm. The Hanseatic cities dominated trade in the Baltic, and this is probably one explanation for the low number of domestic coins from this period and for the inflow of foreign coins. Other explanations are the mentioned site choices made by detectorists and the settlement pattern dominated by single farms, but also the fact that – while formally part of the Danish kingdom – Bornholm was controlled by the Archbishop in Lund during most of the medieval period.

The typological gap between traditionally recovered/registered coins and coins from detector sites grows during the medieval period. One of the reasons is the growing differentiation between high and low denominations. The former are more apt to be hoarded – and in general the larger silver coins are easier to spot in the soil with the naked eye than the small low denomination coins – while the latter are often found during detector surveys. More subtle differences in practices of coin use depending on issue or denomination may also be in play, and need to be investigated from an anthropological perspective. The typological gap between detector finds and traditionally recovered finds would probably continue to grow in renaissance and pre-modern finds, but the lack of reporting of coins struck after 1536 becomes an important obstacle for research. We can only get a glimpse of what we may be missing by looking at exceptional finds such as the Koldekilde complex.

2.2.4 From 1536 to present

Danish web sites and face book groups on metal detecting and amateur archaeology provide indisputable evidence that many small coins from after 1536 are found during metal detector surveys. Unfortunately this evidence is not available for research, as single finds of these coins normally are not declared treasure (*danefæ*). It is therefore impossible to conduct the same type of studies of detector finds and/or single found coins from this period as from the previous ones. Studies of coin use etc. in Vester herred after 1536 must therefore rely almost exclusively on a few coin hoards, church finds, and the special site Koldekilde. This material will be studied more closely in combination with written sources in a more comprehensive project [125]. Of course the written sources contain other types of information than the coin finds – and while the coverage in relation to coin find registration decreases the amount of written sources steadily increases in the period after 1536.

Here the main tendencies in the monetary development in Vester Herred (and Bornholm) since 1536 are outlined as presented by the finds available: in the decades around the year 1600 Bornholm had a significant inflow and use of North German small coins. This was also the case in the rest of Denmark; perhaps the material from Bornholm chronologically is slightly later than the material from the rest of Denmark. The significant inflow was probably mainly caused by a longer period with very insufficient or even lack of domestic production of small coins [126]. In the 17-18th centuries most of the monetary circuits in Bornholm generally seems to match the circuits in main parts of Denmark with regards to coin composition. The isle was according to the coin finds integrated into the national monetary system during those centuries – and therefore probably also more and more integrated into other parts of the administration, politics etc. of the absolutist Da-

[125] Märcher *forthcoming*.

[126] See *e.g.* Poulsen 2007 with references.

nish state (1660-1849). The coins from Koldekilde show the 19th century development in coin use. The political and administrative development *e.g.* in relation to payment of taxes and duties and the industrialization of coin production with large-scale production – and therefore significant supplies – of small coins in base metals (copper and bronze) led to a much higher degree of coin use/monetisation and reduced the use of barter to a minimum. This key development seems to take place later in Bornholm than in the rest of Denmark, since the people of Bornholm apparently continued to pay some of their duties in kind, primarily grain and butter, well into the 19th century – longer than other parts of Denmark [127].

2.3 BORNHOLM IN A REGIONAL CONTEXT

The material from Bornholm is best appreciated when compared to other areas, but each comparison of course needs to consider the validity of the comparison of the datasets. Unfortunately, direct comparison of detector material from different modern states (or *Länder* in Germany) is not possible due to the differences in national/regional legislations regarding the use of metal detectors. While it is possible to compare the distribution of material recovered by traditional methods with neighbouring countries, direct comparison of detector finds must therefore be limited to other parts of modern Denmark. The extremely high finds density in the Iron Age and Viking age as well as the composition of the material from those periods are, however, similar to finds from Gotland, where metal detectors have been use by professional archaeologists. The material from the period 1020-1241 can be compared with Zealand [128], and the period 1241-1340 was covered by Grinder-Hansen's study (2000) which, however, needs to be up-dated as the number of finds has multiplied since then.

Regarding the later periods no systematic studies of detector finds from other parts of the country can act as a backdrop to the material from Bornholm, but the evidence available points to significant differences in the coin distribution in relation to the remaining parts of Denmark till the 17-18th centuries [129].

When the number or composition of finds differ substantially from other parts of Denmark we may presume that the reasons should be sought for locally in Bornholm, and in the island's outwards relations. In the Iron Age Bornholm seems to have received (most) Roman coins from sources only partly identical to those supplying the rest of Denmark [130]. On an overall level Viking Age coinages seem to come from the same sources as in the remaining parts of the country, but some coin types found in other areas are conspicuously absent in the material from Bornholm. A qualitative analysis of the distribution of the various sources of Viking Age coinages in Denmark has not been conducted, but we would suggest that such an analysis of in particular the Continental coinages (both mints and chronology) would be rewarding. The extended use of weight economy and the lack of Danish coinage for most of the period into the 13th century illustrate Bornholm's lack of integration into the Danish monetary system and may also be seen as a reflection of the isle's lower integration into the Danish realm.

[127] Märcher 2012a, 2013, 2014.

[128] Ingvardson 2010.

[129] The establishment of a 'Danish Mean' of detector finds is badly needed as a backdrop to qualify quantitative studies of the material.

[130] Horsnæs 2013.

In the medieval period, Bornholm was mainly supplied from the Danish mints in Scania (Lund and Malmø). This supply was supplemented by the significant influx of foreign coins from most of the areas around the Baltic, especially cities in present-day Germany and Poland. The coin circulation on Bornholm was heavily influenced by the trade in the Baltic, *e.g.* the trade and transport related to the massive 'sildemarkeder' (markets specializing on the sale of salted herring) in Øresund and around Bornholm, and the large-scale trade conducted by the Hanseatic cities across the Baltic. In the centuries following the Reformation in 1536 the differences in coin circulation between different parts of the Danish realm diminished, and in particular from the 17th century onwards the impact of foreign coins gradually decreased – in Bornholm as elsewhere in the country.

2.4 CONCLUDING REMARKS

Coin finds are good indicators of use of a site within a period when coins were available in the local society. On an over-all level they can give information of the diachronic development in a *longue durée* perspective. There are, however, some very important pitfalls that must be stressed. First of all, the numismatic material does not tell the whole story. To get a comprehensive understanding on long term developments it is important that other object types are consulted. This applies for all periods, but it is vital for the periods where coin finds are rare. And in fact, long periods have not produced coin finds at all! In the Later Germanic and Early Viking Age periods we may argue that coins were not available, but from several phases of the medieval period coins are almost completely absent on detector sites, even though we know that coins were minted and used elsewhere in Denmark during those periods.

Secondly, we have approached the finds from a 'site' perspective based on the administrative definitions of sites, which often correspond to a single field. There seems in general to be a shift in the preferred habitation areas during the earlier part of the Viking period, which explains why sites with both Iron Age and later Viking Age objects are rare, but the displacements may not be large, as we have several examples where sites dominated by Viking Age material are found so close to the Iron Age sites that they may be regarded as direct continuations of them.

It should also be kept in mind that the production time of a coin may be grossly misleading as chronological indicator: Roman *denarii* from the 2nd century were undoubtedly in use up to *c.* AD 500, and coins from around AD 1000 are regularly found in hoards deposited throughout the 11th century and even into the 12th century. The gap between production and deposition dates seems to be shorter only from the second half of the 12th century and later, when hoards tend to become more homogeneous as a reflection of a growing monetization of the economy.

While the absence of coins from certain periods may distort the picture in a study of settlement development, it is extremely important in an evaluation of coin circulation (or lack thereof). Detector finds have proved vital in a discourse of coin use, and we are beginning to see hints of different practises of coin use, in particular as regards the medieval and later periods, which need to be addressed in future works.

