

# The Löddeköpinge Investigation III

## The Early Medieval Cemetery

By HAMPUS CINTHIO

### Abstract

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Investigations of an early medieval cemetery with traces of a wooden church, located about 300 metres east of Löddeköpinge Church in the parish of Löddeköpinge, Scania, have been carried out for the past several years. It is estimated that the cemetery had a total of about 2,500 graves, spread over an area of 5000 m<sup>2</sup>. Up to this time 1,300 graves have been excavated and they indicate that the dominant burial custom consisted of placing the body, wrapped in a shroud, into a wooden coffin. Conditions of preservation for wood are very poor, but in spite of this some variations in the construction of the coffins could be observed. In 13 cases the deceased had a coin with him in the grave (in every case the coins were from the 11th century).

Traces of the church consist of a grave-free area bounded by a stone packing which has preliminarily been interpreted as a foundation for a wooden construction. A reconstruction indicates a plan with a chancelled church, 20 m long and 7.5 m wide. Two graves, which have been interpreted as patronus-graves, have been encountered immediately inside the western gable. One of the graves contained a male skeleton and the other a female skeleton in a stone cist.

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### 1. Introduction

In order to fill out the picture, conveyed to us by the historical sources, of the profound social changes that took place in Scandinavia during the transition between the Viking Age and the Early Middle Ages, the archaeological material will have to be increased and analysed. Hereby, the traces of the oldest churches and the Christian graves illuminate the social changes that took place in the Scandinavia of Christianity.

Most of the archaeological excavations – and the largest – particularly in the case of grave material, from that time have been carried out in our oldest towns. In contrast to the towns, the same burial site has often been used continuously up to modern times around the oldest churches in the countryside, the result being that no extensive excavations have been done there.

In the village of Löddeköpinge and within the frame of the Löddeköpinge project,<sup>1</sup> field-

archaeological investigations have been carried out since 1974 on an early medieval burial site, which also contains the traces of a wooden church. The field work is still in progress, and the study of the material is as yet at a preliminary stage. The purpose of the present article is thus merely to present a brief outline of the problems and questions posed by the material. Tom Ohlsson, since 1974 sole and from 1977 with the present author joint director of the investigations, presented in an article in ALE 1977:4 the material such as it was at the time, and much of the information given below will be found there.<sup>2</sup> For the sake of simplicity, reference will not be made to that article in each instance.

On the map, fig. 1, appears the location

*Lunds Universitets Historiska Museum, Lund, p. 59 ff. T. Ohlsson, 1980. The Löddeköpinge Investigation II. The Northern Part of the Village Area. Meddelanden från Lunds Universitets Historiska Museum, Lund, p. 68 ff. (in this vol.).*

<sup>2</sup> T. Ohlsson, 1977. Tidigkristna gravar i Löddeköpinge. *Ale. Historisk tidskrift för Skåneland*, 1977:4, Kristianstad, p. 1 ff.

<sup>1</sup> T. Ohlsson, 1976. The Löddeköpinge Investigation I. The Settlement at Vikhögsvägen. *Meddelanden från*



Fig. 1 The southern part of the village of Löddeköpinge with the excavation locations marked. The Early Medieval cemetery to the right on the map. Compare the map fig. 2 on page 73 of this volume.

of the church and the cemetery, some 300 m east of the present stone church at Löddeköpinge. Note the location of the church outside (east of) the proven early medieval settlement. The area consists of cultivated land. Next to the Löddeköpinge–Kävlinge main road, the country is flat but then slopes slightly towards the south down to the Lödde River. Towards the east, the country slopes down to a channelled brook. Towards the west, there is a slight depression showing the location of a brook-channel, now filled, and to the west of it the country rises up towards the present church. The thickness of the top-soil layer varies between ca 30 and

50 cm, and the subsoil consists of yellow, sterile ice-lake sand.

In 1974, information about finds of old skeletons in the area led to a test excavation. It comprised some 80 graves which, by their orientation, lack of grave gifts and arm postures of the skeletons, could be dated to the Early Middle Ages. The purpose of the following excavation seasons was to determine the size of the burial site and, in proportion to its size, to exhume such a large number of skeletons that the material might justify the need for a thorough osteological and paleodemographical investigation of the population that had dug these graves. Moreover, it

was deemed necessary to obtain a comparatively large grave material in order to be able to determine the types of the coffins and the arm postures and, possibly, other factors that might form the basis of a reliable dating. A very central task, finally, was to establish the presence or absence of a church building adjacent to the graves.

## 2. The Size of the Burial Site

It proved easy to determine the size of the cemetery area since it was possible to document clear boundary-marks. These marks consisted of open ditches between 50 and 100 cm wide and about 50 cm deep. Originally, a wall was probably thrown up on the outside or inside. In the sand, the ditches appeared single, double or treble, in the latter cases with a relative distance of between half a metre and, possibly (in the south-east), up to 3 m. It has not been possible as yet to establish, stratigraphically, whether more than one ditch was open at a time. The orientation is due east-west. The boundaries are clearly established in the south, east, and north (fig. 2). In the west, conditions are more uncertain. Two of the nearest parallel ditches with a relative distance of 10 m have been found in a trench in the north-western part of the field. It seems probable that one or both of these ditches formed the western boundary, but in their southerly extension the area is not accessible for an investigation (because of present land boundaries). If these ditches are, in fact, the boundary to the west, the cemetery would have an area of about 5000 or 5650 sq. m., respectively.

Two stretches of similar ditches with the same orientation inside the above-mentioned outer boundaries would seem to indicate that an originally planned area, after having been used for some time, proved too small and that an extension was necessary. The chronological relations between the different parts of the burial site will, it is hoped, be solved when the relative chronology of the graves is analysed.

The number of graves excavated at present is 1200 on an excavated area of some 2600 sq. m. Considering the assumed density of graves on areas not excavated, the total number of graves would probably be about 2500.

## 3. The Graves

The light sand proved very favourable for the identification of the graves after the top-soil had been removed by machine. The depth of the graves varies much (between 30 and 120 cm from the present ground surface), which may partly be explained by the marked wind erosion that characterizes and, to a still larger extent, characterized the whole of the Löddeköpinge region.<sup>3</sup> Modern agriculture has also contributed to a flattening of earlier differences of level in the land.

The orientation of the graves is east-west throughout with the skull of the skeleton in the west. Deviations from the exact orientation are few and small. The predominant burial custom was for the dead man or woman to be laid, in a shroud and with the arms along the sides, in a rectangular wooden coffin without any grave gifts or pieces of jewellery. There are some deviations from this pattern, but they are quite few. In well over 50 cases the skeletons have another arm posture than the one described above. These cases may be defined as belonging to Redin's groups II, III, and IV; i.e. the forearms have been laid in an angle across the lower part of the pelvis; the hands are placed together (II), the forearms are crossed over the upper part of the pelvis (III), and the forearms are placed over the midriff; the angle of the elbows is 90° (IV).<sup>4</sup>

It should, however, be pointed out that it has not been possible to determine the arm posture in all the 1200 graves excavated. The state of preservation varies very much from graves with completely preserved skeletons to graves that lack all traces of the skeleton apart from a fragment of tooth enamel. Disturbances of the graves are common, too. There is a large number of recent disturbances in the form of pits (often 1×2 m) dug to frost free depth for the winter storage of root-crops, but it is also common for later graves to disturb earlier ones. In the centre of the site are up to three layers of graves on top of each other. Exhumed skeletal parts have then come to be mixed with the filling of the later

<sup>3</sup> J. O. Mattsson, A. Rapp, R. Åhman, 1979. Skånes åkerjord blåser bort. *Forskning och framsteg* 1979:2, Solna, p. 5.

