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**WHAT DO “KNOWN KNOWNS” TEACH US ABOUT  
“KNOWN UNKNOWNNS” AND “UNKNOWN UNKNOWNNS”?  
REFLECTIONS ON OUR KNOWLEDGE OF EARLY  
MEDIEVAL/VIKING AGE COINAGE AND CURRENCY**

**ABSTRACT:** The aim of this paper is to make us aware of the limits of the numismatic documentation of Northern and Eastern Europe during the Early Middle Ages/the Viking Age. The sheer mass of material – almost 900,000 coins are recorded from finds along with numerous non-monetary silver artefacts – may induce us to think that everything is documented already, but at a closer scrutiny, this turns out to be wrong. Some regions and periods and some find categories are well covered by the material, others not. The paper presents a series of cases where a new find, a new technology (e.g. metal detector), a new methodological approach (e.g. die studies) or simply a more detailed study of the material brought new and unexpected insights. Some of the cases concern the coin production, others the coin circulation. Going beyond numismatics seen in isolation, the results inform us about the economic, political and social structures of the past society and thus highlight the contribution of numismatics to the study of history. In turn, these knowledge break-throughs open new paths of research and, significantly, make us aware of potential similar parallel cases of not yet recognized insights. This will help us to guide future research. In some cases, it would even be safe to extrapolate from the specific innovative case study to more general assumptions. In particular, the paper highlights danger of drawing conclusions from absence of evidence. Several examples are presented where the supposed lack of finds or of coin production turned out to be the result of inadequate research methods or technologies for finding the material in the ground. In other cases, the hazard of the discovery of a hoard changed the situation from absence or scarcity to abundance overnight. If conclusions are to be draw from absence of evidence, a minimum requirement would be to check that adequate research methods have been applied in order to ascertain that the absence is real and not the result of present day factors.

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**ABSTRAKT:** Celem niniejszego artykułu jest dyskusja nad ograniczeniami rozpoznania numizmatycznego Europy Północnej i Wschodniej we wczesnym średniowieczu/okresie wikingim. Sam ogrom materiału – ze znalezisk pochodzi prawie 900 tysięcy monet oraz srebra niemonetarnego – może skłaniać do przekonania, że wszystko jest już udokumentowane. Jednak głębsza refleksja pokazuje, że jest to przekonanie błędne. Niektóre regiony, okresy bądź kategorie znalezisk są dobrze rozpoznane, jednak stan rozpoznania innych pozostawia wiele do życzenia. Artykuł przedstawia serię przypadków, w których nowe znalezisko, nowa technologia (np. wykrywacz metalu), nowe podejście metodologiczne (np. badania połączeń stempli) lub po prostu bardziej szczegółowe badanie materiału przyniosły nowe i nieoczekiwane spostrzeżenia. Niektóre przytoczone przypadki dotyczą etapu produkcji, zaś inne etapu obiegu monet. Wykraczając poza numizmatykę widzianą jako samodzielną dyscyplinę, wyniki informują nas o ekonomicznych, politycznych i społecznych strukturach dawnego społeczeństwa, a tym samym podkreślają wkład numizmatyki w badanie historii. W efekcie nowe ustalenia otwierają nowe ścieżki badawcze i co istotne, uświadamiają nam istnienie potencjalnie podobnych przypadków w nierozpoznanych jeszcze obszarach. Pomagają również w planowaniu przyszłych badań. W niektórych przypadkach można nawet przeprowadzić ekstrapolację wyników konkretnego studium przypadku na bardziej ogólne założenia. Artykuł w szczególności zwraca uwagę na niebezpieczeństwo wyciągania wniosków wynikających z braku dowodów. Przedstawiono kilka przykładów, w których rzekomy brak znalezisk lub produkcji monet okazał się wynikiem nieodpowiednich metod badawczych lub technologii poszukiwania materiału w ziemi. W innych przypadkach, odkrycie skarbu zmieniało z dnia na dzień obraz z braku lub niedostatku źródeł na ich obfitość. Jeżeli wnioski mają być wyciągane z braku dowodów, minimalnym wymogiem byłoby sprawdzenie czy zastosowano odpowiednie metody badawcze w celu upewnienia się, że brak jest rzeczywisty, a nie jest wynikiem innych czynników.

**KEYWORDS:** Early Middle Ages, Viking Age, Northern and Eastern Europe, coin finds, research methods

**SŁOWA KLUCZOWE:** wczesne średniowiecze, okres wikingim, Europa Północna i Wschodnia, znaleziska monet, metody badawcze

When we study the coinage and currency of the Early Middle Ages, we rely on the material available. Written sources are extremely scarce, so the coins themselves and, when known, their find spots and find circumstances constitute our evidence. The Northern and Eastern European finds from the 9<sup>th</sup>–12<sup>th</sup> centuries are extraordinary rich. Approximately 900,000 coins are recorded as well as much non-monetary silver. Islamic, German and English coins are the largest groups within this material. For many periods, the northern and eastern finds are much richer than what is known from the home countries of the coins. Of course, the emerging local coinages of the North and the East are also documented by the finds.<sup>2</sup>

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<sup>2</sup> Jonsson 2015, p. 53.

However, the mere richness of the Northern and Eastern European finds may mislead us to think – often unconsciously – that everything is already documented. But this is false. We need to be aware of the limits of the material. This becomes clear looking at the English coinage, that thanks to the efforts of several generations of numismatists is one of the best studied from this period. The bulk of the English coins in the northern and eastern hoards are from the period ca. 980 to ca. 1050.<sup>3</sup> A few examples will illustrate how this biases the available study material. Of the six recorded specimens of the die combination “Harvey 1239” (one of the 434 die combinations of the coins of Cnut the Great (1016–1035), listed by Yvonne Harvey for the mint of Winchester), only one is kept in London (without recorded find-spot), and two are in Stockholm and one each in Copenhagen, Oslo and Tallinn. On the contrary, if we look at earlier or later coins, “Harvey 3” of Alfred (871–899) and “Harvey 2093” of William the Conqueror (1066–1087) are only known by two specimens each. All four are kept in English collections and three of them derive from English finds.<sup>4</sup> Significantly, just one hoard buried ca. 1068, namely the Chew Valley hoard discovered in 2019, more than tripled the number of known specimens both of Harold II’s *PAX*-type and of William the Conqueror’s *Profile/Cross Fleury* type and added several mints and moneyers to the record of these two types.<sup>5</sup>

The aim of this article is through a number of examples to warn against biases and problems of representativeness of the material. The first part will deal with “coinage”, i.e. the production of coins (the issuing power’s perspective), followed by some examples illustrating the “currency”, i.e. the circulation of coins (the coin users’ perspective). The article will present both well-established classical examples and recently gained results. The examples concern major breakthroughs in the research which have led to a better understanding. At the same time, they demonstrate what we did not know before. In each case, we will focus on which factors – more finds, new methods, etc. – made the new insights possible. Hopefully, this will make us aware of avoiding pitfalls when we work from the available evidence. To paraphrase former US Secretary of Defence Donald Rumsfeld: by looking at “known knowns”, we may be able to determine some “known unknowns” and not less importantly be conscious of the possible existence of “unknown unknowns”.