Many methodological questions regarding the collecting, reporting, and scientific use of detector finds in Denmark can be compared with studies on the use of data gathered within the PAS scheme in England [131]. Yet the very dense coverage of the relatively smaller areas with high find density and very precise measurements of each individual find pro-

[131] Among others Brindle 2009, Walton 2012, Robbins 2013.

vide us with information that renders the finds useful for a much closer analysis on a site level. It is, however, important to note that a successful analysis on site level requires that the site is surveyed repeatedly over a period of some years to acquire a representative sample of objects in the plough layer. Some fields in Bornholm have been surveyed more than 20 times and still produce small objects and minute fragments of coins.

As in all cases of surveys and distribution maps, the finds only provide us with evidence of presence of objects in the plough layer. There is rarely a full 1 to 1 relationship between detector finds and excavation finds even on the same site, and the large areas without known finds cannot be interpreted as uninhabited areas.

Some scholars regard detector finds as de-contextualized surface finds, and for that reason objects without scientific value. However, detector archaeology has not only become a valuable tool for recovering as much as possible from already destroyed primary contexts in areas where the disturbed archaeological strata have been mixed up with arable soil, it has also proved to yield numismatic material that to some degree differs from the material deriving from traditional sources (excavations, accidental finds etc.).

The problems involved in the use of detector finds should of course not be underestimated, but nor should the potential. We hope to have demonstrated that detector archaeology provides datasets that form a necessary supplement to data obtained by traditional sources, and in spite of methodological and analytical challenges there is a potential for research based on detector finds of artefacts from destroyed cultural layers: detector archaeology has not only multiplied the volume of material available for study, it has also changed the composition of the finds. It is not just a case of 'more of the same'. In many situations finds retrieved with the help of metal detectors are of other types or from other periods than the traditional finds. Thereby detector data enlarge our vision and the quality of interpretations, and detector archaeology has forced us to develop methodologies adequate for the study of the finds, and it has produced challenging new results.

3. CASES

3.1 BRANDSGÅRD SB 52 AND BRANDSGÅRD ØST SB 91, KNUDSKER PARISH (060301)

The Brandsgård Hoard was found in 1840. According to the original find list by Brøndsted and Thomsen the coins were 67 fragments of Cufic coins, 65 "half bracteates from Dorestadt", 18 German coins, and one from both Pavia and Hungary, in total 152 coins weighing around 117-118 g. No hacksilver was mentioned among the finds [132]. The *tpq* date is provided by the Hungarian coin, identified as an issue of Stephan I (1000-1038) [133]. Lindberg published the Cufic coins and mentioned one broken coin and 67 very small fragments, and this figure was used later by Galster. Another *c.* 44 g of small coin fragments were deemed of no interest and were not preserved. Few of the coins preserved to our days weigh more than 1 g, indeed the preserved half bracteates range in weight between 0.17 and 0.46 g, therefore the 44 g of unregistered fragments could easily represent another 50-100 coins or even more.

Galster examined 12 preserved Haithabu coins from the Brandsgård Hoard, all of various sub-types of Malmer's type KG 9 (Dorestadt imitation) [134]. The remaining coins

[132] Danish National Archives, Rentekammeret, Journalsager ang. Bornholm [Files reg. Bornholm], 1840, nos. 878, 913, and 926.

[133] KMMS inv.no. FP 4: Lindberg 1842-3; Skovmand 1942, p. 127; Galster 1980, find no. 21; von Heijne 2004, find no. 5·74.

[134] Malmer 1966.

were allegedly of the same type(s), while he considered the drawing of a cross bracteate (Malmer type KG 10 A = Hauberg 1900, type 'Hedeby 2') added to the inventory to be a misunderstanding on the part of Hauberg. The latter, however, mentioned the presence of his type Hedeby 2 in the Brandsgård Hoard in his lists of finds including early Scandinavian coins. The presence of Haithabu coins in the hoard is surprising, as Haithabu coins have hitherto been noted in only two other finds from Bornholm. One Dorestadt type came to light in a hoard found at Skærpingegård, Rø parish, in 1878, with 36 coins and 532 g hacksilver [135], and six Haithabu coins (Hauberg type 1 (two specimens) and Hauberg types 3, 4, 5, and 6, one specimen of each) were part of the hoard of more than 800 coins and 597 g hacksilver found in a wooden box/chest at Munkegård, Ibsker parish, in 1864 [136].

In the year 2000 a metal detector reconnaissance produced seven fragmented Cufic coins in the site named Brandsgård Øst [137], and until 2012 a total of 59 Viking Age coins have been located on this site during seven survey seasons [138]. The finds comprise 37 dirhams, 14 German coins, 1 English coin, and no less than seven Haithabu coins. Furthermore there is one blank and one cut fragment of silver, which cannot be identified with certainty as a coin – as well as several finds of hacksilver. The presence of Haithabu coins, as well as the structure of the recent finds as a whole, suggests that they are coins overlooked when the hoard was originally discovered in early 1840. A cross coin of Malmer type KG 10A among the recent detector finds (BMR 3067X33) renders the presence of a cross coin among the coins found in the original hoard in 1840 more likely than believed by Galster [139], and further strengthens the suggestion that the detector finds are part of the Brandsgård 1840 Hoard. Detector surveys have thus helped us locate the original find spot of the Brandsgård Hoard. The presence of hacksilver among the recent finds suggests that there may have been hacksilver also among the finds from 1840, although it is not mentioned in the archival material. The hacksilver is described as pecked, while the coins are heavily and deliberately fragmented, but rarely pecked.

3.2 Ndr. Mulebygård, Nyker parish (060302)

Ndr. Mulebygård is located on the westernmost part of Bornholm, less than 2 kilometres from the west coast in Nyker Parish [140]. It is not known what the prefix Mule- in Muleby means, but the suffix -by generally indicates that a clustered settlement was present in the middle part of the Viking Age and onwards. The word 'by' in Danish translates directly to the English town.

On the southern half of the western coastline on Bornholm there are beaches and sandy shores with relatively shallow waters, and there are many areas suitable for landing places. It must be assumed that places with a stable fresh water supply were preferred and this can in part explain why the area around Ndr. Mulebygård holds a prehistoric site of this size.

[135] Von Heijne 2004, find no. 5·29, *tpq* 962 = Galster 1980, find no. 13.

[136] Von Heijne 2004, find no. 5·112, *tpq* 1002 = Galster 1980, find no. 25.

[137] 060301-91; BMR 3067.

[138] KMMS inv.nos. FP 6808(X1-7), FP 8270(X61-70), FP 9063(X74-8), and coins awaiting registration: X15-24, X28-33, X42-55 and X86-95.

[139] Galster 1980, p. 52.

[140] 060302-124; BMR 3227 (west) and 2812 (east).

Two larger streams, Blykobbe Å and Bagå, flow into the Baltic on this part of the coastline, Bagå being the richest as it has a confluence with Muleby Å close to Ndr. Mulebygård.

As is the case with Vellensby and Myregård (see case studies) the soil is quite sandy although somewhat lighter. The terrain is relatively level, but the northern part is sloping towards the stream Bagå which flows west to the coast only about a kilometer away. Bagå also constitutes the local parish and shire boundary with Klemensker parish in Nørre Herred (Northern shire) on the right bank of the stream.

The combination of level terrain and light soil generally yields good conditions for observations of crop marks using aerial photography and this is also the case for the Ndr. Mulebygård area. An aerial photograph (fig. 18) taken in 2004 provides an overview of the site topography but also reveals distinct colour differences in the crop on the central parts of the site. Some of these features possibly have a geological origin but the smaller and more discrete ones represent prehistoric or early historic activities. Although no excavations have been carried out at the site yet we must assume that these crop marks relate to the Late Iron Age/medieval settlement. A closer look at the crop marks suggests that some of them are in fact pit houses, a type of feature which is abundant in settlements from the Late Iron Age and Viking Age in the Western part of Denmark. Pit houses have, however, been conspicuously absent on Bornholm despite a heavy focus on research in that very part of prehistory. It was not until 2009 that the first pit house on Bornholm was documented in the important site near the farm Baggård, which has produced numerous detector finds just on the opposite side of Bagå from Muleby (fig. 17). Around Baggård are other significant metal detecting sites with roughly the same dating as the Ndr. Mulebygård site, but they are not as large and have, for the time being, less coherent find distributions.