<sup>4</sup> L. Redin, 1976. *Lagmanshejdan. Ett gravfält som spegling av sociala strukturer i Skanör*, Lund, p. 32.



Fig. 2. General plan of the burial site. Key: 1=modern disturbance, 2=the boundary ditch, 3=stone packing, 4=wood coloration? 5=grave, 6=limits of excavation.

grave. Exceptionally, a small grave pit has been dug in which remains of exhumed skeletons have been placed. Evidently, the marks of the individual graves, if any, were so perishable that such disturbances could not be avoided when the most used areas were dug up for later burials. The skeletons are in a better state of preservation than the coffins. As a rule, the wood has left merely a dark colouring of the sand. From coffins with nails or rivets there generally remains so much wood fibre in the ferric oxide as to make a determination of the species of wood possible.

Rectangular and trapezoid deal coffins are predominant in the material. The former type

is the more frequent, fig. 3. The coffins are joined either with wooden plugs or iron nails. In some there are rows of iron rivets, which indicates that the planking of clinker-built boats was used secondarily for the making of coffins, fig. 4. There are some fifteen coffins of an entirely different type. In them the wood colouring marks a sharp short side in the west narrowing into a point in the east, fig. 5. Also vertically, the construction is distinctly narrower at the eastern end. A plausible interpretation would be that the dead man or woman was buried in a boat. If so, the shape of the coffin and the absence of rivets would indicate that a sawn-off log-boat was used which, however, is gainsaid by the fact that the wood colouring



Fig. 3. Coloration from a rectangular wooden coffin.



Fig. 4. Rows of iron rivets, showing that boat planks have been secondarily used for coffin construction.

is not very thick. Another possibility would be that the boat planks had been joined with wooden nails as is the case in the material found on the PK-Bank site in Lund and described by Lundström.<sup>5</sup>

Nails and rivets have been found in several cases where no wood colouring has been observed. Sometimes, however, there are no

<sup>5</sup> S. Lundström, 1976. *Båtdetaljer. Uppgrävt förflutet för PK-banken i Lund*, Malmö 1976, p. 135 ff.

traces whatsoever of a coffin. It is difficult to estimate how many of these cases are due to bad preservation, but it can be established that graves without a coffin do occur. For sometimes a niche has been marked with a stone or two at the west end of the grave; in some rare cases the foot end of the grave has been marked with a stone on a level with the skeleton.

#### 4. Grave Finds

Traces of clothing have been found only in two graves. One is a D-shaped iron buckle found by the hip part of the skeleton, and the other is a fragmentary textile ribbon with strands of silver. The ribbon, which was found by the femur of the skeleton, consists, according to a preliminary analysis, of silk with strands of silver thread entwined with thin silver bands. The breadth of the ribbon is ca 2.5 cm. The strand of silver is woven so that a diagonal pattern is formed and in the intervening rhombic spaces there is a plaited pattern woven into the ribbon, fig. 6. Parallels to this type of textile ribbon are to be found, i.a., in the Birka material.<sup>6</sup> Since no other remains of clothing have been found, ceremementing would seem to have been predominant.

One skeleton was found with a simple, plain bronze ring *in situ*. There are no other ornaments in the material. The oval stone fig. 7, was probably put down loose in the grave or was possibly dropped during the funeral since there is nothing to indicate that it was set when it landed in the grave. The stone, which is a cut crystal and was found in a grave by the right femur of the skeleton, was probably originally set in some lithurgical object.

Silver coins have been found in thirteen graves. Eight of the coins are halved. In most cases, the location in the grave is on a level with the cranium; in some cases down by one of the hands. The coins have been interpreted as Charon coins, occurring very sparsely during the Middle Ages but not quite uncommon during the Late Iron Age.<sup>7</sup> As indicated by Galster and Steen Jensen, analysis has shown that most of the coins were deposited between 1050 and 1100 AD.<sup>8</sup>

#### 5. The Church

In the spring of 1978 it was established that there had been a church building adjacent

<sup>6</sup> A. Geijer, 1938. *Birka III. Die Textilfunde aus den Gräbern*, Uppsala, p. 76 ff.

<sup>7</sup> A.-S. Gräslund, 1967. *Charonsmynt i vikingatida gravar?* *Tor* vol. XI, 1965–66, Uppsala, p. 168 ff.

<sup>8</sup> G. Galster and J. Steen Jensen, 1980. The coins from the Löddeköpinge Cemetery. *Meddelanden från Lunds Universitets Historiska Museum*, Lund, p. 127 (in this vol.).



Fig. 5. Coloration from a boat-shaped coffin.

to the graves. if this had been found earlier, a larger number of graves could have been excavated close to the church. The traces of the church that have been found are not very obvious, so the interpretation of them is very precarious. I should like to point out, too, that important parts of this area still remain to be investigated before the construction can be judged in its entirety.

On the most elevated part of the cemetery, about 20 m to the west of its assumed centre, excavation revealed a stone packing running north-south. When the place was laid bare, the stone packing proved to continue, at right

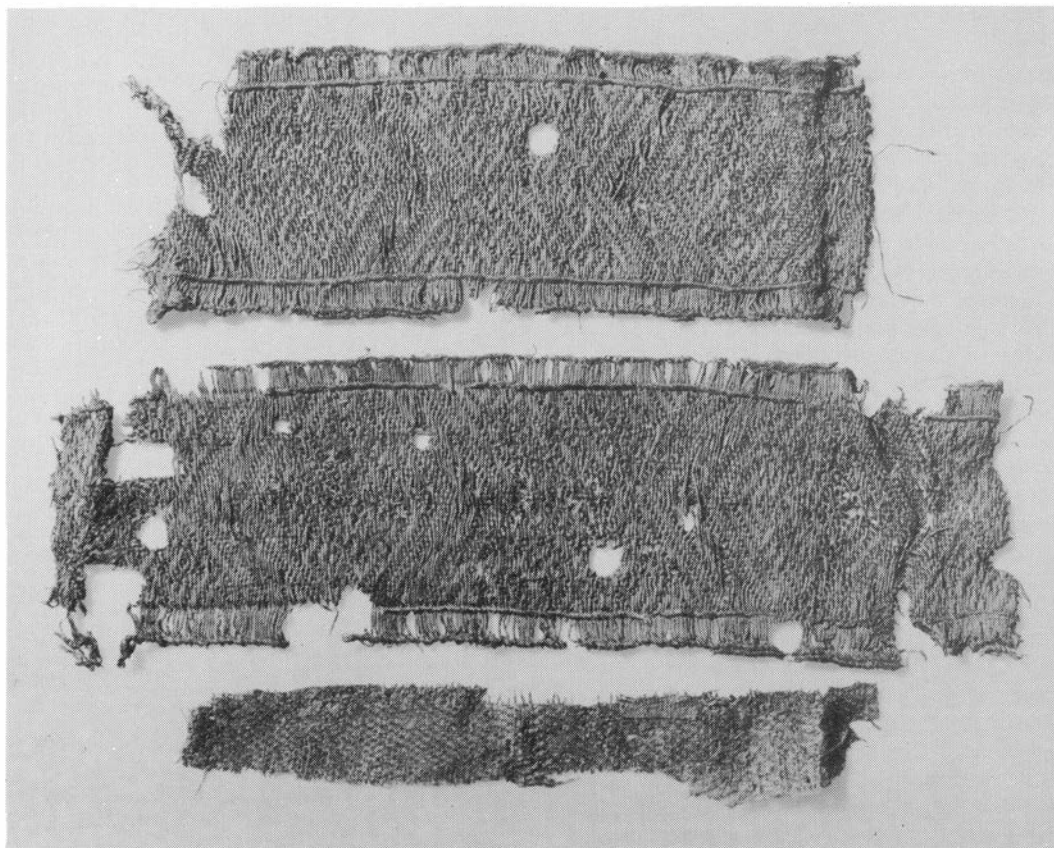


Fig. 6. Textile ribbon of silk with strands of silver thread entwined with thin silver bands. Scale 4:3.