#### COINAGE

Several hundred thousand German coins are recorded in the East and the North. Like the English coins, the import of German coins took off in the last decades of the 10<sup>th</sup> century. Before that, finds are rare.<sup>6</sup> This implies that the

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<sup>3</sup> Jonsson 1986.

<sup>4</sup> Harvey 2012.

<sup>5</sup> Williams 2021.

<sup>6</sup> Suchodolski 1990.

number of recorded specimens of coins is much lower for most mints for the early-mid 10<sup>th</sup> century than for the late 10<sup>th</sup>–11<sup>th</sup> centuries. This has naturally led to the assumption that coin production was low until a supposed massive and spectacular take off that was thought to have happened simultaneously with the increased export of coins. This may be true for some coinages, like the massive Otto-Adelheid issues struck near the rich silver mines in the Harz region. However, the die study of the Dortmund mint conducted at the Museum of Münster showed that the number of dies employed in the 10<sup>th</sup> century was probably not much lower than for the 11<sup>th</sup> century. There were just more specimens known per die for the 11<sup>th</sup> century than for the preceding one. We may assume that we do not know all the 10<sup>th</sup> century dies yet. Consequently, the increase in the number of recorded specimens does not reflect a sudden and massive increase in production, but just a better survival rate thanks to the Northern and Eastern finds.<sup>7</sup> This will probably also be true for other coinages. This is of course a very important insight if we want to understand monetary history. It was made possible by applying a new method – die studies – to the already existing material. The study only concerned one mint (Dortmund), but it opens up the possibility that this may also be true for other mints. Die studies revealing the number of dies used for a coinage is a much better guide to judge the size of the issue than the number of surviving specimens. Indeed, different coinages have different survival rates, which are determined by a number of phenomena. All attempts to establish a generally valid estimation of the ratio between the original number of coins produced and the number surviving today are doomed to fail.

The beginning of the Danish coinage is a much-debated issue. There are now good arguments that the coinage was inaugurated in the emporium of Ribe in south-west Jutland as early as the 8<sup>th</sup> century, although some scholars still stick to the traditional attribution to Frisia. The argument in favour of Ribe is the corpus of 280 coins, predominantly of the *Wodan/Monster* type (225 ex.), found singly in a series of excavations in Ribe. There were two pre-conditions of these finds. First the identification of the site of the earliest Ribe that occurred in the 1970s. Second the systematic sieving of the soil from the excavations – without this painstaking work, these small coins would probably never have been found.<sup>8</sup>

These coins are now also turning up in significant numbers in metal detector surveys at Gross Strömkendorf near Wismar in Mecklenburg-Vorpommern, which is thought to be the emporium of Reric mentioned in the Frankish annals as under the control of the Danish king.<sup>9</sup> Were they produced at both places or at yet another place under royal control and distributed from there to the king's emporia?<sup>10</sup>

<sup>7</sup> Ilisch 1981, p. 140.

<sup>8</sup> Feveile 2006; updated list Feveile 2019, p. 37.

<sup>9</sup> Wiechmann 2021.

<sup>10</sup> Søvnsø 2018.

In the debate over whether this coinage was controlled by the king or the merchants themselves, this new find situation provides evidence in favour of the king. This also raises the question whether they would turn up in large numbers at a third emporium, Åhus in Scania, if the site was metal-detected? A few specimens were indeed found there in excavations and limited metal detector surveys in the 1980s and 1990s<sup>11</sup> and experience at the later emporia of Haithabu and Kaupang shows that the systematic use of metal detectors multiplies the number of finds significantly compared to older excavations.<sup>12</sup> Would that potentially provide indirect evidence that Åhus was under control of the Danish king, like Reric and Ribe?

Curiously, the few specimens struck from one single obverse die carrying the name and the title of King Sweyn Forkbeard (ca. 987–1014) have gained quasi-iconic status as the first Danish coinage, because they are the first to mention a king explicitly. It is very likely that the kingdom of Denmark already existed from the late Iron Age.<sup>13</sup> Although they are well-studied, the 9<sup>th</sup>–10<sup>th</sup> anonymous “civic” coinages of Ribe and Haithabu (present north Germany, then Denmark) are often forgotten, probably in part because they are often labelled “Nordic” rather than “Danish” in the literature.<sup>14</sup> Words are of importance in how we see things.

The Sweyn Forkbeard coins imitate the English *CRVX* type (ca. 991–997) and are thought to be contemporary with the prototype. In the traditional story of Danish coinage, they are considered a short-lived attempt without an aftermath. Cnut the Great (1016 in England, 1018 in Denmark–1035) received the honour of having started the real Danish coinage, almost from scratch, allegedly with the help of experts called in from his other kingdom, England.<sup>15</sup> Nevertheless, the existence of a substantial Scandinavian imitative coinage of the late 10<sup>th</sup>–early 11<sup>th</sup> centuries was well-known. They imitate contemporary English coins, sometimes very closely, but often summarily, and they frequently combine obverses and reverses from different English type, apparently at random. Most of them carry more or less blundered legends. The overall impression is a rather confused coinage. The place of production was not known, with the notable exception of a minority mentioning the mint of Sigtuna in Sweden. These coins were simply ignored when studying the early Danish coinage.

A generation ago, several scholars – most prominently Brita Malmer (1925–2013) – undertook large-scale die studies of the imitative coinage. Anonymous coins were linked to the few with mint-names in large die-chains, and it could be argued that major portions of the imitative coinage originated in Lund (present day south Sweden, then east Denmark) from ca. 995 on (whereas others are from

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<sup>11</sup> Callmer 1984; LUHM 30193.

<sup>12</sup> Hilberg 2016; Blackburn 2008.

<sup>13</sup> Olsen 1999.

<sup>14</sup> Malmer 1966.

<sup>15</sup> Bendixen 1967, pp. 18–22.