The possibility of pit houses on Ndr. Mulebygård of course should have no direct bearing on our interpretations based on artifacts procured using metal detectors. In combination with the nearby documented pit house it does however indicate that there was an influx of ideas from Scania/Western Denmark. This is in accordance with the find material from Ndr. Mulebygård showing signs of trade having taken place on the site.

Ndr. Mulebygård has been surveyed since the late 1990s. The area was originally perceived as containing two separate sites, and it is administratively covered by two different museum files. The more recent surveying has demonstrated that the demarcation between the two sites is no longer warranted since the original gap is now gradually being bridged with finds.Today the area should be considered one archaeological site within which changes take place over time. Together the two sites have yielded 54 coins.

The majority of the finds are metal objects since primarily detector surveying has been carried out on the site. Ranging in date from the Late Roman Iron Age to the late medieval period the finds comprise artefact categories such as coins, *fibulae*, and weights. In addition to these are also small ingots, hackgold, scrap metal, and a smaller number of unidentified objects that remain difficult to categorize due their degree of fragmentation. All in all the composition of the material resembles what is found on many detector sites in Denmark. The analysis of the finds presents some differences in the finds spectrum between the first identified site BMR 2812 in the eastern part and BMR 3227 to the west, with the majority of Iron Age and Viking Period finds in the east, and a notable concentration of medieval coins in the west.

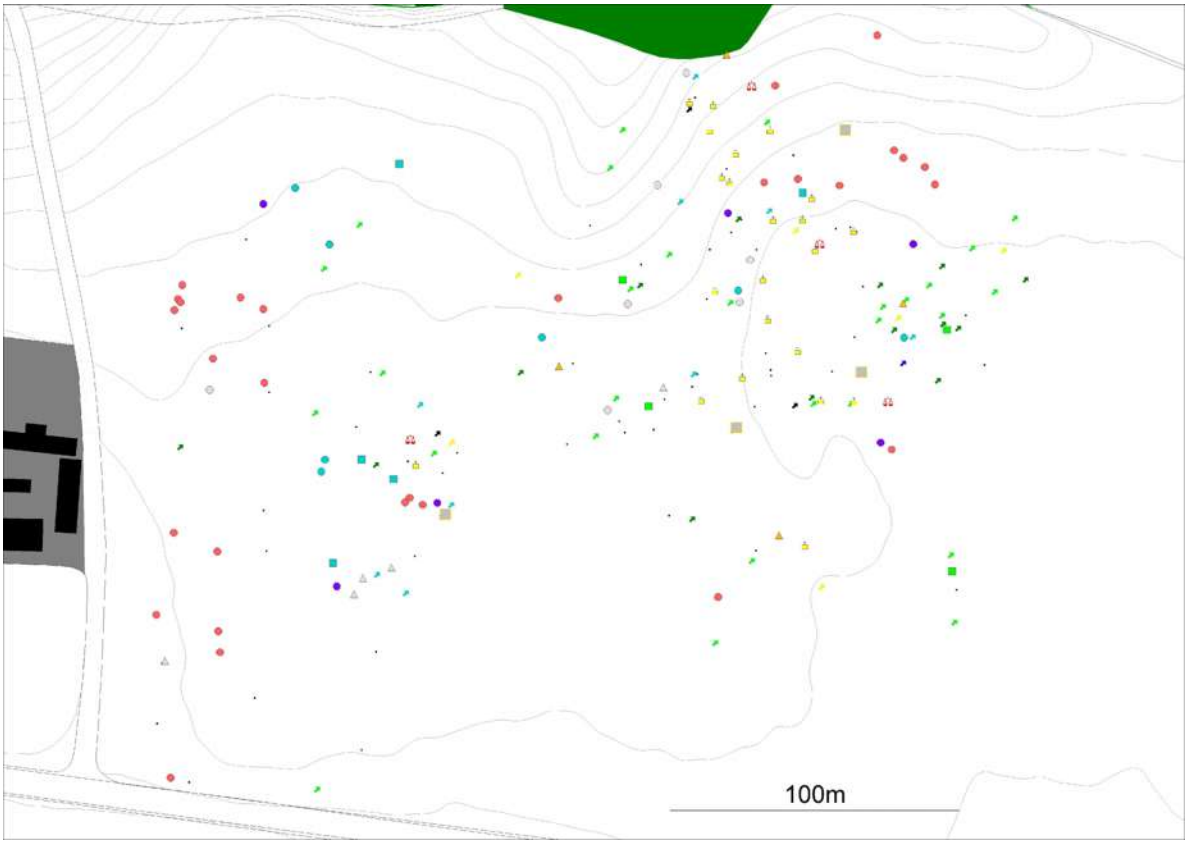

Fig. 17 – Distribution map. Ndr. Mulebygård. Symbols: see fig. 13.
The map contains data from the Danish Geodata Agency

Fig. 18 – Air photo, Ndr. Mulebygård. Photo: M. Vennersdorf for Bornholms Museum

The oldest dated finds from the site are seven Roman *denarii* [141], six of which have been found relatively far from each other on the eastern part of the area, which has also produced the majority of finds from the Germanic Iron Age. Among these finds are the so-called beaked brooches, a type of fibula which has gained importance as chronological marker for the 6th and 7th century in Scandinavian archaeology. Datable fragments range from around 550 to 650 AD but some fragments are ambiguous and may indicate slightly later types. The eastern area has likewise produced the majority of the finds dating to the Viking Age, including two dirhams and a considerable amount of weights [142].

Outside the main concentration of finds, in the north-easternmost part of the site, are a number of Danish penninge from the early 14th century and two Danish klippinge struck 1518-1523.

The western part of the site can be divided into several smaller clusters of material. In the southern part there are again scatters of Danish coins, penninge from the 14th century and klippinge from 1518-1523. Further to the east four medieval coins have been found: two 14th century penninge [143], a hvid from the reign of king Hans (1483-1513) [144], and another klipping from 1518-1523 [145]. The three coins are partly overlapping with a more dense cluster of finds including a number of objects dated in the Viking Age (weight and scales) and two coins: an Arab-Sasanian drachm (Khusraw II type, X7) and a possibly Danish coin from the mid-11th century (X9).

Five other very uncommon coins from the 15th century found in the north-western part of the area must be interpreted as a hoard (one deposition/loss event). The coins are two Danish skillinge from *c.* 1440-1442 (king Christopher of Bavaria (1440-1448), G. 18), a hvid from the same king dated to *c.* 1444-1448, another hvid from either Christopher of Bavaria or Christian I (1448-1481), and a schilling from Riga, archbishop Henning Scarpenberg (1424-1448, Haljak 2010, no. 745). These types are unique on Bornholm, where no other coins from Christopher of Bavaria and apparently no other coins from this archbishop are found. The presence of rare coin types, the chronological compliance, and the proximity of the coins together indicate that the most probably interpretation of the finds is one of a common deposition/loss. Close by, but more spread, two more klippinge from 1518-1523 and a søsling from 1524 (Frederik I, Ribe) have been found.

In the northernmost part of the area two German coins of the late 10th/early 11th century have been found together with two *fibulae* dated in the Late Germanic Iron Age and a Viking Age object.

Ndr. Mulebygård present a complicated chronological development in the numismatic material: the common Roman *denarii* of the Antonine period are found widely apart, yet within the concentration of Germanic Iron Age objects in the eastern part of the site, and thus in line with the suggestion that the majority of the 2nd century *denarii* from Bornholm derive from contexts of the Germanic Iron Age. Two dirhams are found widely apart in the eastern part of the site, and at some distance from the only two German Viking Age coins found in the north-western part of the site, and from the two Viking Age coins of

[141] Horsnæs 2013, p. 139 and 165.

[142] On the chronological significance of the number of weights, see Ingvardson forthcoming.

[143] MB 664 (FP 7106.06; BMR 3227X48) and MB 649 (FP 7106.05; BMR 3227X49).

[144] FP 7106.09; BMR 3227X51.