angles, towards the east and, finally, a rectangular figure could be discerned. The packing is heavily damaged at several points. In the south, there are disturbances made by the above-mentioned recent storage pits, and in several places the construction has been damaged by agricultural work. When the first test trench for graves was dug in 1974, parts of the east boundary were also damaged. In the eastern part there are faint indications of a chancel, and a very preliminary reconstruction would produce a plan with a chancelled church, 20 m long and with a nave breadth of 7.5 m, fig. 8.

The stone packing is ca 60–100 cm broad and is situated immediately below the top-soil. The height does not exceed half a metre. The blocks are erratics consisting of flint and of the local Archaic bedrock, their size being approximately between 10 and 40 cm in dia-

meter. The packing is situated in a dug trough, in most places discernible, and at several points there are, in this trough, diffuse colourings which may emanate from wood. Close to the assumed chancel in the south there is a collection of lime mortar, possibly emanating from the fundament of a side altar.

It is quite evident that the walls were made of wood. The stone packing with its small block sizes and depth could not have served as a foundation for masonry walls. With the exception of the above-mentioned collection and a grave, described below, lime mortar has not been found, nor any other building material such as daub or bricks.

The only wall construction we know from old medieval wooden churches is the stave construction with upstanding wall timber, the staves of which are either dug into the ground

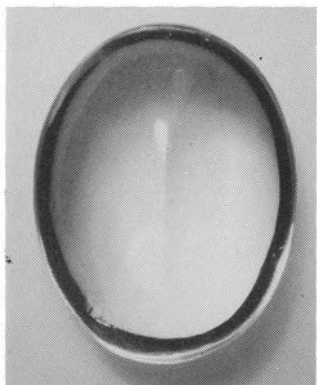


Fig. 7. Polished cut crystal. Scale 3:2.

or placed on a wooden sill which, in its turn, most often rests on a stone packing. Hauglid also observes a transitional form between these two constructions, namely the sill dug into the ground, such as it occurs in the west gable of Hammarlunda II.<sup>9</sup>

<sup>9</sup> R. Hauglid 1976. *Norske stavkirker*, Oslo, p. 170. E. Gustafsson and M. Weidhagen, 1968. Investigations in Hammarlunda Church. *Res Mediaevalis*, Karlshamn, p. 164.

A construction with staves entirely dug into the ground, as we know them from Lund and from several Danish excavations, would in all probability have left traces of quite another character than those found at Löddeköpinge. The depth of the stone packing and the traces of it, interpreted as wood colourings, might, however, emanate from a construction of the above-mentioned transitional type, in which the stone packing would have served as a foundation and drainage for a wooden sill.

Inner post supports or post-holes after inner roof-supporting posts have not been found as yet. However, those parts where such traces would have had the best possibilities of being preserved still remain to be investigated.

In the westernmost part of the church, graves have been found under and inside the wall construction. I shall revert to two of these graves below. The others must be older than the construction, which should thus have been extended towards the west since no graves have been found in the hitherto investigated remaining parts of the church. Interments inside a church did not occur, except in rare cases, during the Early Middle Ages. Three



Fig. 8. The stone packing indicates the outline of a chancelled church. In the middle of the inside of the west gable both patronus-graves. Outside the west part 4 large, stone-lined post-holes.



Fig. 9. The stone cist during excavation, looking south.

stout, stone-lined post-holes – one of which cuts through an older grave – were found outside the west gable, fig. 8. In terms of construction they may have a connection with the extended western part of the church. However, before a larger area has been laid bare and more post-holes may have been found, no definite interpretation of their function can be made. They seem, however, not to be part of a bell-tower construction of the type we know from Lund and Hørning.<sup>10</sup>

## 6. The Patronus Graves

Two of the graves inside the west gable can, in view of their construction and stratigraphy, be distinguished from the rest of the material. They are both located with their west end in the stone packing of the west gable without having been damaged by it. Consequently, they must have been constructed inside the west part of the church. They seem – subject to the uncertainty of the exact distance between the north and the south wall – to be

located on either side of and quite close to the central axis of the church.

The northern grave consisted of a carefully built stone cist. Three stout granite blocks, in parts joined together with lime mortar, covered a slightly trapezoid cist of sandstone slabs set on edge figs. 9, 10. The osteological analysis of the skeleton shows that it belongs to a female with a probable age of life of 30–40 years.<sup>11</sup> The rectangular stone-setting of granite blocks in the southern grave turned out not to be a stone cist but only a grave marking, probably visible in the floor level that is now removed by cultivation. 90 cm under the stone-setting were found wood colourings and nails from a rectangular coffin containing a badly preserved skeleton. According to the osteological examination the skeleton belongs to a male with an age of life of 55–65 years and a living stature of ca 179 cm.<sup>12</sup> Stratigraphically, the southern grave could be proved to be older than the northern one.

The resemblances between these two graves and patronus graves in the towers of some

<sup>10</sup> A. W. Mårtensson, 1976. *Gravar och kyrkor. Uppgrävt förflutet för PK-banken i Lund*, Malmö 1976, fig. 94. K. J. Krogh, O. Voss, 1961. *Fra hedenskab til kristendom i Hørning. Nationalmuseets Arbejdsmark 1961*, Odense, p. 20.

<sup>11</sup> O. Persson, 1980. The Patronus-graves from Löddeköpinge. *Meddelanden från Lunds Universitets Historiska Museum*, Lund, p. 124 (in this vol.).

<sup>12</sup> Persson. *Op.cit.*, p. 124.

early stone churches in Denmark and Scania, such as Asmild,<sup>13</sup> Hammarlunda,<sup>14</sup> Tryde,<sup>15</sup> and Maglarp<sup>16</sup> are striking. Since other graves were not laid inside the churches during the Early Middle Ages, the Löddeköpinge graves must also be regarded as patronus graves. The extension of the west part of the church may possibly be linked to the laying down of the older of these two graves and, if so, this should be compared with the special construction of the west towers of the stone-built patronus churches.

In addition to the stone cist of the northern grave, there are in the whole material only two graves with stone cists; both were children's graves. One of them was built of sandstone slabs with a cut-out head niche and was located immediately outside the south wall of the church, see fig. 8. The investigation of this grave is not yet completed. The other contained only two small skeletal fragments; judging from the size of the cist, the skeleton was that of an infant. The cist consisted of a simple construction of flint blocks and was situated ca six m north of the north wall of the church. It seems plausible to assume a connection between these two graves and the patronus graves but this can probably not be proved.

## 7. Dating Facts

For a dating of the collected material, a large number of factors must be considered and weighed against each other.

