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The Coinages of Harthacnut and Magnus the Good at Lund c. 1040-c. 1046

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I. Introductory remarks

Since the pioneering work of P. Hauberg on coinages of Denmark during the Viking period and the Early Middle Ages¹, only a few of the groups of coins – the anonymous series of the 9th and 10th centuries – have been thoroughly dealt with in a book written by Brita Malmer on Nordic coins dating from before the year 1000². In closely related fields, such as Swedish and Norwegian numismatic history during the 11th century, and especially the contemporary and older Anglo-Saxon coinages, much progress has been made during the last decades. Because Denmark was strongly influenced in the first half of the 11th century by the well-organized Anglo-Saxon minting system, increased know-

1: P. Hauberg, Myntforhold og Udmyntninger i Danmark indtil 1146. København 1900.

2: Brita Malmer, Nordiska Mynt före År 1000. Acta Arch. Lundensia, Ser. 8', 4. Lund 1966.

3: Malmer, Nordiska Mynt, p. 237.

4: Hbg. Svend (pl. I). – M. Blackburn, M. Dolley and K. Jonsson, NNUM 1979, 61 (with references).

5: Brita Malmer, Numismatiska Meddelanden 31, Stockholm 1973, p. 40 and NNUM 1981, p. 62 – As early as 1962 (R. H.) M. Dolley and V. Butler suggested that such imitations could have been made at Lund: Some "Northern" variants etc. of the "Crux" issue of Æthelræd II, BNJ XXX 1961 (1962), p. 219.

6: C. S. S. Lyon, G. v.d. Meer and (R. H.) M. Dolley, Some Scandinavian coins in the names of Æthelræd, Cnut and Harthacnut attributed by Hildebrand to English mints. BNJ XXX 1961 (1962), p. 235–251. – Brita Malmer, King Cnut's coinage in the Northern countries. The Dorothea Coke Memorial Lecture in Northern Studies, University College, London 1972. ledge of that subject (and of the research methods applied) must be of significance for circumstances in the contemporary Viking kingdom east of the North Sea, too. The following studies of Danish coinages issued at Lund during the period c. 1040 - c. 1046 should be considered against this background.

The first time that the name of Lund is encountered as the place of a mint is during the reign of Knut the Great. It is still an open question whether coins were minted at Lund, or elsewhere in Scania, at an earlier date than this. A group of semi-bracteates dating from the end of the 10th century - the so-called Cross Type (Hauberg types 2-6, Malmer groups KG 10-12) - can have been produced somewhere in eastern Denmark (Zealand or Scania)³. Reference should also be made to the discussion concerning the isolated attempt made by Svend Forkbeard to produce Danish coins in c. 995/9974. Finally, some Nordic imitations of the English types of Æthelræd from about the year 1000 could be of east Danish origin⁵ (cf. Mark Blackburn's treatise above).

Definite evidence that coins were minted at Lund is first found from the time of Knut the Great. The conclusions drawn by Hauberg have been supplemented on important points by two more recent works⁶, but it is not yet possible to clarify the circumstances surrounding Knut's attempt to organize the Danish system of coinage on the lines of the English system. At present, it seems possible to identify some relatively Fig. 1. The "Serpent"-type of Lund. a Hbg. Knud 20 (+ CNVT REX ANGLO / + FARDEIN ON LVND). b Hbg. Hard. 1 (+ HARDACNVT REX / + AS: LAC ON LVND). (Priv. coll.). 2:1.



heavy pennies as the result of his first Danish coining, not just at Lund but also at Roskilde, Ringsted, Viborg and Ribe⁷. The models were to some extent older coins, i.e. English types withdrawn from circulation, and the coins were presumably struck about the year 1020 by Anglo-Saxon moneyers called to this country. In some cases the dies are linked with true English dies⁸. However, it is still for consideration whether this group really marks the start of a Danish coinage system proper which was to continue throughout the century.

There seems to be a distinction between this early group of Knut and the series both from Lund and other Danish towns which followed. From Lund there is a fairly common type showing on the obverse a serpent or dragon and on the reverse a cross-like figure. (Fig. 1). This coin type carries the names of both Knut and Harthacnut, but the inscriptions on many dies are blundered. From the same period there are coins of other Danish mints which can be distinguished geographically by their special types. Nevertheless, the coins of this period have one feature in common: they were minted according to new weight systems, one an East Danish (with a penny-weight of c. 1.0g) and the other West Danish (where the weight was c. 0.75g). All these series must represent a new Danish coinage system,⁹ fairly well organized and presumably under central control, probably by the king.

However, this group will not be reconsidered in the present work, but it is necessary to mention these Lund coins briefly to fill in the background for the coins struck still later in this town.

The "Serpent" type, mentioned above, (Hbg.

- 7: Hauberg, Knud types 1-4, 7, 24-25, 36, 46-48, 55-56.
- 8: Brita Malmer, (note 6), p. 13.
- 9: Cf. K. Erslev, (note 58) and Brita Malmer, (note 6), p. 20.

Knud 20 and Hardeknud 1) presumably comprises one group whose introduction should be dated, regardless of who was in control of the mint, no later than to 1030, i.e. when Knut was the actual king of both Denmark and England, but when Harthacnut c. 1026/1028 seems to have had a special status as "vice-king" in Denmark in spite of his youth – being only 10 or 12 years old.

At any rate four large hoards of treasure show that both the Lund types discussed (and the contemporary "provincial" coins) were in circulation between the years c. 1030 and c. 1035: Enner near Århus¹⁰, Dronningensgate at Trondheim¹¹, and Enges in Burs parish on Gotland¹² seem to have been desposited in c. 1030, while the important find from St. Jørgensbjerg church at Roskilde¹³ could be a little later, but probably also before 1035. An analysis of these finds based on the English coins that they contained confirms - as already suggested by Hauberg and later, independently, stated by Michael Dolley¹⁴ - that Danish coins showing the name of Harthacnut must date from before the year 1035, i.e. the year that he became sole king of Denmark. On this background it is also easier to understand why Hauberg, and later Georg Galster¹⁵, expressed themselves so cautiously concerning these coins and emphasized the difficulty of distinguishing between coinages from the time of Knut and that of Harthacnut. In reality they should be considered as one

10: Hauberg, 167, no. 66. – G. Galster, SCBI Copenhagen I, 1964, p. 34, no. 65.

11: L. Lagerqvist, Commentationes II, 1968, p. 385–388. – K. Skaare, Coins and Coinage in Viking-age Norway, Oslo 1976, p. 166, no. 147 (date too late).

12: CNS, vol. I, 2, 1979, p. 148.

13: G. Galster, NNÅ 1954, p. 137-142.

14: M. Dolley, The Numismatic Circular 1972, p. 358.

15: G. Galster, L. E. Bruuns Mønt- og Medaillesamling, København 1928, p. 49, ad no. 1322. – The same, Kongsø, p. 57.

16: C. S. S. Lyon et al., (note 6).

group, and no weight should be laid on the fact that some carry the name of Knut and some that of Harthacnut: both had a right to use the title King of Denmark at that time.

There seems, as previously mentioned, that behind the coins dating from c. 1030 there lay a real organisation of the Danish coinage system with new national coin types and new weight systems after the first attempt of Knut the Great in c. 1020 had obviously failed to succeed. The next occasion when an important change can be observed is in the reign of Harthacnut (1035-1042). This time it concerns types, and particularly those from the Lund mint having one important feature in common, namely an evident similarity with English models. The obverse is again struck with a portrait and with a king's name, while the reverse is of either a contemporary or older Anglo-Saxon type. This is the group of coins that is the subject of the present study of the production of the Lund mint in the time of Harthacnut and Magnus the Good.

II. Method

Hauberg based his chronological arrangement and identifications of Danish coins primarily on the inscriptions given on the obverse (see note 17) and on the evidence provided by the hoards. In addition, this author naturally drew upon the results achieved by international numismatic research in related fields. Hauberg's publication shows his impressive knowledge of the entire Nordic find material. In many cases he identified individual coin dies and ascertained dielinks, but apparently he did not draw further conclusions from these. In this connection it should be mentioned that the authors of a more recent, extremely important treatise¹⁶ concerning the relationship between the English and the Nordic coinages of Knut the Great have published links between certain groups of dies and were even able to set up a long die-chain:

they loyally mention the fact that their results are largely based on Hauberg's observations, found as scattered remarks here and there in his book. Today it seems peculiar that Hauberg did not consider the die-links to be of greater significance, but this is fully understandable considering the research methods of his time. Nevertheless, there might be another reason for his apparent neglect. A large number of the papers left by Hauberg are found in the Royal Collection of Coins and Medals in Copenhagen. Here the present author noticed an important note among the preparatory studies for Hauberg's great work: he wrote that a chronological arrangement of all the Danish material would be difficult if a higher priority was not given to the inscriptions on the obverse and their names than to the reverses¹⁷. Consequently, this was the principle that Hauberg followed for all legible coins. When he noted die-links that did not, apparently, harmonize with his chronology, he explained the circumstance as the re-use of old dies, or the issue of special "memorial coins" for deceased kings^{17a}.

An attempt has been made to use a different method in the following work. This builds primarily on a study of the dies and of their links. A die-link must imply that the two dies were in use simultaneously. If dies occur which because of their legends seem either too old or to originate from a foreign mint, then primarily these must be reckoned to be new dies which, for some reason or other, copy older or foreign models. The concept "re-usage" of old dies is, in this period, a less probable explanation¹⁸. If it is to be used at all, then evidence must be provided that the very same die had, in addition, been used either for older issues or in a different mint. Obviously this does not affect the circumstance that, on a change of regent or the introduction of new types, the immediately preceding dies were used during a transitional period, such as proved long ago, e.g. in the well organised Anglo-Saxon coinage. In such cases the obverse die is normally that of the older and the reverse die that of the newer model¹⁹.

Even though the Danish coinage system seems at times to have attempted to imitate the English one, its structure is still too poorly elucidated. At all events, it should not be assumed that the same organisation existed in this country as in England just because certain Danish issues lie close to the English models in style and technique. For this reason the question of imitations of old or foreign dies is an important one. It has already been established that unexpected die copying could occur at Lund in the period in question, and that these copies seem to have been included in regular issues²⁰. Consequently on must be prepared to find similar types hidden among the material. This aspect is of importance for the whole study; at this stage it should be mentioned that for a short period some of the Lund moneyers permitted the cutting of numerous dies that copied either old coins (but ones which were still in circulation in this country) or foreign contemporary types. From a technical point of view, copies of this nature can be of such good quality that previously there was no possibility of distinguishing them from their models.

17: Hauberg's manuscript: "En ny Udmyntning har været betegnet ved Adversen, og Reversstemplet har været overladt til Myntmesterens Skjøn; derved forekommer ofte de ældre Reversstempler på senere Mynter. Paa anden Maade kan ikke Regenternes Aarsrække og Typernes Antal bringes i Overensstemmelse".

17a: Hauberg, p. 115.

18: Hauberg also suggested that English dies had been transported to Denmark and used here. This has now been documented for the period just before and after 1000 AD, but so far no example could be cited for the period about 1040. See also the recent discussion: Mark Blackburn, Thoughts on imitations of the Anglo-Saxon coinage. Seaby Coin & Medal Bulletin 1977, p. 344 ff.

19: M. Dolley, The relevance of obverse die-links to some problems of the later Anglo-Saxon coinage. Commentationes I, 1961, p. 156.

20: C. J. Becker, NNUM 1979, p. 70, and NNUM 1980, p. 47. – The same, Seaby Coin & Medal Bulletin 1980, p. 335.

III. Copies and imitations

A distinction is made in the present investigation between copies of old or foreign dies (as discussed immediately above) and imitations. An imitation is understood as a direct imitation of a foreign (as a rule Anglo-Saxon) coin, where both the obverse and the reverse are illiterate, but where a more or less succesful attempt has been made to reproduce the foreign model. Large numbers of imitations of the coins of Æthelræd occur in Nordic finds, rather fewer of the English types of Knut the Great, and more rarely of the issues of the following kings, i.e., the series of Harold I (Harefoot), Harthacnut, and Edward the Confessor – although only up to and including the "Expanding Cross" type (1050-1053) of the last-mentioned king (fig. $5)^{21}$. All these imitations can be just about contemporary with their models (proved by a number of hoards) but they can also be later, indeed even several decades later. They still comprise groups which are puzzling within Nordic numismatics, and their minting place or places cannot yet be definitely identified in the Nordic region. Some of the earliest imitations are the subject of studies by my colleagues published above. With a few exceptions, the rather later imitations will not be dealt with in the following. It has however, proved necessary to distinguish a series of Lund coins dating from the time of Magnus the Good, where only the obverse is illiterate (the MX group below), from a series of contemporary, related imitations (the MZ group below) whose minting place is unknown at present but may be Roskilde. Nevertheless, it must be admitted that, for the time being, it can be difficult to explain where the borderline between copies and imitations should be drawn.

21: E.g. Hauberg Magnus 14.

IV. The material and its arrangement

Material found in the most important Scandinavian collections was the object of primary study – by and large the same material that was available to Hauberg. Since 1900 it is true that several hoards have appeared in South Scandinavia²², but these have yielded only little supplementary information and even less fresh knowledge. The most important finds from the present area of Denmark were all published by Georg Galster (see Haagerup and Kongsø). The same author, moreover, made a number of important remarks in the large catalogue of the L. E. Bruun collection (1928) and in the final edition of the equally important catalogue of the Hauberg auction (1929)²³.

The present author has perused the material in the L. E. Bruun collection (cited LEB in the following), the Royal Collection of Coins and Medals, Copenhagen (KMMS), and the Royal Coin Cabinet (National Museum for History of Coins, Medals and Money) Stockholm (KMK), and in a number of larger museums elsewhere (Historical Museum of Lund University, Coin Cabinet of Uppsala University, Coin Cabinet of Oslo University, the Museum of Odense, and the British Museum, London), as well as that in a few private collections. The material was gathered in the years 1978-1980. Use was only made of pieces that could be studied in the original, or where clear illustrations were available in publications or in the form of a photograph. No coins were used that were only known through descriptions or other records. There is one exception: the interesting coin H.43/197, which is known only from descriptions by Dannenberg and Hauberg^{23a}.

22: See G. Galster, SCBI Copenhagen I, 1964, p. 24.

23: Museumsinspektør P. Hauberg's Samling af danske og norske Mønter. København 1929. (The manuscript was nearly finished by Hauberg before his death, and was finally revised by G. Galster).

23a: The unique coin is from the hoard at Plonsk, Poland (Hauberg, p. 180, no. 195). In his publication Dannenberg

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The dies and their recording

An attempt was made to record all obverse dies showing a portrait that originates from the period under discussion. The small number of coinages showing other motifs are excluded. On the other hand, all contemporary reverse dies are recorded if, directly or through links, they can be associated with Lund. This means that the present investigation deals with dies and their mutual links, but it cannot be considered to be an exhaustive numismatic study of the large amount of find material. Hence no complete catalogue is set up of all combinations giving the occurrence of the coins in closed finds and the number of known specimens - no more than the weight and die-axis of the individual coins were specially studied.

The individual obverse and reverse dies are grouped in the following plates I–V with lists, but more according to convenience than to any uniform system: the lists can be used for further conclusions as well as for the identification or classification of individual coins.

The obverse inscriptions are grouped according to inscription. Each group is numbered consecutively.

H = showing the name of Harthacnut (whether literate or only partly literate). The 45 different dies are arranged primarily according to whether the reading starts on the left of the coin or in the middle of it (in such cases the break at the portrait is marked by //). Thereafter, the inscriptions are collected in a first group having H as initial letter and in another group where this is reproduced as N. (The alternating usage of the letters H and N is a common

(Berliner Blätter für Münzkunde VI, 1871–1873, p. 150 ff and p. 241 ff.) registers the coin as English (p. 261) but adds that it may be Scandinavian. Hauberg mentions the coin in his book (p. 201, ad. Hard. no. 20) giving new details about the type of the obverse, which means that he must have seen the coin. It now seems to have disappeared; according to information from Mr. B. Kluge, Berlin, it is not in the Berlin-collection to-day. phenomenon on the coins of this period: but it must be admitted that there are cases where it is difficult to determine which letter it is). Within each subgroup the inscriptions are arranged with the complete ones first and in alphabetical order, whereafter follow the more incomplete inscriptions. Thus, in the H group, no account is taken of the details of the portrait itself.

HX = blundered inscription which, according to the die combinations documented later, must be contemporary with the H group. Only two dies are (subjectively) referred to this group.

 \mathbf{K} = showing the name of Knut. Only those dies are included which, according to die-links or similar criteria, must be contemporary with the other dies here treated. Hauberg attributed all dies of this type to the time of Knut the Great, even though he made reservations concerning a few of them²⁴. A discussion follows below as to whether the late Knut dies recorded here are anachronistic, or whether they should be explained as parallels to the circumstance that Harthacnut's English series can show the name of Knut, too. There are 16 dies of this group, (perhaps more).