[145] FP 6564.08; BMR 3227X12.

very different types found close together in the southern part of the area. There are furthermore several small clusters of medieval coins, where *both* 14th *and* 16th century coins are present, and a small hoard of unusual 15th century coins. In spite of some overlapping there is a tendency that the medieval finds were made in the areas between the Germanic Iron Age/Viking Age finds and the present farms.

3.3 Bukkegård, Nyker parish (060302)

Bukkegård is is situated *c*. 800 m east-northeast of Ndr. Mulebygård, and it is the only other site in Nyker parish with a considerable number of detector finds [146]. The site has been surveyed four times during the years 2002-2012, and it has produced 74 reported finds among which 22 coins. The coins present a varied picture, in several ways comparable to the situation at Ndr. Mulebygård. There are small and very worn fragments of three dirhams and eight or nine Continental coins of the common OAP, Mainz-Speyer-Worms, and similar types; but there are also fragments from the mid-11th century: one Cross-denier fragment that may be ascribed to the issues of Magdeburg in the second-third quarters of the century, and two Edward Confessor coins (1059-1062 and 1042-1066, the latter possibly an imitation). The medieval period is represented by 14th and 16th century coins: four 14th century penninge from the mint in Lund and one fragment of a pierced Danish 4-skilling from 1534-1536 (G. 91). Two post-reformation coins were not declared treasure, and their types were not recorded. Hacksilver has been found on the site as well, and it is very likely that some of the finds are remains of an early 11th century hoard, but there is evidently also some later use of the area.

3.4 Store Myregård and Lille Myregård, Nylarsker parish (060303)

The Myregård site is situated on sandy soil and on the southward facing side of a smaller hill. Today, the land is under different farms. The majority of the finds have come from land owned by Store Myregård and Lille Myregård (meaning Greater and Smaller Myre-farm respectively), while the northern outskirt and less surveyed part of the site is under the farm Båsegård.

Modern field boundaries and distribution of land differs from the situation in medieval and historical times because of a cadastral reform in the first half of the 19th century. Although changes in the Myregård area have been modest compared to the average redistribution of land on Bornholm, there is still a clear difference between the historical and modern land ownership on the Myregård site.

Fig. 16 illustrates the cumulative distribution of finds on the Myregård site with so called Original 1 map as a backdrop. The Original 1 maps were made during the preparation of a cadastral reform covering the Danish kingdom in the early 19th century and contains information about the field boundaries before as well as after the reform; as such it is an extremely important tool for understanding the land ownership situation on Bornholm in historical times [147]. On Bornholm the cadastral reform was put in effect slightly later than in the Western part of Denmark.

[146] 060302-130; BMR 3245.

[147] Vennersdorf 2011.

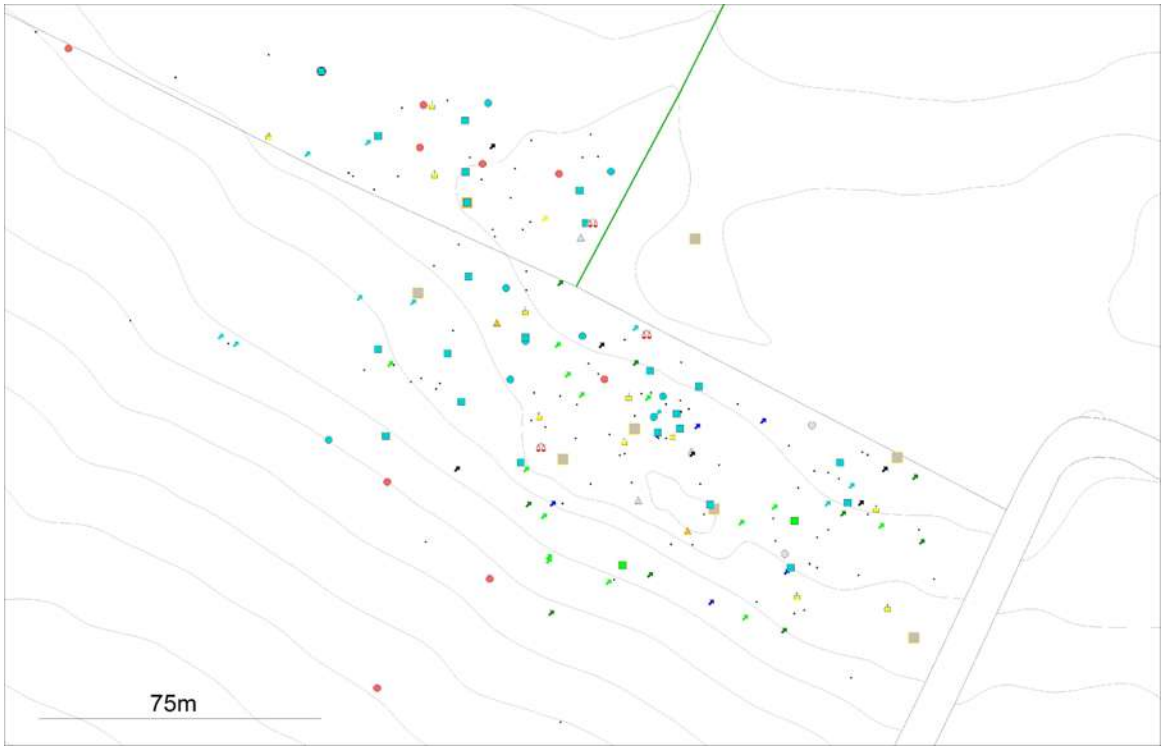

Fig. 19 – Distribution map. Myregård. Symbols: see fig. 13.
The map contains data from the Danish Geodata Agency

The densest cluster of finds can be seen in the eastern part of the site [148] (fig. 19). Iron Age and Viking Age finds (coins and *fibulae*) dominate in the south-eastern part of that area. Compared to the area dominated by the same periods the find density is higher in Ndr. Mulebygård, but at Myregård there are relatively more Viking Age coins, and there are finds of hacksilver. We cannot exclude that these finds represent one or more very scattered Viking Age hoards. The evidence, however, is not conclusive. Medieval coins have been found displaced a little to the west in relation to the earlier periods. They comprise Danish pennies from the second half of the 13th century and from the 14th century and a klipping from 1518-1523. The general composition of the coin finds is within the norm.

The scatter of finds from this site seems to continue a bit to the north. The area to the northeast has been surveyed less intensively and to date only one find, a *fibula*, has been registered [149]. The field to the northwest (sb 185) has on the other hand produced a significant number of finds in the corner adjacent to sb 118. The date range seems to be somewhat later than sb 118, and more importantly five of the coins from this area may derive from a single deposition (hoard) consisting of five otherwise unknown imitations of a coin type struck during the reign of the Danish king Niels (1104-1134, Hbg. 2) [150]. A sixth coin was struck during the reign of Knud VI (1182-1202).

C. 200 m to the west of these sites is an area with a smaller number of finds, including a group of Danish penninge from 1280-1330s [151]. The area between the two sites has been

[148] 060303-118; BMR 1233.
[149] 060303-219; BMR 2737 'Båsegård'.
[150] 060303-185; BMR 1478 'Store Myregård'. Märcher & Aagaard 2014.
[151] 060303-229; BMR 3068.

searched sporadically and so far only one find is registered. It may indicate that the smaller cluster to the west was an independent medieval re-use of the site, but the relatively low number of finds does not allow for solid conclusions.

3.5 VELLENSBYGÅRD, NYLARSKER PARISH (060303)

The close distance between the Myregård site and the site Vellensbygård in part accounts for a somewhat similar topographical description of the latter. Both sites are located on southward facing terrain with a view of the southwestern part of the coastal area on Bornholm and there seems to be a tendency for sites from the later prehistory in this part of Bornholm to also share this feature. For natural reasons the landscape itself has an overall slope towards the coastline but even so south is the predominant slope. Examples are *i.a.* Smørenge (see below) which covers almost the entire southern part of a relatively large hill and the much more inconspicuous, but interesting, Uglegård site (see case, below).