In order to estimate the age and time of deposition of the graves analyses must be made of arm postures and forms of coffins and cists. It is here possible to make comparisons with the material from Lagmanshejdan at Skanör,<sup>17</sup> with grave excavations in recent years in Lund,<sup>18</sup> and with the two



Fig. 10. The opened stone cist with the cleaned female skeleton.

collections from Helsingborg St. Petri<sup>19</sup> and St. Clemens.<sup>20</sup> Generally, it may be said even now that, with its varying types of coffins or cists and quite uniformly straight arm postures, the Löddeköpinge material gives the impression of being early.

The coin graves, as also the graves with a deviating arm posture, seem to be concentrated to certain areas of the cemetery, and interpretations of these factors as also, possibly, the distribution of the coffins, are

<sup>19</sup> R. Holmberg. *Redogörelse för undersökningarna 1962–63 av S:t Petri kyrka och kyrkogård i Helsingborg*. Excavation report at Lunds universitets historiska museum. Unpublished.

<sup>20</sup> M. Weidhagen-Hallerdt, 1972. *S:t Clemens kyrka och kyrkogård i Helsingborg*. Unpublished academic thesis, Lunds Universitets Historiska Museum, p. 22 ff.

<sup>13</sup> J. Vellev 1978. *Stifterinden*. *Skalk* 1978:6, Aarhus, pp. 14–15.

<sup>14</sup> Gustafsson and Weidhagen. *Op.cit.*, pp. 157–159.

<sup>15</sup> J. Balslev Jørgensen, T. Eriksson, 1974. *Stormän i Tryde*. *Ale. Historisk tidskrift för Skåneland*, 1973:3, Kristianstad, p. 1 ff.

<sup>16</sup> E. Gustafsson, 1971. *Rapport från Maglarp*. *Ale. Historisk tidskrift för Skåneland*, 1971:1, Kristianstad, p. 37.

<sup>17</sup> Redin. *Op.cit.*

<sup>18</sup> R. Blomqvist, A. W. Mårtensson, 1963. *Thulegravningen 1961*, Lund, p. 43 ff. Mårtensson. *Op.cit.*, p. 87 ff.

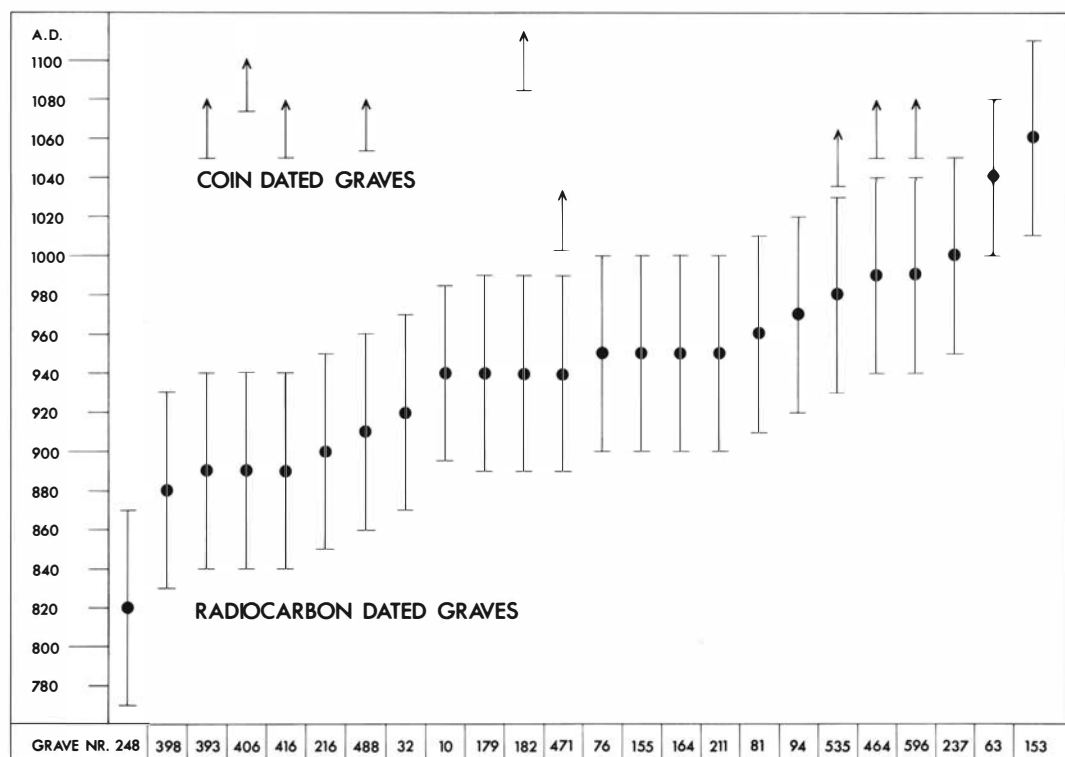


Fig. 11. Table of the coin-dated and/or C-14 dated graves.

important for the relative chronology within the burial site.

Twenty-four C-14 datings have been made of the skeletal material, and of these nine samples have been taken from coin-dated graves. As appears from the table, fig. 11, the C-14 age of the graves is in most cases clearly too high, and, unfortunately, the error does not seem to be constant. That there are problems with C-14 datings of 11th century material has been evident also in other materials,<sup>21</sup> and the general uncertainty of the method makes it too rough an instrument in this context.

Hammarlunda II, the construction of which has been mentioned, in comparison to the wooden church of Löddeköpinge, has been dated not older than 1074.<sup>22</sup> From this year no dating is, of course, possible, but if the construction is interpreted correctly, it

cannot be included in the seemingly oldest group, i.e. the stave churches entirely dug into the ground.

The stone cist inside the west gable gives in itself an impression of being late. The building of stone cists must be linked to the use of stone in masonry building structures generally, and in Löddeköpinge we have then the existing stone church as the oldest example of this technique. The oldest parts of the stone church, which is published by Anita Liepe in *Sveriges Kyrkor* (The Churches of Sweden), are dated to the Romanesque period,<sup>23</sup> which, in this case, would mean well on into the 12th century.

The general impression conveyed by the graves indicates, like the latest coins, that a final dating of the grave material may well correspond to the time when the stone cist was built. If so, the stone church, too, may at least in theory be assumed to have succeeded the wooden church as a funeral church.

<sup>21</sup> Mårtensson. *Op.cit.*, pp. 90–91. H. Graebe, E. Roesdahl, 1977. *Kirken ved Aggersborg. Nationalmuseets Arbejdsmark* 1977, Odense, pp. 18–19.

<sup>22</sup> Gustafsson and Weidhagen. *Op.cit.*, p. 165.

<sup>23</sup> A. Liepe, R. Edenheim, 1972. *Löddeköpinge och Hög. Sveriges Kyrkor*, vol. 148, Stockholm, p. 162.

## 8. A Summary of Problems and Aims

### The Wooden Church and its Relation to the Stone Church

If the stone church, when completed, took over the role as a funeral church, the wooden church should have been pulled down and abandoned at the same time. If so, an important question arises. Were there, at the same time, two churches in Löddeköpinge in the 11th century or was the older (wooden) church succeeded by another one 300 m from the original one? Whether the stone church had a predecessor at the same place can only be established by possible future investigations of the church floor. If that proves to be the case, the two simultaneously existing churches should have had different functions/statuses; let us say a royal patronage church and a parish church with a common cemetery. There are no historical proofs that there was a royal patronage church in Löddeköpinge, but it should be mentioned that stout foundation-walls are found south and west of the stone church when graves are excavated.