 \mathbf{M} = showing the name of Magnus. Naturally, only the issues of Magnus the Good are included here and not the considerably later coins from the time when Svend Estridsen was king and used the name "Magnus". There are 26 dies in this list. For convenience they are arranged according to a system different from that of the H group of Harthacnut. Attention is primarily paid to whether the portrait design includes a sceptre or not. Within each group the dies are arranged alphabetically and with the correct reproductions of the king's name before those that are more or less confused, although still recognisable versions of the name Magnus.

 $\mathbf{M}\mathbf{X}$ = entirely blundered obverse inscriptions which, according to the reverse dies, must originate from the time of Magnus the Good and

^{24:} Hauberg, e.g. p. 114 and 193 (ad no. 23).

must be connected with Lund. The group corresponds to Hauberg's variant of the type Magnus no. 1. The 33 obverse dies here recorded are arranged alphabetically and on the following principle: if there is a + sign, then the inscription begins there whether this initial cross is placed to the left or in the middle of the obverse (the latter position is most frequent). If an inscription includes the + sign twice, then the reading always starts at the second + (i.e., that farthest to the right).

MZ = entirely blundered obverse inscriptions of the same type as that of the previous group. The MZ group is purely subjectively distinguished from the MX on the basis of the reverse dies that cannot be directly referred to Lund. The MZ group is only included because it has been described with the MX by Hauberg and all later authors. As shown below, the group includes some of the earlier mentioned imitations for which the place of minting has not yet been identified. There are 26 obverse dies in the MZ group in the lists, but strictly speaking several more could have been included without altering the definition at all. The inscriptions of the MZ group are arranged according to the principles used in the case of the MX group.

It should be mentioned that in earlier times – chiefly before the work of Hauberg – both the MX and the MZ groups were often attributed to Harthacnut and were considered to be poor versions of the coins of this monarch.

Finally, there are three small groups that can similarly be attributed to Lund through reverse dies or links, and to the period under discussion, even though the names on the obverses are English, namely:

25: C. Ramus and O. Devegge's Ufuldendte Møntværk, København 1867, pl. VI, no. XXXIV. – H. A. Grueber and C. F. Keary, A Catalogue of English Coins in the British Museum: Anglo-Saxon series, vol. II, London 1893, p. 313, no. 64 (with illustration). The two illustrations may be of one and the same coin; it was once in a Danish private collection (H. H. Frost) but later sold to England. \mathbf{E} = the name of \mathbf{E} the lræd, three dies.

HL = the name of Harold, i.e., Harold I (Harefoot). Two dies but only one is entirely certain: the other 25 could show a corruption of the name of Harthacnut.

 \mathbf{E} = the name of Edward the Confessor. Two dies are known from Lund.

Reverse dies are arranged in alphabetic order according to the name of the moneyer (irrespective of whether he really did work at Lund in the period in question, or whether the name is "spurious", i.e., either copies the inscription on a foreign coin, and thus of a moneyer otherwise unknown at Lund, or is, apparently, an entirely fictitious name).

The lists are consecutively numbered and the dies are referred to below just by this number or – where this could lead to a misunderstanding – with an R(= reverse) preceding the number. It should be noted that the lists often omit one or several numbers between the individual names: the reason being that any new dies, or any overlooked in the present investigation, can be incorporated more easily in the series as a whole with a new main number.

The reverse dies are divided into two groups, one containing the numbers 1 to 250 (list I), the other those from 301 onwards (list II). The first consists of dies that either state the name of Lund themselves or originate from a moneyer who stated the name of this town on a closely related die. To date, 160 dies have been recorded in this group. As well as dies having a direct connection with the portrait obverses, Lund dies from the same period are included, even though these are combined with the (more rare) obverses showing other motifs (pictures of animals etc.).

The other group, from no. 301 onwards, comprises only 40 dies. These are entirely or partially illiterate; at any rate, the name of "Lund" is not clear. The group was included in the present investigation because, on the basis of die-links, some of the dies seem to have been used at Lund, while others are directly associated with the obverse dies in the still mysterious MZ group. A single Roskilde die is included (no. 401).

The type or design is also stated for all reverse dies (see pl. VI). The types are indicated by the letters A–T in an apparently arbitrary sequence; however, the letters are selected in this way because in the majority of cases the same definition can be used as that with which many scholars since the time of B. E. Hildebrand are acquainted. Incidentally, Hildebrand's main types of the English reverses from the times of Æthelræd, Knut and Harthacnut, can be directly reused here, with a few exeptions.

Finally, all lists note the die-links so far recorded for both obverse and reverse dies. In this way, the lists constitute the starting-point for conclusions that may be drawn from the material – some of which are discussed below.

Re-engraving of dies. In the lists of both obverse and reverse dies, "a"-numbers (accompanied by the designation "R-E") are given in a few cases, where there is evidence that the die has been altered during its use, often by adding subsidiary symbols to the design (see fig. 8). In some cases the reason for this alteration seems to have been an attempt to cover up damage sustained by the die during usage.

The inscriptions on the dies are reproduced in a normalized fashion in the published lists, i.e., without the individual details of the letters. The same applies to the subsidiary symbols found particularly on the reverse dies (pellets, circles, crescent, etc.). For some groups of obverse dies which would show one and the same normalized inscription an exception has been made and here certain characteristic details of the individual letters have been reproduced more naturalistically to facilitate the identification of the dies. It should be mentioned, however, that as a rule such dies exhibit differences in the portrait, and in practice, therefore, it is easy to distinguish between individual dies. As many as possible of the obverse dies are also reproduced photographically (pls. I–V) to facilitate rapid identification.

In the case of the reverse dies, a brief survey of the lists will show that there is such great variety in the inscriptions that it is easy to distinguish individual dies with legible inscriptions. It is remarkable that even the most frequently occurring names never appear with exactly the same spelling or secondary decoration (supplementary symbols). This is hardly fortuitous as the technical production of the dies is so good in the majority of cases that the craftsmen could easily have produced more uniform dies, as was the case in England, for example. As regards the Danish dies from Lund (but only from this town), it is not necessary to investigate to the same degreee the shapes and sizes of the different letters to be able to distinguish between dies: as a rule, the differences readily appear on reading.

The reading of the inscriptions can prove difficult in some cases, particularly if knowledge of the die is only obtainable from one poorly struck or badly preserved coin. Some of the readings given in the present work may be open to discussion: in a few instances a slightly different reading is proposed from that found, for example, for the same die in Hauberg or in Galster. Such deviations are, however, the exception and the present author is full of admiration for the readings of earlier scholars, relating even to barely legible coins. Only in one case did it prove necessary to correct siginificantly a reading made by Hauberg. Relying on poorly preserved specimens, he read the obverse legends of Hbg. Knud 15 and Hardeknud 8 differently, although these are actually from the same die (K.2 below). The other deviations relate only to insignificant details, particularly concerning the letters H and N, where the diecutters clearly showed some uncertainty, too. In the MX and MZ groups there can also be some doubt about the representation of the letters D and P.

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Scope of the material

Even though the present work does not seek to present a complete catalogue of the coinages of the period, it is necessary to know the scope of the material and to estimate its reliability if the results are to be evaluated.

Here the key question is whether the material studied can be considered to be representative. It appeared that almost all the recorded dietypes and combinations were to be found in three large cabinets, i.e. KMMS and LEB in Denmark and KMK in Sweden. The other collections only supplemented the material, adding very few new dies and die-links. It is also of importance that it was a common habit to bury silver treasure during the first half of the 11th century in the Nordic region and in parts of the Slav countries south and east of the Baltic. In this way a far larger number of coins of the period have been preserved in the northern areas than is the case, for example, in the centuries immediately following. Of course, this is well known, but it has been emphasized by a study of the more recently found hoards in which, for example, very few new types of Lund coins from the first half of the 11th century occur.

To give an impression of the scope of the material, a summary is given below of the number of obverse dies in each of the groups already mentioned, as well as of the number of coins so far recorded by the author in these groups.

Obverse group:	Number of dies:	Number of coins:
н	45	646
HX	2	18
K	16	63
Μ	26	305
MX	33	760
MZ	26	45
Æ	3	51
HL	2	10
E	2	52
Total	155	1950

While the number of known dies, for the reasons stated, is unlikely to increase significantly in coming years, the number of coins recorded is more arbitrary. The last figure should only be used with extreme caution in any study of the volume of coins produced at that time or similar investigations. Here fortuity plays a part both with regard to the composition of the hoards and to the way that these have been handled by museums throughout the years. This can be illustrated by two examples. In the Æ group (Æthelræd) there are recorded three dies and 51 specimens, the first correspond to Æ.1, Æ.2 and Æ.3 of the find lists. Only one example of Æ.2 is known, in combination with a similarly unique reverse (R.160)²⁶, even though the moneyer (Othinkar) is one of the more productive of the Lund moneyers. Seven specimens of Æ.3 are known and these orginate from at least four different hoards in Scania and on the island of Gotland²⁷. In contrast, 43 examples of Æ.1 are recorded from at least six different finds: but from five of these it is known that there was only one specimen in each, while the sixth, Öja in Scania²⁸, originally contained 45 die-identical coins. However, only 18 of the Öja coins can be identified today.

The last-mentioned figure gives an idea of the way in which museums treated the earlier finds – a factor that is of much significance when evaluating the source material. As we know, it was common practice for both large and small museums to exchange or sell coins which were die duplicates, irrespective of whether or not

^{26:} KMMS no. GP 1583. Recently the provenance has been discovered; the large hoard from Naginščina near Novgorod (V. M. Potin, Trudy Gosudarstvennogo Ermitaža IX, 1967, no. 147). See NNUM 1979, p. 71, note 7.

^{27:} Espinge, Skåne (KMK 6620, Hatz no. 247), Lilla Klintegårda II, Gotland (KMK 5804, Hatz no. 243), Halsarve, Gotland (KMK 23040, Hatz nr. 360), Findarve, Gotland (KMK 1076, Hatz no. 353).

^{28:} KMK (= SHM) 2795. Hauberg, p. 168, no. 83. - Hatz, no. 400.

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they constituted part of a closed find. The Coin Cabinet in Kristiania (Oslo) even went as far as issuing a printed price-list for the numerous "duplicates" from the great Gresli (Græslid) hoard subsequent to its painstaking publication by L. B. Stenersen in 1881. Only during the present century had it become the practice in Nordic countries for closed finds to be included in public collections in their entirety and for all items to remain there.

For the period in the 11th century under present discussion, the hoard from Espinge in Scania (in the literature also referred to as Äspinge or Hurva)²⁹ is of importance for any criticism of the source material. Not only was this hoard of unusual size (originally it contained more than 8.000 coins), but it has an exact dating, too³⁰. Moreover, it seems as if there was a close association between the original owner of the treasure and the mint itself in Lund. When the hoard was found (in 1880), the State Historical Museum in Stockholm received it according to the legislation in force at that time, but later the Museum disposed of large parts of it, for example many of the Danish coins were sold to Hauberg, who was at that time a private collector without connection with the museum in Copenhagen³¹. However, a considerable number of the redeemed coins, and numerous die-identical specimens at that, were later discovered in the museum. These have now been included in the Stockholm collection and are thus preserved for posterity because new museum principles relating to the preservation of all coins from closed finds have since been adopted. As a result a number of the issues found at Espinge are, today, relatively better represented than is the case for those of other finds that appeared during the course of the 19th century. This applies, in particular, to some of the groups studied here: for this reason some of the figures in the diagram p. 127 are misleading. This is best seen in the large number of coins in the MX group (760 coins). For example, issues are recorded that show 82, 64, 57, 56, 55 and 51 coins, respectively, from identical pairs of dies, virtually all of them originating from the Espinge hoard.

V. Obverse dies and their grouping

Among the coins of Harthacnut and Magnus the Good struck in Lund there is a group which, on the obverse, shows a portrait with inscription, while the reverse definitely, or with great probability, refers the coin to Lund. The material is shown in the lists of obverse and reverse dies already discussed. A total of 155 different obverse dies and 195 associated reverse dies have been recorded. In addition, the lists include nine reverse dies that should be contemporary with the others, but which hitherto have only been combined with obverses of different type (e.g. animal pictures). Conversely, earlier and later reverse inscriptions are not included (e.g. from the abovementioned "Serpent" group dating from c. 1030, or from the earlier series of Svend Estridsen) even though these could be associated with the same moneyers that appear in the text to the lists.

The lists include all recorded die-links, and thus they also provide the basis for the following studies of the relative dating of the coinages and for all further conclusions of a numismatic or cultural-historical nature. The material contains an unusually large number of die-links and diechains that make a number of observations and conclusions possible.

29: KMK (= SHM) 6620. Hauberg, p. 171, no. 102. R. Skovmand, Aarbøger for nordisk oldkyndighed og historie 1942, p. 169. G. Galster, SCBI Copenhagen I, 1964, p. 37, no. 87. Hatz no. 247. Unfortunately, the records of the Danish coins are not complete, as the registration seems to have been interrupted and never completed (cf. Hauberg, *loc. cit.).*

30: M. Dolley, A note on the Edward the Confessor element in the 1880 Espinge hoard. Seaby Coin & Medal Bulletin 1976, p. 461.

31: According to information in Hauberg's catalogue of his collection (1929), the preface.

9:4

(DC)		1	н	HX	К	М	MX	ΜZ	Æ	HL	Е
н	44	Н	16	28	1.000						
HX	2	HX	5	1							
K	12	K	6	1	2						
М	23	М	11	3	4	5	S)				
MX	27	MX	1			3	17				
MZ	23	ΜZ	Aus		er pi			2			
Æ	2	Æ	1		1.0						
HL	3	HL	A 12-1	1.5	1	1					
E	1	Е	1	1		1		-			2

Fig. 2. Obverse/reverse combinations, based on the reverse dies. The first column shows the number of combinations with only one obverse die. The second part of the diagram indicates the number of combinations between reverse dies with more than one die-link. As an example, die R. 98 is counted both as H/H, H/M, H/HX and HX/M (see list of reverse dies). So the number of combinations in fig. 2 is higher than the total number of reverse dies.

The diagram in fig. 2 illustrates how the 195 reverse dies are combined with the obverse dies. Of the 195, 136 are combined with only one obverse die: the distribution of these in the individual groups is given in the first vertical column. Fifty-five reverse dies are combined with two obverses, either from the same or from different obverse groups. These combinations are shown in the other part of the diagram. Five reverse dies (R. 13, 98, 103, 108 and 201) are combined with obverse dies from three different groups, and these in different ways combine the groups H, HX, K, M and E.

Two important results appear directly from the diagram, fig. 2. The MZ group is not combined via reverse dies with any of the other groups, even though in design, style and inscription the obverses are apparently of the same kind as found in the MX group. All the MZ reverses have illiterate inscriptions, (nos. 301 ff); but this group also contains dies which (by dielinking) should be ascribed to Lund. In fact, these observations have been used in arriving at the arrangement of different groups of obverses, so that the table just constitutes the documentation for this arrangement. We may now justifiably conclude that the MZ group cannot have been produced at the same mint as the other obverse groups. In the following studies of the Lund coins, therefore, the number of dies

treated is reduced by, respectively, 26 obverses and 24 reverses (i.e. all dies only given the designation MZ).

Figure 2 gives some information of importance to the chronology of the obverse groups. Two of the large groups show a relatively large number of reverse dies that are only combined with one and the same obverse group, whether they are single dies or links. The H and the MX groups must, therefore, each have been dominant for a certain span of time, i.e. coins were mainly or exclusively struck with this type of obverse during a certain period. The two other large obverse groups, K and M, are linked via the reverses with a greater number of "foreign" groups. The four last groups are each too small to give any definite information of this nature.

The die-links so far observed are shown in fig. 3–4 (fig. 4 is inserted at the end of the book). Because, as mentioned above, the dies of the MZ group must be considered to belong to another category (i.e. they are not Lund dies proper, perhaps Roskilde), the numbers used in the lists are now reduced to 129 obverse and 171 reverse dies, a total of 300 different dies. Of these, 210 are included in longer or shorter die-chains. In 16 cases it has been possible to combine groups of between 3 and 8 different dies, but it is more significant that it proved possible to associate no less than 136 dies in one long chain (fig. 4). Thus



11



H 6

IV

161



M

228

х



VI









AX 26

348

AX 2

189

HL, E, Æ



S

MX 4

31

MX

XVI





XV

HX

Μ

κ

MX



XIV XII MX 31 58 73 н 59 S S

XVII

Fig. 3. Sixteen minor die-chains. Obverses are shown with circles, reverses with squares. The obverse groups are indicated by different symbols. S = Svend Estridsen's first issues with obverses in Byzantine style.