Sigtuna in central Sweden and some probably from minor mints). The gap between Sweyn's and Cnut's coinages was filled in. Coinage on a substantial scale was more or less continuous during the whole period. The origin of this organized Danish coinage could not be attributed to Cnut and his official English experts – Cnut just continued and refined the already existing coinage.<sup>16</sup> These new insights came about simply by studying in depth already existing, but largely overlooked material. This is likely to happen concerning other coinages, too. Indeed, a similar picture – yet very different in its details – is now emerging in Poland by a closer study of the local 11<sup>th</sup> century imitations of mainly German coins.<sup>17</sup>

Some coinages are almost invisible in the find material as the following example will demonstrate. For a long time it was considered to be a well-established fact that the thriving city of Schleswig had no coinage from when it was founded ca. 1070 until ca. 1150. Neither Peter Hauberg (1844–1928), in his still popular handbooks of early medieval Danish coins,<sup>18</sup> nor the following generations of numismatists were able to identify types attributable to this mint. It was thought that Schleswig was a nodal point of silver trade between the East and the West and that abundant foreign coins were sufficient for the city's needs for currency.<sup>19</sup>

The first challenge to this assumption could have made when it was recognized that one of the types attributed by Hauberg to Schleswig's predecessor Haithabu probably made up a substantial, homogenous parcel (at least 52 examples) within the Swedish Venngarn hoard, buried after 1079.<sup>20</sup> The logical implication was that the type was struck shortly before the burial of the hoard – i.e. after the shift from Haithabu to Schleswig – although one could not fully exclude the possibility that the parcel was a left-over group of coins, already old at the time of the burial. But the time was not yet ripe for the identification of the mint which produced this issue – that had to wait for the new discoveries in Schleswig discussed below. Later, Ivar Leimus and Mauri Kuidsoo had the good fortune to discover a legible specimen of yet another coin type hitherto attributed to Utrecht (Netherlands). It read Sweyn on the obverse and Schleswig on the reverse, and the type must be from the last years of King Sweyn Estridsen (1047–1074/1076), after the founding of Schleswig ca. 1070.<sup>21</sup>

But the real breakthrough came when it was decided in 2007 to use metal detectors and partial sieving of the soil during a small-scale excavation at Hafengang 11 in Schleswig. The result was astonishing. Seventy-three coins from the late 11<sup>th</sup>–early 12<sup>th</sup> centuries were discovered. Twenty-two of them formed a small hoard and the remaining 51 were single finds. At excavations conducted nearby without metal de-

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<sup>16</sup> Malmer 1997.

<sup>17</sup> E.g. Bogucki 2012.

<sup>18</sup> Hauberg 1900; Hauberg 1906.

<sup>19</sup> Radtke 2002.

<sup>20</sup> Jonsson 2007.

<sup>21</sup> Leimus, Kuidsoo 2017.

tecting – at Plessenstrasse 83/3 in 1970–1977 and Schild in 1971–1980 – only 12 and 6 11<sup>th</sup>–12<sup>th</sup>-century coins were found respectively, even though the excavated areas were several times larger than at Hafengang 11. The use of metal detectors really makes a difference and shows how many finds were probably overlooked during former excavations.

The bulk of the coins from the new excavation were of a series of coin types with blundered legends. Most of the types were well known from former excavations in Schleswig, but formerly only recorded in small numbers. For various reasons some of them had been attributed to Ribe, Roskilde or Norway, while others remained unattributed. The attribution to Roskilde of one of the types had been made by Hauberg on a very optimistic reading of a few malformed letters of the reverse legend.<sup>22</sup> The attribution to Ribe of another type was made by myself, based on the geographical distribution of the few finds known before the Hafengang excavation.<sup>23</sup> The attribution to Norway of a third type was based on a vague typological and stylistic resemblance.<sup>24</sup> Thanks to the new finds from Hafengang 11, the sheer concentration of finds made it clear that they must all be local issues from Schleswig. The gap was filled.<sup>25</sup>

How come this was not recognized earlier? After all, these coin types were already known before the excavation of Hafengang 11. Several factors are responsible. First, the coins are anonymous. They have either blundered legends, badly struck legends or legends which are hard to interpret. In order to identify the place of production, find provenances were needed. Apart from the earliest types that appear in a few Swedish and Estonian hoards, these coin types only circulated within a very limited area near Schleswig. If no methods suited for finding coins (such as sieving of the soil or metal detecting) were employed, they would just remain undiscovered in the soil. Within Schleswig itself, the Hafengang excavation made it clear that they far outnumber the few coins from other mints. It strongly indicates that they were meant for a managed local currency where the king banned circulation of foreign coins. No metal analysis has been undertaken, but visual inspection shows that they were heavily debased. They probably circulated at a face value superior to their silver value. This made it unprofitable to export them, and their low intrinsic value probably meant that they were not desirable for people outside Schleswig. In summary, inadequate excavation methods and features linked to the nature of this particular coinage made it invisible until finally metal detecting at an excavation revealed it. Similar features may exist for other hitherto unrecognized issues – Ribe? Odense? – and we should be careful not to draw overhasty conclusions on the absence of evidence.

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<sup>22</sup> Hauberg 1900, no. Niels 4.

<sup>23</sup> Moesgaard 2007.

<sup>24</sup> G. Hatz 2001, nos 25, 46.

<sup>25</sup> Moesgaard, Hilberg, Schimmer 2017.

Another example is the *Face/forward-looking Deer* penny in the 9<sup>th</sup> century Danish coinage. Until the late 1990s, it was only known by one specimen, which came to play an important role in the debate between Brita Malmer and Michael Metcalf on whether there were one or several mints producing the “Nordic” coinage of the 9<sup>th</sup> century. Malmer claimed that this coin was the iconographic link between two major series of the coinage (*Carolus-Dorestad* imitations and *Face/backward-looking Deer*), proving that all were struck at the same mint, presumably Haithabu. Metcalf suggested that it was just a marginal imitative issue made by an unofficial mint. Both proved to be wrong, because new specimens came to light thanks to metal detection. First a specimen from Uppåkra, Scania, Sweden, turned up in 1999 during a university-led detector survey, and then from 2011, private detectorists just kept finding new specimens as single finds all over Denmark and southern Norway, culminating with the Damhus hoard near Ribe found in 2018 and containing more than 258 specimens. All these new finds showed that the type was an official coinage of the mint of Ribe, and that they were circulating within a managed local currency to the exclusion of foreign coins. This coinage is from a period in the first half of the 9<sup>th</sup> century, which is a period with relatively few hoards. This is probably why it was not fully documented before the introduction of the metal detector, which is very suited to finding the formerly scarce single finds.<sup>26</sup>

A quick look at Northern France can illuminate our inquiry, even though it is outside our main investigation area. As late as 1959, Lucien Musset wrote that numismatics would not be of much help for the study of 10<sup>th</sup>–11<sup>th</sup> century Norman economic history, because so few coins were recorded.<sup>27</sup> On 3 July 1963 everything changed. That day the Fécamp hoard (département Seine-Maritime) was discovered with its more than 8,500 coins, buried ca. 980/985. The publication of the hoard by Françoise Dumas revealed its richness. Almost three quarters of the coins were from the local Norman mint of Rouen. One hitherto completely unknown Norman type was found, with more than 2,782 specimens. Another type hitherto only known from a drawing published in 1790 was represented by more than 3,239 specimens.<sup>28</sup> Florian Mazel summarizes the importance of this hoard in his recent synthesis of the history of France from 888 to 1180: it “has revolutionized our knowledge of the monetary circulation of the late 10<sup>th</sup> century, the more so in that it comes from a region that had severely suffered from the Scandinavian raids and had been considered lacking in dynamism [...] The hoard thus reflects a Norman economy that was much more monetized than we imagined. It also gives us a methodological lesson: the scarcity of evidence from the 10<sup>th</sup> century should not be over-interpreted in support of the idea of a monetary contraction”.<sup>29</sup>

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<sup>26</sup> Moesgaard 2018; Feveile 2021.