The second alternative would entail other questions. Why was the first church peripherally located in relation to the rest of the settlement? Could it be that in this originally Viking Age trading community the obvious building activity of the mission was assigned to a place outside the established village? In the early Danish town structures – in contrast to the case described above – the founding of the town and its oldest church was generally made at the same time and on the initiative of the same central power. That the new stone church is then built in a central place in the village might be regarded as a manifestation of the final realization of the mission even if the cramped cemetery was an additional reason for a new localization. Those are some of the questions that the material even now gives rise to, and they might, it is hoped, aid in our understanding of the social transformation con-

veyed by the terms “the transition between the Viking Age and the Early Middle Ages” and “Heathendom – Christianity”.

### The Skeleton Material and the Osteological Work

As was indicated above, an attempt to determine a relative chronology of the various parts of the cemetery must be made. If this should show that graves were dug there prior to the building of the church (which, in itself, would be an interesting result), the deposition time of the skeletal material may be some 150 years; otherwise perhaps only ca 100 years.

The size of the skeletal material in relation to the comparatively short deposition time gives the osteological part of the study a particularly great value as a basis for a demographical analysis of the early medieval Löddeköpinge community. First and foremost, a determination of sex, age and stature should be made of as many specimens as possible.<sup>24</sup> These results, together with observations of the general state of the skeletons are important, too, for the purely archaeological working up and interpretation of the cemetery and, not least, for the simultaneously made analysis of the settlement material.<sup>25</sup> It might also be possible to use the skeletal material to illuminate questions pertaining to the ethnic composition of the population. Finally, it should also be mentioned that a special osteological study of the abrasion of the maxillary joint in the material is in progress.<sup>26</sup>

<sup>24</sup> The osteological determinations are made by Ove Persson.

<sup>25</sup> Ohlsson, 1976. *Op.cit.*, p. 59 ff. Ohlsson, 1980. *Op.cit.*, p. 68 ff.

<sup>26</sup> This investigation is undertaken by Lars-Eric Bergman. L.-E. Bergman and T. Hansson, 1979. Hard tissue changes of the temporomandibular joint in an archaeo-osteological material from the 11th century. In *Swedish Dental Journal*, 1979:3, Jönköping, p. 149 ff.

# Appendix I

## The Coins from the Löddeköpinge Cemetery

By GEORG GALSTER and JØRGEN STEEN JENSEN

Nationalmuseet, Den kongelige Mønt- og Medaillesamling, DK-1220 Copenhagen K, Denmark.

In November 1979, the coins were submitted to us for determination, and we have compiled the following catalogue (the legends will be found in fig. 2).

*Sven Estridsen (1047–74)*

*Lund*

1. Obverse Christ enthroned. Reverse decorated cross with rhombic arms, runic legend. Hauberg 31.<sup>1</sup> The coin halved, 0,32 g. Grave 1200. The fragmentarily runic legend can be interpreted only in parts, but the following letters can be read with a fair degree of certainty: “biarn . .it”. The coin would not seem to be included in Moltke’s big catalogue.<sup>2</sup> It would be tempting to read the last “t” as the beginning of Tumatorp, a Scanian mint known from Sven Estridsen, though not from this series. The fragmentary character of the coin would, however, hardly permit this. It has been suggested that the name may be a corrupted Othbiorn, cf. Moltke no. 230–33 and 330–31.

2. Obverse Christ enthroned, reverse cross with crescents in the cross angles, retrograde legend. Hauberg 32, 0,79 g. Grave 464. The legend on the reverse may possibly read “Ansor” or perhaps rather the well-known moneyer “Atsor”, but the continuation does not make any sense.

3. Same type, 0,58 g. Grave 1020. Moneyer Segrin.

<sup>1</sup> P. Hauberg, 1900. *Myntforhold og Udmyntninger i Danmark indtil 1146*. Det kgl. Danske Videnskabernes Selskabs Skrifter, 6. række, historisk og filosofisk Afdeling V, 1.

<sup>2</sup> Erik Moltke, 1950. *De danske runemønter og deres prægere*. *Nordisk Numismatisk Årsskrift*, pp. 1–56, in particular pp. 19–28.

4. Same type, halved. 0,50 g. Grave 596, in the right hand of the corpse. Moneyer Svafa.

5. Same type, halved. 0,46 g. Grave 393. The name of the moneyer not visible.

*Odense*

6. Obverse portrait of a king, imitation of Anglo-Saxon type, reverse cross moline with pellets in the cross angles. Hauberg 53, halved. 0,43 g. Grave 416. Obverse and reverse die-identical with the coin reproduced by Hauberg and which is now in the Royal Collection of Coins and Medals (Ramus & Devegge no. 59).<sup>3</sup>

*Harald Hen (1074–80). Lund*

7. Obverse holy bishop, reverse jewel cross. Hauberg 1, halved. 0,49 g. Grave 406. Moneyer’s name begins with an O, but such a name was not known by Hauberg. It might be Odbiorn.

*Oluf Hunger (1086–95). Lund*

8. Obverse crowned king, facing right, reverse cross, from each angle of which projects a trefoil. Hauberg 3, halved. 0,43 g. The moneyer’s name cut off. Grave 182, by the left arm of the corpse.

*Imitation of English Coin from Edward Confessor*

9. Obverse portrait of a king with scepter, reverse cross of the type “expanding cross”,

<sup>3</sup> C. Rasmus og O. Devegges unfinished corpus of Danish medieval coins (1820–32). In 1867 some specimens were sent to a number of large libraries.