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there is a true possibility of not only evaluating the ages of the individual groups in relation to one another, but also of being able to provide new information on the actual coining that took place at Lund.

As stated above, the die-chains have been evaluated on the basis that all the dies must be contemporary, and furthermore locally produced, because it was impossible to demonstrate that any of them had also been used earlier for a different coin. In the illustration of the die-links from Lund, all obverse dies are shown with round symbols and all reverses with rectangular. At the same time, to facilitate an overall view, an attempt is made to mark the different groups of obverse dies by symbols. The numbers refer to the lists of dies. Based on these chains, the relative ages of the obverse groups can be determined, and thereafter the absolute dating can be dealt with. A dating based on hoards is, however, used, for the more unusual groups.

The MX-group gives the clearest impression. The large chain includes 30 dies in direct linking, and in the small chains there are a further 45 with a total of 28 obverse dies. In three cases there is a direct connection with M (Magnus) dies (via R. 78, 116 and 121) and in one case with H. 15 (via R. 248). Moreover, links were ascertained with some of the types of Svend Estridsen, indicated in the linkage diagrams by an S. Reverses 31, 32 and 58 are linked with coins of the type Hbg. Svend 6, R. 73 with Hbg. 6 as well as Hbg. 16. Finally, R. 129 is linked with Hbg. 23. As the coins of Svend Estridsen have not been studied to the same extent as the other material, there might even be further combinations; but the cases already mentioned should provide us with sufficient evidence. Svend's types Hbg. 6, 16 and 23 are among his earliest because they all occur in the previously mentioned Espinge hoard that was deposited in 1047/48 at the latest³².

32: See note 30.



Fig. 5. Obverses similar to the MX and MZ groups may be rather late. The coin illustrated has a reverse which imitates the Expanding Cross series of Edward the Confessor (1050–1053), but such imitations are rare. The coin was previously referred to Magnus (Hauberg, Magnus 14) (KMMS, Thomsen 9887). 2:1.

Already the table in fig. 2 showed that the MX group was fairly homogeneous. On one side of the chain the relatively few links with other groups connect up with the M group, while on the other side they connect with some of the earliest Lund coins of Svend Estridsen. From a purely chronological viewpoint, the MX group must thus be placed between the M group and the first coins of Svend Estridsen, and it must represent an independent group.

The H group. According to the table given in fig. 2, this group too showed a relatively large number of links via reverse dies to obverses of its own group. In the large chain I there cannot, apparently, be distinguished as clear and as discrete a group with H dies as was the case for MX. The number of links to other groups is too great for this. The explanation for these apparently contrasting circumstances may be that while some of the H dies originate from a time when this was the only type in use, others must be a little later in time and contemporary with several of the other obverse groups. At the moment it is impossible to distinguish two such sub-groups within the total H group.

Does the H group represent one (or more) independent Danish types, or does it merely – as hitherto supposed – copy English coin designs? A survey of the individual types shows that threee of them are of an independent character (H. 15, 16 and 40) but, as will be discussed below, these are presumably struck posthumously and are therefore of no interest to the question of models for the whole H group. Among the other 42 dies, 32 of them copy Anglo-Saxon dies more or less accurately, but the models originate from among eight different types:

Æthelræd's type C (Crux). 1 die (H. 1)

Æthelræd's type D (Long Cross). 6 dies (H. 3, 11, 12, 19, 24, 47)

Æthelræd's type E (Helmet). 11 dies (H. 2, 4, 5, 22, 23, 25 (right facing), 28, 30, 31, 39, 41)

Knut's type G (Pointed Helmet). 2 dies (H. 43, 44)

Knut's type H (Short Cross). 6 dies (H. 9, 13 (?), 14, 21 (?), 48, 49)

Harold's (also Harthacnut's) type A (Jewel Cross). 3 dies (H. 27, 34, 46)

Harold's type B (Fleur-de-Lis). 3 dies (H. 32, 33 36)

Harthacnut's type B (Arm/Sceptre). 1 die (H. 45).

The remaining dies show elements from at least two of the groups mentioned above, but in very different combinations, i.e. some with elements from two of the types of Æthelræd, some with features of the coinages of Æthelræd and, for instance, of Harold (H. 6, 10, 20, 26, 29, 35, 37, 38, 42).

In other words there is no independent Danish type in the entire H group. The dies are either copies of different English types, or free compositions with elements taken from several of such types.

The M group. According to the inscription (Magnus) they should also comprise an independent chronological group. However, this does not seem to be the case as nearly all the dies have combinations with both H and K. It is, nevertheless, hardly fortuitous that, with a single excep-

tion, only the M group has any direct connection with MX.

The types of portrait of the M group are largely the same as in the preceding group. Twentyfive of the 26 dies recorded can be examined, giving the result that 20 of them must be quite accurate copies of English types, namely:

Æthelræd's type A. 1 die (M. 20) Æthelræd's type D. 2 dies (M. 16, 17) Æthelræd's type E. 10 dies (M. 1, 3, 4, 7, 8 (?), 9, 10, 11, 12, 15) Knut's type H. 3 dies (M. 21, 25, 26) Harold/Harthacnut's type A. 1 die (M. 18) Harthacnut's type B. 1 die (M. 22) Edward's type D (PACX). 2 dies (one of them may possibly be a Knut H) (M. 23, 24).

Five dies show features taken from two different types, or have one significantly diviating feature in relation to the model (M. 2, 5, 6, 13, 19). The last of the dies (M. 14) is difficult to place.

A comparison of the pictures of the H and M groups shows that there is a surprising similarity. These pictures are more or less free copies of a selection of Anglo-Saxon types, primarily the D and E types of Æthelræd, the H type of Knut, and some of the forms of Harold and Harthacnut. Other English types are used only exceptionally, or not at all, although we know from the many hoards hidden at that time that they, too, circulated in large numbers in the Nordic area through the decades in question.

The K group seems similarly placed to H and M. This is remarkable because the dies in question have hitherto been considered to belong to the time of Knut the Great. The 16 K dies recorded here are not known in combination with either English or Danish types that are definitely known to originate from the time of Knut. Nine of the dies are directly included in chains with not only the H but also the M group, and on stylistic grounds (particularly applying to the reverse type) the others must be reckoned contemporary. These late K dies might perhaps be considered as a parallel to some of Harthacnut's Anglo-Saxon issues where he struck coins using the name "Cnut" especially during the period 1040–1042, perhaps also earlier³³. But according to the die-chains, the coins showing the name of Knut could well be even later, i.e., from the time of Magnus the Good.

The K group is of special significance for understanding the problems associated with the Lund coinages of the period under discussion, and therefore it will be dealt with in somewhat greater detail. A majority of the coins recorded here as belonging to the K group were attributed by Hildebrand to the English issues of Knut (London). Hauberg transferred many of them to Lund in Denmark, but dated them to Knut's own time. In an article from 1961, which is just as brief as it is important, C. S. S. Lyon, G.v.d. Meer and M. Dolley³⁴ confirm Hauberg's proposed placing of the coins, but clearly state - albeit just in a single sentence - that some of the coins must originate from late in the reign of Harthacnut (based on the Anglo-Saxon elements included in the series). It now seems possible to go a step further.

For this one group, a survey will be given of all possible types and combinations with reference to the types of Hildebrand and Hauberg, as well as to the models for the obverse types as far as this can be determined on the basis of the English series.

- K.1/101. Hild. 2508, type Kn. (Knut) Gc., Hbg. type Kn.11. 2 ex.
- K.1/102. Hild. ÷ Hbg. ÷. 1 ex.
- K.1/198. Hild. 2743, type Kn. Ab., Hbg. Kn. 9. 1 ex.

33: J. J. North, English hammered coinage vol. I, London 1963, p. 122. (Second edition, 1980, p 132). – The observation was published by P. J. Seaby, The sequence of Anglo-Saxon coin types 1030–1050. BNJ XXVIII, 1 1955, p. 111 ff. (See (R. H.) M. Dolley, Commentationes I, 1961, p. 157–158).

34: See note 6.

- K.2/7. Hild. Hc. 88, type Hc. Gb. (incorrect reading). Hbg. Hc. 8 (incorrect reading). 1 ex.
- K.2/112. Hild. ÷, type Kn. G., Hbg. Kn. 10. Galster, Kongsø 5. 2 ex.
- K.2/218. Hild. 2745, type Kn G., Hbg. Kn. 10. 2 ex.
- K.2/238. Hild. 2749, type Kn. Ic., Hbg. Kn. 15. 3 ex.
- K.3/198. Hild. 2744, type Kn. Ac., Hbg. Kn. 7a. 1 ex.
- K.4/178. Hild. ÷, Hbg. cf. Kn. 16. Galster, Haagerup 5. 1 ex.
- K.5/108. Hild. ÷, Hbg. ÷, type Hild. Kn. K. 2 ex. (Öja (?). Hatz, no. 400).
- K.6/206. Hild. 2735-36, type Kn. D and Da (same dies, as D has been reengraved). Hbg. Kn. 23. The portrait is a mixture of Æthelræd D and E. 13 ex., but only 2 in finds: Kongsø (Galster, Kongsø, nr. 2) and Halsarve, Gotland (Hatz, no. 360).
- K.7/99. Hild. ÷, Hbg. Kn. 23 (this specimen). NNUM 1979, p. 67, 4a. Portrait type Æthelræd D. 12 ex. Finds: Haagerup (Galster, Haagerup 3), Espinge (Hatz, no. 247) (originally 16 ex. here), Sigsarve, Gotland (Hatz, no. 295), Vanneberga, Scania (Hatz, no. 303).
- K.8/168. Hild. 2193, type Kn. H., Hbg. Kn. 16 var. 1 ex.
- K.9/2. Hild. ÷, Hbg. ÷. Type Æ. D/Kn. H
 (?). 1 ex. Find Mannegårda II, Gotland (Hatz, no. 359).
- K.10/47. Hild. 2013, type Kn. H., Hbg. Kn. 16. 4 ex. (Finds: Haagerup, Funen (Galster, Haagerup 230), Stora Bjers II, Gotland (Hatz, no. 286).
- K. 10/64. Hild. 2123, type Kn. Ia., Hbg. Kn. 14 var. 2 ex.
- K.11/228. Hild. ÷, Hbg. cf. Kn. 23. Portrait type, Kn. H. 1 ex. Espinge, Scania.
- K.12/103. Hild. ÷, Hbg. Kn. 16 var. SCBI Cop. III 2679. NNUM 1980, 43, no. II d.

Fig. 6. Die-chain no. IV, linking Æ. 1 with H.6. a Æ.1/161 (LEB 1442). b H.6/161 (LEB 1437). c H.6/25 (LEB 1431). 2:1.



Portrait type Kn. H. 1 ex.

- K.12/115. Hild. 2511, type Kn. Ia., Hbg. Kn 14 var. NNUM 1980, 43, no. IIc. 1 ex.
- K.13/1. Hild. ÷, Hbg. ÷, Portrait type HC. A. 1 ex. Galster, Haagerup 4.
- K.14/138. Hild. ÷, Hbg. Kn 14 var. R & D, suppl. pl. I, 80 c. Portrait type Kn. H. 1 ex.
- K.15/238. Hild. 2748, type Kn. I (HC), Hbg, Kn. 14. 1 ex.
- K.16/97. Hild. ÷, Hbg. Kn. 8. Portrait type Kn. H. 1 ex. Find Bonderup, Zealand (SCBI Cop. I, no. 92).

The models for the obverse designs are thus taken from several different types. Only seven of them copy, more or less accurately, the English types of Knut, namely type G (Pointed Helmet (K. 2)) and type H (Short Cross), (K. 8, 10, 11, 12, 14, 16). Two types seem to copy the older series of Harthacnut (K. 5, 13), while two show his last English type (Arm/Sceptre) (K. 3, 15). Three of the portrait designs seem to include features taken from types of Æthelræd: these are K. 1 (composition like ÆA, but a crowned portrait closest to Knut E), K. 6, which seems to show a mixture of the D and E types of Æthelræd, and K. 7, which has a remote resemblance to Æthelræd D. It is difficult to find direct models for the last two types.

The hoards provide little information about the K group: coins of the K group are included in ten different finds, of which the earliest is Kongsø (tpq. 1040–) and the latest Halsarve (tpq. 1106–), while the others have a tpq. between 1042 and 1055.

In other words, the whole of the K group have in common only the name reproduced as "Cnut" on the obverse. Therefore greater weight should be laid on information derived from the dielinks and the reverse types.

The HX group is peculiar as it shows a portrait design in keeping with the H, K and M groups, but with a blundered inscription. Of the two dies attributed to this group, one (HX. 1), can, however, be compared with the H group because the inscription appears to contain elements from "CNVT NAR", but with the letters in part laterally reversed and in part upside down. Each of the two dies is linked with different reverses, with both literate Lund dies and dies with entirely illiterate inscriptions. However, fig. 4 shows that both the obverse dies are linked with five different reverses and, via these, to other Lund coinages in the groups H, K, M and E. The time and place of minting of the HX group can be determined through these dielinks. Only a few specimens are known of each of the die-combinations: they have occurred in only one find, that at Espinge.

The Æ group has already been discussed elsewhere³⁵. The three dies known not only clearly show the name of Æthelræd but the portrait designs copy Æthelræd's Helmet (Æ. 1) and Long Cross (Æ. 2, 3) types. The technical quality of these coins is rather high, particularly in the case of Æ. 1. The reverse inscriptions clearly refer to Lund and to two of the moneyers active there: Othinkar and Alfwin. Æ. 1 and 3 have been found in seven and four hoards. respectively, each having a tpg. dating of 1042-. One of these hoards is, however, of value for dating the type: namely that found at Öja in Scania³⁶, which containes 125 Anglo-Saxon coins, of which the latest is one single coin of Edward's PACX type (1042-1044). This hoard contained 45 examples of Æ. 1, which were dieidentical; the majority of the pieces still preserved are unused, having not been in circulation Thus the coins were probably struck shortly before the hoard was hidden. Through dielinks, Æ. 1 is included in one of the small series (no. IV, fig. 3), here via R. 161 to an H die.



Fig. 7. Obverse die HL. 1 with reverses R. 245 (KMMS, Bolbygård, SCBI Cop. IV, 426), and R. 240 (LEB 1139, SCBI Cop. IV, 427). 2:1.

The HL group only consists of two obverse dies, one showing such a distorted inscription that it could also be the entirely blundered name of Harthacnut³⁷. On the other hand, the HL. 1 die is legible and of good quality. It copies one of the obverses of Harold I from the Jewel Cross issue (1036-1037). Even though the portrait, and the whole appearance, corresponds entirely to that of the prototype, this cannot be an English die. This has been surmised³⁸, but now it can be proved. We know of this one die only but it is, on the other hand, combined with four Lund reverses from three definite Lund moneyers: one of them (R. 74) is again linked with a (probable) Magnus coin (M. 19) and from here further incorporated in the large chain I, while the reverse R. 115 connects up with other dies in the same chain.

The *E group*. In contrast to the two foregoing groups, this one was placed by Hauberg in his so-called "battle period" (1044–1047) (Hbg. type 2). Two different but related dies are known

^{35:} C. J. Becker, (note 20).

^{36:} See note 28. As mentioned, 18 coins can still be identified as belonging to this find, one of them being cut (half-penny). All coins are quite fresh (uncirculated) but seven pieces show one peck-mark each; the rest are without such marks. 37: See note 25.

^{38:} SCBI Copenhagen IV, 1972, note to no. 352 and 427.



(fig. 8), one of which was re-engraved during its period of use; a mask has been added in front of the face (E. 1a). While the inscription reproduces "Edward Rex", the portrait is not of contemporary English type: the closest model is the Long Cross portrait of Æthelræd. On the other hand, E. 2 may copy an English Edward die of the PACX type, even though the style resembles certain older types (Knut H). Three different reverses (200-202) are associated with E. 1-2: all three show the name of Thorketil and Lund is given as the place of minting. Several of the types were found in the Espinge hoard, some of them being unused specimens. In addition some were found in a few different finds (E. 1a/200 at Haagerup (tpq. 1048), and at Skålö, Dalsland (SCN 16, 1, find 4, 371. Hatz, no. 292. tpg. 1054-), E. 2/201 at Stora Sojdeby, Gotland (Hatz, no. 354 tpg. 1089). The die-links are more decisive for the placing of the group. As fig. 4 shows, both E. 1 and E. 2 are included in the

a

large chain and, via R. 202, associated with HX. 2, as well as with two important Lund dies, namely H. 38 and M. 3 via R. 201. Thus there is no doubt about the placing of the E group.