<sup>27</sup> Musset 1959, p. 285

<sup>28</sup> Dumas 1971.

<sup>29</sup> Mazel 2014, pp. 652–653 (my translation).

But the Fécamp hoard is not the only Northern French hoard from the 10<sup>th</sup>–11<sup>th</sup> centuries to have changed our understanding overnight. Maffliers (département Val-d’Oise) brought to light several hitherto unknown or extremely rare coin types from Paris, Saint-Denis and Senlis.<sup>30</sup> The “Loiret” hoard revealed new types from a string of mints in the middle Loire region.<sup>31</sup> The Cuts hoard (département Oise) contained unpublished types from Paris, Soissons, Laon, Quentovic, Saint-Quentin et Arras.<sup>32</sup> Turning to neighbouring Belgium, the Ciney-Dinant hoard revealed a hitherto unappreciated, but very active mint in the Liège-Maastricht area.<sup>33</sup> All these hoards showed well-organized and substantial coinages in places where the impression before the discovery of the relevant hoard had been that of scarce, sporadic or disorganized coinages. Well beyond numismatics, this has huge implications on how we see the economic and organizational landscape of the post-Carolingian/early Feudal period. We should really take Mazel’s words quoted above to heart and be careful not to draw too firm conclusions from an absence of evidence, recognising that the discovery of a single hoard can produce an abundance of evidence.

This picture strongly differs from that of the preceding century, and lessons are to be learnt from this difference. The discovery of a Carolingian hoard rarely leads to such a radical revision of our knowledge as the examples we just saw from the 10<sup>th</sup> century. This is due to a fundamental change in the currency that becomes apparent from a study of the hoards. In the mid- to late-9<sup>th</sup> century, the empire-wide currency where coins circulated freely from the Pyrenees to the Elbe gradually gave way to a much more divided monetary landscape of regional currency pools with little exchange between them. This implies that a newly discovered hoard from the first half of the 9<sup>th</sup> century would probably bring relatively few completely new coin types. Indeed, the hoard is drawn from a homogeneous currency covering a huge geographical zone, as is already documented by a series of former finds. On the contrary, a hoard from the 10<sup>th</sup> century is likely to be the first to be documented from its regional currency pool. Previously discovered hoards from the same time would most probably derive from other local currency pools and thus document other coinages.

This also implies that a corpus of a Carolingian coin type would usually consist of coins from a string of different hoards.<sup>34</sup> This makes it likely that this corpus is representative of the whole issue. By contrast, a corpus of a 10<sup>th</sup>-century coin type would often be either very small, if no substantial hoard has been found, or strongly biased by coins deriving from one single hoard. This in turn means that

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<sup>30</sup> Foucray 2017.

<sup>31</sup> Achache, Bompaire, Castelas 2017.

<sup>32</sup> Foucray, Bompaire, Kind 2017.

<sup>33</sup> Dengis 2021.

<sup>34</sup> See e.g. Moesgaard 2014a.

we most likely know only a portion of the relevant issue. Consequently, our current vision of the 10<sup>th</sup>-century coinage is much less complete than our vision of that of the preceding century. This situation is aggravated by the fact that metal detecting is restricted in France (and Wallonia), depriving us of the potential string of single finds and small hoards that would probably substantiate the corpora of recorded specimens, as they do in Denmark, England and other countries with more liberal legislation on metal detecting.

Finally, one may ask why these coins were not exported to the North and the East as were English and German coins, among them coins from Lotharingia and Frisia, neither of which is far from France? After all, as we saw above, this is why many German coinages are well-known. Indeed, this absence of export seem securely documented, as very few coins from France are present in the substantial hoard material and no almost new finds have occurred in the last generation, despite intensive metal detecting.<sup>35</sup> Maybe the reason is the lack of interest in these coinages in the North and the East, as they were debased compared to the better contemporary English and German coinages. Whereas the latter often contained 85–95% silver, the French coinages of the 10<sup>th</sup> century were at an ever declining 60–75% standard.<sup>36</sup>

A final example will illustrate the question of the quality of the documentation of the evidence at our disposal. As stated above, almost 900,000 coins are on record from Northern and Eastern Europe – but far from all of them are fully documented. Some of them are kept in public collections. Consequently, they are freely available for renewed inspection by scholars and they must be considered to be fully documented. Some coins have, however, been melted down. Yet others have been spread among collectors and have lost their find spot information. Some of these have never been reported and are thus not even included in the record. Others are documented in museum or university archives and collection inventories as well as in publications in journals, in newspaper articles or in books on local history, coin auction catalogues, etc. The quality of this information varies a lot. At best, the coins are illustrated and described in detail including weight, diameter, die axis, etc. At worst, the coins are mentioned without any details, and we do not even know the country of origin or their date with any degree of precision.

This of course causes problems. Investigations requiring a very detailed scrutiny of the coins can only be conducted on part of the material, simply because the relevant details are not documented for all specimens. The 10<sup>th</sup>-century coins with the name of the Cologne mint found in the North and East constitutes a good example of this. These coins make up a very substantial part of the first waves of German coins exported to the North and the East. The obvious conclusion would

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<sup>35</sup> Hatz 1989; Potin 1965.

<sup>36</sup> Dumas 1971, pp. 40–45 and ongoing research by Guillaume Sarah, cf. Moesgaard, Sarah, Bompaire 2018.

be that Cologne played a major part in the trade. However, Peter Ilisch has been able to show that a large part of the coins with the name of Cologne are in fact imitations from Frisia. They cannot be recognized by the design of the coin, which is closely imitated, but they differ by their lower weight, smaller diameter and (sometimes) coarser style.<sup>37</sup> These features can easily be examined on specimens available for study in museum collections. But for the coins that are only documented in archives or publications, the relevant information may not have been noted – more so because these very common coins rarely attracted much more attention than a simple mention of their presence. This means that we cannot know whether the coins from these hoards were genuine Cologne coins or imitations. We thus have to exclude these hoards from analysis of the relative importance of the imitations versus the prototype, as well as from the study of the chronology and the geography of the spread of these two coinages. The evidence at our disposal is thus limited and our vision is restricted. Nonetheless, this phenomenon is highly important for the understanding of the beginning of the export of German coins to the North and the East. This is an important lesson to be learnt: details that seem irrelevant at one stage of research may turn out to be of the utmost importance in the light of later research. This is a strong argument for saving hoards intact for museum collections.