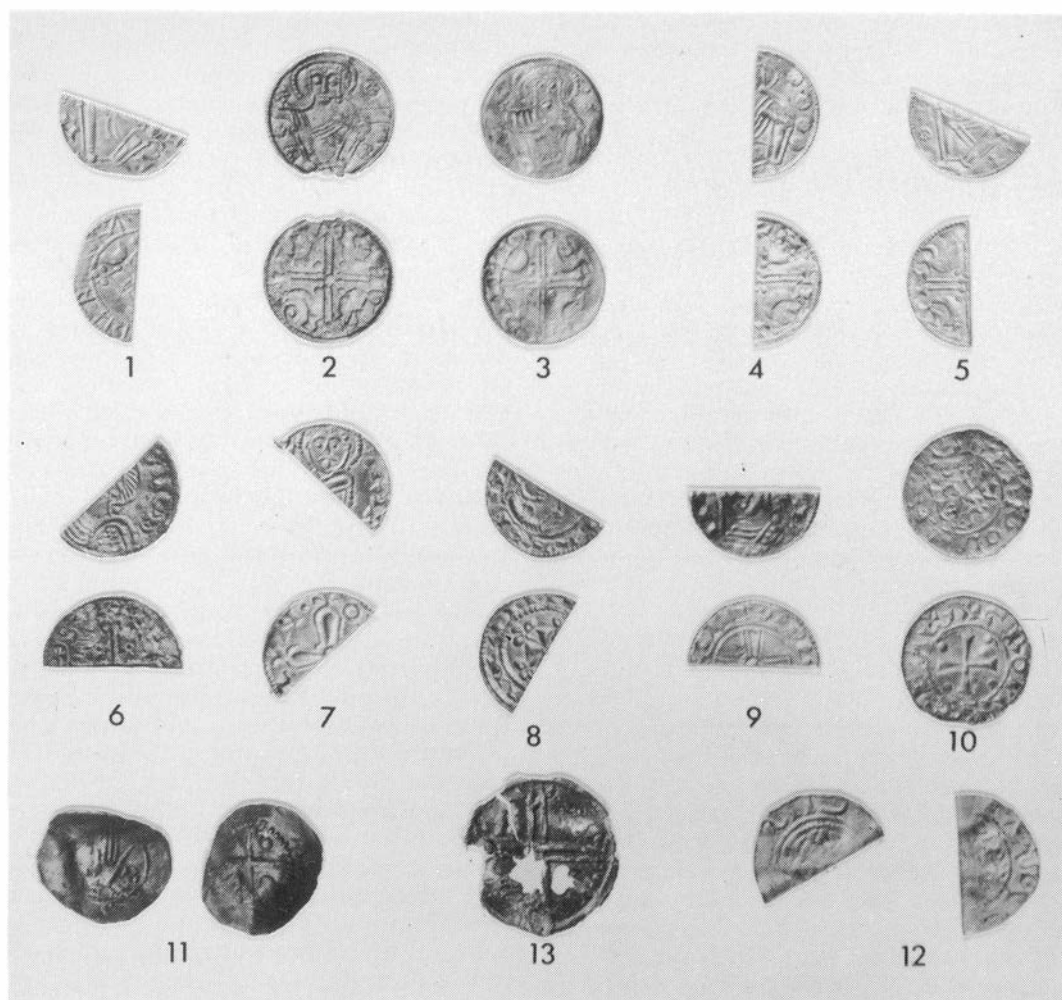


Fig. 1. The coins, scale 1:1.

sub-group "light coinage, North-Eastern varieties" (North 821).<sup>4</sup> Halved, 0,50 g. Grave 488. The prototype (from Lincoln) is dated to 1050–51, the imitation may be contemporary or later. The coin is die-identical with a coin in the Royal Collection of Coins and Medals (Sylloge 1292),<sup>5</sup> which emanates from Chr. Jürgensen Thomsen's collection (9525).

<sup>4</sup> J. J. North, 1963. *English Hammered coinage*, I, London. Hildebrand type E var.

<sup>5</sup> Sylloge 1972. *Sylloge of Coins of the British Isles*, 18. Royal Collection of Coins and Medals National Museum Copenhagen. Part IV Anglo-Saxon Coins from Harold I and Anglo-Norman by Georg Galster, London.

*Groningen, Bishop Bernoldus (1027–54)*

10. Obverse a bishop's crosier (the motif is explained by the legend "Baculus", Latin for staff), reverse cross with a pellet in each angle. Dannenberg 559a.<sup>6</sup> Weight 0,51 g. Grave 989.

*Deventer. Henry II (1002–24)*

11. Obverse hand, obviously the king's, which on better preserved coins bears the

<sup>6</sup> Hermann Dannenberg, 1876. *Die deutschen Münzen der sächsischen und fränkischen Kaiserzeit*, I, Berlin.

clear word "Rex" and the legend "Henricus Imperat", reverse with the place-name "Davantria", Dannenberg 563. The coin is bent and diffuse. Weight 0,68 g. Grave 471.

*Magdeburg (possibly Halberstadt?)*

12. Halved German coin from the 11th century. Weight 0,59 g. Grave 535. Obverse would seem to have fragments of a crowned head in a central field, framed by a double circle, the motif of the reverse undetermined. Cf. Dannenberg 647 ff. The great size of the planchet and the double circle around the obverse motif indicates Magdeburg, possibly Halberstadt, but the legend seems to be blundered. A possible dating might be 1035–60. Cf. Gert Hatz's dating of Magdeburg coins from the Snovald hoard (Hatz find no. 343,<sup>7</sup> Corpus 1,6,551 ff.<sup>8</sup>).

*Ornament Bracteate*

13. Stamped on one side only, cross with three crescents by each cross arm. Imitation of Æthelræd II's long-cross type (997–1003) and Edward the Confessor's "Pointed helmet" type (1053–56), where, however there is a circle in the middle which would seem to be missing here (the coin is much corroded). Weight 0,41 g. Grave 921. The diameter is 21 mm and, thus, somewhat larger than the central field (17 mm) of a corresponding coin (with a central circle), which bears the legend VLFKILLVDAN. This ornament bracteate was found at the investigations of the National Museum in 1923 of a waste-pit by a cemetery from the Viking Age and the Early Middle Ages at Vejleby on Lolland. It was later described in detail<sup>9</sup> and dated to the times of Canute the Saint. A related motif occurs on one side of a two-sided pendant, which was found at Roskilde in 1949 but whose legend GO HI HI LV ascribes it to Lund. It was dated to ca 1100.

<sup>7</sup> Gert Hatz, 1974. *Handel und Verkehr zwischen dem deutschen Reich und Schweden in der späten Wikingerzeit*, Stockholm.

<sup>8</sup> Corpus 1975. *Corpus Nummorum Saeculorum IX–XI qui in Suecia reperti sunt*, I, Gotland, A. Stockholm.

<sup>9</sup> Georg Galster, 1950. Nogle middelalderlige hængesmykker, *Fra Nationalmuseets Arbejdsmark*, pp. 43–48.

When discussing the dating of our coins, it seems reasonable to begin with the well-known Löddeköpinge hoard found in 1865 and containing 408 Danish and 19 German coins. This find was published by B. E. Hildebrand in 1884.<sup>10</sup> Its latest coins were from the times of Harald Hen and the deposit of the hoard may be dated within the reign of that king, i.e. 1074–80. In particular, there were many coins of Hauberg types 32 and 32a, 84 and 50 specimens, respectively, but the Harald Hen type 1 was represented by 57 specimens. Unfortunately, the editor does not tell us how the so-called "die-duplicates" (=die-identical coins?) are distributed beyond the fact they are particularly numerous among the Harald Hen coins. Based on this find, we may undoubtedly conclude that Svend Estridsen's type Hauberg no. 32 lies in time just before Harald Hen's type 1, i.e. that it dates from the 1070's.

Our coin 4 is to be found in the hoard as nos. 71–72. while our no. 3 may be compared to no. 65 of the hoard, here in the form of Sigrin. Besides, the Löddeköpinge hoard has later been mentioned several times in the literature, thus, for instance, by Hauberg (no. 159), Gert Hatz (no. 298), and Birgitta Hårdh (find 98).<sup>11</sup>

The oldest of the Danish coins is no. 6, which is probably from the middle of the 11th century since it is known from the finds from Hågerup, Kirke-Værløse and Næsbyholm, of which the first and the last, in any case, were deposited during the 1050's, whereas the middle hoard is possibly somewhat later.

As to the foreign coins (10–12), it is generally assumed that they ceased to circulate in Denmark at the end of Svend Estridsen's reign, i.e. from ca 1065–70.<sup>12</sup> One would like to think that the coins were deposited prior to that time, but it is difficult to say anything definite about the date of deposit of stray coins.

<sup>10</sup> B. E. Hildebrand, 1884. *Två fynd af danska mynt från 11:e århundradet*, *Kungl. Vitterhets Historie och Antiquitets Akademiens Månadsblad*, pp. 136–162.

<sup>11</sup> Birgitta Hårdh, 1976. *Wikingerzeitliche Depotfunde aus Südschweden. Probleme und Analysen*. Acta Archaeologica Lundensia, Series in 4°, No. 9.