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9:4

Yet another group of dies showing the name of Edward are known from the Danish area. These were attributed by Hauberg to Lund and Odense and to the same period. The Lund coin Hbg. type 1 has, however, a reverse of later type because it seems to copy the English Pointed Helmet type of Edward (c. 1053-1056). The obverse of this coin is identical to that of a provincial coinage from "Toftum" (Hauberg proposed that this was a place on the island of Funen), but here with a reverse that either copies an even later type of Edward (namely the Hammer Cross from c. 1059-1062), or is of non-English origin. For this reason these Edward copies are not included in the present investigation. Other contacts between Lund and Odense are discussed below (p. 157).

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Posthumous Harthacnut types

It has been shown that the material contains a number of anachronistic or posthumous obverse dies, i.e. where the names of deceased kings have been used. Therefore we must investigate whether this applies to some of the dies of Harthacnut. The die-links with the coins of Magnus are of less value in this connection because it is only natural that on a change of regent some intermingling may occur if the mint continues production without a break.

A couple of H dies show – through the coins – such late features that they must have been cut after the death of Harthacnut. H. 15 is associated via die-links with an MX type (chain VII) so this must be an anachronistic H type. The portrait is, incidentally, of a different style from the normal. The related die H. 16, included in the large chain I, may therefore be presumed to be just as late: via three different reverses this is linked with just as many M obverses, as well as with a single K.

By different means the H. 40 die can be considered contemporary with the MX group because the type of portrait corresponds to the style of this group and, moreover, it is of a very different stamp compared with the other H types. The die is not included in any chain.

Thus anachronistic H dies do occur, and consequently there is no certainty that all the other dies showing the name of Harthacnut were cut in his own time. But at the present moment it is impossible difintely to dinstinguish others of this nature.

The absolute dating of the obverse groups

Using the combination diagram, fig. 2, and the different die-chains as evidence, individual groups of obverse dies can be identified and dated in relation to one another. To sum up: the MZ group seems not to have any connection

39: Hauberg, p. 215. 40: See note 30. with the other groups, and for this reason it must be eliminated from the coins definitely associated with the offical mint at Lund. Of the other material, the MX group comprises a chronological unit: as it is the only group to show dielinking with the earliest of Svend Estridsen's Lund coins, it must represent an independent group lying in the time immediately prior to those Svend coins. Others of the MX group have contact with M dies and one of them with a (presumably posthumous) H die. On the other hand, neither the M nor the H group shows any distinct boundaries towards the other material. Many links occur between M and H, and also with the K dies included in the material, as well as with some admittedly small but important groups of a foreign or anachronistic nature, namely the Æ, HL and E groups. Therefore they must all be largely contemporary. However, among the H dies (according to fig. 2) so many cases of links within the same group have been ascertained that some of these dies may be supposed to comprise a special older section within the entire large group H, M, K etc.

In other words, the following chronological groups appear and can be defined in this way: 1) Certain H dies as well as, presumably, some K dies seem to be the oldest. 2) The M dies, certain H and K dies, the foreign or anachronistic groups \mathcal{E} , HL and E, as well as HX, together make up the next group. 3) The MX group follows the preceding one. 4) Svend Estridsen's earliest types of Byzantine style (Hbg. Svend 6, 9, 16, 23 etc.) continue the series and link up with the later coinages struck by Svend.

It seems possible to associate absolute dates with several of the groups. Svend Estridsen became sole Danish monarch on the death of Magnus in the year 1047. Already Hauberg stated that the earliest of Svend's Lund coins could have been struck some years earlier than this, because Svend was in control of parts of the kingdom before 1047³⁹. Independently, M. Dolley has recently reached the same conclusion⁴⁰ based on studies of the Anglo-Saxon coins in the great Espinge hoard. This appears to have been deposited in c. 1047/48, but it contains several of Svend's types which, therefore, must have been struck some time before the hoard was buried, i.e. c. 1046 at the latest. At the same time this must give a date for the transition between groups III and IV.

Further grounds on which to base the chronology can be found in group II as the name of Magnus (and using the title king) cannot belong before 1042, i.e. the death of Harthacnut. For this reason both groups II and III should be placed between 1042 and 1046; because they clearly comprise two chronological phases they can be estimated at two years each. With regard to Group I, i.e. certain of the coins of Harthacnut, it is reasonable to place them before the year 1042 but, based on the great stylistic similarity with Group II and particularly because of the many die-links with this group, only a short period can be involved, hardly longer than the others, i.e. at the most a couple of years. The result is then: Group I c. 1040-1042. Group II 1042-c. 1044. Group III c. 1044-c. 1046. Group IV after c. 1046. Thus, all the portrait coins of Harthacnut and Magnus should be placed within as short a period as c. 1040 to c. 1046. Such a result may seem surprising but there is no possibility of extending this span of time in either direction. It is hardly fortuitous that no links have been observed hitherto with the above-mentioned, older Harthacnut group dating from c. 1030 (the "Serpent Group"). There is a definite break between the two groups - but it is of unknown duration.

The die H. 46

In die-chain I there are several obverse dies that have unusually large numbers of reverse combinations. H. 46, however, seems exceptional, linked as it is with 15 different reverses. This is a die which had already been noted by Hauberg because he had observed a number of the links. Later, his observations were utilized in the treatise already cited⁴¹, where the die was included in the so-called Y chain with as much as seven different reverses for the same obverse. It now proves possible to increase this number to 15 reverses. In addition, these show 15 different names, of which 14 are definitely associated with Lund – namely: Alfnoth, Alfwarth, Alfwin, Grim, Othinkar, Outhinkarl, Sumarlith, Thorkil, Thorketil, Thorsten, Toki, Tovi, Ulfketil and Ulfkil. The last name is that of Alfrik, and

In the material under discussion, although there are several obverse dies linked with a conspiciously high number of reverses, there are none to parallel H. 46. It must have had a very special significance and it is tempting to guess at the reason for this: it may have been a form of test-die which was used by all the moneyers active at Lund when Harthacnut reorganised the mint in this town. It seems, as discussed below, that there were 19 people entitled to put their names on the coins of Harthacnut. Two more names occur later. Fourteen of them are linked with H. 46, but most of the combinations are today known from only a very few specimens so that chance may be responsible for the number of names represented. It could be that future finds will increase this number.

this is discussed below when the foreign dies are

dealt with.

A further feature of the reverses which combine with H. 46 should be noted. The 15 different dies represent a total of eight different types of die, which all copy English models from the times of Æthelræd, Knut, Harold and Harthacnut. This might indicate some sort of an attempt to establish a new standard type at Lund. One of the models is Harthacnut's own Arm-/Sceptre type, which was introduced into England during 1040. The Lund copy cannot be older: this is a weighty argument in favour of the dating (1040–1042) already proposed for the Danish group.

41: C. S. S. Lyon et al., see note 6.



Other obverse dies with many reverses

Figur 9 shows how often the individual obverse dies have been found linked with different dies. Only the three largest groups - H, M and MX are included. The diagram shows how many examples have been identified of obverses with one reverse, obverses with two reverses, etc. In each of three groups a majority of obverse dies occur with a single reverse and the number which occur with 2, 3 and 4 reverses, respectively, decreases rapidly. Thereafter there is a small series with 5-8 reverses to the same obverse and - still within each of the three groups - one single obverse die that is linked with a large number of reverses: 15 in H, 9 in M and 11 in MX. The H die has been discussed above (H. 46). The M die (M. 4) is linked with only five moneyers as several different dies occur with the same name. The MX die (MX. 25) is linked, correspondingly, with nine different "names". Thus, the three dies should not be thought of having been used in parallel. As mentioned earlier. H. 46 was associated with 15 different names, while there are recurrences within the other groups. Moreover, several of the combinations with both M. 4 and MX. 25 are relatively common, i.e. many specimens are preserved, while the H. 46 combinations are rare; indeed, in many cases they are unique.

Fig. 9. Obverse/reverse combinations, based on the obverse dies. For each group the first column shows the number of obverses combined with only one reverse die each, the second obverses with two reverses each etc.

The three diagrams, fig. 9, show, on the other hand, such a uniform picture that an impression is given of stable conditions prevailing at Lund during the period in question.

VI. Reverse dies

The types of the dies and the models

The preparation of the list of reverse dies has been described above on p. 125. Beside each number the type of die is indicated by a letter (A–T) and reference is made to a table (pl. VI) of the individual types. It was mentioned that the dies were arranged in an apparently arbitrary sequency, but that there were purely practical reasons for this arrangement. Almost all the commonly occurring (and therefore particularly important) dies can be described by the letters used by Hildebrand, and now so well known, because the main types from the English series of Æthelræd, Knut, Harold I and Harthacnut which occur in Danish coinage have by pure coincidence almost all been given different letters. As a matter of form, the letters used here are given in sequence stating the place of origin of the model and giving the designations of Hildebrand (in certain cases references is also made to the types of Hauberg).

- A. English. Like Æthelræd Small Cross (Hild.A).
- **B.** English. Like Harold Fleur-de-Lis (Hild. **B.** Bb, Bc) (Hbg. Hard. 16, 25).
- C. English. Like Æthelræd CRUX (Hild. C).
- D. English. Like Æthelræd Long Cross (Hild.D).
- **E.** English. Like Æthelræd Helmet (Hild. E). Perhaps a Scandinavian variant.
- F. English. Like Knut Quatrefoil (Hild. E).
- G. English. Like Knut Helmet (Hild. G).
- H. English. Like Knut Short Cross (Hild. H).
- I. English. Like Harthacnut Arm/Sceptre (Hild. Knud I).
- K. English. Like Harold/Harthacnut Jewel Cross (Hild. Knud K).
- L. Scandinavian. (Hbg. Magnus 9).
- M. Scandinavian. (Hbg. Hard. 5).
- N. English or Scandinavian. Like Edward Trefoil/Quadrilateral. (Hild. C) or *local* mingling of E and I.
- O. Scandinavian. (Hbg. Hard. 42, Ørbæk).
- P. English. Like Edward PACX (Hild. D).
- **R.** Hiberno-Norse. Like Dublin Phase III (Hbg. Hard. 24).
- S. Scandinavian. Like Knud/Harthacnut "Serpent" type. (Hbg. Knud 20–22 and Hard. 1). (Fig. 1).
- T. Scandinavian. Diverse with different, often unknown models (e.g., Hard. 10, 18).

The table given fig. 10 shows the number of types first for the Lund dies in the series R. 1-250 and then the numbers associated with these from the series R. 301 ff. In each series a distinction is made between, on one side, dies from the obverse groups H, M and K (as well as

Y	B1-	250		R301 ff. →		
Р Е	н/м/к	MX	Н/М/К	MX	MZ	
A	4	-	1.00	ase_this		
В	7	-	2	el-ass	-	
С	1	-		Alfadar	-	
D	50	34	3	2	4	
Е	10	2		tha <u>a</u> lofi	3	
F	4	-	-	-		
G	4	-	-		1	
Н	14	1	and Terrel	1	-	
J	10	211	nt bu <u>a</u> cent	1	1	
Κ	8	in Time	1		2	
L	1		1201-1201	196 <u>-</u> 1996	nity <u>e</u> hre.	
Μ	3	-	-	ent Tev ca	aller Trease	
Ν	3		a du i <u>u</u> i apa	opr <u>el</u> ocas	norio_sm	
0	1	1.7	-		a de stimer	
Ρ	6	111 <u>1</u> 200	Sound of	4	13	
R	-	-	1	The Rest	the state	
S	-	-	1 21 - 10	ilic <u>a</u> t nit	tion is <u>the</u> set of	
Т	4		=	-	-	
	130	37	7	8	25	

Fig. 10. Number of reverse dies by type (cf. pl. VI). The certain Lund-dies (nos. 1–250) are shown separately from the more uncertain group (nos. 301 ff). In each group the MX-dies are analyzed separately, and the MZ-dies are indicated to the right. (The total number of reverse dies in the text is 195. In fig. 10 the number is higher, because nine Lund-reverses which are only combined with non-portrait obverses are included, and because two D-dies and one E-die have been counted twice, as they occur both in the M- and the MX-columns).

the small group of HX, Æ, HL and E) and, on the other, the MX group. For the series R. 301 ff. there is, in addition, a special column for the MZ dies - which hardly originate from the Lund mint, as mentioned above. One of the specially interesting results that can be deduced is that there is a clear difference among the relatively certain Lund dies (1-250) between the choice of reverse types appearing in the MX group compared with those of the other groups. In the definite Lund series (nos. 1-250) the colourful multiplicity of types in the H-M-K group is replaced by a single type: the D type practically controls the scene here. At the same time, it should be emphasized that only three cases were observed where one and the same die was used in both the M and the MX groups (R. 116 and 121 of type D, and R. 78 of type E).

Even though the first column shows a very large number of reverse types, it should be noted that here too type D accounts for more than a third of all numbers. This copies the 40year old Long Cross reverse of Æthelræd. English models are generally used for the other types and, remarkably enough, particularly those associated with the most frequently copied obverse types. This applies both to the older prototypes as well as the more contemporary ones, principally Æthelræd's type E, Knut's type H, and Harold/Harthacnut's types B, I and K. In other words, no original drawing was selected as characteristic of Lund during these years. The

42: In the present paper the personal names are given, as far as possible, in modern spelling, as did Hauberg in his book. But such a translation is difficult because many names on the coins show Old English as well as Old Danish elements. My colleague, Professor John Kousgård Sørensen, Københavns Universitet, has kindly helped me in discussing this problem. The present author is responsible for "translations" used in the text (and specially for the less precise distinction between the names Othinkar (list I, nos. R. 160–170) and Outhinkarl (R. 174–179)). This is because we are probably dealing with two different moneyers (as Hauberg suggested), and not with different versions of one name (see e.g. K. Skaare, Coins and coinage in Viking-age Norway, p. 67). most one can talk of as a certain local character present in a few (rare) types (L and N); independent, non-English reverse types are real exceptions.

The PACX type (group P) presents special problems. In table fig. 10, six dies are attributed to Lund, but actually the majority of them are doubtful, or only included because of links with genuine Lund dies. Only two show names known from other Lund coins of the time. namely: Thorkil (R. 196) and Ulfketil (R. 240). Of legible names we find, additionally, Godnod (R. 94), and Godman (R. 95) otherwise unknown at Lund. At all events, "Godman" certainly copies the London moneyer of that name and that time. The P dies are, on the other hand, remarkably frequent in the MZ group. Here one of the dies may contain the name Brun (305), which can be that of the London moneyer Brenman, or a Danish name known from other coinages of Roskilde. Incidentally, one of the very few literate inscriptions with a PACX reverse is indeed associated with Roskilde (Hbg. Hard. 30, list II no. 401). The problems presented by this group are still unsolved and will not be further discussed here, but it should be mentioned that more P reverses than those referred to above copy English coins, for instance R. 316 (Godric, Lincoln) and R. 353 (Osmund, Norwich).

Names on reverse dies

"Authentic" names of people

The reverses of the Lund coins display a relatively large number of literate inscriptions. The material was treated in detail by Hauberg, so it will suffice to comment on a few questions connected with personal and place names in the present investigation⁴².

Because the entire group treated here copies in so many ways the contemporary, well organised English mint system, it has usually been assumed that the structure behind the system was also transferred to the main Danish mint. But this idea – which would represent a significant feature of Danish society at that time – should be investigated critically and not just taken for granted.

Among the many personal names appearing in the list I (p. 171), three categories are obvious: names belonging to people actually employed in the production of coins at Lund; names just as clearly indicating fortuitous copies of inscriptions on foreign or older coins, and thus *not* denoting a man associated with Lund; and finally a third group for which the present author does not dare determine the question of whether they are "authentic" or "spurious" Lund moneyers.

"Authentic" names are those of frequent apperance and of special Nordic character within the H and M groups. There are 21 of these (Alfnoth, Alfwarth, Alwin, A(r)nketil, Aslak, Garfin, Grim, Karl, Lefwin, Osgod, Othinkar, Outhinkarl, Outhketil, Sumarlith, Thorkil, Thorketil, Thorstein, Toki, Tovi, Ulfketil and Ulfkil). The term "special Nordic" only means that the names are associated with Lund. As shown several years ago by Kristian Hald (in a brief, but important, article)43, these names are either of pure Anglo-Saxon type, or of Nordic origin, but in that case typical to the Danelaw in England. This can be interpreted as meaning that all the moneyers were specialists called in from England.

Associated with this question is the long acknowledged problem of distinguishing between London and Lund on inscriptions. Even though this difficulty has been cleared up little by little – with thanks in particular to research on the English coins – there is still a problem, *inter alia* because in the group of Danish coins in question there occur apparently arbitrary copies of older coins that were still in circulation in Denmark. However, such copies are rare in relation to the normal Danish coinages. The more frequent occurence of the 21 names listed above probably implies that these names did in fact belong to people directly connected with Lund.