#### CURRENCY

Let us now turn to the currency, that is not coin production, but coin circulation. More widely, we will also look at how coins were used.

The extreme richness of the Northern and Eastern finds sometimes leads to mis-interpretations. The coin finds in the German core lands are very few and small, in sharp contrast to the numerous finds in the North and the East. This led to the theory of the “Fernhandelspfennig” (the long-distance-trade penny) formulated by Walter Hävernick in the 1950s. This theory postulated that the purpose of German coin production in the 10<sup>th</sup>–11<sup>th</sup> centuries was not to fulfil the local need for coins. These coins were solely meant for export. The inner German economy did not use coins.<sup>38</sup>

This theory provoked objections, e.g. by Wolfgang Hess who put forward written evidence for coin circulation.<sup>39</sup> But it was not until Peter Ilisch started to collect information about metal detector finds in Westphalia that unambiguous proof came that coins did circulate widely.<sup>40</sup> The number of finds exploded after the introduction of the metal detector as a means of finding metal archaeological artefacts.

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<sup>37</sup> Ilisch 2007.

<sup>38</sup> Hävernick 1956.

<sup>39</sup> Hess 1993, see also, among others Ilisch 1981.

<sup>40</sup> Ilisch 2016.

The majority of the detector finds were single finds, probably lost accidentally during everyday coin use. The evidence from the Netherlands confirmed this picture, but for the neighbouring regions of Germany no similar explosion in the number of recorded finds occurred – simply because no one was around to do the painstaking work of recording the detector finds. This revolution of our knowledge of the inner German currency came about thanks to new finds. These finds only came to light because a new efficient tool for finding – the metal detector – was introduced.

The metal detector has also changed our view of the currency in the Scandinavia. First and foremost, it has brought to light the importance of single finds. Before the introduction of the metal detector into archaeology in the late 1970s, the hoard and to a lesser degree the grave find were the predominant find categories, leaving us with the impression that the role of coins and other silver artefacts in Viking society was passive hoarding for economic and cultic reasons rather than active circulation. The use of metal detectors during excavation, but in Denmark even more by private individuals, changed this picture. I have looked at the finds from 30 parishes around the cities of Sorø and Ringsted on the island of Zealand, Denmark. Before metal detecting, no single finds of Viking coins were known. The first turned up in 1985, the next in 1993 and then two in 2001.<sup>41</sup> From 2010, the numbers exploded. During the decade 2010–2020, 59 single finds of Viking coins were recorded plus 11 more that still need confirmation.<sup>42</sup> There are by now finds from a total of 28 different sites from 18 out of the 30 parishes. Most sites have yielded between one and four coins, but one stands out with 22 coins. Most of the sites are settlements. All the finds were made by metal detector. Only 2 coins derive from an excavation, the remainder are found by private individuals.

Single finds from settlements most likely represent loss from small scale transactions (silver by weight according to the habit in the East and the North) within everyday life. The figures quoted above show that this active circulation of coins was much more widespread than hitherto imagined, not only in the number of finds but, significantly, also in the number of sites. This active circulation involved large parts of society. In order to reach this conclusion, we need finds in numbers. The metal detector provides us with this accumulated evidence that we would not have known of otherwise.

Other examples also show the importance of the detector. Archaeological excavations traditionally only examine the undisturbed remains under the plough layer.

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<sup>41</sup> The Royal Collection of Coins and Medals, Copenhagen, inv. FP 4386, 6601.2, 6602. Museum of West Zealand, inv. AMK 1991 024x103.

<sup>42</sup> The Royal Collection of Coins and Medals, Copenhagen, inv. FP 9014.14, 9479.32&34–35, 9490.4, 9512.3, 9516.8, 9597.1, 9605.19, 9610.46, 9631.17, 9734.1, 9871.8, 10325, 11426.13–14, 11612.9, 11071.16, 11812.57, 11928.1, 12195, 12879.1&16, 12901.1–2, 12960.2, 13834, 13867.1–2, 15414.17–18, 15553.27. Museum of West Zealand, inv. MVE 3031x23, 3110x7&17, 3436x9, 3480, 3399x13, 25, 50, 65, 120, 138, 185, 296, 300, 304–308, 316, 559, 598, 628, 633, 635, 683, 711, 714–715, 3521x4-5&35, SVM 2004 061x47, 1219x131&143, 1478x102&245, 1543x1.

The plough has repeatedly turned over the topsoil, destroying the archaeological layers. However, the artefacts from these disturbed layers are still preserved in the plough layer, and they inform us about the activity and chronology of the site. Often an ordinary rescue excavation has limited resources in manpower and time, and the examination of the plough soil is not a top priority. Here the metal detector may help. Two Viking coins were found in stratigraphy at each of the two sites of Vester Egesborg and Kirke Hyllinge at Zealand, Denmark – but by detecting the plough soil 33 and 19 additional coins were found respectively!<sup>43</sup> Numbers matter – the picture we get of the intensity of coin use on a site is not the same if we have two or some twenty plus coins. Thus, the metal detector did not just bring “more of the same”, but a completely new picture of Viking coin use.

Another important aspect is the chronology of a site. The classical example is Haithabu, the important Viking emporium in present day northern Germany. Traditionally, the lack of finds from the 11<sup>th</sup> century led archaeologists to suggest that the decline of the site occurred already in the late 10<sup>th</sup> century. But then metal detecting in the plough soil brought to light numerous coins and other artefacts from the 11<sup>th</sup> century. They derive from the archaeological layers of the latest phases of the settlement that had been destroyed by the plough and thus do not appear during traditional excavations. The new picture that has emerged is that the city thrived right up to when it was abandoned in the second half of the 11<sup>th</sup> century.<sup>44</sup>

The metal detector has also allowed us to see more clearly the importation of certain coinages. Before the introduction of the metal detector, ten Carolingian pre-900 coins were recorded in present day Denmark, against three minted in 10<sup>th</sup>-century ducal Normandy. The figures were low, and the difference between the two groups not very marked. Now, more than 200 Carolingian coins can be added to the record,<sup>45</sup> but not a single Norman coin.<sup>46</sup> The importance of the former and the marginal role of the latter is thus confirmed beyond doubt. The lack of Norman coins may seem astonishing, because Normandy was a Viking colony that maintained relations with the motherland for at least a century after it was founded in 911. This may be due to the fact that the Normans struck coins according to contemporary Frankish practice, which among other things adopted a low silver content of ca. 60–75% that would not have been desirable for the Vikings in Scandinavia, who looked for good silver, cf. above.<sup>47</sup>

The multiplication of find spots provided new knowledge about coin use. As already stated above, before the metal detector, only 10 pre-900 Carolingian

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<sup>43</sup> Aarsleff 2006. At Vester Egesborg, two coins are duplicates (Aarsleff 2=18, 9=17) due to double numbering at the museum.