The area around Vellensbygård is rich in prehistoric sites. There are a number of sites dated from the Iron Age onwards, settlements as well as burial sites. A cemetery consisting of 23 graves from the Roman Iron Age has been excavated on the road leading from Vellensbygård southwards towards the coast. It contained among others boat graves, a type of grave associated with people of high status and well known from excavations on Slusegård, Pedersker parish [152].

The Vellensbygård area was first noted in archaeological literature in 1812 because of the find of a Viking Age silver hoard consisting of 56 coins (46 coins (*c.* 87.7 g) and 10 fragments of coins (*c.* 7.3 g)), two silver chains (*c.* 102.3 g) and 28 fragments of silver (264.9 g), a total weight of *c.* 462.2 g silver [153]. The hoard had been hit by ploughing in an area with no other known finds. Already in 1812 Chr. Ramus examined 42 coins among which he identified 16 Cufic and one English coin, and 'the remaining coins' as German.

Since then detector archaeology has identified several sites with finds dating from the Iron Age onwards around Vellensbygård (fig. 20). The largest site, Vellensbygård NØ, has produced 53 coins among 241 recorded finds: 44 coins from the Viking Period, as well as a Roman *denarius*, five penninge, and three coins postdating 1536 [154]. The high number of Viking Age coins in comparison with the total number of recorded finds, as well as the relatively dense cluster of Viking Age coins which may have a distribution differing slightly from that of other finds from the site found, indicate that the Viking Age coins found in Vellensbygård sb 207 derive from a ploughed up hoard. The presence of some hacksilver within the area of the densest coin scatter supports this view. Three of the recently found coins are significantly later than the *tpq* date 996 recorded from the 1812 Vellensbygård hoard. The late coins are two Cross-deniers (dated 1024-1039, BMR 2361x2, and 1010-1020, x29) and an English coin struck 1040-1042 (Harthacnut, jewel cross, x114). The Harthacnut coin, by far the latest of these coins, is found in the middle of the densest cluster of the Viking Age coins from the detector site, while x2 is situated in the outskirts of the cluster, and only x29 has been found in some distance from the cluster. Thus an evaluation of the distribution of the coin finds only would indicate that at least two of the 'later' coins should belong to the hoard. The Vellensbygård site has produced a

[152] 060303-188; BMR 1472. Karg *et al.* 2014 (*forthcoming*). We owe this reference to Finn Ole Nielsen.

[153] KMMS inv. no. FP 11: Galster 1980, find no. 16; von Heijne 2004, find no. 5·91. The weights given in this paper are a bit higher than the already published ones. We have used the precise measurements conducted by Copenhagen's city assayer; see The Danish National Archives, Rentekammeret, Journalsager ang. Bornholm, 1813, no. 1262.

[154] 060303-207; BMR 2361.

considerable number of other finds, and both the Roman *denarius*, and medieval and post-Reformation coins have been found closer to the centre of hoard distribution than x2 and x29. Presently it therefore seems preferable to exclude the Cross-deniers and the Harthacnut coins from the hoard, but we may need to revise this suggestion in light of future evidence.

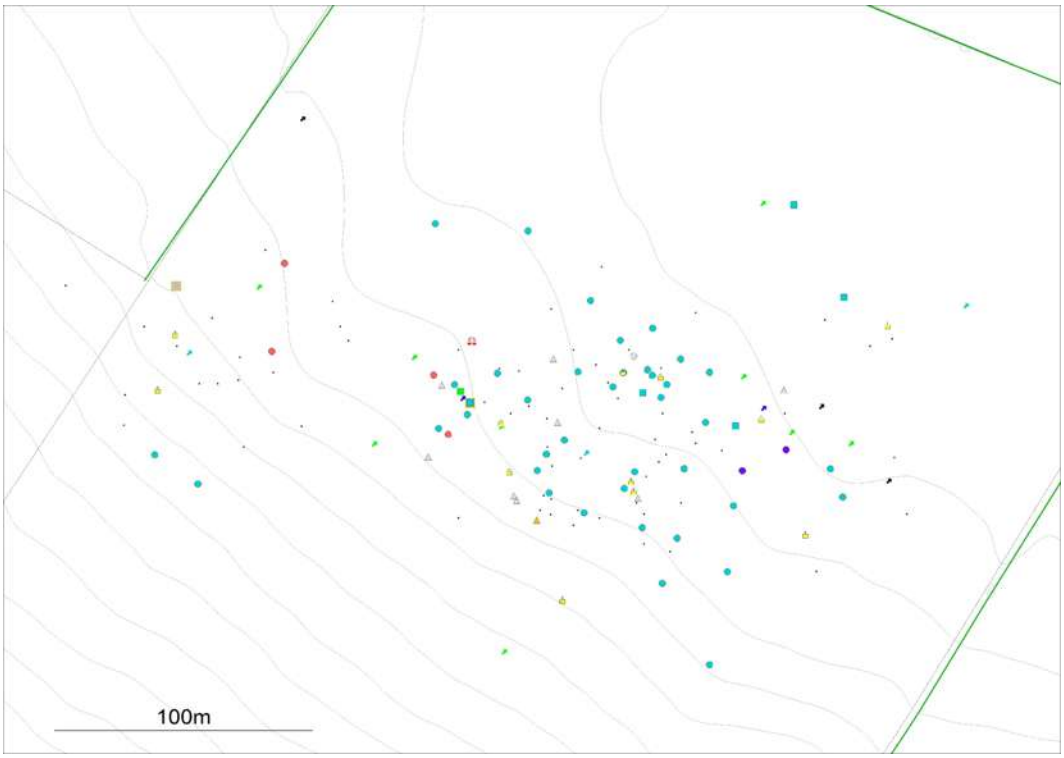

Fig. 20 – Distribution map. Vellensbygård. Symbols: see fig. 13.
The map contains data from the Danish Geodata Agency

The over-all composition of the majority of the Viking Age detector finds from Vellensbygård NØ seems comparable with the finds from the 1812 hoard, and one would be tempted to suggest that the finding place of the 1812 hoard had been identified (fig. 21). Yet, some differences in details should be noted. The proportions of coin types are different: the recent finds counting less Cufic and more English coins. Admittedly, the change from 1/46 (not counting the 10 unidentified coins from the 1812 hoard) to 3/45 English coins is not in itself statistically significant, nor is the change from 16/46 to 9/45 German coins. But even among the various sub-types of German coins there are differences: the number of Cross-deniers is relatively higher in the 1812 hoard than in the detector finds, and there are three coins of Häv. 34 among the Cologne coins found during detector surveys, while this issue is not represented at all among the five Cologne coins from the 1812 hoard.

At present the evidence indicate that the Vellensbygård area has produced two Viking Age hoards. One was found 1812 with a coin *tpq* 996, the other was located in 1996. The coin *tpq* of the latter is most likely 997 and thus almost contemporary with the first hoard. The deposition of two near-contemporary Viking Age hoards within the same area or even site is not unique. The same situation is seen in Rosmannegård [155]. The three latest Viking Age coins from the site are here interpreted as single finds.

[155] Horsnæs 2011.

	English	OAP	MSW	Cross-deniers	Cologne	Cufic	Other/unidentified
Vellensbygård hoard 1812 (Galster 1980, 16)	1	7	4	14 (only 4 identified to type)	4	16	10
Vellensbygård NØ hoard 1996, detector finds	3	8	0	2	5	9	3

Fig. 21 – Vellensbygård hoards 1812 and 1996

3.6 UGLEGÅRD, NYLARSKER PARISH (060303)

The detector site at Uglegård has produced 13 Viking Age, four medieval, and one 18th century coins (fig. 22) [156]. Five of the Viking Age coins were melted together and represent a small closed deposit. Two of the coins have been identified as Danish coins struck in Lund 1047-1074 (Svend Estridsen, Hbg. 32 or 32var), while the remaining three coins, enclosed by the former, have not been identified. The remaining Viking Age coins from the site are fragments of three dirhams and five German coins that have not been identified, but which seem not to be related to the small stack. One of the coins, formally counted among medieval coins, is probably an imitation of a coin from Bardowich [157], and may relate more closely to the Viking Age coins than to the remaining Medieval coins: one penning from Lund (MB 656), one copper sterling of the early 15th century and one hvid struck by Christian I in Malmø.