Other factors point in this direction. When discussing the groups of obverses, some dies were mentioned that so directly copy English coins that the name of an English king replaces a corresponding Danish name. In the case of the Æthelræd imitations (Æ. 1–3), however, only two Danish moneyers are "responsible", Alfwin and Othinkar – although several different dies are known. Correspondingly, only the name of Thorketil is found on the Edward dies produced in Denmark. This points in the direction of individual (although mysterious) initiative being taken by staff of the Lund mint.

The choice of the reverse types, too, seems to have a certain individuality. Thorketil, just mentioned above, seems on the whole to have had a lively imagination because his 13 reverse dies known so far represent four different types (among them the peculiar Byzantine imitiation, dealt with by M. Dolley and K. Jonsson above (p. 113)). Similarly, Grim is associated with eight dies of five different types. In contrast, for example, Garfin, keeps to one type (D) for his seven dies.

Finally, there is a difference in the span of time during which the different names occur. Some occur only in the earlier groups, others only in the later ones. The distinction is borne out by the preceding and succeeding coin series, thus names associated only with the earlier groups occur in the previous, but not the later, series and names associated only with the later coins occur in the still later, but not the earlier, series. A similar pattern can also be observed in the Anglo-Saxon coinage.

New names appear that are on the whole contemporary with the MX group, such as Lefsi, Leisti, Bain, as well as some enigmatic designa-

^{43:} Kr. Hald, Om Personnavnene i de danske Møntindskrifter. Studier tilegnede Verner Dahlerup. Sprog og Kultur, Tillæg til 3. Aargang, Aarhus 1934, p. 182–187.

tions, e.g., "Ardln", "Alnri", etc. Several of these are found, too, on the earlier coins of Svend.

It is not the author's intention to analyze the name material in the present study - the foregoing remarks are only made to emphasize the fact that there were people (and quite a number of them) who actually worked at Lund, and whose names are therefore found on the coins. Some names are early, others appear during the course of time and can be found on still later coins from Lund. It is significant that among the so-called older names in the H and M groups there are several that are known from the preceding series of Lund coins, the so-called "Serpent" group. In that series 11 different names (with the obverse of either Knut or Harthacnut) have so far been noted. No less than eight of these recur in the H and M groups, although, as stated earlier, there are no die-links between the two groups. The eight names are: Alfnoth, Alfwarth, Alfwin, A(r)nketil, Aslak, Osgod, Sumarlith and Thorketil.

Even though in several cases there is continuity from names in the H and M groups via MX and even further, a survey of the list of reverse dies shows a clear tendency to poorer spelling or degeneration down through time, so that some of the latest inscriptions can only be read with knowledge of the earlier forms (compare, e.g. R. 85 with 90 or R. 183 with 189). This appears to be a general development at the Lund mint, such that in the earlier series of Svend Estridsen the same feature is encountered and little by little an even larger number of almost illiterate, or entirely illiterate inscriptions occur. This gradual deterioration in the literacy of the inscriptions cannot be ascribed to a poorer ability of the die-cutters employed at Lund.

The earliest obverse designs of Svend are technically just as good as those of the earlier series – and in some cases even better. Perhaps this phenomenon indicates that the names gradually lost their significance, i.e. the concept behind the names was in a process of disintegration. In other words, during the first quite lengthy minting period of Svend Estridsen, we cannot assume that there existed a system where certain people were responsible for the purity and weight of the coins. If correct, then we do not know when this development was initiated. In other words, the partially disintegrated and often incomprehensible names of the MX group may indicate that the structure introduced by Harthacnut in c. 1040 has been given up already at this time. This was the structure where the English coin types were not only copied, but, presumably, where the English organisation of coin production had been copied, too.

"Spurious" or doubtful personal names

In the list of reverse dies there are several examples of dies showing names unusual for Lund. Previously, these were all accepted as authentic, i.e. as proof that the person in question had actually struck coins at Lund, albeit only occasionally. In reality, these unique dies should be considered as comparable with the obverse dies showing the names of Æthelræd, Harold and Edward, i.e. as copies of foreign coins. As examples of this type of hapax die we may mention Arkil (R. 35, name known from York under Harold I), Mana (R. 147, known from several places in England), Osbern (R. 154 with minting place stated as Sigtuna) and Gamel (R. 83, apparently unknown in England until much later).

When, in all probability, there was occasional copying of foreign names on the reverse of coins, doubt arises about where the line should be drawn between "authentic" and "spurious" names. Perhaps a thorough philological and numismatic study would make it possible to distinguish between these two groups. The present author is unable to do so and, as a result, we must deal with this common group of personal names. This means that we do not dare to take decision, whether a name really represents a moneyer active at the Lund mint or not. Only one more example will be mentioned: namely Asferth (R. 47), who may be identical with Asforth (R. 49). Each of the two forms of the name are only known on a single die from Lund originating from the earlier and the later group, respectively. But both forms are found on a number of English coins that range in time from Æthelræd to Harold I and which were issued at London, Lincoln and York.

Place names on reverse dies

As there is a proof that foreign personal names can occur on the Lund coins of the period in question, both as issuer of the coin (on the obverse) and as moneyer (on the reverse), there is every reason to review the place names just as critically. This does not mean so much the problem already mentioned of distinguishing between London and Lund. In the material under investigation Lund is sometimes denoted (with implied "ON") LUNDI, sometimes LUDI, often using different abbreviations. The problem at hand is of a different nature: did the Lund moneyers occasionally use the names of other towns on their coins? The question must be answered in the affirmative because there are examples of the use of foreign place names just as incomprehensible as the use of foreign personal names.

English names

There are a few Lund dies that show the correct names of English towns. So far they have been considered either as authentic English dies that had been carried to Lund, such as proved both for the early Nordic copy groups from the time of Æthelræd (see the 1962 paper (note 6) and Mark Blackburn above) and for the first Danish series of Knut from c. 1020⁴⁴; conversely, as Hauberg thought, they have been considered Nordic, i.e., for some reason or other the moneyer used the name of his original home town instead of that of Lund. In the material under study we deal primarily with dies showing the names of Lincoln and London, whereas more obvious imitations from other places are easier to explain as such.

Lincoln. The list includes four dies that use the name of this town in one of the usual English forms. Comments on each die are necessary and these are based on the recent monograph on Lincoln dies⁴⁵.

R. 7, ALFRIC is of type H and combined both with the important H. 46 and with K. 2. According to the reverse type, one would expect this name to appear on the coins of Knut from Lincoln, but it is not found on these. The name is otherwise unknown among the Lund dies, and here it must be termed as "spurious" personal name (above p. 143). Mossop illustrates the two pieces (pl. LXIII, 20 and 21) but adds: "May be Scandinavian". The die must be considered a Lund imitation in the H group.

R. 134, LEFPINE (Leofwin) is of type I and combined with the obverses H. 16 and M. 8. The name is also known with this spelling on a genuine Lincoln die, but this die is not identical with 134. The same name is found among Lund dies, but in the form LEOFPINE, and with the town name Lund or LUDN (R. 137–138, combined with H. 15 and K. 14, respectively). Both are rare dies and the personal name belongs to the group described above as "doubtful". R. 134 is propably a Lund imitation belonging to the H or to the M group.

R. 135, the same name as 134. The die is of type A, i.e. of the long defunct Æthelræd type (or possibly type A of Edward). A Leofwin is known at Lincoln in both these types, but none of the dies corresponds to R. 135, which is probably a copy from the time of Magnus.

In connection with the name Lefwin, it should be mentioned that there are further Scandinavi-

^{44:} Brita Malmer, note 6.

^{45:} H. R. Mossop et al., The Lincoln Mint c. 890 – 1279, Newcastle-upon-Tyne 1970.

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an imitations where the H type of Knut (Short Cross) is used. These specimens are not included in the present material because their association with Lund is doubtful.

R. 152, "OINDI". The reverse is of type F (Knut's English type E). It is combined with H. 16 and M. 14, presumably both from the time of Magnus. The name and the die are unknown from the Lincoln mint. No other dies are found with this name in the Lund material. R. 152 must therefore be a Lund imitation of more imaginative type than the preceding ones.

We must conclude that the four "Lincoln" dies cannot be considered authentic English dies, and neither can they be considered as associated with English moneyers who worked first at Lincoln and then moved to Lund. The dies are free or fortuitous imitations of the same kind, so difficult to explain, as the obverses of Æthelræd or Edward originating from Lund.

London. Because of the similarity between the words London and Lund, it is more difficult to point out imitations corresponding to the "Lincoln" dies just discussed. There is, however, one obvious example, namely R. 74 EDWINE ON LUNDI of the H type. The style is English and an Edwin is known from London in this type among others. R. 74 is, however, combined with M. 19 (a local obverse die with elements taken from several English types, e.g. Harold's type B, and with partially illiterate inscriptions) and with HL. 1 (a Lund imitation of a Harold die proper). The reverse die is not identical with any English

Fig. 11. Lund-dies with the name of "Lincoln". a R. 7 (KMK, Hild. Hard. 87). b R. 134 (KMMS). c R. 135 (KMK 6620). d R. 152 (LEB 1588). 2:1.

die from the time of Knut and, in the absence of evidence to the contrary it should rather be considered as a later copy that was produced at Lund.

The good copies of English dies just mentioned cannot be compared with more or less barbaric copies that lead directly to the large group with blundered inscriptions. This group is briefly mentioned above, but it is not included in the treatise as a whole because it is still doubtful where (and when) it was produced. Some of the dies may have been associated with Lund, e.g. the PACX imitations discussed above (p. 141). The two known examples of H. 47/314, may belong to the same groups; on these the reverse dies seem to imitate, both in type and inscription, certain elements of the Dublin series ("LIFL" could be "DIFL"). The legend appears, however, to be earlier than Phase III, in which the design with two hatched quarters frequently occurs.

For obvious reasons, copies of *Nordic place names* (apart from Lund) are difficult to identify because pieces carrying such names normally would be attributed to a different mint. Nevertheless, there are some exceptions.

R. 154 displays the frequently discussed inscription OSBRN ON SITUN, and the die



Fig 12. The "Gori"-die R. 108 (KMK 2795 (?)). 2:1.



R. 108 has an inscription that is just as interesting: HVELN ON GORI. Since the time of Hauberg Gori has been considered to be a place where coins were struck, just as the first part of the legend has been read as a personal name. Hauberg did, however, emphasize the close connection with Lund (because of dielinks), and therefore he proposed that the site of this mint should be sought in Scania. R. 108 is included in the large chain I in direct linkage



Fig. 13. The coin H. 1/52, carefully copying the CRUX issue (Private collection). 2:1.

with three such diverse obverses as H. 16, K. 5 and M. 22, which again are connected with numerous reverse dies. Even though a remarkably large number of dies in this part of the chain are associated with the "spurious" moneyers, there can be no doubt that all the pieces were issued by the Lund mint. It is therefore more probable that the entire inscription is one of the "meaningless" ones that – quite accidentally – appears to have some meaning. "Hveln" is not known in England or in Denmark and "Gori" has hardly ever existed as a place name. This part of die chain I can be dated after 1042 (because of the Magnus obverse, M. 22).

With regard both to the personal and to the place names, the present material contains a relatively large number of dies that copy earlier or contemporary coins from other places – but often so well copied that they have previously been considered examples of old or foreign dies that had been taken to Lund and re-used in this mint. This point of view cannot be confirmed. Everything seems to indicate that all these dies

^{46:} Lars Lagerqvist, Commentationes II, 1968, pl. 46, 22. Idem, Svenska mynt under vikingatid och medeltid, Stockholm 1970, p. 39, fig. 19.

^{47:} Tuuka Talvio, Till frågan om Knuts och Hardeknuts Sigtunamynt. NNUM 1979, p. 106.

^{48:} C. J. Becker, Hardeknuds "Sigtuna"-mønt og andre imitationer fra Lund. NNUM 1980, p. 42.





Fig. 14. "Pomeranian" coins, imitating the Danish MX-obverse. (After Hauberg, Magnus 17–18). 1:1.

are copies which the technically skilled diecutters of Lund executed during the period c. 1040–1044 – just as was the case with the "foreign" obverse dies discussed above.

There are several unusual dies of related character. As a characteristic and quite genuine example mention may be made of the coin H. 1/52: Hildebrand attributed this to England (Hard. D. 109) but Hauberg transferred it to Lund (Hbg. H. 7). Only one pair of dies is known, but both the obverse and the reverse are accurate copies of the Crux type of Æthelræd, even with regard to the portrait. There is only one small inaccuracy: the sceptre is of more recent type. The dies are technically excellent, and the inscriptions quite clearly show Harthacnut's name and ASLAC ON LUND. Both names are "authentic" as no Aslak is known from the coins of Æthelræd or from London in the later period. On the other hand, the name is found at Lund both in the "Serpent" group and in the material presently under discussion (H. 16 and M. 14). H. 1/52 is certainly from Lund but both dies are accurate copies of the c. 50 year old English type.

Hauberg drew attention to the fact that several of the Lund coins of Harthacnut exhibit features directly copied from different German or Byzantine coins which are known, from the hoards, to have been in circulation in the Nordic area at that time. Through the names of the moneyers some of them have, with a high

Fig. 15. The unique "Hedeby" coin, most likely a Lund copy of the K group. (After Hauberg, Knud 13). 1:1.

degree of probability, been associated with Lund: for example the "Byzantine" copies specially dealt with by Michael Dolley and Kenneth Jonsson elsewhere (p. 113 above). Thorketil is likewise the moneyer in the case of the probable German copy Hbg. 13, and here he has at any rate given the name of "Lund". Strictly speaking, the Hiberno-Norse inspired coin, H. 47/314, discussed above (p. 145), belongs to the same group.

In cases where such copies of older or contemporary coins from widely different places can be dated with any accuracy, they are found to belong to the same period as the H and the M groups, i.e. c. 1040 to c. 1044. In other words, this is a special tendency associated with quite a short period and not a generally occurring feature of the Lund mint. There is, apparently, one exception: two cases of MX-like obverses with quite clear German reverse copies, but these do not give the name of Lund. Both pieces are illustrated by Hauberg (Hbg. Magnus 17 and 18). They have recently been mentioned by Georg Galster⁴⁹, who considers them to belong to the so-called "Pomeranian" imitations, i.e. they are not associated with Denmark. Therefore they are excluded from the lists given above.

Finally, it is tempting to deal with one of the truly odd coins from the first half of the 11th century, namely Hauberg's Knud no. 13. The obverse has the appearance of being struck from an English die of Knut's Pointed Helmet type, while the reverse is an accurate reproduction of one of the animal designs found on the earliest Hedeby coins, a deer-like figure, with different

^{49:} Georg Galster, Vikingetids møntfund fra Bornholm. NNÅ 1977/78 (1979), p. 110, cfr. p. 119.

subsidiary symbols (fig. 15). Most recently, Brita Malmer's grouping of the material has made it clear that the reverse does copy one of these animal designs. From a stylistic point of view, it is a brilliant copy: the die-cutter must have had one of the very coins - by that time 200 years old - in front of him when cutting the die. In similar fashion the obverse is just as good a copy of one of the English coins of Knut, if it is not an original (according to the inscription both proposals might be possible). Such an extraordinary combination of widely differing coin-dies seems logical only during this period (c. 1040-1044) when all possible models are being copied and with the relevant degree of technical competance. The "deer" coin, Hbg. Knud 13, should be placed in the series of Lund coins from c. 1040-1044, even though there is no real evidence to support this placing yet. At all events, this coin has nothing to do with Hedeby, as has been proposed occasionally49a.

A last group consists of reverses with entirely illiterate inscriptions. Following the remarks made above on the Nordic imitations of English coins in general (p. 123), and more specifically on the MZ-group based on its obverses (p. 129), it is sufficient to point out that within the H and M groups there exists a small number of reverses with blundered inscriptions side by side with fully literate Lund reverses (e.g., R. 313, 329, 336, 360, 362). In the MX group it is possible to demonstrate similar die-links, i.e. cases where literate Lund reverses and blundered inscriptions are linked by a common obverse (examples of illiterate inscriptions of this category are: R. 302, 348, 358, 364, 381). It should be repeated, however that the majority of blundered reverse inscriptions belong to the groups of Nordic imitations whose place of origin cannot be ascertained for the time being.