<sup>44</sup> Hilberg 2016.

<sup>45</sup> Latest catalogue: Garipzanov 2008. Latest surveys: Coupland 2011, Moesgaard 2015b.

<sup>46</sup> Moesgaard 2014b, p. 184.

<sup>47</sup> Moesgaard, Sarah, Bompaire 2018.

coins were recorded in Denmark. Five derived from hoards, and four from unknown circumstances. Only one was a secure single find. Then from the 1980s on, the number of finds increased. They were predominantly single finds from settlements, many of which were elite sites. Most of the coins were pierced and turned into jewellery. This made me suggest that they were prestige artefacts, probably imported not via trade but as gifts from Frankish diplomats and missionaries.<sup>48</sup> But in 2008, the spectacular site of Havsmarken on the east coast of the small island of Ærø south of Funen was discovered by the metal detectorist Steen Agersø. This completely unknown site has turned out to be one of the most prolific Viking sites, and was clearly a place of call point and a coastal market. Up till now, some 70 Carolingian coins and more than 200 dirhams have been found in a context that is clearly commercial. So I had to revise my theory that these coins were not used in commerce in the North.<sup>49</sup> This is an inherent feature of archaeology, that new finds can overturn even the best theory. We build our ideas on current evidence that is bound to change, either to substantiate our theories or to reject them.

One must, however, be aware of the limits of the metal detector. A metal detector would not catch coins that are too small, too thin or too light. Sieving the soil, as was done in the 8<sup>th</sup> century layers at Ribe, cf. above, is much more suited to such finds. However, detectors are getting better and more sensitive, and will catch items today that earlier generations of detectors would have missed. The small thin pennies of Harald Bluetooth (king of Denmark ca. 958–before 987) with a cross motif can serve as an example. They are thin and only weigh 0.20–0.35 g. They break easily, and then become even harder to find. Our present corpus of specimens predominantly derive from hoards. They are rare as single finds – only 12 are recorded in present day Denmark and Schleswig-Holstein. But significantly, the rate of discovery has risen over the last two decades due to better metal detectors (three specimens) and sieving of the soil in excavations (seven specimens).<sup>50</sup> This implies that this coin type is probably under-represented among the single finds due to its thinness and small size. It would be an error to conclude from the low number of finds that this type did not circulate and were predominantly used for passive hoarding. We may assume that it is rather the result of a low survival rate and our inadequate methods of finding them. Future finds will show whether this assumption is right.

The success of metal detecting also has its pitfalls. The intensity of detecting is not the same everywhere, creating clusters of finds that reflect today's research activity rather than the realities of former times. This may be true on a micro-level

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<sup>48</sup> Moesgaard 2013 (written 2006).

<sup>49</sup> Moesgaard, Uldum 2010.

<sup>50</sup> Moesgaard 2015a, pp. 30–32, 89, 235–241.

within a site or a parish.<sup>51</sup> But it is also a problem on a macro-level between regions. The problem becomes particularly acute if one wants to compare countries with different legislations on metal detecting. Take for instance Sweden and Denmark. In Denmark, metal detecting is legal everywhere except on scheduled monuments. You need to have the permission of the land owner, and it is good practice not to survey unploughed lands where the risk of destroying preserved archaeological layers is great. The declaration of the finds is obligatory, and the State may claim the finds against a reward to the finder. In Sweden, private metal detecting is restricted and you need to apply for a permission to detect, and you have to define the search area etc. beforehand. The result is that the number of finds has exploded in Denmark. If we take a rather small group of finds, namely Carolingian pre-900 coins, Ildar Garipzanov published a catalogue of the Scandinavian finds in 2008. He knew 65 specimens (half of them from the Häljarp hoard) found in present-day Sweden against 31 in present-day Denmark (which was already a marked increase compared to the 10 specimens recorded by 1975 before detecting).<sup>52</sup> Since 2008, almost 200 additional coins (a third of them from the prolific site of Havsmarken on the island of Ærø<sup>53</sup>) have been found in Denmark against a mere three new finds in Sweden!

This of course makes comparisons between Denmark and Sweden very difficult. Can we extrapolate that Carolingian finds would turn up in Sweden at the same rate as in Denmark if metal detecting was set free in Sweden? Well, at the present state of research, the patterns of use in Viking-Age Denmark (including the now Swedish provinces of Scania and Halland and the Oslo Fjord area in present day Norway) and Sweden seem different: settlement finds and a few hoards in Denmark and grave finds and hoards in Sweden.<sup>54</sup> Is this difference real, or is the absence of settlement finds in Sweden just a result of the restrictive detector rules? It is difficult to know. Indeed, marked regional differences in coin use do exist, as demonstrated convincingly by Tuukka Talvio's thesis on Viking Age Finland.<sup>55</sup> Consequently, we have to accept that on the present evidence we cannot resolve this question.

Regarding one region, however, we may use the Danish "known knowns" to extrapolate to "known unknowns". That is the region of Scania in present day southern Sweden. This region is historically Danish, and the presence of an Osfrid of Scania at the Danish court in the early 9<sup>th</sup> century indicates that it was already the case by then.<sup>56</sup> The find pattern of Carolingian coins is like present day Denmark, as opposed

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<sup>51</sup> Paulsson 1999 gives a brilliant analysis of this problem.

<sup>52</sup> Garipzanov 2008.

<sup>53</sup> Moesgaard, Uldum 2010 + later finds.

<sup>54</sup> Moesgaard 2015b.

<sup>55</sup> Talvio 2002.

<sup>56</sup> Olsen 1999.

to the rest of Sweden: coins from settlements and hoards, but not from graves.<sup>57</sup> If we look at the number of find spots (not the number of coins) of pre-900 Carolingian coins compared to the Danish island of Funen, we get interesting results. Before the metal detector, there were none on Funen, but four in Scania.<sup>58</sup> The – probably correct – conclusion would be, that Carolingian coins were more widespread in Scania than in Funen. If we look at the figures today, 40 years after the introduction of the detector, four new sites have appeared in Scania<sup>59</sup>, against no less than 13 at Funen.<sup>60</sup> It would be wrong to conclude that Funen was the more important place, or that coin use was more decentralised at Funen. It is much more likely that more finds would turn up in Scania if metal detecting was increased. This should warn us against drawing rapid comparative conclusions without looking carefully at the find conditions of the finds and the research history, but also encourage us to look for possibilities to extrapolate when the evidence is manifestly incomplete.