<sup>12</sup> Lars Haastrup, 1969. Oversigt over kompositionen af danske skattefund ca. 800–ca. 1150, *Nordisk Numismatisk Unions Medlemsblad*, pp. 129–132. Birgitta Hårdh, 1978. Trade and Money in Scandinavia in the Viking Age. *Meddelanden från Lunds universitets historiska Museum 1977–78*, p. 169.

On the basis of what has been said above, a dating of the use of the cemetery to the period ca 1050–1100 would seem reasonable.

The coins have been deposited along with the dead as Charon's coins. In most cases, they lay on a level with the skull, occasionally by one hand. But only a limited number of dead has been given such a coin for use in the next world, about 1 %. They were found by 13 corpses in all out of a material of 1200 burials and, besides, 2/3 of the coins, or eight, were halved. If this is a typical proportion, it is not strange that the phenomenon is not much known from other parts of Denmark at this period. Thus, we are given quite an important complement to Anne-Sofie Gräslund's material, in which the absence of Charon's coins in Denmark and Scania was characteristic.

No systematic investigation has ever been undertaken in Denmark, and it may be taken for granted that, among the many hoards that are known in the Royal Collection of Coins and Medals, there are instances where a dead person has simply been given his worldly fortune. But those – comparatively few – that are known have, of course, been the rare exceptions. In the short time at our disposal it has not been possible to make a detailed investigation, but it is our impression that these cases were not known until the latter part of the middle Ages.

From the excavations in Vordingborg Castle Church about the turn of the century some medieval coins may reasonably be considered as Charon's coins but here, too, the oldest coins are later than the Löddeköpinge coins.<sup>13</sup> It may possibly be difficult, on the basis of the old excavation reports, to obtain proof positive that it was really Charon's coins that were found in Vordingborg and not "ordinary" church floor coins.

<sup>13</sup> Anne-Sofie Gräslund, 1965–66. *Charonsmynt i vikingatida gravar? Tor. Meddelanden från Institutionen för nordisk fornkunskap vid Uppsala Universitet*, vol. IX, 1967, pp. 168–197. Occasional specimens are known from Norway, see Kolbjørn Skaare, 1978. *Mynt i Norge*, pp. 116–118.

<sup>14</sup> Nationalmuseet. Den Kgl. Mønt- og Medaillesamlings fundprotokol no. 763 b.

- 1  $\text{b} \text{I} \text{X} \text{R} \text{I} \text{A} \text{X} : \text{A} \dots$
- 2  $+ \text{I} \text{A} \text{E} \text{O} \text{N} : \text{R} \text{O} \text{M} \text{A}$
- 3  $+ \text{SEGRIM ON LV}$
- 4  $+ \text{SVAFA} : \text{I} \dots$
- 5  $\dots \text{LVNDI}$
- 6  $\dots \text{ONOD} / + \text{ALF} \dots \text{DSVI}$
- 7  $\text{HAR} \dots / + \text{O} \dots \text{LVN} \dots$
- 8  $\dots \text{FREXDA} / \dots \text{ILVW} +$
- 9  $[+D] \text{DTIIC} [\text{IIT} +] / + \text{LEII} [\text{VLICOLII}] [\text{IOIII}]$
- 10  $+ \text{ERNOU} \dots \text{BACVLVS} / + \text{GRON} \dots \text{GET} \text{X}$
- 11  $\dots \text{N} \dots \text{S} / \dots \text{A} \dots \text{A} \dots$
- 12  $\dots \sim \text{II} \text{D} \dots / \dots \text{T} \text{UO} \text{I} \dots$

Fig. 2. The legends on the coins.

A very clear example of a Charon's coin is the ornament bracteate which was found in the hand of a male skeleton buried in the church of St. Jørgen's hospital in Åderup near Næstved. The piece is an imitation of an English short-cross Sterling and it may reasonably be dated to 1200–1250.<sup>15</sup> In the same area was found the oldest recorded specimen of a Charon's coin found *in situ*. It is a silver coin, probably a Roman Imperial denarius, found in a human cranium.<sup>16</sup>

It appears from what has been said above that a systematic investigation of the Danish material would be profitable. But here, ethnological material should, of course, also be taken into consideration.

<sup>15</sup> Nationalmuseet, Den kgl. Mønt- og Medaillesamlings fundprotokol no. 2919. The coin found in 1966 at Professor Vilh. Møller Christensen's excavation.

<sup>16</sup> Georg Galster, 1935. *Møntfundet fra Lille Næstved (før) 1689 i Møntfund fra Danmark og Norge før aar 1700, Numismatisk Forenings Medlemsblad*, vol. XIV, p. 309.

# Appendix II

## The Patronus-graves from Löddeköpinge

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### 1. Skeleton from the Southern Patronus-grave

An almost complete human skeleton, but post-mortally severely demineralized and partly deformed by the pressure of the superimposed masses of earth.

Sex: All observable sex characteristics indicate ♂.

Probable life age: 55–65 years of age (estimation mainly based on the closure of the cranial sutures).

Stature: Without correction for age 179.75 cm, with correction for age 178.25 cm (estimation according to Trotter & Gleser, on the basis of humerus dx, radius dx, femur sin, and tibia dx. See table 2).<sup>1</sup>

### 2. The Cranium

The state of preservation is such that only a few absolute measurements could be made (table 1). Estimated measurements and indices based on them are italicized.

Table 1.

Maximum skull length	177.0 mm
„— breadth	136.0 „
Minimum forehead breadth	96.1 „
Maximum „—	118.5 „
Upper facial height	67.0 „
Zygomatic arch breadth	132.7 „

BL-index 76.8: Mesocranium (moderately dolichocephalous)  
Transversal frontal index 81.0: Sphaero-parallelo-metopic.  
„ fronto-parietal index 70.7: Eurymetopic  
Upper facial index 50.5: Mesen.

<sup>1</sup> Trotter, M. & Gleser, G., 1958. A Revaluation of Estimation of Stature based on Measurements of Stature taken during Life and of Long Bones after Death. — *Am. Journ. Phys. Anthr.* Vol. 16 No 1.

### 3. Summary

The man was considerably above medieval Scandinavian medium height, which was, for men, usually about 170 cm. In a material from the 11th and 12th centuries from Lund the figure is 171.2 cm.<sup>2</sup> The extremities are very robust and with unusually strongly marked muscular attachments. The man had a fairly broad, somewhat backward-sloping forehead, a moderately long face, and a narrow, straight nose ridge. No pathological or traumatical changes were observed in the skeleton.

### 4. Skeleton from the Northern Patronus-grave<sup>3</sup>

Most of the skeleton is in a fairly good state of preservation. All observable sex characteristics indicate ♀.

Life age: Only in a short section of sutura sagittalis, and in the lateral parts of s. coronalis is the closure complete (i.e. it has reached tabula externa). Consequently, the cranial sutures indicate a life age of 30–40 years of age. However, the severe abrasion of the teeth suggests a higher age. Besides, the state of the teeth is poor. All the teeth of the lower mandible with the exception of *one*

Table 2. The Long Bones

Humerus dx	351 mm
Radius dx	266 „
Femur sin	500 „
Tibia dx	411 „

<sup>2</sup> Persson, P. O., 1976. Undersökning av människo-skelett. *Uppgrävt förflutet för PK-banken i Lund*, pp. 171–174. Malmö.

<sup>3</sup> This skeleton has been mentioned in Bergman, L.-E., 1979. Skeletten i Löddeköpingses vikingagravar. *Observanda Medica Ferrosan*, vol. 6, pp. 80–81.