VII. Conclusions

The mint at Lund during the reigns of Harthacnut and Magnus

The present study concentrates primarily on the coins of Harthacnut and Magnus which have a portrait on the obverse. In earlier publications the main groups have been distinguished and the coins grouped according to their inscriptions, but a study of the individual dies and, in particular, of the numerous die-links has made it possible to supplement, or revise, our knowledge of these groups of coins in several ways. No longer can we reckon that the coins bearing the name of Harthacnut were all struck during his reign or that the coins of Magnus follow thereafter to be replaced some years later by the types of Svend Estridsen that have obverse designs of a Byzantine character. However, the inscriptions on the obverse still retain some significance. Thus while a number of coins bearing the name of Harthacnut must be considered the earliest in this series (some of the H group), others are doubtless contemporary with coins struck in the name of Magnus (the M group), and it is not at present possible to distinguish between them. On the other hand, die-links show that there is a distinct difference between the coins of these groups and those of the following group (MX) where the inscription on the obverse is always illiterate - and certainly meant to be so. In the same way there is evidence to show that there was a direct connection between the MX group and Svend's earliest coinage, so that it is possible to follow an unbroken line of production from the so-called H group until the time of Svend Estridsen - and from then onwards.

49a: Hauberg originally suggested that it was a Lund coin (p. 192) in spite of the light weight of the only specimen known (0,64 g). In a later paper, (Nordens ældste Møntsted, Aarbøger for nordisk Oldkyndighed og Historie 1914, p. 81) Hauberg considered it more likely that it was struck at Hedeby.

It is also possible to set out an absolute chronology for these activities of the Lund mint. Even the earliest types of the H group were scarcely struck before 1040, i.e. towards the end of the reign of Harthacnut: the dating is based upon an assessment of the English types which were copied at Lund and which at the earliest have been struck during the summer of 1040. A further foundation for the chronology lies in the transition between the MX group and the first of Svend's coins: Hauberg's supposition is confirmed - Svend's first coinages at Lund must have been struck a short time, estimated at one or two years, before he became sole monarch of Denmark on the death of Magnus in 1047. Consequently, a period of only a few years is available for all the groups of coins studied here, and the following absolute chronology may be proposed:

I. The earliest H coins, c. 1040-1042.

II. Certain H coins and the M group, 1042 – c. 1044.

III. The MX group, c. 1044 – c. 1046.

IV. The first of Svend's coinages: from c. 1046 onwards.

Several numerically smaller coin groups were minted at Lund during the same period as the series mentioned here, and this evidently complicates the chronology. Be means of die-links, however, it has proved possible to demonstrate that coins bearing the name of Knut were being struck at the same time as coins of phases I and II. Whether or not the name Knut was synonymous with Harthacnut during the period 1040-1042, as was the case in England, or whether it was used posthumously at Lund, earlier ideas stand in need of revision. No less than 16 obverse dies, perhaps even more, with the name "Knut" (the K group) must be dated to period I or II, i.e. as late as c. 1040 - c. 1044. Some of the other small groups (Æ, HL and E) use the names of English kings. These also belong to periods I-II, but being so few they are C. J. Becker 149

of no great significance for the chronology. On the other hand, they do make a decisive contribution to our understanding of the ordinary activities of the Lund mint.

With the large number of dies and moneyers, coin-production must have been carried out at Lund on quite a large scale throughout the periods mentioned above. Production must have continued unbroken even during the troubled times prevailing during the change of kings first to Magnus and then to Svend. On the other hand, it is doubtful if there was a similar continuity with the earlier Lund coins which are termed the "Serpent" group, after the dominating type. As mentioned above (p. 121), this seems to have been put into production at the latest around the year 1030, i.e. while Knut was still alive and Harthacnut was only a kind of vassal king in Denmark. But it cannot be decided at present for how long the "Serpent" group was produced at Lund. New studies must be made before it will be possible to tell whether the three subsidiary types with respectively, the name of Knut, that of Harthacnut, and an entirely blundered inscription are contemporary, or whether they represent chronological phases (and if so, perhaps those showing the name of Harthacnut are the earliest in time).

It is highly significant for the relationship between the "Serpent" group and the H group that, so far, no die-links have been discovered between them. Thus there may have been a break here, i.e. the Lund mint could have been inactive for one or more years. On the other hand, the names of the moneyers support the idea of some connection, because eight of the eleven known names from the "Serpent" group are also found in the H group - although, accompanied by a larger number of new names. It is also significant that the weight of the penny is about the same in the two groups. According to the provisional results (see below), there even seems to be a slight increase in weight from an average of 0.98 to 1.02 g.

These factors are very important, but nevertheless they do not explain clearly the relationship between the two groups of Lund coins. Other aspects of the coinage must be taken into account. For example, entirely new types were introduced with the H group. These all copied English coins, contemporary or obsolete, in a varied mixture. Both at Lund and in the other Danish mints the types within the "Serpent" group represent a more national or at any rate a distinctly non-English style. With these new types there were also introduced better striking techniques and more skillfully executed dies. The inscriptions, which (at Lund) are as a rule well legible, and the many moneyer names could indicate the introduction (or re-introduction) of an administration supervisning all activities, such as was the case in contemporary English production. A superior authority, presumably the king, controlled all minting and the many craftsmen (we only know the names of the moneyers) must have worked under common management and - to judge from the large number of die-links - presumably in the same building⁵⁰.

However, both the H and the M groups differ from the English system in one significant aspect: no reverse type was produced specially here. Not only do the obverses copy a whole series of types of Æthelræd, Knut, Harold and Harthacnut, but this also applies to the reverses. As noted earlier, the die-impressions are of high technical quality and the die-cutters employed at Lund must have been professionals, perhaps Anglo-Saxon emigrants. They could easily have produced a special "Lund type", just as was done in England at regular intervals. Only a few, rather rarely used reverse Lund dies show independent composition (e.g. types L, M and T). All the other dies copy English types, or they are "new" ones made by putting together elements from different English models. The closest that one comes to the concept of a special mint type for Lund during this period is the

tendency to make frequent use of an obverse portrait based on the Helmet type of Æthelræd and a reverse modelled on the Long Cross type of the same king.

Even though a very short span of time is covered by coin periods I–III, a certain development can be noted in several aspects of the coinage. On the transition from II to III, i.e. in the MX group, the portraits begin to resemble either the contemporary English ones (the PACX group) or they become more primitive, developing a style of their own. At the same time the reverse type D was used almost exclusively, although frequent use was now made of small symbols in two or more of the quarters of the reverse. On the transition to group IV – the first types of Svend – the reverse type was retained from III, but the obverse designs were changed completely.

Another, perhaps more important development can be seen in the inscriptions. During periods I and II the great majority of the inscriptions are literate. In period III all the obverse inscriptions are entirely illiterate, and this was certainly done deliberately because the reverse inscriptions can still be read and in many cases show association with the foregoing ones. The reverses of period III are, however, clearly of poorer quality and without knowledge of the earlier specimens some of them could be difficult to read. This development continues into group IV, so that a large majority of the inscriptions are now entirely blundered. Such a gradual alteration cannot be ascribed to technical difficulties, or to a lack of skill on the part of the die-cutters, because the obverse designs on Svend's coins are particularly carefully executed; indeed some of them almost have the

50: Cfr. Peter Berghaus, Die frühmittelalterlische Numismatik als Quelle der Wirtschaftsgeschichte. In Geschichtswissenschaft und Archäologie, Vorträge und Forschungen d. XXII Konstanzer Arbeitskreis für mittelalterlische Geschichte. Ed. H. Jankuhn u. R. Wenskus. Sigmaringen 1979, p. 415. character of a work of art. The changes seem rather to indicate that the organisation in which the individual moneyer was a person of importance was beginning to alter, i.e. it was losing its original meaning. This may have occurred at an early stage of the development described here.

Yet another peculiarity of the Lund mint deserves mention. In periods I and II there occur quite a number of puzzling copies that obviously belong to Lund. These relate to "spurious" names of kings, "spurious" moneyer names and "spurious" place names. All three categories would be extremely unlikely in the Anglo-Saxon mint system. With respect to the kings' names, the use of "Knut" has already been discussed: here in some cases this could be an "authentic" name, synonymous with Harthacnut. More peculiar are the few, but quite clear, dies showing the names "Æthelræd", "Harold" and "Edward". Similarly, certain moneyer names are "spurious", e.g. copies of names from English mints, and, in consequence, it can be difficult to distinguish the moneyers who were, in fact, employed at Lund during the period. Finally, "spurious" place names occur of both Nordic origin (Sigtuna) and English origin (Lincoln and London). Even in the latter case, the dies concerned must be interpreted as Danish copies; they are not, as previously assumed, authentic English dies taken to Lund and reused in this town.

It is not easy to give an exact dating for all three types of copying within the periods distin-

50b: The standard weight ought to be 1.16 g (with a slight reduction – to 1.13 g – during Harold and Harthacnut. See V. J. Butler, note 50a and J. J. North, English Hammered Coinage, Vol. I, 2nd ed. London 1980, p. 210.

51: Primarily the figures given by Hauberg.

guished in the present work. While the Knut dies can be ascribed to both periods I and II, there are several factors that seem to indicate that the other categories first occurred in the time after 1042, i.e. only in period II. It would have been obvious to relate these copies to the illiterate obverses of period III, but the names, and their spelling, used on the associated reverse dies clearly show that this tendency to "wild" or apparently arbitrary copying is connected with period II. This is confirmed by the many dielinks.

The weights of the coins have not been of primary interest in the present study, but so much information was gathered that it is possible to supplement the impressions of the quality of the coins described above. The weight was noted for half of the material, and this should give a reliable average value.

A total of 326 pieces of the H group show an average weight of 1.012 g; 129 coins of the M group show, correspondingly, 1.017 g; and a total of 95 coins from the K, Æ, HL and E groups show an average weight of 1.027 g. The average value of these three coin groups is 1.016 g. Finally, 382 coins of the MX group show an average of 0.975 g. It should be mentioned that the weight of the individual coins within each group naturally varies somewhat, but the deviation is no larger than that found in the slightly earlier and the contemporary English issues^{50a}. The Lund coins were thus struck according to a fixed weight-standard that was constant during periods I and II, and slightly reduced in period III. This standard did not, however, correspond to that of the contemporary English coinages (with an average value from the Short Cross type of Knut to the PACX of Edward of between 1.06 and 1.09 g^{50b}). The figures given for Lund show that all earlier information on the coin weights from this mint should be revised⁵¹.

No recent study has been made of the purity of the coins.

A further factor relating to the high technical

⁵⁰a: V. J. Butler, The Metrology of the Late Anglo-Saxon Penny: The Reigns of Æthelræd II and Cnut. Anglo-Saxon Coins, Studies presented to F. M. Stenton, London 1961, p. 195 ff. – H. Bertil A. Petersson, Anglo-Saxon Currency. King Edgar's Reform to the Norman Conquest. Bibliotheca Historica Lundensis XXII, Lund 1969.

quality of the Lund mint deserves mention. The number of known reverse dies is, as can be expected, rather larger than the corresponding number of obverses. In the die-chains it can very often be seen that two reverses have a common obverse. This might indicate that the practice – only proved for much later period – was already in use of producing initially two reverse dies for each obverse (because of their different lengths of life in use). The same practice has been suggested in the case of the Anglo-Saxon coinages, but is has not been proved as yet⁵².

Lund and the other Danish mints in the years 1040–1046

The foregoing pages deal only with the Lund coinages, but it would be right to comment upon the relationship between these and the contemporary coinages struck elsewhere in the Danish area. Hauberg has already drawn attention to the remarkable difference which exists between the coins from Lund and other Danish issues, so that Lund may be characterized not only as the most important Danish mint during this period, but also as the only town where well-organized minting of high technical quality was taking place. Throughout the next 40 years Lund retained this special position among Danish mints, notwithstanding that it was one of the later Danish town-settlements of the Viking era (probably founded in about 1020), that near-by Dalby was the ecclesiastical headquarters of Scania, or that Roskilde was the town preferred by the Danish monarchs (to use a later concept, it was their capital).

Oddly enough the re-organisation of the Danish coinage in c. 1040, carried out by Harthacnut based on a wholly Anglo-Saxon model, seems only to have affected Lund. As is well known, several Danish mints were active both before and after this period, but the "new" system dating from c. 1040, is only reflected at a few of them. At Viborg, Århus and Ørbæk, too, new portrait coins were introduced bearing the name of Harthacnut (or Knut) and with literate reverses⁵³, but only one local moneyer was employed at each place. There were very few dies in these cases, and they were replaced remarkably rapidly by dies of far poorer quality and showing illiterate inscriptions. Only one obverse linking of these "new" provincial coins with those of Lund has been observed, namely via the die H. 27 also used at Viborg (moneyer Braem, Hbg. 40). This is a true case of a die being transported from its place of origin – which must be Lund – to another mint.

In two other cases die-links have been observed between Lund and the provinces during the period concerned. One is the Magnus die M. 17 used both at Lund (R. 186 and 187) and at Odense (fig. 16), but at the latter mint it was provided with a local reverse die (Hbg. M. 29): SVMRFVL OĐNS. The other example concerns one of the anachronistic Knut dies from Lund (K. 14) which was also used at Odense, but again with a local reverse die: ALFNOĐ ON OĐSVI. Admittedly, Hauberg dates this last coin to Knut's own time (Hbg. 45), but its whole style suggests that it is of far later origin.

The two Odense coins are particularly interesting and are not to be explained in the same way as the Viborg coin discussed above. In the latter case the coin was struck by a moneyer previously known from Viborg and unknown at Lund, while, in the case of the Odense coins, one bears the name of a moneyer, Alfnoth, known to have been active at Lund; there are other contemporary Odense coins (Hbg. pl. VIII, 4) which bear the name of another Lund moneyer: Outhinkarl. Furthermore, there occur a few Odense coins, some with the name of Magnus and some with the name of Harold, which

^{52:} Michael Dolley, The Coins. In The Archaeology of Anglo-Saxon England (ed. David Wilson), London 1976, p. 362.

^{53:} Viborg: Hbg. Kn. 53, Hard. 40-41. - Århus: Hbg. Hard. 44. - Ørbæk: Hbg. Kn. 54, Hard. 42.

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technically are almost as good as the contemporary Lund coins, and thus very much better than other Danish provincial dies. (The question of whether "Harold" copies an English name – in keeping with the HL group from Lund – or represents the Norwegian Harald Hårderåde, will not be discussed here⁵⁴. The attitude of the present author may be judged by a reference to the fact that the name Edward was also copied at Odense (Hbg. pl. VII, 3) at this time. At all events, Magnus must have struck coins at Odense with the participation of two of the Lund moneyers. Magnus coins from other Danish "provincial" mints are both rare and always of primitive technique.

There are some points on which to base a comparison between the ages of the Odense coins just mentioned and the groups of Lund coins, even though the Odense material is not

Fig. 16. Lund – Odense. a M. 17/187 (KMK 6620, Espinge), Lund (?) – b M. 17/186 (KMMS BP 1038, Espinge), Lund. – c M. 17/ + SVMRFVL OD NS (KMK), Odense. – d = Hbg. Svend 55. + SPEN REX / = c. (KMK). Odense. 2:1.

large. There are no known Odense groups which correspond in style to the MX group of Lund: furthermore, in one case, die-linking occurs directly between a Magnus coin from Odense (Hbg. 29) and a corresponding coin carrying the name of Svend (Hbg. 55) (fig. 16). This indicates that the Odense coins with the name of Magnus are contemporary with the MX group from Lund, or in other words that Magnus struck coins at Odense later than the period when his name appeared clearly on Lund coins. Consequently it is not just chance that the two Lund moneyers, Alfnoth and Outhinkarl, disappear from the Lund coinage before the introduction of the MX group - presumably they moved to Odense together with Magnus.

^{54:} K. Skaare, Heimkehr eines Warägers. Die Münzprägung Harald Hardrådes in Dänemark. Dona Numismatica (Festschrift Haevernick) Hamburg 1965, p. 99.

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Historical aspects

A purely numismatic study can – and should – have wider perspectives. The eleventh century in Denmark was a time of upheaval between a "prehistoric" and an "historic" era. The written sources are more than sparse and often doubtful, so the historians must supplement their material with results derived from a number of other fields of study. Nevertheless, the information provided by these fields must be evaluated on its own merits before it can be used for a historical synthesis.

As a consequence, the results of numismatics and archaeology play a special part in knowledge of the political and economic history of Denmark in the century in question. While the results of archaeological research in recent years have already been utilized to give a fuller picture⁵⁵, or to alter the picture of social aspects and settlements of the time, the same cannot be said to apply to numismatics. Danish historians seem either to have treated the material resulting from this subject in a rather free and easy manner (as, for example, Erik Arup in his epoch-making historical work from 1925⁵⁶), or, as the majority of Arup's later colleagues did, they have built their interpretations on Hauberg's great work from 1900 that deals with the earliest history of our coins.

Even though the present investigation rests on very limited material only – the different coinages issued by the Lund mint during a part of the time of Harthacnut and Magnus – some of the results can also be used in a wider perspective. As reported in the introduction, the investigation was primarily of a purely numismatic nature, i.e. only comprising a study of the individual coin types and die-links. The relative and absolute chronology of the groups of coins builds in part on these studies, in part on well known methods of dating numismatic material – taken in the main from recent research relating to Anglo-Saxon coinages, from studies of the great hoards, and finally from the few, but quite definite historical facts (e.g. the year of death of the Danish kings). The results of the study should, thus, be of use to historians and to other colleagues as independent primary material.