The Danish and Swedish experiences thus differ considerably. As we have seen, active private metal detecting has led to an explosive increase in the number of finds as well as of new sites in Denmark compared to Sweden. In one area, however, I think that Sweden is surpassing Denmark.<sup>61</sup> That is metal detecting by professional archaeologists. Many private detectorists have a tendency to concentrate on prolific sites for the pleasure of finding. Professionals do the surveys more systematically and also record an absence of finds.<sup>62</sup> In parts of Sweden, a best practice for metal detecting during excavations has been developed, including mapping carefully the detected areas and the intensity of detection.<sup>63</sup> This information is reported in detail in the excavation report. This of course concerns a much smaller number of sites than the widespread private detector activity in Denmark, but these sites deliver high quality information that can be compared one-to-one from site to site without the usual need for methodological reservations regarding bias and representativeness. If for instance a site has delivered no coins, a quick look in the report will immediately reveal whether the absence is due to a lack of detecting or whether it is a true reflection of the absence of coins at that particular site. We

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<sup>57</sup> Moesgaard 2015b.

<sup>58</sup> Fru Alstad, ca. 1850, Åkarp 1866, Häljarp 1905, Råbyhemmer 1927.

<sup>59</sup> Archaeologically controlled detector surveys at Uppåkra from 1999 and Ravlunda Maletofte from 2000. Excavation at Räng Sand 2004. Vikhem.

<sup>60</sup> Gudme from 1983, Havsmarken/Gravendal, Ærø from 2008, Hjulby from 2009, Solløkkegård from 2011, Eske Vest, Ærø from 2011, Broholm Vest from 2012, Voldtofte Vest from 2012, Damgård from 2012, Ålykke from 2014, Bregninge, Ærø from 2014, Kallehave Syd, Ærø from 2014, Krogrisgård from 2015, Schelenborg from 2015.

<sup>61</sup> Of course, there is awareness of this problem in Denmark too, see for instance Abramsson, Henriksen 2021.

<sup>62</sup> Paulsson 1999.

<sup>63</sup> Lindberg, Lingström 2016.

would also avoid the recurrent discussion over whether a coin is a real single find or a stray from a hoard. These sites will consequently form high-quality reference material for the bulk of less well-documented sites.

Turning from single finds to hoards, Majvor Östergren's thesis from 1989 was a major step forward.<sup>64</sup> The bulk of Viking Age hoards are found away from present day habitations, and formerly scholars considered that they were buried on purpose out of sight from dwellings in order to keep them secret. It was imagined that the owner found a large stone or an old tree as a landmark to be able to locate the hoard again. Östergren systematically examined hoard locations on the world's most Viking-hoard-rich place, namely the Swedish island of Gotland in the Baltic Sea. She found out that most hoards come from the archaeological remains of abandoned farms. Thus, the hoards were not hidden far from the inhabited areas but within them. This opened up entirely new perspectives on hoarding. For instance, a hoard within a house would have been easily accessible, and thus does not necessarily represent carefully hidden away savings but rather the household's current liquid assets. Jonsson and Östergren later demonstrated that looking at how the coins lie within the container reveals a lot about the process of accumulating the wealth contained in a hoard.<sup>65</sup> Dealing with another period and geographical zone (late medieval and renaissance northern France), Thibault Cardon has shown how to refine even further the interpretation of hoards by looking in detail at their archaeological context (when this is available), which reveals their degree of accessibility and the haste with which they were hidden.<sup>66</sup>

Östergren's observation on the link between habitations and hoards has also been confirmed outside Gotland. Renewed excavations on the find spots of the Danish Viking Age hoards of Enner<sup>67</sup> and Randlev<sup>68</sup> have shown that they were buried within settlements, not far outside as thought when they were found in the mid-19<sup>th</sup>–early 20<sup>th</sup> century. New hoards regularly turn up during excavations of settlements, such as Viggbyholm, Täby, Sweden.<sup>69</sup> But there are likewise examples of the opposite case – at the find spot of the Holløse hoard, for example, no trace of houses or other settlement remains was found during the excavation.<sup>70</sup>

No overall survey of all Viking hoards has been attempted regarding this question, but in her thesis, Gitte Ingvardson systematically checked the find spots of hoards on the Danish island of Bornholm. Among the ca. 100 known hoards, 33 have sufficiently precise information on the find circumstances to allow for an

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<sup>64</sup> Östergren 1989.

<sup>65</sup> Jonsson, Östergren 1990.

<sup>66</sup> Cardon 2021, pp. 166–210.

<sup>67</sup> Kristiansen 2006.

<sup>68</sup> Jeppesen 2003.

<sup>69</sup> <https://arkeologerna.com/vikingatida-silverskatt-funnen-i-tabyl/> (access 25.04.2022).

<sup>70</sup> Langsted, Moesgaard 2017.

interpretation of the find spot. 16 derive from the core of settlements, nine from the edge of settlements, four more vaguely from settlements without precision and only four from outside settlements. Even considering that hoards outside settlements may be under-represented because harder to find, the link between hoards and settlements seems confirmed.<sup>71</sup>

What made these new insights possible? The simple fact that archaeologists started to take interest in hoards and numismatists in archaeology. The find spots were excavated and hoards seen not in numismatic isolation, but in context. The added value of taking the archaeological context into consideration when interpreting a hoard turned out to be immense. There is still a huge potential in following this path, both during future excavation, but also through surveys of old material, as has been done for Bornholm and Gotland.

#### CONCLUSION

The preceding pages present how scholars established a series of new “known knowns”. Various features made these new ground-breaking insights possible. Sometimes, it was the sheer coincidence of the discovery of a hoard that brought up new material. But sometimes, new methods of searching like metal detecting or sieving the soil changed the find pattern, bringing to light new categories of finds. In these cases, the decision whether or not to favour these methods strongly influences the number and the nature of the finds. Comparing find corpora from places with different search strategies will sometimes enable us to suggest more or less secure “known unknowns” – provided that the comparison is made between places that in other respects are comparable.

In other cases, the new insights came about simply when a scholar had the opportunity to go through the material in detail. The material may be huge, and from mere lack of time it has not always benefitted from the attention it deserves and which is necessary to release its potentials. As demonstrated above, new knowledge also arises by applying new methods to the already existing material, like die studies or systematic comparisons of weight, diameter and style. It may also be multi-disciplinary approaches like using the archaeological record. This often creates an opportunity for recognising a wide range of “known unknowns” and guessing at potential “unknown unknowns”.

The existence of numerous “unknown unknowns” is demonstrated by the unexpected breakthroughs in our knowledge presented above. This suggests that many “unknown unknowns” still exist and wait to be discovered. This should strongly warn us against drawing conclusions from a simple absence of evidence, unless we are completely certain that this absence is real, if for instance adequate methods of finding have been applied without result. It just takes the discovery of a hoard or a new site to change the evidence completely overnight.

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<sup>71</sup> Ingvardson 2020, pp. 12, 162–171.