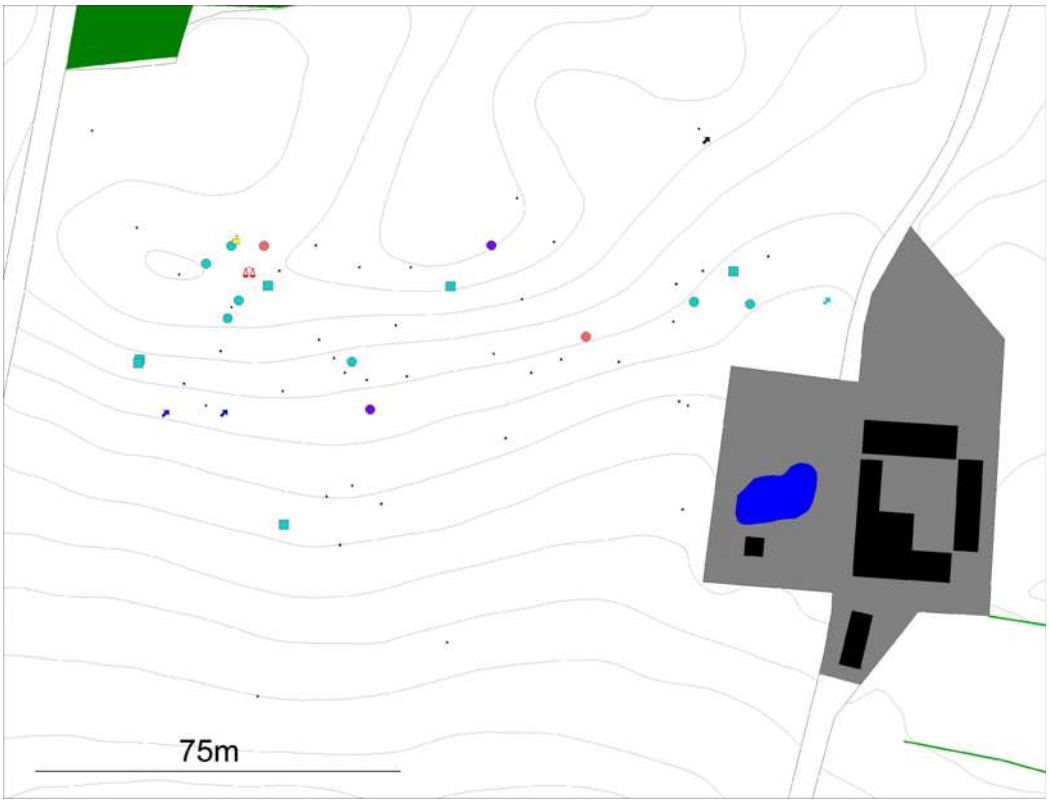

Fig. 22 – Distribution map. Uglegård. Symbols: see fig. 13.
The map contains data from the Danish Geodata Agency

[156] 060303-187, BMR 1550.

[157] Kilger 2000, type 3.2.2.C 1.

3.7 THE SMØRENGEGÅRD COMPLEX, VESTERMARIE PARISH (060305)

Smørenge is one of the two most important sites in Iron Age and Early Viking age Bornholm, and it was recognized as such already in the 19th century [158].

In 1983 multiple finds of Roman *denarii* during detector surveying at Smørenge and subsequent archaeological excavation of the site resulted in the recovery of what may be the largest *denarius* hoard from Denmark. It was possible to locate the original deposition of the hoard in two small ceramic jars close to a building [159]. In the year 2000 a second excavation in the same field explored a *denarius* scatter *c*. 40 m from the first hoard area [160], and numerous *denarii* have been found during more than 30 years of metal detector surveying of the same field. It is however, argued that while we can interpret a considerable number of the 748 *denarii* so far registered from this field as part of one or more hoards, other *denarii* are undoubtedly single finds, and a number of *denarii* may be *either* part of the hoard(s) *or* single finds [161]. Large numbers of Roman coins have also been found in the neighbouring fields both to the east [162] and to the west [163], as well as in the probably cultic area 'Guldhullet' more distant from the hoard find(s) [164].

In all the sites making up the Iron Age complex Roman coins dominate the numismatic material. The continuous importance of the site is however evidenced not only by significant finds of cultic activity in several areas during the Germanic Iron Age, but also by the relatively high number of finds of Viking Age coins on the sites (see below). Later coins are almost exclusively dirhams supplemented by a few 10th century German coins, suggesting that the centre is fading during the 10th century and that it had gone out of use before the large influx of Continental coins began. This situation is closely comparable to the other Iron Age central place in Bornholm, Sorte Muld [165].

It is also important to note the displacement of the Viking Age coins in relation to the much more abundant finds of Roman coins. In the main site (sb 144/BMR 766) 14 dirham fragments have been found in the southern part of the field, distant from the main scatter of Roman coins. There are more than 50 meters between the most distant dirhams, yet considering the close correspondence between the types represented as well as the high degree of fragmentation of the dirhams in general, it cannot be excluded that they derive from a closed deposition. More important is the complete lack of other Viking Age coins from the site, which may indicate that this site as a whole went out of use during the second half of the 10th century, before the mass influx of western coins began.

11 Roman and six Viking Age coins have been found at 'Guldhullet'. The Roman dominance is thus less pronounced, but with five dirham fragments (of which one has been identified as Abbasid struck in Samarqand 818/9) and only one Western coin (an early Otto Adelheid penning, Hatz type III.7) the Viking Age coins again belong to an early phase [166]. In the area south of the Iron Age centre some sites dominated by Viking Age

[158] Vedel 1886, p. 187.

[159] 060305-144; BMR 766. Watt 1983.

[160] Vennersdorf 2000.

[161] Horsnæs 2013, pp. 44 and 140-144.

[162] 060305-70; BMR 1469: 78 *denarii/solidi*.

[163] 060305-405; BMR 1697: 30 *denarii/solidi*.

[164] 060305-554; BMR 3550. Laursen & Watt 2011.

[165] Adamsen 2009; Horsnæs 2013, p. 109-128.

[166] FP 8296 and FP 9315, the latter registered in 2013 and not included in other statistics.

coins have been found. 23 badly preserved Viking Age coins derive from Store Smørengegård situated *c.* 1 km southwest of the central Smørenge site [167]. Finds include nine dirhams, one looped bronze imitation of a dirham, and 13 German coins from the late 10th and early 11th century. As in several other cases a single German coin is dated somewhat later than the bulk of the material (Häv. 251, 1036-1039). A unique, so far unidentified but probably medieval, coin was also recorded [168]. Further to the southeast Smørengegård Syd has produced three dirhams, five Continental coins from the late 10th or early 11th century (two 10th century, two OAP and one un-identified coin), and a single coin struck under Svend Estridsen in Lund (1047-1074) [169]. In both cases it is possible that the near-contemporary coins derive from a one deposition, while the only later coin should be considered a single find. Further spatial analysis of the site may give more firm evidence.

3.8 KLINTEFRYD, VESTERMARIE PARISH (060305)

The topographical position of Klintefryd can be compared to that of the nearby sites Klintegård and Smørenge. The majority of 73 registered objects have been found in an area of *c.* 75 × 75 m, with a few driplets east of the modern north-south road that seems to divide the archaeological area. Among the finds are 16 Viking Age coins (*c.* 12%) and some hacksilver [170]. The coins include four dirhams (three Samanid), two English coins from Æthelred II, and ten German coin types. A single Danish coin from Knud IV (the Holy) struck in Roskilde (Hbg 7) stands apart from the usual coin spectrum.

Fig. 23 – Distribution of finds at Klintefryd. Symbols: see fig. 13.
The map contains data from the Danish Geodata Agency

The initial interpretation was one of a site with one Viking Age hoard, but the analysis of the distribution suggests other possibilities (fig. 23). Most of the coins were found in an

[167] 060305-430; BMR 2652.