The author does not intend to carry his work into the field of professional historians. It is, though, tempting to mention a few special results which might in different ways be of significance for the overall economic and political history of the years in question.

1. It is still difficult to ascertain any points of contact between the oldest Danish coinages of the 9th and 10th centuries (the earlier Hedeby series, the later but related coin groups, as well as the few coins of Svend Forkbeard from c. 995/997) and the first attempt of Knut the Great to establish a Danish mint system on the lines of that existing in England, in c. 1020). The "heavy" pennies of Knut cannot represent the introduction of a Danish mint system proper, – the way in which they are usually interpreted. Nor does there seem any direct connection between this and to the following Danish coinages.

2. A mint system which was both comprehensive and permanent was then organised in Denmark during the last years of Knut's life (c. 1030 at the latest) by the setting up of mints in a number of Danish towns or sites (Lund, Roskilde, Slagelse, Ålborg, Viborg, Ørbæk, Århus, Ribe, Hedeby). Here pennies were struck according to an East Danish and a West Danish weight system, and using coin types peculiar to each mint. The great majority of the coins are non-

^{55:} Else Roesdahl, Danmarks vikingetid, København 1980 (with references) (English edition in preparation). – See also Klavs Randsborg, The Viking Age in Denmark, The formation of a state. London 1980.

^{56:} Erik Arup, Danmarks Historie I. Til 1282. København 1925, p. 138. Here the Danish coins of the first half of the 11th century are the result of private initiative with help of English moneyers; it may have been merchants, local chieftains or other wealthy persons.

English in style, i.e. they have either a purely national character (such as the "Serpent" type of Lund) or they copy different continental models. Regardless of whether the (relatively few) literate inscriptions name Knut or Harthacnut as in control of the mint, all the coinages seem to have started at about the same time and to be an expression of a well-organised, overall Danish mint system. Whereas Hauberg was inclined to date most of these types to a later part of the reign of Harthacnut⁵⁷, i.e. he considered them to be later than the group mentioned below under point 3, it should be mentioned that Kr. Erslev, in a discerning and important paper from 1875⁵⁸, clearly placed the whole of this group in the same way as they are placed in the present work. Erslev interpreted the group, moreover, in a wider historical perspective⁵⁹, as he proposed that it was established in the years when (Harthacnut and) Danish earls attempted to bring about a national Danish uprising against the English-dominated rule of Knut, under which Denmark had become just a peripheral province in the North Sea empire. Erslev dates these events to c. 1026, and ascribes to this factor

58: Kr. Erslev, Roskildes ældste Mønter. Studier til dansk Mønthistorie. Aarbøger for nordisk Oldkyndighed og Historie 1875, p. 117–187. A summary of the paper was published later: Les plus anciennes monnaies du Danemark, Mémoires de la Société Royale des Antiquaires du Nord, København 1885, p. 120–142.

59: Erslev 1875, p. 127 and 173 ff.

60: Even if this year (or c. 1040) in other papers is considered to mark a change in the economic systems of Viking-age Denmark (specially in Scania), the present author does not attempt to participate in the discussion. During recent years archaeologists have submitted these problems to debate i.a. by using different models, which primarily are based on anthropological and social theories about primitive and advanced trade or exchange of goods. See Birgitta Hårdh, Trade and Money in Scandinavia in the Viking Age, Meddelanden från Lunds universitets historiska museum 1977–1978, p. 157–171, with further references. the anti-English character of the entire mint system. Modern historical research should take up these, apparently overlooked, ideas for renewed considerations: Erslev's numismatic placing of this group of coins seems to be more probable than that of Hauberg and thus of the datings later followed by others.

3. About the year 1040 (or even later), i.e. in the last year of the reign of Harthacnut, new types were introduced at the Lund mint namely the series studied here with a portrait and king's name on the obverse and a fully literate reverse, both in a truly English style. The re-organisation which occurred at the Lund mint had, oddly enough, virtually no effect at the other Danish mints where it must be supposed that coins were still being struck. At Roskilde, the town lying geographically closest to Lund, no new style can be traced at all, even though there must have been more or less continuous production of coins there throughout the reign of Harthacnut and during the following years. At Lund, the introduction of the new types also represented a technical advance, because the dies then became of better quality and almost all are entirely legible. On the other hand, there must have been some connection with the earlier, local issues ("Serpent" type) because many names of moneyers are common to both groups and the penny weight seems virtually unaltered. From 1040 onwards - but not before this date - Lund enjoyed a special position among Danish mints that remained unaltered until c. 1080, on the coin reform of Harald Hen.

4. The obvious difference between the coinages of Lund and those of the other Danish mints where coins were still struck must lead to considerations of the political and economic significance of the controller of the mint. Was there here, too, any alteration round about the year $1040?^{60}$

^{57:} Hauberg, p. 117. Hauberg also mentions the other possibility (p. 48) referring to Erslev's paper (see the following note).

5. The change in ruler in 1042 made no difference at Lund: the mint continued to function, the coin types and the quality were at first unchanged and the weight remained the same. The name of Magnus appeared as controller of the mint, but at the same time the names of both Knut and Harthacnut seem to have been used. as well as - in more rare cases - the names of deceased or living English kings (Æthelræd, Harold and Edward). Correspondingly, among the generally legible names on the reverse, there appear both Lund moneyers and copies of foreign moneyer and place names. Can this be explained by the different administrative abilities and experience of the two kings? Harthacnut became sole king of England in 1040 and must have had knowledge of the whole administrative apparatus of that country, which included one of the best organised mint systems in Europa. Therefore a reform of the Danish mint system, on similar lines, appears natural and does, in fact, now seem to be discernable at Lund. On the death of Harthacnut in 1042, the Norwegian Viking chieftain Magnus was given the title of king of Denmark. What were his qualifications for heading an administration of European style and scale? And he did not strike coins in Norway. Today, all we can ascertain is that the Lund mint functioned without perceptible alterations also after the year 1042. The frequent "wild" copyings dating from these years could, however, indicate that the local administrators were primarily interested in keeping production up to the same level as prior to 1042, but that they were less interested in which names appeared on the coins.

6. After 1042 the difference between Lund and the other Danish mints appears still more clearly than before. Apart from at the Odense mint, which will be mentioned below, the coins carrying the name of Magnus are not only very rare, but always of a remarkably poor quality. It is difficult to prove how many of the Danish "provincial" mints continued in function but, following Hauberg, we may assume continuity at most because they also produced coins during the following reign of Svend Estridsen. This whole question has not been re-investigated, but the problems involved are of great significance for the factors mentioned above in point 4.

7. At Lund - but only here - a relative chronology can be set up for the coinages issued during the reign of Magnus. Thanks to studies of the dies, it can now be ascertained that the earliest series (corresponding to the "reform" coins of Harthacnut) were replaced by the socalled MX group. This meant a more uniform production where the coins (with a few exceptions) were struck according to a more restricted pattern: obverse with portrait and blundered name, reverse of type D with partially literate inscriptions which to a degree reflect the names of earlier known moneyers - and a few new ones - and the place-name "Lund". The relative and absolute chronology of this groups is now clear: some dies are connected with the abovementioned group showing the name of Magnus, while others are linked with the first "Byzantine" obverse types, i.e. the series traditionally, and correctly, ascribed to Svend Estridsen. The anonymous obverses are not the result of a lack of technical skill but must have been produced deliberately. Perhaps the explanation can be sought in the political conditions prevailing at that time, where one of the few certain facts is that for several years there was a struggle for power between Magnus and Svend. The mint at Lund continued production throughout this period; for a short time there was obviously some uncertainty as to who was in political control of the mint (and who the owner of the silver here), and therefore deliberate use was made of blundered obverse names.

8. The Lund coins of Svend Estridsen were not part of the primary material connected with the present study, but a couple of earlier results should be mentioned because they are of importance for the circumstances discussed here. Svend introduced entirely new obverse designs with his "Byzantine" types and he made use of them for a long period, probably more than ten years. The reverse dies were, on the other hand, of the same kind as used for the MX group, and several die-links have been observed between these two groups. According to Hauberg's studies, there seems no break in the production of coins: the quality and weight of the coins seems unchanged on this transition. Considering the other Danish minting places, it can similarly be seen that Svend's new style made its mark in several of them on the island of Funen and in Jutland (Odense, Viborg, Ribe and Hedeby (?)), but in all cases the results were of poorer technical quality than at Lund. Coin production still seems to have been based on a special East Danish and West Danish weight system. In other words, there seems a remarkable similarity between the Danish coin system on the reform of Harthacnut in c. 1040 and during the reign of Svend.

The date of the change in coin type is of special importance for the history of the Lund mint. At Lund – and provisionally only there – it is possible to show that the first "Byzantine" types (consisting of several different subsidiary types: Hbg. Svend 6, 9, 16, 23), were already in production when the great Espinge hoard was buried in c. 1047/48, as previously mentioned. The production of new types must thus have been in full swing a couple of years before Svend (on the death of Magnus) became king of the whole of Denmark.

9. It seems that a series of coinages from Odense should be considered in connection with the events surrounding the production of the Lund mint. Some of these Odense coins have often been the subject of discussion by historians and numismatists. Only a few observations: A. Odense is the only mint which we know of besides Lund, that produced Magnus coins of a quality comparable with those of Lund.

B. Two obverse dies from Lund (K. 14 and M. 17) were taken to Odense, where they were used in combination with local reverses.

C. Two moneyers' names appear both at Lund and at Odense – i.e. Alfnoth and Outhinkarl. Dies are known that show their names and place of minting as Lund and Odense, respectively. No similar circumstances – the same name occurring at two different mints – are otherwise known from this period.

D. On the advent of the MX group the same two moneyer-names disappear from Lund.

E. While the MX group at Lund clearly represents an indendent chronological phase, no corresponding group with anonymous obverse names is known at Odense.

F. At Lund, there are several die-links between the MX group and Svend's first "Byzantine" types, but not between the M group and the latter. On the other hand, at Odense, linking has been ascertained between a coin showing the name of Magnus and one of the "Byzantine" specimens, and even one showing the name of Svend on the obverse (fig. 16). This may imply that the Odense coin is so late that it corresponds to the anonymous MX obverses of Lund.

All these observations could have a common explanation: the name of Magnus disappeared from Lund during the short period of time in which the MX group flourished, and which is dated above to the years immediately preceding the production of the first of Svend's characteristic types (i.e. 1046 at the latest).

At the same time the first coins of Magnus appeared in Odense, a few of them struck by moneyers from Lund, and using at least two original Lund dies. These Odense coins were replaced directly by the first types of Svend.

In other words, these numismatic observations could lead to the interpretation that, round about the time 1044/45, Magnus was forced to leave Lund (and thus Scania), and thereafter he settled at Odense where coins were struck in his name at a newly established mint. This mint continued its production also after Svend gained control of Funen.

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Abbreviations

- BEH = Bror Emil Hildebrand, Anglosachsiska mynt i Svenska Kongl. Myntkabinettet. 2nd edition. Stockholm 1881.
- BNJ = The British Numismatic Journal, London.
- CNS =Corpus Nummorum Saeculorum IX XI qui in Suecia reperti sunt, Stockholm 1976 ff.
- Commentationes = Commentationes de Nummis Saeculorum IX – XI in Suecia repertis I–II. Kungl. Vitterhets Historie och Antikvitets Akademiens handlingar, Antikvariska serien, no. 9 and 19, Stockholm 1961 and 1968.
- Galster, Haagerup = Georg Galster, Møntfundet fra Haagerup, Nordisk Numismatisk Årsskrift 1944, p. 93–157.
- Galster, Kongsø = Georg Galster, Møntfundet fra Kongsø Plantage. Aarbøger for nordisk oldkyndighed og historie 1962. København 1963, p. 54–78.
- Hatz = Gert Hatz, Handel und Verkehr zwischen dem Deutschen Reich und Schweden in der späten Wikingerzeit. Kung. Vitterhets Historie och Antikvitetsakademien. Stockholm 1974.
- Hbg. (Hauberg = P. Hauberg, Myntforhold og Udmyntninger i Danmark indtil 1146. Kgl. Danske Vidensk. Selsk. Skr. 6. række, hist. afd. V, 1. København 1900.
- Hild. = Hildebrand 1881 (See above, BEH).
- LEB =L. E. Bruuns Mønt- og Medaillesamling. Catalouge by Georg Galster *et al.* København 1928.
- KMK = Kungl. Myntkabinettet, Statens Museum för Mynt-, Medalj- och Penninghistoria, Stockholm.
- KMMS = Den kgl. Mønt- og Medaillesamling, Nationalmuseet, København.
- NNÅ = Nordisk Numismatisk Årsskrift (Scandinavian Numismatic Journal).
- NNUM = Nordisk Numismatisk Unions Medlemsblad.
- SCBI = Sylloge of Coins of the British Isles. London 1948 ff. SHM = Statens Historiska Museum, Stockholm (Catalouges
- use the same numbers as KMK).

I	Name	starting_left_
	A. Firs	t letter "H"
	H1	+HARÐAENVT RX
	H 2	+HAR DECNVT REX
	Н3	+HAR DECNVT REX
	H4	+HARĐEENVT R'
	Н5	+HAR ĐE ENVT
	H6	+HARÐEENVT
	Н9	+H⊼R:ĐECNV
	H 10	+HAREENVT
	H 11	+HEXRDEENVT RX
	H 12	+HVBÐVEAH.AE:
	H 13	+HARAENV
	H 14	+HAREAEENV
	H 15	+H⊼R:NÐECN/
	H 16	+H⊼R:···: ĐECNV

B. First letter "N"

		A
H19	+NAR //////	52
H20	+N⊼RÐENVT RE	175
H21	+NARÐENVT RI	169
H22	+Nૠ₽ECNVT∷	162,164,165,175
H 23	+N⊼RÐEENVT:	85, 86
H 24	+N⊼RÐEENVT∵	119
H 25	+N⊼R:ĐEENVT∵	184, 244
H 26	+N⊼R ĐECNVT:	3, 162
H27	+NXRĐEENVT"	170
H28	+N⊼RÐECNYT	85,98,175,185,226,227
H 29	+N⊼RÐECN∨∕T	175
H30	+NAR ĐE CNVT	139
H 31	N⊼RÐE⊑N¥T	27
H 32	+NARĐEECNV	14,169,360
H 33	+N⊼RĐE⊑NV	12

52 184,188,226,227 26 156 14 25,161 239 16,18 83 204,205 47,63,154 10 41,42,44,137,149,248

51, 108, 134, 152, 336

.