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## CZEGO „ZNANE WIADOME” UCZĄ NAS O „ZNANYCH NIEWIADOMYCH” I „NIEZNANYCH NIEWIADOMYCH”? REFLEKSJE NAD NASZĄ WIEDZĄ O WCZESNOŚREDNIOWIECZNYM/WIKIŃSKIM MENNICTWIE I OBIEGU MONETARNYM

(Streszczenie)

Celem niniejszego artykułu jest dyskusja nad ograniczeniami rozpoznania numizmatycznego Europy Północnej i Wschodniej we wczesnym średniowieczu/ okresie wikińskim. Sam ogrom materiału – ze znalezisk pochodzi prawie 900 tysięcy monet oraz srebra niemonetarnego – może skłaniać do przekonania, że wszystko jest już udokumentowane. Jednak głębsza refleksja pokazuje, że jest to przekonanie błędne. Niektóre regiony, okresy bądź kategorie znalezisk są dobrze rozpoznane, jednak stan rozpoznania innych pozostawia wiele do życzenia. Artykuł przedstawia serię przypadków, w których nowe znalezisko, nowa technologia (np. wykrywacz metalu), nowe podejście metodologiczne (np. badania połączeń stempli) lub po prostu bardziej szczegółowe badanie materiału przyniosły nowe i nieoczekiwane spostrzeżenia.

Jeśli chodzi o produkcję monet, dawniej uważano, że w Niemczech w X w. była ona niewielka ilościowo. Jeśli jednak spojrzeć się na liczbę rozpoznanych stempli, a nie odkrytych egzemplarzy denarów, to okaże się, że niewielka liczba monet z X w. (rzadkich w znaleziskach północnych i wschodnich) jest spowodowana ich szybszym obiegiem i wycofywaniem z rynków, niż monet z XI w., licznie reprezentowanych w znaleziskach na północy i wschodzie Europy.

Przesiewanie ziemi z wykopalisk w VIII-wiecznym Ribe dało wystarczającą liczbę znalezisk, aby wykazać, że prawdopodobnie tam wybijano anonimowe sceattas typu *Wodan/Monster*. Zastosowanie wykrywaczy metali podczas niedawnych wykopalisk w Szlezwiku doprowadziło do licznych odkryć, dzięki którym udało się wykazać, że niektóre, dotychczas rzadkie i nieokreślone, enigmatyczne monety są lokalnymi wyrobami ze Szlezwiku z końca XI w. Badania łańcuchów połączeń stempli wcześniej nieokreślonych zbarbaryzowanych naśladownictw monet angielskich z końca X i początku XI w. wykazały, że są to spójne grupy monet, które można przypisać mennicom w Lund i Sigtunie. Bliższa analiza znalezionych w Skandynawii monet w typie kolońskim z X w. wykazała, że większość z nich to naśladownictwa fryzyjskie, a nie oficjalna emisja kolońska, co znacznie zmienia naszą wizję organizacji szlaków handlowych w tym czasie. Opuszczając Skandynawię i patrząc na północną Francję w X–XI w., zobaczyliśmy, że rzadko spotykane lub nawet nieznanne typy monet mogą pojawić się w dużych ilościach wraz z odkryciem nowego skarbu. To często całkowicie zmienia nasze postrzeganie danego mennictwa – ze sporadycznego i słabo zorganizowanego w rozwinięte, dobrze kontrolowane. Powyższe przykłady pokazują nam, że nasza wiedza o produkcji menniczej jest fragmentaryczna.

W artykule przedstawiono również kilka przykładów dotyczących obiegu monet. Niewielka liczba znalezisk monet z X–XI w. w Niemczech doprowadziła do postawienia hipotezy, że monety niemieckie nie były bite na potrzeby lokalnego obiegu, a jedynie na eksport na północ i wschód. Jednak zastosowanie wykrywaczy metali doprowadziło do zwielokrotnienia znalezisk i wykazało, że monety obiegały również lokalnie w Niemczech. Podobnie w Skandynawii, używanie wykrywaczy metali ujawniło liczne znaleziska

pojedyncze. Są to prawdopodobnie przypadkowe zguby z aktywnego obiegu w handlu. Jest to jasną wskazówką, że wikingowie nie tylko ukrywali swoje bogactwo w depozytach, jak można by sądzić, rejestrując tylko skarby. Również sam charakter znalezisk może wiele powiedzieć o sposobie wykorzystania monet. Na przykład znaleziska na placach targowych pokazują, że monety były w obiegu jako środek płatniczy (przyjmowany według wagi, ponieważ wikingowie używali monet według wartości metalu, a nie ich pierwotnej wartości nominalnej). Intensywność wykorzystywania wykrywaczy metali jest znacznie wyższa w Danii niż w Szwecji, stąd zjawisko to jest mniej udokumentowane w Szwecji. Można jednak zakładać, że liczba znalezisk wzrosłaby również w Szwecji (przynajmniej w regionach, które w innych aspektach są podobne do Danii), gdyby zintensyfikowano używanie wykrywaczy metali.

Konfrontując miejsca odkryć skarbów z kontekstem archeologicznym, udało się wykazać, że skarby nie zawsze były ukrywane w odległych, niezamieszkałych miejscach. Bardzo często odnajdywane są bezpośrednio na osadach lub nawet w domach. Oznacza to, że skarby niekoniecznie były ukrywane tak, aby właściciel nie miał do nich dostępu. Wręcz przeciwnie, sugeruje to, że skarby mogły być bieżącymi zasobami gospodarstwa domowego, do którego często sięgano, aby pobrać trochę pieniędzy w celu zapłaty lub dodać kilka ostatnio zarobionych monet. Podsumowując, znaleziska te wskazują na bardziej aktywne używanie monet i mniej pasywne gromadzenie niż dotychczas sądzono.

Wykraczając poza numizmatykę widzianą jako samodzielną dyscyplinę, wyniki informują nas o ekonomicznych, politycznych i społecznych strukturach dawnego społeczeństwa, a tym samym podkreślają wkład numizmatyki w badanie historii. W efekcie nowe ustalenia otwierają nowe ścieżki badawcze i co istotne, uświadamiają nam istnienie potencjalnie podobnych przypadków w nierozpoznanych jeszcze obszarach. Pomagają również w planowaniu przyszłych badań. W niektórych przypadkach można nawet przeprowadzić ekstrapolację wyników konkretnego studium przypadku na bardziej ogólne założenia. Artykuł w szczególności zwraca uwagę na niebezpieczeństwo wyciągania wniosków wynikających z braku dowodów. Przedstawiono kilka przykładów, w których rzekomy brak znalezisk lub produkcji monet okazał się wynikiem nieodpowiednich metod badawczych lub technologii poszukiwania materiału w ziemi. W innych przypadkach, odkrycie skarbu zmieniało z dnia na dzień obraz z braku lub niedostatku źródeł na ich obfitość. Jeżeli wnioski mają być wyciągane z braku dowodów, minimalnym wymogiem byłoby sprawdzenie, czy zastosowano odpowiednie metody badawcze w celu upewnienia się, że brak jest rzeczywisty, a nie stanowi wypadkowej innych czynników.

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