[168] FP 7094.1-6, FP 7843.1-2, and coins not registered in KMMS: X57-61, X80-88 and X119-120. Medieval (?): BMR2652X82.

[169] 060305-538; BMR 3479.

[170] 060305-424; BMR 2224; von Heijne 2004, find 82-83.

oblong cluster along the modern road, compatible with the distribution pattern encountered by hoards scattered by ploughing. The latest coin (Knud IV, BMR 2224xx15) from the site was found on the south-western fringes of this cluster. Also in the southern part of this cluster is a rolled-up fragment of a burnt dirham. The remaining coins in this group are two English coins and six German coins.

A smaller group of coins was found *c*. 25 m west of the main cluster. The western cluster consists of three dirhams and two 10th century Germans coins. Finally, a single coin was among the few finds made on the other side of the modern road splitting this site into two parts. If the hoard has been hit recently the latter coin (x69) could by no means belong to a hoard deposited west of the modern road. It is hard to make clear distinctions between the coin finds from the western side on the road. On the present evidence – new finds may easily change this – we must suggest that the site consists of one *or* two Viking age hoards, and two (three) or more single finds.

3.9 STORE KLINTEGÅRD, VESTERMARIE PARISH (060305)

31 Viking Age coins, 17 pieces of hacksilver and two gold fragments came to light at Store Klintegård in 1999 (fig. 24) [171]. Subsequent excavation revealed another 15 coins, five pieces of silver and one gold fragment, and well as the remains of at least one house. The site is situated in an elevated position with a good view in all directions. The house remains – and thereby the site as a whole – proved to be cut by the modern north-south running road.

A concentration of pottery fragments was found in the drainage ditch south of the house, perhaps in connection with the (not preserved) entrance to the building. The majority of the coins were found south of the house. After the excavation coins have been found during metal detector surveys in 2000 (x99-106), 2003 (x131-135), 2005 (x138-139) and 2006 (x141), and today a total of 63 Viking Age coins have been registered from Store Klintegård. The finds were quickly interpreted as a hacksilver hoard scattered by ploughing [172]. The position of the excavation area was defined by the distribution of detector finds, and naturally the excavation itself stressed this distribution. Still, the coins and the hacksilver were found scattered throughout the entire excavation area without any concentration or other signs of the original deposition. The excavator concluded that the hoard had been destroyed for some time before excavation.

The majority of the coins from Store Klintegård belong to types current in the first three decades of the 11th century. Nine of the coins are issues of Cnut I and one was struck in Dortmund (?) by Conrad II [173]. These coins form an unusually close chronological structure, and they suggest a *tpq* date 1029 (13% of the coins struck in the decade leading up to 1029). Two coins, struck in Lund by Svend Estridsen 1047-1074 [174] and in Speyer 1067-1073 [175], are considerably later. No other coins were found. The large chronological spread of the coins was noted, and it led to the suggestion that the two latest coins from

[171] 060305-431; BMR 2758. The gold fragments were identified by Margrethe Watt as remains of a procession cross from the Rhine area.

[172] Von Heijne 2004, p. 323, find no. 5·101.

[173] Berghaus 1978, type 22-24.

[174] x134; Hbg. 13.

[175] x14; Dbg. 841.

the site did not belong to the hoard [176]. The latest coin (x14) is preserved only as a small fragment. It was among the first detector finds and it was found within the southern part of the later excavation area. The Svend Estridsen coin, on the other hand was found after the excavation had ended in the area west of the excavation, and on the fringes of the coin scatter. The analysis of the chronological structure of the finds as a whole seems to support the initial interpretation of the two latest coins as outliers, but this suggestion cannot be proved.

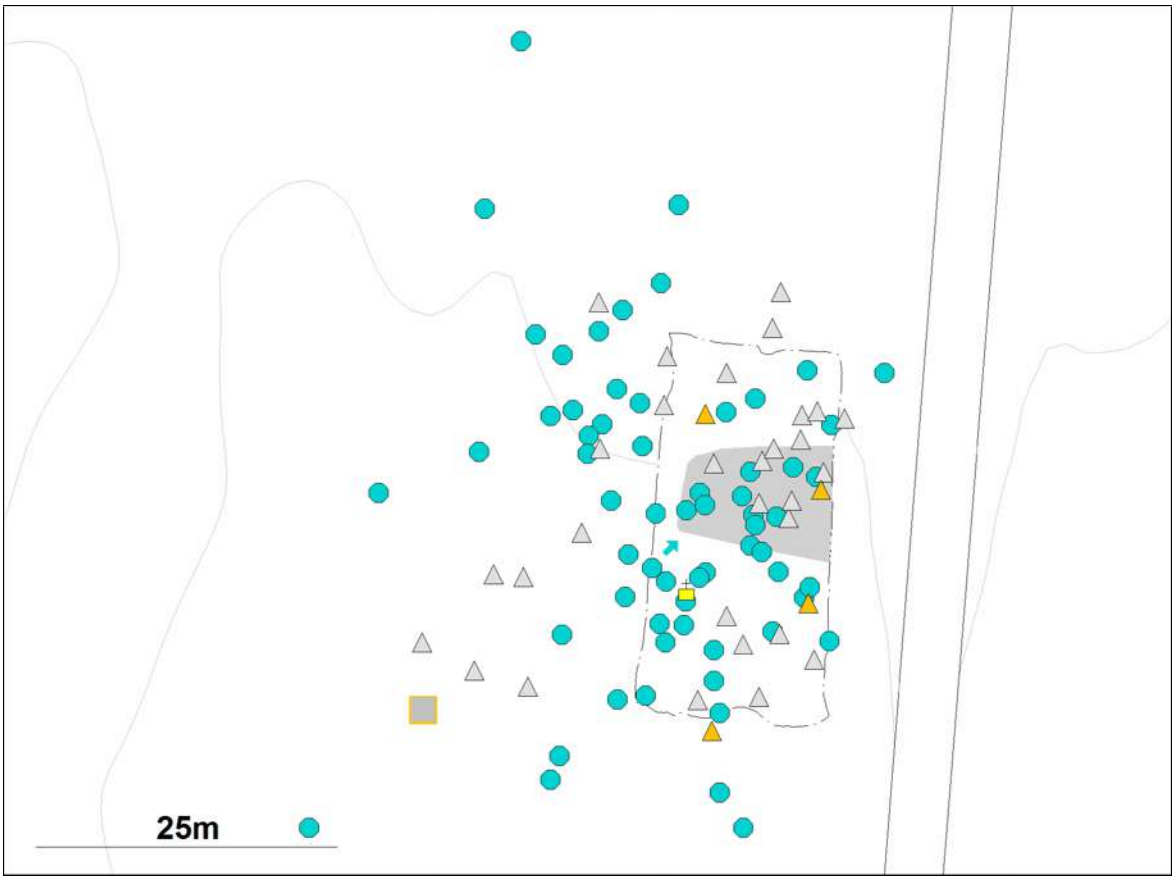

Fig. 24 – Distribution map. Store Klintegård. Symbols: see fig. 13.
The map contains data from the Danish Geodata Agency

[176] KMMS archive. Today the *tpq* date for the hoard (AD 1080) suggested by von Heijne cannot be maintained, as it is based on a coin from BMR 2760, sb 555, a site situated almost 1 km southwest of the Store Klintegård excavation area.

APPENDIX

Vester Herred: 131 Sites listed by site number, number of coins from each site is divided according to the four main chronological groups. Dark brown: presence of hoard; light brown; church; green: burial.