160



Н

H34	+N⊼RÐE⊑NY	11
H 35	+N⊼RĐECN	175, 226, 227
H36	∵N⊼REENVT RE+	23
H 37	+NTREENVT HH	102
H38	×NXR.EENA	14,15,18,196,199, 201,203,362
H 39	+N⊼+ÐŁENVTD	76
H40	+N⊼RÐECII\/II	140
H41	+ARĐEENVTAN	163
H42	×ARĐEENVT:	15
H43	+ARĐEENVT REX	197

П	Name	starting above bust	
	H44	+HXR//EENVTR	179
	H45	+N⊼RĐ∥ENVT:	174
	H46	+N⊼R∥/+CNVT "	3,7,13,22,98,162,174, 184,198,210,217, 226,231,238,244
	H47	+NA //ENVTRE	314
	H48	+NAR:Đ//AEVNT	10
	H49	×ENVTN⊼R∥ REEX	167
	K1	+ENVT RE+ XNGLO:	101, 102, 198
	K2	+ENVT ++ XNLO	7, 112, 218, 238
	K3	+ENVT∥REX ⊼N	198
	K4	+ENVT ////// GLO	178
	K5	+ENVT//REX X	108

κZ	TENVI TT ANLO	7, 112, 2
K3	+ENVT//REX XN	198
K4	+ENVT ////// GLO	178
K5	+ENVT//REX T	108
K6	XENVT REX XA	206
K7	+ENVT REX IND.	99
K8	+ENVT// REE	168
К9	+ENVT REXX	2
K 10	+ENVT REXX:	47, 64
K11	+ENVT RE++	228
K12	+ENVT RE+×.	103, 115
K13	+ENVT RE++"	1
K14	+ENVTN// REE	138
K15	+ENVT REX AN'	238
K 16	+ENVT REX AX	97



12

13

Κ

14

15

16

9:4

I Without sceptre

M1	+M⊼GNVS	RE	56
M2	+MAHNVS	REXD	70,150
М3	+м∧нмүг	REX:	78,113,116,117, 201, 221
M4	+мхних2	RE+	53,113,114,184,219 – 222,244
M5	+млнилг	RE+	228
M6	+млнилг	RE+	17
M7	+мхннлг	RE+	88
M8	+M⊼hNV∑	REX	134, 166, 175
M9	+M⊼hNVS	RE:	166
M10	+MXKNVZ	RE+:	98,99
M11	+маннуг	R+	100, 121
M12	+млнилг	RX	185
M13	+мүннүг	Ν	229
M14	÷Μ.ΥΗΝΛΖ	++:	103, 152
M15	+MXHNS	REXX	13, 65,114
M16	+млнилг	+LI	35
M17	×MAHVZ F	RE+×	186,187
M18	/////HNV5	D ////	303
M19	+NXHVZ+-	+EN	3,74
M20	+мҳнилг	REXEVNIGI	135

II Sceptre in front

M21	.:×MAHNV/	// REXX:•	95
M22	+мҳнилг	REX	104,108,147
M23	+млнилг	REX	150
M 24	+W%HN.AZ.	RX	94
M25	+MAHNVS	R	211
M26	+MVHVAZ	P	43



Μ

HX1	+FVBCI//VCHM	13,14,98, 103, 360
HX2	+VFHREIITH:II	13, 202, 313, 329, 362

Æ1	+EĐELRED	RE	161
Æ2	+EÐEL'RED	RE	160
Æ3	+EDELRED	RE+∧LR⊹	24

HL 1	+n⊼r∥old re	74,115,240,245
HL 2	+NAREII//+RE	176

E1	+EDPA:// ·: ×:PRE:·	200, 201
E 1a _{R-E}	+EDPA:// ·:×:PRE:·	200, 201, 202
E2	+EDPA'//×DRE:	201, 202

MX1	+CDDDD//////T	129
MX2	+CDDDD//NDT	129
мхз	+CIIVPP//:DPPDVCI	89,91
MX4	+ERDD// IIIATII	31
MX5	+CPPD// IIHTN	207
MX6	+DD// D:EEA+N	121, 123
MX7	+DDD//PPNIATII	142
MX8	IVIICIX // CICNDD+	208
мх9	+HDD//ICICIIATII	195, 319, 380
мх9А	+HDD∥I'IV⊅⊼N	248
MX10	+IJ JD //:IPIITII	128
MX11	+IEMEI://+HOEIÐRI	49
MX12	+IEN⊼+∥cccCCODNI	78,89,91
MX13	HITAII // PRCI+	194
MX14	IIEVOC//CTAII+	234





HL1







E2



MX

168

MX15	+IIEVI//IPPDEC	190, 190a	MZ1	+CCDDI//IDP+II	353
MX16	+IIDD//IDDIIATV	31	MZ2	+ETIIV//OTHAE	366
MX17	+IIDVI//ODVIP	127, 131	MZ3	+EPPD//IIIRD	301, 325
MX 18	+IIVII// DDI7XTII	32, 78	MZ4	+HVDD//IIQQNEC	363
MX 19	+IIP>>>>>> //IITJIION	90, 128, 129	MZ5	+IDID//ECCCHD	344
MX20	+IIPD//IIDIJIAT	38, 77	MZ6	+IHTONIVPPD	327
MX21	+IIPDTI91//IIVTA	122, 126, 127	MZ7	+IIENEENEDENNOh	311
MX22	+IPIDD//IIRIITII	130, 142, 358	MZ8	HIIDD// JOIINN	340
MX23	+NDD//N+DDNV	71	MZ10	+IIPD//NNNI	321
MX 24	+NDDI//ATII+C	121, 364, 381	MZ11	+NDD//DDDIIT	335
MX 25	+NFDVIIO//IDT	32, 37, 38, 71, 77, 78,	MZ12	+N:DDD//NEN:EI	350
		302 302	MZ13	+NDDD//:PPNI+⊼	363
MX 26		2/0	MZ14	+NDNI://IIDND	307, 309
MX 27		348	MZ15	XNDNTACIPIPM	342
MY 28		189, 348	MZ16	+NID//IPRE+	331
MY 29		37, 38, 77, 78, 208	MZ17	+NPD//IIATNE	346
MX 30		207, 208	MZ18	+NPEDR//·REPDN	316
MX 21		60	MZ 19	+TIP//+NNNP+I	354
MY 22		58, 59, 73	MZ 20	+VIPT0//+III\II	356
MA 32		142, 233, 323	MZ21	+PD//DDIIPII	333
			MZ22	+CPD//DDIIPII	333
			MZ23	+PD//ICENV+I	333

MZ24 +PPD//·PRIAIEI

MZ26 DEXLOEDXIORUI

MZ25 DDDIIIV31/\/ID

MZ27 NNDHDID

363

305

352

317, 334, 401

9:4



11



6

12









MZ





Ν



0

Ρ



R



Τ1

Т2



тз

Reverse dies of the Lund mint

1	+ALFNOĐONLVDEN	K	K 13	37	+A: RDL HOL NDI	D	MX 28
2	+AL FN0: ĐON LVDI	М	Ka	37a	•	D	MX 25,28
3	+⊼l Fn QÐ Onl	D	H 26,46,	38	+A: RDL NOL VDI	D	MX 20,25,28
7	+ALFRICONLINCOL	н	M 19 H 46, K 2	41	+AN EET LON LVD	B	H 15
10	+ALFVARĐONLV	н	H 14,48	42	TAR NEE TEO: EVI	D E	
11	+ALFPARDONLVDI**	к	H 34	43	TARN LE TEV	Г	
12	+AL PAR: DON LVDI	в	H 33	44	+ P X IELO VLVI	P	H 15
13	+⊼L FP⊼ RDO LVD	F	H 46, HX 1, 2,	47	+AZFERĐONLVDI:	н	H13, K10
• /		-	M 15	49	+X IFO RĐ: NLV	D	MX 11
14	TAL FPA RD OLV	D	H 5, 32, 38, HX1	51	+XZLXCONLWDEIO:	Т	H 16
15	XAL: FPAR DOL VDI	D	H 38,42	52	+AZLAEONLVND:	С	H 1, 19
10		-		53	+XZ LXE ON: LVD	Е	M 4
16	TAL PA RD: ONL	D	H 10	56	+AS ORO NL: VD:	Е	M 1
16a R-E	~ ~ ~	D	H 10	58	+BA INI NOI ILVI	D	MX 31
17	+AL FPA RDO NLV	D	M 6	59	+BA IILI NOI ILVI	D	MX 31
18	+X LFP RD: ONL	D	H 10	60	+BA INO NE NN	D	MX 30
18a _{R-E}	0 O	D	H 38	63	+CARLEONLVNDI	н	H 13
22	+ALFPINEONLVDI:	I	H 46	64	+CARELONLVDI:	I	K 10
23	+AL FPIN EON VDI:	В	Н 36	65	+FA BLO NLV DI:	D	M 15
24	+AL FPI: NEO LVD:	D	Æ3	00		-	
25	+AL FPI NEO NLV	D	H6	70	+EOL SVE INO NW	D	M 2
				71	+LO LSV LIN OHV	D	MX 23,25
26	+XL FPI NE ONL	D	H3	73	+E: AN AOH LVD	D	MX 31
27	+AL PIN EON LVD + +	D	Н 31	74	+EDPINEONLVNDI:	н	M 19, HL1
31	+AL NRII ONE VDI	D	MX 4,16	76	+EN ERO NLV DOĐ	Е	H 39
32	+AL NR: NEI ITNI	D	MX 18,25	77	EM: ERO IIL. VI+	Е	MX 20,25,28
35	XAREILONLVND	0	M 16				

172

25.20	
131 +L: EIS TIOI HVI D N	MX 17
134 +LEFPINEONLINEO: I H	H 16, M 8
135 +LEFPINEONLNEOL∵ A N	√l 20
86 +GA RFI: NEC AEIOT D H23 136 +LEFPIHEONL'NEOL: A +	÷ (Hbg. M12)
137 + COPPINEONLVND A = 137	-1 15
138 + LEOFPIHELVDH: I P	K 14
139 +LE FPIN EON LVD D F	-130
89 +GA AFI NEO IILVD D MX3,12 140 +LE RIN EON LVI: D H	H40
90 + GA AFI: NLY OIHD D MX19 142 + I'E ND: VON LVD D M	MX 7, 22, 32
91 +GT AFI NEO IILV D MX 3,12 143 +I'F ND: VOH LVD D	÷ (Hba, Sv. 19=M)
94 +GOD NOĐ ONL VND P M24 T + P M24 144 +L'E NĐ: NO: LND D -	÷ (Hbg. Sv. 19 = M)
95 XGOD TAH OLVD ENEO P M 21	
97 + GR IM: ON LVD F K16 147 + MANAMONLVN:D. I I	M 22
98 +G RIM ON LV. D H2846, HX1, 149 +NI TAZ COD ONL B	H 15
MIO 150 +NI TIZ' GOD ONL B	M 2, 23
99 + LR IM: ONL VND D K7, M10 152 + OI NDI: ONL INC F I	H16, M14
100 +LR IM ON LV D MII 154 +OZBRNONZITVN H I	H13
101 +GRIMONLVNDI G KI 156 +OZ GOD ONL VND D I	H4
102 +GRIMONLVNDIN H H37, K1 160 +OĐ ĐEN EAR OLVD D	Æ2
103 +GRIMONLVNDIHOII H HX1, K12,M14 161 +OĐ ĐEN CAR OLVD D H	H 6, Æ 1
104 + $GRIIMONLVDI$ + + KM_{22} $rightarrow$ $rightarrow$	
108 +H.VELNONGORI H H16,K5,M22 162 ODD END RON LVD E H	H 22, 26, 46
110 +IL' ONT ATN LVD D \div (Hbg. M 16) 163 +OĐ ĐEN CAR OLV: E H	H 41
112 +ILVEONLVDI:RIST: G K2 164 +OĐ ĐEN LAR OLVD E H	H 22
113 +IL VH EO: NL D M3,4 165 +OĐ ĐEN EAR OIV E	H 22
114 +ILV HON LVD: INI D M4,15 166 +:0ĐENE⊼R'ONL'VD L M	M 8,9
115 +ILVHLONLVNDI I K12, HL1 167 +OĐĐENE⊼RONLVDI∵ H H	H 49
116 +TI VN EON LVD D M3, MX25 168 +ODDENEAROLVD H	Кø
117 +TI VH EON LVD D M3 169 +ODDENEARONLV K	H 21, 32
119 +IN OMI NE DOMI D H 24 170 +ODDENEROLVDENNE K H	H 27
121 ×LE F≶I: ON. ∀D: D M11, MX6,24 174 +0V:ĐENEARLONLV I H	H 45,46
122 +LE FSI ONL VD D MX 21 175 +OV DEN CAR ONL N H	H 20,22,28,29,35, M 8
123 ×LE SI: ON: VD: D MX6 176 +0VĐNCAR'ONLV H I	HL ₂
126 +LE ISTI OHL VD: D MX21 178 +OVDEFTI /// NDI H I	K 4
127 +LE ISTI ON VD: D MX17,21 179 +OVDEFLONIVND-1	H //
128 +LE ISTLONL VDI D MX10,19 182 +SV MER LED ON' M	÷ (Hba H5)
129 +LE ISTI: OHI VDI D MX1,2,19,25 183 +SV MER. LED ONI M	÷ (Hba. H5)

9:4

184	+SV ME RLE DON	D	H2,25,46, M4	210	+ĐOREE (TE)LONLVDI:	к	H 46
185	+ SM ERL EDOI LV4	D	H 28, M 12	211	+ĐOREETLONLVND	I	M 25
		D	Mar	212	+ÐOREETL	Т	÷ (Hbg. H6)
186	TAN WEL RD ONL	U	M 17	213	+ĐORETLONLVND	Т	÷ (Hbg. H13)
187	XIV ME RD: ON	D	M 17	217	+Ð0RSTENONLVDI∵	к	H 46
188	+SV MER LED OLV	D	H 2	218	+ÐVRSTNONLVD	G	K 2
189	+SV: ERL EDO ILVI	D	MX 27	219	×ÐV R≶T N⊙N LVD	Е	M 4
		_		220	+ĐV RST ENO NLV	Е	M4
190	+SV ERL LDO ILVA	D	MX15	221	ÐVR STHI ONL VDI	Ν	M 3,4
190 a		D	MX15	222	+Ð: VR STN ONL	Ν	M 4
^{R-E} 194	+SV EIN ON' LVD	D	MX 13	226	+TO OEI: ONL VDI	D	H 2,28,35,46
195	+SPENONLVDENE: SZ.	н	МХэ	0.07			
196	XĐO REILON LVD	Ρ	H 38	227		D	H 2,28,35
		-	11.0	228	+TO EIO NLV ND	D	M 5, K 11
197	+DVRLILONLVDI*	T	H 43			-	14.0
198	+ÐVREILØNLVDI*	A	H 46, K 1,3	229	+ IO LIO NLV ND	D	M 13
199	+ĐO REIL ONL VDI	D	H 38	231	+TO /// /// NL VDIFELXI	в	H 46
200	+ĐO REE TLOL VND	D	E 1,1a	232	+TO IIL VIII OLV	D	MX 25
201	+ĐO: REE TLO LVD	D	H 38, M 3, E 1,1a,2	233	+TO LIOII LVH DN 유 영	D	MX 32
202	+ĐO RE: ETL' NVI	D	HX2, E1a,2	234	+TO IILV IIIO LIID	D	MX 14
203	+DO REE TLO N.LD	D	Н зв	220		Ŧ	Live Keys
204	+ĐO REE TLO NLV'	D	H 12	238	+VLEFLETLONLVDI	1	H46, K 2,15
		-		239	+VFLFILONLVNDE	н	H 9
205	+ĐO REE LON LVN	D	H 12	240	+VC FIC ONL VND	Ρ	HL1
206	×ĐO: REET LOL∵ VDI	D	К 6	244	+VL FEIL ON LVD	D	H 25,46, M 4
2060	1	D	K 6	245	+VLFEILONLVDINE	к	HL1
207	+D: ORI ETE IILV	D	MX 5, 29	248	+PV LNI DVI: ONI	Ρ	H 15, MX 9A
208	+Ð ORF ETL NVD	D	MX8, 25, 28, 29		+		

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List II

Reverse dies not indicating Lund

301	+ A 11 F: 11 D: VIO	Р	M7 3	336	+MA NAL (FNI GIN	в	H 16
	+ P A È			340		P	M78
302	+ ⁺ V. IIE: HD: A0	Ρ	MX 25	040			MZO
303		ĸ	M 18	342	+NL IIIOI IIIII IITAI	Е	MZ 15
205		D		344	: אֿאַ בוסו אַאַ בוס:	Ρ	MZ 5
305		F	MZ 25	210		-	
307	+EO PIN STOI INL	Р	MZ 14	346	+N VL OID CID.	D	MZ 17
	PAL+			348	+OI LNI IEI: IH.:	D	MX 26,27
309	+DV. NEN OTD: NTO	Р	MZ 14	350	+01 1101 1101 110+	D	MZ 12
311	DEE ENE DEE NNL:	Ε	MZ 7	352	XIOII OIEIO XIIOIX	Ρ	MZ 26
313	+DN: FVDI ИЕІ ҢҮГ	D	HX 2	353	+OS: TIVI DON NOR	Р	MZı
	0 0				+ P X L	20.0	
314	+FI SIO PILI :FL	R	H 47	354	+R: NE NOI HHI	E	MZ 19
316	+ĢO DŖII EŅN LĮNE	Ρ	MZ 18 -	356	+TĽI IIC/// IIIO: IIIII	D	MZ 20
317		П	M7 27	358	+ĐI RNI NT: OH:	D	MX 22
517		U		360	E+11 HVE EVELIFTI	D	H 32, HX 1
319	+א: מאָם סמֿוו אובו	Ρ	MX 9	362		D	
221		ĸ	M7 10	262		D	
321	TIEUTAF: IIIDNISE	n	MZ 10	303	E ENIVODINIE	Р	MZ 4,13, 24
323		Р	MX 32	364	+PV NQA IDV LŅI	Р	MX 24
325	+IIIPTAIIDPAIDOE:	I	MZ 3				
327	+IIL VPNDICOIL II:	G	MZ 6	368	+PVVOGTLVGNINDOI	K	MZ 2
329		B	HX 2	380	+IIVPADHAMDOINE	Н	MX 9
331		P	M7 16	381	+LJNAELAENOCDIVN	I	MX 24
551		1					
333	+ITA DIO: ·IND NAE	Ρ	MZ 21, 22				
22/		-	117		ROSKILDE		
225		1	MZ 27	101		-	
335		Р	MZ 11	401	ALV: DKO: NK O7FI	Р	M Z 27