Fig. 1. Photograph of the female skull. Observe the depressions in the os frontale and the os parietale.

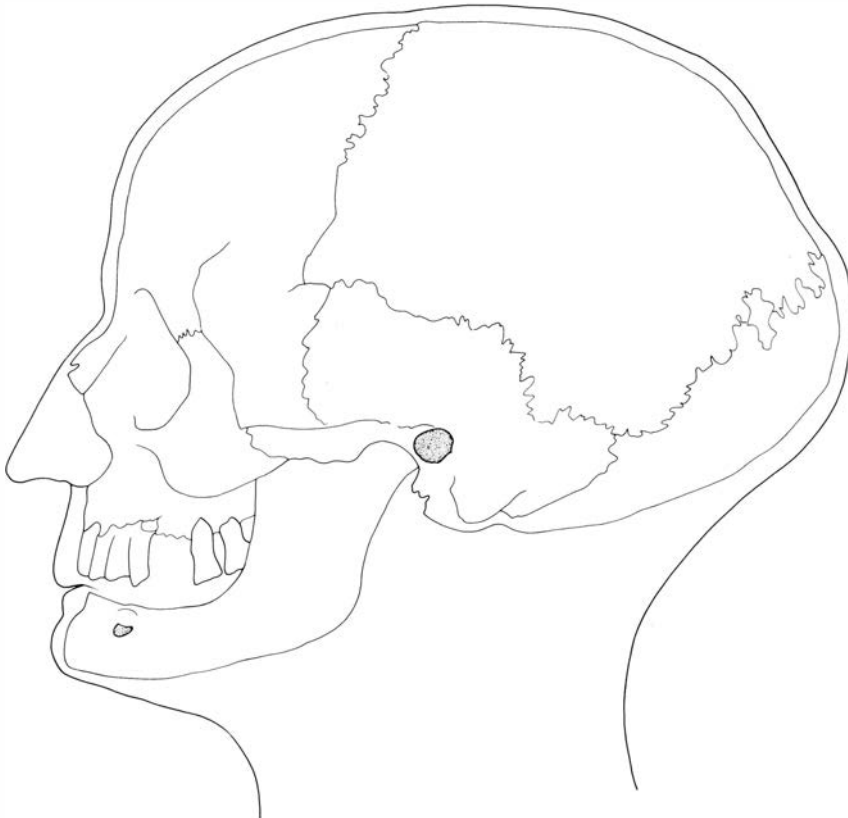


Fig. 2. Reconstruction of the woman's profile.

Table 3.

Maximum length	188.5 mm
Nasion-basion length	99.0 "
Maximum skull breadth	132.5 "
Minimum forehead breadth	95.4 "
Maximum ,—	113.7 "
Basion-bregma height	125.8 "
Basion-prosthion length	94.0 "
Foramen magnum breadth	27.4 "
,— length	34.2 "
Upper facial breadth	102.0 "
,— height	60.4 "
Zygomatic arch breadth	122.0 "
Orbital breadth, dx	39.2 "
,— height, dx	36.6 "
Nasal breadth	22.0 "
,— height	48.0 "
Maximum skull circumference (ho circ)	52 cm
Cranical capacity (brain-case volume)	1302 cc

BL-index 70.3: Dolichocranium (dolichocephalous)

HL-index 66.7: Chamaecranium (brain-case low in relation to length)

HB-index 94.9: Metriocranium (brain-case moderately high in relation to breadth)

Transversal frontal index 83.9: Sphaero-parallelo-metopic

Transversal fronto-parietal index 72.0: Eurymetopic (broad forehead)

Foramen magnum index 80.1

Upper facial index 49.5: Euryenic (low upper face)

Orbital index 93.4: Hypsiconchous (high orbit)

Nasal index 45.8: Leptorrhinc (narrow nose)

Facial angle  $76^{\circ}.5$  (Orthognathous)

Angulus mandibulae dx  $127^{\circ}$  sin  $129^{\circ}$ .

(5—?, severely abraded) were lost *intra vitam*. Besides, the lower mandible is partly atrophied in a way that indicates that most of the teeth were lost long before death.

## 5. The Cranium

Measurements and indices and angles based on them appear from table 3.

## 6. The post-cranial skeleton

All the long bones were in such a condition that they could be measured (table 4), and on the basis of these measurements the stature could be estimated according to Trotter & Gleser.<sup>4</sup>

The stature is 158.2 cm, which is within the frame of the medium height of women

Table 4. Measurements of the Long Bones.

	Dx	Sin
Humerus	306 mm	302 mm
Radius	228 "	228 "
Ulna	255 "	249 "
Femur	410 "	406 "
Tibia	333 "	335 "
Fibula	323 "	323 "

during Early Scandinavian Medieval Times.<sup>5</sup>

The skeleton is of gracile build and *cristae et facies musculares* are fairly slenderly developed.

Distinct osteophytes occur in several vertebral bodies, especially in the lumbar region. The osteophytes are larger than is usually the case in individuals of the age group in which the woman was placed, on the basis of the sutural state (see above).

Characteristic changes in the pubic region show that the woman had given birth to at least one child.

## 7. Summary

The woman's brain-case is very elongated, next to hyperdolichocranium, and she had a strongly protruding occipital part. There is, however, nothing to indicate that the head had been artificially deformed by lacing or bandaging during the woman's infancy. As we know, such artificial deformation was not uncommon during the Middle Ages.

There is a clear bathrocephalous shelf. This is particularly worth noting since this property is most common in brachycephalous individuals. On the contrary, the present individual was, as appears from the cranial measurements, distinctly dolichocephalous. Besides, bathrocephaly usually occurs in connection with numerous accessory sutural bones ("inca-bones", etc.) in suture lambdoidea. In this case, there is only one such bone. It is situated in the left part of the suture in question, and is very small.

The forehead was broad, moderately high and fairly straight (steep). The upper part of the face is, in its entirety, low (euryenic).<sup>6</sup>

The profile of the face is straight.

<sup>5</sup> Persson *Op.cit.*, pp. 171–174.

<sup>6</sup> Martin, R., & Saller, K., 1958. *Lehrbuch der Anthropologie*. Verlag Gustav Fischer, Stuttgart.

<sup>4</sup> Trotter & Gleser, *Op.cit.*

The nose is narrow, with a high, markedly convex ridge.

A fairly unusual "discrete trait" exists, viz. torus palatinus.<sup>7</sup>

As to the condition of the teeth, see above.

*Lesions?* — On os frontale sin there is a large, shallow depression in tabula externa, and on os parietale sin there is a similar one, but smaller and deeper. Nothing abnormal has been observed on the corresponding parts of tabula interna. Since no observable change (decomposition or the like) of the bone tissue in the depressions exists, they will probably not be of pathological origin but are rather healed lesions.

<sup>7</sup> Berry, A. C. & Berry, R. J., 1967. Epigenetic variation in the human cranium. — *Journ. Anat.* 101, p. 369. London.

*Pathological changes.* As was mentioned above, there are on the vertebrae distinct osteophytes, which shows that ♀ has had a long-lasting though not crippling backache. Bergman states that a roentgenological examination of the tibia showed so-called Harri's lines in the distal parts of them. He is of the opinion that the growth disorders arose when the individual was in her later teens. — The same author also mentions the poor condition of the teeth, and the suggestion of arthrosis in the mandible joint.<sup>8</sup>

*Further.* The woman has given birth to at least *one* child.

<sup>8</sup> Bergman *Op.cit.*, pp. 80–81.