SITE	SB	BMR FILE NO.	SITE NAME	<600	600-1130	1130-1536	>1536
60301	0	–	Knuds Church			3	4
60301	051	–	Rabækkegård/Kanegård		15		
60301	052	–	Brandsgård		153		
60301	066	–	Udmarken "A+B+C"/Kroggård	217			
60301	073	1667	Fynegård		1		
60301	084	2626	Tornegård			1	
60301	087	273	Stubbegård			1	
60301	088	1491	Smørbygård		107		
60301	090	3169	Smørjeppegård				1
60301	091	3067	Brandsgård Ø		62		
60301	103	3494	Rosmannegård SV		121		
60301	103	3494	Rosmannegård S		245	1	1
60301	113	3540	Gadegård N		3		
60301	118	1490	Nygård		1		
60301	132	323	Nygård Ø/2			1	
60301	133	3329x2128	Klippegård		1	1	1
60302	0	3329	Nyker parish				1
60302	041	2256	Blykobbegård		1		
60302	124	3227	Ndr. Mulebygård II, East	3	4	19	2
60302	124	2812	Ndr. Mulebygård, West	4	3	12	2
60302	130	3245	Bukkegård		15	5	2
60302	151	3240	Sdr. Mulebygård		1	1	
60302	152	–	Ny Church			71	15
60303	0	–	Nylars Church			18	13
60303	0	–	Nylars parish			1	
60303	0	–	Blemmelyng (?)	1			
60303	0	–	Vellensbygård		56		
60303	100	–	Engegård hoard		859		
60303	100	2327	Engegård, detector site		9	1	
60303	118	1233	Lille Myregård	2	6	6	
60303	150	2361	Vellensbygård NØ			1	
60303	185	1478	Store Myregård		4	7	
60303	187	1550	Uglegård		13	5	1
60303	190	1672	Vestergård	5			
60303	197	1664	St. Myregård			1	

SITE	SB	BMR FILE NO.	SITE NAME	<600	600–1130	1130–1536	>1536
60303	201	2031	Vellensbygård		1	2	2
60303	203	2291	Skovvang [177]		836	1	1
60303	207	2361	Vellensbygård NØ	1	41	4	2
60303	209	2369	Kølleregård area I	1	1	3	
60303	210	2368	Præstegård			1	
60303	211	2239	Fynegård/Skovvang		11	1	1
60303	214	2630	Vellensbygård Syd 2	2			
60303	216	2600	Hjulergård			1	
60303	217	2662	Klintefryd SØ		3		
60303	218	2728	Vellensbygård, south of		1		
60303	220	2764	Vellensbygård		1	2	
60303	222	2838	Ll. Strandbygård NØ	1			
60303	223	2656	Lillevang	9	12		
60303	229	3068	Ll. Myregård N			5	
60303	231 [178]	2655	Tornegård Vest	1	2	4	
60303	251	3495	Lillevang Øst	3	1		
60303	252	3436	Ankersminde SSV	1			
60303	253	3244	Almegård		2		
60303	254	2859	Ll. Gadegård NØ		2		
60303	256	–	Nylarsker parish	1			
60303	258	3609	Tingfogedgård		1		
60304	0	–	Rønne			2	
60304	0	–	Rønne, Fælleshåb 44			1	
60304	0	–	Rønne, below street				18
60304	0	–	Rønne, on beach below Kapelstr 83a				4
60304	0	–	Rønne, allotment				1
60304	0	–	Rønne, Store Torv				1
60304	0	–	Rønne, Thorkildsvej 61				1
60304	020	–	Robbedale	255			
60304	034	–	Rønne, Toldkammerbygn.				1
60304	040	–	Rønne, Snorregade			2	
60304	043	–	Rønne, Kolonihaveforening Håbet				1
60304	051	–	Rønne, Thorkildsvej 26				1
60304	060	–	Rønne, Kastelskirkegården			1	
60304	063	–	Rønne	1			

[177] Some of the coins registered as 'Skovvang' have been found close to the Fynegård/Skovvang border, and they most probably belong to the Fynegård/Skovvang Hoard rather than to the Skovvang Hoard (we thank Finn Ole Nielsen for this observation).

[178] + SB 435.

SITE	SB	BMR FILE NO.	SITE NAME	<600	600-1130	1130-1536	>1536
60304	114	–	Rønne Church			61+2	
60304	115	–	Rønne, Bagergade 12				1
60304	116	–	Rønne, excavation at museum			2	
60305	–	–	Vestermarie, at the church		1	2	
60305	–	–	Vestermarie parish?		1		
60305	0	–	Vestermarie Church			27	15
60305	0	–	Vestermarie, btw Stensgård and Gadegård				136
60305	–	3329	St. Gadegård				1
60305	021	–	Stensgård, west of	1			
60305	034+418	2150	Tyskegård/Palmegård		82		
60305	049	–	Høilyngen		2		
60305	050	–	Kongens Udmark/Pindeløkkegård	1	112		
60305	070	1469	Smørengegård	78	1	2	1
60305	080	3278	Klinten S		2		
60305	101	–	Kirkebjerget, Sose	1			
60305	126A	–	Vestermarie fattiggård/-hus			1	
60305	144	0766	Smørenge	753	13		3
60305	149	1346	Åkirkeby, near Åvang [179]		1		
60305	151	–/0024	Lilleborg	13		265	
60305	154	–	Borresø	16			
60305	176	–	Almindingen/Ravnebrohus	6			
60305	218		Åkirkeby				1
60305	400	1275	Østre Smørengegård	?1			?1
60305	402	1696	Brændesgård		1		
60305	405	1697	Store Smørengegård	30	2		
60305	407	1693	Stenshøj	1	3		
60305	412	1524	Søndre Ellebygård	1	4	2	
60305	417	2079	Skørrebro Ø/Lundsminde	1	4		
60305	419	2157	Pindeløkkegård	1			
60305	424	2224	Klintefryd		16		
60305	425	2174	Kannikegård/Tyskegård		61		
60305	427	2341 & 3191	Kærgård/Skørrebrovej		7		
60305	429	1047	Smørengegård	1			
60305	430	2652	St. Smørengegård		24	?1	
60305	431	2758	Store Klintegård		63		
60305	432	2599	Slaggegård		3	?1	

[179] According to Finn Ole Nielsen this coin derive from the same hoard as the later identified cluster 060305-549, Åvang/Skørrebro.

SITE	SB	BMR FILE NO.	SITE NAME	<600	600-1130	1130-1536	>1536
60305	433	2661	Almegård, SØ for	1	2		
60305	435	2654	Ø. Smørengegård, SØ		3		
60305	437	2669	Bjerget			1	
60305	445	2843	Nyvang		1		
60305	446	3189	Mellemste Myrebygård	1	2	1	
60305	447	3272	Bækkegård Vest	2			
60305	448	3321	Hullegård	1			
60305	538	3479	Smørengegård S		9		
60305	539	3428	Håkonsgård NNØ	1	10		
60305	540	3471	Møllegård NNØ		1		
60305	541	3145	Store Dalbygård NØ	1	1		
60305	542	3312	Ø. Klintgård, SØ		2		
60305	543	3501	Ll. Bjergegård N		1		
60305	544	3500	Ll. Bjergegård NNV		1		
60305	546	1488	Lillegård NNØ		2	1	
60305	548	3499	Smørengegård ØSØ			1	
60305	549	3188	Åvang/Skørrebro		23		
60305	550	1928	Løkkegård	1			
60305	551	3482	Myrebygård SSV		4		
60305	552	3238	Engfryd/Ringeby		1		
60305	553	3427	Håkonsgård N		5		
60305	554	3550	St. Smørengegård NV	12	6		
60305	555	2760	St. Klintgård SV		4		
60305	609	3687	Præstegård NNØ	1			
60305	647		Koldekilde				493

ABBREVIATIONS

AUD: *Arkæologiske Udgravninger i Danmark* (Annual catalogue of archaeological excavations in Denmark), 1984-2005 available at http://www.kulturstyrelsen.dk/publikationer/arkiv-kulturarvs-styrelsen/singlevisning/artikel/arkaeologiske_udgravninger_i_danmark/ and as printed books 1984-2001

BMR: Bornholms Museum, Rønne

Dbg.: Dannenberg 1876-1905

DMS: Jensen *et al.* 1992

G.: Galster 1972

Häv.: Hävernick 1935

Hbg.: Hauberg 1900

KMMS: Den kgl. Mønt- og Medaillesamling/The Royal Collection of Coins and Medals in The Danish National Museum

MB: Mansfeld-Büllner 1887

ODM: Organisationen Danske Museer

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